CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2025-0004

Application Type:	Conditional Use Permit
Applicant(s):	Bohler Engineering
Owner(s):	VC Dover Investments, LLC
Location:	30 Grapevine Dr. (Assessor's Map H, Lot 4-3-4)
Meeting Date:	August 26, 2025

INTENT: Proposal is for a Conditional Use Permit (CUP) to allow 37 parking spaces where 13 parking spaces are allowed as part of the proposed construction of a McDonald's restaurant. (application inaccurately notes 14 are allowed).

AGENDA ITEM #: 4-J

FILE: COND-2025-0004

OWNER: VC Dover Investments, LLC

APPLICANT: Bohler Engineering

LOTS/UNITS PROPOSED: One commercial unit.

ACREAGE: Site: ±1.91 acres, Parent: ±21.19 acres

ZONING DISTRICT: Commercial, Residential-Commercial Mixed-Use (RCM) Overlay (parent parcel)

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Restaurant (McDonald's)

SURROUNDING LAND USE: Commercial, Residential

ZBA ACTION: N/A

WAIVERS REQUESTED: §153-17G- requesting relief from limits to drive-in service which are restricted to 6:00 a.m.-9:00 p.m.

PERMITS REQUIRED: City of Dover CUPs for wetland buffer impacts and for parking in excess of maximum (37 spaces proposed, 13 spaces maximum), NHDES AoT, Driveway Permit

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters.

TECHNICAL REVIEW COMMITTEE: Reviewed on 1/9/25 and 3/13/25.

CONSERVATION COMMISSION: Reviewed and endorsed on 7/14/25.

ATTACHMENTS: Site Plan, Application Materials.

Summary of Request and Background:
The applicant is proposing to construct an approximately 3,694 square foot McDonald's restaurant with a side-by-side drive-thru and 37 parking spaces on the subject property at Grapevine Drive, Assessor's Map H, Lot 4-3-4.

While the subject property is a pad site within the larger development located in the Residential Commercial Mixed-Use (RCM) Overlay District, this application does not rely on the RCM provisions. The underlying zoning district permits both the proposed use and driveway.

As part of the overall proposal, the applicant is requesting a total of thirty-seven parking spaces. This totals twenty-four additional parking spaces beyond the maximum permitted, per §153-14D. The applicant has identified the need for additional parking spaces based on site designs for other McDonald's restaurants and in relation to restricted drive-thru hours, (§153-17G, which limits the hours of operation for drive-in service to 6:00 a.m.-9:00 p.m.). A waiver is also being proposed as part of this project related to relief for the limit on hours of drive-thru operation.

The Technical Review Committee reviewed the application at their January 9, 2025 and March 13, 2025 meetings. *(minutes attached)*

Consistency with Land Use Regulations – Conditional Use Permit
§ 153-14D(5) of the Site Review Regulations of the City Code provides for Conditional Use Permits to allow an increase in number of parking spaces than allowed by §153-14D.

Applicants requesting increased parking must justify the need through an analysis demonstrating that the increased parking is essential to the use, is not detrimental to surrounding properties, and that the proposed use cannot be served by existing on- and off-street parking. The applicant must also show that additional parking areas use pervious materials and comply with the New Hampshire Stormwater Manual, with a design engineer overseeing construction. Depending on the typical parking duration, applicants must also support electric vehicle (EV) infrastructure by installing EV charging stations or EV-ready spaces.

Staff appreciates that the applicant has made revisions throughout the TRC process to remove six parking spaces from the original submission and to include pervious pavers and readiness for electric vehicle (EV) charging.

To justify the need for additional parking, the applicant referenced other McDonald's locations in the area with a greater amount of parking than being requested. Planning staff reviewed aerial imagery over the past five years at the existing McDonald's location in Dover, which was provided as one of the example sites, and observed between 10 and 18 vehicles in the parking lot at different times of day and throughout the year.

See reverse →

The applicant also explained that the CUP is being requested for the site to have an appropriate amount of parking for "employees, in-house dining customers, takeout customers, and mobile order waiting customers" and to accommodate potential increased in-house traffic due to restricted drive-thru hours. The following breakdown was provided by the applicant: a total of 8 spaces will be reserved for curbside pickup, drive-thru pull-forward, and courier use, 12 spaces will be allocated to employees during peak shifts and 17 spaces will remain available for dine-in, takeout, and drive-thru customers who park on-site.

Staff feels that the parking design of other McDonald's locations does not provide ample justification for need at this site and would still request data on parking usage at other sites that justifies the proposed number. However, consideration could be given to an increased parking need related to reduced drive-thru hours, though the applicant is also seeking relief from that regulation.

STAFF RECOMMENDATION:
Staff again appreciates the applicant's willingness to revise the plan by reducing the number of parking spaces from the original submission and including pervious pavers and EV-ready infrastructure but finds that the justification for the additional parking has not been adequately demonstrated and would request data points that include parking usage at other locations and average number of employees anticipated. For this reason, staff recommends that the Board continue the item to a future meeting.

Should the Planning Board determine that the applicant has provided sufficient justification, staff would recommend conditional approval with a phased approach to parking, with the site developed with an average number of spaces based on usage at other sites, and the option to add additional spaces in the future should a demonstrated need arise. In this situation, the Planning Department would recommend that the Planning Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:

1. The site shall initially be developed with the maximum number of 25 parking spaces permitted;
2. Revise final plan to mark potential additional parking spaces beyond this amount that may only be constructed upon demonstrated need and subsequent Planning Board review and approval.

COND-2025-0004 30 GRAPEVINE DRIVE



Property Information

Location	GRAPEVINE DR/250 MAST RD
Owner	DOVER FIELDS CONDOMINIUM
Land Use	911V
Zoning Code	C*
Property Id	H0004-003000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

PERMIT SNAPSHOT REPORT COND-2025-0004
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	02/20/2025
Work Class:	Non-Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: The Applicant proposed to construct a new 3,694 SF McDonald's restaurant with a side-by-side drive-thru, which consists of two lanes and two order points, along with new parking areas, landscaping, and utilities on the corner of Grapevine Drive and NH-108. The proposed layout results in 37 parking spaces, which is greater than the maximum 14 parking spaces permitted as calculated per zoning requirements. Therefore, the applicant is seeking a Conditional Use Permit to increase the number of proposed parking spaces permitted for the proposed use [153-14.D.(5)(a)]. Refer to Site Review Application #SITE-2024-0020 for additional information.

Parcel:	H0004-003000 Main	**Address:**	30 Grapevine Dr Main Dover, NH	**Zone:**	IT(Non-Residential - Innovative Technolo C(Non-Residential - Commercial)

Owner	Architect	Applicant	Landscape Architect
Alex Vailas Home: (603) 472-4488	Core States Group 135 Water Street Suite 201 Naperville, IL 60540 Business: (312) 718-5415	Connor Ennis 352 Turnpike Road 3rd Floor 3rd Floor Southborough, MA 01772 Business: (508) 480-9900 Mobile: (856) 357-3485	Bohler Engineering 352 Turnpike Road Southborough, MA 01772 Business: (508) 480-9900
Plan Preparer	**Engineer**	**Surveyor**	
Bohler Engineering 352 Turnpike Road Southborough, 01772 Business: (508) 480-9900	Bohler Engineering 352 Turnpike Road Southborough, 01772 Business: (508) 480-9900	Control Point Associates, Inc. 352 Turnpike Road Southborough, MA 01772 Business: (508) 948-3000	

Permit Custom Fields

Select Permit Type	Off-Street Parking and Loading	General Purpose	New Construction	Project Zone	Non-Residential
What is the parcel zoned?	C	New Change in Impervious/Paved Area (sq ft)	36095	Work	The Applicant proposes to construct a new 3,694 SF McDonald's restaurant with a side-by-side drive-thru, which consists of two lanes and two order points, along with new parking areas, landscaping, and utilities on the corner of Grapevine Drive and NH-108. The proposed layout results in 37 parking spaces, which is greater than the maximum 14 parking spaces permitted as calculated per zoning requirements. Therefore, the applicant is seeking a Conditional Use Permit to increase the number of proposed parking spaces permitted for the proposed use [153-14.D.(5)(a)]. Terrain Amendment - In progress
permitstatefed	NHDOT Driveway Permit #IA-0000000841 - In		progress; NHDES Alteration of		

PERMIT SNAPSHOT REPORT (COND-2025-0004)

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Connor_Ennis_2/20/2025.jpg	02/20/2025 11:56	Ennis, Connor		Uploaded via CSS
Permit Snapshot Report.pdf	02/22/2025 12:52	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot
2025.7.14_RevisedConservationCommission.Agenda.pdf	07/08/2025 11:52	Blonigen, Rachel		ConCom Agenda
2025.07.14 ConservationCommission.Minutes.draft.pdf	07/30/2025 15:28	Blonigen, Rachel		Draft ConCom Minutes

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00011354	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-00011354	**$200.00**	**$0.00**
INV-00011355	Planning Public Notice in Newspaper	$120.00	$0.00
	Total for Invoice INV-00011355	**$120.00**	**$0.00**
	Grand Total for Permit	**$320.00**	**$0.00**

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	Approved	07/03/2025	07/11/2025	07/30/2025	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Edgecomb, Makayla	Approved	07/30/2025	08/27/2025	07/11/2025

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		02/20/2025 14:33	07/30/2025 15:32
Confirm application complete v.1	Generic Action		02/20/2025 14:33
Conditional Use Review v.1	Receive Submittal	07/30/2025 0:00	07/30/2025 15:32
Planning Board v.1		07/30/2025 15:32	
Planning Board Agenda v.1	Task	07/30/2025 15:32	
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Permit Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Internal Notification of Plan Completion v.1	Generic Action		
Recording v.1	Task		

Docusign Envelope ID: B73C31B3-0BCE-4816-9737-3099CA2AFB4D

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: McDonald's USA LLC (c/o Bohler) Telephone #630-209-1540

Address of Applicant: 110 N. Carpenter St. Chicago, IL 60607

E-Mail Address: cennis@bohlereng.com

Name of Property Owner (if different from applicant): VC Dover Investments LLC Telephone #

Address of Property Owner: 48 Constitution Drive Bedford, NH 03110

PROPERTY INFORMATION

Assessor's Map # H Lot(s) # 4-3

Address of Property: 30 Grapevine Drive, Dover, NH 03820

Zoning District(s) Commercial (C) Overlay District(s) RCM Overlay District

Existing Use of Property: Overall property consists of an existing Hannaford supermarket and existing Senior Care Housing. Project location is an existing grass field.

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☒ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☒ Off-Street Parking and Loading	☐ Alternative Treatment Center
☒ Wetland Protection District	☐ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:
The Applicant proposed to construct a new 3,694 SF McDonald's restaurant with a side-by-side drive-thru, which consists of two lanes and two order points, along with new parking areas, landscaping, and utilities on the corner of Grapevine Drive and NH-108. The proposed layout results in 43 parking spaces. The proposed activity requires Conditional Use Permits for the following the construction of parking lots and re-contouring or grading of land within the 50' wetland buffer within the Wetland Protection District [170-28.G.(1)(d)] and to increase number of parking spaces permitted for the proposed use [153-14.D.(5)(a)].

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Alteration of Terrain Amendment; NHDOT Driveway Permit

Name of Professional That Prepared Plans: Bohler Engineering c/o John Kucich

Address 352 Turnpike Road Ste. 300 Southborough, MA 01752 Telephone #: 508-480-9900

Professional License #: NH License No. 15476 E-mail address: cennis@bohlereng.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: Refer to Planning Application Owner Authorization form Date:

Signature of Applicant (if different from owner): DocuSigned by: Eric Wagner 61FB8F48153D457... Date: 12/18/2024

Signature of Agent: Date: 12/18/2024
(Bohler attn: Connor Ennis)

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: Refer to Planning Application Owner Authorization form Date:

Docusign Envelope ID: B73C31B3-0BCE-4816-9737-3099CA2AFB4D

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
H	4-3	VC Dover Investments LLC	48 Constitution Dr. Bedford, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
McDonald's USA LLC	c/o Bohler	352 Turnpike Rd Southbough, MA 01752

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
John Kucich, PE	Bohler	352 Turnpike Rd Southbough, MA 01752

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

Docusign Envelope ID: B73C31B3-0BCE-4816-9737-3099CA2AFB4D

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 24, 2023)

Below are the fees associated with plan review and are subject to a nonrefundable application fee to cover administrative expenses. Please complete the information below and provide payment with your application submittal. **Plan review fees shall be paid prior to technical review committee (TRC) being scheduled.** For plans not requiring TRC review, **fees are due 21 days prior** to the Planning Board meeting. Staff will coordinate abutter/notice fees, which will be invoiced and must be paid 28 hours before the Planning Board meeting for an application to be heard. Fees shall be paid by cash or check made payable to "City of Dover".

A. Plan Review Fees

1. Application fee for the following (SELECT ALL THAT APPLY):

- ☐ SUBDIVISION Application fee $200.00 + $150.00 x # _____ new lots created = $_____
- ☐ LOT LINE ADJUSTMENT Application fee $200.00 + $100.00 X # ___ of lots involved = $_____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee $200.00 = $_____
- ☐ SITE REVIEW – RESIDENTIAL Application fee $200.00+ $100.00 x # __ per dwelling unit = $_____
- ☑ SITE REVIEW – NON-RESIDENTIAL Application fee $200.00 + (not to exceed $10,000) 200.00
  - New construction $.15 sq. ft. x # 3,694 sq. ft.= $ 554.10
  - Additions (new floor space) $.10 per sq. ft. x # _____sq. ft.= $_____
- ☐ MOTEL/HOTEL $35.00 x # ___ per lodging unit= $_____
- ☐ CHANGE OF USE Application fee $200.00 + (not to exceed $5,000)
  - Existing floor spaces $.10 per sq. ft. x # _____ sq. ft. = $_____
- ☑ CONDITIONAL USE PERMIT Application fee $200.00 x # 3 per Application = $ 600.00
- ☐ GRAVEL PIT/ EXCAVATIONS
  - Application fee $50.00= $_____
  - Permit fee $75.00= $_____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee $200.00 = $_____
- ☐ REQUEST FOR REZONING Application fee $200.00 = $_____
- ☐ DRIVEWAY WAIVER Application fee $200.00 = $_____
- ☑ **TOTAL IMPERVIOUS PAVED AREA** (for new development, roadways or additions to existing parking lots, (not to exceed $10,000)) Application fee of $200.00 is N/A if it is part of a Site Review or Subdivision Plan. $200.00 + $.07 per sq. ft. x # 33,850 sq. ft. = $ 2,369.50

SUBTOTAL PLAN REVIEW FEE = $ 3,723.60

AND

B. Abutter Notification/Mailing Labels - this office will create and print the abutter list and provide labels in triplicate for each abutter. The applicant/owner will review the list for accuracy and provide to us the engineer, architect, licensed land surveyor (LLS), licensed landscape architect (LLA) and/or soil scientist whose professional seal appears on the plan with names and addresses for notices.

- ☑ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
  - Certified letters fee # _____ of x $10.00= $_____
- ☑ Certified letters fee: # of abutters _____ X $10.00= $_____
- ☑ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X $1.00= $_____
- ☑ Creating/Printing Abutter Labels in triplicate per sheet _____ x $10.00= $_____

C. Foster's newspaper public notice fee $120.00 x # _____ applications = $_____

SUBTOTAL = $_____

TOTAL INVOICE AMOUNT = $_____

PLAN REVIEW FEE COLLECTED/PAID = $_____

BALANCE DUE = $_____

The amount due must be paid 28 hours prior to the Planning Board Meeting, to be heard.

COND-2025-0004 **30 GRAPEVINE DRIVE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
H0002-000000	275 DURHAM RD	CITY OF DOVER		288 CENTRAL AVENUE	DOVER	NH	03820
H0004-000000	CIELO DR	HERON BAY PARTNERS LLC		242 CENTRAL AV	DOVER	NH	03820
H0004-000001	1 CIELO DR	HERON BAY PARTNERS LLC		242 CENTRAL AV	DOVER	NH	03820
H0004-000002	2 CIELO DR	CONNOLLY THOMAS V	CONNOLLY NANCY M	2 CIELO DR	DOVER	NH	03820
H0004-000004	4 CIELO DR	PETTIGREW RICHARD	PETTIGREW LORAINE	4 CIELO DR	DOVER	NH	03820
H0004-000006	6 CIELO DR	EDWARDS JUDITH A TRUSTEE	EDWARDS JUDITH A REVOCABLE TRUST	6 CIELO DR	DOVER	NH	03820
H0004-000068	70 CIELO DR	VASSALLO DIANE		70 CIELO DR	DOVER	NH	03820
H0004-000070	72 CIELO DR	BOOTHBY L.A & HEDBERG P.M & HALL M.C TTS	BOOTHBY LOUISE ANNE TRUST 2023	72 CIELO DRIVE	DOVER	NH	03820
H0004-000072	74 CIELO DR	LINDSAY TIMOTHY & CHERYL TRUSTEES	LINDSAY TIMOTHY AND CHERYL REVOCABLE TRU	4 BAYVIEW RD	DOVER	NH	03820
H0004-000076	76 CIELO DR	LARSON ROLAND E TRUSTEE	LARSON FAMILY REVOCABLE TRUST	76 CIELO DR	DOVER	NH	03820
H0004-000078	78 CIELO DR	IAMPIETRO DEBORAH L TRUSTEE	IAMPIETRO DEBORAH L REV TRUST	78 CIELO DR	DOVER	NH	03820
H0004-000080	80 CIELO DR	HERON BAY PARTNERS LLC		242 CENTRAL AV	DOVER	NH	03820
H0004-000081	81-87 CIELO DR	HERON BAY PARTNERS LLC		242 CENTRAL AV	DOVER	NH	03820
H0004-000082	82 CIELO DR	MERRILL LISSA ANN TRUSTEE	MERRILL LISSA ANN REVOCABLE TRUST	82 CIELO DR	DOVER	NH	03820
H0004-001000	217 DURHAM RD	TORR SCOTT A & RENEE L TRUSTEES	TORR SCOTT AND RENNE REVOCABLE LIVING TR	217 DURHAM RD	DOVER	NH	03820
H0004-003001	30 GRAPEVINE DR	VC DOVER INVESTMENTS LLC		48 CONSTITUTION DR	BEDFORD	NH	03110
H0004-003005	250 MAST RD	HINEC DOVER LLC		264 US RTE 1 BUILDING 300 STE 2A	SCARBOROUGH	ME	04074
H0004-00305A	250 MAST RD	HINEC DOVER LLC		264 US RTE 1 BUILDING 300 STE 2A	SCARBOROUGH	ME	04074
H0004-00305B	250 MAST RD	HINEC DOVER LLC		264 US RTE 1 BUILDING 300 STE 2A	SCARBOROUGH	ME	04074
H0005-A00000	MAST RD	TORR SCOTT A & RENEE L TTS	TORR SCOTT A & RENEE L REV LIV TRUST	217 DURHAM RD	DOVER	NH	03820
H0053-001000	15 STONEWALL DR	MAST ROAD DOVER LLC	C/O RAND-WHITNEY CONTAINER LLC	207 GREENWOOD ST	WORCESTER	MA	01607
H0058-000000	271 MAST RD	CITY OF DOVER		288 CENTRAL AVE	DOVER	NH	03820
H0058-000LS2	273 MAST RD	OMNIPOINT HOLDINGS INC	ATTN PROPERTY MANAGEMENT	4 SYLVAN WAY	PARSIPPANY	NJ	07054
I0022-000000	13 BROOKMOOR RD	SUN JENSEN LLC		27777 FRANKLIN RD #200	SOUTHFIELD	MI	48034
I0022-000002	2 DEERFIELD DR	SHAFFER PRESTON &	SHAFFER ANITA	2 DEERFIELD DRIVE	DOVER	NH	03820
I0022-000005	28 FARMINGTON DR	SIRACUSA HILLMAN BENJAMIN T ESQ TRUSTEE	C/O SHAHEEN & GORDON PA	PO BOX 2703	CONCORD	NH	03302
I0022-000007	24 FARMINGTON DR	GLIDDEN JAMES R &	GLIDDEN LYNNETTE M	24 FARMINGTON DR	DOVER	NH	03820
I0022-000008	22 FARMINGTON DR	RICHTER STEPHEN JAMES	RITCHER-MOON JEREMY DAVID	22 FARMINGTON DR	DOVER	NH	03820
I0022-000009	20 FARMINGTON DR	CARSON DIANNE E		20 FARMINGTON DR	DOVER	NH	03820
I0022-000011	16 FARMINGTON DR	STEWART DARALYN A		16 FARMINGTON DR	DOVER	NH	03820
I0022-000158	14 FARMINGTON DR	PRESCOTT ROBIN		14 FARMINGTON DRIVE	DOVER	NH	03820
I0022-000159	18 FARMINGTON DR	WALERYSZAK MICHAEL S &	WALERYSZAK LINDSAY L	18 FARMINGTON DR	DOVER	NH	03820-5348
I0022-000162	26 FARMINGTON DR	GOODMAN SUSAN A		26 FARMINGTON DRIVE	DOVER	NH	03820
I0022-000193	4 DEERFIELD DR	MANHA SUSAN J		4 DEERFIELD DR	DOVER	NH	03820
		CONTROL POINT ASSOCIATES, INC	JOHN P. LYNCH	352 TURNPIKE ROAD	SOUTHBOROUGI	MA	01772
		BOHLER	JOHN A. KUCICH	352 TURNPIKE ROAD	SOUTHBOROUGI	MA	01772
		CORE STATES GROUP	MARC PELINI	135 WATER STREET, SUITE 201	NAPERVILLE	IL	60540

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #SITE-2024-0020

Application Type:	Site Plan
Applicant(s):	Bohler Engineering
Owner(s):	VC Dover Investments, LLC
Location:	30 Grapevine Dr. (Assessor's Map H, Lot 4-3-4)
Meeting Date:	August 26, 2025

INTENT: Proposal is for a Site Plan for the construction of an approximately 3,694 square foot McDonald's restaurant with a side-by-side drive-thru and 37 parking spaces.

AGENDA ITEM #: 4-K

FILE: SITE-2024-0020

OWNER: VC Dover Investments, LLC

APPLICANT: Bohler Engineering

LOTS/UNITS PROPOSED: One commercial unit.

ACREAGE: Site: ±1.91 acres, Parent: ±21.19 acres

ZONING DISTRICT: Commercial, Residential-Commercial Mixed-Use (RCM) Overlay (parent parcel)

EXISTING LAND USE: Vacant

PROPOSED LAND USE: McDonald's Restaurant

SURROUNDING LAND USE: Commercial, Residential

ZBA ACTION: N/A

WAIVERS REQUESTED: §153-17G- requesting relief from limits to drive-in service which are restricted to 6:00 a.m.-9:00 p.m.

PERMITS REQUIRED: City of Dover CUPs for wetland buffer impacts and for parking in excess of maximum (37 spaces proposed, 13 spaces maximum), NHDES AoT, Driveway Permit

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters.

TECHNICAL REVIEW COMMITTEE: Reviewed on 1/9/25 and 3/13/25.

CONSERVATION COMMISSION: Reviewed and endorsed on 7/14/25.

ATTACHMENTS: Site Plan, Application Materials.

Summary of Request and Background:
The applicant is proposing to construct an approximately 3,694 square foot McDonald's restaurant with a side-by-side drive-thru and 37 parking spaces on the subject property at Grapevine Drive, Assessor's Map H, Lot 4-3-4. (Master parcel for the Dover Fields Condominium is Map H, Lot 4-3).

While the subject property is a pad site within the larger development located in the Residential Commercial Mixed-Use (RCM) Overlay District, this application does not rely on the RCM provisions. The underlying zoning district permits both the proposed use and drive-thru.

As part of the proposal, the applicant is requesting twenty-four additional parking spaces beyond the maximum permitted. The proposal includes construction of paved areas, a retaining wall, and associated grading, resulting in approximately 7,630± square feet of wetland buffer impact. No direct wetland impacts are proposed. The applicant has submitted two related Conditional Use Permit (CUP) applications to the City of Dover: one for the additional parking and one for the buffer impacts.

One waiver is being proposed as part of this project related to the drive-thru service. Drive-thru service is a permitted use but the applicant is requesting relief from the limits on hours of operation which are 6:00 a.m.-9:00 p.m.

The Technical Review Committee reviewed the application at their January 9, 2025 and March 13, 2025 meetings. *(minutes attached)*

The Conservation Commission reviewed and endorsed the application at their July 14, 2025 meeting. *(minutes attached)*

Summary of Waiver Requests:
The applicant is seeking one waiver as part of this proposal. The waiver is from the following:

1. §153-17G, requesting relief from limits to drive-in service which are restricted to 6:00 a.m.-9:00 p.m.

Consistency with Land Use Regulations –Waivers/Relief
§153-21 of the Site Plan Review Regulations state the "Planning Board may waive specific provisions of these regulations. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that:

(1) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or
(2) Specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations."

See reverse →

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE # SITE-2024-0020

Application Type:	Site Plan
Applicant(s):	Bohler Engineering
Owner(s):	VC Dover Investments, LLC
Location:	30 Grapevine Dr. (Assessor's Map H, Lot 4-3-4)
Meeting Date:	August 26, 2025

Planning Staff do not believe the applicant's rationale for the waivers meets either criterion. Per §153-17G, drive-in facilities shall be designed to impose the least amount of intrusion upon existing residential abutters which includes the limit of hours of operation for the drive-in portion of the business to be limited to 6:00 a.m. to 9:00 p.m. The applicant has requested extended drive-thru hours to 5:00 a.m. to 10 p.m. citing consistency with other restaurants, customer demand, and drive-thru speakers with self-adjusting volume based on ambient noise. The circumstances are not specific to the site, therefore criterion 2 is not applicable. The applicant has been aware of staff's position on this request and other drive-thru hour waiver requests but the applicant still desired to have Planning Board review the request and vote on the waiver. Planning staff do not feel the applicant has adequately shown how conformity would pose an unnecessary hardship as the business could remain open and the drive-thru window could still be made available for mobile orders.

STAFF RECOMMENDATION - Waivers/Relief:
The Planning Department recommends that the Planning Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact, and vote to deny the waiver.

Consistency with Land Use Regulations – Site Plan
§153-4 of the Site Review Regulations of the City Code provides for site review by the Planning Board of new construction of various types. This plan is consistent with those regulations.

STAFF RECOMMENDATION:
As there are related applications to this Site Plan, Staff offers the following recommendations depending on the outcome:

Should the Planning Board deny COND-2025-0004, or requests changes to the site design related to the parking relief request, Staff recommends that the Board continue the item to a future meeting.

Should the Planning Board approve the related conditional use permit applications and/or sets conditions related to site design or materials, Staff recommends that the Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact, and vote to approve the Site Plan with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Signing of Plans:
1. Approval of COND-2025-0005;
2. Approval of COND-2025-0004;
3. Provide copy of AoT Amendment when completed;
4. Add a note that building address will be assigned by the Building Official at time of Building Permit.
5. Add note about drive-thru hours being limited to 6am to 9pm.
6. Provide physical and digital copies (including CAD) of complete plan set for final Planning Board signature which additionally shall include:
   6.1. Owner's signatures;
   6.2. Professional stamps and signatures;
   6.3. Per City Assessor, revise lot number on plan set to Lot 4-3-4 to reflect the correct condo lot.

Subsequent Condition to Be Met Prior to Construction:
7. City's standard site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director;
8. Wetland buffer placards are installed;

Subsequent Conditions to Be Met Prior to Building Permit:
9. Payment of Water and Sewer Investment Fees if applicable at time of request of service;

Subsequent Conditions to Be Met Prior to Occupancy:
10. Issuance of Certificate of Occupancy;
11. Surety or other form of security acceptable to the City is provided for any unfinished work;
12. Wetland buffer placards are still in place or replaced per the plan;
13. Design engineer to submit a construction certification letter to the City ensuring construction was completed in accordance with the plans and specifications approved by the City of Dover.

SITE-2024-0020 30 GRAPEVINE DRIVE



Property Information

Location	GRAPEVINE DR/250 MAST RD
Owner	DOVER FIELDS CONDOMINIUM
Land Use	911V
Zoning Code	C*
Property Id	H0004-003000

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 10/30/2023
Data updated Daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Docusign Envelope ID: 1BC16E8B-59FA-4E73-9564-4DA322393260

CHRISTOPHER G. PARKER, AICP
Assistant City Manager
Planning & Strategic Initiatives
c.parker@dover.nh.gov

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Dover, New Hampshire 03820-4169
(603) 516-6008
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www.dover.nh.gov

City of Dover, New Hampshire

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

INSTRUCTIONS TO APPLICANTS TO THE DOVER PLANNING BOARD

IMPORTANT: PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE FILLING OUT ATTACHED APPLICATION.
INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED FOR REVIEW.

Dear Applicant:

This will serve to briefly inform you regarding the process to have the Dover Planning Board (the Board) review a land use application. Please refer to the NH Statutes on Land Use and Regulation the Dover Code, and our Developer's Handbook for more specific information.

The Board primarily reviews 5 types of applications:

1. **Site Plans** - A site plan is a professionally rendered drawing which delineates the proposed development of a site. This plan is required for non-residential development, creation of multi-family residential structures, and for extensions of parking lots and alteration of an acre or more of land. These plans require meeting with the Technical Review Committee before Planning Board review.

2. **Subdivisions** - A subdivision is the division of the lot, tract, or parcel of land into two (2) or more lots, plats, sites or other divisions of land for the purpose, whether immediate or future, of sale, rent, lease or building development. It includes re-subdivision and, when appropriate to the context, relates to the process of subdividing or to the land or territory subdivided. Major subdivision plans (4+) require meeting with the Technical Review Committee before Planning Board review.

3. **Lot Line Adjustments** - A lot line adjustment alters the size of two (2) or more lots, but does not create a new buildable lot.

4. **Conditional Use Permits** - A conditional use permit is required for any alteration of wetlands, wetland buffers or work within the City's conservation district. Additionally, a conditional use permit could be issued as to offer relief in the Central Business District, for plans in the Residential Mixed Use Overlay District, or parking relief. Environmental Conditional Use Permits are acted on after Conservation Commission review.

5. **Excavation Permits** – NH RSA Chapter 155-E grants municipalities the authority to regulate earth excavations within their borders. This authority rests with the Planning Board.

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The Board cannot and will not review applications that do not meet zoning requirements. **Please review the need to apply to the Zoning Board of Adjustment prior to applying to the Board.**

Professional agents will prepare your application; however, you may represent yourself or authorize, in writing, someone else to represent you before the Planning Board.

In most cases, the first step would be to appear before the Technical Review Committee, to apply, eight (8) folded copies of the site plan with scale of not less than 1"=50' or 1" =100' for larger site plans, and a PDF, need to be provided, along with payment of plan review fees. These meetings occur on Thursday, and materials and payment must be submitted three (3) weeks prior to meeting. Meetings are scheduled, upon receipt of completed applications with the full checklist and payment.

The next step would be to provide, two weeks prior to Planning Board, the final plan sets (three (3) full size and twelve (12) half size (11x 17), folded, copies of the plan), and 15 copies, and a PDF, of all supporting materials, including response to TRC comments. Please print all materials on both sides of paper.

For projects not appearing before the Technical Review Committee, Plan Review Fees are due along with three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and 15 copies, plus a PDF, of plans and materials, 3 weeks prior to the Planning Board meeting. Please print all materials on both sides of paper.

Staff will generate an abutter list, and Abutter/Notice Fees will be invoiced. They are due 28 hours prior to Planning Board. If they are not paid, the application will not be heard.

Once an item is placed upon an agenda the following process is used:

- The Board will hold a public hearing on your application at a regularly scheduled meeting
    - Typically the second or fourth Tuesday of the Month.
- Public notice of the hearing will be posted at the City Clerk's office and the Planning Department office and printed in the newspaper.
- Certified letters will be mailed to you and to all abutters at least ten days before the date of the hearing.
- 28 hours prior to the meeting, abutter/notice fees must be paid
- At the meeting
    - Staff will introduce your project
    - You and all other parties will be invited to appear in person or by agent or counsel to present your application.
        - Your project will be pre-loaded onto a laptop for review by the Board and public
    - The Board may ask clarifying questions
    - The Board will vote to accept jurisdiction on the application
    - If accepted:
        - The Board will hold a public hearing
        - The Board may ask additional questions
        - The Board will deliberate on your application
            - Typically decisions are made the night of the presentation, but an application may be tabled
        - After deliberation, a decision will be made.
            - You will be sent a notice of the decision.

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City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: McDonald's USA LLC (c/o Bohler attn. Connor Ennis) Telephone # 508-480-9900

Address of Applicant: 352 Turnpike Road, Ste. 300, Southborough, MA 01772

E-Mail Address: cennis@bohlereng.com

Name of Property Owner (*if different from applicant*): VC Dover Investments LLC Telephone #

Address of Property Owner: 48 Constitution Drive, Bedford, NH 03110

PROPERTY INFORMATION

Address of Property: 30 Grapevine Drive, Dover, NH 03820

Assessor's Map # H Lot(s) # 4-3

Zoning District(s) Commercial (C) Overlay District(s) RCM Overlay District

Size of Parcel: 83,463 sq. ft. 1.92 ac. Property Deed: Book 3496 Page: 733

Existing Use of Property: Overall property consists of an existing Hannaford supermarket and existing Senior Care Housing. Project location is an existing grass field.

SITE PLAN INFORMATION

Describe Proposed Use: Proposed McDonald's Restaurant with Drive-thru

Area of Parcel to be Developed: ±79,450 sq. ft.

If Multi-family Residential: Number of Units N/A & Buildings Proposed N/A

If lodging: Number of Units N/A & number of Buildings N/A

Number of Parking Spaces: Existing N/A Proposed 43

Highway Access (check where applicable): X City Street X State Highway

Number of Employees Total: ±75 In Maximum Shift: 14

Disposition of Parcel:

Building Footprint 3,694 sq. ft.

Total Building Area 3,694 sq. ft.

Paved Area ±33,850 sq. ft.

Building Setbacks:

Front Yard 90.3 ft.

Rear Yard N/A ft.

Side Yard: Right 75.1 ft. Left 156.7 ft.

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City Water? _X_ Yes ___ No How far is city water from the property? On-site

City Sewer? _X_ Yes ___ No How far is city sewer from the property? On-site

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

Type of TRANSFER OF DEVELOPMENT RIGHT REQUEST (Check All That Apply):

□ Residential □ Residential (reduced size) □ Industrial | □ Purchase □ Land Preservation

Relief sought (Check All That Apply):

□ Lot Size □ Frontage □ Setback □ 30' Buffer □ Increase by _____ units

Describe Proposed Use or Activity that requires TDR; describe any impacts and document mitigation:

_____

_____

_____

BUILDING INFORMATION

Type of Building to be Built: Fast-Food Restaurant (McDonald's) with Drive-Thru

Height of Building: ±22.0' Finished Floor Elevation: 109.25

Number of Seats (where applicable) 38 Seats

Estimated value of construction: ±$2,000,000 Refuse removal: (Public) / Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: §153-17.G. - Drive-in facilities hours of operation

Justification for waiver request(s) (*attach additional sheets as needed*):

Refer to Waiver Request Letter attached.

_____

_____

_____

_____

_____

_____

Docusign Envelope ID: 1BC16E8B-59FA-4E73-9564-4DA322393260

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) John P. Lynch Control Point Associates, Inc.

Address 352 Turnpike Road, Southborough, MA 01772 Telephone #: 508-948-3000

Professional License #: NH P.L.S. #899 E-mail address: _____

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) John A. Kucich Bohler

Address 352 Turnpike Road, Southborough, MA 01772 Telephone #: 508-480-9900

Professional License #: NH License #15476 E-mail address: cennis@bohlereng.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) Marc Pelini Core States Group

Address 135 Water Street, Suite 201, Naperville, IL 60540 Telephone #: 312-718-5415

Professional License #: NH License #05437 E-mail address: _____

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) Matthew J. Mrva Bohler

Address 352 Turnpike Road, Southborough, MA 01772 Telephone #: 508-480-9900

Professional License #: NH License #109 E-mail address: cennis@bohlereng.com

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) _____

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: _____ Telephone #_____

Address Easement Holder: _____

Docusign Envelope ID: 1BC16E8B-59FA-4E73-9564-4DA322393260

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. Furthermore, I/we submit that the existing conditions sheet of the plan represents the lot in question, and that no alteration of the site shall take place during Planning Board review up to and including the pre-construction meeting. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: Refer to Planning Application Owner Authorization form Date: _____

Signature of Applicant (*if different from owner*): DocuSigned by: Eric Wagner 61FB8F48153D457... Date: 12/18/2024

Signature of Agent: _____ Date: 12/18/2024
(Bohler attn: Connor Ennis)

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: Refer to Planning Application Owner Authorization form Date: _____

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby the City of Dover or its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: Refer to Planning Application Owner Authorization form Date: _____

Signature of Applicant (*if different from owner*): DocuSigned by: Eric Wagner 61FB8F48153D457... Date: 12/18/2024

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to the Land Use Change Tax.

Signature of Property Owner: Refer to Planning Application Owner Authorization form Date: _____

Signature of Applicant (*if different from owner*): DocuSigned by: Eric Wagner 61FB8F48153D457... Date: 12/18/2024

Docusign Envelope ID: 1BC16E8B-59FA-4E73-9564-4DA322393260

CITY OF DOVER SITE REVIEW
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
H	4-3	VC Dover Investments LLC	48 Constitution Dr. Bedford, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
McDonald's USA LLC	c/o Bohler	352 Turnpike Rd Southbough, MA 01752

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
John Kucich, PE	Bohler	352 Turnpike Rd Southbough, MA 01752

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

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City of Dover, New Hampshire
SITE PLAN REVIEW SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

This site plan review checklist, as required by Chapter 153-6-B(2), should be completed by the applicant. It is intended to assist the applicant in the planning process of preparing a Site Plan Review application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

The first step would be to appear before the Technical Review Committee, to apply, eight (8) folded copies of the site plan with scale of not less than 1"=50' or 1" =100' for larger site plans, need to be provided, along with payment of plan review fees.

Two weeks prior to Planning Board, three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and materials, including response to TRC comments, will be due. Abutter/Notice Fees will be invoiced and need to be paid 28 hours prior to the Planning Board meeting.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan Review Regulations for full details.

APPLICANT: McDonald's USA, LLC (c/o Bohler) File Number: _____

PROJECT TITLE: Proposed McDonald's - Grapevine Drive & NH Route 108

PROPERTY LOCATION: 30 Grapevine Drive Tax Map: H Lot: 4-3

	Where/How Provided	Reviewed
1. Completed and signed Application form	Submitted	
2. Plan Review Fees are provided	TBD	
3. Electronic copy of the engineered/surveyed plan layout	Submitted	
4. Electronic copy of supplementary materials and application	Submitted	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	Submitted	
6. Waiver requests to the Site Plan Review Regulations, with written justification	Submitted	
7. Conditional Use Permit applications	Submitted	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	Waiver Requested	
9. A colored architectural plan showing all sides of buildings	Submitted	
10. Folded copies of site plan w/scale of not less than 1"=50' or 1"=100' for larger site plans, for TRC. Plans shall contain the following items as appropriate:	Submitted	
Location map at appropriate scale	See Cover Sheet (C-101)	
Proposed Project name and title and Planning File #	See Site Plan Sheets	
Date, north arrow and scale	See Site Plan Sheets	
Names of all abutting property owners	See Site Plan Sheets	
Name and address of owners and/or applicants	See Site Plan Sheets	
Signature & stamp of NH licensed land surveyor and/or engineer	See Site Plan Sheets	
Zoning District boundaries, including any special or overlay districts	See Site Plan Sheets	
Location of Conservation District areas	N/A	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	See Site Plan Sheets	
Location and widths of existing & proposed easements & right of ways	See Site Plan Sheets	
Location and width of existing and proposed access/egress ways	See Site Plan Sheets	

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	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	See Site Plan Sheets	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	See Site Plan Sheets See Site Plan Sheets	
Existing and proposed topographic information at two foot intervals	See Site Plan Sheets	
Existing and proposed buildings and structure locations	See Site Plan Sheets	
Minimum building setbacks or build to lines on all lots	See Site Plan Sheets	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	See Site Plan Sheets	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	See Site Plan Sheets	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	See Site Plan Sheets	
Existing and proposed stormwater lines and facilities	See Site Plan Sheets	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	See Site Plan Sheets	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	See Site Plan Sheets	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	See Cover Sheet (C-101)	
Existing natural features and/or significant vegetation on property	See Site Plan Sheets	
Depict existing contours up to 100 ft. beyond project limits	See Site Plan Sheets	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	See Site Plan Sheets	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	See Site Plan Sheets	
Location, material and size of existing and proposed pavement area	See Site Plan Sheets	
Location of proposed fire lanes	See Site Plan Sheets	
Specify finished floor elevations of buildings	See Site Plan Sheets	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	See Site Plan Sheets	
Depict all service, storage, loading bays and utility areas	See Site Plan Sheets	
All applicable Dover Common Site Plan notes	See Site Plan Sheets	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	Submitted	
Stormwater Management System Operation and Maintenance Plan	Submitted	
Letter to Serve from Public and Private Utilities	To be provided	
Erosion and Sedimentation Control Plan	See Site Plan Sheets	
Landscape Operation and Maintenance Plan	See Site Plan Sheets	
Proposed restrictive covenants or homeowners association documents	N/A	
Dates and permit numbers of all required state and federal permits	Not submitted. State permits in progress	
If wetland buffer, indicate placards locations, as applicable	See Site Plan Sheets	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	"Report of Geotechnical Investigation" prepared by Whitestone Associates, Inc.	
Location of proposed drive-in facilities	See Site Plan Sheets	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	TBD	

REVIEWED BY: _____ DATE_____ TRC DATE_____

Docusign Envelope ID: 055AEEA7-4DBB-4287-B6A9-35F0EB5809FF

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

I/We hereby submit this application to the City of Dover / City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Property Owner Name: VC Dover Investments, LLC

Signature(s) of Property Owner(s): _____ Date: Dec 13, 2024

Signature of Applicant: DocuSigned by: Eric Wagner 61FB8F48153D457... Date: 12/18/2024

if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity..

Property Owner Name: VC Dover Investments, LLC

Signature(s) of Property Owner(s): _____ Date: Dec 13, 2024

Signature of Applicant: DocuSigned by: Eric Wagner 61FB8F48153D457... Date: 12/18/2024

if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

If the sign permit applicant is not the property owner, this form must be completed and included as part of application submission.

I have read this application and state that, to the best of my knowledge, the information provided is true and that the proposed sign(s) will comply with all applicable regulations in Section 170-32 of the Zoning Ordinance of the City of Dover and shall conform to the submitted materials and designs. Furthermore, after 90 days, any application still waiting information will be denied.

Address of Sign Location: _____

Sign Permit Application Type: (check one)

- ☐ Permanent Sign
- ☐ Temporary Sign
- ☐ Community Sign

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2024-0020

Application Type:	Site Review
Applicant(s):	Bohler Engineering
Owner(s):	VC Dover Investments, LLC
Location:	30 Grapevine Dr. (Assessor's Map H, Lot 4-3)
Date:	March 13, 2025

INTENT: Proposal is for a ± 3,694 square foot McDonald's restaurant with a side-by-side drive-thru and 43 parking spaces.

LOTS/UNITS PROPOSED: N/A

AGENDA ITEM #: 1

ACREAGE:
Site: ±1.91 acres
Parent: ±21.19 acres

ZONING DISTRICT: Commercial, Residential-Commercial Mixed-Use (RCM) Overlay (parent parcel), Secondary Groundwater Protection District

EXISTING USE: Vacant

PROPOSED USE: McDonald's Restaurant

SURROUNDING USE: Residential, Commercial

ZBA ACTION: N/A for proposal

PERMITS REQUESTED: City of Dover CUP for wetland buffer impacts, City of Dover CUP for parking in excess of maximum (43 spaces proposed, 14 spaces maximum), NHDES AoT, Driveway Permit

WAIVERS REQUESTED:
- §153-17G- requesting relief from limits to drive-in service outside of 6:00 a.m.-9:00 p.m.
- §153-13A(17)- requesting relief from requirement to provide a streetscape rendering.

ATTENDANCE:
Donna Benton, Planning
Paul Crouser, Zoning
Marn Speidel, Police Department
Ken Mavrogeorge, Engineering
Craig Chabot, Fire Department
James Burdin, Business Development
Tom Clark, Planning Board

Others:
Dylan Cruess, Owner
Alex Vailas, VC Dover Investments, LLC
Ari Pollack, Esq., Gallagher, Callahan & Gartrell
Connor Ennis, Bohler
Krystian Kozlowski, Assistant City Engineer

Approval of minutes from February 27, 2025:
J.Burdin moved to approve the February 27, 2025 minutes. Seconded by T.Clark. Vote: U/A with P.Crouser abstaining.

PLAN REVIEW:
Planning:
- *Water and sewer investment fees*
- *Submit Amended driveway permit and add number to plan*
- *CWS stamp and signature*
- Can't read owner's info on C—001. Move C-001 into Civil Set
- Check if Secondary Groundwater is applicable, if so, plan needs note.
- Provide 2x2" blank space on lower right corner of C102 and cover.
- Remove signage from renderings
- Still not in favor of the potential for queuing vehicles at the drive-thru blocking ADA spaces. Prefer a vehicle pattern which eliminates the possibility of blocking issue. "No stacking" painting/striping required at a minimum.
- Not in support of CUP for hours of operation.
- No justification for excess parking except for parking figures at other locations. Need to see parking occupancy loads at different times/days of the week from other locations to justify requested relief.

Engineering:
- General Comment:
  - Regarding contribution from applicant to upgrade traffic signal at Mast Road and Durham Road/Rt 108 Intersection, the city is paving Durham Rd in 2025 and is currently evaluating the costs for upgrades to the intersection based on the expected increase in traffic. The City proposes the upgrade costs be divided between the final two pads of the development.
  - Regarding narrative per Section 153-14, the City is requesting a narrative that describes in detail how each

of the criteria of Section 153-14 are met, with a major focus on stormwater management requirements. The applicant should specify where each item required can be found in the application or whether it is or is not applicable.
    - Previous versions of City standard details appear on the revised drawings. Please coordinate directly with Community Services (Engineering Department) for latest City Standard Details.
- Dwg C-301 Site Plan:
    - Provide final copy of AOT amendment when received.
- Dwg C-401 Grading and Drainage Plan:
    - If the applicant chooses to keep the trench drain, it is recommended they provide enhanced maintenance schedule to address common trench drain issues (excess sediment build up.
    - Regarding culvert pipe minimum 3' cover requirement, the City recommends a 12" dia. RCP in lieu of HDPE pipe.
- Dwg C-501 Utility Plan:
    - Provide calculations showing how proposed use affects existing pump station, which had modifications approved in 2023.
    - The City Engineering Division will continue its request for applicant to extend the water main along the restaurant parcel frontage.
- Dwg C-901 Construction Details:
    - Concrete & Bituminous Concrete Paving Detail, the Geotech report (P.13) calls for 12" concrete with WFF at bituminous junctions. The detail still shows 6".
- Dwg C-905 & C-906 Construction Details:
    - Previous versions of City standard details appear on the revised drawings. Please coordinate directly with Community Services (Engineering Department) for latest City Standard Details.

Police:

- Previous comments have been addressed
- Include these specific measures in the "mitigation plan" that was referred to in one of the responses:
    - Remove existing "Route 108" signage along Grapevine Drive, to be replaced as detailed below.
    - Relocate existing "South 108 / North 108" sign w/ arrows from the Durham/Grapevine exit to the point on Grapevine across from the McDonalds site driveway
    - Add 2 more identical "South 108 / North 108: signs with arrow assemblies on Grapevine across from the two main Hannaford egress points
    - Add 1 new "To North 108" sign on Grapevine at Mast
    - On McDonalds site, add 1 new "To South 108 Only" sign at mounth of right-only exit driveway leading toward Durham Road
- Sheet C-301, notes 38-40: confirm that all 3 of these – including the access to fire connection – are not applicable?

Inspection Services:

- Provide approval for proposed drive thru hours. Show how the residential area would not be affected by the drive thru audible system.
- Indicate the length of the queue line, demonstrate how vehicles in the que do not impede accessible parking backing into drive thru que.
- Indicate how the minimum accessible route widths are maintained along the exterior accessible route (sign appears to obstruct route).
- Provide proposed locations of bollards at EV charging stations to protect from physical vehicular impact.
- Could not locate a proposed accessible EV charging station location which would meet minimum requirements. It is presumed to be near the entrance however the proposed site plan does not appear to indicate an EV space that would comply with minimum standards.
- Sheet 301-Located the snow storage in clouded area on north side of parking lot but did not locate other areas, please clarify.

- A turning template for T-1 was not recognized in the plan set.

Fire Department:

- Please provide a fire apparatus turning template (Truck 1)

Business Development:

- *Raised parapets above the entrance appear to be floating above roofline when seen from the side or opposite elevation.*
- *Street elevation would help understand if that would be visible/look odd from eye level.*
- *Current building orientation places drive-thru pickup windows closest to residential abutters across Durham Road.*
- *Is it possible to reorient with entrance facades facing Durham Road and Grapevine Drive and drive-thru facing Hannaford/open field?*

Planning Board:

- *CUPs and Waiver requests conflict with one another*

Next Steps: Revise plans per comments above and submit for informal TRC and Planning Board.

Adjournment: J.Burdin moved to adjourn the meeting at 10:59 a.m. Seconded by T.Clark. Vote: U/A

BOHLER

50 Washington Street, Suite 2000
Westborough, MA 01581
508.480.9900

May 22, 2025

City of Dover
Planning and Community Development
288 Central Ave
Dover, MA 03820

Attn: Donna Benton, Director of Planning and Community Development

Re: Planning Technical Review Committee
Site Plan Review, 30 Grapevine Drive
(Assessor's Map H, Lot 4-3)

Dear Members of The Committee:

Bohler Engineering is in receipt of a comment letter from The City's Planning Technical Review Committee dated March 13, 2025. On behalf of Applicant McDonald's USA, LLC, Bohler offers the following responses. For clarity, the original comments are in *italics*, while our responses are directly below in **bold.**

PLANNING:

Comment 1. *Water and sewer investment fees.*

Response: **Acknowledged.**

Comment 2. *Submit Amended driveway permit and add number to plan.*

Response: **NHDOT Driveway Permit number has been added to the plans. Refer to Sheet C-101 of the "Proposed Site Plan Documents" prepared by Bohler, revised through 02/07/2025.**

Comment 3. *CWS stamp and signature.*

Response: **The most recent wetland delineation done on site and reflected on the revised plans was performed by Goddard Consulting on 4/29/2025. The resulting wetland delineation encroaches farther into the development area, and as such, we have updated the Environmental Conditional Use Permit #COND-2025-0005 to include the construction of parking areas within the 50' buffer area per Section 170-28.G.(1)(d). No direct impacts to the existing wetland area are proposed, and all disturbance is limited to within the 50' wetland buffer. A signature block has been added to Sheet C-101 of the "Proposed Site Plan Documents" prepared by Bohler, and the Applicant will coordinate with the wetland scientist to add the required signature and stamps to the final approved set of plans.**

Comment 4. *Can't read owner's info on C-001. Move C-001 into Civil Set.*

Response: **The owner's info on the Neighborhood Plan Exhibit has been enlarged to be more legible, and the plan has been moved into the Civil Set and renumbered to be Sheet C-302.**

Comment 5. *Check if Secondary Groundwater is applicable, if so, plan needs note.*

Response: **The site is within the Secondary Groundwater Protection District, and as such, notation has been added to the plans specifying the contractor shall abide by all standards and regulations outlined in Chapter 170-33 "Groundwater Protection of the City of Dover, NH Zoning Ordinance. Refer to Sheets C-201, C-301, C-401, C-501, & C-801 of the "Proposed Site Plan Documents" prepared by Bohler for additional detail.**

Comment 6. *Provide 2x2" blank space on lower right corner of C102 and cover.*

Response: **2"x2" blank space on the lower right corner of Sheets C-101 and C-102 have been added to the plans.**

Comment 7. *Remove signage from renderings.*

Response: **Signage has been removed from the 2D and 3D building renderings as requested.**

Comment 8. *Still not in favor of the potential for queuing vehicles at the drive-thru blocking ADA spaces. Prefer a vehicle pattern which eliminates the possibility of blocking issue. "No stacking" painting/ striping required at a minimum.*

Response: **The plans have been revised to propose signage at the drive-thru entrance noting "Do not block accessible parking spaces". Cars stacking back to the ADA parking spaces is not anticipated during normal operating conditions. This configuration is a condition that presently exists across numerous McDonald's restaurants in the region. In rare cases where stacking occurs as far back as the accessible parking spaces it has been observed that vehicles end up leaving a "courtesy gap" where they may observe a car trying to back out of one of these spaces and subsequently leave them an adequate gap for the car to back out of the space. Refer to Sheet C-301 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.**

Comment 9. *Not in support of CUP for hours of operation.*

Response: **The Applicant is requesting to modify the waiver request for extended drive-thru hours to be 5 AM to 10 PM daily. McDonald's drive-thru typically operates on a 24-hour basis, so the drive-thru waiver request is viewed as the minimum necessary to respond to customer demand and achieve standardized programming goals. Additionally, the drive-thru has been designed to locate the speakers and stacking area toward the rear of the site to muffle sound and project away from the roadway. Finally, the speakers are facing in the opposite direction from nearby residences, all of which are protected by existing fencing and landscaping. For these reasons we believe the drive-thru hours can be reasonably extended while maintaining the intent of the regulation, and therefore we respectfully request the Board grant a waiver as requested.**

Comment 10. *No justification for excess parking except for parking figures at other locations. Need to see parking occupancy loads at different times/ days of the week from other locations to justify requested relief.*

Response: **The project proposes a total of 37 parking spaces, with 8 reserved for curbside pickup, drive-thru pull forward, and courier parking. Employees on the maximum shift may use 12 spaces, which leaves 17 parking spaces for in-house dining, takeout customers, and drive-thru patrons who choose to park and eat within their vehicles. If drive-thru hours are restricted, during the restricted hours customers which would typically use the drive-thru under normal operations would have to park and use takeout or dine-in options, increasing parking demand. Comparing parking**

figures from other locations to this site would be an unjust comparison due to the restriction of the drive-thru hours of operation for this location and other variables across existing locations.

ENGINEERING:

General Comment:

Comment 1. *Regarding contribution from applicant to upgrade traffic signal at Mast Road and Durham Road/ Rt 108 Intersection, the city is paving Durham Rd in 2025 and is currently evaluating the costs for upgrades to the intersection based on the expected increase in traffic. The city proposes the upgrade costs be divided between the final two pads of the development.*

Response: **The Applicant suggests waiting until NHDOT issues comments and/or approves of the pending driveway permit application for the proposed restaurant use. Depending on the conditions of the anticipated permit, the parties can revisit any desired fair-share contribution relative to this site and City infrastructure. Meanwhile, if the Engineering Department has guidelines or procedures relating to the use, collection or calculation of such contributions from land use applicants, it would be helpful to receive them for review and familiarity ahead of any future discussions.**

Comment 2. *Regarding narrative per Section 153-14, the City is requesting a narrative that describes in detail how each of the criteria of Section 153-14 are met, with a major focus on stormwater management requirements. The applicant should specify where each item required can be found in the application or whether it is or is not applicable.*

Response: **An additional narrative has been provided as part of this resubmission addressing the design criteria outlined in Section 153-14. Refer to "Site Development Design Criteria" prepared by Bohler, dated 5/21/2025, for further information.**

Comment 3. *Previous versions of City standard details appear on the revised drawings. Please coordinate directly with Community Services (Engineering Department) for latest City Standard Details.*

Response: **City standard details have been updated to be the latest details as provided by the Engineering Department via email correspondence on 3/13/2025. Refer to Sheet C-907 of the "Proposed Site Plan Documents" prepared by Bohler for additional detail.**

Dwg C-301 Site Plan:

Comment 4. *Provide final copy of AOT amendment when received.*

Response: **Acknowledged.**

Dwg C-401 Grading and Drainage Plan:

Comment 5. *If the applicant chooses to keep the trench drain, it is recommended they provide enhanced maintenance schedule to address common trench drain issues (excess sediment build up).*

Response: **An enhanced operation and maintenance schedule has been provided outlining maintenance methods and schedules to address common trench drain issues.**

Comment 6. *Regarding culvert pipe minimum 3' cover requirement, the City recommends a 12" dia. RCP in lieu of HDPE pipe.*

Response: **The plans have been revised to specify a 12" diameter RCP pipe proposed for the culvert pipe located at the right-out driveway in lieu of the HDPE pipe. Refer to Sheet C-401 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.**

Dwg C-501 Utility Plan:

Comment 7. *Provide calculations showing how proposed use affects existing pump station, which had modifications approved in 2023.*

Response: **Calculations to show how the proposed use affects the existing pump station have been provided. Refer to "Sewer Pump Station Calculations" for additional information.**

Comment 8. *The City Engineer Division will continue its request for applicant to extend the water main along the restaurant parcel frontage.*

Response: **The significant development cost of this request poses a hardship for the project. There is an existing hydrant within the property frontage south of Grapeview drive. Additionally, the property is served by an existing water main along Grapevine Drive and associated water lateral stub that will serve the project's needs. As such extension of the 16" water main on Durham Road has not been included in the proposed plan set.**

Dwg C-901 Construction Details:

Comment 9. *Concrete & Bituminous Concrete Paving Detail, the Geotech report (P.13) calls for 12" concrete with WFF at bituminous junctions. The detail still shows 6".*

Response: **The Report of Geotechnical Investigation specifies a rigid pavement section with 6" 4,000 psi air-entrained concrete surface course with a 12" NHDOT 304.3 Crushed Gravel subbase. The concrete & bituminous concrete paving detail has been updated to specify the material and thickness for both the rigid (6" surface and 12" subbase) and flexible (1.5" surface, 1.5" binder, and 12" subbase) pavement sections to match the pavement sections specifications on Page 13 of the Report of Geotechnical Investigation. No heavy-duty pavement is proposed as part of this project. Refer to Sheet C-901 of the "Proposed Site Plan Documents" for additional information.**

Dwg C-905 & C-906 Construction Details:

Comment 10. *Previous versions of City standard details appear on the revised drawings. Please coordinate directly with Community Services (Engineering Department) for latest City Standard Details.*

Response: **City standard details have been updated to be the latest details as provided by the Engineering Department via email correspondence on 3/13/2025. Refer to Sheet C-907 of the "Proposed Site Plan Documents" prepared by Bohler for additional detail.**

POLICE:

Comment 1. *Previous comments have been addressed.*

Response: **Acknowledged.**

Comment 2. *Include these specific measures in the "mitigation plan" that was referred to in one of the responses:*

- *Remove existing "Route 108" signage along Grapevine Drive, to be replaced as detailed below.*

Response: **Acknowledged. Signage within Grapevine Drive shall be removed and installed according to the prior mitigation plan and detailed below.**

- *Relocate existing "South 108 / North 108" sign w/ arrows from the Durham/ Grapevine exit to the point on Grapevine across from the McDonalds site driveway.*

Response: **Acknowledged. The existing "South 108 / North 108" signs with arrow assemblies located at the Durham/Grapevine exit is to be relocated to the point on Grapevine across from the McDonald's site driveway. An updated mitigation plan will be submitted separately from the proposed McDonald's development**

- *Add 2 more identical "South 108 / North 108" signs with arrow assemblies on Grapevine across from the two main Hannaford egress points.*

Response: **Acknowledged. Two (2) additional identical "South 108 / North 108" signs with arrow assemblies at to be added on Grapevine across from the two main Hannaford egress points. An updated mitigation plan will be submitted separately from the proposed McDonald's development**

- *Add 1 new "To North 108" sign on Grapevine at Mast*

Response: **Acknowledged. One (1) new "To North 108" sign is to be added on Grapevine at Mast. An updated mitigation plan will be submitted separately from the proposed McDonald's development**

- *On McDonalds site, add 1 new "To South 108 Only" sign at mouth of right-only exit driveway leading toward Durham Road.*

Response: **Plans have been revised to add "To South 108 Only" sign at the mouth of the right-only exit driveway. Refer to Sheet C-301 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.**

Comment 3. *Sheet C-301, notes 38-40: confirm that all 3 of these – including the access to fire connection – are not applicable?*

Response: **Notes 38-40 are not applicable as a sprinkler system is not required by Chapter 81-27 of the Code of the City of Dover. The proposed building is a business use less than 5,000 SF in area and does not meet the occupancy requirements to require a sprinkler system.**

INSPECTION SERVICES:

Comment 1. *Provide approval for proposed drive thru hours. Show how the residential area would not be affected by the drive thru audible system.*

Response: **The Applicant is requesting to modify the waiver request for extended drive-thru hours to be 5 AM to 10 PM daily, whereas 6 AM to 9 PM is allowed by-right. The waiver request for extended drive-thru hours is to be reviewed by the Planning Board. The drive-thru audible system is not anticipated to impact the residential area as the drive-thru speakers utilize technology that will self-adjust and minimize accordingly to ambient noise. Therefore, during the evening when the surrounding roadway traffic noised may be lessened, the speaker decibels will lower automatically to reduce audible impacts.**

Comment 2. *Indicate the length of the queue line, demonstrate how vehicles in the queue do not impede accessible parking backing into drive thru queue.*

Response: **The proposed drive-thru layout provides space for approximately 11 vehicles to queue from the cash window to the drive-thru lane entrance and does not impede accessible parking. Additionally, a sign stating "Do not block accessible parking spaces" has been added at the drive-thru entrance. Refer to "Proposed Drive-Thru Stacking Exhibit" prepared by Bohler for additional information. Under normal operating conditions we do not anticipate the accessible parking stalls to be impeded by drive-thru stacking.**

Comment 3. *Indicate how the minimum accessible route widths are maintained along the exterior accessible route (sign appears to obstruct route).*

Response: **Minimum accessible route widths are to be maintained along exterior accessible routes per ADA/AAB requirements. The proposed signs are graphically shown for illustrative purposes, and notes have been added to the plans that the contractor shall ensure a minimum clear distance is provided. Refer to Sheet C-301 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.**

Comment 4. *Provide proposed locations of bollards at EV charging stations to protect from physical vehicular impact.*

Response: **A total of seven (7) electric vehicle ready parking spaces are proposed as part of this project. A parking space meets electric vehicle readiness requirements if one or more dedicated circuits on the electrical panels such that the service capacity to accommodate the required number of Level 2 EVSE. Conduit is proposed to be installed at the EV Ready parking spaces to allow the addition of all necessary wiring to electrify installed EVSE at the parking space without having to excavate to do so, therefore meeting the requirement for electric vehicles readiness. As such, no EV charging stations are proposed at this time. Should EV charging stations be constructed in the future, bollard protection will be included to protect the charging stations. Refer to Sheets C-301 & C-501 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.**

Comment 5. *Could not locate a proposed EV charging station location which would meet minimum requirements. It is presumed to be near the entrance however the proposed site plan does not appear to indicate an EV space that would comply with minimum standards.*

Response: **A total of seven (7) electric vehicle ready parking spaces are proposed as part of this project. A parking space meets electric vehicle readiness requirements if one or more dedicated circuits on the electrical panels such that the service capacity to accommodate the required number of Level 2 EVSE. Conduit is proposed to be installed at the EV Ready parking spaces to allow the addition of all necessary wiring**

to electrify installed EVSE at the parking space without having to excavate to do so, therefore meeting the requirement for electric vehicles readiness. As such, no EV charging stations are proposed at this time.

This project is a non-residential project and per Chapter 153-14 D.(3)(a)[2] of the City of Dover, NH Planning Board Regulations, 2% of the total number of new parking spaces must be provided Electric Vehicle Charging Readiness. 2% of the total 37 parking spaces proposed is calculated to be 1 electric vehicle charging ready parking space. 2 additional spaces are required for every 10 spaces above the maximum permitted. There are 23 spaces proposed above the maximum 14 spaces permitted which results in an additional 4 electric vehicle charging ready spaces, and the total number of electric vehicle charging ready spaces required is calculated to be 5 spaces. Refer to Sheets C-301 & C-501 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.

Comment 6. *Sheet 301 – Located the snow storage in clouded area on north side of parking lot but did not locate other areas, please clarify.*

Response: **Location of snow storage in clouded areas have been clarified. Snow storage is shown on the north side of the parking lot, the north side of the right-out only driveway, and near the proposed trash enclosure. Refer to Sheet c-301 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.**

Comment 7. *A turning template for T-1 was not recognized in the plan set.*

Response: **A truck turning exhibit for the City of Dover T-1 fire apparatus has been included in this submission. Refer to "Dover Fire Truck Turn Exhibit" prepared by Bohler for additional detail.**

FIRE DEPARTMENT:

Comment 1. *Please provide a fire apparatus turning template (Truck 1)*

Response: **A truck turning exhibit for the City of Dover T-1 fire apparatus has been included in this submission. Refer to "Dover Fire Truck Turn Exhibit" prepared by Bohler for additional detail.**

BUSINESS DEVELOPMENT:

Comment 1. *Raised parapets above the entrance appear to be floating above roofline when seen from the side or opposite elevation.*

Response: **A streetscape rendering from Durham Road has been included which provides clarification on the appearance of the raised parapets from eye level.**

Comment 2. *Street elevation would help understand if that would be visible/look odd from eye level.*

Response: **A streetscape rendering from Durham Road has been provided as part of this resubmission.**

Comment 3. *Current building orientation places drive-thru pickup windows closest to residential abutters across Durham Road.*

Response: **We have explored alternative layouts, all of which produce greater impacts. The proposed orientation places ordering areas and speakers farthest from abutters and best respects the adjacent drainage area and site grades.**

Comment 4. *Is it possible to reorient with entrance facades facing Durham Road and Grapevine Drive and drive-thru facing Hannaford/open field?*

Response: **We have explored alternative layouts including a possibility to reorient the building as requested where the entrance façades face Durham Road and Grapevine drive with the drive-thru windows facing South, however, based on the geometry of this layout, the rotated layout would have impacts to the existing common area basin and face additional grading constraints along the Durham Road right-of-way. Simply put, the building does not fit the lot in the alternative placement scenario.**

PLANNING BOARD:

Comment 1. *CUPs and Waiver requests conflict with one another.*

Response: **These two forms of relief are requested in the alternative since neither request is assured to be approved. For example, receiving Planning Board permission to extend drive-thru hours may lessen parking demand, whereas denying drive-thru relief has the effect of increasing parking demand for customers who would otherwise depart without parking. Applicant's filings are preparing for both scenarios.**

We trust the above as well as the attached information are sufficient for your continued review of the project. Should you have any questions or require additional information, please do not hesitate to contact me at (508) 480-9900.

Sincerely,

BOHLER

Eric Dubrule, PE

Connor Ennis

50 Washington Street, Suite 2000
Westborough, MA 01581
508.480.9900

May 22, 2025

City of Dover
Planning Board
288 Central Avenue
Dover, NH 03820

Attn: Donna Benton, Town Planner

Re: Revised Waiver Request Letter
Proposed McDonald's Restaurant with Drive-Thru
30 Grapevine Drive
Dover, NH 03820

Dear Ms. Benton,

Pursuant to §153-21. Of the City of Dover Site Review Regulations, the Planning Board may waive specific provisions of these regulations should the Board find that strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations. As such, we respectfully request the Board consider granting waivers from the following requirements outlined in the City of Dover Site Review Regulations and the Site Plan Review Submission Checklist listed in italicized text with the support of the requests in bold text below:

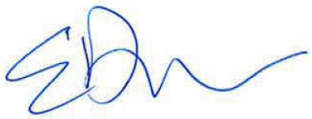
§153-17.G. - Drive-in facilities shall be designed to impose the least amount of intrusion upon existing residential abutters. Such design features shall include, but not be limited to: nonaudible ordering systems (touchpad or human contact) shall be utilized, placement shall be as far from residential uses as possible, and hours of operation for the drive-in portion of the business shall be limited to 6:00 a.m. to 9:00 p.m.

The Applicant respectfully requests the extension of the drive-thru operations to permit the proposed McDonald's restaurant to operate the drive-thru portion of the business from 5 AM to 10:00 PM. Limiting drive-thru hours of operation to 6:00 AM to 9:00 PM would pose an operational and financial hardship on the applicant, and would distinguish this location from other nearby and more distant McDonald's locations. We understand the restaurant is permitted to operate the interior dining facilities on a 24-hour basis and can operate its mobile ordering system after drive-thru hours, however the majority of McDonald's business during nighttime hours is generated through the drive-thru operations across other stores. Additionally, the closure of the drive-thru lanes and lighting at 9 PM may give the appearance the interior of the store is closed to potential customers who may be unfamiliar with the location. McDonald's also offers breakfast, and it is important that the drive-thru operate at 5am to serve their early commuter customers. McDonald's utilizes drive-thru speaker technology that will self-adjust and minimize accordingly to ambient noise. Therefore, during the evening when the surrounding roadway traffic noise may be lessened, the speaker volume will lower automatically to reduce audible impacts. Additionally, the drive-thru has been designed to locate the speakers and stacking area toward the rear of the site to muffle sound towards the roadway. Finally, the speakers are facing in the opposite direction from nearby residences. For these reasons we believe the drive-thru hours can be reasonably extended while maintaining the intent of the regulation, and therefore we respectfully request the Board grant a waiver as requested.

We trust the provided information is sufficient for your needs at this time. Should you have any questions or require additional information, please do not hesitate to contact me at 508-480-9900.

Sincerely,

BOHLER



Eric Dubrule, PE



Connor Ennis

NAD83

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

172.09'
S24°08'19"W

12' SIDE YARD BUILDING SETBACK

84.08'
S09°44'35"E

25' PARKING SETBACK

47.83'
S64°09'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

DRIVE THRU

DRIVE THRU

DRIVE THRU

VAN

STOP

DO NOT ENTER

STOP

N56°47'53"W
69.80'

BLOCK NOT DO

52.03'
S65°46'54"E

162.91'
S65°46'54"E

64'
16'
8'
4'
2'
32'

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

N65°40'47"W
75.52'

N60°11'10"W
48.72'

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY
TRAFFIC
(ASPHALT ROADWAY)

ONLY

ONLY

APPROX LOCATION OF EX
±8' WHITE VINYL FENCE
AND LANDSCAPING (SEE
IMAGES THIS SHEET)

30' FRONT YARD BUILDING SETBACK

25' PARKING SETBACK

30' FRONT YARD BUILDING SETBACK

25' PARKING SETBACK

STOP

DO NOT ENTER

N24°13'06"E
313.87'

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY
TRAFFIC
(ASPHALT ROADWAY)

APPROX LOCATION OF EX
±8' WHITE VINYL FENCE
AND LANDSCAPING (SEE
IMAGES THIS SHEET)

APPROX LOCATION OF EX
±8' WHITE VINYL FENCE
AND LANDSCAPING (SEE
IMAGES THIS SHEET)





MENUBOARD SOUNDS LEGEND

WITH AUTOMATIC VOLUME CONTROL (AVC)

- SOUND LEVELS UP TO 60 DECIBELS
- SOUND LEVELS UP TO 54 DECIBELS
- SOUND LEVELS UP TO 48 DECIBELS
- SOUND LEVELS UP TO 42 DECIBELS
- SOUND LEVELS UP TO 36 DECIBELS
- SOUND LEVELS UP TO 30 DECIBELS

DECIBEL COMPARISON CHART

SOUND OF BREATHING AT 1'	25 DBA
WHISPER IN A QUIET LIBRARY AT 6'	30 DBA
AVERAGE RESIDENCE OR NORMAL PRIVATE OFFICE	40 DBA
NOISE OF NORMAL LIVING OR RADIO IN BACKGROUND	45 DBA
REFRIGERATOR AT 3' OR BIRD TWITTER OUTSIDE AT 45'	50 DBA
LOW VOLUME RADIO OR TV AT 3'	55 DBA
NORMAL CONVERSATION AT 3'	60-65 DBA
CITY TRAFFIC (INSIDE CAR)	85 DBA

MENUBOARD SOUND NOTES

1. SOUND OUTPUT PROVIDED BY THE MANUFACTURER (HME) ON "ENGINEERING DEPARTMENT WHITE PAPER" DATED 07/31/2020 (REV. 2.1).
2. SOUND OUTPUT MEASUREMENTS TAKEN AT ELEVATION APPROXIMATELY 1.5' ABOVE GRADE.
3. SOUND DATA PROVIDED FROM MANUFACTURER ASSUMES AN OPEN PARKING LOT WITH NO OBSTRUCTIONS.
4. SOUND LEVELS ARE REDUCED AT A RATE OF 6 DB FROM DOUBLING OF THE DISTANCE FROM THE SOURCE.
5. THE READINGS ON THE PLANS ARE BASED ON THE AVC BEING ACTIVE AT ALL TIMES

THIS PLAN TO BE UTILIZED FOR EXHIBIT PURPOSES ONLY

20 10 5 0 20
SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN ARE PROPRIETARY AND SHALL NOT BE DISCLOSED OR USED FOR ANY PURPOSE, WITHOUT THE EXPRESS AUTHORIZATION FROM BOHLER. ONLY APPROVED, SIGNED AND SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE

811
Know what's below.
Call before you dig.
ALWAYS CALL 811
It's fast. It's free. It's the law.

ISSUED FOR ENTITLEMENTS

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	MAA240177.00-0A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-EXHD-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

SHEET TITLE:

SOUND EXHIBIT

SHEET NUMBER:

C-001

REVISION 4 - 07/02/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\EXHIBIT\SEXHIBIT D*P-EXHD-PROP-MAA240177.00-0A.----LAYOUT: C-001 EXHD

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

DRIVEWAY PERMIT

To Landowner:
Alex Vailas
VC Dover Investments, LLC
48 Constitution Drive
Bedford, NH 03110

City/Town: Dover
Route/Road: NH 108 (S0000108__)
Patrol Section: 606
Tax Map: H
Lot: 4-3
Development: Mixed Use - Commercial & Residential

Permit#: DOT-DRI-000826
District: 06
Permit Date: 03/28/2025

Permission is hereby granted to construct (alter) a driveway, entrance, exit or approach adjoining NH 108 (S0000108__), pursuant to the location and specifications as described below. Failure to adhere to the standards and engineering drawings previously approved shall render this instrument null and void. Failure to start or complete construction of said facility within one calendar year of the date of this permit shall require application for permit extension or renewal in accordance with the Driveway Access Rules. Facilities constructed in violation of the permit specifications or the rules, shall be corrected immediately upon notification by a Department representative. Any cost by the State to correct deficiencies shall be fully borne by the landowner. The landowner shall defend, indemnify and hold harmless the Department and its duly appointed agents and employees against any action for personal injury and/or property damage sustained by reason of the exercise of this permit. All supporting documentation for this permit, on file in the State of New Hampshire Permit Portal for the respective application, is considered part of the final permit and all parties are responsible for complying with these documents.

Drive 1

Location: Approximately 0 miles South of Deerfield Drive on the West side of NH 108 (S0000108__).

GPS: 43.166635, -70.89172

Land Use: 820 Shopping Center

Specifications: This permit authorizes a Paved access for the land use stated above. Any change in use, increase in use or reconstruction of the driveway requires reapplication.

The right-of-way line is located 33 feet from and parallel to the center line of the highway.

The driveway shall not exceed 24 feet in width. The entrance of the drive may be flared; typically the flare radius is one half the driveway width.

Drive 2

Location: Approximately 0.05 miles South of Grapevine Drive on the West side of NH 108 (S0000108__).

GPS: 43.166011, -70.892092

Land Use: 934 Fast Food Restaurant with Drive-Through Window

Specifications: This permit authorizes a Paved access for the land use stated above. Any change in use, increase in use or reconstruction of the driveway requires reapplication.

The right-of-way line is located 33 feet from and parallel to the center line of the highway.

The entrance shall be graded so that the surface of the drive drops 3 inches at a point 10 feet from NH 108 (S0000108__) edge of pavement to create a drainage swale.

The driveway shall not exceed 24 feet in width. The entrance of the drive may be flared; typically the flare radius is one half the driveway width.

A new 12 inch diameter (minimum) HDPE culvert is required for drainage.

This drive is to be a Right Turn Exit Only driveway. All other movements are prohibited.

Other Conditions:

No structures, including buildings, permanent or portable signs, lights, displays, fences, walls, etc. shall be permitted on, over or under the Highway Right of Way.

No parking, catering or servicing shall be conducted within the Highway Right of Way.

The applicant shall comply with all applicable ordinances and regulations of the municipality or other State Agencies.

The Department has relied on the title and subdivision information provided by the landowner. The Department has not performed additional title research and makes no warranty or representation concerning landowner's legal right to access. In the event of a dispute about the landowner's legal right to the access provided herein, the landowner will defend and indemnify the Department.

All excavated topsoil, or in the absence of topsoil the top 6 inches of soil, within the limits of state ROW shall be properly re-used within the limits of the state ROW. All temporary stockpiles of the re-use material shall be located within the state ROW, or as otherwise approved by the District Engineer.

The Contractor shall be solely responsible for the handling, transport and disposal of any surplus material generated by their project and shall comply with all federal, state and local laws, ordinances and rules in doing so.

I/We, the contractor/Owner, certify that the property will not have any illicit unauthorized drainage connections to the NHDOT storm water drainage system. An illicit discharge is any direct or Indirect discharge to the NHDOT drainage system that is not composed entirely of storm water. Illicit discharges include, without limitation, sewage, process wastewater, or wash water and any connections from floor drains, sinks, or toilets.

1. This permit is for access to an existing commercial subdivision, including the following existing uses, 37,443SF supermarket (Unit 1), 69 bed congregate care home (Unit 5), and Ciello Drive residential development. The following proposed uses (Unit 2) were permitted on permit #06-125-432, 49 apartments, 3,851 SF gym and 2,367 SF café/sandwich shop. The following proposed uses are included on this permit, 2,000 SF branch bank (Unit 3) and 3,700 SF McDonald's fast food restaurant (Unit 4). Any further development or subdivision will require re-application for a driveway permit.

2. The Expansion in use and reconstruction of one existing, permitted driveway entrance (Grapevine Drive) and the construction of one right out only driveway is permissible. This permit is based on the preliminary project plans on record with NHDOT and labeled "Grapevine Drive Improvements" prepared for VC Dover Investments, LLC by TF Moran dated January 15, 2025 and "Proposed Site Plan Documents for Proposed McDonalds Restaurant with Drive Thru" prepared for VC Dover Investments, LLC (Owner) by Bohler Engineering, dated 12/17/2024. The driveways are

to be constructed as per the final construction plans that will be developed in concurrence with NHDOT. Work within the NHDOT right of way will not begin until final construction plans are accepted by the department.

3. Other access to the highway from the premises is to be prevented. No part of the right-of-way may be used for any purpose other than travel.
4. The drainage along NH Route 108 shall be maintained. No additional surface drainage will enter upon the highway
5. All season safe All sight distance shall be maintained by the landowner as per RSA 236:13.
6. This permit requires the applicant to fully address plan comments dated March 28, 2025 from NHDOT to gain final acceptance for construction.
7. This permit requires the applicant to reconstruct Grapevine Drive generally as shown on the plans to provide a dedicated left turn lane for vehicles entering the proposed site driveway. The proposed site driveway on Grapevine Drive shall be located as shown on the plans, as far from the NH 108 intersection as practicable within the Unit boundaries.
8. This permit requires the applicant to construct and maintain internal guide sign's as shown on the plan's and required under permit #06-125-432. The intent of the guide signs is to promote the use of Mast Road to access NH 108 north via a left turn at the Mast Road and NH 108 signal. All signs shall comply with the current edition of the Manual on Uniform Traffic Control Devices (M.U.T.C.D.).
9. This permit does not include or approve the location or installation of underground utilities. Any underground utility work within the NHDOT right-of-way shall require a NHDOT excavation permit.
10. This permit supersedes permits 06-125-432 dated February 23, 2024, and 06-125-353 dated February 14, 2007, and references permit 06-125-219 dated September 1, 1975.
11. Interruptions to traffic shall be kept to a minimum and be maintained in accordance with the most current edition of the Manual on Uniform Traffic Control Devices (M.U.T.C.D.). When conditions warrant, flaggers and or uniformed officers shall be utilized and be of a competent nature.
12. The applicant will be responsible for mitigation should the future use of these driveways unfavorably impact the highway.
13. Contact the NHDOT District 6 office at 868-1133 at least 72 hours prior to driveway construction activities to allow NHDOT the opportunity to review driveway layout.

Approved by

Roger Appleton

Assistant District Engineer

For Director of Administration

Copies:

Bureau, Owner, Patrolman

Return to:
Lyndsee D. Paskalis
Stebbins, Lazos & Van Der Beken PLLC
602B Riverway Place
Bedford, NH 03110

E Doc # 240010804 09/06/2024 11:05:49 AM
Book 5209 Page 1023 Page 1 of 3
Catherine A. Berube
Register of Deeds, Strafford County

SECOND AMENDMENT TO

DOVER FIELDS CONDOMINIUM

CONDOMINIUM DECLARATION

THIS SECOND AMENDMENT TO CONDOMINIUM DECLARATION (this "Amendment") is made this 30th day of August, 2024 by all of the Unit Owners under that certain Condominium Declaration of Dover Fields Condominium dated as of December 14, 2012 and recorded with the Strafford County Registry of Deeds at Book 4094, Page 317, as affected by that certain First Amendment to Condominium Declaration dated as of November 8, 2021 and recorded with said Registry at Book 4979, Page 349 (collectively, the "Declaration"). Any capitalized terms used in this Amendment which are not otherwise defined herein shall have the meanings given to them in the Declaration.

WHEREAS, the Unit Owners desire to amend the boundary lines and certain other features of Unit 4 of the Condominium, and reconfigure the common detention area adjacent thereto, all as more particularly described herein; and

NOW THEREFORE, in compliance with applicable provisions of the Declaration and the Condominium Act, the Unit Owners hereby state as follows:

1) Exhibit C: "Unit Allocation of Percentage Interests and Descriptions" is hereby amended by deleting the legal description of Condominium Unit #4 and replacing it with the legal description set forth in Exhibit A attached hereto.

2) The Unit Owners consent to the recording of the Plan referenced in said Exhibit A.

3) The Unit Owners hereby grant to the Owner of Unit 4, in fee simple absolute, that portion of Land previously shown on the Condominium Plan as Common Area and now shown on the Plan referenced herein as constituting a portion of Unit 4 pursuant to the relocated boundary line described above.

4) Except as amended hereby, the Declaration shall remain unchanged and in full force and effect. This Second Amendment to Condominium Declaration shall become effective immediately upon recording in the Strafford County Registry of Deeds.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the undersigned being all of the Unit Owners have caused this Second Amendment to Condominium Declaration to be executed as of the date first written above.

WITNESS:

VC Dover Investments, LLC

By: _____
Dylan Cuneo (Typed Name)
Its Manager, duly authorized

WITNESS:

HINEC Dover, LLC

By: _____
Cynthia J. Milliken Taylor
Its President

STATE OF NEW HAMPSHIRE
COUNTY OF Hillsborough

On the 6th day of ~~June~~ September, 2024, before me, personally appeared Dylan Cuneo, known to me to be the Manager of VC Dover Investments, LLC, and that he as such manager and signer of the foregoing instrument, acknowledged the execution of the same to be his free act and deed individually and as such manager, and the free act and deed of said limited liability company.

_____
~~Justice of the Peace~~/Notary Public
My Commission Expires: -MY- COMMISSION EXPIRES AUGUST 17, 2027
Name: _____
[print]

LYNDSEE DICKISON PASKALIS
STATE OF NEW HAMPSHIRE
NOTARY PUBLIC

STATE OF MAINE
COUNTY OF Cumberland

On the 30th day of August, 2024, before me, personally appeared Cynthia J. Milliken Taylor known to me to be the President of HINEC Dover, LLC, and that she as such manager and signer of the foregoing instrument, acknowledged the execution of the same to be her free act and deed individually and as such manager, and the free act and deed of said limited liability company.

_____
~~Justice of the Peace~~/Notary Public
My Commission Expires:
Name: KAREN A. COWPERTHWAITE
[print] Notary Public, Maine
My Commission Expires July 13, 2028

KAREN A. COWPERTHWAITE
NOTARY PUBLIC
MAINE

EXHIBIT A

Legal Description of Condominium Unit #4
Dover Fields Condominium
New Hampshire Route 108, Dover, New Hampshire

A certain Condominium Unit 4 of the Dover Fields Condominium, in the City of Dover, County of Strafford, State of New Hampshire, more particularly bounded and described as follows:

Beginning at a the southern most corner of Unit 4 herein described at a point on the westerly sideline of N.H. Route 108, thence;

N 65°47'14" W a distance of 215.26' to a point thence;
N 09°26'55" W a distance of 84.16' to a point thence;
N 24°08'20" E a distance of 171.75' to a point thence;
N 84°06'48" E a distance of 47.82' to a point thence;
N 24°06'48" E a distance of 44.35' to a point thence;
N 10°33'27" E a distance of 42.03' to a point on the southerly sideline of
Grapevine Drive, thence;

Along the southerly sideline of Grapevine Drive the following three courses:

Along a curve running easterly having an arc length of 46.82', a radius of 625.00', a chord bearing of S 55°02'33" E, a chord length of 46.80', to a point, thence;
S 60°11'10" E a distance of 71.59' to a point thence;
S 65°40'47" E a distance of 75.52' to a point thence;
Along a curve turning to the right having an arc length of 45.49', a radius of 44.78', a chord bearing of S 36°35'50" E, a chord length of 43.56', to a point on the westerly sideline of
N.H. Route 108, thence;

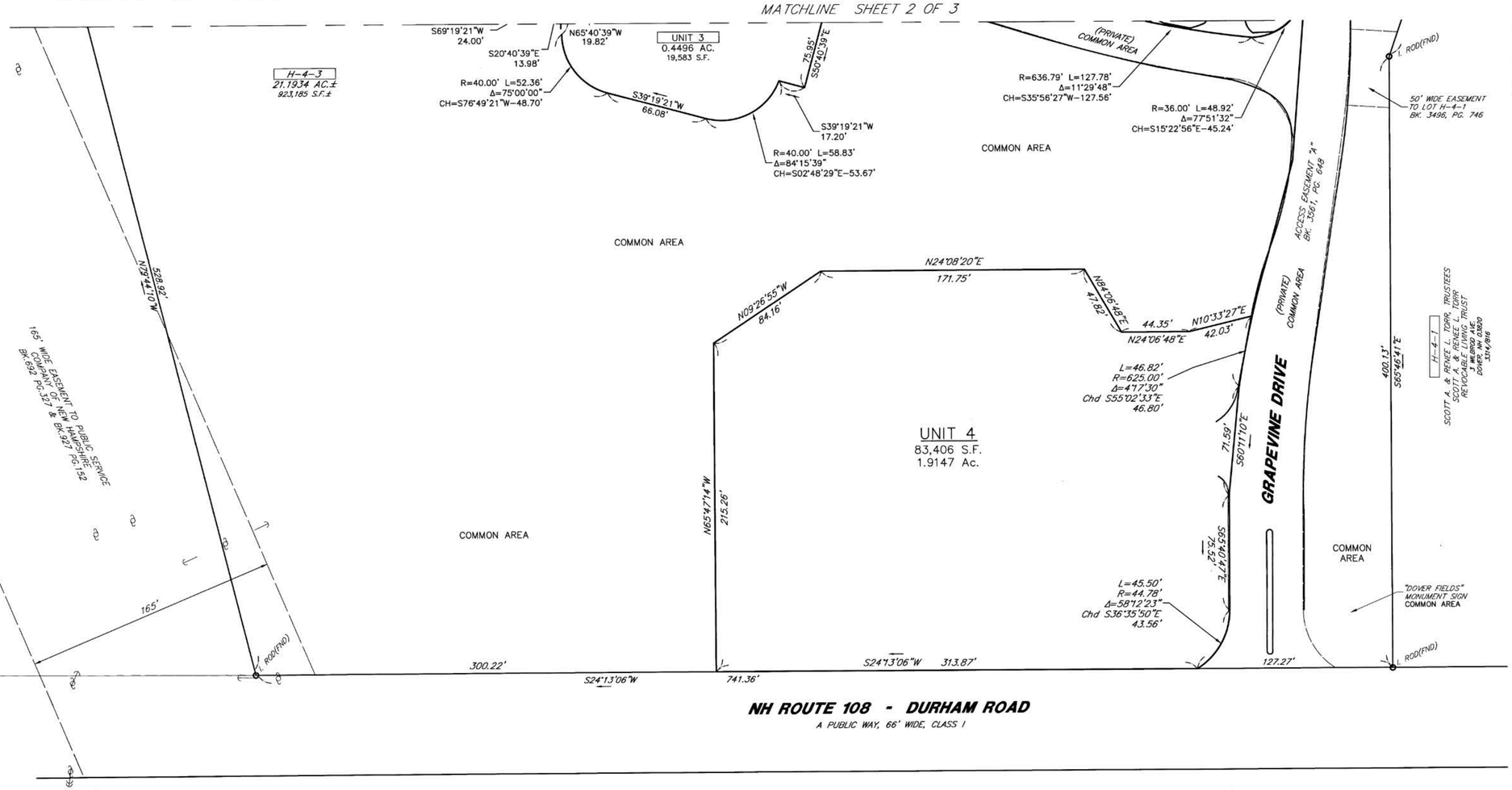
Along the westerly sideline of N.H. Route 108 S 24°13'06" W a distance of 313.87' to the point of beginning.

Said Unit 4 having an area of 83,406 square feet or 1.915 acres, more or less, and being shown on a plan by TFMoran entitled "Amended Condominium Site Plan, Unit 4, Dover Fields Condominium, NH Route 108, Grapevine Road & Mast Road, Dover, New Hampshire", dated September 5, 2024 and recorded in the Strafford County Registry of Deeds as Plan # 13324, Plan #13325 and Plan #13326.

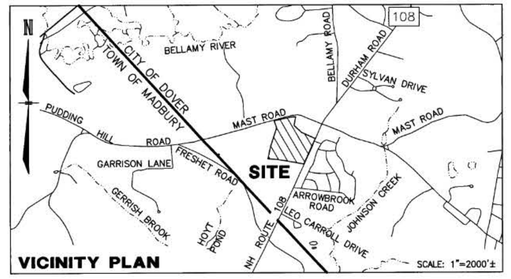
Plan# 13324 09/06/2024 10:09:10 AM
Page 1 of 1
Register of Deeds, Strafford County
LCHIP STA221802 25.00

LEGEND

VERTICAL GRANITE CURB	VGC	WATER GATE	
VERTICAL CONCRETE CURB	VCC	UTILITY POLE	
EDGE OF PAVEMENT	EOP	GAS VALVE	
SEWER LINE	S	LIGHT POLE	
SEWER FORCE MAIN	FM	HYDRANT	
WATER LINE	W	BOUND	
DRAIN LINE	D	DRILL HOLE	
GAS LINE	G	IRON PIN	
OVERHEAD UTILITIES	OHW	SIGN	
U.G. ELEC.,TEL., & CABLE	UGETC	GUY ANCHOR	



I-22
SUN JENSEN,LLC
27777 FRANKLIN ROAD #200
SOUTHFIELD, MI 48034



REFERENCE PLANS

1. TAX MAP H LOT 4, SUBDIVISION PLAN , MIXED USE DEVELOPMENT RETAIL PHASE, NH ROUTE 108 AND MAST ROAD, DOVER, NEW HAMPSHIRE, OWNER OF RECORD: JOHN F. TORR TRUSTEE ET AL., DATED OCTOBER 30, 2006 BY TFMORAN INC. AND RECORDED AS PLANS 89-40 AND 89-41 AT THE STRAFFORD COUNTY REGISTRY OF DEEDS.
2. TAX MAP H LOTS 4 AND 4-3, SITE EASEMENT PLAN , MIXED USE DEVELOPMENT RETAIL PHASE, NH ROUTE 108 AND MAST ROAD, DOVER, NEW HAMPSHIRE, OWNED BY VC DOVER INVESTMENTS, LLC, DATED FEBRUARY 15, 2007 BY TFMORAN INC. AND RECORDED AS PLAN 91-43 AT THE STRAFFORD COUNTY REGISTRY OF DEEDS.

NOTES

1. DECLARANT: VC DOVER INVESTMENTS, LLC
   48 CONSTITUTION DR., BEDFORD, NH 03110
   DEED REFERENCE: SCRD BK. 3496 PG. 733.
   AREA: 923,185 S.F. OR 21.193 ACRES
2. H-4-3 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW INFORMATION FOR A PROPOSED AMENDMENT TO UNIT FOUR (4) OF THE DOVER FIELDS CONDOMINIUM, SITUATED ON THE NORTHERLY SIDE OF NH ROUTE 108, A.K.A. DURHAM ROAD, TAX MAP H LOT 4-3 IN THE CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, AS SHOWN HEREON AND NO OTHER PURPOSE.
4. UTILITY INFORMATION SHOWN IS BASED UPON VISIBLE EVIDENCE AS SUPPLEMENTED BY PROPOSED LOCATIONS PER APPROVED SITE PLAN. NO AS BUILT LOCATION OF UNDERGROUND UTILITIES WAS PERFORMED BY THIS FIRM PRIOR TO BACKFILLING. THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. T.F. MORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 1-888-344-7233.
5. BOUNDARY INFORMATION IS BASED ON FIELD SURVEY PERFORMED BY TF MORAN INC. AND SCRD PLAN:
6. REFER TO REFERENCE PLAN #2 FOR METES AND BOUNDS OF EXISTING EASEMENTS ON SUBJECT PREMISES.
7. HORIZONTAL DATUM: NAD 27. VERTICAL DATUM: NGVD 1929. BENCHMARK USED: CITY OF DOVER GIS CONTROL TRAVERSE #69A, PT#411.
8. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR STRAFFORD COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), PANEL 320 OF 405, MAP NUMBER 33017C0320D, EFFECTIVE DATE: MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
9. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE STRAFFORD COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.
10. SEWER, DRAIN, WATER, GAS, ELECTRIC AND COMMUNICATION LINES WITHIN UNITS THAT SERVE MORE THAN ONE UNIT ARE PART OF COMMON AREA.
11. ENTRY LANDSCAPING AND DOVER FIELDS SIGNS ARE COMMON AREA.

PERTINENT DOCUMENTS

DECLARATION OF CONDOMINIUM	SCRD BOOK 4094 PAGE 317
CONDOMINIUM SITE PLANS	SCRD PLAN 104-089 & 104-090

Graphic Scale
40' 20' 0' 40' 80' 120' 160'
1" = 40'

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TF Moran, Inc.
48 Constitution Drive
Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TF Moran, Inc.

811 DIGSAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV.	DATE	DESCRIPTION	DR	CK

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SITE PLAN FULLY AND ACCURATELY DEPICTS THE LOCATION AND DIMENSIONS OF THE LAND AND EXISTING IMPROVEMENTS SHOWN THEREON AND, TO THE EXTENT FEASIBLE, ALL EASEMENTS APPURTENANT THERETO, THAT ALL UNITS DEPICTED THEREON AS COMPLETE HAVE BEEN SUBSTANTIALLY COMPLETED AND THAT THIS PLAN COMPLIES WITH THE PROVISIONS OF RSA 356-B:20 I & V.

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN," (RSA 676:18, III)

THE ABOVE CERTIFICATION IS PROVIDED TO MEET REGISTRY OF DEEDS REQUIREMENTS AND IS NOT A CERTIFICATION TO TITLE OR OWNERSHIP OF PROPERTY SHOWN.

LICENSED LAND SURVEYOR 9.6.24 DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 714 MICHAEL R. DARLBERG

TAX MAP H LOT 4-3

AMENDED CONDOMINIUM SITE PLAN

UNIT 4

DOVER FIELDS CONDOMINIUM

NH ROUTE 108, GRAPEVINE ROAD & MAST ROAD
DOVER, NEW HAMPSHIRE

OWNED BY AND PREPARED FOR

VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE'
BEDFORD, NEW HAMPSHIRE 03110

SCALE: 1" = 40' **SEPTEMBER 05, 2024**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	46001.31	DR	mrd	FB	1927	SHEET 1 OF 3
		CK	mrd	CADFILE	46001.31 CONDO SITE	

Plan # 13325 09/06/2024 10:09:11 AM
Page 1 of 1
Catherine A. Berube
Register of Deeds, Strafford County

LEGEND

VERTICAL GRANITE CURB	VGC	WATER GATE	
VERTICAL CONCRETE CURB	VCC	UTILITY POLE	
EDGE OF PAVEMENT	EOP	GAS VALVE	
SEWER LINE	S	LIGHT POLE	
SEWER FORCE MAIN	FM	HYDRANT	
WATER LINE	W	BOUND	
DRAIN LINE	D	DRILL HOLE	
GAS LINE	G	IRON PIN	
OVERHEAD UTILITIES	OHW	SIGN	
U.G. ELEC.,TEL., & CABLE	UGETC	GUY ANCHOR	

H-4
HERON BAY PARTNERS, LLC
242 CENTRAL AVE.
DOVER, NH 03820

DRAINAGE EASEMENT BK. 3561, PG. 648
SIDEWALK EASEMENT BK. 3561, PG. 648
ELECTRIC EASEMENT BK. 3561, PG. 648
SEWER EASEMENT BK. 3561, PG. 648

S24°19'21"W 580.62'
345.16'
51.59'
130.23'
450.39'
24.11'

R=98.20' L=28.53'
Δ=16°38'36"
CH=N64°22'12"E-28.43'
N13°24'50"W 174.29'
S76°52'49"W 128.71'

R=16.42' L=10.34'
Δ=36°04'26"
CH=S80°28'01"E-10.17'
N18°33'19"E 5.09'

R=30.00' L=19.31'
Δ=36°52'26"
CH=S50°50'48"E-18.98'

R=230.00' L=224.92'
Δ=56°01'48"
CH=S42°01'37"E-216.06'

R=284.00' L=173.40'
Δ=37°37'56"
CH=S51°13'33"E-170.30'

S77°33'51"W 202.49'

CIELO DRIVE (PRIVATE)
COMMON AREA
"TO BE BUILT"

COMMON AREA

N67°48'22"W 78.54'
N24°24'38"E 5.00'
N65°35'22"W 14.78'
R=15.00' L=23.58'
Δ=90°05'17"
CH=N69°21'59"E-21.23'

61.43'
N65°40'40"W
S45°16'41"W 70.26'
R=15.00' L=41.64'
Δ=159°02'40"
CH=N55°11'59"W-29.50'
L=30.66'
N24°19'21"E 223.69'
L=10.98'
S72°22'18"W 31.00'
EXISTING ACCESS EASEMENT

EXISTING BUILDING "HANNAFORD'S"
ROOF OVERHANG

ACCESS EASEMENT "A" BK. 3561, PG. 648

UNIT 5
2.1043 AC.
91,665 S.F.

COMMON AREA
N24°16'04"E 94.39'
"DOVER FIELDS" MONUMENT SIGN
COMMON AREA

MAST ROAD
(99.5' WIDE LAYOUT)

R=1111.10' L=113.39'
Δ=5°50'49"
CH=S87°20'57"W-113.34'

228.63'
S11°26'49"W

I. ROD(FND)
I. ROD(FND)

204.03'
S65°35'22"E

UNIT 2
1.9621 AC.
85,468 S.F.

310.19'
S65°40'39"E

UNIT 1
4.5822 AC.
199,601 S.F.

319.24'
N70°00'09"W

245.36'
S70°02'31"E

GRAPEVINE DRIVE
(PRIVATE)
COMMON AREA

130.00'
269.60'
S46°58'29"E
N19°57'29"E 70.65'

COMMON AREA

H-4-1
SCOTT A. & RENEE L. TORR, TRUSTEES
SCOTT A. & RENEE L. TORR
REVOCABLE LIVING TRUST
3 WILBROD AVE.
DOVER, NH 03820
5314/816

R=103.09' L=27.67'
Δ=15°22'37"
CH=S31°55'34"W-27.58'
R=103.09' L=40.18'
Δ=22°19'50"
CH=S50°46'48"W-39.93'
R=66.75' L=28.67'
Δ=24°36'45"
CH=S53°32'47"W-28.45'
R=136.75' L=214.81'
Δ=90°00'00"
CH=S69°19'21"W-193.39'
S24°19'21"W 110.66'
N24°19'21"E 72.96'
CIELO DRIVE (PRIVATE)
COMMON AREA
"TO BE BUILT"
ACCESS EASEMENT "B" BK. 3561, PG. 648
N65°40'39"W 22.21'
N20°40'39"W 33.84'
R=77.81' L=69.01'
Δ=50°48'50"
CH=N50°01'48"E-66.77'
R=10.00' L=7.85'
Δ=45°00'00"
CH=N43°10'39"W-7.65'
N41°14'24"E 46.40'
S41°14'24"W 170.99'
CIELO DRIVE
S61°18'59"E 8.78'
COMMON AREA

MATCHLINE SHEET 3 OF 3
MATCHLINE SHEET 1 OF 3

TFM
REF: PLAN NAD 27

Graphic Scale
40' 20' 0' 40' 80' 120' 160'
1" = 40'

TAX MAP H LOT 4-3

AMENDED CONDOMINIUM SITE PLAN

UNIT 4

DOVER FIELDS CONDOMINIUM

NH ROUTE 108, GRAPEVINE ROAD & MAST ROAD
DOVER, NEW HAMPSHIRE

OWNED BY AND PREPARED FOR

VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE'
BEDFORD, NEW HAMPSHIRE 03110

SCALE: 1" = 40' **SEPTEMBER 05, 2024**

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48 Constitution Drive
Bedford, N.H. 03110

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811 DIGSAFE
CALL 811 TWO FREE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

REV.	DATE	DESCRIPTION	DR	CK

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SITE PLAN FULLY AND ACCURATELY DEPICTS THE LOCATION AND DIMENSIONS OF THE LAND AND EXISTING IMPROVEMENTS SHOWN THEREON AND, TO THE EXTENT FEASIBLE, ALL EASEMENTS APPURTENANT THERETO, THAT ALL UNITS DEPICTED THEREON AS COMPLETE HAVE BEEN SUBSTANTIALLY COMPLETED AND THAT THIS PLAN COMPLIES WITH THE PROVISIONS OF RSA 356-B:20 I & V.

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN," (RSA 676:18, III)

THE ABOVE CERTIFICATION IS PROVIDED TO MEET REGISTRY OF DEEDS REQUIREMENTS AND IS NOT A CERTIFICATION TO TITLE OR OWNERSHIP OF PROPERTY SHOWN.

LICENSED LAND SURVEYOR — DATE 9.6.24

STATE OF NEW HAMPSHIRE — LICENSED LAND SURVEYOR — No. 714 — MICHAEL R. THIBERT — SIGNATURE

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

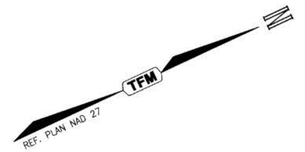
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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www.tfmoran.com

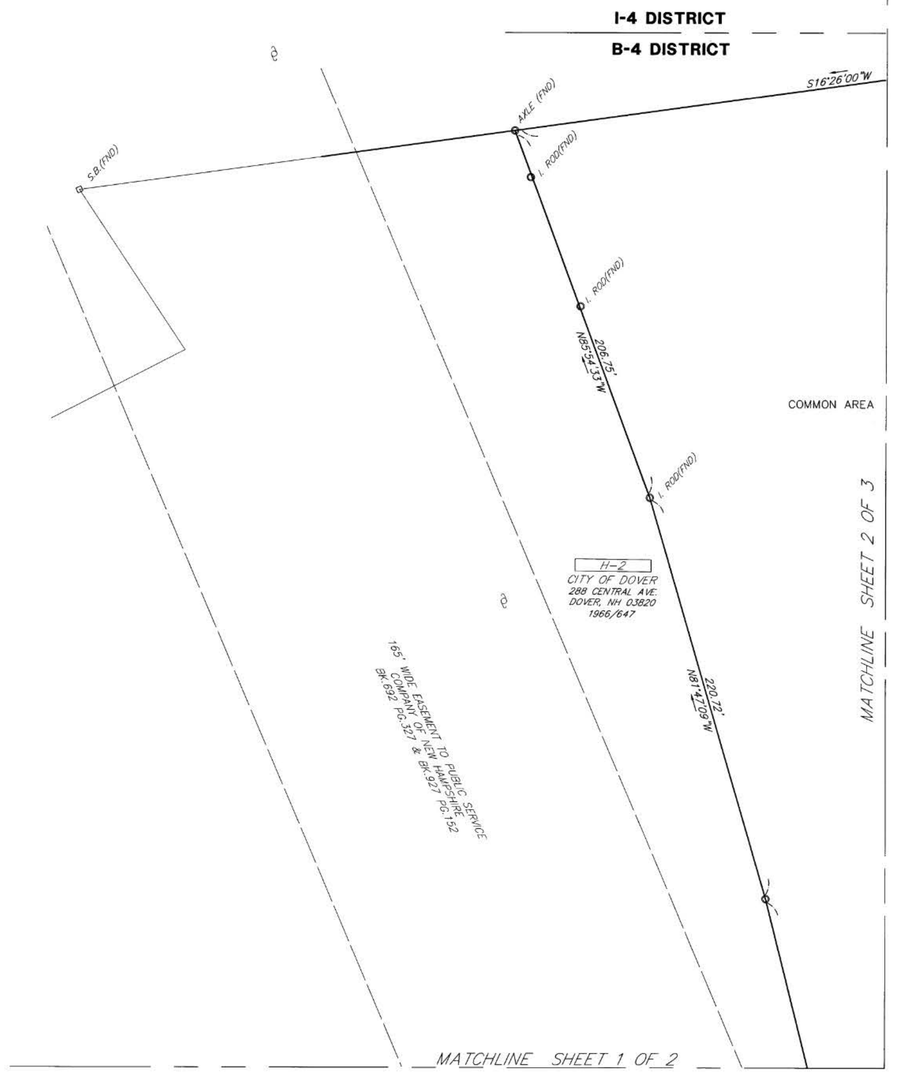
FILE	46001.31	DR	mrd	FB	1927	SHEET 2 OF 3
		CK	mrd	CADFILE	46001.31 CONDO SITE	

Plan # 13326 09/06/2024 10:09:12 AM
Page 1 of 1
Catherine A. Berube
Register of Deeds, Strafford County

LEGEND

VERTICAL GRANITE CURB	VGC	WATER GATE	
VERTICAL CONCRETE CURB	VCC	UTILITY POLE	
EDGE OF PAVEMENT	EOP	GAS VALVE	
SEWER LINE	S	LIGHT POLE	
SEWER FORCE MAIN	FM	HYDRANT	
WATER LINE	W	BOUND	
DRAIN LINE	D	DRILL HOLE	
GAS LINE	G	IRON PIN	
OVERHEAD UTILITIES	OHW	SIGN	
U.G. ELEC.,TEL., & CABLE	UGETC	GUY ANCHOR	





Graphic Scale

40' 20' 0' 40' 80' 120' 160'

1" = 40'

TAX MAP H LOT 4-3

AMENDED CONDOMINIUM SITE PLAN

UNIT 4

DOVER FIELDS CONDOMINIUM

NH ROUTE 108, GRAPEVINE ROAD & MAST ROAD

DOVER, NEW HAMPSHIRE

OWNED BY AND PREPARED FOR

VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE'
BEDFORD, NEW HAMPSHIRE 03110

SCALE: 1" = 40' **SEPTEMBER 05, 2024**

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M R Dahlberg 9-6-24

LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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FILE	46001.31	DR	mrd	FB	1927	SHEET 3 OF 3
		CK	mrd	CADFILE	46001.31 CONDO SITE	

50 Washington Street, Suite 2000
Westborough, MA 01581
508.480.9900

July 2, 2025

City of Dover
Planning and Community Development
288 Central Avenue
Dover, NH 03820

Attn: Donna Benton, AICP – Director of Planning and Community Development

Re: Water Main Extension Memorandum
Proposed McDonald's Restaurant with Drive-Thru
NH-108 & Grapevine Drive
Dover, NH 03820

Dear Ms. Benton,

It was requested by the City Engineer we prepare this memorandum acknowledging that the Applicant, McDonald's USA, LLC, understands any future construction activities conducted by the City to extend of the existing water main within Durham Road along the site frontage may temporarily restrict the right-out driveway to Durham Road. The Applicant is aware of the potential temporary impacts to the site egress, and they anticipate the full access drive proposed at Grapevine Drive will be sufficient for temporary conditions when the right-out driveway to Durham Road is temporarily unavailable.

We trust the provided information is sufficient for your needs at this time. Should you have any questions or require additional information, please do not hesitate to contact me at 508-480-9900.

Sincerely,

BOHLER

Eric Dubrule, PE

Connor Ennis

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Supplemental Traffic Analysis

Fast Food Restaurant (Unit 4)

Dover Fields - NH108 & Grapevine Drive

Dover, New Hampshire

22 October 2024
25 February 2025 Rev1

1. Introduction

This supplemental traffic analysis evaluates a McDonald's fast-food restaurant along Grapevine Drive at Unit 4 of the Dover Fields project. According to the current NHDOT Driveway Permit for the project (issued in February 2024), development of the remaining lots (Units 3 and 4) requires a supplemental traffic analysis and new permit.

The previous traffic study for the current permit included a 2,500 sf fast-food restaurant (Taco Bell) at Unit 4; this analysis evaluates a 3,700 sf fast food restaurant (McDonald's) with the driveway shifted approximately 60' further away from NH108.

Scope of Study
The scope of this supplemental analysis is consistent with the previous approved study and is outlined below.

Trip Generation Summary for Unit 4:

Unit 4 Site Trips Fast Food (LUC 934)	Size	AM Peak	PM Peak	SAT Peak
Previous Proposal (Taco Bell)	2,500 sf	112	83	138
Current Proposal (McDonald's)	3,700 sf	165	122	204
Net Change in Trips		*+53*	*+39*	*+66*

Study Area Intersections:

1) NH108 at Grapevine Drive/Deerfield
2) NH108 at Mast Road
3) Mast Road at Grapevine/Stonewall
4) Fast-Food driveway on Grapevine
5) Fast-Food driveway on NH108

Methodology:

- Site trips as calculated based on ITE 11th Edition.
- Provide HCM unsignalized intersection capacity analysis for AM, PM, SAT peak hours, 2025 opening and 2035 future years.
- No Build represents existing development and approved trips only, and Build represents 2024 proposed McDonald's development.
- Provide comparison of HCM theoretical delay and queue for the Grapevine Drive approach vs. actual field measured delay and queue in the 2024 Base PM peak hour condition.

2. Background and No-Build Volumes

New turning movement counts were taken at all study intersections on the following dates: (See Appendix):

- Thursday July 25, 2024 – 7AM to 9AM, 3PM to 6PM.
- Saturday July 27, 2024 – 11 AM to 2 PM.

Seasonal Adjustment.
Based on Group 4 Highway data, the July TMC's were seasonally adjusted upward by a factor of 1% to reflect the July peak month factor.

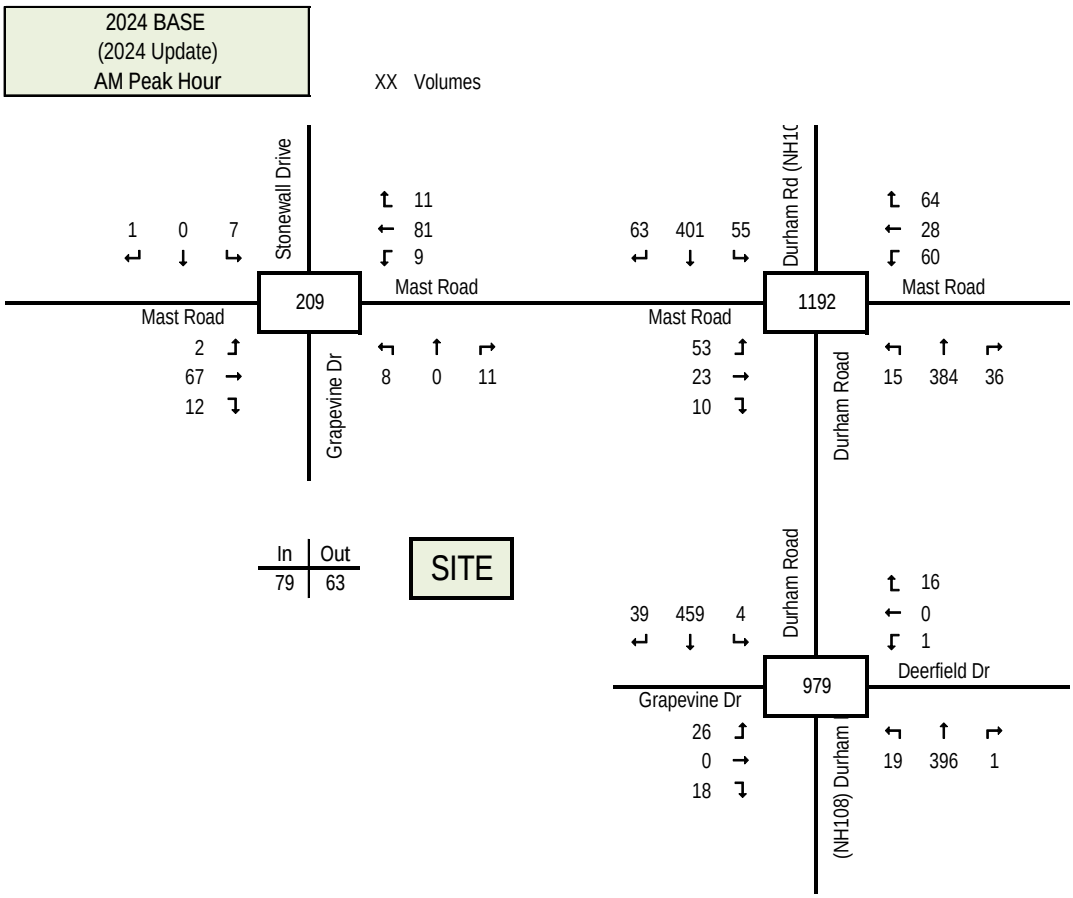
Growth Factor.
A 1% compound annual growth rate was used to account for general population growth and incidental future developments.

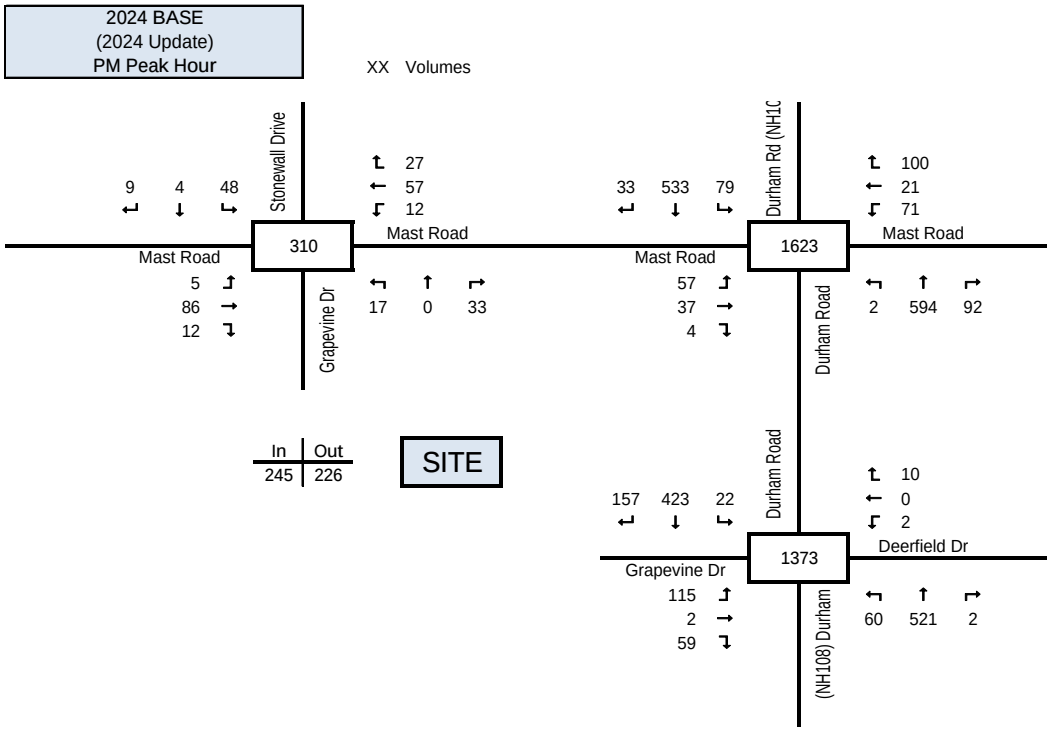
COVID/Stay-at Home Adjustment.
One month of data from previous MS2 count stations was averaged for pre- and post-Covid volumes during AM, PM, and SAT peak hours, resulting in upward adjustments of +2.5%, +1.1% and +2.8%, respectively.

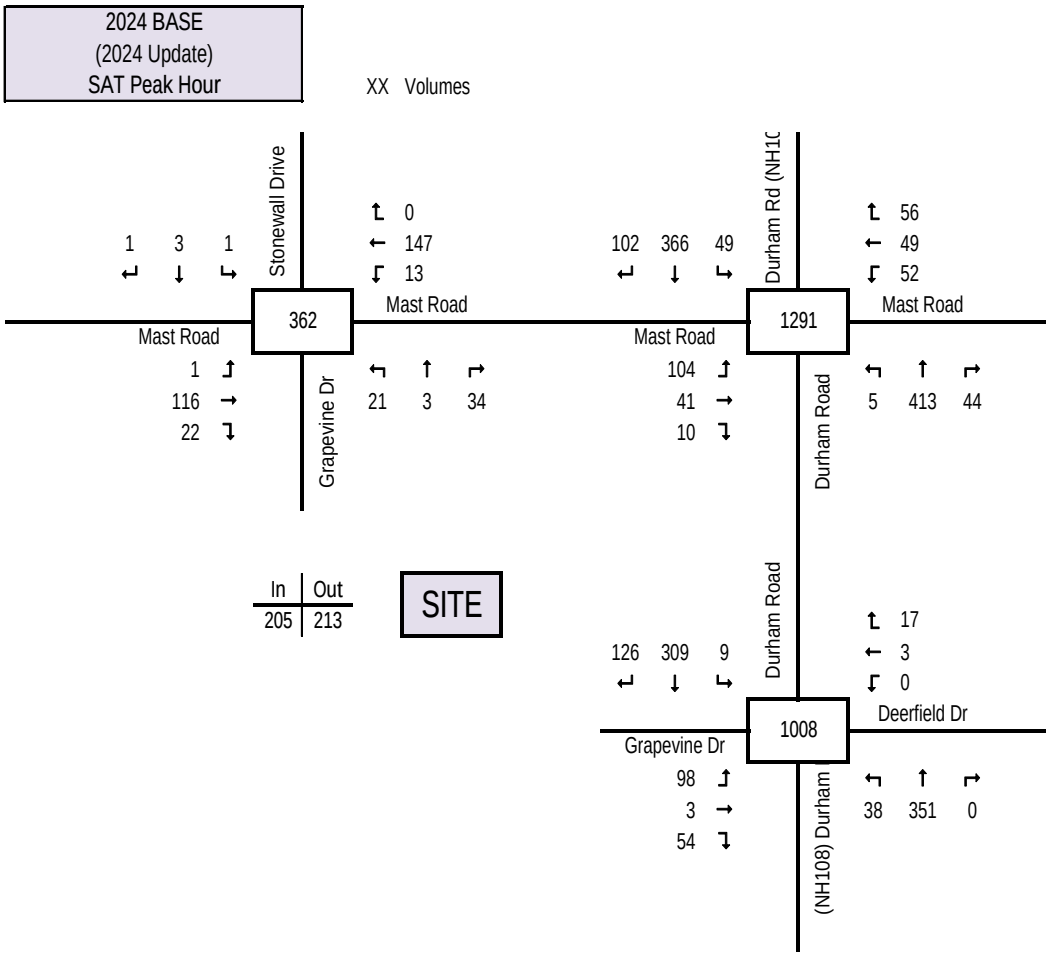
Other Developments
Two previously-approved phases of this projects have not been constructed at the time of the July 2024 counts, so traffic volumes based on appropriate LUCs were added to the No-Build volumes for this analysis to represent full-build conditions in the background volumes:

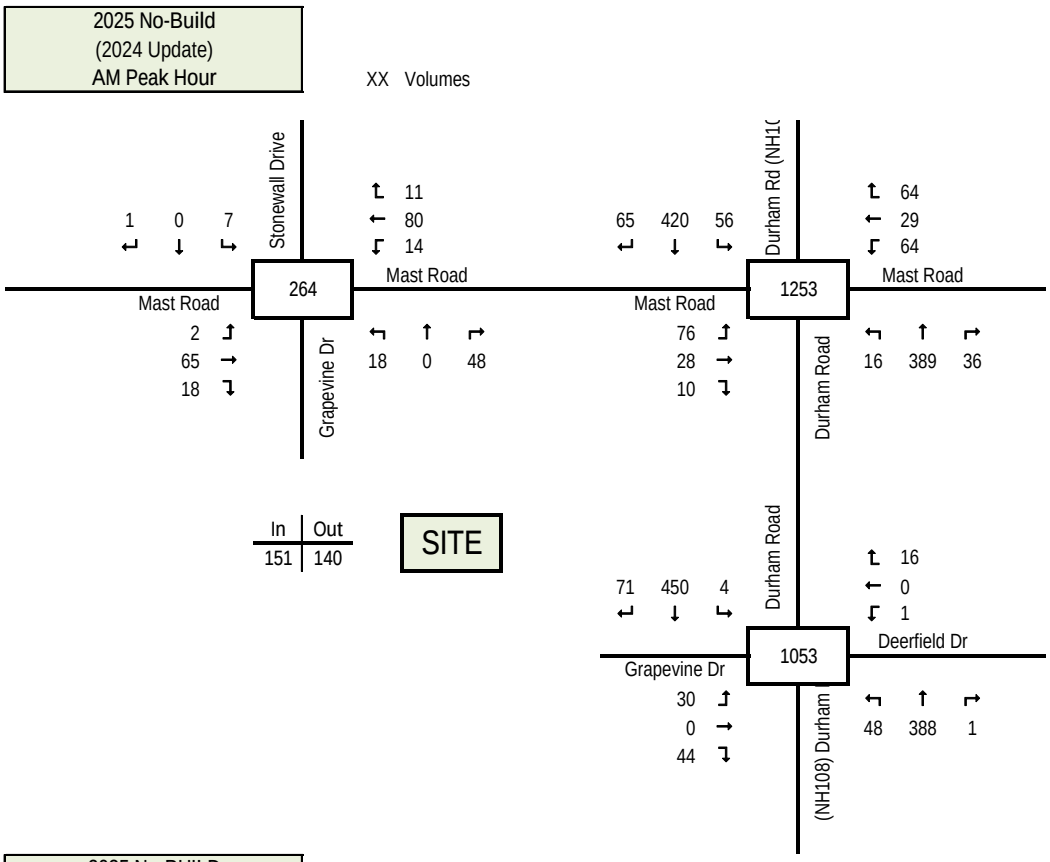
- Arbor Woods Phase 2:
  - 53 additional units
- Dover Fields
  - Mixed-use building (Unit 2) - 49 apartments on upper floors, small gym and café/sandwich shop on ground level
  - Branch Bank (Unit 3) – 2,000 sf
  - Fast-Food (Unit 4) – 2,500 sf

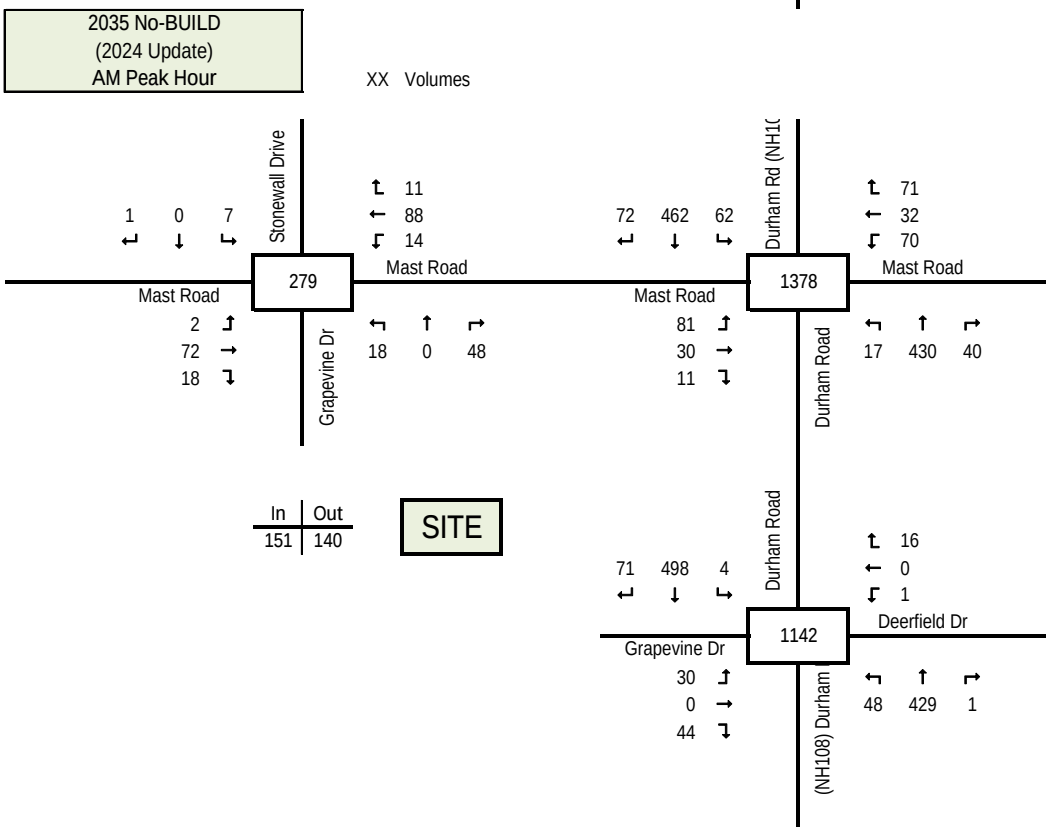
Base diagrams for the 2024 adjusted counts and No-Build volumes for the opening (2025) and future years (2035) adjusted for Growth and Other Developments are presented in the following figures.

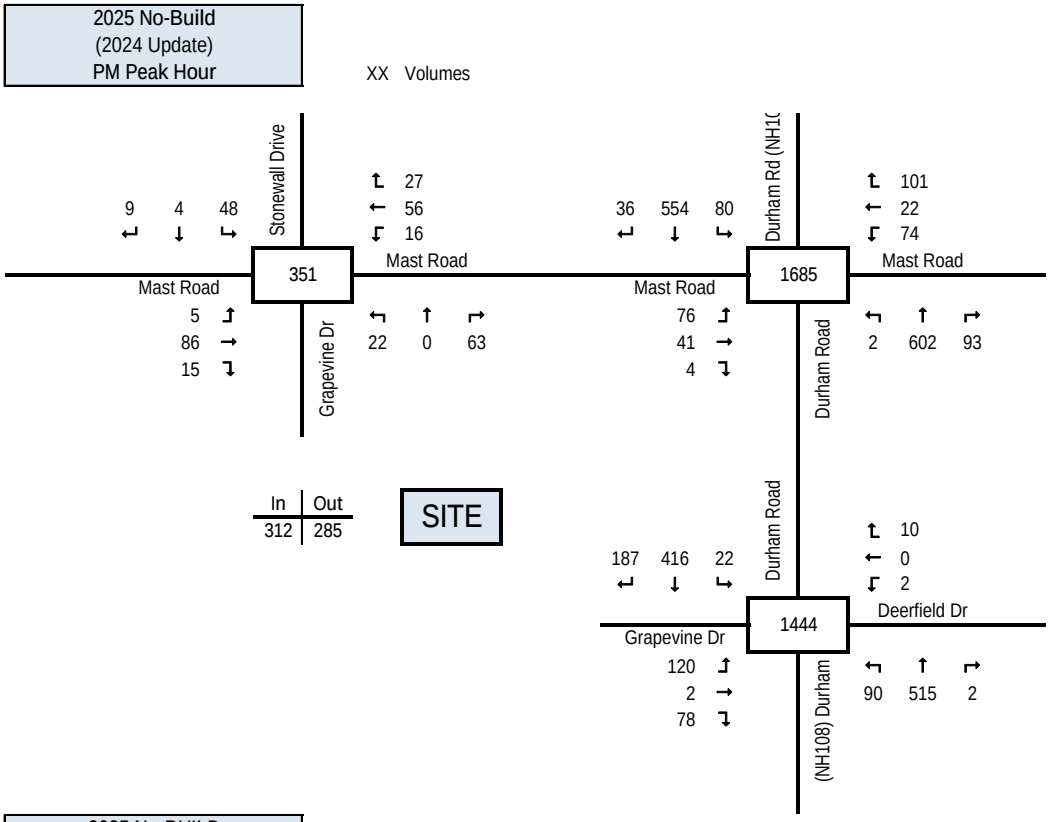

2024 BASE
(2024 Update)
AM Peak Hour
XX Volumes
Stonewall Drive
Mast Road
209
Grapevine Dr
1 0 7
11
81
9
2
67
12
8 0 11
Durham Rd (NH1C
1192
Durham Road
63 401 55
64
28
60
53
23
10
15 384 36
In 79
Out 63
SITE
979
Deerfield Dr
Grapevine Dr
(NH108) Durham
39 459 4
16
0
1
26
0
18
19 396 1

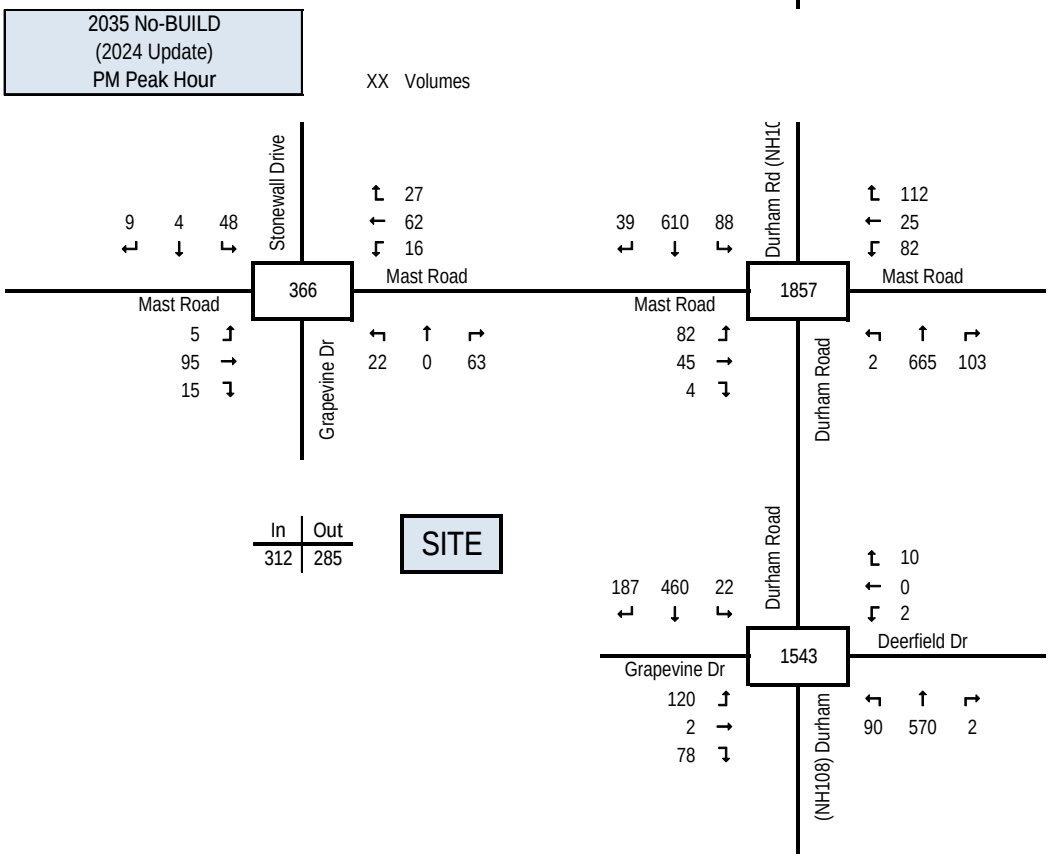

2024 BASE
(2024 Update)
PM Peak Hour
XX Volumes
Stonewall Drive
Mast Road
310
Grapevine Dr
9 4 48
27
57
12
5
86
12
17 0 33
Durham Rd (NH1C
1623
Durham Road
33 533 79
100
21
71
57
37
4
2 594 92
In 245
Out 226
SITE
1373
Deerfield Dr
Grapevine Dr
(NH108) Durham
157 423 22
10
0
2
115
2
59
60 521 2

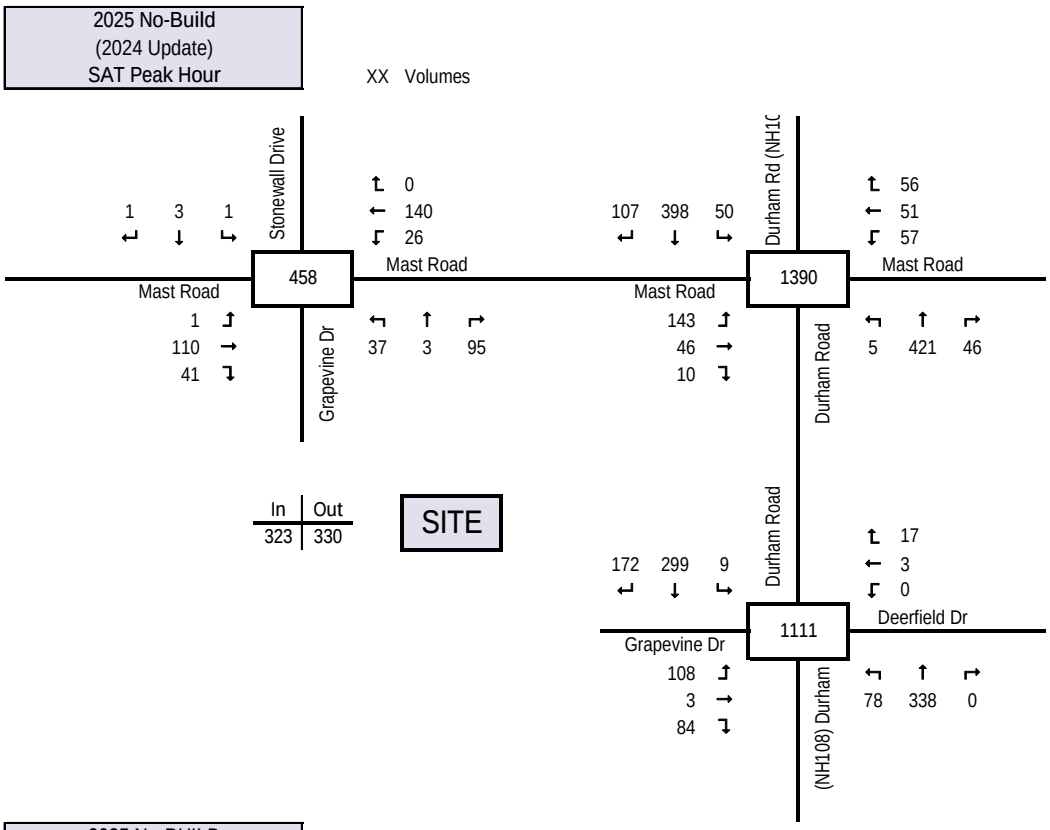

2024 BASE
(2024 Update)
SAT Peak Hour
XX Volumes
Stonewall Drive
Durham Rd (NH10
362
1291
1008
Mast Road
Grapevine Dr
Durham Road
Deerfield Dr
(NH108) Durham
1 3 1
0
147
13
102 366 49
56
49
52
1
116
22
21 3 34
104
41
10
5 413 44
In 205
Out 213
SITE
126 309 9
17
3
0
98
3
54
38 351 0

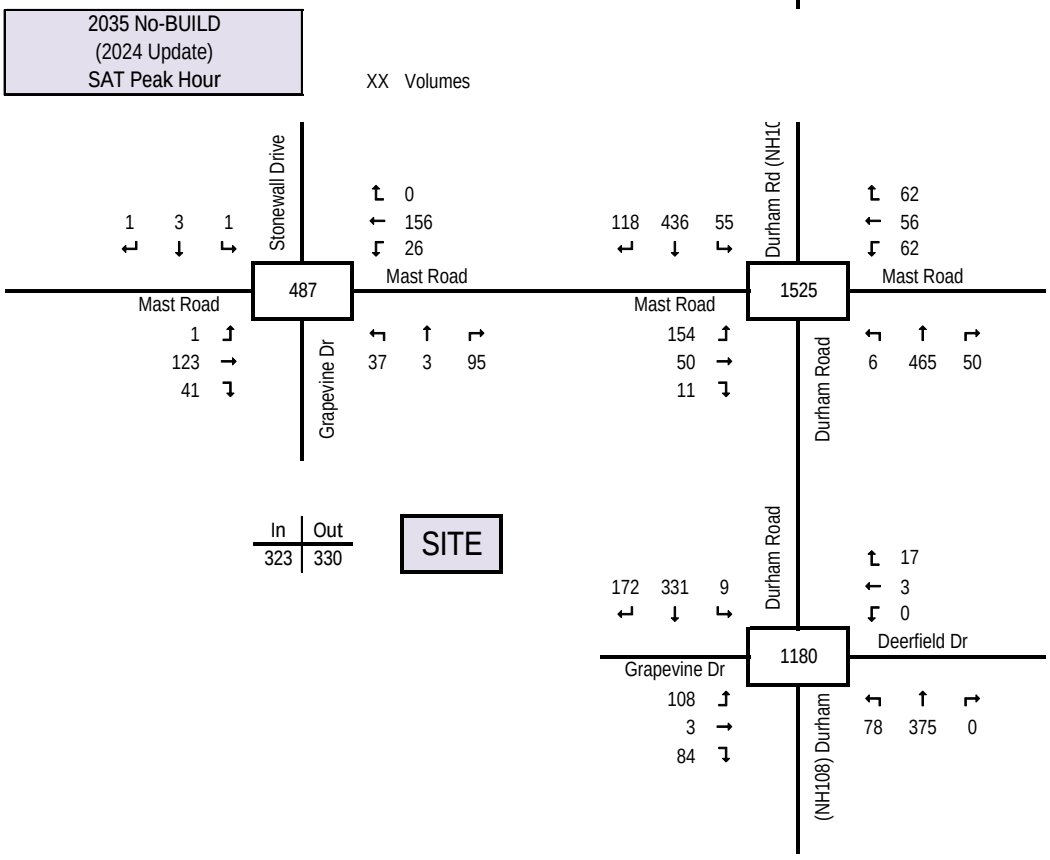

2025 No-Build
(2024 Update)
AM Peak Hour
XX Volumes
Stonewall Drive
1 0 7
11
80
14
264
Mast Road
Mast Road
2
65
18
Grapevine Dr
18 0 48
65 420 56
64
29
64
Durham Rd (NH10
1253
Mast Road
Mast Road
76
28
10
Durham Road
16 389 36
In Out
151 140
SITE
Durham Road
71 450 4
16
0
1
1053
Deerfield Dr
Grapevine Dr
30
0
44
(NH108) Durham
48 388 1


2035 No-BUILD
(2024 Update)
AM Peak Hour
XX Volumes
Stonewall Drive
1 0 7
11
88
14
279
Mast Road
Mast Road
2
72
18
Grapevine Dr
18 0 48
72 462 62
71
32
70
Durham Rd (NH10
1378
Mast Road
Mast Road
81
30
11
Durham Road
17 430 40
In Out
151 140
SITE
Durham Road
71 498 4
16
0
1
1142
Deerfield Dr
Grapevine Dr
30
0
44
(NH108) Durham
48 429 1


2025 No-Build
(2024 Update)
PM Peak Hour
XX Volumes
Stonewall Drive
9 4 48
27
56
16
Mast Road
351
Mast Road
5
86
15
Grapevine Dr
22 0 63
Durham Rd (NH10
36 554 80
101
22
74
Mast Road
1685
Mast Road
76
41
4
Durham Road
2 602 93
In 312
Out 285
SITE
Durham Road
187 416 22
10
0
2
Deerfield Dr
1444
Grapevine Dr
120
2
78
(NH108) Durham
90 515 2


2035 No-BUILD
(2024 Update)
PM Peak Hour
XX Volumes
Stonewall Drive
9 4 48
27
62
16
Mast Road
366
Mast Road
5
95
15
Grapevine Dr
22 0 63
Durham Rd (NH10
39 610 88
112
25
82
Mast Road
1857
Mast Road
82
45
4
Durham Road
2 665 103
In 312
Out 285
SITE
Durham Road
187 460 22
10
0
2
Deerfield Dr
1543
Grapevine Dr
120
2
78
(NH108) Durham
90 570 2


2025 No-Build
(2024 Update)
SAT Peak Hour
XX Volumes
Stonewall Drive
1 3 1
0
140
26
458
Mast Road
Mast Road
1 110 41
Grapevine Dr
37 3 95
Durham Rd (NH10
107 398 50
56
51
57
1390
Mast Road
Mast Road
143 46 10
Durham Road
5 421 46
In 323
Out 330
SITE
Durham Road
172 299 9
17
3
0
1111
Deerfield Dr
Grapevine Dr
108 3 84
(NH108) Durham
78 338 0


2035 No-BUILD
(2024 Update)
SAT Peak Hour
XX Volumes
Stonewall Drive
1 3 1
0
156
26
487
Mast Road
Mast Road
1 123 41
Grapevine Dr
37 3 95
Durham Rd (NH10
118 436 55
62
56
62
1525
Mast Road
Mast Road
154 50 11
Durham Road
6 465 50
In 323
Out 330
SITE
Durham Road
172 331 9
17
3
0
1180
Deerfield Dr
Grapevine Dr
108 3 84
(NH108) Durham
78 375 0

3. Trip Generation/Composition:

Trip Generation

The previous permit included an allowance for a fast-foot restaurant on Unit 4. The following Table 1 shows the previously included site trips based on the updated 2022 site changes and Table 2 show the site trips of the 2024 Update fast-food use.

Table 1 – Previous Taco Bell Site trips

Trip Generation for LUC 934 (2,500 sf)			
Scenario	In	Out	Total
Weekday AM	57	55	112
Weekday PM	43	40	83
Saturday Midday	70	68	138

Table 2 – Proposed McDonald's Site Trips

Trip Generation for LUC 934 (3,700 sf)			
Scenario	In	Out	Total
Weekday AM	84	81	165
Weekday PM	63	59	122
Saturday Midday	104	100	204

Internal Capture

Interaction between proposed uses at Dover Marketplace reduces total external trips. This reduction is known as "internal capture". Standard NCHRP 684 methodologies were used to estimate the internal capture rates. The resulting reduction rate is 12% during the weekday AM peak hour, 27% in the PM peak hour and 17% for the SAT midday peak hour only.

Table 3 – Internal Capture Adjustments

Trip Generation for 2024 Update [Unit 4]			
Scenario	In	Out	Total
McDonald's (3,700 sf) Site Trips (Unadjusted)			
Weekday AM	84	81	165
Weekday PM	63	59	122
Saturday Midday	104	100	204
Less Former Taco Bell Site Trips			
Weekday AM	*57*	*55*	*112*
Weekday PM	*43*	*40*	*83*
Saturday Midday	*70*	*68*	*138*
Less Internal Capture Adjustment			
Weekday AM (12%)	*10*	*10*	*20*
Weekday PM (27%)	*17*	*16*	*33*
Saturday Midday (17%)	*18*	*17*	*35*
Adjusted Site Trips for McDonald's			
Weekday AM	17	16	33
Weekday PM	3	3	6
Saturday Midday	16	15	31

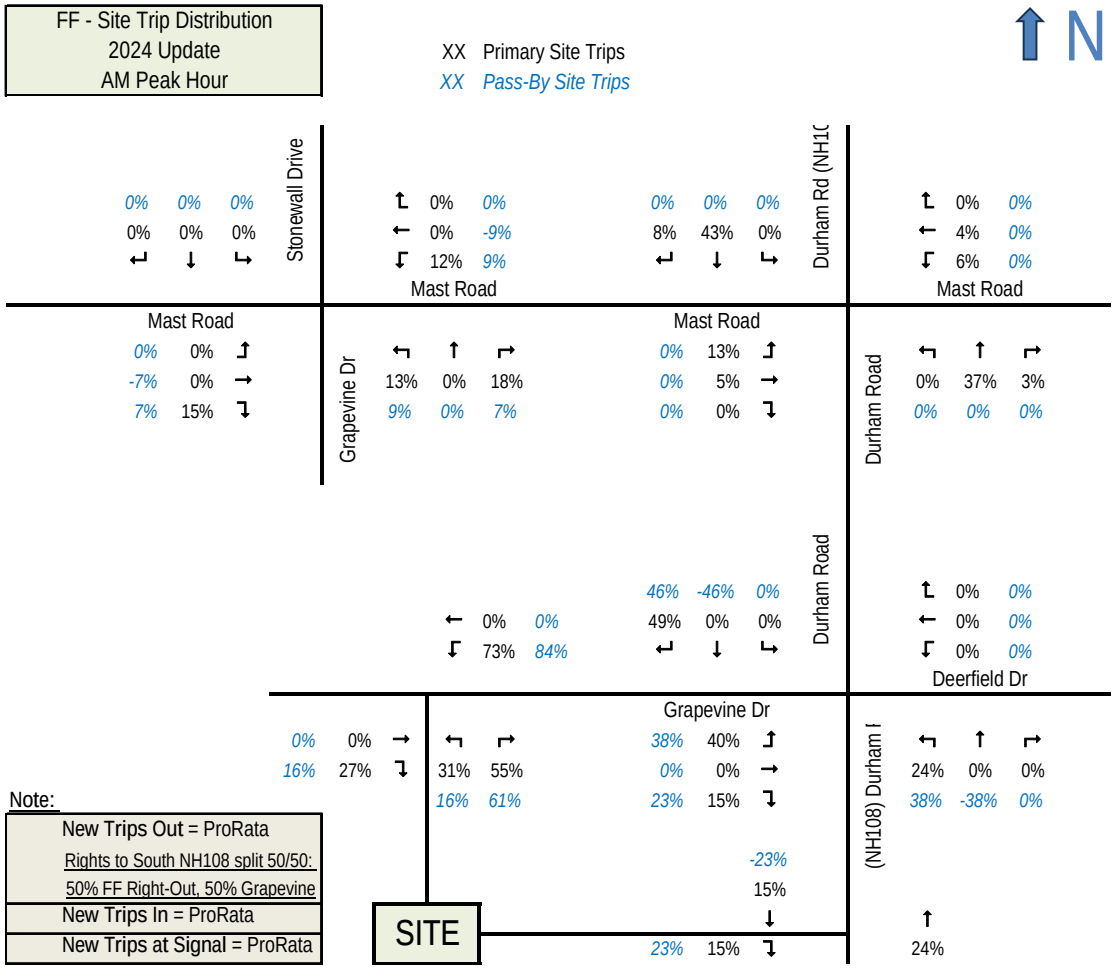
Trip Composition

Table 4: Proposed Fast-Food Trip Composition [Unit 4]

	Non Pass-By		Pass-By		Total at Site
	In	Out	In	Out	
Weekday AM Peak Hour Adj Street	37	35	37	36	145
Weekday PM Peak Hour Adj Street	21	19	25	24	89
Weekend SAT Peak Hour Generator	43	41	43	42	169

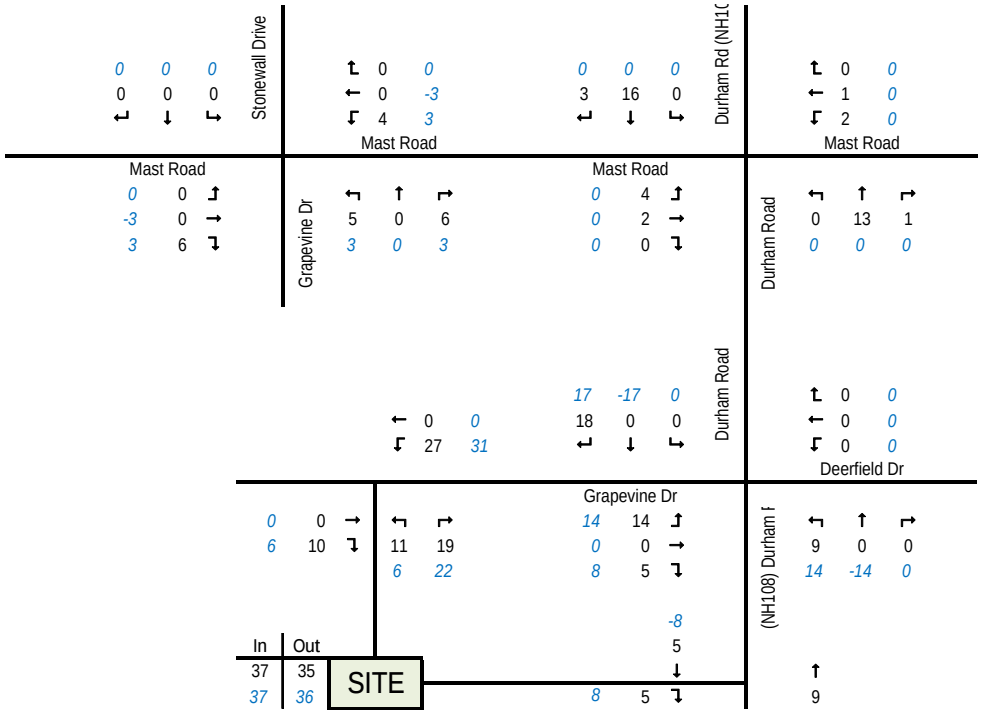
Trip Assignment

Distribution is prorated based on current background volumes.



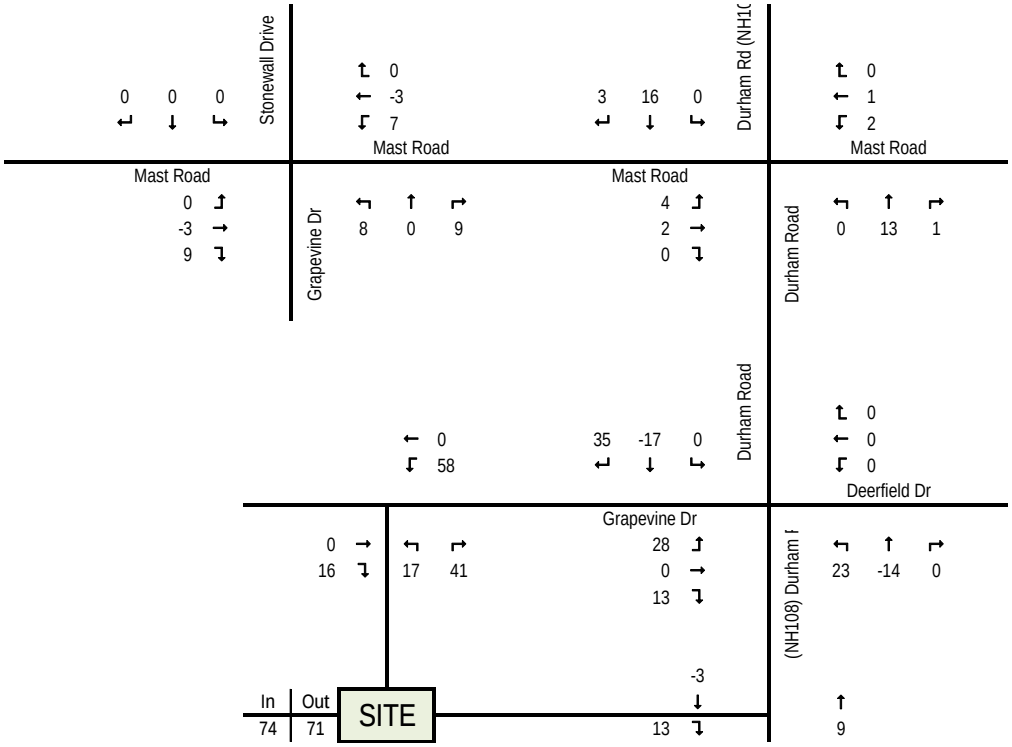
FF - Site Trip Assignments
2024 Update
AM Peak Hour

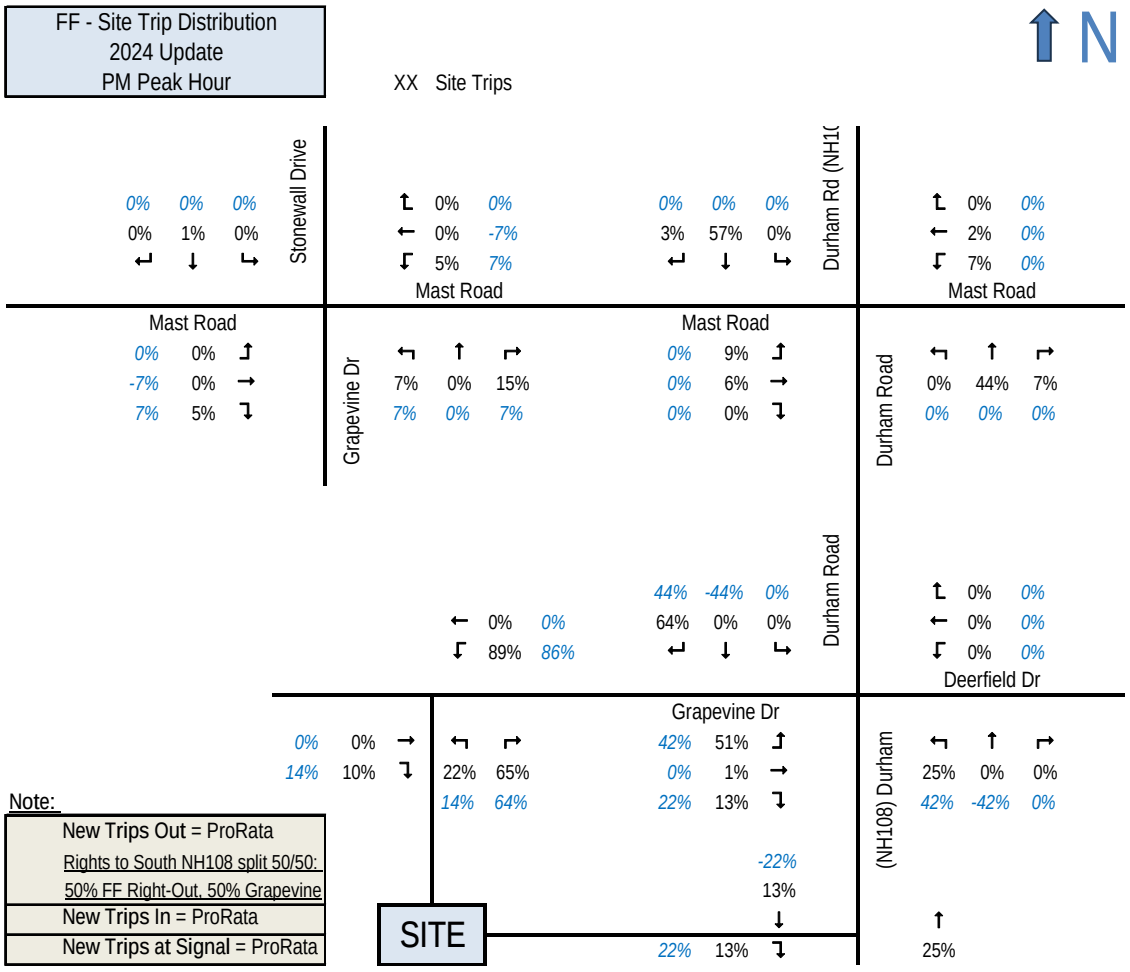
XX Primary Site Trips
XX Pass-By Site Trips



FF - Site Trip Assignments
2024 Update
AM Peak Hour

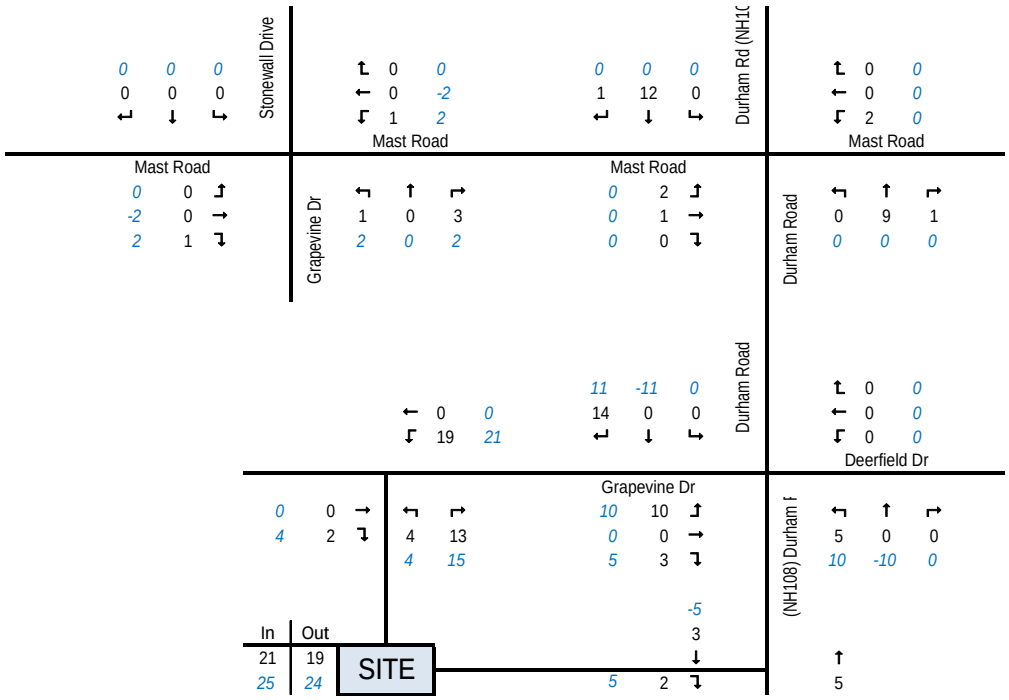
XX Site Trips




FF - Site Trip Distribution
2024 Update
PM Peak Hour
XX Site Trips
N
Stonewall Drive
Mast Road
Durham Rd (NH1(
Mast Road
Mast Road
Mast Road
Grapevine Dr
Durham Road
Durham Road
Deerfield Dr
Grapevine Dr
(NH108) Durham
SITE
Note:
New Trips Out = ProRata
Rights to South NH108 split 50/50:
50% FF Right-Out, 50% Grapevine
New Trips In = ProRata
New Trips at Signal = ProRata

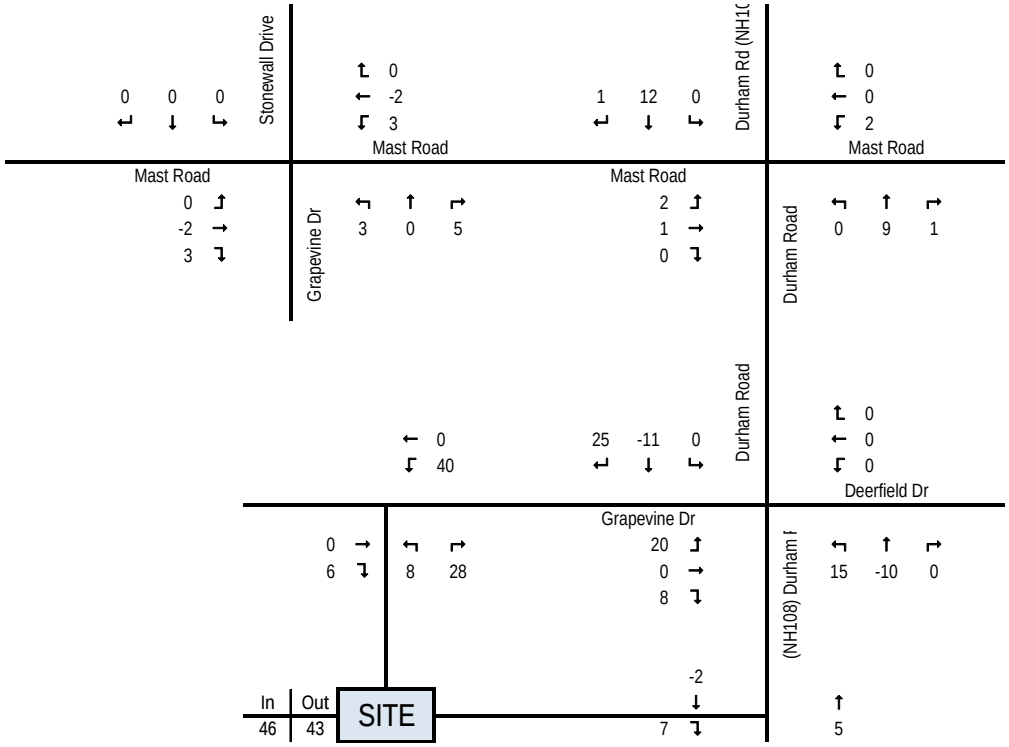
FF - Site Trip Assignments
2024 Update
PM Peak Hour

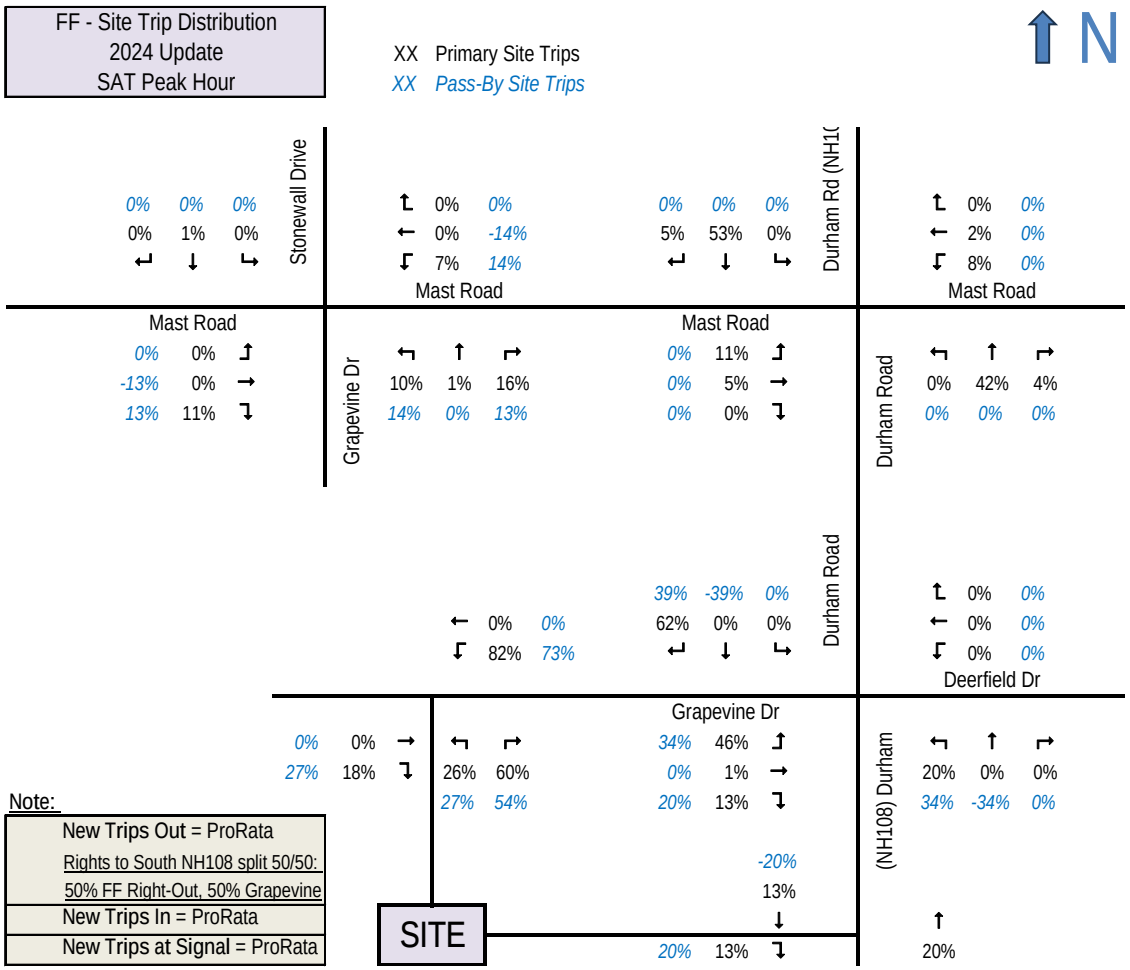
XX Primary Site Trips
XX Pass-By Site Trips

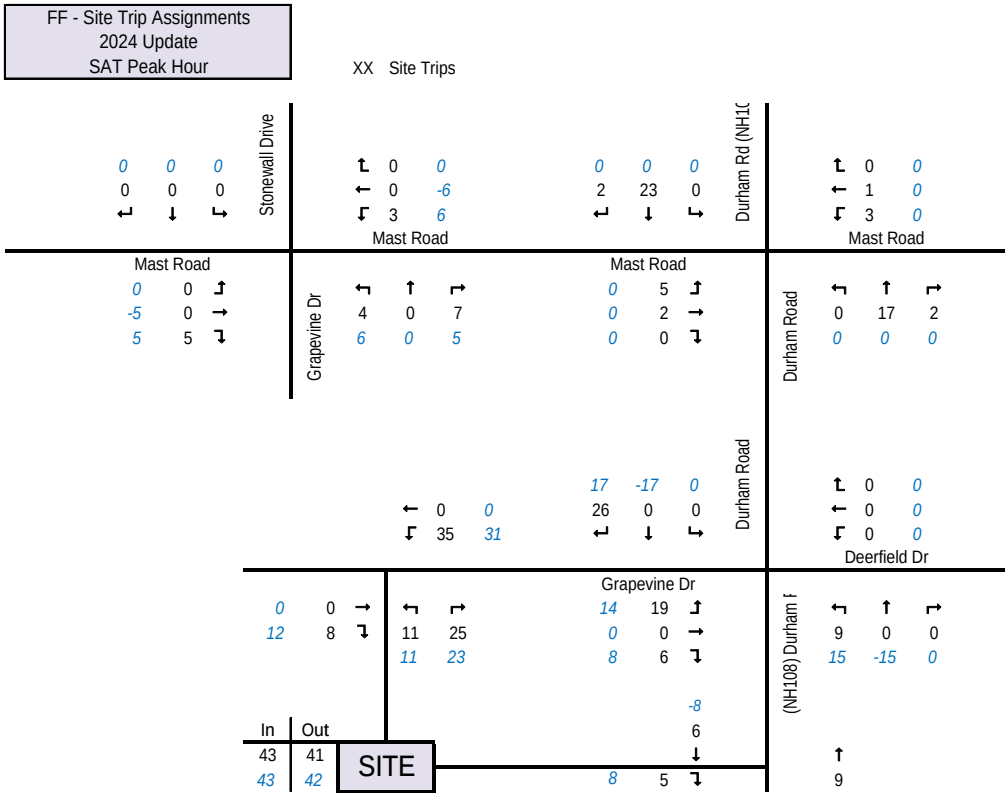


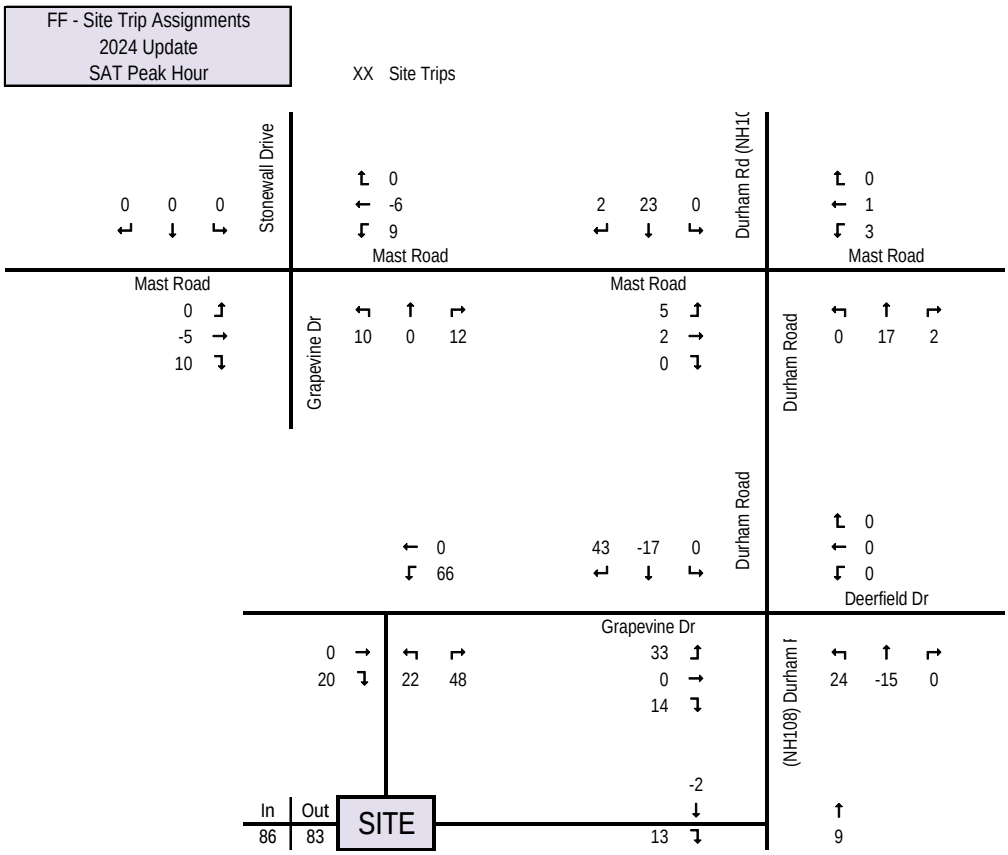
FF - Site Trip Assignments
2024 Update
PM Peak Hour

XX Site Trips




FF - Site Trip Distribution
2024 Update
SAT Peak Hour
XX Primary Site Trips
XX Pass-By Site Trips
N
Stonewall Drive
Durham Rd (NH1(
Mast Road
Mast Road
Mast Road
Mast Road
Grapevine Dr
Durham Road
Durham Road
Deerfield Dr
Grapevine Dr
(NH108) Durham
SITE
Note:
New Trips Out = ProRata
Rights to South NH108 split 50/50:
50% FF Right-Out, 50% Grapevine
New Trips In = ProRata
New Trips at Signal = ProRata


FF - Site Trip Assignments
2024 Update
SAT Peak Hour
XX Site Trips
Stonewall Drive
Durham Rd (NH1(
Mast Road
Grapevine Dr
Durham Road
Deerfield Dr
(NH108) Durham I
In
Out
43
41
43
42
SITE

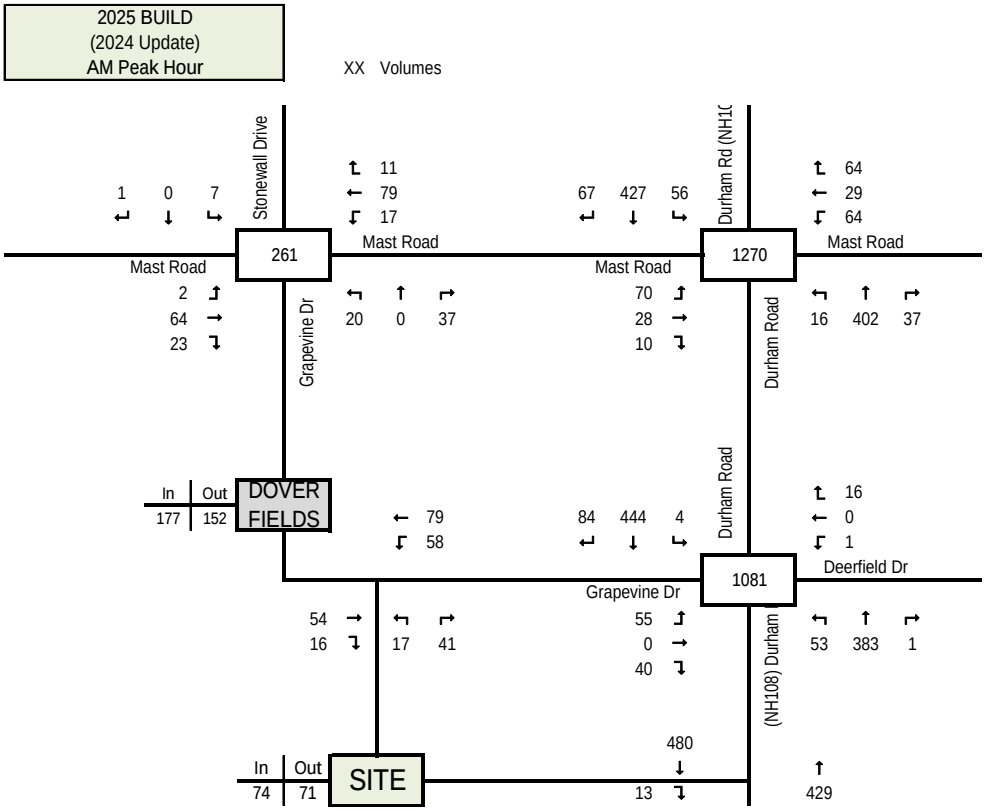

FF - Site Trip Assignments
2024 Update
SAT Peak Hour
XX Site Trips
Stonewall Drive
Durham Rd (NH1(
Mast Road
Grapevine Dr
Durham Road
Deerfield Dr
(NH108) Durham I
In
Out
86
83
SITE

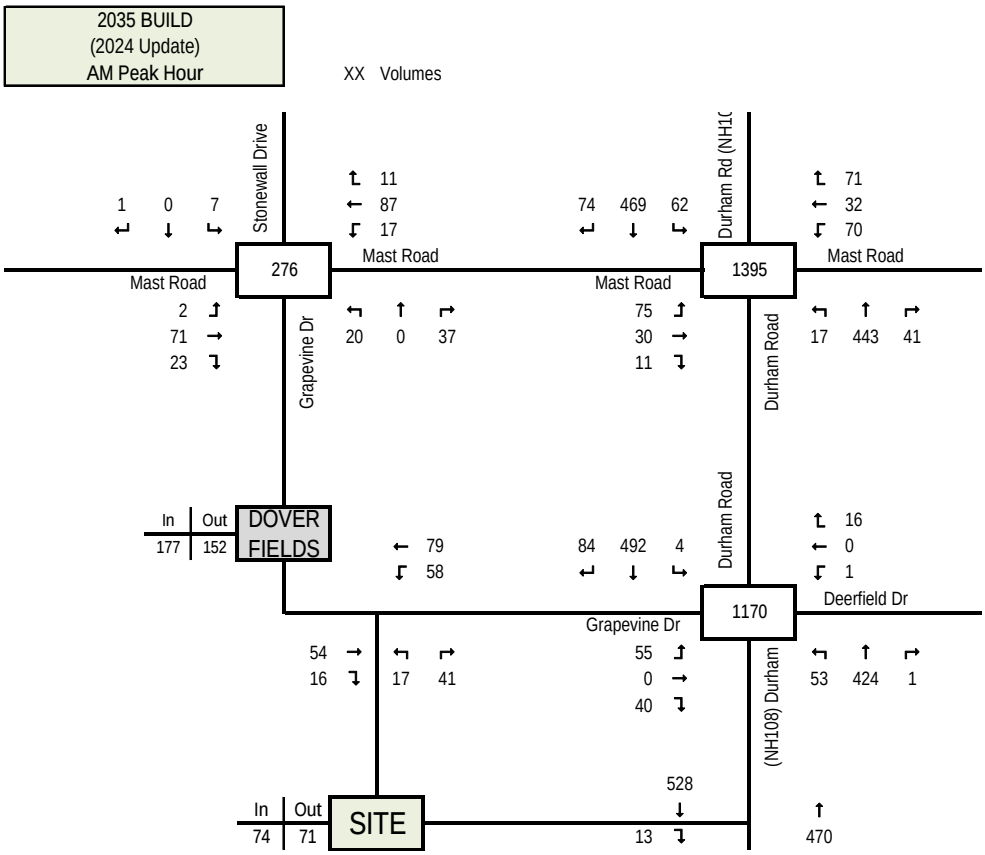
4. Build Volumes:

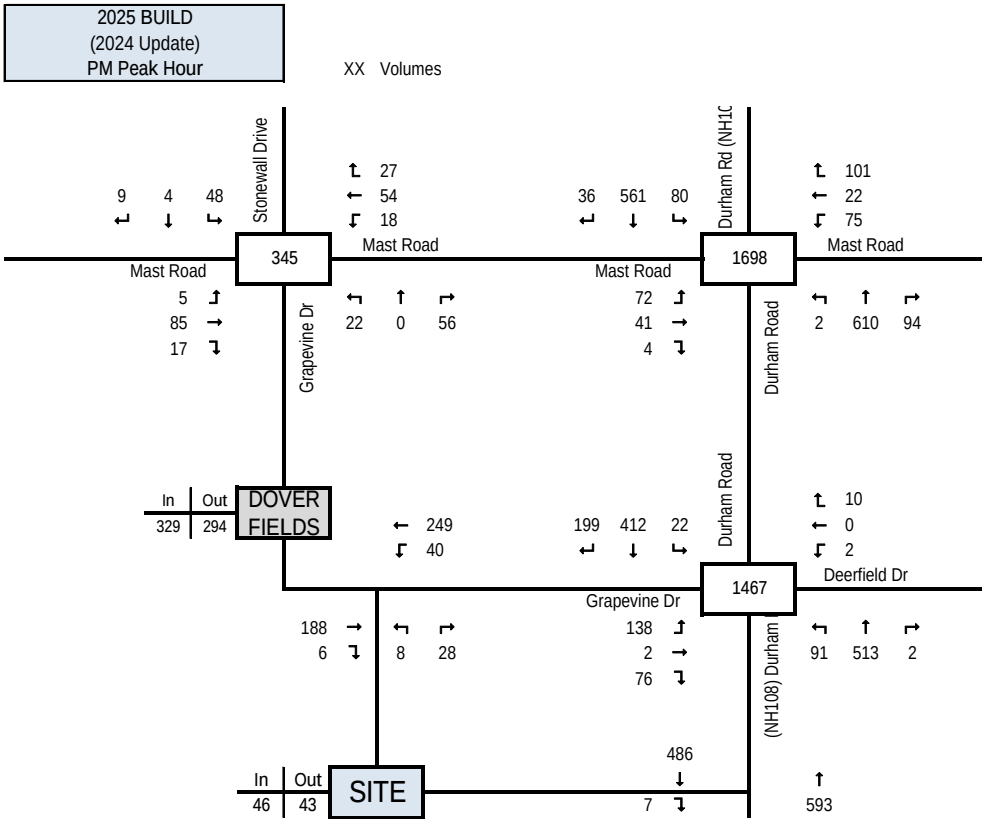
There are two steps to arrive at the “Build” Volumes for this project.

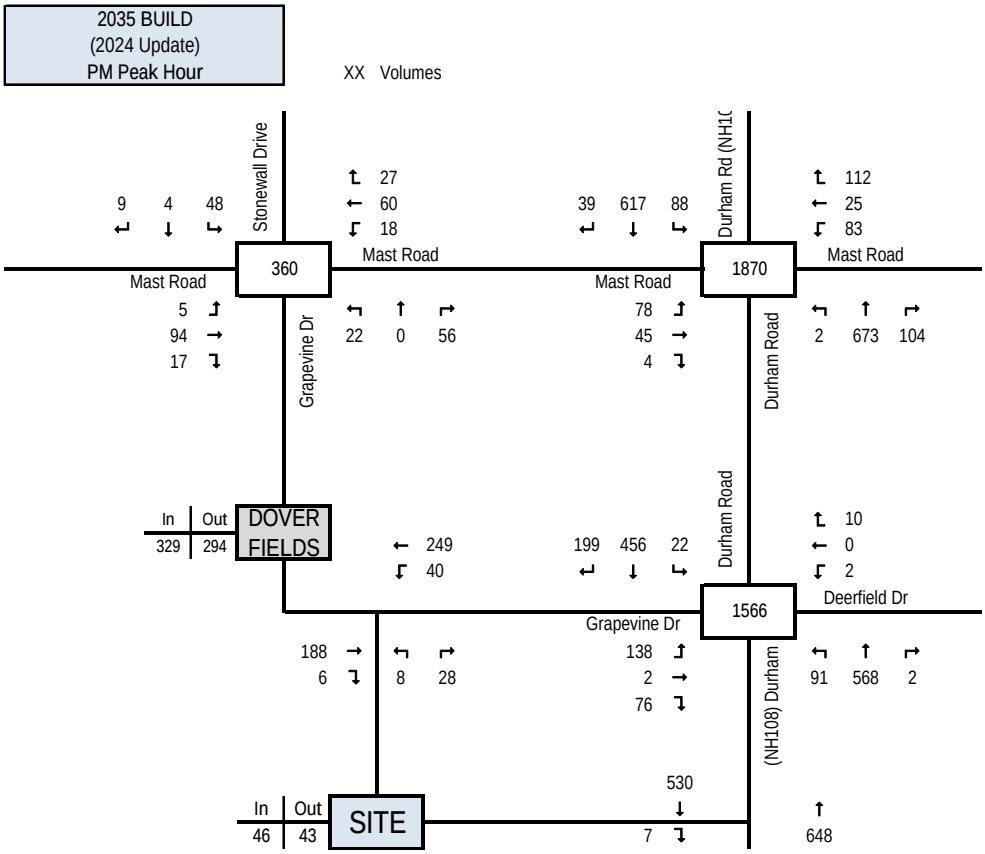
First, the 2023 Previously Permitted Fast-Food Unit 4 trips need to be subtracted from the study area No-Build Volumes. The site trip diagrams of the 2023 Previously Permitted Fast-Food Unit4 trips are in Appendix D and noted in the Volume calculations in Appendix E.

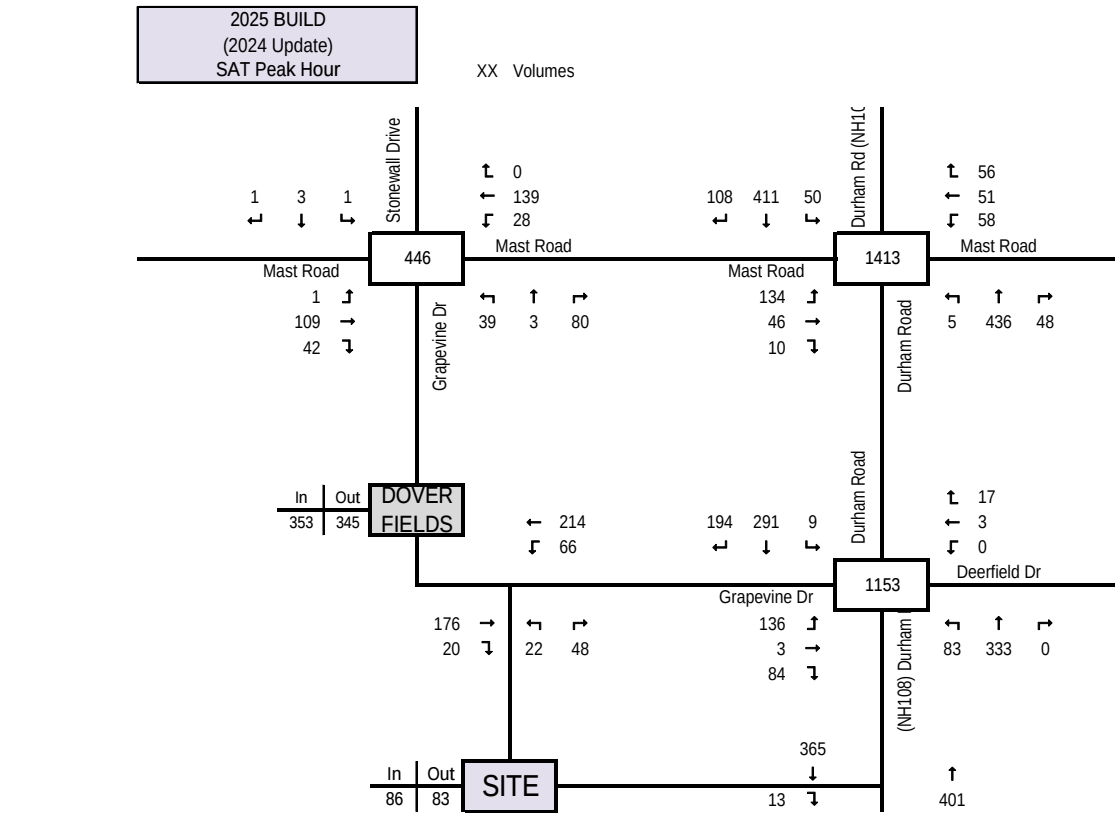
Second, the Unit 4 site trips generated by the 2024 updated development were added to No-Build traffic volumes throughout the study area to produce 2025 & 2035 Build diagrams for each peak hour on the following pages:

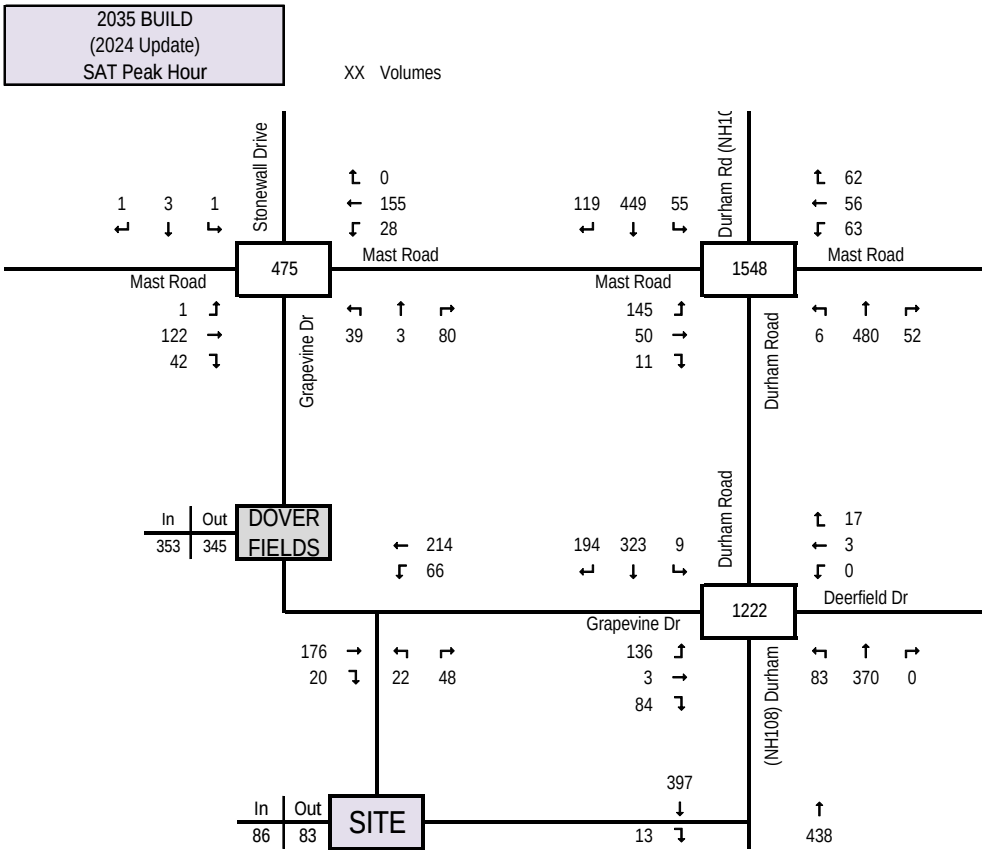

2025 BUILD
(2024 Update)
AM Peak Hour
XX Volumes
Stonewall Drive
Durham Rd (NH10
Mast Road
261
1270
Grapevine Dr
Durham Road
DOVER FIELDS
In 177 Out 152
1081
Deerfield Dr
Grapevine Dr
(NH108) Durham
SITE
In 74 Out 71
480
429


2035 BUILD
(2024 Update)
AM Peak Hour
XX Volumes
Stonewall Drive
Durham Rd (NH10
Mast Road
276
1395
Grapevine Dr
Durham Road
DOVER FIELDS
In 177 Out 152
1170
Deerfield Dr
Grapevine Dr
(NH108) Durham
SITE
In 74 Out 71
528
470


2025 BUILD
(2024 Update)
PM Peak Hour
XX Volumes
Stonewall Drive
Durham Rd (NH1C
Mast Road
345
1698
Grapevine Dr
Durham Road
DOVER FIELDS
In 329
Out 294
Deerfield Dr
1467
Grapevine Dr
(NH108) Durham
SITE
In 46
Out 43
9 4 48
27 54 18
36 561 80
101 22 75
5 85 17
22 0 56
72 41 4
2 610 94
249 40
199 412 22
10 0 2
188 6
8 28
138 2 76
91 513 2
486 7
593


2035 BUILD
(2024 Update)
PM Peak Hour
XX Volumes
Stonewall Drive
Durham Rd (NH1C
Mast Road
360
1870
Grapevine Dr
Durham Road
DOVER FIELDS
In 329
Out 294
Deerfield Dr
1566
Grapevine Dr
(NH108) Durham
SITE
In 46
Out 43
9 4 48
27 60 18
39 617 88
112 25 83
5 94 17
22 0 56
78 45 4
2 673 104
249 40
199 456 22
10 0 2
188 6
8 28
138 2 76
91 568 2
530 7
648


2025 BUILD
(2024 Update)
SAT Peak Hour
XX Volumes
Stonewall Drive
Durham Rd (NH1(
Mast Road
446
1413
Grapevine Dr
Durham Road
DOVER FIELDS
In 353
Out 345
1153
Deerfield Dr
SITE
In 86
Out 83
(NH108) Durham


2035 BUILD
(2024 Update)
SAT Peak Hour
XX Volumes
Stonewall Drive
Durham Rd (NH1(
Mast Road
475
1548
Grapevine Dr
Durham Road
DOVER FIELDS
In 353
Out 345
1222
Deerfield Dr
SITE
In 86
Out 83
(NH108) Durham

5. Level of Service Analysis:

Level of Service Analysis:

Level of service (LOS) is a qualitative description of operational conditions within a traffic stream measured in terms of control delay. The relationship between control delay and LOS is shown in the following table.

Level of Service (LOS)	Signalized Control Delay (sec)	Unsignalized Control Delay (sec)
A	≤10.0	≤10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	Over 80.0	Over 50.0

Methodology.

Trafficware “Synchro” v11 software was used to analyze signalized and unsignalized intersections (based on Synchro/HCM 6th) within the study area intersections during the weekday AM, PM and Saturday peak hours.

Queue Analysis.

Reported queue represents the 95th percentile queue, that is, the queue that will be exceeded no more than 5% of the time during the peak periods.

Signal Timing

Existing signal timing at the NH108/Mast Road intersection was based on current City timings received by TFM on November 9, 2023. There is a single timing plan that runs all day at this signal. The timing plan is attached in the appendix.

Intersection Summaries.

Volume to capacity (v/c) ratios, Level of Service (LOS), delays and queue results are summarized in the following tables.

Table 5. Level of Service Analysis Summary (2024/2025/2035)

	2024 BASE				2025 No-Build				2025 Build				2035 No-Build				2035 Build			
Movement	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]
9: NH108/Durham Road & Grapevine Drive (East) /Deerfield Drive [Unsignalized]																				
AM Peak OVERALL	---	1.9	A	---	---	2.9	A	---	---	3.0	A	---	---	3.0	A	---	---	3.2	A	---
EB L/T	0.22	28.2	D	20	0.29	33.8	D	28	0.35	36.0	E	35	0.34	40.9	E	35	0.41	44.6	E	45
EB R	0.06	12.1	B	5	0.14	12.9	B	13	0.08	12.4	B	8	0.15	13.6	B	13	0.09	13.0	B	8
WB L	0.04	11.8	B	3	0.05	12.0	B	3	0.03	11.8	B	3	0.05	12.7	B	5	0.04	12.4	B	3
NB L	0.02	8.7	A	3	0.05	8.9	A	5	0.06	8.9	A	5	0.06	9.1	A	5	0.06	9.1	A	5
SB L	0.00	8.2	A	0	0.00	8.2	A	0	0.00	8.2	A	0	0.00	8.3	A	0	0.00	8.3	A	0
PM Peak OVERALL	---	13.6	B	---	---	19.7	C	---	---	27.5	D	---	---	27.1	D	---	---	37.1	E	---
EB L/T	1.00	146.5	F	173	1.18	215.9	F	210	1.34	274.0	F	258	1.43	>300	F	248	1.62	>300	F	298
EB R	0.12	12.7	B	10	0.16	13.1	B	15	0.16	13.1	B	13	0.17	13.7	B	15	0.17	13.7	B	15
WB L	0.06	16.8	C	5	0.07	18.2	C	5	0.05	17.8	C	3	0.08	20.3	C	8	0.05	19.9	C	5
NB L	0.07	9.1	A	5	0.10	9.3	A	8	0.11	9.4	A	8	0.11	9.5	A	10	0.11	9.6	A	10
SB L	0.02	8.6	A	3	0.02	8.6	A	3	0.02	8.6	A	3	0.03	8.8	A	3	0.03	8.8	A	3
SAT Peak OVERALL	---	5.4	A	---	---	8.0	A	---	---	9.3	A	---	---	9.5	A	---	---	11.5	B	---
EB L/T	0.53	37.1	E	70	0.69	56.5	F	108	0.75	61.4	F	125	0.78	75.5	F	130	0.85	84.1	F	153
EB R	0.11	11.4	B	10	0.17	12.0	B	15	0.15	11.8	B	13	0.18	12.5	B	15	0.16	12.1	B	15
WB L	0.07	12.2	B	5	0.07	12.7	B	5	0.04	12.4	B	3	0.08	13.3	B	5	0.05	13.0	B	3
NB L	0.04	8.5	A	3	0.08	8.8	A	8	0.08	8.8	A	8	0.08	9.0	A	8	0.09	8.9	A	8
SB L	0.01	8.0	A	0	0.01	8.0	A	0	0.01	8.0	A	0	0.01	8.1	A	0	0.01	8.1	A	0
13: NH108/Durham Road & FF Right-Out [Unsignalized]																				
AM Peak OVERALL	---	---	---	---	---	---	---	---	---	0.2	A	---	---	---	---	---	---	0.2	A	---
EB L	---	---	---	---	---	---	---	---	0.03	11.8	B	3	---	---	---	---	0.03	12.3	B	3
PM Peak OVERALL	---	---	---	---	---	---	---	---	---	0.1	A	---	---	---	---	---	---	0.1	A	---
EB L	---	---	---	---	---	---	---	---	0.01	11.7	B	0	---	---	---	---	0.02	12.2	B	0
SAT Peak OVERALL	---	---	---	---	---	---	---	---	---	0.2	A	---	---	---	---	---	---	0.2	A	---
EB L	---	---	---	---	---	---	---	---	0.02	10.7	B	3	---	---	---	---	0.02	11.0	B	3

[a] Volume-to-capacity ratio - [b] Average control delay (sec/veh) - [c] Level of service - [d] 95th percentile queue in feet

Table 5 cont. Level of Service Analysis Summary (2024/2025/2035)

	2024 BASE				2025 No-Build				2025 Build				2035 No-Build				2035 Build			
Movement	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]
12: Fast Food Driveway & Grapevine Drive (East) [Unsignalized]																				
AM Peak OVERALL	---	---	---	---	---	---	---	---	---	3.7	A	---	---	---	---	---	---	3.7	A	---
WB L	---	---	---	---	---	---	---	---	0.04	7.5	A	3	---	---	---	---	0.04	7.5	A	3
NB L	---	---	---	---	---	---	---	---	0.07	9.5	A	5	---	---	---	---	0.07	9.5	A	5
PM Peak OVERALL	---	---	---	---	---	---	---	---	---	1.3	A	---	---	---	---	---	---	1.3	A	---
WB L	---	---	---	---	---	---	---	---	0.03	7.7	A	3	---	---	---	---	0.03	7.7	A	3
NB L	---	---	---	---	---	---	---	---	0.06	10.4	B	5	---	---	---	---	0.06	10.4	B	5
SAT Peak OVERALL	---	---	---	---	---	---	---	---	---	2.4	A	---	---	---	---	---	---	2.4	A	---
WB L	---	---	---	---	---	---	---	---	0.05	7.8	A	5	---	---	---	---	0.05	7.8	A	5
NB L	---	---	---	---	---	---	---	---	0.12	11.3	B	10	---	---	---	---	0.12	11.3	B	10
3 Grapevine Drive (North) /Stonewall Drive & Mast Road [Unsignalized]																				
AM Peak OVERALL	---	1.6	A	---	---	3.0	A	---	---	2.7	A	---	---	2.8	A	---	---	2.8	A	---
EB L	0.00	7.6	A	0	0.00	7.6	A	0	0.00	7.6	A	0	0.00	7.6	A	0	0.00	7.5	A	0
WB L	0.01	7.4	A	0	0.02	7.5	A	0	0.02	7.5	A	3	0.02	7.5	A	0	0.01	7.5	A	0
NB L	0.03	9.6	A	3	0.10	9.7	A	8	0.08	9.8	A	8	0.10	9.8	A	8	0.07	9.5	A	5
SB L	0.02	10.4	B	3	0.02	11.0	B	3	0.02	10.9	B	3	0.02	11.3	B	3	0.01	10.3	B	0
PM Peak OVERALL	---	5.5	A	---	---	6.1	A	---	---	5.9	A	---	---	6.0	A	---	---	4.5	A	---
EB L	0.00	7.4	A	0	0.00	7.4	A	0	0.00	7.4	A	0	0.00	7.4	A	0	0.00	7.4	A	0
WB L	0.01	7.5	A	0	0.01	7.5	A	0	0.01	7.5	A	0	0.01	7.5	A	0	0.01	7.5	A	0
NB L	0.08	9.7	A	5	0.13	9.9	A	10	0.10	9.8	A	8	0.13	10.0	B	10	0.10	9.7	A	8
SB L	0.22	11.6	B	20	0.23	12.3	B	23	0.23	12.1	B	23	0.24	12.5	B	23	0.10	11.1	B	8
SAT Peak OVERALL	---	2.5	A	---	---	4.4	A	---	---	3.5	A	---	---	4.2	A	---	---	3.4	A	---
EB L	0.00	7.6	A	0	0.00	7.6	A	0	0.00	7.6	A	0	0.00	7.6	A	0	0.00	7.6	A	0
WB L	0.01	7.6	A	0	0.02	7.7	A	3	0.03	7.7	A	3	0.02	7.7	A	3	0.02	7.6	A	3
NB L	0.12	10.7	B	10	0.26	11.6	B	25	0.19	11.2	B	18	0.27	11.9	B	28	0.19	11.1	B	18
SB L	0.02	11.4	B	3	0.02	12.0	B	3	0.02	11.9	B	3	0.02	12.4	B	3	0.01	11.7	B	0

[a] Volume-to-capacity ratio - [b] Average control delay (sec/veh) - [c] Level of service - [d] 95th percentile queue in feet

Table 5 cont. Level of Service Analysis Summary (2024/2025/2035)

	2024 BASE				2025 No-Build				2025 Build				2035 No-Build				2035 Build			
Movement	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]	v/c[a]	Del[b]	LOS[c]	Q[d]
6: NH108/Durham Road & Mast Road [Signalized]																				
AM Peak OVERALL	0.48	9.0	A	---	0.51	9.6	A	---	0.52	9.5	A	---	0.56	10.1	B	---	0.54	9.6	A	---
EB L	0.29	18.4	B	42	0.39	18.8	B	56	0.38	19.0	B	52	0.42	19.6	B	59	0.36	19.4	B	57
EB T	0.10	17.2	B	25	0.11	16.9	B	28	0.11	17.2	B	28	0.12	17.4	B	29	0.11	17.7	B	31
WB L	0.32	18.5	B	46	0.31	18.2	B	47	0.33	18.5	B	48	0.35	18.9	B	52	0.32	19.0	B	54
WB T	0.17	17.5	B	35	0.16	17.2	B	36	0.17	17.5	B	36	0.18	17.8	B	38	0.17	18.0	B	44
NB L/T	0.52	9.7	A	203	0.54	10.4	B	220	0.55	10.3	B	226	0.59	11.0	B	259	0.59	10.7	B	258
NB R	0.03	7.0	A	0	0.03	7.3	A	0	0.03	7.1	A	0	0.03	7.3	A	0	0.03	7.0	A	0
SB L	0.12	3.8	A	18	0.12	4.2	A	20	0.12	4.1	A	19	0.15	4.5	A	22	0.14	4.3	A	21
SB T/R	0.44	4.3	A	128	0.47	4.7	A	154	0.47	4.6	A	153	0.51	5.0	A	183	0.50	4.6	A	175
PM Peak OVERALL	0.62	11.1	B	---	0.65	11.7	B	---	0.65	11.7	B	---	0.72	15.5	B	---	0.69	12.9	B	---
EB L	0.37	20.6	C	44	0.47	21.5	C	55	0.45	21.5	C	53	0.48	22.1	C	60	0.43	22.6	C	61
EB T	0.15	19.0	B	31	0.16	18.9	B	33	0.16	19.1	B	33	0.15	19.2	B	35	0.16	20.4	C	38
WB L	0.40	20.7	C	51	0.40	20.7	C	52	0.41	20.9	C	53	0.39	21.0	C	57	0.40	22.2	C	62
WB T	0.18	19.2	B	30	0.18	19.1	B	30	0.18	19.2	B	30	0.19	19.4	B	32	0.18	20.5	C	46
NB L/T	0.70	13.1	B	425	0.72	13.9	B	441	0.73	13.9	B	445	0.85	22.5	C	507	0.80	17.3	B	494
NB R	0.06	7.2	A	12	0.06	7.5	A	12	0.06	7.4	A	13	0.07	9.1	A	17	0.07	7.7	A	16
SB L	0.20	5.8	A	25	0.21	6.3	A	27	0.21	6.3	A	26	0.26	8.9	A	29	0.25	7.5	A	27
SB T/R	0.47	4.5	A	181	0.49	4.9	A	201	0.50	4.9	A	200	0.55	6.2	A	236	0.53	4.8	A	219
SAT Peak OVERALL	0.55	10.3	B	---	0.60	11.4	B	---	0.60	11.2	B	---	0.66	12.9	B	---	0.63	11.4	B	---
EB L	0.49	19.3	B	72	0.64	23.9	C	97	0.61	22.8	C	91	0.59	21.2	C	105	0.59	22.6	C	102
EB T	0.14	16.8	B	34	0.15	17.3	B	37	0.15	17.3	B	37	0.14	16.3	B	40	0.15	17.4	B	42
WB L	0.21	17.2	B	42	0.22	17.7	B	45	0.22	17.7	B	45	0.20	16.7	B	48	0.25	18.1	B	49
WB T	0.19	17.0	B	49	0.19	17.5	B	51	0.19	17.5	B	51	0.18	16.5	B	55	0.21	17.8	B	54
NB L/T	0.57	11.1	B	236	0.57	11.6	B	242	0.59	11.8	B	252	0.68	15.4	B	310	0.63	12.5	B	327
NB R	0.03	7.7	A	0	0.03	8.0	A	0	0.03	7.9	A	0	0.04	9.3	A	0	0.04	7.9	A	0
SB L	0.12	4.7	A	20	0.12	5.1	A	20	0.12	5.1	A	20	0.16	6.7	A	21	0.14	5.4	A	21
SB T/R	0.45	5.1	A	155	0.49	5.6	A	173	0.50	5.6	A	182	0.57	7.5	A	200	0.54	5.9	A	210

[a] Volume-to-capacity ratio - [b] Average control delay (sec/veh) - [c] Level of service - [d] 95th percentile queue in feet

6. Lane Warrants and Accident Evaluation:

Right Turn Lane

A turn lane warrant analysis was performed previously for the southbound right turn into Grapevine Drive from NH108. It was agreed at that time that a turn lane was not necessary due to insufficient ROW and the following factors:

- The lane was not required when the original project was permitted with substantially higher volumes
- The analysis shows favorable operating conditions in opening and future build conditions,
- Four years of Dover PD data showed no crashes involved a southbound right turning vehicle.

Accident Evaluation:

Dover PD crash data for study intersections for 2021-2024 (approximately four years of data) is provided in the Appendix and summarized below.

Table 6 – Crash Data Summary

	NH108 (Durham Rd) at Grapevine **(Unsignalized)**	NH108 (Durham Rd) at Mast Rd **(Signalized)**	Mast Road at Grapevine **(Unsignalized)**
CRASH FREQUENCY			
Total Crashes	11	16	3
Crashes/year (Ave)	2.8	4	0.8
Intsn Crashes/year	1.8	3.5	0.5
CRASH SEVERITY			
Property Damage Only	10	14	2
Injury	1	2	1
Fatalities	0	0	0
CRASH TYPE			
Angle	6	8	2
Rear End	1	4	0
Side-Swipe	0	2	0
Fixed Object	2	1	1
Animal	2	1	0
WEATHER			
Clear/Dry	10	13	3
Snow/Ice	1	0	0
Clear/Wet	0	3	0
WEEKDAY COMMUTER PEAK			
AM (7-9am)	0	0	0
PM (3-6pm)	5	4	1
Non-Commuter Peak	6	12	2

NH108 (Durham Road) at Grapevine Drive (Unsignalized)

Eleven crashes occurred in the vicinity of the NH108/Grapevine Drive intersection, one resulting in injury. Four crashes involved fixed objects/animals. There was one rear end crash and six angle crashes (5 with property damage only). Three of the angle crashes were due to left turns exiting Grapevine. None involved SB right turns. This is a relatively favorable crash history for the traffic volume entering the intersection.

7. Mitigation:

Visual observation of the recent turning movement counts indicate that Synchro predicts longer delays than actually occur at the eastbound approach of Grapevine Drive to NH108 during the PM peak. See table below:

Table 7: Grapevine/NH108 Eastbound Approach

PM Peak	Average Delay (sec)	Avg Queue (cars)	95th Queue (cars)
2024 Observed from TMC	35	3 cars	7 vehicles
McD Synchro (Base)	146.5	-	7 vehicles

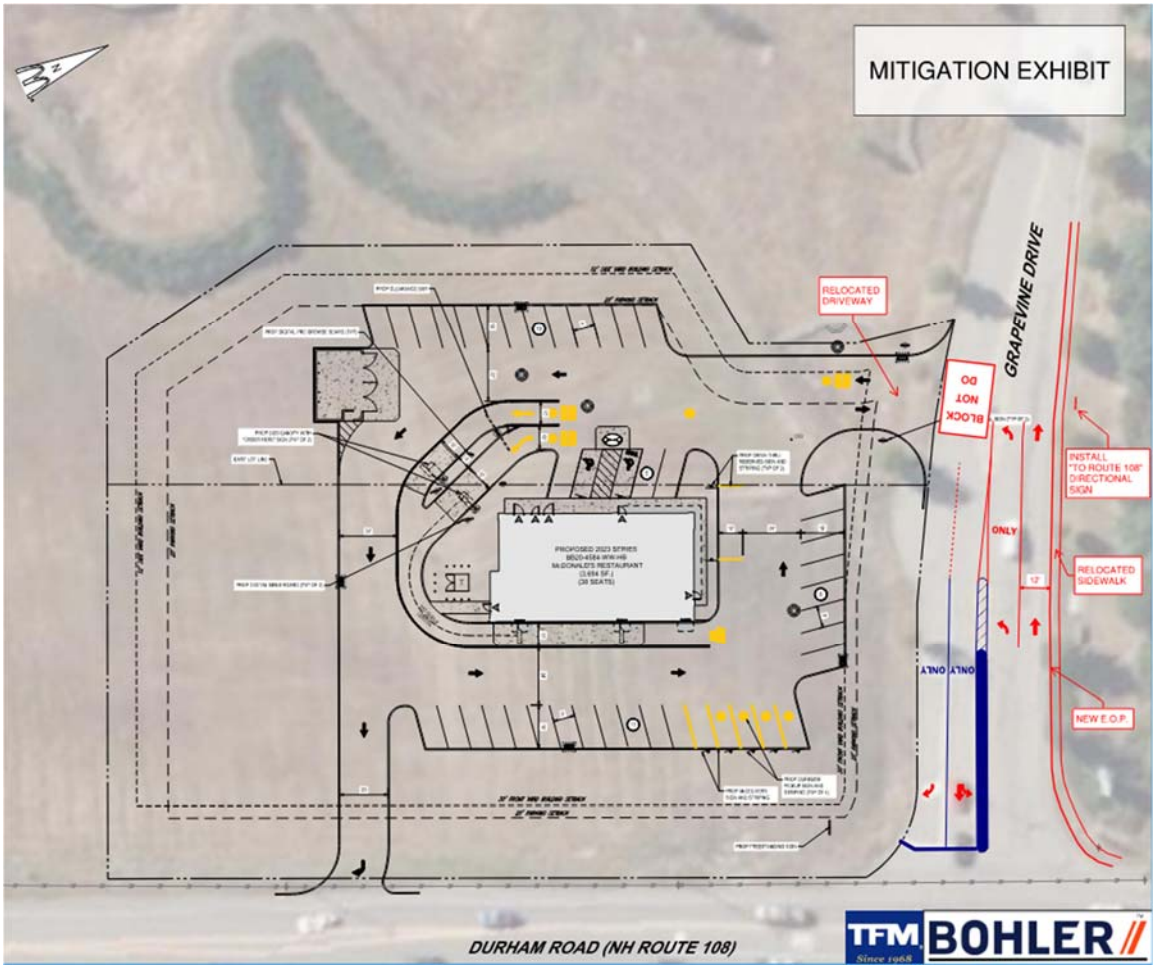
As part of the previous permit, signage was installed along Grapevine Drive directing NB drivers who may be unfamiliar with the site towards the Mast Road driveway rather Grapevine/NH108. The same signage will be installed opposite the McDonalds drive to identify the Mast Road alternative.

Based on observation, the intersection operates at acceptable delays despite the longer Synchro-calculated delays. In addition, drivers who follow signage to the alternative Mast Road exit will also experience lower delays. It is reasonable to assume that over time these two exit points will find a reasonable balance.

Based on the foregoing results and observations, we recommend the following mitigation improvements:

- Signage has been installed previously within the development to instruct drivers of the alternate Mast Road exit, reducing potential congestion at Grapevine. Measured volumes are less at this exit point, and overall traffic volumes of the 2024 counts are lower than the 2022 volumes.
- To further reduce potential congestion, the Fast Food driveway has been shifted approximately 60’ west to create space for two more vehicles in the eastbound queue, and “Do Not Block” striping and signage will be installed at the driveway.
- A right-turn-only exit lane has been added to the Fast Food parcel so that southbound vehicles need not pass through the Grapevine intersection.
- We propose to widen Grapevine Drive to two entering lanes and create a left turn pocket at the Fast Food driveway so that through traffic can bypass vehicles turning into the Fast Food drive. The expected left turn queue is less than one car.

An exhibit detailing these changes is shown in the Appendix.



8. Conclusions:

Recent (July 2024) counts show overall traffic volumes are generally lower than the 2022 volumes of the approved study.

Traffic operations at the Dover Fields access point at Mast Road is favorable in all scenarios, and the Mast Road/NH108 intersection also shows favorable results (C or better) in all scenarios. Build and No-Build queues are essentially unchanged with one or two car queues.

Operations at the Grapevine site driveway are favorable and there is no blocking of westbound through traffic due to the added left turn pocket. The 95th queue for the left turn movement into the site is less than 1 car.

The Grapevine approach LOS will degrade slightly with higher traffic volume, but observation of current operations shows that queues and delays are substantially better than predicted by the Synchro model (in part due to signal gaps at Mast Road). Please note that northbound traffic also has ready access to the Mast Road signal for more favorable left turn conditions. .

A crash analysis of the Grapevine/NH108 intersection showed this is a relatively favorable crash history for the traffic volume entering the intersection.

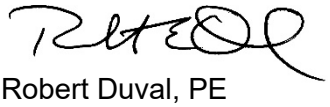
This proposal provides the following mitigation measures to avoid potential spillback from the Fast Food driveway into NH108:

- Additional Grapevine Drive queue storage
- Widened entering roadway
- Left turn pocket into Fast Food and right turn exit to NH108
- Do Not Block signage and markings
- Additional internal signage to Mast Road exit

In summary it is our opinion that the Fast Food use can be safely accommodated without adverse safety impacts at the Grapevine/NH108 driveway.

Please let us know if any additional information is needed in connection with this report.

Respectfully Submitted,
TFMORAN, INC.



Robert Duval, PE
Chief Engineer

APPENDIX A

Trip Generation

Proposed Trip Generation

Internal Capture

Dover Fields [units 2,3&4] + Arbor Woods = APPROVED 2022 Update Trip Generation

TOTAL TRIP GENERATION	Trip Ends		In	Out	Internal Capture %*	Internal Trips In	Internal Trips Out	External Trips In	External Trips Out	External Trips TOTAL
Weekday AM Peak Hour Adjacent Street	178		86	92	16%	13	15	72	77	149
Weekday PM Peak Hour Adjacent Street	187		100	87	32%	33	28	67	59	126
Weekend SAT Peak Hour of Generator	295		148	147	20%	30	30	118	117	235

Dover Fields [2,3&4] + Arbor Woods = APPROVED 2022 Update Trip Composition

	External In	External Out	Non Pass-By % Total	Non Pass-By # In		Non Pass-By # Out	Pass-By % Total	Pass-By # In		Pass-By # Out
AM	72	77		42		50		30		27
PM	67	59		43		37		24		22
SAT	118	117		73		72		45		45

APPROVED Trip Generation - Dover Fields [Unit 4] 2022 Update - FAST FOOD

Based on ITE Trip Generation 11th Edition

ITE LUC 934 - Fast-food with Drive-through Window: 2,500 sf

Time Period	Variable: SF X	Variable: SF Rate	Rate/ Eq Used	Trip Ends	Directional Split In	Directional Split Out	Directional Distribution In	Directional Distribution Out	Internal Capture %	Internal Trips In	Internal Trips Out	External Trips In	External Trips Out	External Trips TOTAL
Weekday AM Peak Hour Adjacent Street	2.5	44.61	Rate	112	51%	49%	57	55	16%	9	9	48	46	94
Weekday PM Peak Hour Adjacent Street	2.5	33.03	Rate	83	52%	48%	43	40	32%	14	13	29	27	56
Weekend SAT Peak Hour of Generator	2.5	55.25	Rate	138	51%	49%	70	68	20%	14	14	56	54	110

Description of LUC 934: This land use includes any fast-food restaurant with a drive-through window. This type of restaurant is characterized by a large drive-through and large carry-out clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours a day) and high turnover rates for eat-in customers. The restaurant does not provide table service. A patron generally orders from a menu board and pays before receiving the meal. A typical duration of stay for an eat-in patron is less than 30 minutes.

APPROVED Trip Composition - Dover Fields [Unit 4] 2022 Update - FAST FOOD

ITE LUC 934 - Fast-food with Drive-through Window: 2,500 sf

	Trips IN	Trips OUT	Primary % In	Primary # In	Primary % Out	Primary # Out	Pass-By* % In	Pass-By* # In	Pass-By* % Out	Pass-By* # Out
AM	48	46	50%	*24*	50%	*23*	50%	24	50%	23
PM	29	27	45%	13	45%	12	55%	16	55%	15
SAT	56	54	50%	*28*	50%	27	50%	28	50%	27

* Table: Vehicle Pass-By Rates by Land Use, ITE Trip Generation Manual, 11th Edition, LUC 934 Fast-Food Restaurant with Drive-Through Window, Weekday AM Peak Period, Weekday PM Peak Period, used AM rate for SAT

Proposed Trip Generation - Dover Fields [Unit 4] 2024 Update

Based on ITE Trip Generation 11th Edition

ITE LUC 934 - Fast-food with Drive-through Window: 3,700 sf (38 seats)

Time Period	Variable: SF X	Variable: SF Rate	Rate/ Eq Used	Trip Ends	Directional Split In	Directional Split Out	Directional Distribution In	Directional Distribution Out	Internal Capture %	Internal Trips In	Internal Trips Out	External Trips In	External Trips Out	External Trips TOTAL
Weekday AM Peak Hour Adjacent Street	3.7	44.61	Rate	165	51%	49%	84	81	12%	10	10	74	71	145
Weekday PM Peak Hour Adjacent Street	3.7	33.03	Rate	122	52%	48%	63	59	27%	17	16	46	43	89
Weekend SAT Peak Hour of Generator	3.7	55.25	Rate	204	51%	49%	104	100	17%	18	17	86	83	169

Description of LUC 934: This land use includes any fast-food restaurant with a drive-through window. This type of restaurant is characterized by a large drive-through and large carry-out clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours a day) and high turnover rates for eat-in customers. The restaurant does not provide table service. A patron generally orders from a menu board and pays before receiving the meal. A typical duration of stay for an eat-in patron is less than 30 minutes.

Proposed Trip Composition - Dover Fields [Unit 4] 2024 Update

ITE LUC 934 - Fast-food with Drive-through Window: 3,700 sf (38 seats)

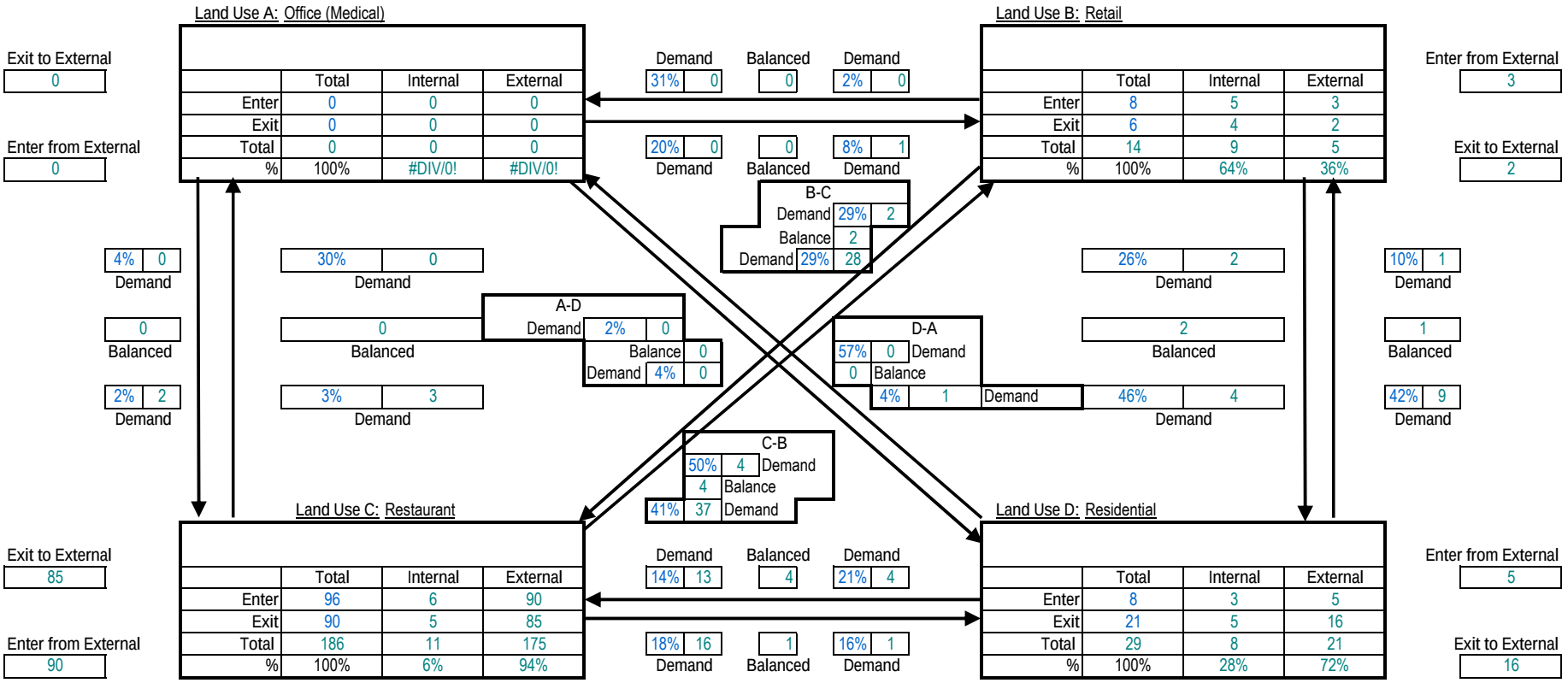
	Trips IN	Trips OUT	Primary % In	Primary # In	Primary % Out	Primary # Out	Pass-By* % In	Pass-By* # In	Pass-By* % Out	Pass-By* # Out
AM	74	71	50%	*37*	50%	*35*	50%	37	50%	36
PM	46	43	45%	21	45%	19	55%	25	55%	24
SAT	86	83	50%	*43*	50%	41	50%	43	50%	42

* Table: Vehicle Pass-By Rates by Land Use, ITE Trip Generation Manual, 11th Edition, LUC 934 Fast-Food Restaurant with Drive-Through Window, Weekday AM Peak Period, Weekday PM Peak Period, used AM rate for SAT

Multi-Use Development: Fast -Food 2024 UPDATE - Dover Fields & Arbor Woods
Internal Capture Summary per NCHRP Report 684

Analyst: TFMoran Inc.
Date: 10/3/2024
Project: 46001.32
Time Period: AM Peak Hour
Phase: Full Build

	LUC	Enter	Exit
Land Use A: Office (Medical)	-	0	0
Land Use B: Retail	492/912	8	6
Land Use C: Restaurant	930/934	96	90
Land Use D: Residential	221/252	8	21
		112	117 Total



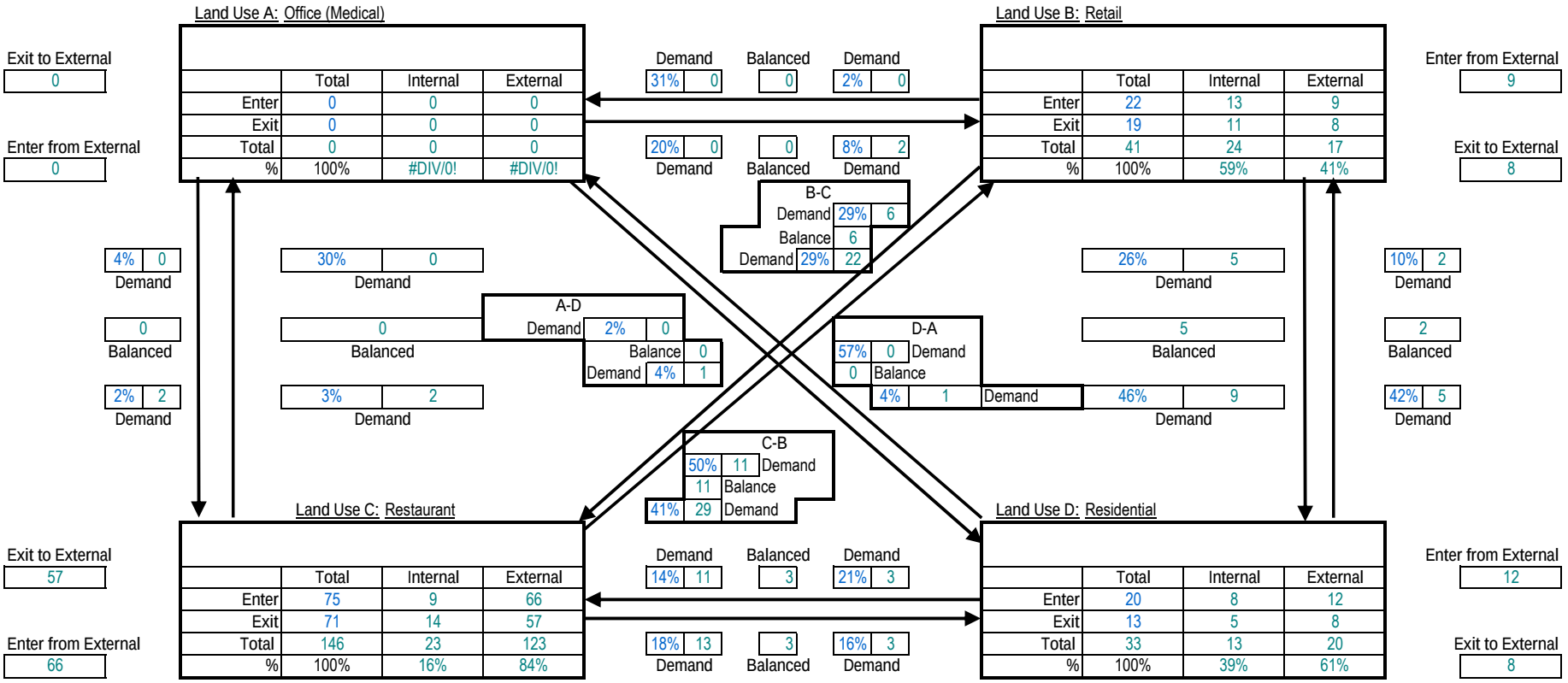
Net External Trips for Multi-Use Development					
	Land Use A	Land Use B	Land Use C	Land Use D	Total
Enter	0	3	90	5	98
Exit	0	2	85	16	103
Total	0	5	175	21	201
Single-Use Trip Gen. Est.	0	14	186	29	229

Internal Capture: 12%

Multi-Use Development: Fast -Food 2024 UPDATE - Dover Fields & Arbor Woods
Internal Capture Summary per NCHRP Report 684

Analyst: TFMoran Inc.
Date: 10/3/2024
Project: 46001.32
Time Period: PM Peak Hour
Phase: Full Build

	LUC	Enter	Exit
Land Use A: Office (Medical)	-	0	0
Land Use B: Retail	492/912	22	19
Land Use C: Restaurant	930/934	75	71
Land Use D: Residential	221/252	20	13
		117	103 Total



Land Use A: Office (Medical)	Total	Internal	External
Enter	0	0	0
Exit	0	0	0
Total	0	0	0
%	100%	#DIV/0!	#DIV/0!

Land Use B: Retail	Total	Internal	External
Enter	22	13	9
Exit	19	11	8
Total	41	24	17
%	100%	59%	41%

Land Use C: Restaurant	Total	Internal	External
Enter	75	9	66
Exit	71	14	57
Total	146	23	123
%	100%	16%	84%

Land Use D: Residential	Total	Internal	External
Enter	20	8	12
Exit	13	5	8
Total	33	13	20
%	100%	39%	61%

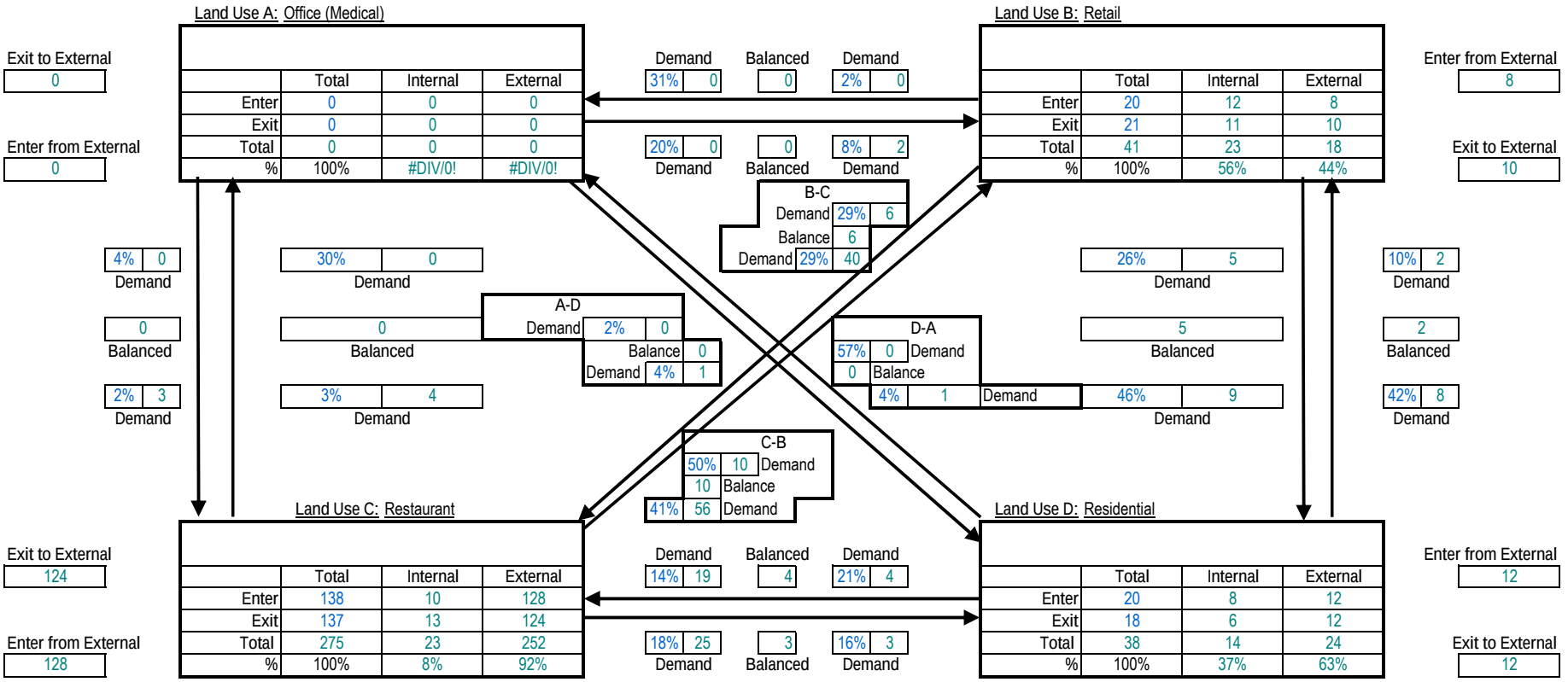
Net External Trips for Multi-Use Development					
	Land Use A	Land Use B	Land Use C	Land Use D	Total
Enter	0	9	66	12	87
Exit	0	8	57	8	73
Total	0	17	123	20	160
Single-Use Trip Gen. Est.	0	41	146	33	220

Internal Capture: 27%

Multi-Use Development: Fast -Food 2024 UPDATE - Dover Fields & Arbor Woods
Internal Capture Summary per NCHRP Report 684

Analyst: TFMoran Inc.
Date: 10/3/2024
Project: 46001.32
Time Period: SAT Peak Hour
Phase: Full Build

	LUC	Enter	Exit
Land Use A: Office (Medical)	-	0	0
Land Use B: Retail	492/912	20	21
Land Use C: Restaurant	930/934	138	137
Land Use D: Residential	221/252	20	18
		178	176 Total



Net External Trips for Multi-Use Development						
	Land Use A	Land Use B	Land Use C	Land Use D	Total	
Enter	0	8	128	12	148	
Exit	0	10	124	12	146	
Total	0	18	252	24	294	Internal Capture
Single-Use Trip Gen. Est.	0	41	275	38	354	17%

APPENDIX B

Distribution (AM/PM/SAT)

FAST FOOD

PRIMARY TRIPS - Dover Fields 2024 FF Update

PRORATA PER 2024 COUNTS

			In	Out
		AM Totals	37	35

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR	15%		6	0
WBL	12%		4	0
WBT			0	0
WBR			0	0
NBL		13%	0	5
NBT			0	0
NBR		18%	0	6
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		13%	0	4
EBT		5%	0	2
EBR			0	0
WBL	6%		2	0
WBT	4%		1	0
WBR			0	0
NBL			0	0
NBT		37%	0	13
NBR		3%	0	1
SBL			0	0
SBT	43%		16	0
SBR	8%		3	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		40%	0	14
EBT			0	0
EBR		15%	0	5
WBL			0	0
WBT			0	0
WBR			0	0
NBL	24%		9	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR	49%		18	0

Grapevine Dr at FF

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBT			0	0
EBR	27%		10	0
WBL	73%		27	0
WBT			0	0
NBL		31%	0	11
NBR		55%	0	19

NH108 at FF Right-Out

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBR		15%	0	5
NBT	24%		9	0
SBT		15%	0	5

PASS-BY TRIPS - Dover Fields 2024 FF Update

PRORATA PER 2024 COUNTS

			In	Out
		AM Totals	37	36

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT	-7%		-3	0
EBR	7%		3	0
WBL	9%		3	0
WBT	-9%		-3	0
WBR			0	0
NBL		9%	0	3
NBT			0	0
NBR		7%	0	3
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR			0	0
WBL			0	0
WBT			0	0
WBR			0	0
NBL			0	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR			0	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		38%	0	14
EBT			0	0
EBR		23%	0	8
WBL			0	0
WBT			0	0
WBR			0	0
NBL	38%		14	0
NBT	-38%		-14	0
NBR			0	0
SBL			0	0
SBT	-46%		-17	0
SBR	46%		17	0

Grapevine Dr at FF

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBT			0	0
EBR	16%		6	0
WBL	84%		31	0
WBT			0	0
NBL		16%	0	6
NBR		61%	0	22

NH108 at FF Right-Out

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBR		23%	0	8
NBT			0	0
SBT		-23%	0	-8

TOTAL: Site Trip Assignment

TOTAL

	AM TOTAL
	145

Mast Road at Grapevine Dr/Stonewall Dr

Movement	
EBL	0
EBT	-3
EBR	9
WBL	7
WBT	-3
WBR	0
NBL	8
NBT	0
NBR	9
SBL	0
SBT	0
SBR	0

Mast Road at Durham Road (NH108)

Movement	
EBL	4
EBT	2
EBR	0
WBL	2
WBT	1
WBR	0
NBL	0
NBT	13
NBR	1
SBL	0
SBT	16
SBR	3

Durham Road at Grapevine Dr/Deefield Dr

Movement	
EBL	28
EBT	0
EBR	13
WBL	0
WBT	0
WBR	0
NBL	23
NBT	-14
NBR	0
SBL	0
SBT	-17
SBR	35

Grapevine Dr at FF

Movement	
EBT	0
EBR	16
WBL	58
WBT	0
NBL	17
NBR	41

NH108 at FF Right-Out

Movement	
EBR	13
NBT	9
SBT	-3

FAST FOOD

PRIMARY TRIPS - Dover Fields 2024 FF Update

PRORATA PER 2024 COUNTS

			In	Out
		PM Totals	21	19

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR	5%		1	0
WBL	5%		1	0
WBT			0	0
WBR			0	0
NBL		7%	0	1
NBT			0	0
NBR		15%	0	3
SBL			0	0
SBT	1%		0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		9%	0	2
EBT		6%	0	1
EBR			0	0
WBL	7%		*2*	0
WBT	2%		0	0
WBR			0	0
NBL			0	0
NBT		44%	0	*9*
NBR		7%	0	1
SBL			0	0
SBT	57%		12	0
SBR	3%		1	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		51%	0	10
EBT		1%	0	0
EBR		13%	0	*3*
WBL			0	0
WBT			0	0
WBR			0	0
NBL	25%		5	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR	64%		*14*	0

Grapevine Dr at FF

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBT			0	0
EBR	10%		2	0
WBL	89%		19	0
WBT			0	0
NBL		22%	0	4
NBR		65%	0	*13*

NH108 at FF Right-Out

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBR		13%	0	2
NBT	25%		5	0
SBT		13%	0	*3*

PASS-BY TRIPS - Dover Fields 2024 FF Update

PRORATA PER 2024 COUNTS

			In	Out
		PM Totals	25	24

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT	-7%		-2	0
EBR	7%		2	0
WBL	7%		2	0
WBT	-7%		-2	0
WBR			0	0
NBL		7%	0	2
NBT			0	0
NBR		7%	0	2
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR			0	0
WBL			0	0
WBT			0	0
WBR			0	0
NBL			0	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR			0	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		42%	0	10
EBT			0	0
EBR		22%	0	5
WBL			0	0
WBT			0	0
WBR			0	0
NBL	42%		*10*	0
NBT	-42%		*-10*	0
NBR			0	0
SBL			0	0
SBT	-44%		-11	0
SBR	44%		11	0

Grapevine Dr at FF

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBT			0	0
EBR	14%		4	0
WBL	86%		*21*	0
WBT			0	0
NBL		14%	0	*4*
NBR		64%	0	15

NH108 at FF Right-Out

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBR		22%	0	5
NBT			0	0
SBT		-22%	0	-5

TOTAL: Site Trip Assignment

TOTAL

	PM TOTAL
	89

Mast Road at Grapevine Dr/Stonewall Dr

Movement	
EBL	0
EBT	-2
EBR	3
WBL	3
WBT	-2
WBR	0
NBL	3
NBT	0
NBR	5
SBL	0
SBT	0
SBR	0

Mast Road at Durham Road (NH108)

Movement	
EBL	2
EBT	1
EBR	0
WBL	2
WBT	0
WBR	0
NBL	0
NBT	9
NBR	1
SBL	0
SBT	12
SBR	1

Durham Road at Grapevine Dr/Deefield Dr

Movement	
EBL	20
EBT	0
EBR	8
WBL	0
WBT	0
WBR	0
NBL	15
NBT	-10
NBR	0
SBL	0
SBT	-11
SBR	25

Grapevine Dr at FF

Movement	
EBT	0
EBR	6
WBL	40
WBT	0
NBL	8
NBR	28

NH108 at FF Right-Out

Movement	
EBR	7
NBT	5
SBT	-2

FAST FOOD

PRIMARY TRIPS - Dover Fields 2024 Update

PRORATA PER 2024 COUNTS

	In	Out
SAT Totals	43	41

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR	11%		5	0
WBL	7%		3	0
WBT			0	0
WBR			0	0
NBL		10%	0	4
NBT		1%	0	0
NBR		16%	0	7
SBL			0	0
SBT	1%		0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		11%	0	5
EBT		5%	0	2
EBR			0	0
WBL	8%		3	0
WBT	2%		1	0
WBR			0	0
NBL			0	0
NBT		42%	0	17
NBR		4%	0	2
SBL			0	0
SBT	53%		23	0
SBR	5%		2	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		46%	0	19
EBT		1%	0	0
EBR		13%	0	6
WBL			0	0
WBT			0	0
WBR			0	0
NBL	20%		9	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR	62%		26	0

Grapevine Dr at FF

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBT			0	0
EBR	18%		8	0
WBL	82%		35	0
WBT			0	0
NBL		26%	0	11
NBR		60%	0	25

NH108 at FF Right-Out

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBR		13%	0	5
NBT	20%		9	0
SBT		13%	0	6

PASS-BY TRIPS - Dover Fields 2024 Update

PRORATA PER 2024 COUNTS

	In	Out
SAT Totals	43	42

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR			0	0
WBL			0	0
WBT			0	0
WBR			0	0
NBL			0	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR			0	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		34%	0	14
EBT			0	0
EBR		20%	0	8
WBL			0	0
WBT			0	0
WBR			0	0
NBL	34%		15	0
NBT	-34%		-15	0
NBR			0	0
SBL			0	0
SBT	-39%		-17	0
SBR	39%		17	0

Grapevine Dr at FF

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBT			0	0
EBR	27%		12	0
WBL	73%		31	0
WBT			0	0
NBL		27%	0	11
NBR		54%	0	23

NH108 at FF Right-Out

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBR		20%	0	8
NBT			0	0
SBT		-20%	0	-8

TOTAL: Site Trip Assignment

TOTAL

	SAT TOTAL
	169

Mast Road at Grapevine Dr/Stonewall Dr

Movement	TOTAL
EBL	0
EBT	-5
EBR	10
WBL	9
WBT	-6
WBR	0
NBL	10
NBT	0
NBR	12
SBL	0
SBT	0
SBR	0

Mast Road at Durham Road (NH108)

Movement	TOTAL
EBL	5
EBT	2
EBR	0
WBL	3
WBT	1
WBR	0
NBL	0
NBT	17
NBR	2
SBL	0
SBT	23
SBR	2

Durham Road at Grapevine Dr/Deefield Dr

Movement	TOTAL
EBL	33
EBT	0
EBR	14
WBL	0
WBT	0
WBR	0
NBL	24
NBT	-15
NBR	0
SBL	0
SBT	-17
SBR	43

Grapevine Dr at FF

Movement	TOTAL
EBT	0
EBR	20
WBL	66
WBT	0
NBL	22
NBR	48

NH108 at FF Right-Out

Movement	TOTAL
EBR	13
NBT	9
SBT	-2

APPENDIX C

Volume Adjustments

Seasonal Adjustment

Covid Factor

Heavy Vehicles

Year 2019 Monthly Data

Group 4 Averages: Urban Highways

Month	ADT	For WARRANTS Adjustment to Average	For Traffic Adjustment to Peak
January	11,431	1.12	1.23
February	11,848	1.08	1.18
March	12,141	1.06	1.15
April	12,860	1.00	1.09
May	13,551	0.95	1.03
June	13,785	0.93	1.02
July	13,942	0.92	1.01
August	14,016	0.92	1.00
September	13,379	0.96	1.05
October	13,339	0.96	1.05
November	12,265	1.05	1.14
December	11,496	1.12	1.22

Average ADT: 12,838
Peak ADT: 14,016

Covid Factor Calculation - NHDOT Methodology

NHDOT currently has a preference on the methodology to be used in determining any required adjustments to traffic counts collected during the pandemic (to compare the month of counts in 2019 and in the pandemic year of

1 Select the appropriate permanent count station.
2 Scroll to the "Volume Count" section and select on one of the eyeball icons.
3 A new screen will open and select the "Compare Count" tab at the bottom.
4 A new window will open and scroll to the "Date Range Selection" section and type in or select the Count Date Range. The first day of the month, to the last day of the month should be selected.
5 Since NHDOT prefers that separate pandemic adjustment factors be used for the different time periods, select Monday through Friday for the weekday daily, weekday AM peak hour, and weekday PM peak hour comparisons. A separate analysis would be performed in determining the Saturday daily and Saturday midday peak hour
6 Click the "Add Count" button and the time period and days of the week selected will appear on the graph to the right.
7 For the pre-pandemic volume comparison, go to the "Count Date Range" and select the same month and days but use 2019 as the pre-pandemic base. For this project, the 2019 month (first day to last day) would be used.
8 Click the "Add Count" button and the 2019 data selected will appear on the graph to the right.
9 Go to the top of the screen and select the "Grid" tab.
10 Hourly and daily ("Total") data will then be shown for the time periods selected for comparison. To determine the weekday AM peak hour comparison, review the highest peak hour traffic volumes from the counts between 7-9 AM (weekday PM = 4-6 PM, Saturday midday = 11 AM-1 PM).

Strafford County - Group 4 Highway Station (Minor Arterial)						
		Dover Point Road	JULY			
02125001	Dover	South of Middlebrook Road				
			2024	2019	change	
	7AM - 9AM	AM	722	711	1.5%	
	3PM - 6PM	PM	1045	1017	2.8%	
	11AM - 2PM	SAT	822	776	5.9%	

Rockingham County - Group 4 Highway Station (Minor Arterial)						
		US1 (Lafayette Road)	JULY			
82197076	Hampton	South of Ramp to NH101				
			2024	2019	change	
	7AM - 9AM	AM	1450	1465	-1.0%	
	3PM - 6PM	PM	1781	1755	1.5%	
	11AM - 2PM	SAT	1793	1801	-0.4%	

Merrimack County - Group 4 Highway Station (Minor Arterial)						
		NH28 (Suncook Valley Road)	JULY			
02089001	Chichester	North of Bear Hill Road				
			2024	2019	change	
	7AM - 9AM	AM	1036	1125	-7.9%	
	3PM - 6PM	PM	1251	1352	-7.5%	
	11AM - 2PM	SAT	1300	1508	-13.8%	

	Average	
Covid Adjust	-2.5%	AM
	-1.1%	PM
	-2.8%	SAT

Station 02125001: Dover

Count 1

N/A For Aggregated Counts

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	33	19	14	15	81	0.0
1:00-2:00	10	6	6	6	28	-46.6
2:00-3:00	7	7	6	5	25	-41.3
3:00-4:00	7	10	11	13	41	-7.1
4:00-5:00	21	19	35	37	112	0.9
5:00-6:00	42	57	73	83	255	5.2
6:00-7:00	84	101	123	125	433	0.5
7:00-8:00	150	176	195	181	702	-0.7
8:00-9:00	168	186	184	184	722	-1.9
9:00-10:00	175	168	167	176	686	-0.3
10:00-11:00	167	167	181	176	691	-6.4
11:00-12:00	178	184	197	198	757	3.9
12:00-13:00	212	217	206	200	835	8.1
13:00-14:00	194	199	201	209	803	-4.0
14:00-15:00	226	237	252	244	959	9.2
15:00-16:00	232	251	260	244	987	1.4
16:00-17:00	258	282	254	251	1045	-3.0
17:00-18:00	268	281	242	213	1004	-13.3
18:00-19:00	192	178	160	149	679	-13.2
19:00-20:00	146	137	124	110	517	-16.7
20:00-21:00	114	108	99	86	407	-11.1
21:00-22:00	79	73	64	56	272	-6.1
22:00-23:00	55	57	49	40	201	1.5
23:00-24:00	39	36	34	29	138	-2.9
Total			Counts = 14		12380	-2.8

Count Criteria

Local Id	02125001
Start Date	07/01/2024
End Date	07/31/2024
Aggregation	AVG
Include Abnormal	False
Selected Days	Tuesday Wednesday Thursday

Count 2

N/A For Aggregated Counts

INTERVAL:60-MIN

Time	60-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	-	-	-	-	99	20.0
1:00-2:00	-	-	-	-	37	-19.5
2:00-3:00	-	-	-	-	26	-37.5
3:00-4:00	-	-	-	-	29	-41.1
4:00-5:00	-	-	-	-	79	-33.7
5:00-6:00	-	-	-	-	226	-6.8
6:00-7:00	-	-	-	-	476	9.9
7:00-8:00	-	-	-	-	711	0.6
8:00-9:00	-	-	-	-	701	-4.9
9:00-10:00	-	-	-	-	652	-5.4
10:00-11:00	-	-	-	-	659	-11.2
11:00-12:00	-	-	-	-	717	-1.5
12:00-13:00	-	-	-	-	759	-1.4
13:00-14:00	-	-	-	-	754	-10.3
14:00-15:00	-	-	-	-	821	-6.4
15:00-16:00	-	-	-	-	934	-4.1
16:00-17:00	-	-	-	-	992	-8.2
17:00-18:00	-	-	-	-	1017	-12.0
18:00-19:00	-	-	-	-	700	-10.2
19:00-20:00	-	-	-	-	545	-11.4
20:00-21:00	-	-	-	-	448	-1.6
21:00-22:00	-	-	-	-	329	12.9
22:00-23:00	-	-	-	-	228	14.1
23:00-24:00	-	-	-	-	144	1.4
Total			Counts = 14		12083	-5.3

Count Criteria

Local Id	02125001
Start Date	07/01/2019
End Date	07/31/2019
Aggregation	AVG
Include Abnormal	False
Selected Days	Tuesday Wednesday Thursday

Count 1

N/A For Aggregated Counts

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	38	23	18	16	95	-6.1
1:00-2:00	15	13	16	10	54	-13.8
2:00-3:00	10	9	4	6	29	-29.4
3:00-4:00	8	7	6	7	28	-16.4
4:00-5:00	6	12	19	16	53	-10.7
5:00-6:00	13	20	35	33	101	-5.8
6:00-7:00	32	47	59	45	183	-3.2
7:00-8:00	60	75	84	77	296	-9.0
8:00-9:00	85	100	121	129	435	-8.6
9:00-10:00	131	144	173	163	611	-7.9
10:00-11:00	165	176	182	181	704	-10.0
11:00-12:00	186	200	200	183	769	2.6
12:00-13:00	201	197	207	200	805	0.4
13:00-14:00	207	204	215	196	822	-3.0
14:00-15:00	206	206	210	190	812	-1.8
15:00-16:00	199	198	201	188	786	3.2
16:00-17:00	190	189	163	162	704	-5.4
17:00-18:00	185	187	179	149	700	1.0
18:00-19:00	162	150	152	136	600	8.2
19:00-20:00	153	130	120	102	505	-0.4
20:00-21:00	109	98	89	90	386	2.6
21:00-22:00	78	84	76	67	305	-4.8
22:00-23:00	70	51	55	37	213	1.4
23:00-24:00	37	37	34	29	137	3.7
Total			Counts = 4		10133	-2.1

Count Criteria

Local Id	02125001
Start Date	07/01/2024
End Date	07/31/2024
Aggregation	AVG
Include Abnormal	False
Selected Days	Saturday

Count 2

N/A For Aggregated Counts

INTERVAL:60-MIN

Time	60-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	-	-	-	-	132	26.6
1:00-2:00	-	-	-	-	56	-10.2
2:00-3:00	-	-	-	-	44	12.0
3:00-4:00	-	-	-	-	22	-40.0
4:00-5:00	-	-	-	-	38	-43.3
5:00-6:00	-	-	-	-	86	-21.8
6:00-7:00	-	-	-	-	201	6.2
7:00-8:00	-	-	-	-	336	3.6
8:00-9:00	-	-	-	-	461	-2.8
9:00-10:00	-	-	-	-	635	-4.0
10:00-11:00	-	-	-	-	728	-6.6
11:00-12:00	-	-	-	-	776	3.5
12:00-13:00	-	-	-	-	763	-5.0
13:00-14:00	-	-	-	-	731	-14.7
14:00-15:00	-	-	-	-	738	-11.4
15:00-16:00	-	-	-	-	721	-5.4
16:00-17:00	-	-	-	-	704	-5.4
17:00-18:00	-	-	-	-	688	-0.7
18:00-19:00	-	-	-	-	568	2.7
19:00-20:00	-	-	-	-	487	-4.0
20:00-21:00	-	-	-	-	405	7.4
21:00-22:00	-	-	-	-	354	10.1
22:00-23:00	-	-	-	-	229	8.7
23:00-24:00	-	-	-	-	160	19.2
Total			Counts = 4		10063	-2.8

Count Criteria

Local Id	02125001
Start Date	07/01/2019
End Date	07/31/2019
Aggregation	AVG
Include Abnormal	False
Selected Days	Saturday

Station 82197076: Hampton

Count 1

N/A For Aggregated Counts

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	31	30	24	19	104	-60.4
1:00-2:00	20	16	16	18	70	-49.5
2:00-3:00	12	14	12	14	52	-36.2
3:00-4:00	14	15	16	16	61	-3.2
4:00-5:00	23	42	53	67	185	58.7
5:00-6:00	89	102	136	153	480	54.0
6:00-7:00	168	191	256	247	862	56.2
7:00-8:00	239	287	334	366	1226	45.2
8:00-9:00	336	356	369	389	1450	11.4
9:00-10:00	357	358	377	395	1487	-13.5
10:00-11:00	380	395	398	403	1576	-10.7
11:00-12:00	399	409	423	431	1662	-8.2
12:00-13:00	432	427	429	415	1703	-1.3
13:00-14:00	419	428	426	406	1679	-8.0
14:00-15:00	418	409	439	435	1701	-8.1
15:00-16:00	442	436	441	429	1748	-7.2
16:00-17:00	437	444	458	442	1781	-0.3
17:00-18:00	452	457	439	409	1757	-0.1
18:00-19:00	399	367	353	340	1459	-11.7
19:00-20:00	335	313	286	280	1214	-19.3
20:00-21:00	272	246	235	210	963	-23.5
21:00-22:00	201	177	150	138	666	-21.6
22:00-23:00	143	136	111	94	484	-11.1
23:00-24:00	82	73	60	50	265	-32.8
Total			Counts = 14		24635	-3.5

Count Criteria

Local Id	82197076
Start Date	07/01/2024
End Date	07/31/2024
Aggregation	AVG
Include Abnormal	False
Selected Days	Tuesday Wednesday Thursday

Count 2

N/A For Aggregated Counts

INTERVAL:60-MIN

Time	60-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	-	-	-	-	126	-42.5
1:00-2:00	-	-	-	-	70	-49.5
2:00-3:00	-	-	-	-	50	-40.0
3:00-4:00	-	-	-	-	63	0.0
4:00-5:00	-	-	-	-	185	58.7
5:00-6:00	-	-	-	-	553	66.8
6:00-7:00	-	-	-	-	944	64.4
7:00-8:00	-	-	-	-	1307	51.2
8:00-9:00	-	-	-	-	1465	12.4
9:00-10:00	-	-	-	-	1439	-16.7
10:00-11:00	-	-	-	-	1535	-13.4
11:00-12:00	-	-	-	-	1622	-10.7
12:00-13:00	-	-	-	-	1616	-6.5
13:00-14:00	-	-	-	-	1583	-13.9
14:00-15:00	-	-	-	-	1628	-12.4
15:00-16:00	-	-	-	-	1655	-12.6
16:00-17:00	-	-	-	-	1739	-2.7
17:00-18:00	-	-	-	-	1755	-0.2
18:00-19:00	-	-	-	-	1484	-10.0
19:00-20:00	-	-	-	-	1168	-23.1
20:00-21:00	-	-	-	-	943	-25.6
21:00-22:00	-	-	-	-	704	-16.1
22:00-23:00	-	-	-	-	517	-4.5
23:00-24:00	-	-	-	-	294	-22.6
Total			Counts = 14		24445	-4.3

Count Criteria

Local Id	82197076
Start Date	07/01/2019
End Date	07/31/2019
Aggregation	AVG
Include Abnormal	False
Selected Days	Tuesday Wednesday Thursday

Count 1

N/A For Aggregated Counts

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	56	46	49	39	190	-2.1
1:00-2:00	31	26	29	22	108	-7.1
2:00-3:00	22	27	20	14	83	10.1
3:00-4:00	10	13	11	12	46	-31.2
4:00-5:00	15	22	26	28	91	-10.4
5:00-6:00	49	47	63	76	235	-16.0
6:00-7:00	74	96	122	118	410	-16.6
7:00-8:00	125	158	185	222	690	-11.5
8:00-9:00	218	259	286	314	1077	-18.3
9:00-10:00	332	381	383	411	1507	-12.2
10:00-11:00	415	394	419	423	1651	-6.1
11:00-12:00	421	447	443	461	1772	-1.8
12:00-13:00	433	452	454	434	1773	2.7
13:00-14:00	432	440	459	462	1793	-1.4
14:00-15:00	433	464	444	449	1790	-3.0
15:00-16:00	454	447	450	430	1781	-5.3
16:00-17:00	434	437	421	434	1726	-3.5
17:00-18:00	441	420	409	386	1656	-6.0
18:00-19:00	378	376	382	346	1482	-10.2
19:00-20:00	353	345	316	319	1333	-10.0
20:00-21:00	301	293	275	261	1130	-7.7
21:00-22:00	222	221	182	158	783	-5.5
22:00-23:00	164	143	114	96	517	-4.5
23:00-24:00	93	88	78	69	328	-11.8
Total			Counts = 4		23952	-6.3

Count Criteria

Local Id	82197076
Start Date	07/01/2024
End Date	07/31/2024
Aggregation	AVG
Include Abnormal	False
Selected Days	Saturday

Count 2

N/A For Aggregated Counts

INTERVAL:60-MIN

Time	60-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	-	-	-	-	213	9.3
1:00-2:00	-	-	-	-	123	5.9
2:00-3:00	-	-	-	-	77	2.6
3:00-4:00	-	-	-	-	67	6.2
4:00-5:00	-	-	-	-	98	-3.0
5:00-6:00	-	-	-	-	234	-16.5
6:00-7:00	-	-	-	-	471	-2.7
7:00-8:00	-	-	-	-	845	8.8
8:00-9:00	-	-	-	-	1319	1.9
9:00-10:00	-	-	-	-	1668	-2.0
10:00-11:00	-	-	-	-	1737	-1.0
11:00-12:00	-	-	-	-	1756	-2.8
12:00-13:00	-	-	-	-	1801	4.3
13:00-14:00	-	-	-	-	1764	-3.1
14:00-15:00	-	-	-	-	1692	-8.6
15:00-16:00	-	-	-	-	1694	-10.3
16:00-17:00	-	-	-	-	1634	-8.9
17:00-18:00	-	-	-	-	1628	-7.7
18:00-19:00	-	-	-	-	1576	-4.0
19:00-20:00	-	-	-	-	1337	-9.7
20:00-21:00	-	-	-	-	1109	-9.5
21:00-22:00	-	-	-	-	872	5.3
22:00-23:00	-	-	-	-	592	9.0
23:00-24:00	-	-	-	-	338	-8.8
Total			Counts = 4		24645	-3.5

Count Criteria

Local Id	82197076
Start Date	07/01/2019
End Date	07/31/2019
Aggregation	AVG
Include Abnormal	False
Selected Days	Saturday

Station 02089001: Chichester

Count 1

N/A For Aggregated Counts

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	11	11	9	9	40	10.5
1:00-2:00	9	7	6	8	30	-9.5
2:00-3:00	9	10	12	7	38	2.7
3:00-4:00	10	14	18	18	60	-16.8
4:00-5:00	23	39	46	47	155	-3.8
5:00-6:00	76	109	139	147	471	-5.6
6:00-7:00	158	202	218	215	793	-4.7
7:00-8:00	249	273	275	239	1036	-3.0
8:00-9:00	224	229	220	203	876	-8.5
9:00-10:00	199	199	205	200	803	-4.0
10:00-11:00	201	209	212	218	840	3.5
11:00-12:00	222	221	224	218	885	-2.2
12:00-13:00	232	234	229	223	918	-3.6
13:00-14:00	230	229	230	228	917	-2.6
14:00-15:00	239	242	254	254	989	-2.2
15:00-16:00	273	283	308	296	1160	-9.4
16:00-17:00	304	317	313	317	1251	-8.0
17:00-18:00	302	301	295	258	1156	-7.7
18:00-19:00	223	212	185	164	784	-4.1
19:00-20:00	160	144	133	122	559	-13.5
20:00-21:00	125	112	107	91	435	-18.4
21:00-22:00	87	80	63	48	278	-15.3
22:00-23:00	55	47	39	32	173	11.6
23:00-24:00	37	32	24	18	111	-15.0
Total			Counts = 14		14758	-5.6

Count Criteria

Local Id	02089001
Start Date	07/01/2024
End Date	07/31/2024
Aggregation	AVG
Include Abnormal	False
Selected Days	Tuesday Wednesday Thursday

Count 2

N/A For Aggregated Counts

INTERVAL:60-MIN

Time	60-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	-	-	-	-	81	76.9
1:00-2:00	-	-	-	-	33	0.0
2:00-3:00	-	-	-	-	45	19.5
3:00-4:00	-	-	-	-	66	-7.3
4:00-5:00	-	-	-	-	170	5.4
5:00-6:00	-	-	-	-	514	3.2
6:00-7:00	-	-	-	-	877	5.4
7:00-8:00	-	-	-	-	1125	5.2
8:00-9:00	-	-	-	-	906	-5.2
9:00-10:00	-	-	-	-	833	-0.4
10:00-11:00	-	-	-	-	859	5.7
11:00-12:00	-	-	-	-	900	-0.6
12:00-13:00	-	-	-	-	940	-1.3
13:00-14:00	-	-	-	-	931	-1.1
14:00-15:00	-	-	-	-	1004	-0.7
15:00-16:00	-	-	-	-	1191	-6.8
16:00-17:00	-	-	-	-	1352	-0.2
17:00-18:00	-	-	-	-	1300	4.1
18:00-19:00	-	-	-	-	887	8.2
19:00-20:00	-	-	-	-	627	-2.1
20:00-21:00	-	-	-	-	497	-5.1
21:00-22:00	-	-	-	-	330	1.8
22:00-23:00	-	-	-	-	218	34.4
23:00-24:00	-	-	-	-	129	0.0
Total			Counts = 14		15815	1.3

Count Criteria

Local Id	02089001
Start Date	07/01/2019
End Date	07/31/2019
Aggregation	AVG
Include Abnormal	False
Selected Days	Tuesday Wednesday Thursday

Count 1

N/A For Aggregated Counts

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	21	15	16	17	69	62.9
1:00-2:00	12	10	6	9	37	11.4
2:00-3:00	10	9	9	6	34	-8.5
3:00-4:00	8	8	12	12	40	-55.9
4:00-5:00	14	15	13	21	63	-87.5
5:00-6:00	25	32	45	42	144	-110.3
6:00-7:00	55	65	74	83	277	-100.0
7:00-8:00	100	119	141	148	508	-71.1
8:00-9:00	158	198	226	245	827	-14.3
9:00-10:00	248	268	292	282	1090	26.4
10:00-11:00	322	308	331	333	1294	45.9
11:00-12:00	313	324	331	329	1297	35.6
12:00-13:00	320	342	323	315	1300	30.9
13:00-14:00	314	305	307	277	1203	24.4
14:00-15:00	281	267	270	263	1081	6.7
15:00-16:00	281	263	260	246	1050	-19.4
16:00-17:00	257	235	233	244	969	-33.2
17:00-18:00	234	230	210	202	876	-35.0
18:00-19:00	187	183	168	164	702	-15.1
19:00-20:00	164	152	140	132	588	-8.5
20:00-21:00	121	128	119	115	483	-8.0
21:00-22:00	113	101	98	84	396	20.0
22:00-23:00	72	68	54	44	238	42.9
23:00-24:00	40	43	36	30	149	14.4
Total			Counts = 4		14715	-5.9

Count Criteria

Local Id	02089001
Start Date	07/01/2024
End Date	07/31/2024
Aggregation	AVG
Include Abnormal	False
Selected Days	Saturday

Count 2

N/A For Aggregated Counts

INTERVAL:60-MIN

Time	60-min Interval 1st	2nd	3rd	4th	Hourly Count	% Diff
0:00-1:00	-	-	-	-	103	96.4
1:00-2:00	-	-	-	-	45	30.8
2:00-3:00	-	-	-	-	43	15.0
3:00-4:00	-	-	-	-	38	-60.6
4:00-5:00	-	-	-	-	70	-78.8
5:00-6:00	-	-	-	-	161	-102.3
6:00-7:00	-	-	-	-	296	-94.9
7:00-8:00	-	-	-	-	566	-61.4
8:00-9:00	-	-	-	-	888	-7.2
9:00-10:00	-	-	-	-	1170	33.3
10:00-11:00	-	-	-	-	1432	55.4
11:00-12:00	-	-	-	-	1508	50.0
12:00-13:00	-	-	-	-	1376	36.4
13:00-14:00	-	-	-	-	1283	30.8
14:00-15:00	-	-	-	-	1202	17.3
15:00-16:00	-	-	-	-	1102	-14.6
16:00-17:00	-	-	-	-	969	-33.2
17:00-18:00	-	-	-	-	918	-30.5
18:00-19:00	-	-	-	-	732	-11.0
19:00-20:00	-	-	-	-	658	2.8
20:00-21:00	-	-	-	-	529	1.1
21:00-22:00	-	-	-	-	433	28.8
22:00-23:00	-	-	-	-	273	55.7
23:00-24:00	-	-	-	-	158	20.2
Total			Counts = 4		15953	2.2

Count Criteria

Local Id	02089001
Start Date	07/01/2019
End Date	07/31/2019
Aggregation	AVG
Include Abnormal	False
Selected Days	Saturday

Background Traffic Volumes - HEAVY VEHICLE CALCULATIONS

NOTE: For calculated HV weighted average per NHDOT Synchro Checklist, Heavy vehicle percentages >8% are
Volumes with strikethrough are not included in weighted average

AM Peak Hour	Existing 2024 (Raw data) [07/25/2024]	AM HEAVY	AM %Heavy	CALCULATED WEIGHTED AVERAGE	*If 0% calculated, use 2%*
3. Mast Road at Grapevine Dr/Stonewall Dr	8:00 AM				
Movement					
EBL	2	0	0%		
EBT	64	~~16~~	~~25%~~	7%	*7%*
EBR	12	1	8%		
WBL	9	0	0%		
WBT	78	~~17~~	~~22%~~	0%	*2%*
WBR	11	~~6~~	~~55%~~		
NBL	8	~~2~~	~~25%~~		
NBT	0	0	-	0%	*2%*
NBR	11	0	0%		
SBL	7	~~4~~	~~57%~~		
SBT	0	0	-	0%	*2%*
SBR	1	0	0%		
6. Mast Road at Durham Road (NH108)	8:00 AM				
Movement					
EBL	51	~~7~~	~~14%~~		
EBT	22	~~2~~	~~9%~~	0%	*2%*
EBR	10	~~6~~	~~60%~~		
WBL	58	1	2%		
WBT	27	2	7%	2%	*2%*
WBR	61	0	0%		
NBL	15	~~12~~	~~80%~~		
NBT	371	7	2%	2%	*2%*
NBR	35	0	0%		
SBL	53	0	0%		
SBT	387	13	3%	3%	*3%*
SBR	60	~~9~~	~~15%~~		
9. Durham Road at Grapevine Dr/Deefield Dr	7:30 AM				
Movement					
EBL	25	2	8%		
EBT	0	0	-	7%	*7%*
EBR	18	1	6%		
WBL	1	0	0%		
WBT	0	0	-	0%	*2%*
WBR	16	0	0%		
NBL	19	~~2~~	~~11%~~		
NBT	382	17	4%	4%	*4%*
NBR	1	0	0%		
SBL	4	0	0%		
SBT	444	21	5%	5%	*5%*
SBR	38	2	5%		
12. Grapevine Drive at FF	(CALCULATED)				
Movement					
EBT	43	3	7%	7%	*7%*
EBR					
WBL				7%	*7%*
WBT	57	4	7%		
NBL				-	*2%*
NBR					
13. NH108 at FF	(CALCULATED)				
Movement					
EBR					
NBT	402	19	5%	4%	*4%*
SBT	463	22	5%	5%	*5%*

e not to be averaged into the approach value

PM Peak Hour	Existing 2024 (Raw data) [07/25/2024]	PM HEAVY	PM %Heavy	CALCULATED WEIGHTED AVERAGE	*If 0% calculated , use 2%*
3. Mast Road at Grapevine Dr/Stonewall Dr	3:00 PM				
Movement					
EBL	5	~~1~~	~~20%~~		
EBT	84	~~9~~	~~11%~~	0%	*2%*
EBR	12	0	0%		
WBL	12	0	0%		
WBT	55	~~12~~	~~22%~~	0%	*2%*
WBR	27	~~6~~	~~22%~~		
NBL	17	0	0%		
NBT	0	0	-	0%	*2%*
NBR	33	0	0%		
SBL	47	~~7~~	~~15%~~		
SBT	4	0	0%	0%	*2%*
SBR	9	0	0%		
6. Mast Road at Durham Road (NH108)	4:45 PM				
Movement					
EBL	55	0	0%		
EBT	37	0	0%	0%	*2%*
EBR	4	~~1~~	~~25%~~		
WBL	69	0	0%		
WBT	21	0	0%	0%	*2%*
WBR	98	0	0%		
NBL	2	0	0%		
NBT	582	8	1%	1%	*1%*
NBR	90	0	0%		
SBL	77	0	0%		
SBT	522	2	0%	0%	*2%*
SBR	33	~~9~~	~~27%~~		
9. Durham Road at Grapevine Dr/Deefield Dr	4:45 PM				
Movement					
EBL	114	0	0%		
EBT	2	0	0%	0%	*2%*
EBR	58	0	0%		
WBL	2	0	0%		
WBT	0	0	-	0%	*2%*
WBR	10	~~1~~	~~10%~~		
NBL	59	0	0%		
NBT	510	5	1%	1%	*1%*
NBR	2	0	0%		
SBL	22	0	0%		
SBT	414	2	0%	1%	*1%*
SBR	155	1	1%		
12. Grapevine Drive at FF	(CALCULATED)				
Movement					
EBT	174	0	0%	0%	*2%*
EBR					
WBL				0%	*2%*
WBT	214	1	0%		
NBL				-	*2%*
NBR					
13. NH108 at FF	(CALCULATED)				
Movement					
EBR					
NBT	571	5	1%	1%	*1%*
SBT	474	2	0%	1%	*1%*

SAT Peak Hour	Existing 2024 (Raw data) [07/27/2024]	SAT HEAVY	SAT %Heavy	CALCULATED WEIGHTED AVERAGE	*If 0% calculated , use 2%*
3. Mast Road at Grapevine Dr/Stonewall Dr	11:00 AM				
Movement					
EBL	1	0	0%		
EBT	112	1	1%	1%	*1%*
EBR	21	1	5%		
WBL	13	0	0%		
WBT	142	0	0%	0%	*2%*
WBR	0	0	-		
NBL	20	1	5%		
NBT	3	0	0%	2%	*2%*
NBR	33	0	0%		
SBL	1	0	0%		
SBT	3	0	0%	0%	*2%*
SBR	1	0	0%		
6. Mast Road at Durham Road (NH108)	11:00 AM				
Movement					
EBL	1	0	0%		
EBT	112	1	1%	1%	*1%*
EBR	21	1	5%		
WBL	13	0	0%		
WBT	142	0	0%	0%	*2%*
WBR	0	0	-		
NBL	20	1	5%		
NBT	3	0	0%	2%	*2%*
NBR	33	0	0%		
SBL	1	0	0%		
SBT	3	0	0%	0%	*2%*
SBR	1	0	0%		
9. Durham Road at Grapevine Dr/Deefield Dr	11:45 AM				
Movement					
EBL	1	0	0%		
EBT	112	1	1%	1%	*1%*
EBR	21	1	5%		
WBL	13	0	0%		
WBT	142	0	0%	0%	*2%*
WBR	0	0	-		
NBL	20	1	5%		
NBT	3	0	0%	2%	*2%*
NBR	33	0	0%		
SBL	1	0	0%		
SBT	3	0	0%	0%	*2%*
SBR	1	0	0%		
12. Grapevine Drive at FF	(CALCULATED)				
Movement					
EBT	151	4	3%	3%	*3%*
EBR					
WBL				1%	*1%*
WBT	163	1	1%		
NBL				-	*2%*
NBR					
13. NH108 at FF					
Movement					
EBR					
NBT	375	6	2%	2%	*2%*
SBT	351	6	2%	0%	*2%*

APPENDIX D

Other Developments

Previously Permitted Dover Fields [Units 2,3&4]

Previously Permitted Fast-Food Only [Unit 4]

APPROVED 2022 Update DEVELOPMENT: Dover Fields [Units 2,3&4] + Arbor Woods

PRIMARY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

Entering Trips: based on ProRata,
Exiting Trips: 28% northbound trips directed to Mast Road via signage, 26% to NH108

	In	Out
AM Totals	42	50

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR	9%		4	0
WBL	8%		3	0
WBT			0	0
WBR			0	0
NBL		16%	0	8
NBT			0	0
NBR		54%	0	27
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		45%	0	*22*
EBT		9%	0	5
EBR			0	0
WBL	8%		3	0
WBT	3%		1	0
WBR			0	0
NBL			0	0
NBT		1%	0	1
NBR		0%	0	0
SBL			0	0
SBT	36%		15	0
SBR	5%		2	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		1%	0	1
EBT			0	0
EBR		29%	0	*14*
WBL			0	0
WBT			0	0
WBR			0	0
NBL	39%		*17*	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR	44%		18	0

PASS-BY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

	In	Out
AM Totals	30	27

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT	-8%		-2	0
EBR	8%		2	0
WBL	7%		2	0
WBT	-7%		-2	0
WBR			0	0
NBL		7%	0	2
NBT			0	0
NBR		36%	0	10
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR			0	0
WBL			0	0
WBT			0	0
WBR			0	0
NBL			0	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR			0	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		12%	0	3
EBT			0	0
EBR		45%	0	12
WBL			0	0
WBT			0	0
WBR			0	0
NBL	40%		*12*	0
NBT	-40%		*-12*	0
NBR			0	0
SBL			0	0
SBT	-45%		-14	0
SBR	45%		14	0

TOTAL: Site Trip Assignment

TOTAL

AM TOTAL
149

Mast Road at Grapevine Dr/Stonewall Dr

Movement	
EBL	0
EBT	-2
EBR	6
WBL	5
WBT	-2
WBR	0
NBL	10
NBT	0
NBR	37
SBL	0
SBT	0
SBR	0

Mast Road at Durham Road (NH108)

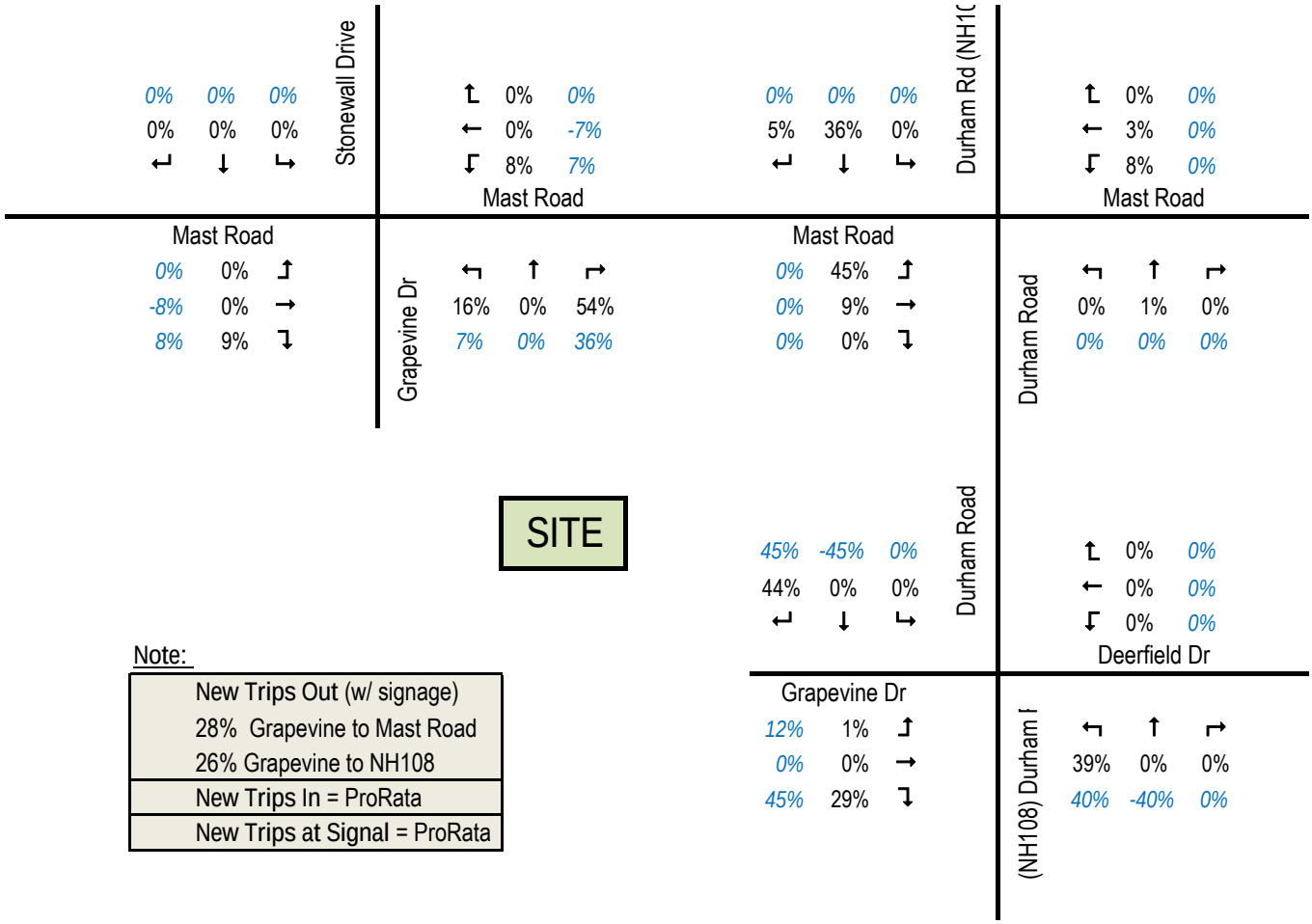
Movement	
EBL	22
EBT	5
EBR	0
WBL	3
WBT	1
WBR	0
NBL	0
NBT	1
NBR	0
SBL	0
SBT	15
SBR	2

Durham Road at Grapevine Dr/Deefield Dr

Movement	
EBL	4
EBT	0
EBR	26
WBL	0
WBT	0
WBR	0
NBL	29
NBT	-12
NBR	0
SBL	0
SBT	-14
SBR	32

Site Trip Distribution
2023 Update - 70/30
AM Peak Hour

XX Primary Site Trips
XX Pass-By Site Trips

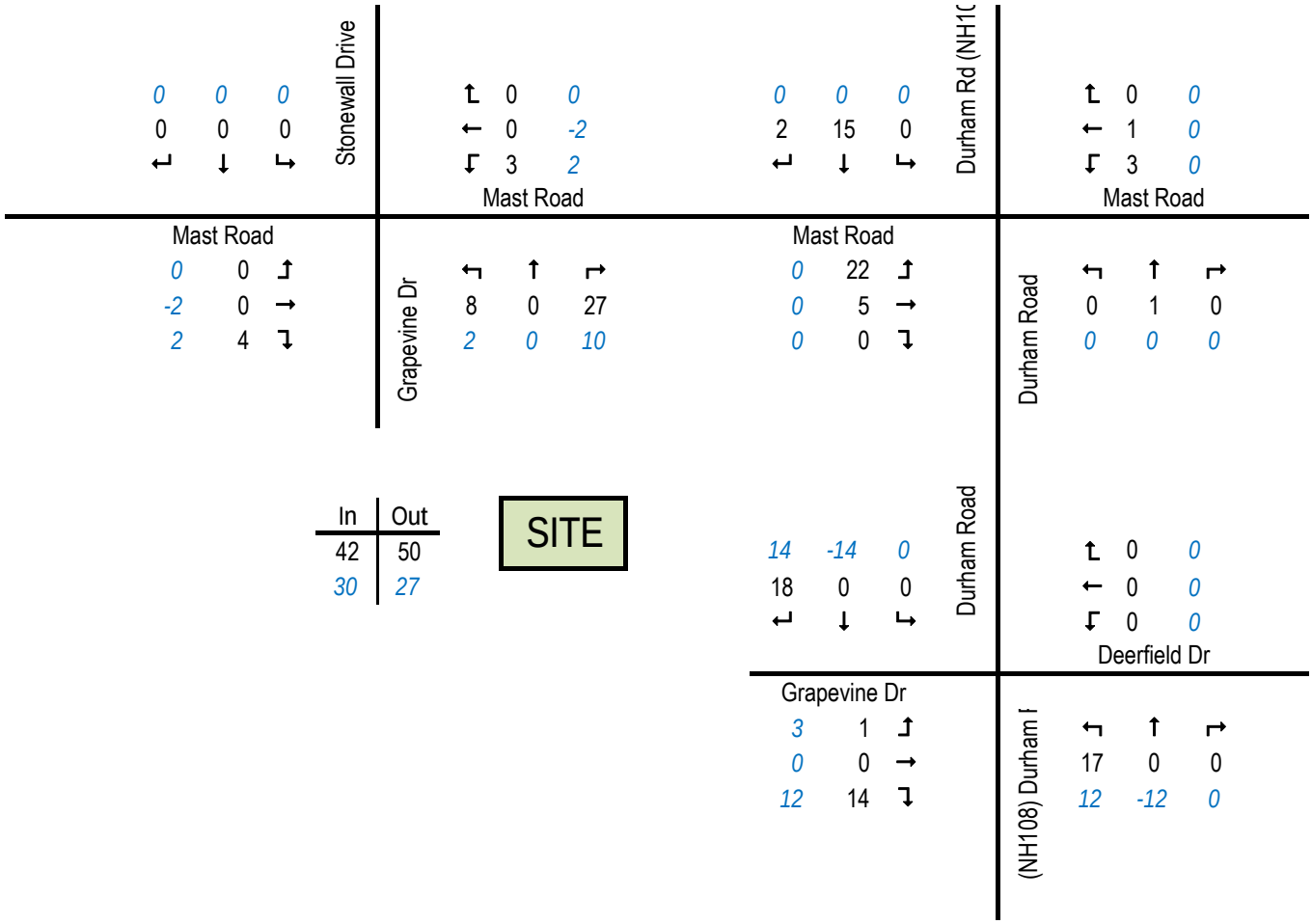


Note:

New Trips Out (w/ signage)
28% Grapevine to Mast Road
26% Grapevine to NH108
New Trips In = ProRata
New Trips at Signal = ProRata

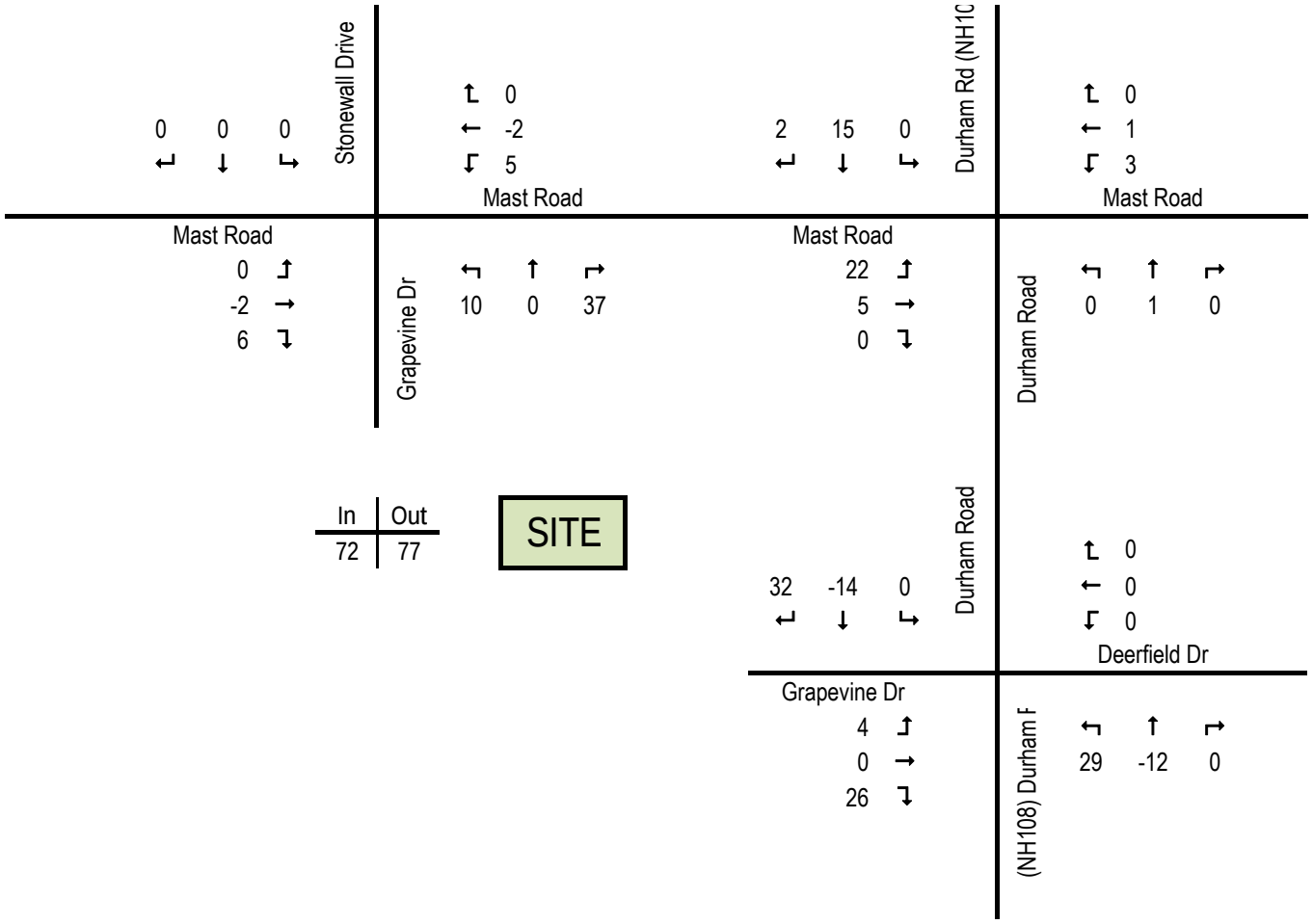
Site Trip Assignments
2023 Update - 70/30
AM Peak Hour

XX Primary Site Trips
XX Pass-By Site Trips



Site Trips
2023 Update - 70/30
AM Peak Hour

XX Site Trips



APPROVED 2022 Update DEVELOPMENT: Dover Fields [Units 2,3&4] + Arbor Woods

PRIMARY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

Entering Trips: based on ProRata,
Exiting Trips: 70% northbound trips directed to Mast Road via signage, 30% to NH108

	In	Out
PM Totals	43	37

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR	5%		2	0
WBL	7%		3	0
WBT			0	0
WBR			0	0
NBL		9%	0	*4*
NBT			0	0
NBR		61%	0	*22*
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		52%	0	19
EBT		9%	0	3
EBR			0	0
WBL	6%		3	0
WBT	2%		1	0
WBR			0	0
NBL			0	0
NBT		5%	0	2
NBR		1%	0	0
SBL			0	0
SBT	38%		16	0
SBR	5%		2	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		6%	0	*2*
EBT			0	0
EBR		24%	0	9
WBL			0	0
WBT			0	0
WBR			0	0
NBL	44%		19	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR	44%		19	0

PASS-BY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

	In	Out
PM Totals	24	22

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT	-5%		-1	0
EBR	5%		1	0
WBL	4%		1	0
WBT	-4%		-1	0
WBR			0	0
NBL		4%	0	1
NBT			0	0
NBR		38%	0	8
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR			0	0
WBL			0	0
WBT			0	0
WBR			0	0
NBL			0	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR			0	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		14%	0	3
EBT			0	0
EBR		44%	0	10
WBL			0	0
WBT			0	0
WBR			0	0
NBL	47%		11	0
NBT	-47%		-11	0
NBR			0	0
SBL			0	0
SBT	-44%		-11	0
SBR	44%		*11*	0

TOTAL: Site Trip Assignment

TOTAL

	PM TOTAL
	126

Mast Road at Grapevine Dr/Stonewall Dr

Movement	
EBL	0
EBT	-1
EBR	3
WBL	4
WBT	-1
WBR	0
NBL	5
NBT	0
NBR	30
SBL	0
SBT	0
SBR	0

Mast Road at Durham Road (NH108)

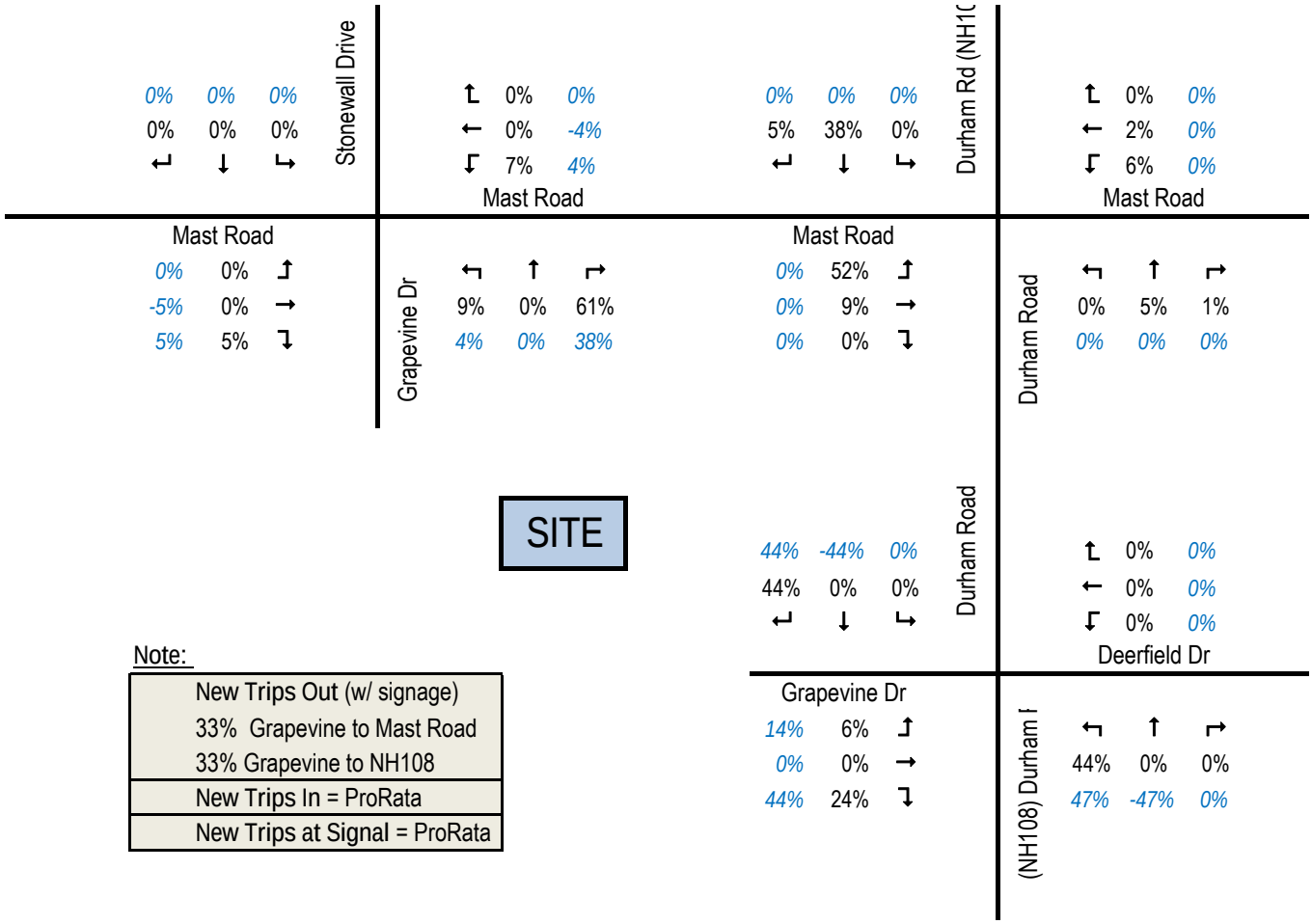
Movement	
EBL	19
EBT	3
EBR	0
WBL	3
WBT	1
WBR	0
NBL	0
NBT	2
NBR	0
SBL	0
SBT	16
SBR	2

Durham Road at Grapevine Dr/Deefield Dr

Movement	
EBL	5
EBT	0
EBR	19
WBL	0
WBT	0
WBR	0
NBL	30
NBT	-11
NBR	0
SBL	0
SBT	-11
SBR	30

Site Trip Distribution
2023 Update - 70/30
PM Peak Hour

XX Site Trips

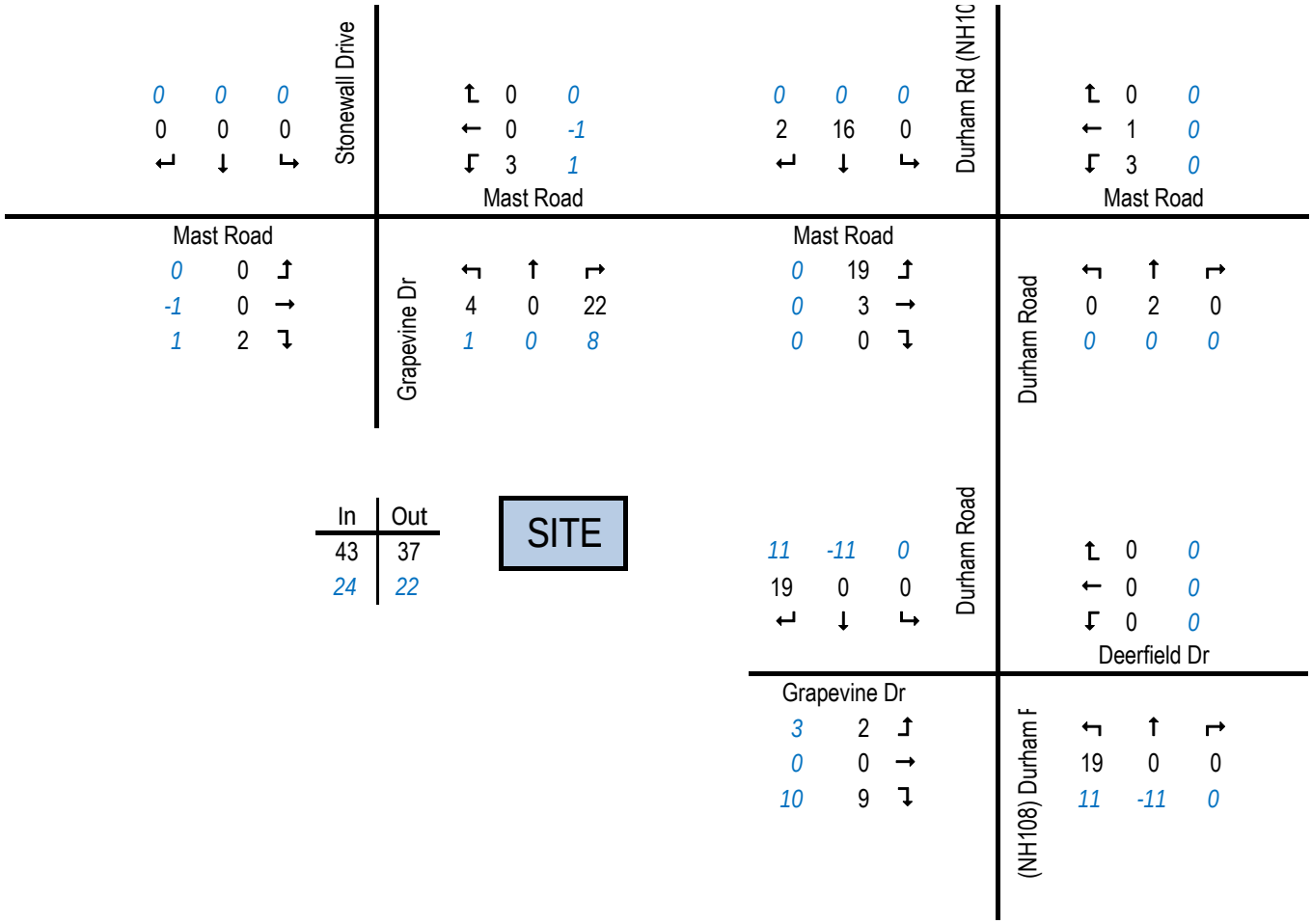


Note:

New Trips Out (w/ signage)
33% Grapevine to Mast Road
33% Grapevine to NH108
New Trips In = ProRata
New Trips at Signal = ProRata

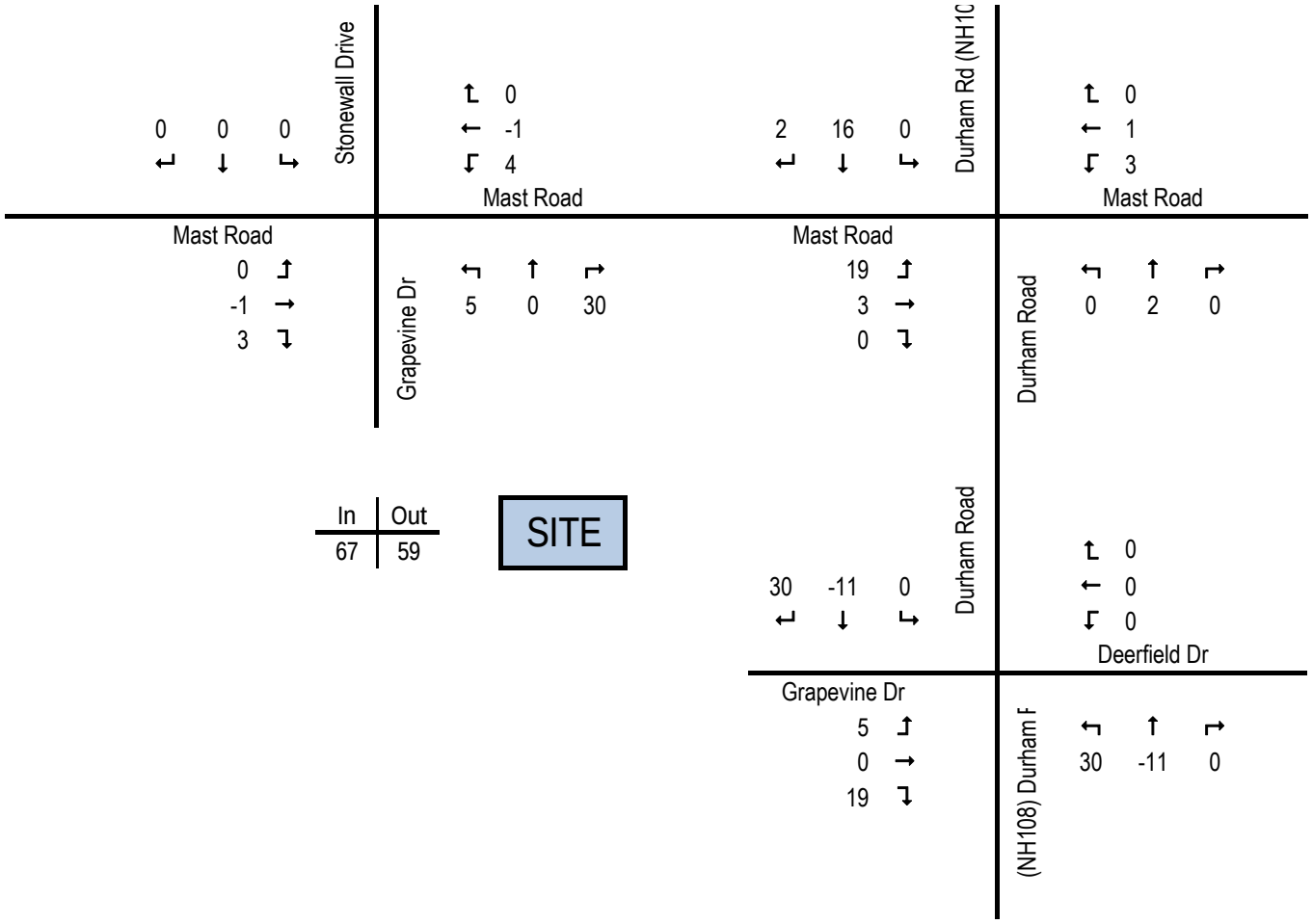
Site Trip Assignments
2023 Update - 70/30
PM Peak Hour

XX Primary Site Trips
XX Pass-By Site Trips



Site Trips
2023 Update - 70/30
PM Peak Hour

XX Site Trips



APPROVED 2022 Update DEVELOPMENT: Dover Fields [Units 2,3&4] + Arbor Woods

PRIMARY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

Entering Trips: based on ProRata,
Exiting Trips: 31% northbound trips directed to Mast Road via signage, 32% to NH108

	In	Out
SAT Totals	73	72

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR	16%		12	0
WBL	7%		5	0
WBT			0	0
WBR			0	0
NBL		12%	0	9
NBT			0	0
NBR		58%	0	42
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		53%	0	38
EBT		5%	0	4
EBR			0	0
WBL	6%		4	0
WBT	2%		1	0
WBR			0	0
NBL			0	0
NBT		6%	0	4
NBR		1%	0	1
SBL			0	0
SBT	38%		28	0
SBR	5%		4	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		7%	0	5
EBT			0	0
EBR		23%	0	*16*
WBL			0	0
WBT			0	0
WBR			0	0
NBL	33%		24	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR	44%		32	0

PASS-BY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

	In	Out
SAT Totals	45	45

.

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT	-17%		-7	0
EBR	17%		7	0
WBL	17%		8	0
WBT	-17%		-8	0
WBR			0	0
NBL		17%	0	7
NBT			0	0
NBR		42%	0	19
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR			0	0
WBL			0	0
WBT			0	0
WBR			0	0
NBL			0	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR			0	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		11%	0	5
EBT			0	0
EBR		31%	0	14
WBL			0	0
WBT			0	0
WBR			0	0
NBL	35%		16	0
NBT	-35%		-16	0
NBR			0	0
SBL			0	0
SBT	-31%		-14	0
SBR	31%		14	0

TOTAL: Site Trip Assignment

TOTAL

	SAT TOTAL
	235

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Movement	
EBL	0
EBT	-7
EBR	19
WBL	13
WBT	-8
WBR	0
NBL	16
NBT	0
NBR	61
SBL	0
SBT	0
SBR	0

Mast Road at Durham Road (NH108)

Movement	
EBL	38
EBT	4
EBR	0
WBL	4
WBT	1
WBR	0
NBL	0
NBT	4
NBR	1
SBL	0
SBT	28
SBR	4

Durham Road at Grapevine Dr/Deefield Dr

Movement	
EBL	10
EBT	0
EBR	30
WBL	0
WBT	0
WBR	0
NBL	40
NBT	-16
NBR	0
SBL	0
SBT	-14
SBR	46

Site Trip Distribution
2023 Update - 70/30
SAT Peak Hour

XX Primary Site Trips
XX Pass-By Site Trips

Stonewall Drive

0%	*0%*	*0%*
0%	0%	0%

Mast Road

0%	*0%*	
0%	*-17%*	
7%	*17%*	

Durham Rd (NH1C

0%	*0%*	*0%*
5%	38%	0%

Mast Road

0%	*0%*	
2%	*0%*	
6%	*0%*	

Mast Road

0%	0%	
-17%	0%	
17%	16%	

Grapevine Dr

	12%	0%	58%
	17%	*0%*	*42%*

Mast Road

0%	53%	
0%	5%	
0%	0%	

Durham Road

	0%	6%	1%
	0%	*0%*	*0%*

SITE

Durham Road

31%	*-31%*	*0%*
44%	0%	0%

Deerfield Dr

0%	*0%*	
0%	*0%*	
0%	*0%*	

Grapevine Dr

11%	7%	
0%	0%	
31%	23%	

(NH108) Durham I

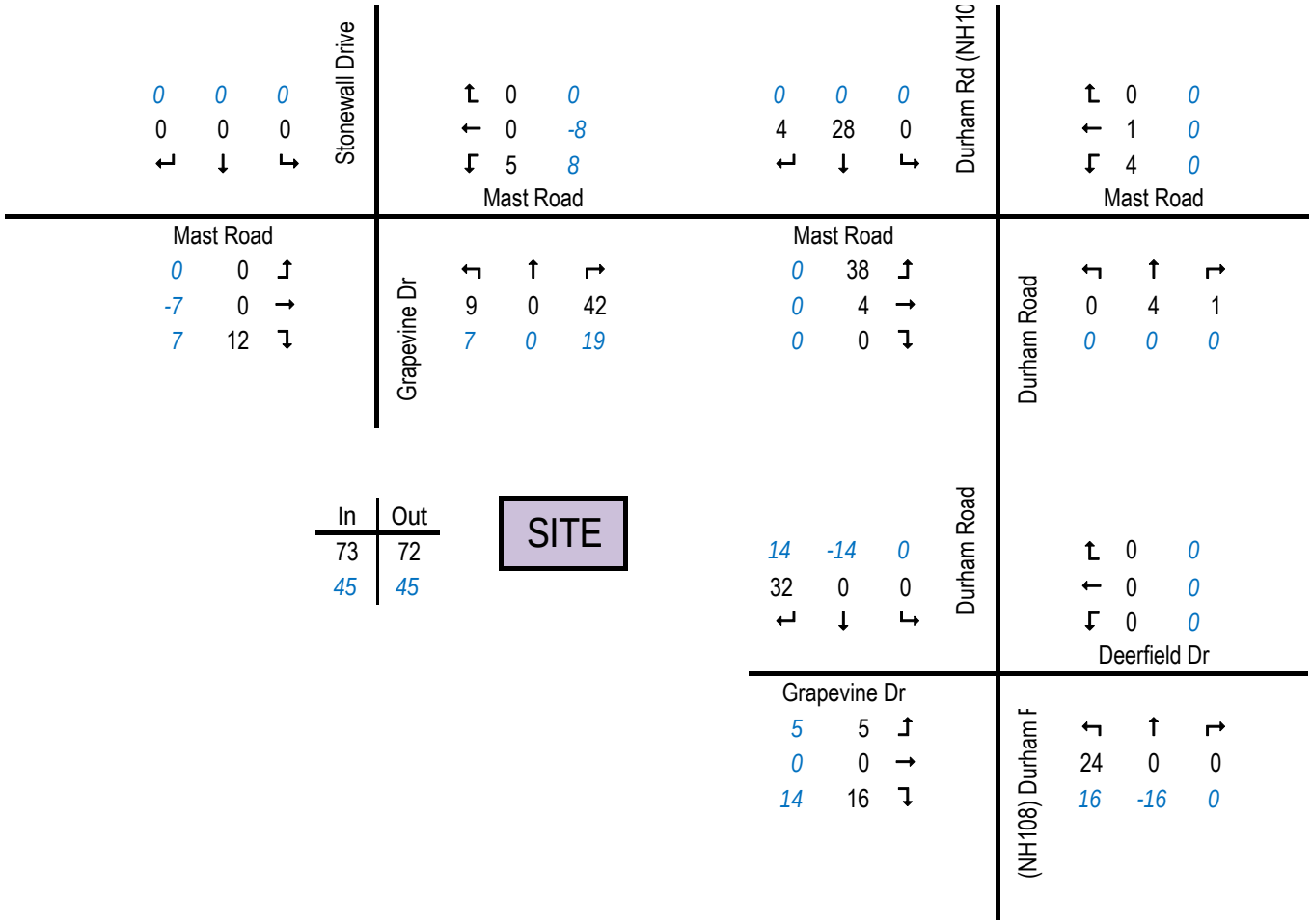
	33%	0%	0%
	35%	*-35%*	*0%*

Note:

New Trips Out (w/ signage)
31% Grapevine to Mast Road
32% Grapevine to NH108
New Trips In = ProRata
New Trips at Signal = ProRata

Site Trip Assignments
2023 Update - 70/30
SAT Peak Hour

XX Site Trips

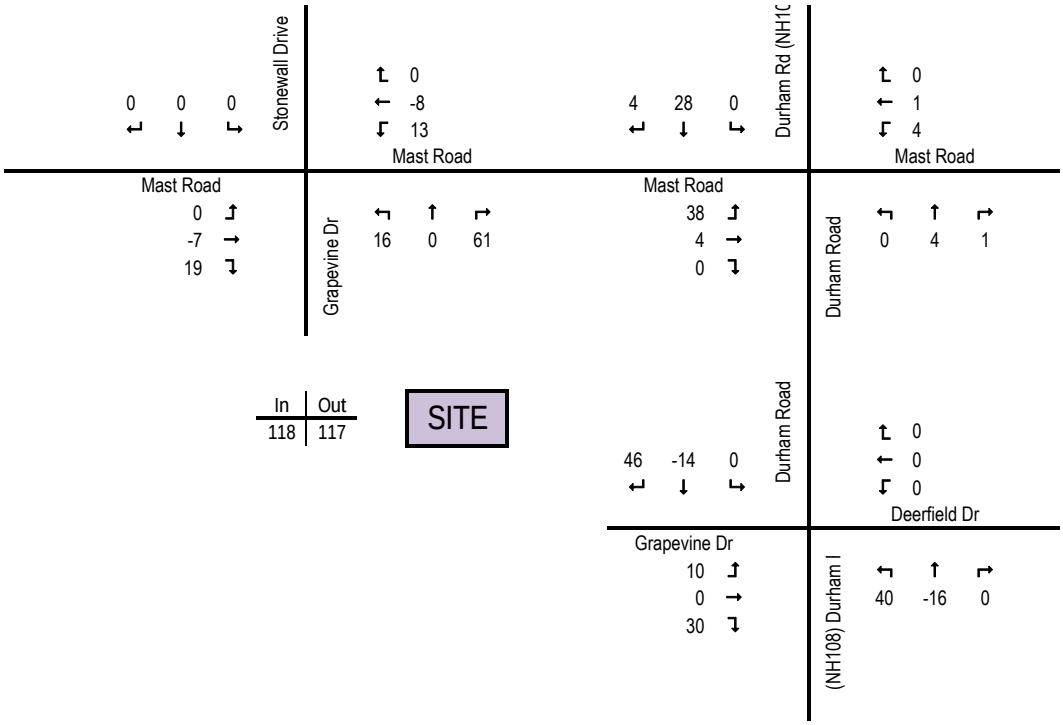


In	Out
73	72
45	45

SITE

Site Trips
2023 Update - 70/30
SAT Peak Hour

XX Site Trips



APPROVED 2022 Update DEVELOPMENT: Dover Fields [Unit 4] - FF

PRIMARY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

Entering Trips: based on ProRata,
Exiting Trips: 28% northbound trips directed to Mast Road via signage, 26% to NH108

	In	Out
AM Totals	24	23

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR	9%		2	0
WBL	8%		2	0
WBT			0	0
WBR			0	0
NBL		16%	0	4
NBT			0	0
NBR		54%	0	12
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		45%	0	10
EBT		9%	0	2
EBR			0	0
WBL	8%		2	0
WBT	3%		1	0
WBR			0	0
NBL			0	0
NBT		1%	0	0
NBR		0%	0	0
SBL			0	0
SBT	36%		9	0
SBR	5%		1	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		1%	0	0
EBT			0	0
EBR		29%	0	7
WBL			0	0
WBT			0	0
WBR			0	0
NBL	39%		9	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR	44%		11	0

PASS-BY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

	In	Out
AM Totals	24	23

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT	-8%		-2	0
EBR	8%		2	0
WBL	7%		2	0
WBT	-7%		-2	0
WBR			0	0
NBL		7%	0	2
NBT			0	0
NBR		36%	0	8
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR			0	0
WBL			0	0
WBT			0	0
WBR			0	0
NBL			0	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR			0	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		12%	0	3
EBT			0	0
EBR		45%	0	10
WBL			0	0
WBT			0	0
WBR			0	0
NBL	40%		9	0
NBT	-40%		-9	0
NBR			0	0
SBL			0	0
SBT	-45%		-11	0
SBR	45%		11	0

TOTAL: Site Trip Assignment

TOTAL

AM TOTAL
94

Mast Road at Grapevine Dr/Stonewall Dr

Movement	
EBL	0
EBT	-2
EBR	4
WBL	4
WBT	-2
WBR	0
NBL	6
NBT	0
NBR	20
SBL	0
SBT	0
SBR	0

Mast Road at Durham Road (NH108)

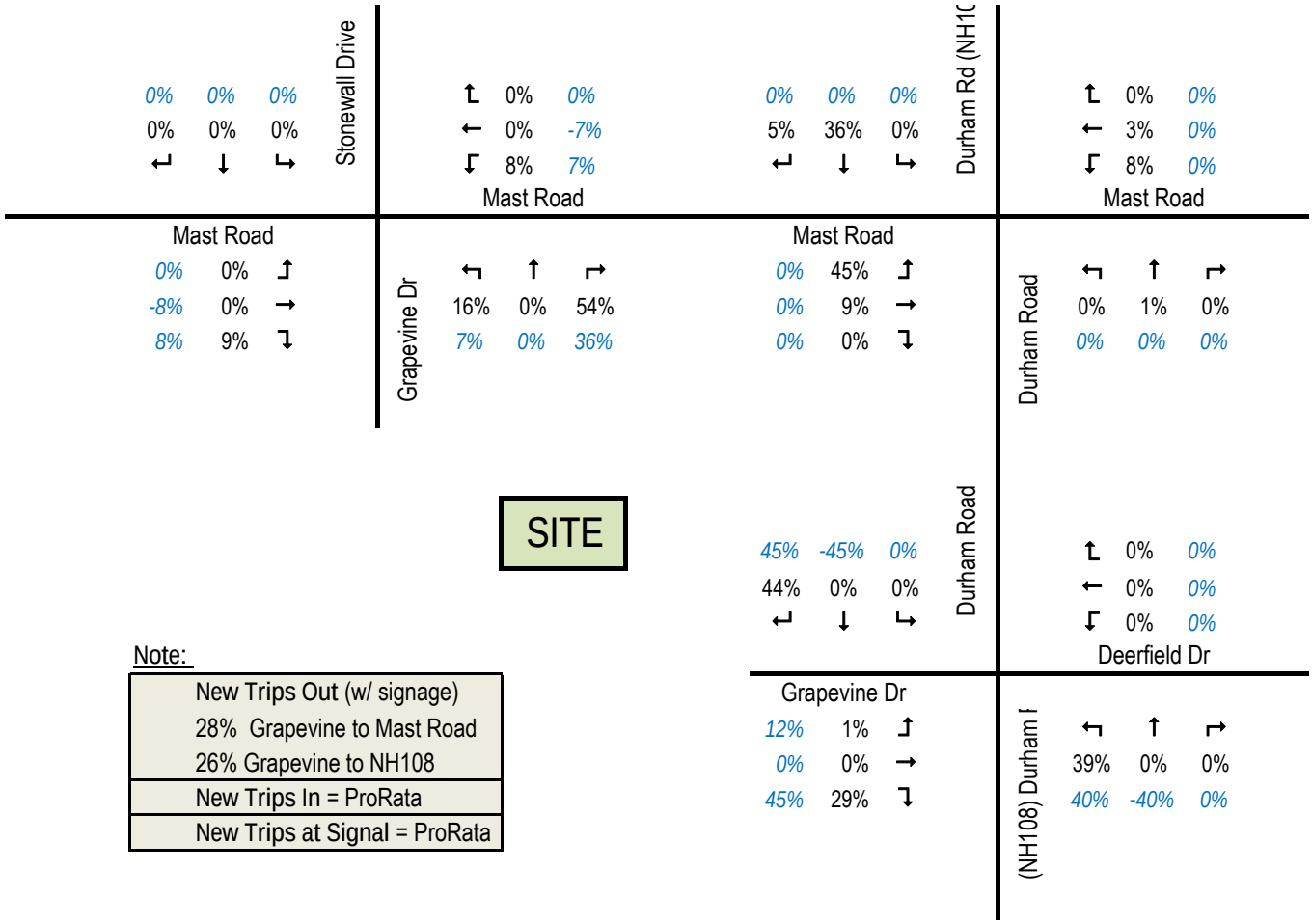
Movement	
EBL	10
EBT	2
EBR	0
WBL	2
WBT	1
WBR	0
NBL	0
NBT	0
NBR	0
SBL	0
SBT	9
SBR	1

Durham Road at Grapevine Dr/Deefield Dr

Movement	
EBL	3
EBT	0
EBR	17
WBL	0
WBT	0
WBR	0
NBL	18
NBT	-9
NBR	0
SBL	0
SBT	-11
SBR	22

APPROVED FF: Site Trip Distribution
2023 Update - 70/30
AM Peak Hour

XX Primary Site Trips
XX Pass-By Site Trips

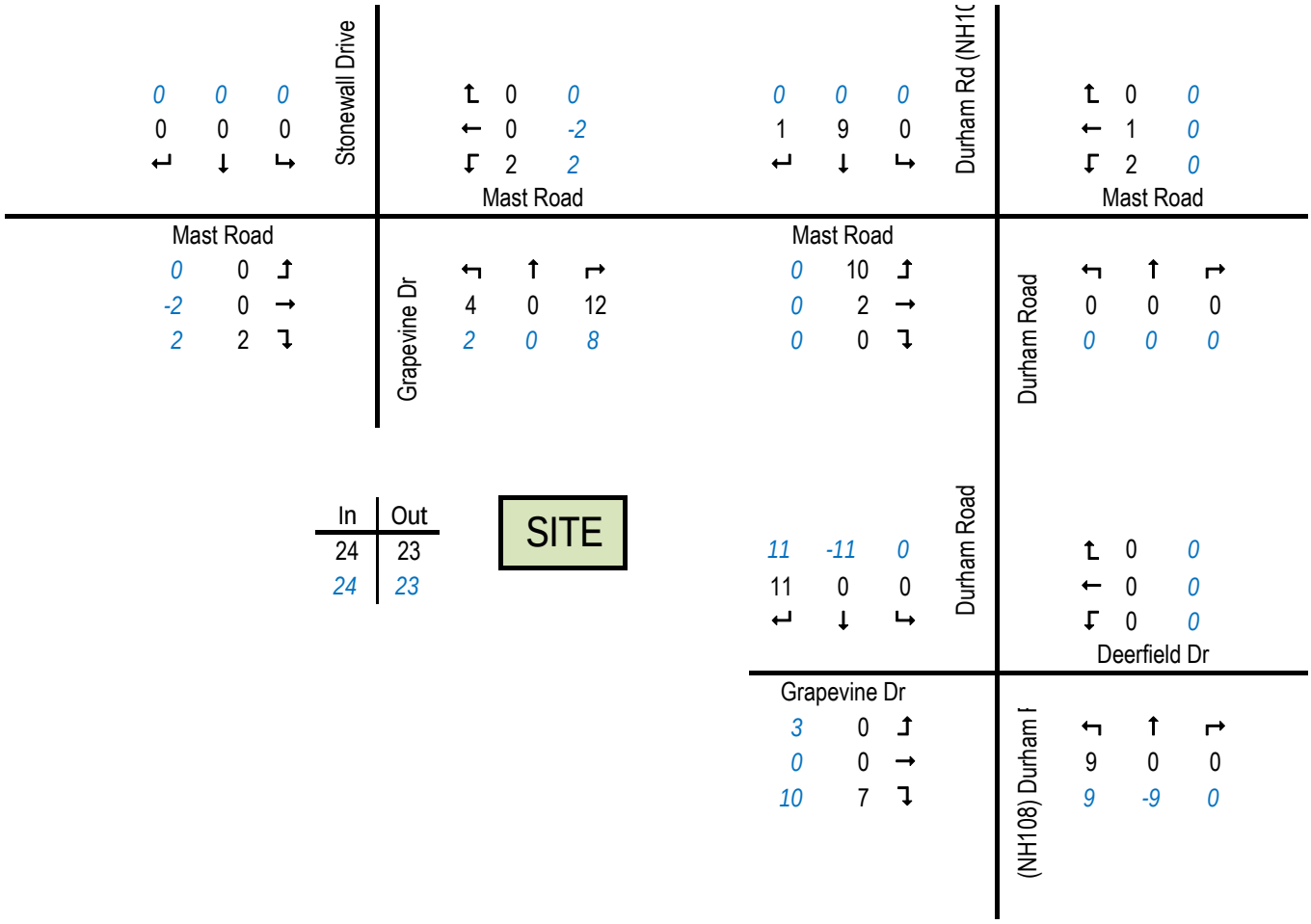


Note:

New Trips Out (w/ signage)
28% Grapevine to Mast Road
26% Grapevine to NH108
New Trips In = ProRata
New Trips at Signal = ProRata

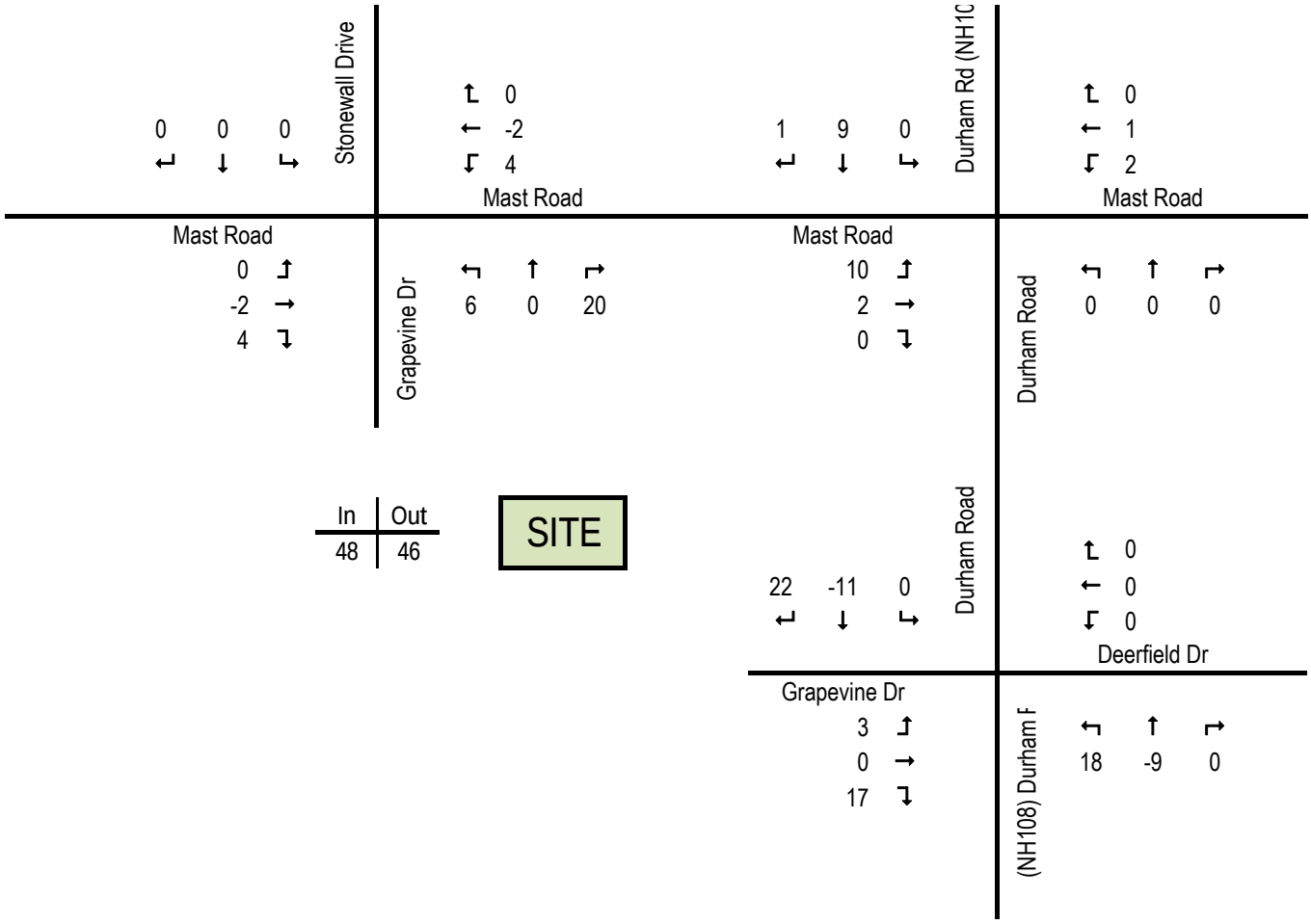
APPROVED FF: Site Trip Assignments
2023 Update - 70/30
AM Peak Hour

XX Primary Site Trips
XX Pass-By Site Trips



APPROVED FF: Site Trips
2023 Update - 70/30
AM Peak Hour

XX Site Trips



APPROVED 2022 Update DEVELOPMENT: Dover Fields [Unit 4] - FF

PRIMARY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

Entering Trips: based on ProRata,
Exiting Trips: 70% northbound trips directed to Mast Road via signage, 30% to NH108

	In	Out
PM Totals	13	12

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR	5%		*0*	0
WBL	7%		1	0
WBT			0	0
WBR			0	0
NBL		9%	0	*2*
NBT			0	0
NBR		61%	0	*7*
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		52%	0	6
EBT		9%	0	1
EBR			0	0
WBL	6%		1	0
WBT	2%		0	0
WBR			0	0
NBL			0	0
NBT		5%	0	1
NBR		1%	0	0
SBL			0	0
SBT	38%		5	0
SBR	5%		1	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		6%	0	*0*
EBT			0	0
EBR		24%	0	3
WBL			0	0
WBT			0	0
WBR			0	0
NBL	44%		6	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR	44%		6	0

PASS-BY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

	In	Out
PM Totals	16	15

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT	-5%		-1	0
EBR	5%		1	0
WBL	4%		0	0
WBT	-4%		*0*	0
WBR			*0*	0
NBL		4%	0	1
NBT			0	0
NBR		38%	0	*5*
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR			0	0
WBL			0	0
WBT			0	0
WBR			0	0
NBL			0	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR			0	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		14%	0	2
EBT			0	0
EBR		44%	0	7
WBL			0	0
WBT			0	0
WBR			0	0
NBL	47%		8	0
NBT	-47%		-8	0
NBR			0	0
SBL			0	0
SBT	-44%		-7	0
SBR	44%		7	0

TOTAL: Site Trip Assignment

TOTAL

	PM TOTAL
	56

Mast Road at Grapevine Dr/Stonewall Dr

Movement	
EBL	0
EBT	-1
EBR	1
WBL	1
WBT	0
WBR	0
NBL	3
NBT	0
NBR	12
SBL	0
SBT	0
SBR	0

Mast Road at Durham Road (NH108)

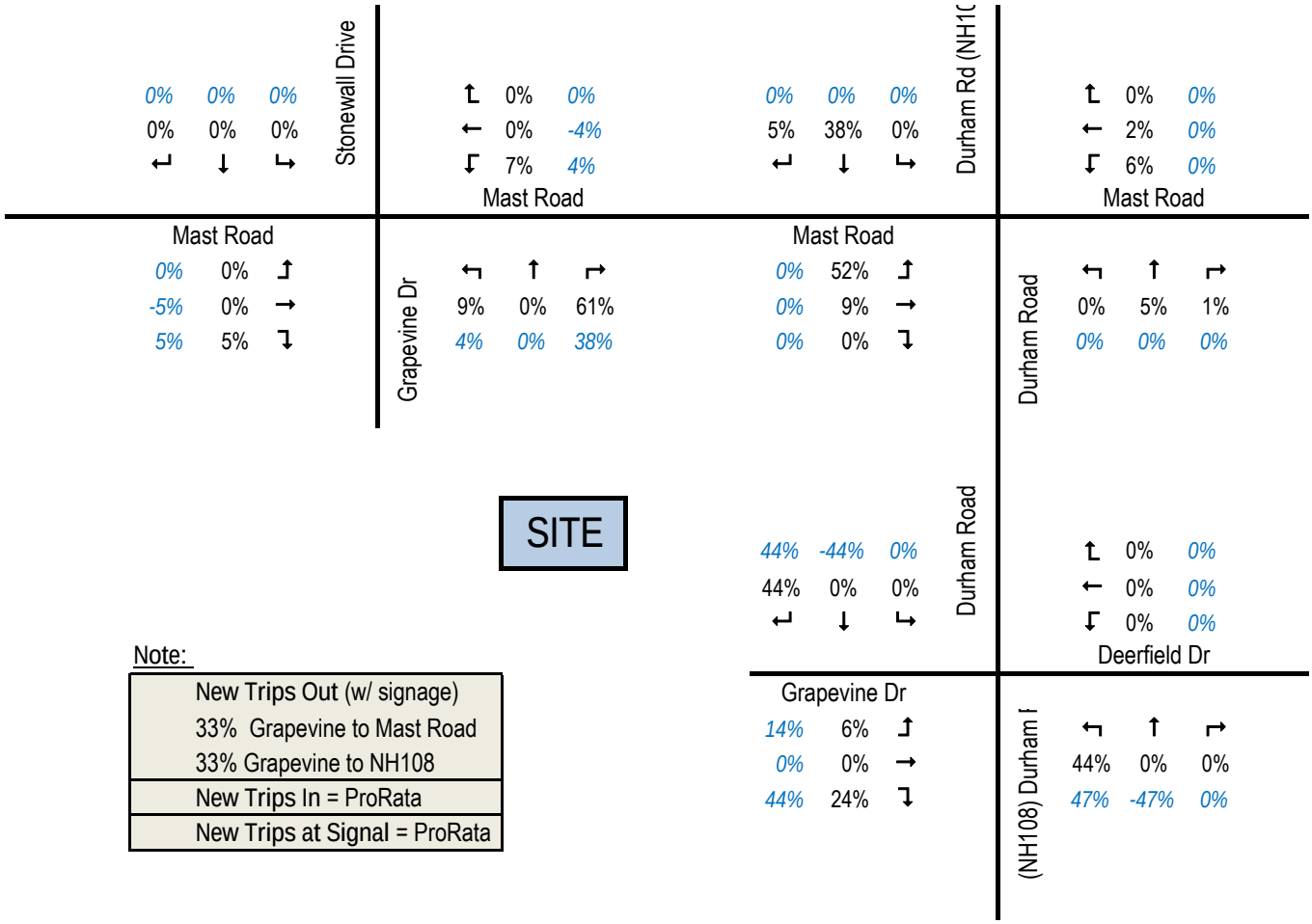
Movement	
EBL	6
EBT	1
EBR	0
WBL	1
WBT	0
WBR	0
NBL	0
NBT	1
NBR	0
SBL	0
SBT	5
SBR	1

Durham Road at Grapevine Dr/Deefield Dr

Movement	
EBL	2
EBT	0
EBR	10
WBL	0
WBT	0
WBR	0
NBL	14
NBT	-8
NBR	0
SBL	0
SBT	-7
SBR	13

APPROVED FF: Site Trip Distribution
2023 Update - 70/30
PM Peak Hour

XX Site Trips

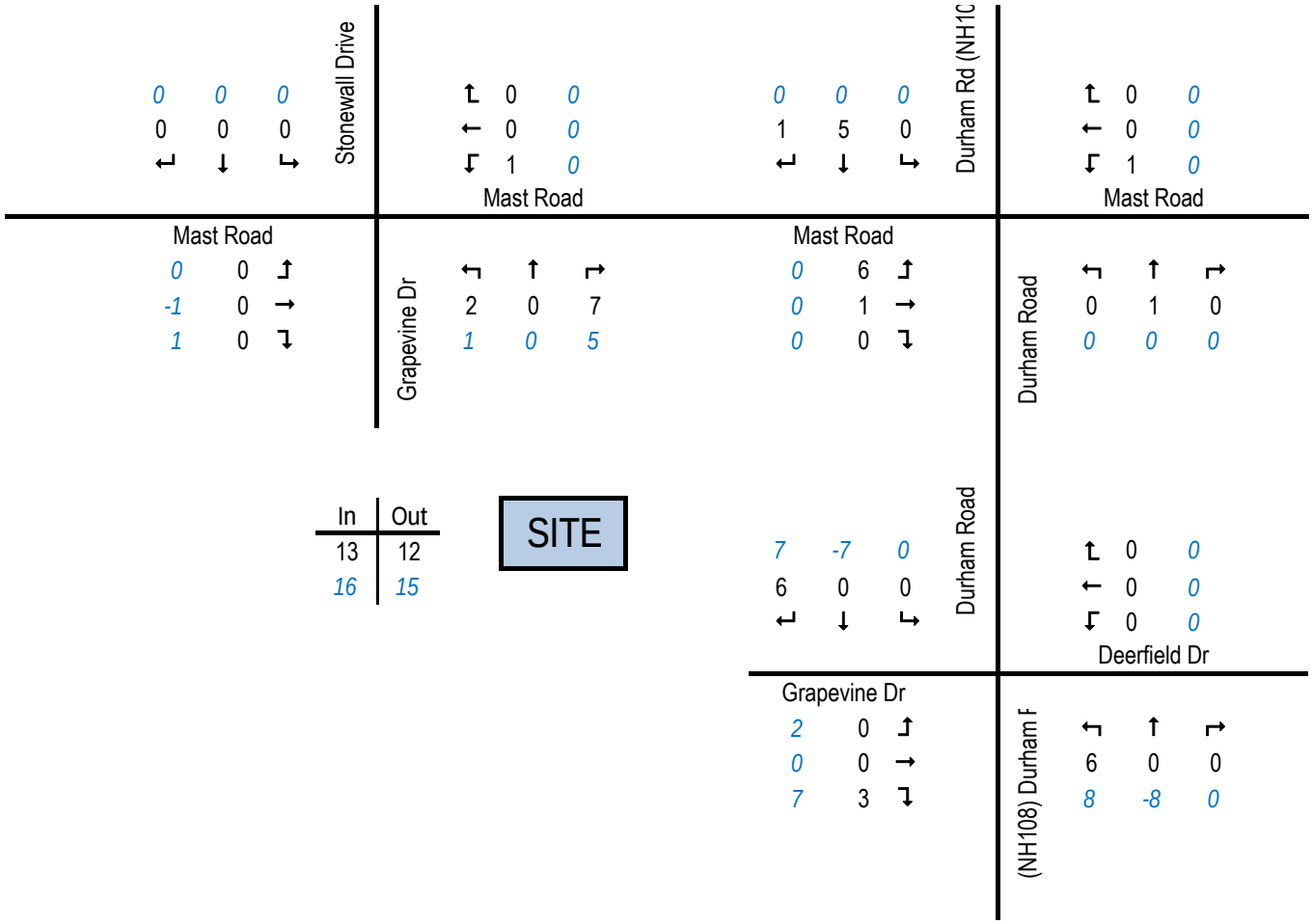


Note:

New Trips Out (w/ signage)
33% Grapevine to Mast Road
33% Grapevine to NH108
New Trips In = ProRata
New Trips at Signal = ProRata

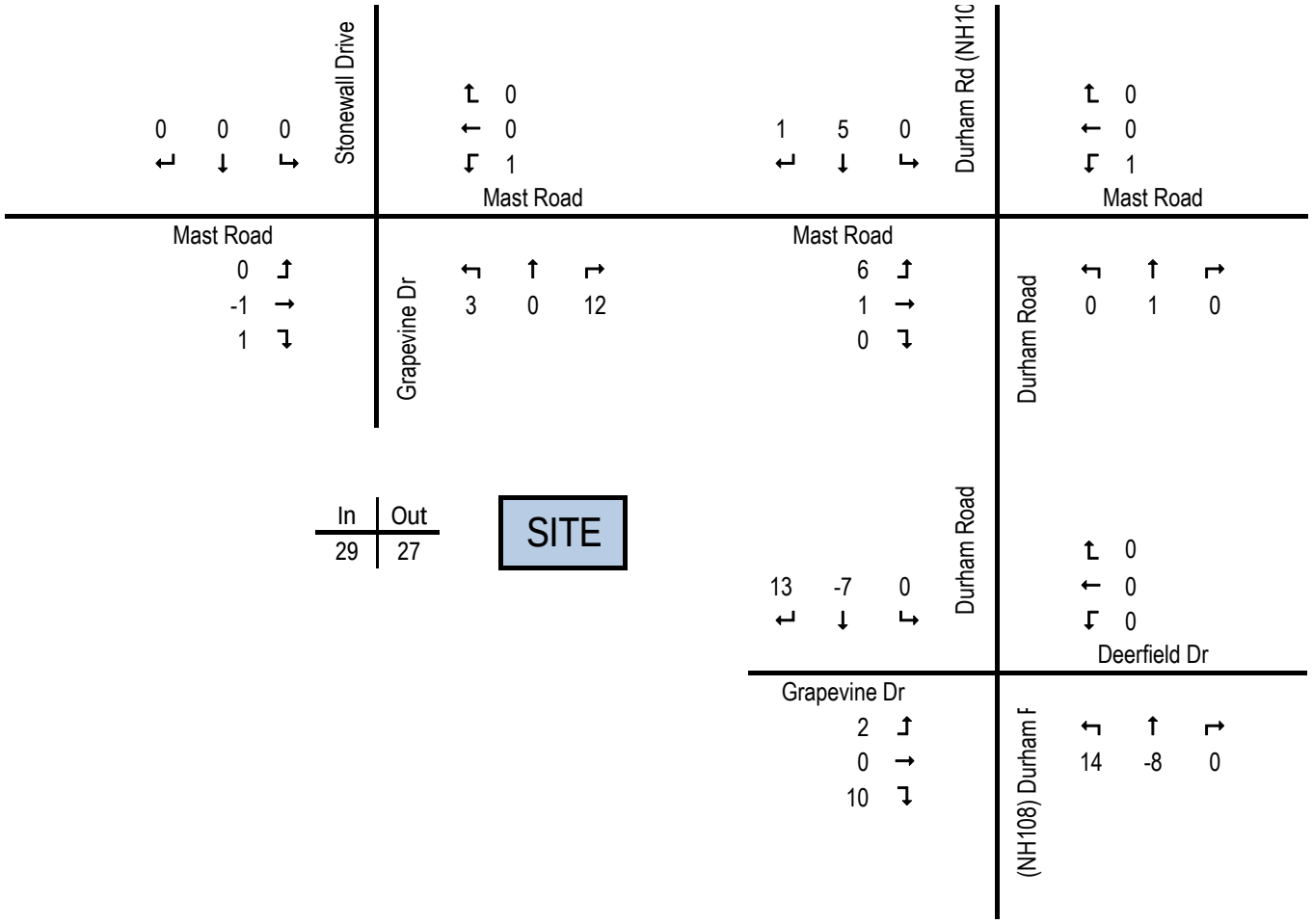
APPROVED FF: Site Trip Assignments
2023 Update - 70/30
PM Peak Hour

XX Primary Site Trips
XX Pass-By Site Trips



APPROVED FF: Site Trips
2023 Update - 70/30
PM Peak Hour

XX Site Trips



APPROVED 2022 Update DEVELOPMENT: Dover Fields [Unit 4] - FF

PRIMARY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

Entering Trips: based on ProRata,
Exiting Trips: 31% northbound trips directed to Mast Road via signage, 32% to NH108

	In	Out
SAT Totals	28	27

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR	16%		5	0
WBL	7%		2	0
WBT			0	0
WBR			0	0
NBL		12%	0	3
NBT			0	0
NBR		58%	0	16
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		53%	0	14
EBT		5%	0	2
EBR			0	0
WBL	6%		2	0
WBT	2%		1	0
WBR			0	0
NBL			0	0
NBT		6%	0	2
NBR		1%	0	0
SBL			0	0
SBT	38%		10	0
SBR	5%		1	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		7%	0	2
EBT			0	0
EBR		23%	0	6
WBL			0	0
WBT			0	0
WBR			0	0
NBL	33%		9	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR	44%		12	0

PASS-BY TRIPS - Dover Fields 2022 Update

PRORATA PER 2023 COUNTS

	In	Out
SAT Totals	28	27

Mast Road at Grapevine Dr/Stonewall Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT	-17%		-4	0
EBR	17%		4	0
WBL	17%		5	0
WBT	-17%		-5	0
WBR			0	0
NBL		17%	0	5
NBT			0	0
NBR		42%	0	11
SBL			0	0
SBT			0	0
SBR			0	0

Mast Road at Durham Road (NH108)

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL			0	0
EBT			0	0
EBR			0	0
WBL			0	0
WBT			0	0
WBR			0	0
NBL			0	0
NBT			0	0
NBR			0	0
SBL			0	0
SBT			0	0
SBR			0	0

Durham Road at Grapevine Dr/Deefield Dr

Movement	PERCENTAGES In	PERCENTAGES Out	TRIPS In	TRIPS Out
EBL		11%	0	3
EBT			0	0
EBR		31%	0	8
WBL			0	0
WBT			0	0
WBR			0	0
NBL	35%		10	0
NBT	-35%		-10	0
NBR			0	0
SBL			0	0
SBT	-31%		-9	0
SBR	31%		9	0

TOTAL: Site Trip Assignment

TOTAL

	SAT TOTAL
	110

Mast Road at Grapevine Dr/Stonewall Dr

Movement	
EBL	0
EBT	-4
EBR	9
WBL	7
WBT	-5
WBR	0
NBL	8
NBT	0
NBR	27
SBL	0
SBT	0
SBR	0

Mast Road at Durham Road (NH108)

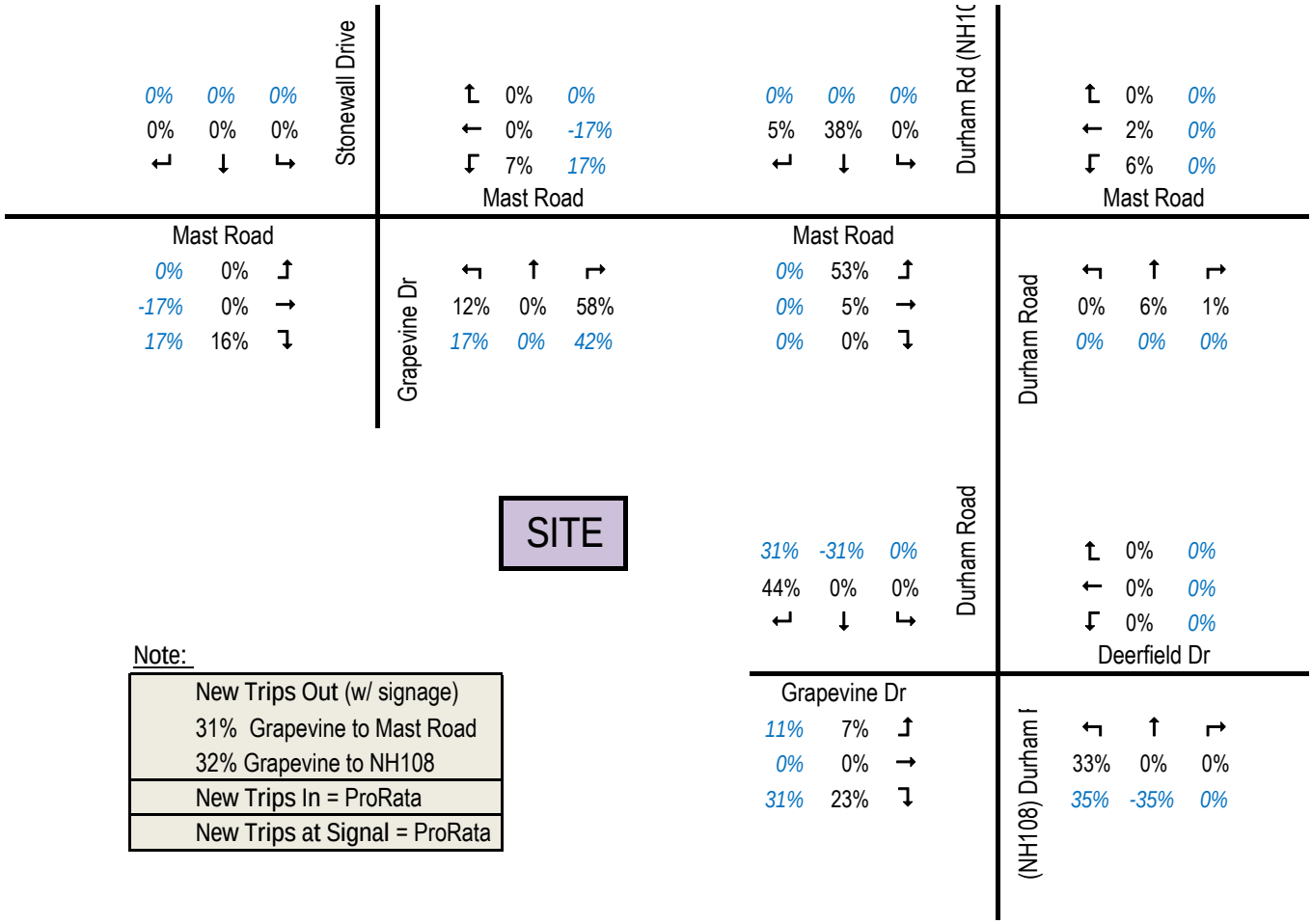
Movement	
EBL	14
EBT	2
EBR	0
WBL	2
WBT	1
WBR	0
NBL	0
NBT	2
NBR	0
SBL	0
SBT	10
SBR	1

Durham Road at Grapevine Dr/Deefield Dr

Movement	
EBL	5
EBT	0
EBR	14
WBL	0
WBT	0
WBR	0
NBL	19
NBT	-10
NBR	0
SBL	0
SBT	-9
SBR	21

APPROVED FF: Site Trip Distribution
2023 Update - 70/30
SAT Peak Hour

XX Primary Site Trips
XX Pass-By Site Trips

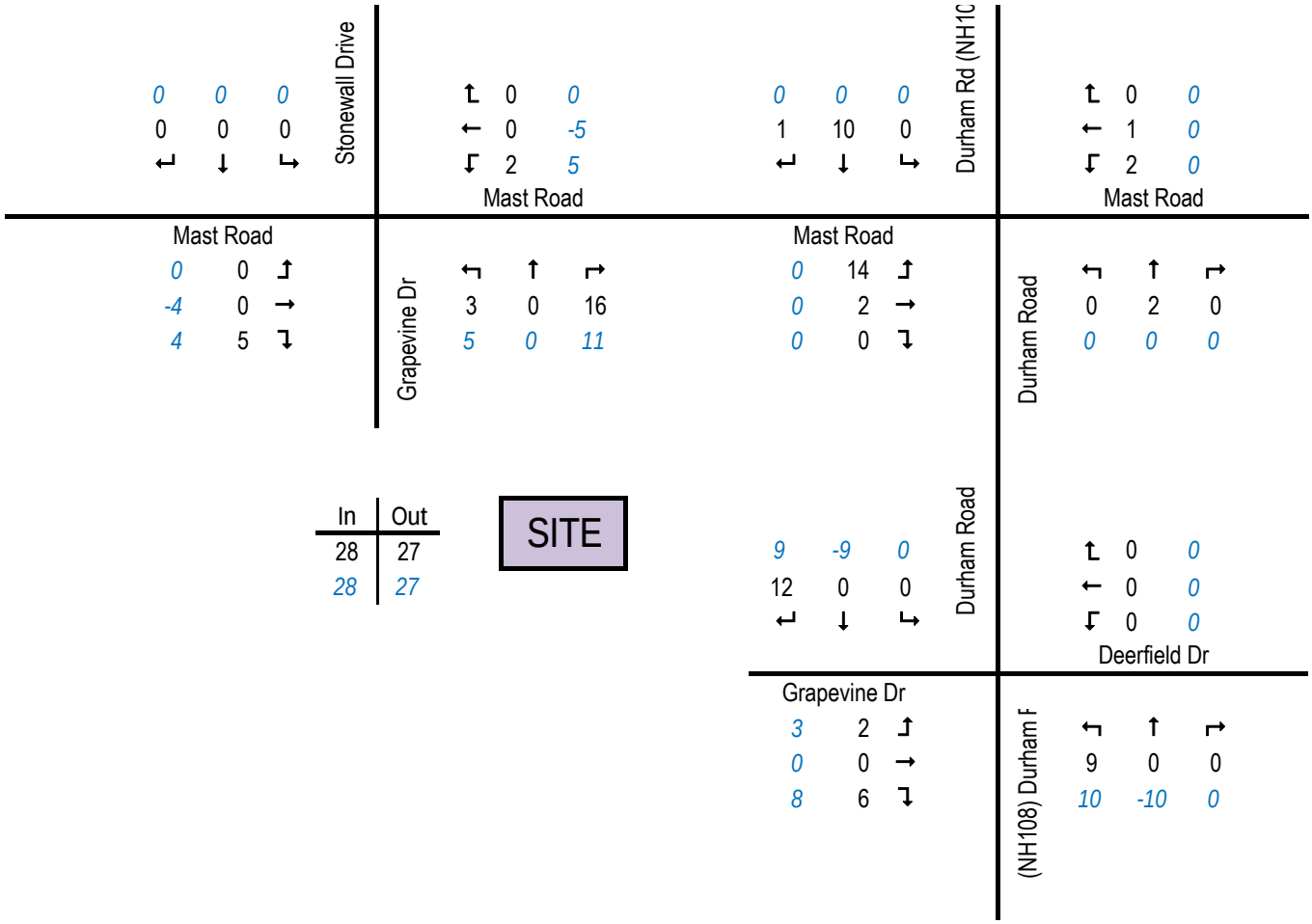


Note:

New Trips Out (w/ signage)
31% Grapevine to Mast Road
32% Grapevine to NH108
New Trips In = ProRata
New Trips at Signal = ProRata

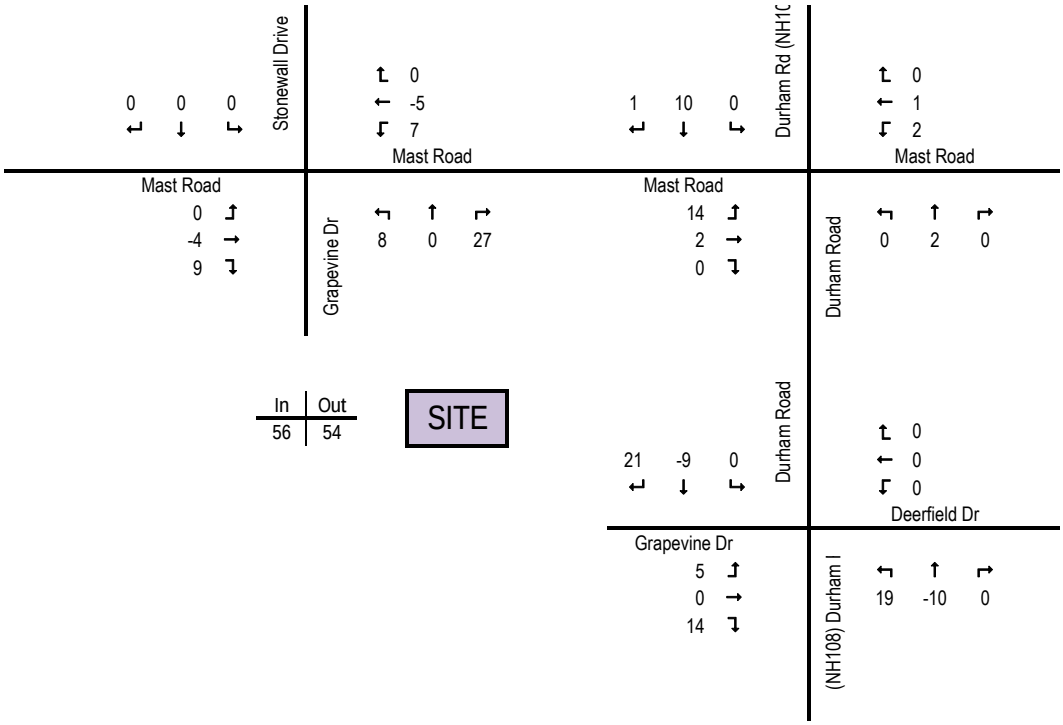
APPROVED FF: Site Trip Assignments
2023 Update - 70/30
SAT Peak Hour

XX Site Trips



APPROVED FF: Site Trips
2023 Update - 70/30
SAT Peak Hour

XX Site Trips



APPENDIX E

Volumes (AM/PM/SAT)

Calculations

ProRata

Background Traffic Volumes
AM Peak data

Assumed growth rate	0.01	
July 2019 Seasonal Adjust	1.01	NHDOT Group 4 Averages
Covid/Stay-home factor	1.025	NHDOT Methodology

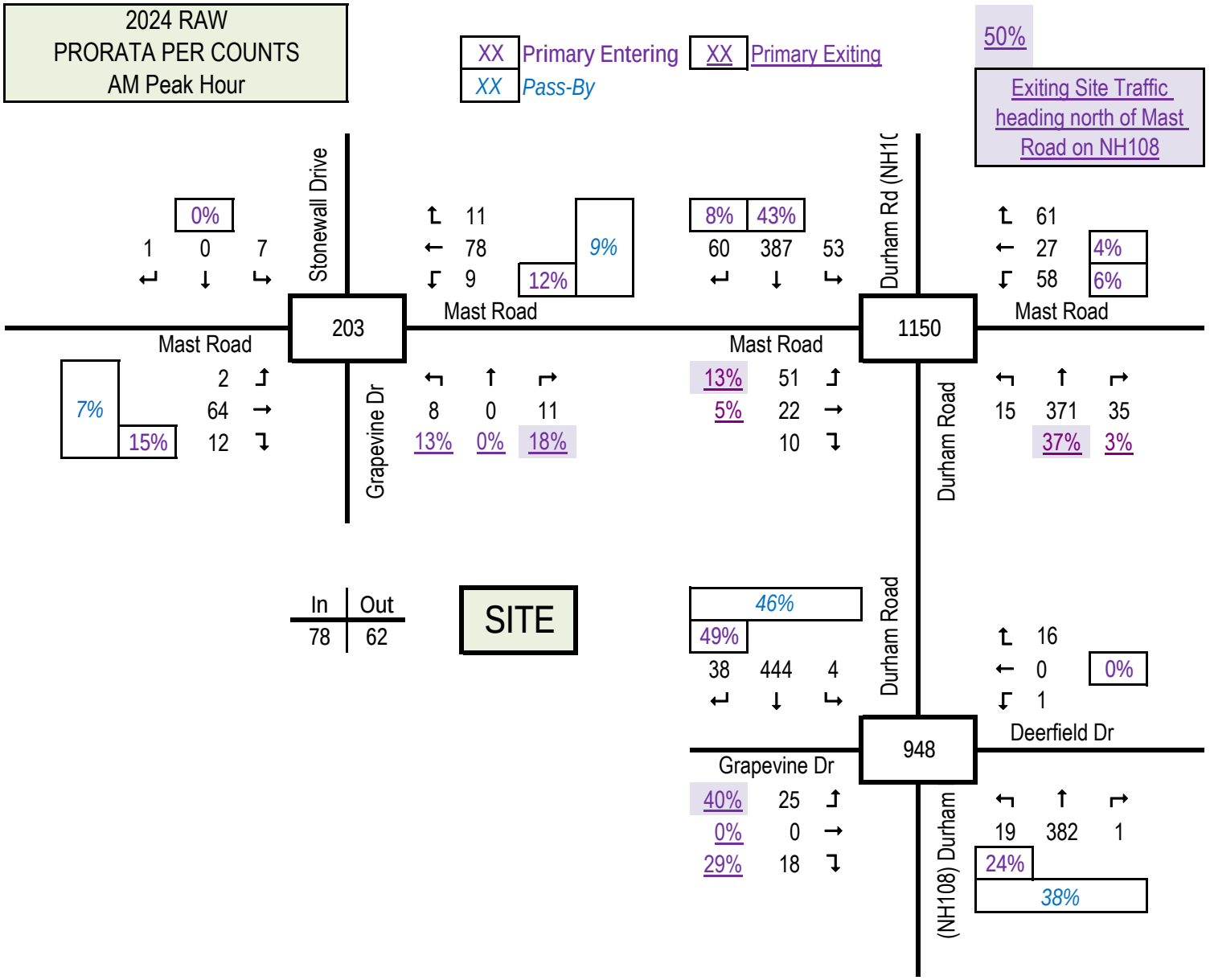
Site Trips are not Seasonally Adjusted or Grown.

ALL TRIPS ARE COVID ADJUSTED

AM Peak Hour	Existing 2024 (Raw data) [07/25/2024]	Existing 2024 w/ Seasonal Adjustment	Covid/Stay Home Adjustment	2024 BASE	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	AM PHF	*Calculated Heavy*
3. Mast Road at Grapevine Dr/Stonewall Dr	8:00 AM																
Movement	(C)																
EBL	2	*2*	1.025	2.05	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*		
EBT	64	65	1.025	66.63	67.30	67.97	68.65	69.34	70.03	70.73	71.44	72.15	72.87	73.60	74.34	0.75	7%
EBR	12	*12*	1.025	12.30	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*		
WBL	9	*9*	1.025	9.23	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*		
WBT	78	79	1.025	80.98	81.79	82.61	83.44	84.27	85.11	85.96	86.82	87.69	88.57	89.46	90.35	0.60	2%
WBR	11	*11*	1.025	11.28	*11*	*11*	*11*	*11*	*11*	*11*	*11*	*11*	*11*	*11*	*11*		
NBL	8	*8*	1.025	8.20	*8*	*8*	*8*	*8*	*8*	*8*	*8*	*8*	*8*	*8*	*8*		
NBT	0	*0*	1.025	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.79	2%
NBR	11	*11*	1.025	11.28	*11*	*11*	*11*	*11*	*11*	*11*	*11*	*11*	*11*	*11*	*11*		
SBL	7	*7*	1.025	7.18	*7*	*7*	*7*	*7*	*7*	*7*	*7*	*7*	*7*	*7*	*7*		
SBT	0	*0*	1.025	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.67	2%
SBR	1	*1*	1.025	1.03	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*		
6. Mast Road at Durham Road (NH108)	8:00 AM																
Movement	(B)																
EBL	51	52	1.025	53.30	53.83	54.37	54.91	55.46	56.01	56.57	57.14	57.71	58.29	58.87	59.46		
EBT	22	22	1.025	22.55	22.78	23.01	23.24	23.47	23.70	23.94	24.18	24.42	24.66	24.91	25.16	0.80	2%
EBR	10	10	1.025	10.25	10.35	10.45	10.55	10.66	10.77	10.88	10.99	11.10	11.21	11.32	11.43		
WBL	58	59	1.025	60.48	61.08	61.69	62.31	62.93	63.56	64.20	64.84	65.49	66.14	66.80	67.47		
WBT	27	27	1.025	27.68	27.96	28.24	28.52	28.81	29.10	29.39	29.68	29.98	30.28	30.58	30.89	0.79	2%
WBR	61	62	1.025	63.55	64.19	64.83	65.48	66.13	66.79	67.46	68.13	68.81	69.50	70.20	70.90		
NBL	15	15	1.025	15.38	15.53	15.69	15.85	16.01	16.17	16.33	16.49	16.65	16.82	16.99	17.16		
NBT	371	375	1.025	384.38	388.22	392.10	396.02	399.98	403.98	408.02	412.10	416.22	420.38	424.58	428.83	0.89	2%
NBR	35	35	1.025	35.88	36.24	36.60	36.97	37.34	37.71	38.09	38.47	38.85	39.24	39.63	40.03		
SBL	53	54	1.025	55.35	55.90	56.46	57.02	57.59	58.17	58.75	59.34	59.93	60.53	61.14	61.75		
SBT	387	391	1.025	400.78	404.79	408.84	412.93	417.06	421.23	425.44	429.69	433.99	438.33	442.71	447.14	0.87	3%
SBR	60	61	1.025	62.53	63.16	63.79	64.43	65.07	65.72	66.38	67.04	67.71	68.39	69.07	69.76		
9. Durham Road at Grapevine Dr/Deefield Dr	7:30 AM																
Movement	(A)																
EBL	25	*25*	1.025	25.63	*26*	*26*	*26*	*26*	*26*	*26*	*26*	*26*	*26*	*26*	*26*		
EBT	0	*0*	1.025	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.60	7%
EBR	18	*18*	1.025	18.45	*18*	*18*	*18*	*18*	*18*	*18*	*18*	*18*	*18*	*18*	*18*		
WBL	1	*1*	1.025	1.03	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*		
WBT	0	*0*	1.025	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.71	2%
WBR	16	*16*	1.025	16.40	*16*	*16*	*16*	*16*	*16*	*16*	*16*	*16*	*16*	*16*	*16*		
NBL	19	*19*	1.025	19.48	*19*	*19*	*19*	*19*	*19*	*19*	*19*	*19*	*19*	*19*	*19*		
NBT	382	386	1.025	395.65	399.61	403.61	407.65	411.73	415.85	420.01	424.21	428.45	432.73	437.06	441.43	0.93	4%
NBR	1	*1*	1.025	1.03	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*		
SBL	4	*4*	1.025	4.10	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*		
SBT	444	448	1.025	459.20	463.79	468.43	473.11	477.84	482.62	487.45	492.32	497.24	502.21	507.23	512.30	0.89	5%
SBR	38	*38*	1.025	38.95	*39*	*39*	*39*	*39*	*39*	*39*	*39*	*39*	*39*	*39*	*39*		
12. Grapevine Drive at FF																	
Movement	(CALCULATED)																
EBT	43	*43*	1.025	44.08	*44*	*44*	*44*	*44*	*44*	*44*	*44*	*44*	*44*	*44*	*44*	0.90	7%
EBR		*0*	1.025	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		
WBL		*0*	1.025	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.90	7%
WBT	57	*57*	1.025	58.43	*58*	*58*	*58*	*58*	*58*	*58*	*58*	*58*	*58*	*58*	*58*		
NBL		*0*	1.025	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.90	2%
NBR		*0*	1.025	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		
13. NH108 at FF																	
Movement	(CALCULATED)																
EBR		*0*	1.025	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.90	2%
NBT	402	406	1.025	416.16	419.61	423.61	427.65	431.73	435.85	440.01	444.21	448.45	452.73	457.06	461.43	0.90	4%
SBT	463	467	1.025	478.68	482.79	487.43	492.11	496.84	501.62	506.45	511.32	516.24	521.21	526.23	531.3	0.90	5%

AM Peak Hour	2024 BASE	2025	APPROVED [Units 2,3&4] +Arbor Site Trip Distribution	2025 No-Build	(-SUBTRACT) APPROVED [Unit 4] Fast Food Site Trip Distribution	+ADD PROPOSED [Unit 4] Fast Food Site Trip Distribution	2025 Build	AM PHF BUILD
3. Mast Road at Grapevine Dr/Stonewall								
Movement								
EBL	2	2	0	2	0	0	2	
EBT	67	67	-2	65	2	-3	64	0.75
EBR	12	12	6	18	-4	9	23	
WBL	9	9	5	14	-4	7	17	
WBT	81	82	-2	80	2	-3	79	0.60
WBR	11	11	0	11	0	0	11	
NBL	8	8	10	18	-6	8	20	
NBT	0	0	0	0	0	0	0	0.90
NBR	11	11	37	48	-20	9	37	
SBL	7	7	0	7	0	0	7	
SBT	0	0	0	0	0	0	0	0.67
SBR	1	1	0	1	0	0	1	
6. Mast Road at Durham Road (NH108)								
Movement								
EBL	53	54	22	76	-10	4	70	
EBT	23	23	5	28	-2	2	28	0.80
EBR	10	10	0	10	0	0	10	
WBL	60	61	3	64	-2	2	64	
WBT	28	28	1	29	-1	1	29	0.79
WBR	64	64	0	64	0	0	64	
NBL	15	16	0	16	0	0	16	
NBT	384	388	1	389	0	13	402	0.89
NBR	36	36	0	36	0	1	37	
SBL	55	56	0	56	0	0	56	
SBT	401	405	15	420	-9	16	427	0.87
SBR	63	63	2	65	-1	3	67	
9. Durham Road at Grapevine Dr/Deefield Dr								
Movement								
EBL	26	26	4	30	-3	28	55	
EBT	0	0	0	0	0	0	0	0.90
EBR	18	18	26	44	-17	13	40	
WBL	1	1	0	1	0	0	1	
WBT	0	0	0	0	0	0	0	0.90
WBR	16	16	0	16	0	0	16	
NBL	19	19	29	48	-18	23	53	
NBT	396	400	-12	388	9	-14	383	0.93
NBR	1	1	0	1	0	0	1	
SBL	4	4	0	4	0	0	4	
SBT	459	464	-14	450	11	-17	444	0.90
SBR	39	39	32	71	-22	35	84	
12. Grapevine Drive at FF								
Movement								
EBT	44	44	30	74	-20	0	54	
EBR	0	0		0		16	16	0.90
WBL	0	0		0		58	58	
WBT	58	58	61	119	-40	0	79	0.90
NBL	0	0		0		17	17	
NBR	0	0		0		41	41	0.90
13. NH108 at FF								
Movement								
EBR	0	0		0	0	13	13	0.90
NBT	416	420		420	0	9	429	0.90
SBT	479	483		483	0	-3	480	0.90

PM Peak Hour	2035	APPROVED DR [units 2&3] Site Trip Distribution	2035 No-Build	(-SUBTRACT) APPROVED [Unit 4] Fast Food Site Trip Distribution	+ADD PROPOSED [Unit 4] Fast Food Site Trip Distribution	2035 Build
3. Mast Road at Grapevine Dr/Stonewall						
Movement						
EBL	2	0	2	0	0	2
EBT	74	-2	72	2	-3	71
EBR	12	6	18	-4	9	23
WBL	9	5	14	-4	7	17
WBT	90	-2	88	2	-3	87
WBR	11	0	11	0	0	11
NBL	8	10	18	-6	8	20
NBT	0	0	0	0	0	0
NBR	11	37	48	-20	9	37
SBL	7	0	7	0	0	7
SBT	0	0	0	0	0	0
SBR	1	0	1	0	0	1
6. Mast Road at Durham Road (NH108)						
Movement						
EBL	59	22	81	-10	4	75
EBT	25	5	30	-2	2	30
EBR	11	0	11	0	0	11
WBL	67	3	70	-2	2	70
WBT	31	1	32	-1	1	32
WBR	71	0	71	0	0	71
NBL	17	0	17	0	0	17
NBT	429	1	430	0	13	443
NBR	40	0	40	0	1	41
SBL	62	0	62	0	0	62
SBT	447	15	462	-9	16	469
SBR	70	2	72	-1	3	74
9. Durham Road at Grapevine Dr/Deefield Dr						
Movement						
EBL	26	4	30	-3	28	55
EBT	0	0	0	0	0	0
EBR	18	26	44	-17	13	40
WBL	1	0	1	0	0	1
WBT	0	0	0	0	0	0
WBR	16	0	16	0	0	16
NBL	19	29	48	-18	23	53
NBT	441	-12	429	9	-14	424
NBR	1	0	1	0	0	1
SBL	4	0	4	0	0	4
SBT	512	-14	498	11	-17	492
SBR	39	32	71	-22	35	84
12. Grapevine Drive at FF						
Movement						
EBT	44	30	74	-20	0	54
EBR	0		0		16	16
WBL	0		0		58	58
WBT	58	61	119	-40	0	79
NBL	0		0		17	17
NBR	0		0		41	41
13. NH108 at FF						
Movement						
EBR	0		0		13	13
NBT	461		461		9	470
SBT	531		531		-3	528


2024 RAW
PRORATA PER COUNTS
AM Peak Hour
XX Primary Entering
XX Pass-By
XX Primary Exiting
50%
Exiting Site Traffic heading north of Mast Road on NH108
Stonewall Drive
Grapevine Dr
Durham Rd (NH1C
Durham Road
(NH108) Durham
Mast Road
Deerfield Dr
203
1150
948
0%
1 0 7
11
78
9
12%
9%
8% 43%
60 387 53
61
27
58
4%
6%
7%
15%
2
64
12
8 0 11
13% 0% 18%
13% 51
5% 22
10
15 371 35
37% 3%
In 78
Out 62
SITE
46%
49%
38 444 4
16
0
1
0%
40% 25
0% 0
29% 18
19 382 1
24%
38%

Background Traffic Volumes
PM Peak data

Assumed growth rate	0.01		
July 2019 Seasonal Adjust	1.01	NHDOT Group 4 Averages	
Covid/Stay-home factor	1.011	NHDOT Methodology	

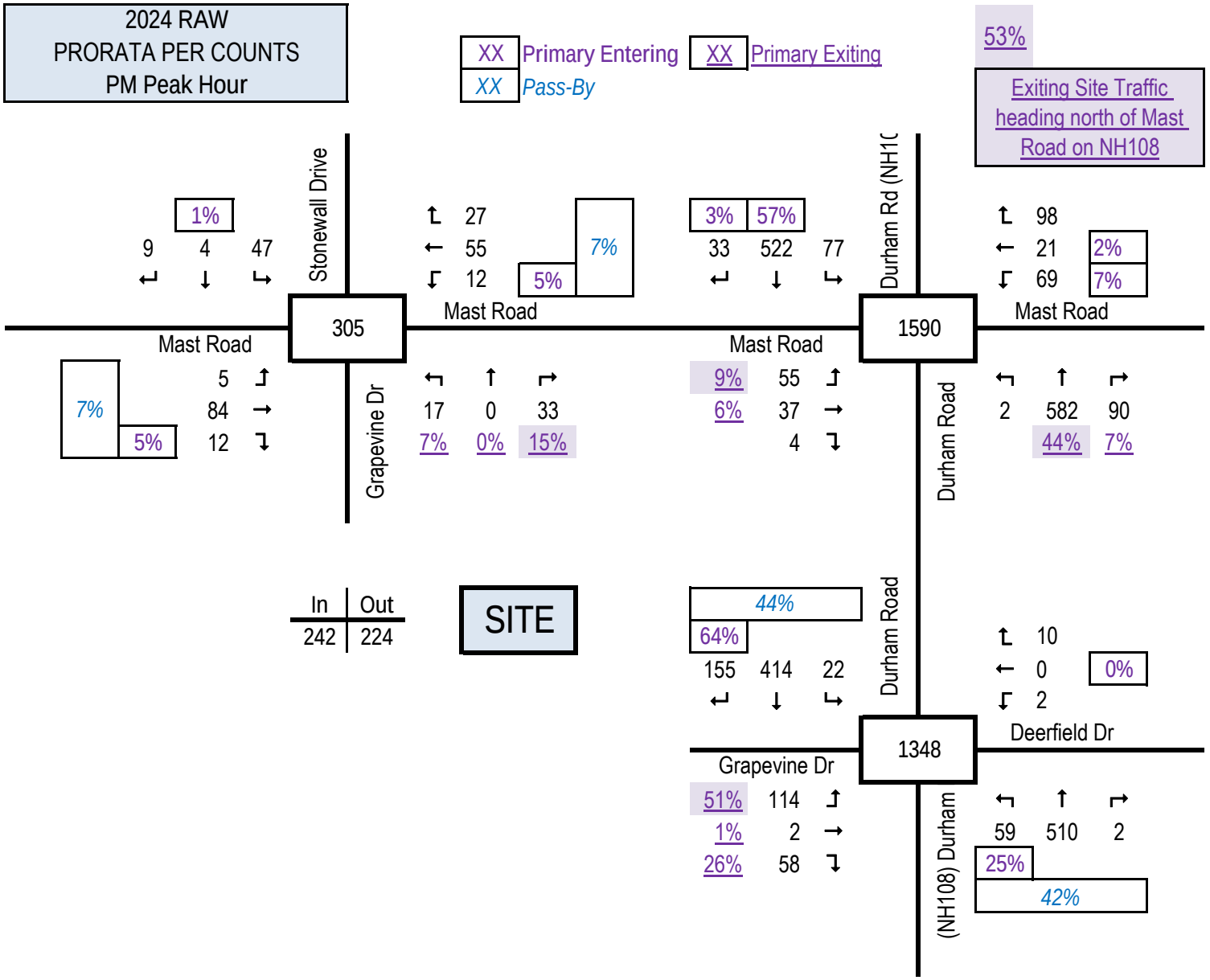
Site Trips are not Seasonally Adjusted or Grown.

ALL TRIPS ARE COVID ADJUSTED

PM Peak Hour	Existing 2024 (Raw data) [07/25/2024]	Existing 2024 w/ Seasonal Adjustment	Covid/Stay Home Adjustment	2024 BASE	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	PM PHF	% Heavy	Counted Heavy	*Calculated Heavy*
3. Mast Road at Grapevine Dr/Stonewall Dr	3:00 PM																		
Movement	(C)																		
EBL	5	*5*	1.011	*5.06*	*5*	*5*	*5*	*5*	*5*	*5*	*5*	*5*	*5*	*5*	*5*		20%	1	
EBT	84	85	1.011	85.94	86.80	87.67	88.55	89.44	90.33	91.23	92.14	93.06	93.99	94.93	95.88	0.81	11%	9	2%
EBR	12	*12*	1.011	*12.13*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*		0%	0	
WBL	12	*12*	1.011	*12.13*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*		0%	0	
WBT	55	56	1.011	56.62	57.19	57.76	58.34	58.92	59.51	60.11	60.71	61.32	61.93	62.55	63.18	0.87	22%	12	2%
WBR	27	*27*	1.011	*27.30*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*	*27*		22%	6	
NBL	17	*17*	1.011	*17.19*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*		0%	0	
NBT	0	*0*	1.011	*0.00*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.80	0%	0	2%
NBR	33	*33*	1.011	*33.36*	*33*	*33*	*33*	*33*	*33*	*33*	*33*	*33*	*33*	*33*	*33*		0%	0	
SBL	47	*47*	1.011	*47.52*	*48*	*48*	*48*	*48*	*48*	*48*	*48*	*48*	*48*	*48*	*48*		15%	7	
SBT	4	*4*	1.011	*4.04*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	*4*	0.41	0%	0	2%
SBR	9	*9*	1.011	*9.10*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*		0%	0	
6. Mast Road at Durham Road (NH108)	4:45 PM																		
Movement	(B)																		
EBL	55	56	1.011	56.62	57.19	57.76	58.34	58.92	59.51	60.11	60.71	61.32	61.93	62.55	63.18		0%	0	
EBT	37	37	1.011	37.41	37.78	38.16	38.54	38.93	39.32	39.71	40.11	40.51	40.92	41.33	41.74	0.75	0%	0	2%
EBR	4	4	1.011	4.04	4.08	4.12	4.16	4.20	4.24	4.28	4.32	4.36	4.40	4.44	4.48		25%	1	
WBL	69	70	1.011	70.77	71.48	72.19	72.91	73.64	74.38	75.12	75.87	76.63	77.40	78.17	78.95		0%	0	
WBT	21	21	1.011	21.23	21.44	21.65	21.87	22.09	22.31	22.53	22.76	22.99	23.22	23.45	23.68	0.73	0%	0	2%
WBR	98	99	1.011	100.09	101.09	102.10	103.12	104.15	105.19	106.24	107.30	108.37	109.45	110.54	111.65		0%	0	
NBL	2	2	1.011	2.02	2.04	2.06	2.08	2.10	2.12	2.14	2.16	2.18	2.20	2.22	2.24		0%	0	
NBT	582	588	1.011	594.47	600.41	606.41	612.47	618.59	624.78	631.03	637.34	643.71	650.15	656.65	663.22	0.91	1%	8	1%
NBR	90	91	1.011	92.00	92.92	93.85	94.79	95.74	96.70	97.67	98.65	99.64	100.64	101.65	102.67		0%	0	
SBL	77	78	1.011	78.86	79.65	80.45	81.25	82.06	82.88	83.71	84.55	85.40	86.25	87.11	87.98		0%	0	
SBT	522	527	1.011	532.80	538.13	543.51	548.95	554.44	559.98	565.58	571.24	576.95	582.72	588.55	594.44	0.97	0%	2	2%
SBR	33	33	1.011	33.36	33.69	34.03	34.37	34.71	35.06	35.41	35.76	36.12	36.48	36.84	37.21		27%	9	
9. Durham Road at Grapevine Dr/Deefield Dr	4:45 PM																		
Movement	(A)																		
EBL	114	*114*	1.011	*115.25*	*115*	*115*	*115*	*115*	*115*	*115*	*115*	*115*	*115*	*115*	*115*		0%	0	
EBT	2	*2*	1.011	*2.02*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	0.93	0%	0	2%
EBR	58	*58*	1.011	*58.64*	*59*	*59*	*59*	*59*	*59*	*59*	*59*	*59*	*59*	*59*	*59*		0%	0	
WBL	2	*2*	1.011	*2.02*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*		0%	0	
WBT	0	*0*	1.011	*0.00*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.60	0%	0	2%
WBR	10	*10*	1.011	*10.11*	*10*	*10*	*10*	*10*	*10*	*10*	*10*	*10*	*10*	*10*	*10*		10%	1	
NBL	59	*59*	1.011	*59.65*	*60*	*60*	*60*	*60*	*60*	*60*	*60*	*60*	*60*	*60*	*60*		0%	0	
NBT	510	515	1.011	520.67	525.88	531.14	536.45	541.81	547.23	552.70	558.23	563.81	569.45	575.14	580.89	0.94	1%	5	1%
NBR	2	*2*	1.011	*2.02*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*		0%	0	
SBL	22	*22*	1.011	*22.24*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*		0%	0	
SBT	414	418	1.011	422.60	426.83	431.10	435.41	439.76	444.16	448.60	453.09	457.62	462.20	466.82	471.49	0.91	0%	2	1%
SBR	155	*155*	1.011	*156.71*	*157*	*157*	*157*	*157*	*157*	*157*	*157*	*157*	*157*	*157*	*157*		1%	1	
12. Grapevine Drive at FF																			
Movement	(CALCULATED)																		
EBT	174	*174*	1.011	*175.91*	*176*	*176*	*176*	*176*	*176*	*176*	*176*	*176*	*176*	*176*	*176*		0%	0	
EBR		*0*	1.011	*0.00*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.90	0%		2%
WBL		*0*	1.011	*0.00*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		0%		
WBT	214	*214*	1.011	*216.35*	*216*	*216*	*216*	*216*	*216*	*216*	*216*	*216*	*216*	*216*	*216*	0.90	0%	1	2%
NBL		*0*	1.011	*0.00*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		0%		
NBR		*0*	1.011	*0.00*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.90	0%		2%
13. NH108 at FF																			
Movement	(CALCULATED)																		
EBR		*0*	1.011	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.90	0%		2%
NBT	571	576	1.011	582.34	587.88	593.14	598.45	603.81	609.23	614.7	620.23	625.81	631.45	637.14	642.89	0.90	1%	5	1%
SBT	474	478	1.011	483.26	487.83	492.1	496.41	500.76	505.16	509.6	514.09	518.62	523.2	527.82	532.49	0.90	0%	2	1%

PM Peak Hour	2024 BASE	2025	APPROVED [Units 2,3&4] +Arbor Site Trip Distribution	2025 No-Build	(-SUBTRACT) APPROVED [Unit 4] Fast Food Site Trip Distribution	+ADD PROPOSED [Unit 4] Fast Food Site Trip Distribution	2025 Build	PM PHF BUILD
3. Mast Road at Grapevine Dr/Stonewall								
Movement								
EBL	5	5	0	5	0	0	5	
EBT	86	87	-1	86	1	-2	85	0.81
EBR	12	12	3	15	-1	3	17	
WBL	12	12	4	16	-1	3	18	
WBT	57	57	-1	56	0	-2	54	0.87
WBR	27	27	0	27	0	0	27	
NBL	17	17	5	22	-3	3	22	
NBT	0	0	0	0	0	0	0	0.90
NBR	33	33	30	63	-12	5	56	
SBL	48	48	0	48	0	0	48	
SBT	4	4	0	4	0	0	4	0.41
SBR	9	9	0	9	0	0	9	
6. Mast Road at Durham Road (NH108)								
Movement								
EBL	57	57	19	76	-6	2	72	
EBT	37	38	3	41	-1	1	41	0.75
EBR	4	4	0	4	0	0	4	
WBL	71	71	3	74	-1	2	75	
WBT	21	21	1	22	0	0	22	0.73
WBR	100	101	0	101	0	0	101	
NBL	2	2	0	2	0	0	2	
NBT	594	600	2	602	-1	9	610	0.91
NBR	92	93	0	93	0	1	94	
SBL	79	80	0	80	0	0	80	
SBT	533	538	16	554	-5	12	561	0.97
SBR	33	34	2	36	-1	1	36	
9. Durham Road at Grapevine Dr/Deefield Dr								
Movement								
EBL	115	115	5	120	-2	20	138	
EBT	2	2	0	2	0	0	2	0.93
EBR	59	59	19	78	-10	8	76	
WBL	2	2	0	2	0	0	2	
WBT	0	0	0	0	0	0	0	0.90
WBR	10	10	0	10	0	0	10	
NBL	60	60	30	90	-14	15	91	
NBT	521	526	-11	515	8	-10	513	0.94
NBR	2	2	0	2	0	0	2	
SBL	22	22	0	22	0	0	22	
SBT	423	427	-11	416	7	-11	412	0.91
SBR	157	157	30	187	-13	25	199	
12. Grapevine Drive at FF								
Movement								
EBT	176	176	24	200	-12	0	188	
EBR	0	0		0		6	6	0.90
WBL	0	0		0		40	40	
WBT	216	216	60	276	-27	0	249	0.90
NBL	0	0		0		8	8	
NBR	0	0		0		28	28	0.90
13. NH108 at FF								
Movement								
EBR	0	0		0		7	7	0.90
NBT	582	588		588		5	593	0.90
SBT	483	488		488		-2	486	0.90

PM Peak Hour	2035	APPROVED [Units 2&3] +Arbor Site Trip Distribution	2035 No-Build	(-SUBTRACT) APPROVED [Unit 4] Fast Food Site Trip Distribution	+ADD PROPOSED [Unit 4] Fast Food Site Trip Distribution	2035 Build	PM PHF FUTURE
3. Mast Road at Grapevine Dr/Stonewall							
Movement							
EBL	5	0	5	0	0	5	
EBT	96	-1	95	1	-2	94	0.90
EBR	12	3	15	-1	3	17	
WBL	12	4	16	-1	3	18	
WBT	63	-1	62	0	-2	60	0.90
WBR	27	0	27	0	0	27	
NBL	17	5	22	-3	3	22	
NBT	0	0	0	0	0	0	0.90
NBR	33	30	63	-12	5	56	
SBL	48	0	48	0	0	48	
SBT	4	0	4	0	0	4	0.90
SBR	9	0	9	0	0	9	
6. Mast Road at Durham Road (NH108)							
Movement							
EBL	63	19	82	-6	2	78	
EBT	42	3	45	-1	1	45	0.90
EBR	4	0	4	0	0	4	
WBL	79	3	82	-1	2	83	
WBT	24	1	25	0	0	25	0.90
WBR	112	0	112	0	0	112	
NBL	2	0	2	0	0	2	
NBT	663	2	665	-1	9	673	0.91
NBR	103	0	103	0	1	104	
SBL	88	0	88	0	0	88	
SBT	594	16	610	-5	12	617	0.97
SBR	37	2	39	-1	1	39	
9. Durham Road at Grapevine Dr/Deefield Dr							
Movement							
EBL	115	5	120	-2	20	138	
EBT	2	0	2	0	0	2	0.93
EBR	59	19	78	-10	8	76	
WBL	2	0	2	0	0	2	
WBT	0	0	0	0	0	0	0.90
WBR	10	0	10	0	0	10	
NBL	60	30	90	-14	15	91	
NBT	581	-11	570	8	-10	568	0.94
NBR	2	0	2	0	0	2	
SBL	22	0	22	0	0	22	
SBT	471	-11	460	7	-11	456	0.91
SBR	157	30	187	-13	25	199	
12. Grapevine Drive at FF							
Movement							
EBT	176	24	200	-12	0	188	
EBR	0		0		6	6	0.90
WBL	0		0		40	40	
WBT	216	60	276	-27	0	249	0.90
NBL	0		0		8	8	
NBR	0		0		28	28	0.90
13. NH108 at FF							
Movement							
EBR	0		0		7	7	0.90
NBT	643		643		5	648	0.90
SBT	532		532		-2	530	0.90


2024 RAW
PRORATA PER COUNTS
PM Peak Hour
XX Primary Entering
XX Pass-By
XX Primary Exiting
53%
Exiting Site Traffic heading north of Mast Road on NH108
Stonewall Drive
Grapevine Dr
Durham Rd (NH1C
Durham Road
(NH108) Durham
Mast Road
Deerfield Dr
Grapevine Dr
305
1590
1348
SITE
In 242
Out 224
1% 9 4 47
27 55 12
5% 7%
3% 57% 33 522 77
98 21 2% 69 7%
7% 5 84 12 5%
17 0 33
7% 0% 15%
9% 55
6% 37 4
2 582 90
44% 7%
44% 64% 155 414 22
10 0 0% 2
59 510 2
25% 42%
51% 114
1% 2
26% 58

Background Traffic Volumes
SAT Peak data

Assumed growth rate	0.01	
July 2019 Seasonal Adjust	1.01	NHDOT Group 4 Averages
Covid/Stay-home factor	1.028	NHDOT Methodology

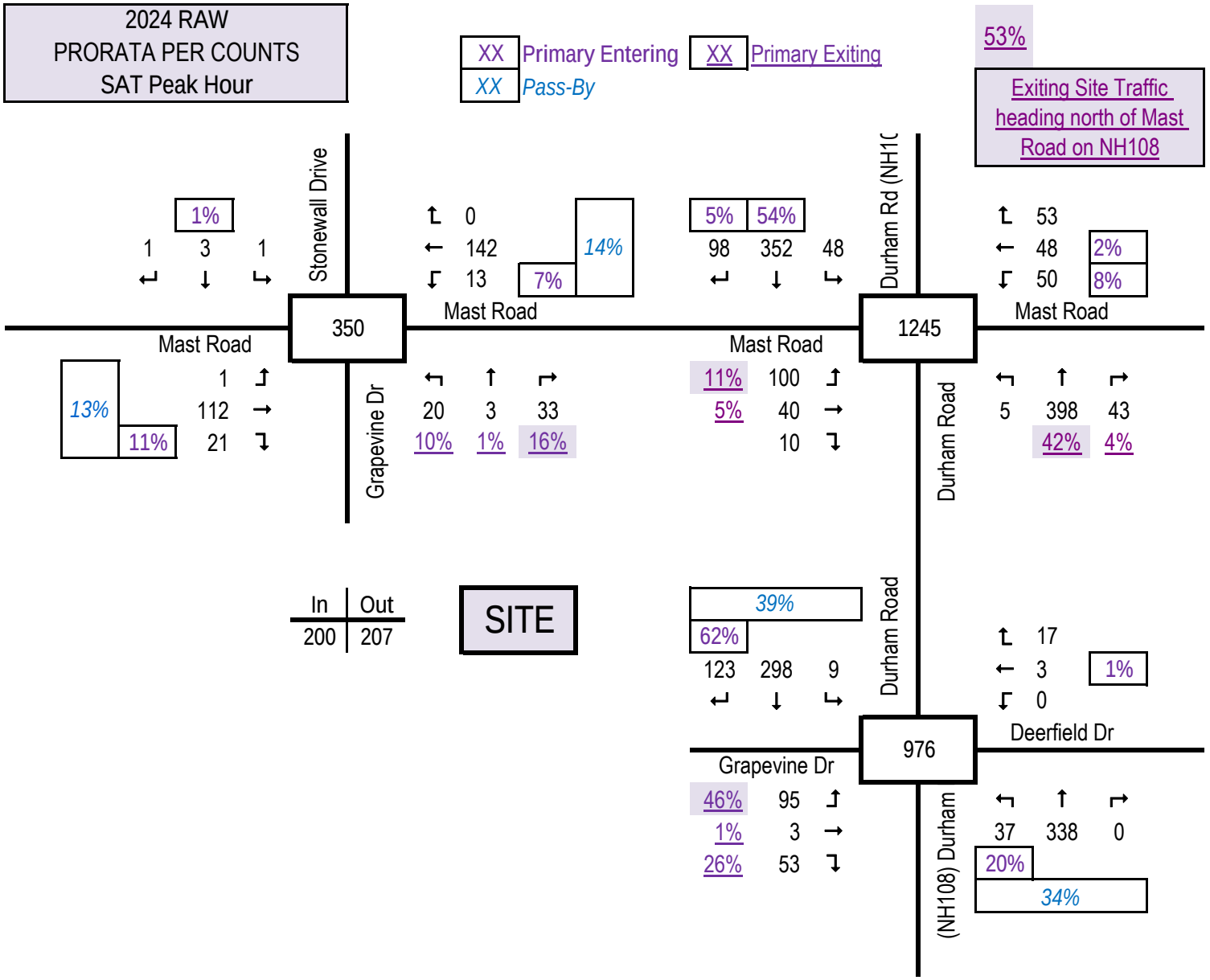
Site Trips are not Seasonally Adjusted or Grown.

ALL TRIPS ARE COVID ADJUSTED

SAT Peak Hour	Existing 2024 (Raw data) [07/27/2024]	Existing 2024 w/ Seasonal Adjustment	Covid/Stay Home Adjustment	2024 BASE	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	SAT PHF	% Heavy	Counted Heavy	*Calculated Heavy*
3. Mast Road at Grapevine Dr/Stonewall Dr	11:00 AM																		
Movement	(C)																		
EBL	1	*1*	1.028	1.03	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*		0%	0	
EBT	112	113	1.028	116.16	117.32	118.49	119.67	120.87	122.08	123.30	124.53	125.78	127.04	128.31	129.59	0.82	1%	1	1%
EBR	21	*21*	1.028	21.59	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*	*22*		5%	1	
WBL	13	*13*	1.028	13.36	*13*	*13*	*13*	*13*	*13*	*13*	*13*	*13*	*13*	*13*	*13*		0%	0	
WBT	142	143	1.028	147.00	148.47	149.95	151.45	152.96	154.49	156.03	157.59	159.17	160.76	162.37	163.99	0.78	0%	0	2%
WBR	0	*0*	1.028	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		0%	0	
NBL	20	*20*	1.028	20.56	*21*	*21*	*21*	*21*	*21*	*21*	*21*	*21*	*21*	*21*	*21*		5%	1	
NBT	3	*3*	1.028	3.08	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	0.70	0%	0	2%
NBR	33	*33*	1.028	33.92	*34*	*34*	*34*	*34*	*34*	*34*	*34*	*34*	*34*	*34*	*34*		0%	0	
SBL	1	*1*	1.028	1.03	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*		0%	0	
SBT	3	*3*	1.028	3.08	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	0.42	0%	0	2%
SBR	1	*1*	1.028	1.03	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*		0%	0	
6. Mast Road at Durham Road (NH108)	11:00 AM																		
Movement	(B)																		
EBL	100	101	1.028	103.83	104.87	105.92	106.98	108.05	109.13	110.22	111.32	112.43	113.55	114.69	115.84		0%	0	
EBT	40	40	1.028	41.12	41.53	41.95	42.37	42.79	43.22	43.65	44.09	44.53	44.98	45.43	45.88	0.80	0%	0	1%
EBR	10	10	1.028	10.28	10.38	10.48	10.58	10.69	10.80	10.91	11.02	11.13	11.24	11.35	11.46		10%	1	
WBL	50	51	1.028	52.43	52.95	53.48	54.01	54.55	55.10	55.65	56.21	56.77	57.34	57.91	58.49		0%	0	
WBT	48	48	1.028	49.34	49.83	50.33	50.83	51.34	51.85	52.37	52.89	53.42	53.95	54.49	55.03	0.90	0%	0	2%
WBR	53	54	1.028	55.51	56.07	56.63	57.20	57.77	58.35	58.93	59.52	60.12	60.72	61.33	61.94		0%	0	
NBL	5	5	1.028	5.14	5.19	5.24	5.29	5.34	5.39	5.44	5.49	5.54	5.60	5.66	5.72		20%	1	
NBT	398	402	1.028	413.26	417.39	421.56	425.78	430.04	434.34	438.68	443.07	447.50	451.98	456.50	461.07	0.87	2%	8	2%
NBR	43	43	1.028	44.20	44.64	45.09	45.54	46.00	46.46	46.92	47.39	47.86	48.34	48.82	49.31		2%	1	
SBL	48	48	1.028	49.34	49.83	50.33	50.83	51.34	51.85	52.37	52.89	53.42	53.95	54.49	55.03		0%	0	
SBT	352	356	1.028	365.97	369.63	373.33	377.06	380.83	384.64	388.49	392.37	396.29	400.25	404.25	408.29	0.88	1%	2	2%
SBR	98	99	1.028	101.77	102.79	103.82	104.86	105.91	106.97	108.04	109.12	110.21	111.31	112.42	113.54		0%	0	
9. Durham Road at Grapevine Dr/Deefield Dr	11:45 AM																		
Movement	(A)																		
EBL	95	*95*	1.028	97.66	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*	*98*		3%	3	
EBT	3	*3*	1.028	3.08	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	0.82	33%	1	1%
EBR	53	*53*	1.028	54.48	*54*	*54*	*54*	*54*	*54*	*54*	*54*	*54*	*54*	*54*	*54*		0%	0	
WBL	0	*0*	1.028	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		0%	0	
WBT	3	*3*	1.028	3.08	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	0.56	0%	0	2%
WBR	17	*17*	1.028	17.48	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*	*17*		6%	1	
NBL	37	*37*	1.028	38.04	*38*	*38*	*38*	*38*	*38*	*38*	*38*	*38*	*38*	*38*	*38*		0%	0	
NBT	338	341	1.028	350.55	354.06	357.60	361.18	364.79	368.44	372.12	375.84	379.60	383.40	387.23	391.10	0.96	2%	6	2%
NBR	0	*0*	1.028	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		0%	0	
SBL	9	*9*	1.028	9.25	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*	*9*		0%	0	
SBT	298	301	1.028	309.43	312.52	315.65	318.81	322.00	325.22	328.47	331.75	335.07	338.42	341.80	345.22	0.86	2%	6	2%
SBR	123	*123*	1.028	126.44	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*	*126*		1%	1	
12. Grapevine Drive at FF																			
Movement	(CALCULATED)																		
EBT	151	*151*	1.028	155.23	*155*	*155*	*155*	*155*	*155*	*155*	*155*	*155*	*155*	*155*	*155*	0.90	3%	4	3%
EBR		*0*	1.028	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		0%		
WBL		*0*	1.028	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.90	0%	1	1%
WBT	163	*163*	1.028	167.56	*168*	*168*	*168*	*168*	*168*	*168*	*168*	*168*	*168*	*168*	*168*		1%		
NBL		*0*	1.028	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.90	0%		2%
NBR		*0*	1.028	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*		0%		
13. NH108 at FF																			
Movement	(CALCULATED)																		
EBR		*0*	1.028	0.00	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0.90	0%		2%
NBT	375	378	1.028	388.59	392.06	395.6	399.18	402.79	406.44	410.12	413.84	417.6	421.4	425.23	429.1	0.90	2%	6	2%
SBT	351	354	1.028	363.91	366.52	369.65	372.81	376	379.22	382.47	385.75	389.07	392.42	395.8	399.22	0.90	2%	6	2%

SAT Peak Hour	2024 BASE	2025	APPROVED [Units 2,3&4] +Arbor Site Trip Distribution	2025 No-Build	(-SUBTRACT) APPROVED [Unit 4] Fast Food Site Trip Distribution	+ADD PROPOSED [Unit 4] Fast Food Site Trip Distribution	2025 Build	AM PHF BUILD
3. Mast Road at Grapevine Dr/Stonewall								
Movement								
EBL	1	1	0	1	0	0	1	
EBT	116	117	-7	110	4	-5	109	0.82
EBR	22	22	19	41	-9	10	42	
WBL	13	13	13	26	-7	9	28	
WBT	147	148	-8	140	5	-6	139	0.78
WBR	0	0	0	0	0	0	0	
NBL	21	21	16	37	-8	10	39	
NBT	3	3	0	3	0	0	3	0.90
NBR	34	34	61	95	-27	12	80	
SBL	1	1	0	1	0	0	1	
SBT	3	3	0	3	0	0	3	0.42
SBR	1	1	0	1	0	0	1	
6. Mast Road at Durham Road (NH108)								
Movement								
EBL	104	105	38	143	-14	5	134	
EBT	41	42	4	46	-2	2	46	0.80
EBR	10	10	0	10	0	0	10	
WBL	52	53	4	57	-2	3	58	
WBT	49	50	1	51	-1	1	51	0.90
WBR	56	56	0	56	0	0	56	
NBL	5	5	0	5	0	0	5	
NBT	413	417	4	421	-2	17	436	0.87
NBR	44	45	1	46	0	2	48	
SBL	49	50	0	50	0	0	50	
SBT	366	370	28	398	-10	23	411	0.88
SBR	102	103	4	107	-1	2	108	
9. Durham Road at Grapevine Dr/Deefield Dr								
Movement								
EBL	98	98	10	108	-5	33	136	
EBT	3	3	0	3	0	0	3	0.90
EBR	54	54	30	84	-14	14	84	
WBL	0	0	0	0	0	0	0	
WBT	3	3	0	3	0	0	3	0.90
WBR	17	17	0	17	0	0	17	
NBL	38	38	40	78	-19	24	83	
NBT	351	354	-16	338	10	-15	333	0.96
NBR	0	0	0	0	0	0	0	
SBL	9	9	0	9	0	0	9	
SBT	309	313	-14	299	9	-17	291	0.90
SBR	126	126	46	172	-21	43	194	
12. Grapevine Drive at FF								
Movement								
EBT	155	155	40	195	-19	0	176	0.90
EBR	0	0		0		20	20	
WBL	0	0		0		66	66	0.90
WBT	168	168	86	254	-40	0	214	
NBL	0	0		0		22	22	0.90
NBR	0	0		0		48	48	
13. NH108 at FF								
Movement								
EBR	0	0		0		13	13	0.90
NBT	389	392		392		9	401	0.90
SBT	364	367		367		-2	365	0.90

SAT Peak Hour	2035	APPROVED [Units 2&3] +Arbor Site Trip Distribution	2035 No-Build	(-SUBTRACT) APPROVED [Unit 4] Fast Food Site Trip Distribution	+ADD PROPOSED [Unit 4] Fast Food Site Trip Distribution	2035 Build	SAT PHF FUTURE
3. Mast Road at Grapevine Dr/Stonewall							
Movement							
EBL	1	0	1	0	0	1	
EBT	130	-7	123	4	-5	122	0.90
EBR	22	19	41	-9	10	42	
WBL	13	13	26	-7	9	28	
WBT	164	-8	156	5	-6	155	0.90
WBR	0	0	0	0	0	0	
NBL	21	16	37	-8	10	39	
NBT	3	0	3	0	0	3	0.90
NBR	34	61	95	-27	12	80	
SBL	1	0	1	0	0	1	
SBT	3	0	3	0	0	3	0.90
SBR	1	0	1	0	0	1	
6. Mast Road at Durham Road (NH108)							
Movement							
EBL	116	38	154	-14	5	145	
EBT	46	4	50	-2	2	50	0.90
EBR	11	0	11	0	0	11	
WBL	58	4	62	-2	3	63	
WBT	55	1	56	-1	1	56	0.90
WBR	62	0	62	0	0	62	
NBL	6	0	6	0	0	6	
NBT	461	4	465	-2	17	480	0.90
NBR	49	1	50	0	2	52	
SBL	55	0	55	0	0	55	
SBT	408	28	436	-10	23	449	0.90
SBR	114	4	118	-1	2	119	
9. Durham Road at Grapevine Dr/Deefield Dr							
Movement							
EBL	98	10	108	-5	33	136	
EBT	3	0	3	0	0	3	0.90
EBR	54	30	84	-14	14	84	
WBL	0	0	0	0	0	0	
WBT	3	0	3	0	0	3	0.90
WBR	17	0	17	0	0	17	
NBL	38	40	78	-19	24	83	
NBT	391	-16	375	10	-15	370	0.96
NBR	0	0	0	0	0	0	
SBL	9	0	9	0	0	9	
SBT	345	-14	331	9	-17	323	0.90
SBR	126	46	172	-21	43	194	
12. Grapevine Drive at FF							
Movement							
EBT	155	40	195	-19	0	176	0.90
EBR	0		0		20	20	
WBL	0		0		66	66	0.90
WBT	168	86	254	-40	0	214	
NBL	0		0		22	22	0.90
NBR	0		0		48	48	
13. NH108 at FF							
Movement							
EBR	0		0		13	13	0.90
NBT	429		429		9	438	0.90
SBT	399		399		-2	397	0.90


2024 RAW
PRORATA PER COUNTS
SAT Peak Hour
XX Primary Entering
XX Pass-By
XX Primary Exiting
53%
Exiting Site Traffic heading north of Mast Road on NH108
Stonewall Drive
Grapevine Dr
Durham Rd (NH1C
Durham Road
(NH108) Durham
Mast Road
Deerfield Dr
Grapevine Dr
350
1245
976
SITE
In 200
Out 207
1% 1 3 1
0 142 13
7% 14%
5% 54% 98 352 48
53 48 2% 50 8%
13% 1 112 11% 21
20 3 33
10% 1% 16%
11% 100 5% 40 10
5 398 43
42% 4%
39% 62% 123 298 9
17 3 1% 0
46% 95 1% 3 26% 53
37 338 0
20% 34%

APPENDIX F

AM Synchro

2024 – BASE

2025, 2035 – No-Build

2025, 2035 – Build

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	67	12	9	81	11	8	0	11	7	0	1
Future Vol, veh/h	2	67	12	9	81	11	8	0	11	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	60	60	60	79	79	79	67	67	67
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	89	16	15	135	18	10	0	14	10	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	153	0	0	105	0	0	278	286	97	284	285	144
Stage 1	-	-	-	-	-	-	103	103	-	174	174	-
Stage 2	-	-	-	-	-	-	175	183	-	110	111	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1398	-	-	1486	-	-	674	623	959	668	624	903
Stage 1	-	-	-	-	-	-	903	810	-	828	755	-
Stage 2	-	-	-	-	-	-	827	748	-	895	804	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1398	-	-	1486	-	-	667	616	959	652	617	903
Mov Cap-2 Maneuver	-	-	-	-	-	-	667	616	-	652	617	-
Stage 1	-	-	-	-	-	-	901	808	-	826	747	-
Stage 2	-	-	-	-	-	-	817	741	-	880	802	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.7	9.6	10.4
HCM LOS			A	B

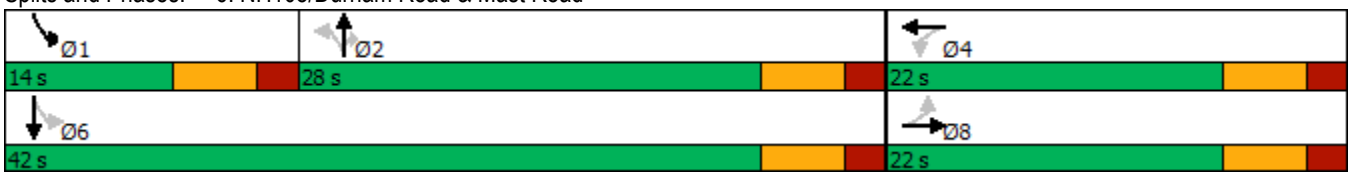
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	810	1398	-	-	1486	-	-	675
HCM Lane V/C Ratio	0.03	0.002	-	-	0.01	-	-	0.018
HCM Control Delay (s)	9.6	7.6	0	-	7.4	-	-	10.4
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

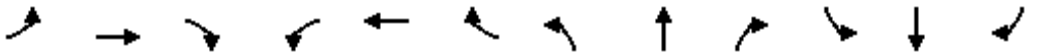
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	53	23	60	28	15	384	36	55	401
Future Volume (vph)	53	23	60	28	15	384	36	55	401
Lane Group Flow (vph)	66	42	76	116	0	448	40	63	533
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	10.7	10.7	10.7	10.7		24.8	24.8	29.7	31.0
Actuated g/C Ratio	0.24	0.24	0.24	0.24		0.55	0.55	0.65	0.68
v/c Ratio	0.22	0.10	0.24	0.26		0.45	0.04	0.10	0.43
Control Delay	19.8	14.5	19.8	9.8		13.1	0.1	4.3	6.1
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	19.8	14.5	19.8	9.8		13.1	0.1	4.3	6.1
LOS	B	B	B	A		B	A	A	A
Approach Delay		17.8		13.8		12.0			5.9
Approach LOS		B		B		B			A
Queue Length 50th (ft)	17	7	19	9		101	0	6	61
Queue Length 95th (ft)	42	25	46	35		203	0	18	128
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	550	776	588	767		1102	1022	684	1474
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.12	0.05	0.13	0.15		0.41	0.04	0.09	0.36

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 45.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 10.1 Intersection LOS: B
Intersection Capacity Utilization 62.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: NH108/Durham Road & Mast Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	23	10	60	28	64	15	384	36	55	401	63
Future Volume (vph)	53	23	10	60	28	64	15	384	36	55	401	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	0.90			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1776		1770	1668			1859	1583	1752	1807	
Flt Permitted	0.68	1.00		0.73	1.00			0.97	1.00	0.34	1.00	
Satd. Flow (perm)	1271	1776		1359	1668			1814	1583	636	1807	
Peak-hour factor, PHF	0.80	0.80	0.80	0.79	0.79	0.79	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	66	29	12	76	35	81	17	431	40	63	461	72
RTOR Reduction (vph)	0	11	0	0	67	0	0	0	21	0	7	0
Lane Group Flow (vph)	66	31	0	76	49	0	0	448	19	63	526	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	6.7	6.7		6.7	6.7			21.3	21.3	30.6	30.6	
Effective Green, g (s)	8.7	8.7		8.7	8.7			23.3	23.3	32.6	32.6	
Actuated g/C Ratio	0.18	0.18		0.18	0.18			0.47	0.47	0.66	0.66	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	224	313		239	294			857	748	540	1194	
v/s Ratio Prot		0.02			0.03					0.01	c0.29	
v/s Ratio Perm	0.05			c0.06				c0.25	0.01	0.06		
v/c Ratio	0.29	0.10		0.32	0.17			0.52	0.03	0.12	0.44	
Uniform Delay, d1	17.6	17.0		17.7	17.2			9.1	6.9	3.7	4.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	0.1		0.8	0.3			0.6	0.0	0.1	0.3	
Delay (s)	18.4	17.2		18.5	17.5			9.7	7.0	3.8	4.3	
Level of Service	B	B		B	B			A	A	A	A	
Approach Delay (s)		17.9			17.9			9.5			4.2	
Approach LOS		B			B			A			A	

Intersection Summary

HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	0	18	1	0	16	19	396	1	4	459	39
Future Vol, veh/h	26	0	18	1	0	16	19	396	1	4	459	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	71	71	71	93	93	93	89	89	89
Heavy Vehicles, %	7	7	7	2	2	2	4	4	4	5	5	5
Mvmt Flow	43	0	30	1	0	23	20	426	1	4	516	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1024	1013	538	1028	1035	427	560	0	0	427	0	0
Stage 1	546	546	-	467	467	-	-	-	-	-	-	-
Stage 2	478	467	-	561	568	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.12	6.52	6.22	4.14	-	-	4.15	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.518	4.018	3.318	2.236	-	-	2.245	-	-
Pot Cap-1 Maneuver	209	234	534	212	232	628	1001	-	-	1116	-	-
Stage 1	513	510	-	576	562	-	-	-	-	-	-	-
Stage 2	559	553	-	512	506	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	198	228	534	197	226	628	1001	-	-	1116	-	-
Mov Cap-2 Maneuver	198	228	-	197	226	-	-	-	-	-	-	-
Stage 1	503	508	-	564	551	-	-	-	-	-	-	-
Stage 2	528	542	-	482	504	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.6	11.8	0.4	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1001	-	-	198	534	556	1116	-	-
HCM Lane V/C Ratio	0.02	-	-	0.219	0.056	0.043	0.004	-	-
HCM Control Delay (s)	8.7	-	-	28.2	12.1	11.8	8.2	-	-
HCM Lane LOS	A	-	-	D	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	65	18	14	80	11	18	0	48	7	0	1
Future Vol, veh/h	2	65	18	14	80	11	18	0	48	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	60	60	60	79	79	79	67	67	67
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	87	24	23	133	18	23	0	61	10	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	151	0	0	111	0	0	294	302	99	324	305	142
Stage 1	-	-	-	-	-	-	105	105	-	188	188	-
Stage 2	-	-	-	-	-	-	189	197	-	136	117	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1400	-	-	1479	-	-	658	611	957	629	608	906
Stage 1	-	-	-	-	-	-	901	808	-	814	745	-
Stage 2	-	-	-	-	-	-	813	738	-	867	799	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1400	-	-	1479	-	-	648	600	957	581	597	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	648	600	-	581	597	-
Stage 1	-	-	-	-	-	-	899	806	-	812	733	-
Stage 2	-	-	-	-	-	-	799	726	-	810	797	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1	9.7	11
HCM LOS			A	B

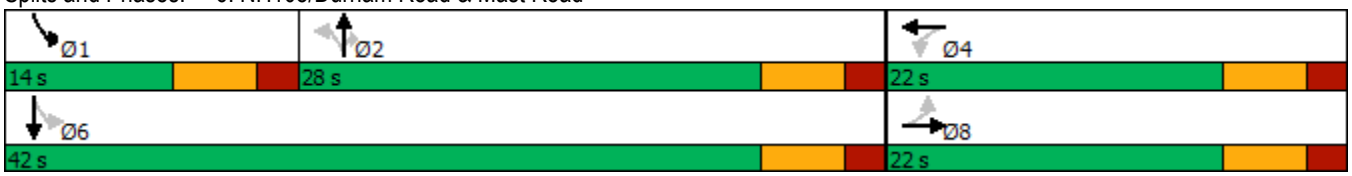
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	847	1400	-	-	1479	-	-	608
HCM Lane V/C Ratio	0.099	0.002	-	-	0.016	-	-	0.02
HCM Control Delay (s)	9.7	7.6	0	-	7.5	-	-	11
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

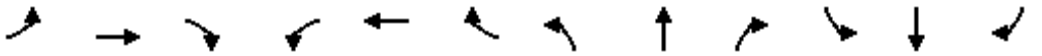
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	76	28	64	29	16	389	36	56	420
Future Volume (vph)	76	28	64	29	16	389	36	56	420
Lane Group Flow (vph)	95	48	81	118	0	455	40	64	558
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	11.6	11.6	11.6	11.6		24.8	24.8	29.8	31.1
Actuated g/C Ratio	0.25	0.25	0.25	0.25		0.53	0.53	0.64	0.67
v/c Ratio	0.30	0.11	0.24	0.25		0.47	0.04	0.10	0.46
Control Delay	20.4	14.4	19.4	9.6		14.1	0.1	4.9	6.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	20.4	14.4	19.4	9.6		14.1	0.1	4.9	6.9
LOS	C	B	B	A		B	A	A	A
Approach Delay		18.4		13.6		13.0			6.7
Approach LOS		B		B		B			A
Queue Length 50th (ft)	25	9	21	9		108	0	6	71
Queue Length 95th (ft)	56	28	47	36		220	0	20	154
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	543	772	579	762		1089	1014	664	1450
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.17	0.06	0.14	0.15		0.42	0.04	0.10	0.38

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 46.5
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 64.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: NH108/Durham Road & Mast Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	28	10	64	29	64	16	389	36	56	420	65
Future Volume (vph)	76	28	10	64	29	64	16	389	36	56	420	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.90			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1787		1770	1671			1859	1583	1752	1807	
Flt Permitted	0.68	1.00		0.73	1.00			0.97	1.00	0.33	1.00	
Satd. Flow (perm)	1269	1787		1352	1671			1809	1583	616	1807	
Peak-hour factor, PHF	0.80	0.80	0.80	0.79	0.79	0.79	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	95	35	12	81	37	81	18	437	40	64	483	75
RTOR Reduction (vph)	0	11	0	0	66	0	0	0	21	0	8	0
Lane Group Flow (vph)	95	37	0	81	52	0	0	455	19	64	550	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	7.6	7.6		7.6	7.6			21.3	21.3	30.6	30.6	
Effective Green, g (s)	9.6	9.6		9.6	9.6			23.3	23.3	32.6	32.6	
Actuated g/C Ratio	0.19	0.19		0.19	0.19			0.46	0.46	0.65	0.65	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	242	341		258	319			839	734	519	1173	
v/s Ratio Prot		0.02			0.03					0.01	c0.30	
v/s Ratio Perm	c0.07			0.06				c0.25	0.01	0.07		
v/c Ratio	0.39	0.11		0.31	0.16			0.54	0.03	0.12	0.47	
Uniform Delay, d1	17.8	16.8		17.5	17.0			9.6	7.3	4.1	4.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.1		0.7	0.2			0.7	0.0	0.1	0.3	
Delay (s)	18.8	16.9		18.2	17.2			10.4	7.3	4.2	4.7	
Level of Service	B	B		B	B			B	A	A	A	
Approach Delay (s)		18.2			17.6			10.1			4.7	
Approach LOS		B			B			B			A	

Intersection Summary

HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	50.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	44	1	0	16	48	388	1	4	450	71
Future Vol, veh/h	30	0	44	1	0	16	48	388	1	4	450	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	71	71	71	93	93	93	89	89	89
Heavy Vehicles, %	7	7	7	2	2	2	4	4	4	5	5	5
Mvmt Flow	50	0	73	1	0	23	52	417	1	4	506	80

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1087	1076	546	1113	1116	418	586	0	0	418	0	0
Stage 1	554	554	-	522	522	-	-	-	-	-	-	-
Stage 2	533	522	-	591	594	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.12	6.52	6.22	4.14	-	-	4.15	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.518	4.018	3.318	2.236	-	-	2.245	-	-
Pot Cap-1 Maneuver	189	215	528	186	208	635	979	-	-	1125	-	-
Stage 1	508	506	-	538	531	-	-	-	-	-	-	-
Stage 2	522	523	-	493	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	174	203	528	153	196	635	979	-	-	1125	-	-
Mov Cap-2 Maneuver	174	203	-	153	196	-	-	-	-	-	-	-
Stage 1	481	504	-	509	503	-	-	-	-	-	-	-
Stage 2	477	495	-	423	491	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.4	12	1	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	979	-	-	174	528	536	1125	-	-
HCM Lane V/C Ratio	0.053	-	-	0.287	0.139	0.045	0.004	-	-
HCM Control Delay (s)	8.9	-	-	33.8	12.9	12	8.2	-	-
HCM Lane LOS	A	-	-	D	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.1	0.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	2	72	18	14	88	11	18	0	48	7	0	1
Future Vol, veh/h	2	72	18	14	88	11	18	0	48	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	60	60	60	79	79	79	67	67	67
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	96	24	23	147	18	23	0	61	10	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	165	0	0	120	0	0	317	325	108	347	328	156
Stage 1	-	-	-	-	-	-	114	114	-	202	202	-
Stage 2	-	-	-	-	-	-	203	211	-	145	126	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1383	-	-	1468	-	-	636	593	946	607	591	890
Stage 1	-	-	-	-	-	-	891	801	-	800	734	-
Stage 2	-	-	-	-	-	-	799	728	-	858	792	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1383	-	-	1468	-	-	626	582	946	560	580	890
Mov Cap-2 Maneuver	-	-	-	-	-	-	626	582	-	560	580	-
Stage 1	-	-	-	-	-	-	889	799	-	798	722	-
Stage 2	-	-	-	-	-	-	785	716	-	801	790	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	9.8	11.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	830	1383	-	-	1468	-	-	587
HCM Lane V/C Ratio	0.101	0.002	-	-	0.016	-	-	0.02
HCM Control Delay (s)	9.8	7.6	0	-	7.5	-	-	11.3
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	81	30	70	32	17	430	40	62	462
Future Volume (vph)	81	30	70	32	17	430	40	62	462
Lane Group Flow (vph)	101	52	89	131	0	502	45	71	614
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	12.0	12.0	11.9	11.9		26.0	26.0	31.0	32.3
Actuated g/C Ratio	0.25	0.25	0.25	0.25		0.54	0.54	0.65	0.67
v/c Ratio	0.32	0.11	0.27	0.27		0.51	0.05	0.12	0.50
Control Delay	21.1	14.5	20.0	9.6		15.3	0.1	5.1	7.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	21.1	14.5	20.0	9.6		15.3	0.1	5.1	7.5
LOS	C	B	C	A		B	A	A	A
Approach Delay		18.9		13.8		14.1			7.3
Approach LOS		B		B		B			A
Queue Length 50th (ft)	29	10	25	11		126	0	7	84
Queue Length 95th (ft)	59	29	52	38		#259	0	22	183
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	519	748	557	744		1058	990	634	1431
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.19	0.07	0.16	0.18		0.47	0.05	0.11	0.43

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 47.9
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 11.6 Intersection LOS: B
Intersection Capacity Utilization 69.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	30	11	70	32	71	17	430	40	62	462	72
Future Volume (vph)	81	30	11	70	32	71	17	430	40	62	462	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.90			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1788		1770	1671			1859	1583	1752	1807	
Flt Permitted	0.67	1.00		0.72	1.00			0.97	1.00	0.30	1.00	
Satd. Flow (perm)	1254	1788		1347	1671			1807	1583	555	1807	
Peak-hour factor, PHF	0.80	0.80	0.80	0.79	0.79	0.79	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	101	38	14	89	41	90	19	483	45	71	531	83
RTOR Reduction (vph)	0	11	0	0	73	0	0	0	24	0	8	0
Lane Group Flow (vph)	101	41	0	89	58	0	0	502	21	71	606	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	7.9	7.9		7.9	7.9			22.4	22.4	31.8	31.8	
Effective Green, g (s)	9.9	9.9		9.9	9.9			24.4	24.4	33.8	33.8	
Actuated g/C Ratio	0.19	0.19		0.19	0.19			0.47	0.47	0.65	0.65	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	240	342		257	319			852	747	487	1181	
v/s Ratio Prot		0.02			0.03					0.02	c0.34	
v/s Ratio Perm	c0.08			0.07				c0.28	0.01	0.08		
v/c Ratio	0.42	0.12		0.35	0.18			0.59	0.03	0.15	0.51	
Uniform Delay, d1	18.4	17.3		18.1	17.5			10.0	7.3	4.4	4.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	0.2		0.8	0.3			1.0	0.0	0.1	0.4	
Delay (s)	19.6	17.4		18.9	17.8			11.0	7.3	4.5	5.0	
Level of Service	B	B		B	B			B	A	A	A	
Approach Delay (s)		18.9			18.2			10.7			5.0	
Approach LOS		B			B			B			A	

Intersection Summary

HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	44	1	0	16	48	429	1	4	498	71
Future Vol, veh/h	30	0	44	1	0	16	48	429	1	4	498	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	71	71	71	93	93	93	89	89	89
Heavy Vehicles, %	7	7	7	2	2	2	4	4	4	5	5	5
Mvmt Flow	50	0	73	1	0	23	52	461	1	4	560	80

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1185	1174	600	1211	1214	462	640	0	0	462	0	0
Stage 1	608	608	-	566	566	-	-	-	-	-	-	-
Stage 2	577	566	-	645	648	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.12	6.52	6.22	4.14	-	-	4.15	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.518	4.018	3.318	2.236	-	-	2.245	-	-
Pot Cap-1 Maneuver	162	188	492	159	182	600	935	-	-	1084	-	-
Stage 1	474	478	-	509	507	-	-	-	-	-	-	-
Stage 2	493	499	-	461	466	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	149	177	492	129	171	600	935	-	-	1084	-	-
Mov Cap-2 Maneuver	149	177	-	129	171	-	-	-	-	-	-	-
Stage 1	447	476	-	480	479	-	-	-	-	-	-	-
Stage 2	448	471	-	391	464	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.7	12.7	0.9	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	935	-	-	149	492	494	1084	-	-
HCM Lane V/C Ratio	0.055	-	-	0.336	0.149	0.048	0.004	-	-
HCM Control Delay (s)	9.1	-	-	40.9	13.6	12.7	8.3	-	-
HCM Lane LOS	A	-	-	E	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	0.5	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	64	23	17	79	11	20	0	37	7	0	1
Future Vol, veh/h	2	64	23	17	79	11	20	0	37	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	60	60	60	90	90	90	67	67	67
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	85	31	28	132	18	22	0	41	10	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	150	0	0	116	0	0	305	313	101	324	319	141
Stage 1	-	-	-	-	-	-	107	107	-	197	197	-
Stage 2	-	-	-	-	-	-	198	206	-	127	122	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1401	-	-	1473	-	-	647	602	954	629	598	907
Stage 1	-	-	-	-	-	-	898	807	-	805	738	-
Stage 2	-	-	-	-	-	-	804	731	-	877	795	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1401	-	-	1473	-	-	635	589	954	593	585	907
Mov Cap-2 Maneuver	-	-	-	-	-	-	635	589	-	593	585	-
Stage 1	-	-	-	-	-	-	896	805	-	803	724	-
Stage 2	-	-	-	-	-	-	787	717	-	838	793	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.2	9.8	10.9
HCM LOS			A	B

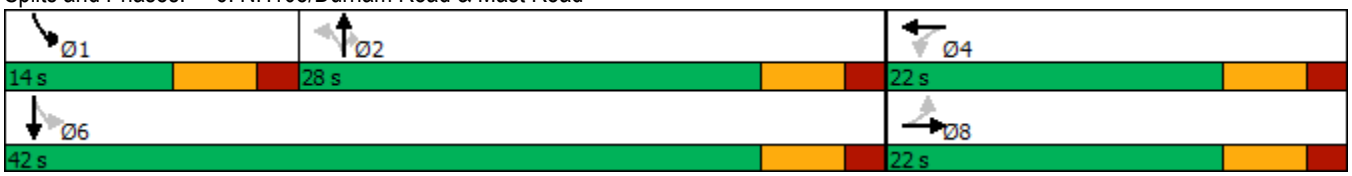
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	811	1401	-	-	1473	-	-	620
HCM Lane V/C Ratio	0.078	0.002	-	-	0.019	-	-	0.019
HCM Control Delay (s)	9.8	7.6	0	-	7.5	-	-	10.9
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	70	28	64	29	16	402	37	56	427
Future Volume (vph)	70	28	64	29	16	402	37	56	427
Lane Group Flow (vph)	88	48	81	118	0	470	42	64	568
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	11.3	11.3	11.3	11.3		25.3	25.3	30.2	31.5
Actuated g/C Ratio	0.24	0.24	0.24	0.24		0.54	0.54	0.65	0.68
v/c Ratio	0.29	0.11	0.25	0.25		0.48	0.05	0.10	0.46
Control Delay	20.5	14.6	19.7	9.7		14.0	0.1	4.7	6.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	20.5	14.6	19.7	9.7		14.0	0.1	4.7	6.8
LOS	C	B	B	A		B	A	A	A
Approach Delay		18.4		13.8		12.8			6.5
Approach LOS		B		B		B			A
Queue Length 50th (ft)	23	9	21	9		111	0	6	72
Queue Length 95th (ft)	52	28	48	36		226	0	19	153
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	538	765	573	756		1082	1007	661	1453
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.16	0.06	0.14	0.16		0.43	0.04	0.10	0.39

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 46.6
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 10.8 Intersection LOS: B
Intersection Capacity Utilization 63.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	28	10	64	29	64	16	402	37	56	427	67
Future Volume (vph)	70	28	10	64	29	64	16	402	37	56	427	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.90			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1787		1770	1671			1859	1583	1752	1807	
Flt Permitted	0.68	1.00		0.73	1.00			0.97	1.00	0.33	1.00	
Satd. Flow (perm)	1269	1787		1352	1671			1810	1583	602	1807	
Peak-hour factor, PHF	0.80	0.80	0.80	0.79	0.79	0.79	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	88	35	12	81	37	81	18	452	42	64	491	77
RTOR Reduction (vph)	0	11	0	0	66	0	0	0	22	0	8	0
Lane Group Flow (vph)	88	37	0	81	52	0	0	470	20	64	560	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	7.3	7.3		7.3	7.3			21.7	21.7	31.0	31.0	
Effective Green, g (s)	9.3	9.3		9.3	9.3			23.7	23.7	33.0	33.0	
Actuated g/C Ratio	0.18	0.18		0.18	0.18			0.47	0.47	0.66	0.66	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	234	330		249	308			852	745	516	1185	
v/s Ratio Prot		0.02			0.03					0.01	c0.31	
v/s Ratio Perm	c0.07			0.06				c0.26	0.01	0.07		
v/c Ratio	0.38	0.11		0.33	0.17			0.55	0.03	0.12	0.47	
Uniform Delay, d1	18.0	17.1		17.8	17.2			9.5	7.1	4.0	4.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.2		0.8	0.3			0.8	0.0	0.1	0.3	
Delay (s)	19.0	17.2		18.5	17.5			10.3	7.1	4.1	4.6	
Level of Service	B	B		B	B			B	A	A	A	
Approach Delay (s)		18.4			17.9			10.0			4.6	
Approach LOS		B			B			B			A	

Intersection Summary

HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	0	40	1	0	16	53	383	1	4	444	84
Future Vol, veh/h	55	0	40	1	0	16	53	383	1	4	444	84
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	93	93	93	90	90	90
Heavy Vehicles, %	7	7	7	2	2	2	4	4	4	5	5	5
Mvmt Flow	61	0	44	1	0	18	57	412	1	4	493	93

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1084	1075	540	1097	1121	413	586	0	0	413	0	0
Stage 1	548	548	-	527	527	-	-	-	-	-	-	-
Stage 2	536	527	-	570	594	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.12	6.52	6.22	4.14	-	-	4.15	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.518	4.018	3.318	2.236	-	-	2.245	-	-
Pot Cap-1 Maneuver	190	215	532	191	206	639	979	-	-	1130	-	-
Stage 1	512	509	-	535	528	-	-	-	-	-	-	-
Stage 2	520	520	-	506	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	176	202	532	167	193	639	979	-	-	1130	-	-
Mov Cap-2 Maneuver	176	202	-	167	193	-	-	-	-	-	-	-
Stage 1	482	507	-	504	497	-	-	-	-	-	-	-
Stage 2	476	490	-	462	491	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.1	11.8	1.1	0.1
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	979	-	-	176	532	548	1130	-	-
HCM Lane V/C Ratio	0.058	-	-	0.347	0.084	0.034	0.004	-	-
HCM Control Delay (s)	8.9	-	-	36	12.4	11.8	8.2	-	-
HCM Lane LOS	A	-	-	E	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	16	58	79	17	41
Future Vol, veh/h	54	16	58	79	17	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	7	7	7	7	2	2
Mvmt Flow	60	18	64	88	19	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	78	0	285	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	216	-
Critical Hdwy	-	-	4.17	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.263	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1489	-	705	994
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1489	-	673	994
Mov Cap-2 Maneuver	-	-	-	-	673	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	783	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	872	-	-	1489	-
HCM Lane V/C Ratio	0.074	-	-	0.043	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	429	480	0
Future Vol, veh/h	0	13	0	429	480	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	4	5	5
Mvmt Flow	0	14	0	477	533	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	533	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	547	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	547	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	547	-
HCM Lane V/C Ratio	-	0.026	-
HCM Control Delay (s)	-	11.8	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	2	71	23	17	87	11	20	0	37	7	0	1
Future Vol, veh/h	2	71	23	17	87	11	20	0	37	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	79	26	19	97	12	22	0	41	8	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	109	0	0	105	0	0	238	243	92	258	250	103
Stage 1	-	-	-	-	-	-	96	96	-	141	141	-
Stage 2	-	-	-	-	-	-	142	147	-	117	109	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1451	-	-	1486	-	-	716	659	965	695	653	952
Stage 1	-	-	-	-	-	-	911	815	-	862	780	-
Stage 2	-	-	-	-	-	-	861	775	-	888	805	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1451	-	-	1486	-	-	707	650	965	658	644	952
Mov Cap-2 Maneuver	-	-	-	-	-	-	707	650	-	658	644	-
Stage 1	-	-	-	-	-	-	910	814	-	861	770	-
Stage 2	-	-	-	-	-	-	849	765	-	849	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.1	9.5	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	855	1451	-	-	1486	-	-	684
HCM Lane V/C Ratio	0.074	0.002	-	-	0.013	-	-	0.013
HCM Control Delay (s)	9.5	7.5	0	-	7.5	-	-	10.3
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	75	30	70	32	17	443	41	62	469
Future Volume (vph)	75	30	70	32	17	443	41	62	469
Lane Group Flow (vph)	83	45	78	115	0	511	46	69	603
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	11.2	11.2	11.2	11.2		26.0	26.0	31.0	32.3
Actuated g/C Ratio	0.24	0.24	0.24	0.24		0.55	0.55	0.66	0.68
v/c Ratio	0.28	0.10	0.24	0.25		0.51	0.05	0.12	0.48
Control Delay	20.7	14.9	20.1	9.9		14.6	0.1	4.6	6.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	20.7	14.9	20.1	9.9		14.6	0.1	4.6	6.9
LOS	C	B	C	A		B	A	A	A
Approach Delay		18.7		14.0		13.4			6.7
Approach LOS		B		B		B			A
Queue Length 50th (ft)	23	9	22	10		124	0	6	77
Queue Length 95th (ft)	57	31	54	44		#258	0	21	175
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	530	753	565	743		1067	996	640	1445
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.16	0.06	0.14	0.15		0.48	0.05	0.11	0.42

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 47.2
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 69.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	30	11	70	32	71	17	443	41	62	469	74
Future Volume (vph)	75	30	11	70	32	71	17	443	41	62	469	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.90			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1788		1770	1671			1859	1583	1752	1807	
Flt Permitted	0.68	1.00		0.73	1.00			0.97	1.00	0.30	1.00	
Satd. Flow (perm)	1272	1788		1356	1671			1809	1583	552	1807	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	33	12	78	36	79	19	492	46	69	521	82
RTOR Reduction (vph)	0	10	0	0	65	0	0	0	24	0	7	0
Lane Group Flow (vph)	83	35	0	78	50	0	0	511	22	69	596	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	7.2	7.2		7.2	7.2			22.5	22.5	31.9	31.9	
Effective Green, g (s)	9.2	9.2		9.2	9.2			24.5	24.5	33.9	33.9	
Actuated g/C Ratio	0.18	0.18		0.18	0.18			0.48	0.48	0.66	0.66	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	229	321		244	300			867	758	493	1198	
v/s Ratio Prot		0.02			0.03					0.01	c0.33	
v/s Ratio Perm	c0.07			0.06				c0.28	0.01	0.08		
v/c Ratio	0.36	0.11		0.32	0.17			0.59	0.03	0.14	0.50	
Uniform Delay, d1	18.4	17.5		18.2	17.7			9.7	7.0	4.2	4.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.2		0.8	0.3			1.0	0.0	0.1	0.3	
Delay (s)	19.4	17.7		19.0	18.0			10.7	7.0	4.3	4.6	
Level of Service	B	B		B	B			B	A	A	A	
Approach Delay (s)		18.8			18.4			10.4			4.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	0	40	1	0	16	53	424	1	4	492	84
Future Vol, veh/h	55	0	40	1	0	16	53	424	1	4	492	84
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	93	93	93	90	90	90
Heavy Vehicles, %	7	7	7	2	2	2	4	4	4	5	5	5
Mvmt Flow	61	0	44	1	0	18	57	456	1	4	547	93

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1182	1173	594	1195	1219	457	640	0	0	457	0	0
Stage 1	602	602	-	571	571	-	-	-	-	-	-	-
Stage 2	580	571	-	624	648	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.12	6.52	6.22	4.14	-	-	4.15	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.518	4.018	3.318	2.236	-	-	2.245	-	-
Pot Cap-1 Maneuver	163	188	496	163	180	604	935	-	-	1088	-	-
Stage 1	478	481	-	506	505	-	-	-	-	-	-	-
Stage 2	491	497	-	473	466	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	150	176	496	141	168	604	935	-	-	1088	-	-
Mov Cap-2 Maneuver	150	176	-	141	168	-	-	-	-	-	-	-
Stage 1	449	479	-	475	474	-	-	-	-	-	-	-
Stage 2	447	467	-	429	464	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.3	12.4	1	0.1
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	935	-	-	150	496	506	1088	-	-
HCM Lane V/C Ratio	0.061	-	-	0.407	0.09	0.037	0.004	-	-
HCM Control Delay (s)	9.1	-	-	44.6	13	12.4	8.3	-	-
HCM Lane LOS	A	-	-	E	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.8	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	16	58	79	17	41
Future Vol, veh/h	54	16	58	79	17	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	7	7	7	7	2	2
Mvmt Flow	60	18	64	88	19	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	78	0	285	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	216	-
Critical Hdwy	-	-	4.17	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.263	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1489	-	705	994
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1489	-	673	994
Mov Cap-2 Maneuver	-	-	-	-	673	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	783	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	872	-	-	1489	-
HCM Lane V/C Ratio	0.074	-	-	0.043	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	470	528	0
Future Vol, veh/h	0	13	0	470	528	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	4	5	5
Mvmt Flow	0	14	0	522	587	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	587	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	510	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	510	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	510	-
HCM Lane V/C Ratio	-	0.028	-
HCM Control Delay (s)	-	12.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

APPENDIX G

PM Synchro

2024 – BASE

2025, 2035 – No-Build

2025, 2035 – Build

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	5	86	12	12	57	27	17	0	33	48	4	9
Future Vol, veh/h	5	86	12	12	57	27	17	0	33	48	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	87	87	87	80	80	80	41	41	41
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	106	15	14	66	31	21	0	41	117	10	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	97	0	0	121	0	0	252	251	114	256	243	82
Stage 1	-	-	-	-	-	-	126	126	-	110	110	-
Stage 2	-	-	-	-	-	-	126	125	-	146	133	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1496	-	-	1467	-	-	701	652	939	697	659	978
Stage 1	-	-	-	-	-	-	878	792	-	895	804	-
Stage 2	-	-	-	-	-	-	878	792	-	857	786	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1496	-	-	1467	-	-	670	643	939	659	650	978
Mov Cap-2 Maneuver	-	-	-	-	-	-	670	643	-	659	650	-
Stage 1	-	-	-	-	-	-	874	789	-	891	796	-
Stage 2	-	-	-	-	-	-	840	784	-	816	783	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.9	9.7	11.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	826	1496	-	-	1467	-	-	692
HCM Lane V/C Ratio	0.076	0.004	-	-	0.009	-	-	0.215
HCM Control Delay (s)	9.7	7.4	0	-	7.5	-	-	11.6
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.8

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	57	37	71	21	2	594	92	79	533
Future Volume (vph)	57	37	71	21	2	594	92	79	533
Lane Group Flow (vph)	76	54	97	166	0	655	101	81	583
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	11.6	11.6	11.6	11.6		28.2	28.2	33.7	34.9
Actuated g/C Ratio	0.23	0.23	0.23	0.23		0.56	0.56	0.67	0.69
v/c Ratio	0.29	0.13	0.31	0.35		0.62	0.10	0.16	0.45
Control Delay	21.5	17.1	21.4	8.2		18.3	1.3	5.2	6.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	21.5	17.1	21.4	8.2		18.3	1.3	5.2	6.9
LOS	C	B	C	A		B	A	A	A
Approach Delay		19.7		13.0		16.1			6.7
Approach LOS		B		B		B			A
Queue Length 50th (ft)	22	13	28	8		179	0	8	77
Queue Length 95th (ft)	44	31	51	30		#425	12	25	181
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	434	697	508	701		1053	963	547	1425
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.18	0.08	0.19	0.24		0.62	0.10	0.15	0.41

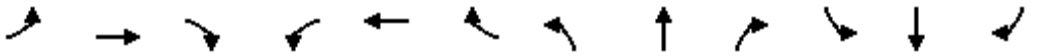
Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 50.3
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 12.4 Intersection LOS: B
Intersection Capacity Utilization 85.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	37	4	71	21	100	2	594	92	79	533	33
Future Volume (vph)	57	37	4	71	21	100	2	594	92	79	533	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.88			1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1837		1770	1632			1881	1599	1770	1846	
Flt Permitted	0.62	1.00		0.72	1.00			1.00	1.00	0.20	1.00	
Satd. Flow (perm)	1150	1837		1345	1632			1879	1599	382	1846	
Peak-hour factor, PHF	0.75	0.75	0.75	0.73	0.73	0.73	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	76	49	5	97	29	137	2	653	101	81	549	34
RTOR Reduction (vph)	0	4	0	0	112	0	0	0	51	0	3	0
Lane Group Flow (vph)	76	50	0	97	54	0	0	655	50	81	580	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	7.8	7.8		7.8	7.8			24.9	24.9	34.5	34.5	
Effective Green, g (s)	9.8	9.8		9.8	9.8			26.9	26.9	36.5	36.5	
Actuated g/C Ratio	0.18	0.18		0.18	0.18			0.50	0.50	0.67	0.67	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	207	331		242	294			930	792	399	1240	
v/s Ratio Prot		0.03			0.03					0.02	c0.31	
v/s Ratio Perm	0.07			c0.07				c0.35	0.03	0.12		
v/c Ratio	0.37	0.15		0.40	0.18			0.70	0.06	0.20	0.47	
Uniform Delay, d1	19.5	18.7		19.7	18.9			10.6	7.1	5.6	4.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.2		1.1	0.3			2.4	0.0	0.3	0.3	
Delay (s)	20.6	19.0		20.7	19.2			13.1	7.2	5.8	4.5	
Level of Service	C	B		C	B			B	A	A	A	
Approach Delay (s)		19.9			19.7			12.3			4.7	
Approach LOS		B			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	13.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	115	2	59	2	0	10	60	521	2	22	423	157
Future Vol, veh/h	115	2	59	2	0	10	60	521	2	22	423	157
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	60	60	60	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	124	2	63	3	0	17	64	554	2	24	465	173

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1292	1284	552	1315	1369	555	638	0	0	556	0	0
Stage 1	600	600	-	683	683	-	-	-	-	-	-	-
Stage 2	692	684	-	632	686	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	140	165	533	135	146	531	951	-	-	1020	-	-
Stage 1	488	490	-	439	449	-	-	-	-	-	-	-
Stage 2	434	449	-	468	448	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	126	150	533	110	133	531	951	-	-	1020	-	-
Mov Cap-2 Maneuver	126	150	-	110	133	-	-	-	-	-	-	-
Stage 1	455	478	-	410	419	-	-	-	-	-	-	-
Stage 2	392	419	-	401	437	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	101.6	16.8	0.9	0.3
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	951	-	-	126	533	324	1020	-	-
HCM Lane V/C Ratio	0.067	-	-	0.998	0.119	0.062	0.024	-	-
HCM Control Delay (s)	9.1	-	-	146.5	12.7	16.8	8.6	-	-
HCM Lane LOS	A	-	-	F	B	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	6.9	0.4	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	86	15	16	56	27	22	0	63	48	4	9
Future Vol, veh/h	5	86	15	16	56	27	22	0	63	48	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	87	87	87	80	80	80	41	41	41
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	106	19	18	64	31	28	0	79	117	10	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	95	0	0	125	0	0	260	259	116	283	253	80
Stage 1	-	-	-	-	-	-	128	128	-	116	116	-
Stage 2	-	-	-	-	-	-	132	131	-	167	137	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1499	-	-	1462	-	-	693	645	936	669	650	980
Stage 1	-	-	-	-	-	-	876	790	-	889	800	-
Stage 2	-	-	-	-	-	-	871	788	-	835	783	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1499	-	-	1462	-	-	661	635	936	605	640	980
Mov Cap-2 Maneuver	-	-	-	-	-	-	661	635	-	605	640	-
Stage 1	-	-	-	-	-	-	872	787	-	885	790	-
Stage 2	-	-	-	-	-	-	831	779	-	762	780	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.2	9.9	12.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	845	1499	-	-	1462	-	-	644
HCM Lane V/C Ratio	0.126	0.004	-	-	0.013	-	-	0.231
HCM Control Delay (s)	9.9	7.4	0	-	7.5	-	-	12.3
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.9

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	76	41	74	22	2	602	93	80	554
Future Volume (vph)	76	41	74	22	2	602	93	80	554
Lane Group Flow (vph)	101	60	101	168	0	664	102	82	608
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	12.2	12.2	12.2	12.2		28.4	28.4	34.0	35.2
Actuated g/C Ratio	0.24	0.24	0.24	0.24		0.55	0.55	0.66	0.69
v/c Ratio	0.37	0.14	0.32	0.34		0.64	0.11	0.17	0.48
Control Delay	22.8	17.1	21.1	8.0		19.3	1.4	5.6	7.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	22.8	17.1	21.1	8.0		19.3	1.4	5.6	7.5
LOS	C	B	C	A		B	A	A	A
Approach Delay		20.7		12.9		16.9			7.3
Approach LOS		C		B		B			A
Queue Length 50th (ft)	30	15	29	8		189	0	8	87
Queue Length 95th (ft)	55	33	52	30		#441	12	27	201
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	424	686	496	693		1043	955	530	1409
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.24	0.09	0.20	0.24		0.64	0.11	0.15	0.43

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 51.2
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 13.2 Intersection LOS: B
Intersection Capacity Utilization 88.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	41	4	74	22	101	2	602	93	80	554	36
Future Volume (vph)	76	41	4	74	22	101	2	602	93	80	554	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.88			1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1839		1770	1633			1881	1599	1770	1846	
Flt Permitted	0.61	1.00		0.72	1.00			1.00	1.00	0.19	1.00	
Satd. Flow (perm)	1142	1839		1337	1633			1878	1599	361	1846	
Peak-hour factor, PHF	0.75	0.75	0.75	0.73	0.73	0.73	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	101	55	5	101	30	138	2	662	102	82	571	37
RTOR Reduction (vph)	0	4	0	0	112	0	0	0	52	0	3	0
Lane Group Flow (vph)	101	56	0	101	56	0	0	664	50	82	605	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	8.5	8.5		8.5	8.5			25.1	25.1	34.8	34.8	
Effective Green, g (s)	10.5	10.5		10.5	10.5			27.1	27.1	36.8	36.8	
Actuated g/C Ratio	0.19	0.19		0.19	0.19			0.49	0.49	0.67	0.67	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	216	349		253	310			920	783	385	1228	
v/s Ratio Prot		0.03			0.03					0.02	c0.33	
v/s Ratio Perm	c0.09			0.08				c0.35	0.03	0.12		
v/c Ratio	0.47	0.16		0.40	0.18			0.72	0.06	0.21	0.49	
Uniform Delay, d1	19.9	18.7		19.6	18.8			11.1	7.4	6.0	4.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.2		1.0	0.3			2.8	0.0	0.3	0.3	
Delay (s)	21.5	18.9		20.7	19.1			13.9	7.5	6.3	4.9	
Level of Service	C	B		C	B			B	A	A	A	
Approach Delay (s)		20.6			19.7			13.1			5.1	
Approach LOS		C			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	19.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	120	2	78	2	0	10	90	515	2	22	416	187
Future Vol, veh/h	120	2	78	2	0	10	90	515	2	22	416	187
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	60	60	60	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	129	2	84	3	0	17	96	548	2	24	457	205

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1358	1350	560	1392	1451	549	662	0	0	550	0	0
Stage 1	608	608	-	741	741	-	-	-	-	-	-	-
Stage 2	750	742	-	651	710	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	~ 126	150	528	119	131	535	931	-	-	1025	-	-
Stage 1	483	486	-	408	423	-	-	-	-	-	-	-
Stage 2	403	422	-	457	437	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 111	131	528	89	115	535	931	-	-	1025	-	-
Mov Cap-2 Maneuver	~ 111	131	-	89	115	-	-	-	-	-	-	-
Stage 1	433	475	-	366	379	-	-	-	-	-	-	-
Stage 2	350	379	-	374	427	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	136.8	18.2	1.4	0.3
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	931	-	-	111	528	292	1025	-	-
HCM Lane V/C Ratio	0.103	-	-	1.182	0.159	0.068	0.024	-	-
HCM Control Delay (s)	9.3	-	-	215.9	13.1	18.2	8.6	-	-
HCM Lane LOS	A	-	-	F	B	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	8.4	0.6	0.2	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	95	15	16	62	27	22	0	63	48	4	9
Future Vol, veh/h	5	95	15	16	62	27	22	0	63	48	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	87	87	87	80	80	80	41	41	41
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	117	19	18	71	31	28	0	79	117	10	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	102	0	0	136	0	0	278	277	127	301	271	87
Stage 1	-	-	-	-	-	-	139	139	-	123	123	-
Stage 2	-	-	-	-	-	-	139	138	-	178	148	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1490	-	-	1448	-	-	674	631	923	651	636	971
Stage 1	-	-	-	-	-	-	864	782	-	881	794	-
Stage 2	-	-	-	-	-	-	864	782	-	824	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1490	-	-	1448	-	-	643	621	923	588	626	971
Mov Cap-2 Maneuver	-	-	-	-	-	-	643	621	-	588	626	-
Stage 1	-	-	-	-	-	-	861	779	-	877	784	-
Stage 2	-	-	-	-	-	-	824	773	-	751	772	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.1	10	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	830	1490	-	-	1448	-	-	627
HCM Lane V/C Ratio	0.128	0.004	-	-	0.013	-	-	0.237
HCM Control Delay (s)	10	7.4	0	-	7.5	-	-	12.5
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.9

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	82	45	82	25	2	665	103	88	610
Future Volume (vph)	82	45	82	25	2	665	103	88	610
Lane Group Flow (vph)	109	65	112	187	0	733	113	91	669
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	12.8	12.8	12.8	12.8		27.3	27.3	37.5	37.5
Actuated g/C Ratio	0.22	0.22	0.22	0.22		0.47	0.47	0.64	0.64
v/c Ratio	0.47	0.16	0.38	0.39		0.83	0.14	0.24	0.56
Control Delay	26.6	17.6	23.0	8.1		29.0	1.9	6.4	8.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	26.6	17.6	23.0	8.1		29.0	1.9	6.4	8.8
LOS	C	B	C	A		C	A	A	A
Approach Delay		23.2		13.7		25.4			8.5
Approach LOS		C		B		C			A
Queue Length 50th (ft)	33	17	33	9		230	0	10	107
Queue Length 95th (ft)	60	35	57	32		#507	17	29	236
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	327	573	412	611		878	829	416	1216
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.33	0.11	0.27	0.31		0.83	0.14	0.22	0.55

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 58.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 95.7% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	45	4	82	25	112	2	665	103	88	610	39
Future Volume (vph)	82	45	4	82	25	112	2	665	103	88	610	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.88			1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1841		1770	1634			1881	1599	1770	1846	
Flt Permitted	0.57	1.00		0.71	1.00			1.00	1.00	0.13	1.00	
Satd. Flow (perm)	1059	1841		1331	1634			1878	1599	238	1846	
Peak-hour factor, PHF	0.75	0.75	0.75	0.73	0.73	0.73	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	109	60	5	112	34	153	2	731	113	91	629	40
RTOR Reduction (vph)	0	4	0	0	120	0	0	0	61	0	3	0
Lane Group Flow (vph)	109	61	0	112	67	0	0	733	52	91	666	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	10.8	10.8		10.8	10.8			25.3	25.3	36.8	36.8	
Effective Green, g (s)	12.8	12.8		12.8	12.8			27.3	27.3	38.8	38.8	
Actuated g/C Ratio	0.21	0.21		0.21	0.21			0.46	0.46	0.65	0.65	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	227	395		285	350			860	732	347	1201	
v/s Ratio Prot		0.03			0.04					0.03	c0.36	
v/s Ratio Perm	c0.10			0.08				c0.39	0.03	0.14		
v/c Ratio	0.48	0.15		0.39	0.19			0.85	0.07	0.26	0.55	
Uniform Delay, d1	20.5	19.0		20.1	19.2			14.4	9.0	8.5	5.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	0.2		0.9	0.3			8.2	0.0	0.4	0.6	
Delay (s)	22.1	19.2		21.0	19.4			22.5	9.1	8.9	6.2	
Level of Service	C	B		C	B			C	A	A	A	
Approach Delay (s)		21.0			20.0			20.7			6.6	
Approach LOS		C			C			C			A	

Intersection Summary

HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	59.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	27.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	120	2	78	2	0	10	90	570	2	22	460	187
Future Vol, veh/h	120	2	78	2	0	10	90	570	2	22	460	187
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	60	60	60	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	129	2	84	3	0	17	96	606	2	24	505	205

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1464	1456	608	1498	1557	607	710	0	0	608	0	0
Stage 1	656	656	-	799	799	-	-	-	-	-	-	-
Stage 2	808	800	-	699	758	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	~ 106	130	496	101	113	496	894	-	-	975	-	-
Stage 1	454	462	-	379	398	-	-	-	-	-	-	-
Stage 2	375	397	-	430	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 92	113	496	75	98	496	894	-	-	975	-	-
Mov Cap-2 Maneuver	~ 92	113	-	75	98	-	-	-	-	-	-	-
Stage 1	405	450	-	338	355	-	-	-	-	-	-	-
Stage 2	323	355	-	347	405	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	203.7	20.3	1.3	0.3
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	894	-	-	92	496	256	975	-	-
HCM Lane V/C Ratio	0.107	-	-	1.426	0.169	0.078	0.025	-	-
HCM Control Delay (s)	9.5	-	-	$ 325.1	13.7	20.3	8.8	-	-
HCM Lane LOS	A	-	-	F	B	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	9.9	0.6	0.3	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	85	17	18	54	27	22	0	56	48	4	9
Future Vol, veh/h	5	85	17	18	54	27	22	0	56	48	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	87	87	87	90	90	90	41	41	41
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	105	21	21	62	31	24	0	62	117	10	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	126	0	0	264	263	116	279	258	78
Stage 1	-	-	-	-	-	-	128	128	-	120	120	-
Stage 2	-	-	-	-	-	-	136	135	-	159	138	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1460	-	-	689	642	936	673	646	983
Stage 1	-	-	-	-	-	-	876	790	-	884	796	-
Stage 2	-	-	-	-	-	-	867	785	-	843	782	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1460	-	-	657	630	936	619	634	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	657	630	-	619	634	-
Stage 1	-	-	-	-	-	-	872	787	-	880	785	-
Stage 2	-	-	-	-	-	-	825	774	-	784	779	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.4	9.8	12.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	836	1501	-	-	1460	-	-	656
HCM Lane V/C Ratio	0.104	0.004	-	-	0.014	-	-	0.227
HCM Control Delay (s)	9.8	7.4	0	-	7.5	-	-	12.1
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.9

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	72	41	75	22	2	610	94	80	561
Future Volume (vph)	72	41	75	22	2	610	94	80	561
Lane Group Flow (vph)	96	60	103	168	0	672	103	82	615
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	12.0	12.0	12.0	12.0		28.4	28.4	34.0	35.2
Actuated g/C Ratio	0.23	0.23	0.23	0.23		0.56	0.56	0.67	0.69
v/c Ratio	0.36	0.14	0.33	0.34		0.64	0.11	0.17	0.48
Control Delay	22.6	17.2	21.4	8.1		19.4	1.4	5.5	7.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	22.6	17.2	21.4	8.1		19.4	1.4	5.5	7.5
LOS	C	B	C	A		B	A	A	A
Approach Delay		20.5		13.1		17.0			7.2
Approach LOS		C		B		B			A
Queue Length 50th (ft)	28	15	30	8		191	0	8	87
Queue Length 95th (ft)	53	33	53	30		#445	13	26	200
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	422	684	495	692		1045	958	528	1448
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.23	0.09	0.21	0.24		0.64	0.11	0.16	0.42

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 51.1
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 87.9% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	41	4	75	22	101	2	610	94	80	561	36
Future Volume (vph)	72	41	4	75	22	101	2	610	94	80	561	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.88			1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1839		1770	1633			1881	1599	1770	1846	
Flt Permitted	0.61	1.00		0.72	1.00			1.00	1.00	0.19	1.00	
Satd. Flow (perm)	1139	1839		1337	1633			1879	1599	355	1846	
Peak-hour factor, PHF	0.75	0.75	0.75	0.73	0.73	0.73	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	96	55	5	103	30	138	2	670	103	82	578	37
RTOR Reduction (vph)	0	4	0	0	112	0	0	0	52	0	3	0
Lane Group Flow (vph)	96	56	0	103	56	0	0	672	51	82	612	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	8.3	8.3		8.3	8.3			25.2	25.2	34.9	34.9	
Effective Green, g (s)	10.3	10.3		10.3	10.3			27.2	27.2	36.9	36.9	
Actuated g/C Ratio	0.19	0.19		0.19	0.19			0.49	0.49	0.67	0.67	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	212	343		249	304			925	787	383	1234	
v/s Ratio Prot		0.03			0.03					0.02	c0.33	
v/s Ratio Perm	c0.08			0.08				c0.36	0.03	0.12		
v/c Ratio	0.45	0.16		0.41	0.18			0.73	0.06	0.21	0.50	
Uniform Delay, d1	19.9	18.8		19.8	18.9			11.1	7.3	6.0	4.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	0.2		1.1	0.3			2.9	0.0	0.3	0.3	
Delay (s)	21.5	19.1		20.9	19.2			13.9	7.4	6.3	4.9	
Level of Service	C	B		C	B			B	A	A	A	
Approach Delay (s)		20.6			19.8			13.1			5.0	
Approach LOS		C			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	27.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	138	2	76	2	0	10	91	513	2	22	412	199
Future Vol, veh/h	138	2	76	2	0	10	91	513	2	22	412	199
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	90	90	90	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	148	2	82	2	0	11	97	546	2	24	453	219

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1358	1353	563	1394	1461	547	672	0	0	548	0	0
Stage 1	611	611	-	741	741	-	-	-	-	-	-	-
Stage 2	747	742	-	653	720	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	~ 126	150	526	119	129	537	923	-	-	1027	-	-
Stage 1	481	484	-	408	423	-	-	-	-	-	-	-
Stage 2	405	422	-	456	432	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 112	131	526	90	113	537	923	-	-	1027	-	-
Mov Cap-2 Maneuver	~ 112	131	-	90	113	-	-	-	-	-	-	-
Stage 1	430	473	-	365	379	-	-	-	-	-	-	-
Stage 2	355	378	-	374	422	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	182.2	17.8	1.4	0.3
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	923	-	-	112	526	294	1027	-	-
HCM Lane V/C Ratio	0.105	-	-	1.344	0.155	0.045	0.024	-	-
HCM Control Delay (s)	9.4	-	-	274	13.1	17.8	8.6	-	-
HCM Lane LOS	A	-	-	F	B	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	10.3	0.5	0.1	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	188	6	40	249	8	28
Future Vol, veh/h	188	6	40	249	8	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	7	44	277	9	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	578	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1354	-	478	827
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	460	827
Mov Cap-2 Maneuver	-	-	-	-	460	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	675	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	702	-	-	1354	-
HCM Lane V/C Ratio	0.057	-	-	0.033	-
HCM Control Delay (s)	10.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	593	486	0
Future Vol, veh/h	0	7	0	593	486	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	0	8	0	659	540	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	540	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	542	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	542	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	542	-
HCM Lane V/C Ratio	-	0.014	-
HCM Control Delay (s)	-	11.7	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	94	17	18	60	27	22	0	56	48	4	9
Future Vol, veh/h	5	94	17	18	60	27	22	0	56	48	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	104	19	20	67	30	24	0	62	53	4	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	97	0	0	123	0	0	255	263	114	279	257	82
Stage 1	-	-	-	-	-	-	126	126	-	122	122	-
Stage 2	-	-	-	-	-	-	129	137	-	157	135	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1496	-	-	1464	-	-	698	642	939	673	647	978
Stage 1	-	-	-	-	-	-	878	792	-	882	795	-
Stage 2	-	-	-	-	-	-	875	783	-	845	785	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1496	-	-	1464	-	-	678	630	939	620	635	978
Mov Cap-2 Maneuver	-	-	-	-	-	-	678	630	-	620	635	-
Stage 1	-	-	-	-	-	-	874	789	-	878	784	-
Stage 2	-	-	-	-	-	-	849	772	-	786	782	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.3	9.7	11.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	847	1496	-	-	1464	-	-	656
HCM Lane V/C Ratio	0.102	0.004	-	-	0.014	-	-	0.103
HCM Control Delay (s)	9.7	7.4	0	-	7.5	-	-	11.1
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	78	45	83	25	2	673	104	88	617
Future Volume (vph)	78	45	83	25	2	673	104	88	617
Lane Group Flow (vph)	87	54	92	152	0	742	114	91	676
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	11.3	11.3	11.3	11.3		29.2	29.2	38.0	39.0
Actuated g/C Ratio	0.21	0.21	0.21	0.21		0.54	0.54	0.70	0.72
v/c Ratio	0.35	0.14	0.33	0.35		0.74	0.12	0.22	0.51
Control Delay	23.6	18.0	22.5	8.7		23.3	1.8	5.5	7.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	23.6	18.0	22.5	8.7		23.3	1.8	5.5	7.3
LOS	C	B	C	A		C	A	A	A
Approach Delay		21.4		13.9		20.4			7.1
Approach LOS		C		B		C			A
Queue Length 50th (ft)	25	14	26	8		220	0	9	97
Queue Length 95th (ft)	61	38	62	46		#494	16	27	219
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	397	620	450	630		1006	927	462	1352
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.22	0.09	0.20	0.24		0.74	0.12	0.20	0.50

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 54.5
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 14.6 Intersection LOS: B
Intersection Capacity Utilization 95.7% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	45	4	83	25	112	2	673	104	88	617	39
Future Volume (vph)	78	45	4	83	25	112	2	673	104	88	617	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.88			1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1842		1770	1635			1881	1599	1770	1846	
Flt Permitted	0.64	1.00		0.72	1.00			1.00	1.00	0.14	1.00	
Satd. Flow (perm)	1184	1842		1345	1635			1879	1599	262	1846	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	87	50	4	92	28	124	2	740	114	91	636	40
RTOR Reduction (vph)	0	3	0	0	103	0	0	0	58	0	3	0
Lane Group Flow (vph)	87	51	0	92	49	0	0	742	56	91	673	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	7.9	7.9		7.9	7.9			26.2	26.2	37.4	37.4	
Effective Green, g (s)	9.9	9.9		9.9	9.9			28.2	28.2	39.4	39.4	
Actuated g/C Ratio	0.17	0.17		0.17	0.17			0.49	0.49	0.69	0.69	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	204	318		232	282			924	786	369	1269	
v/s Ratio Prot		0.03			0.03					0.03	c0.36	
v/s Ratio Perm	c0.07			0.07				c0.39	0.04	0.14		
v/c Ratio	0.43	0.16		0.40	0.18			0.80	0.07	0.25	0.53	
Uniform Delay, d1	21.2	20.2		21.0	20.2			12.2	7.7	7.1	4.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.2		1.1	0.3			5.1	0.0	0.4	0.4	
Delay (s)	22.6	20.4		22.2	20.5			17.3	7.7	7.5	4.8	
Level of Service	C	C		C	C			B	A	A	A	
Approach Delay (s)		21.8			21.1			16.0			5.1	
Approach LOS		C			C			B			A	

Intersection Summary

HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	37.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	138	2	76	2	0	10	91	568	2	22	456	199
Future Vol, veh/h	138	2	76	2	0	10	91	568	2	22	456	199
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	90	90	90	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	148	2	82	2	0	11	97	604	2	24	501	219

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1464	1459	611	1500	1567	605	720	0	0	606	0	0
Stage 1	659	659	-	799	799	-	-	-	-	-	-	-
Stage 2	805	800	-	701	768	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	~ 106	129	494	100	111	498	886	-	-	977	-	-
Stage 1	453	461	-	379	398	-	-	-	-	-	-	-
Stage 2	376	397	-	429	411	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 93	112	494	74	96	498	886	-	-	977	-	-
Mov Cap-2 Maneuver	~ 93	112	-	74	96	-	-	-	-	-	-	-
Stage 1	404	449	-	338	355	-	-	-	-	-	-	-
Stage 2	327	354	-	348	401	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	264.7	19.9	1.3	0.3
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	886	-	-	93	494	255	977	-	-
HCM Lane V/C Ratio	0.109	-	-	1.619	0.165	0.052	0.025	-	-
HCM Control Delay (s)	9.6	-	-	$ 401	13.7	19.9	8.8	-	-
HCM Lane LOS	A	-	-	F	B	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	11.9	0.6	0.2	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	188	6	40	249	8	28
Future Vol, veh/h	188	6	40	249	8	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	7	44	277	9	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	578	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1354	-	478	827
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	460	827
Mov Cap-2 Maneuver	-	-	-	-	460	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	675	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	702	-	-	1354	-
HCM Lane V/C Ratio	0.057	-	-	0.033	-
HCM Control Delay (s)	10.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	648	530	0
Future Vol, veh/h	0	7	0	648	530	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	0	8	0	720	589	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	589	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	508	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	508	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	508	-
HCM Lane V/C Ratio	-	0.015	-
HCM Control Delay (s)	-	12.2	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0	-

APPENDIX H

SAT Synchro

2024 – BASE

2025, 2035 – No-Build

2025, 2035 – Build

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	116	22	13	147	0	21	3	34	1	3	1
Future Vol, veh/h	1	116	22	13	147	0	21	3	34	1	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	78	78	78	70	70	70	42	42	42
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	141	27	17	188	0	30	4	49	2	7	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	188	0	0	168	0	0	384	379	155	405	392	188
Stage 1	-	-	-	-	-	-	157	157	-	222	222	-
Stage 2	-	-	-	-	-	-	227	222	-	183	170	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1392	-	-	1410	-	-	574	553	891	556	544	854
Stage 1	-	-	-	-	-	-	845	768	-	780	720	-
Stage 2	-	-	-	-	-	-	776	720	-	819	758	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1392	-	-	1410	-	-	561	546	891	517	537	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	561	546	-	517	537	-
Stage 1	-	-	-	-	-	-	844	767	-	779	711	-
Stage 2	-	-	-	-	-	-	757	711	-	769	757	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	10.7	11.4
HCM LOS			B	B

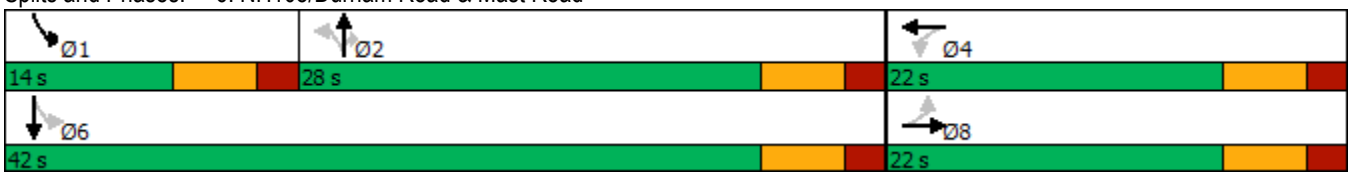
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	715	1392	-	-	1410	-	-	575
HCM Lane V/C Ratio	0.116	0.001	-	-	0.012	-	-	0.021
HCM Control Delay (s)	10.7	7.6	0	-	7.6	-	-	11.4
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	104	41	52	49	5	413	44	49	366
Future Volume (vph)	104	41	52	49	5	413	44	49	366
Lane Group Flow (vph)	130	64	58	116	0	481	51	56	532
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	12.9	12.9	12.8	12.8		25.0	25.0	29.8	31.2
Actuated g/C Ratio	0.27	0.27	0.27	0.27		0.52	0.52	0.62	0.65
v/c Ratio	0.37	0.13	0.16	0.23		0.50	0.06	0.10	0.45
Control Delay	21.0	14.7	18.0	10.9		15.2	0.1	5.4	7.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	21.0	14.7	18.0	10.9		15.2	0.1	5.4	7.2
LOS	C	B	B	B		B	A	A	A
Approach Delay		18.9		13.3		13.7			7.0
Approach LOS		B		B		B			A
Queue Length 50th (ft)	36	13	15	14		122	0	6	71
Queue Length 95th (ft)	72	34	42	49		236	0	20	155
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	541	778	562	759		1096	1000	639	1422
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.24	0.08	0.10	0.15		0.44	0.05	0.09	0.37

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 47.7
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 11.7 Intersection LOS: B
Intersection Capacity Utilization 59.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	41	10	52	49	56	5	413	44	49	366	102
Future Volume (vph)	104	41	10	52	49	56	5	413	44	49	366	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.92			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	1824		1770	1713			1862	1583	1770	1802	
Flt Permitted	0.68	1.00		0.72	1.00			0.99	1.00	0.31	1.00	
Satd. Flow (perm)	1284	1824		1332	1713			1850	1583	573	1802	
Peak-hour factor, PHF	0.80	0.80	0.80	0.90	0.90	0.90	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	130	51	12	58	54	62	6	475	51	56	416	116
RTOR Reduction (vph)	0	10	0	0	49	0	0	0	28	0	14	0
Lane Group Flow (vph)	130	54	0	58	67	0	0	481	23	56	518	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	8.7	8.7		8.7	8.7			21.5	21.5	30.7	30.7	
Effective Green, g (s)	10.7	10.7		10.7	10.7			23.5	23.5	32.7	32.7	
Actuated g/C Ratio	0.21	0.21		0.21	0.21			0.46	0.46	0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	267	379		277	356			845	723	485	1146	
v/s Ratio Prot		0.03			0.04					0.01	c0.29	
v/s Ratio Perm	c0.10			0.04				c0.26	0.01	0.06		
v/c Ratio	0.49	0.14		0.21	0.19			0.57	0.03	0.12	0.45	
Uniform Delay, d1	17.9	16.6		16.8	16.8			10.2	7.7	4.6	4.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.2		0.4	0.3			0.9	0.0	0.1	0.3	
Delay (s)	19.3	16.8		17.2	17.0			11.1	7.7	4.7	5.1	
Level of Service	B	B		B	B			B	A	A	A	
Approach Delay (s)		18.5			17.1			10.8			5.0	
Approach LOS		B			B			B			A	

Intersection Summary

HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	98	3	54	0	3	17	38	351	0	9	309	126
Future Vol, veh/h	98	3	54	0	3	17	38	351	0	9	309	126
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	56	56	56	96	96	96	86	86	86
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	120	4	66	0	5	30	40	366	0	10	359	147

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	917	899	433	934	972	366	506	0	0	366	0	0
Stage 1	453	453	-	446	446	-	-	-	-	-	-	-
Stage 2	464	446	-	488	526	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	254	280	625	246	252	679	1059	-	-	1193	-	-
Stage 1	588	572	-	591	574	-	-	-	-	-	-	-
Stage 2	580	576	-	561	529	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	230	267	625	210	240	679	1059	-	-	1193	-	-
Mov Cap-2 Maneuver	230	267	-	210	240	-	-	-	-	-	-	-
Stage 1	566	567	-	569	552	-	-	-	-	-	-	-
Stage 2	528	554	-	494	525	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.1	12.2	0.8	0.2
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1059	-	-	231	625	533	1193	-	-
HCM Lane V/C Ratio	0.037	-	-	0.533	0.105	0.067	0.009	-	-
HCM Control Delay (s)	8.5	-	-	37.1	11.4	12.2	8	-	-
HCM Lane LOS	A	-	-	E	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.8	0.4	0.2	0	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	110	41	26	140	0	37	3	95	1	3	1
Future Vol, veh/h	1	110	41	26	140	0	37	3	95	1	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	78	78	78	70	70	70	42	42	42
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	134	50	33	179	0	53	4	136	2	7	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	179	0	0	184	0	0	411	406	159	476	431	179
Stage 1	-	-	-	-	-	-	161	161	-	245	245	-
Stage 2	-	-	-	-	-	-	250	245	-	231	186	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1403	-	-	1391	-	-	551	534	886	499	517	864
Stage 1	-	-	-	-	-	-	841	765	-	759	703	-
Stage 2	-	-	-	-	-	-	754	703	-	772	746	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1403	-	-	1391	-	-	533	521	886	412	504	864
Mov Cap-2 Maneuver	-	-	-	-	-	-	533	521	-	412	504	-
Stage 1	-	-	-	-	-	-	840	764	-	758	686	-
Stage 2	-	-	-	-	-	-	726	686	-	649	745	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.2	11.6	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	740	1403	-	-	1391	-	-	524
HCM Lane V/C Ratio	0.261	0.001	-	-	0.024	-	-	0.023
HCM Control Delay (s)	11.6	7.6	0	-	7.7	-	-	12
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	0.1

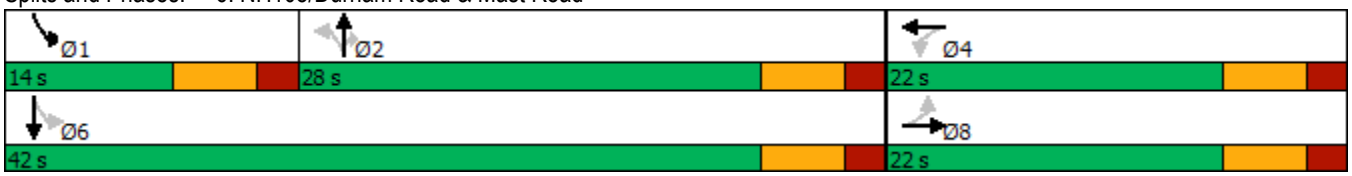
6: NH108/Durham Road & Mast Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	143	46	57	51	5	421	46	50	398
Future Volume (vph)	143	46	57	51	5	421	46	50	398
Lane Group Flow (vph)	179	71	63	119	0	490	53	57	574
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	14.4	14.4	13.9	13.9		26.5	26.5	31.5	32.8
Actuated g/C Ratio	0.29	0.29	0.28	0.28		0.53	0.53	0.62	0.65
v/c Ratio	0.49	0.13	0.17	0.23		0.50	0.06	0.10	0.48
Control Delay	23.1	14.8	18.0	10.9		16.1	0.1	5.8	8.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	23.1	14.8	18.0	10.9		16.1	0.1	5.8	8.2
LOS	C	B	B	B		B	A	A	A
Approach Delay		20.7		13.3		14.5			8.0
Approach LOS		C		B		B			A
Queue Length 50th (ft)	54	16	17	15		137	0	7	93
Queue Length 95th (ft)	97	37	45	51		242	0	20	173
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	501	723	517	709		1049	963	613	1396
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.36	0.10	0.12	0.17		0.47	0.06	0.09	0.41

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 50.4
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 62.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	46	10	57	51	56	5	421	46	50	398	107
Future Volume (vph)	143	46	10	57	51	56	5	421	46	50	398	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.92			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	1830		1770	1717			1862	1583	1770	1803	
Flt Permitted	0.68	1.00		0.71	1.00			0.99	1.00	0.30	1.00	
Satd. Flow (perm)	1280	1830		1324	1717			1850	1583	563	1803	
Peak-hour factor, PHF	0.80	0.80	0.80	0.90	0.90	0.90	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	179	58	12	63	57	62	6	484	53	57	452	122
RTOR Reduction (vph)	0	10	0	0	48	0	0	0	29	0	14	0
Lane Group Flow (vph)	179	61	0	63	71	0	0	490	24	57	560	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	9.9	9.9		9.9	9.9			23.0	23.0	32.3	32.3	
Effective Green, g (s)	11.9	11.9		11.9	11.9			25.0	25.0	34.3	34.3	
Actuated g/C Ratio	0.22	0.22		0.22	0.22			0.46	0.46	0.63	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	281	401		290	376			853	730	474	1141	
v/s Ratio Prot		0.03			0.04					0.01	c0.31	
v/s Ratio Perm	c0.14			0.05				c0.26	0.02	0.06		
v/c Ratio	0.64	0.15		0.22	0.19			0.57	0.03	0.12	0.49	
Uniform Delay, d1	19.2	17.1		17.3	17.2			10.7	8.0	4.9	5.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.7	0.2		0.4	0.2			0.9	0.0	0.1	0.3	
Delay (s)	23.9	17.3		17.7	17.5			11.6	8.0	5.1	5.6	
Level of Service	C	B		B	B			B	A	A	A	
Approach Delay (s)		22.0			17.5			11.3			5.6	
Approach LOS		C			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	108	3	84	0	3	17	78	338	0	9	299	172
Future Vol, veh/h	108	3	84	0	3	17	78	338	0	9	299	172
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	56	56	56	96	96	96	86	86	86
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	132	4	102	0	5	30	81	352	0	10	348	200

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1000	982	448	1035	1082	352	548	0	0	352	0	0
Stage 1	468	468	-	514	514	-	-	-	-	-	-	-
Stage 2	532	514	-	521	568	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	223	250	613	210	217	692	1021	-	-	1207	-	-
Stage 1	577	563	-	543	535	-	-	-	-	-	-	-
Stage 2	533	537	-	539	506	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	195	229	613	161	198	692	1021	-	-	1207	-	-
Mov Cap-2 Maneuver	195	229	-	161	198	-	-	-	-	-	-	-
Stage 1	531	558	-	500	493	-	-	-	-	-	-	-
Stage 2	464	495	-	442	502	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.3	12.7	1.7	0.2
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1021	-	-	196	613	504	1207	-	-
HCM Lane V/C Ratio	0.08	-	-	0.691	0.167	0.071	0.009	-	-
HCM Control Delay (s)	8.8	-	-	56.5	12	12.7	8	-	-
HCM Lane LOS	A	-	-	F	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	4.3	0.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	1	123	41	26	156	0	37	3	95	1	3	1
Future Vol, veh/h	1	123	41	26	156	0	37	3	95	1	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	78	78	78	70	70	70	42	42	42
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	150	50	33	200	0	53	4	136	2	7	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	200	0	0	200	0	0	448	443	175	513	468	200
Stage 1	-	-	-	-	-	-	177	177	-	266	266	-
Stage 2	-	-	-	-	-	-	271	266	-	247	202	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1378	-	-	1372	-	-	521	509	868	472	493	841
Stage 1	-	-	-	-	-	-	825	753	-	739	689	-
Stage 2	-	-	-	-	-	-	735	689	-	757	734	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1378	-	-	1372	-	-	504	496	868	388	481	841
Mov Cap-2 Maneuver	-	-	-	-	-	-	504	496	-	388	481	-
Stage 1	-	-	-	-	-	-	824	752	-	738	672	-
Stage 2	-	-	-	-	-	-	708	672	-	634	733	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	11.9	12.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	715	1378	-	-	1372	-	-	500
HCM Lane V/C Ratio	0.27	0.001	-	-	0.024	-	-	0.024
HCM Control Delay (s)	11.9	7.6	0	-	7.7	-	-	12.4
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	0.1

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Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	154	50	62	56	6	465	50	55	436
Future Volume (vph)	154	50	62	56	6	465	50	55	436
Lane Group Flow (vph)	193	77	69	131	0	541	57	63	629
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	14.7	14.7	14.7	14.7		24.5	24.5	31.2	31.2
Actuated g/C Ratio	0.27	0.27	0.27	0.27		0.45	0.45	0.57	0.57
v/c Ratio	0.56	0.15	0.19	0.25		0.65	0.07	0.14	0.60
Control Delay	25.6	15.0	18.4	10.9		19.8	0.2	6.1	10.1
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	25.6	15.0	18.4	10.9		19.8	0.2	6.1	10.1
LOS	C	B	B	B		B	A	A	B
Approach Delay		22.6		13.5		18.0			9.7
Approach LOS		C		B		B			A
Queue Length 50th (ft)	61	17	19	17		162	0	8	113
Queue Length 95th (ft)	105	40	48	55		#310	0	21	200
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	437	641	455	638		883	837	508	1325
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.44	0.12	0.15	0.21		0.61	0.07	0.12	0.47

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 54.3
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 14.9 Intersection LOS: B
Intersection Capacity Utilization 67.6% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	50	11	62	56	62	6	465	50	55	436	118
Future Volume (vph)	154	50	11	62	56	62	6	465	50	55	436	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.92			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	1830		1770	1716			1862	1583	1770	1803	
Flt Permitted	0.67	1.00		0.71	1.00			0.99	1.00	0.24	1.00	
Satd. Flow (perm)	1266	1830		1317	1716			1847	1583	440	1803	
Peak-hour factor, PHF	0.80	0.80	0.80	0.90	0.90	0.90	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	192	62	14	69	62	69	7	534	57	62	495	134
RTOR Reduction (vph)	0	10	0	0	51	0	0	0	32	0	15	0
Lane Group Flow (vph)	193	67	0	69	80	0	0	541	25	63	614	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	12.6	12.6		12.6	12.6			22.3	22.3	31.9	31.9	
Effective Green, g (s)	14.6	14.6		14.6	14.6			24.3	24.3	33.9	33.9	
Actuated g/C Ratio	0.26	0.26		0.26	0.26			0.43	0.43	0.60	0.60	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	327	472		340	443			794	680	395	1081	
v/s Ratio Prot		0.04			0.05					0.02	c0.34	
v/s Ratio Perm	c0.15			0.05				c0.29	0.02	0.08		
v/c Ratio	0.59	0.14		0.20	0.18			0.68	0.04	0.16	0.57	
Uniform Delay, d1	18.3	16.1		16.4	16.3			13.0	9.3	6.5	6.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	0.1		0.3	0.2			2.4	0.0	0.2	0.7	
Delay (s)	21.2	16.3		16.7	16.5			15.4	9.3	6.7	7.5	
Level of Service	C	B		B	B			B	A	A	A	
Approach Delay (s)		19.8			16.6			14.8			7.5	
Approach LOS		B			B			B			A	

Intersection Summary

HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	56.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	9.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	108	3	84	0	3	17	78	375	0	9	331	172
Future Vol, veh/h	108	3	84	0	3	17	78	375	0	9	331	172
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	56	56	56	96	96	96	86	86	86
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	132	4	102	0	5	30	81	391	0	10	385	200

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1076	1058	485	1111	1158	391	585	0	0	391	0	0
Stage 1	505	505	-	553	553	-	-	-	-	-	-	-
Stage 2	571	553	-	558	605	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	198	226	584	186	196	658	990	-	-	1168	-	-
Stage 1	551	542	-	517	514	-	-	-	-	-	-	-
Stage 2	508	516	-	514	487	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	172	206	584	141	178	658	990	-	-	1168	-	-
Mov Cap-2 Maneuver	172	206	-	141	178	-	-	-	-	-	-	-
Stage 1	506	537	-	475	472	-	-	-	-	-	-	-
Stage 2	440	474	-	417	483	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	48.4	13.3	1.5	0.1
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	990	-	-	173	584	468	1168	-	-
HCM Lane V/C Ratio	0.082	-	-	0.782	0.175	0.076	0.009	-	-
HCM Control Delay (s)	9	-	-	75.5	12.5	13.3	8.1	-	-
HCM Lane LOS	A	-	-	F	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	5.2	0.6	0.2	0	-	-

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	109	42	28	139	0	39	3	80	1	3	1
Future Vol, veh/h	1	109	42	28	139	0	39	3	80	1	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	78	78	78	90	90	90	42	42	42
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	133	51	36	178	0	43	3	89	2	7	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	184	0	0	416	411	159	457	436	178
Stage 1	-	-	-	-	-	-	161	161	-	250	250	-
Stage 2	-	-	-	-	-	-	255	250	-	207	186	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1404	-	-	1391	-	-	547	531	886	514	514	865
Stage 1	-	-	-	-	-	-	841	765	-	754	700	-
Stage 2	-	-	-	-	-	-	749	700	-	795	746	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1404	-	-	1391	-	-	528	517	886	451	500	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	517	-	451	500	-
Stage 1	-	-	-	-	-	-	840	764	-	753	682	-
Stage 2	-	-	-	-	-	-	720	682	-	711	745	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.3	11.2	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	718	1404	-	-	1391	-	-	533
HCM Lane V/C Ratio	0.189	0.001	-	-	0.026	-	-	0.022
HCM Control Delay (s)	11.2	7.6	0	-	7.7	-	-	11.9
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.1

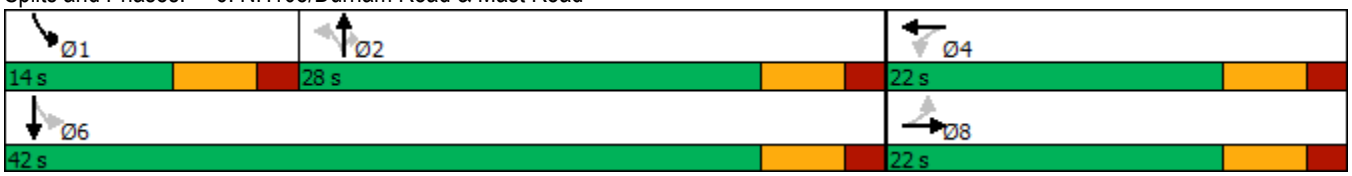
6: NH108/Durham Road & Mast Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	134	46	58	51	5	436	48	50	411
Future Volume (vph)	134	46	58	51	5	436	48	50	411
Lane Group Flow (vph)	168	71	64	119	0	507	55	57	590
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	14.1	14.1	13.8	13.8		26.4	26.4	31.2	32.6
Actuated g/C Ratio	0.28	0.28	0.28	0.28		0.53	0.53	0.63	0.65
v/c Ratio	0.46	0.13	0.18	0.23		0.52	0.06	0.10	0.49
Control Delay	22.7	14.9	18.2	10.9		16.4	0.1	5.7	8.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	22.7	14.9	18.2	10.9		16.4	0.1	5.7	8.2
LOS	C	B	B	B		B	A	A	A
Approach Delay		20.4		13.5		14.8			8.0
Approach LOS		C		B		B			A
Queue Length 50th (ft)	51	16	18	16		141	0	7	94
Queue Length 95th (ft)	91	37	45	51		252	0	20	182
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	514	743	532	727		1049	964	611	1399
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.33	0.10	0.12	0.16		0.48	0.06	0.09	0.42

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 49.9
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 62.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	46	10	58	51	56	5	436	48	50	411	108
Future Volume (vph)	134	46	10	58	51	56	5	436	48	50	411	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.92			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	1830		1770	1717			1862	1583	1770	1804	
Flt Permitted	0.68	1.00		0.71	1.00			0.99	1.00	0.29	1.00	
Satd. Flow (perm)	1280	1830		1324	1717			1850	1583	539	1804	
Peak-hour factor, PHF	0.80	0.80	0.80	0.90	0.90	0.90	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	168	58	12	64	57	62	6	501	55	57	467	123
RTOR Reduction (vph)	0	10	0	0	49	0	0	0	30	0	13	0
Lane Group Flow (vph)	168	61	0	64	70	0	0	507	25	57	577	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	9.6	9.6		9.6	9.6			22.8	22.8	32.1	32.1	
Effective Green, g (s)	11.6	11.6		11.6	11.6			24.8	24.8	34.1	34.1	
Actuated g/C Ratio	0.22	0.22		0.22	0.22			0.46	0.46	0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	276	395		286	370			854	731	463	1145	
v/s Ratio Prot		0.03			0.04					0.01	c0.32	
v/s Ratio Perm	c0.13			0.05				c0.27	0.02	0.07		
v/c Ratio	0.61	0.15		0.22	0.19			0.59	0.03	0.12	0.50	
Uniform Delay, d1	19.0	17.1		17.3	17.2			10.7	7.9	5.0	5.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	0.2		0.4	0.3			1.1	0.0	0.1	0.4	
Delay (s)	22.8	17.3		17.7	17.5			11.8	7.9	5.1	5.6	
Level of Service	C	B		B	B			B	A	A	A	
Approach Delay (s)		21.1			17.6			11.4			5.6	
Approach LOS		C			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	9.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	136	3	84	0	3	17	83	333	0	9	291	194
Future Vol, veh/h	136	3	84	0	3	17	83	333	0	9	291	194
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	96	96	96	90	90	90
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	3	93	0	3	19	86	347	0	10	323	216

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	981	970	431	1018	1078	347	539	0	0	347	0	0
Stage 1	451	451	-	519	519	-	-	-	-	-	-	-
Stage 2	530	519	-	499	559	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	230	254	626	216	219	696	1029	-	-	1212	-	-
Stage 1	590	573	-	540	533	-	-	-	-	-	-	-
Stage 2	534	534	-	554	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	206	231	626	169	199	696	1029	-	-	1212	-	-
Mov Cap-2 Maneuver	206	231	-	169	199	-	-	-	-	-	-	-
Stage 1	540	568	-	495	488	-	-	-	-	-	-	-
Stage 2	473	489	-	465	507	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42.7	12.4	1.8	0.1
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1029	-	-	206	626	506	1212	-	-
HCM Lane V/C Ratio	0.084	-	-	0.75	0.149	0.044	0.008	-	-
HCM Control Delay (s)	8.8	-	-	61.4	11.8	12.4	8	-	-
HCM Lane LOS	A	-	-	F	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	5	0.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	176	20	66	214	22	48
Future Vol, veh/h	176	20	66	214	22	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	2	2
Mvmt Flow	196	22	73	238	24	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	218	0	591	207
Stage 1	-	-	-	-	207	-
Stage 2	-	-	-	-	384	-
Critical Hdwy	-	-	4.11	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.209	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1358	-	470	833
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1358	-	441	833
Mov Cap-2 Maneuver	-	-	-	-	441	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	645	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	651	-	-	1358	-
HCM Lane V/C Ratio	0.119	-	-	0.054	-
HCM Control Delay (s)	11.3	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	401	365	0
Future Vol, veh/h	0	13	0	401	365	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	0	446	406	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	406	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	645	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	645	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	645	-
HCM Lane V/C Ratio	-	0.022	-
HCM Control Delay (s)	-	10.7	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	109	42	28	139	0	39	3	80	1	3	1
Future Vol, veh/h	1	109	42	28	139	0	39	3	80	1	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	78	78	78	90	90	90	42	42	42
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	133	51	36	178	0	43	3	89	2	7	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	184	0	0	416	411	159	457	436	178
Stage 1	-	-	-	-	-	-	161	161	-	250	250	-
Stage 2	-	-	-	-	-	-	255	250	-	207	186	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1404	-	-	1391	-	-	547	531	886	514	514	865
Stage 1	-	-	-	-	-	-	841	765	-	754	700	-
Stage 2	-	-	-	-	-	-	749	700	-	795	746	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1404	-	-	1391	-	-	528	517	886	451	500	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	517	-	451	500	-
Stage 1	-	-	-	-	-	-	840	764	-	753	682	-
Stage 2	-	-	-	-	-	-	720	682	-	711	745	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.3	11.2	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	718	1404	-	-	1391	-	-	533
HCM Lane V/C Ratio	0.189	0.001	-	-	0.026	-	-	0.022
HCM Control Delay (s)	11.2	7.6	0	-	7.7	-	-	11.9
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.1

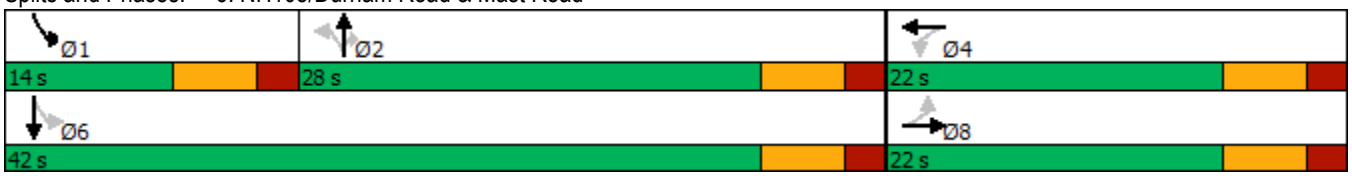
6: NH108/Durham Road & Mast Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	134	46	58	51	5	436	48	50	411
Future Volume (vph)	134	46	58	51	5	436	48	50	411
Lane Group Flow (vph)	168	71	64	119	0	507	55	57	590
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	14.1	14.1	13.8	13.8		26.4	26.4	31.2	32.6
Actuated g/C Ratio	0.28	0.28	0.28	0.28		0.53	0.53	0.63	0.65
v/c Ratio	0.46	0.13	0.18	0.23		0.52	0.06	0.10	0.49
Control Delay	22.7	14.9	18.2	10.9		16.4	0.1	5.7	8.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	22.7	14.9	18.2	10.9		16.4	0.1	5.7	8.2
LOS	C	B	B	B		B	A	A	A
Approach Delay		20.4		13.5		14.8			8.0
Approach LOS		C		B		B			A
Queue Length 50th (ft)	51	16	18	16		141	0	7	94
Queue Length 95th (ft)	91	37	45	51		252	0	20	182
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	514	743	532	727		1049	964	611	1399
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.33	0.10	0.12	0.16		0.48	0.06	0.09	0.42

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 49.9
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 62.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	46	10	58	51	56	5	436	48	50	411	108
Future Volume (vph)	134	46	10	58	51	56	5	436	48	50	411	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.92			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	1830		1770	1717			1862	1583	1770	1804	
Flt Permitted	0.68	1.00		0.71	1.00			0.99	1.00	0.29	1.00	
Satd. Flow (perm)	1280	1830		1324	1717			1850	1583	539	1804	
Peak-hour factor, PHF	0.80	0.80	0.80	0.90	0.90	0.90	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	168	58	12	64	57	62	6	501	55	57	467	123
RTOR Reduction (vph)	0	10	0	0	49	0	0	0	30	0	13	0
Lane Group Flow (vph)	168	61	0	64	70	0	0	507	25	57	577	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	9.6	9.6		9.6	9.6			22.8	22.8	32.1	32.1	
Effective Green, g (s)	11.6	11.6		11.6	11.6			24.8	24.8	34.1	34.1	
Actuated g/C Ratio	0.22	0.22		0.22	0.22			0.46	0.46	0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	276	395		286	370			854	731	463	1145	
v/s Ratio Prot		0.03			0.04					0.01	c0.32	
v/s Ratio Perm	c0.13			0.05				c0.27	0.02	0.07		
v/c Ratio	0.61	0.15		0.22	0.19			0.59	0.03	0.12	0.50	
Uniform Delay, d1	19.0	17.1		17.3	17.2			10.7	7.9	5.0	5.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	0.2		0.4	0.3			1.1	0.0	0.1	0.4	
Delay (s)	22.8	17.3		17.7	17.5			11.8	7.9	5.1	5.6	
Level of Service	C	B		B	B			B	A	A	A	
Approach Delay (s)		21.1			17.6			11.4			5.6	
Approach LOS		C			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	9.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	136	3	84	0	3	17	83	333	0	9	291	194
Future Vol, veh/h	136	3	84	0	3	17	83	333	0	9	291	194
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	96	96	96	90	90	90
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	3	93	0	3	19	86	347	0	10	323	216

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	981	970	431	1018	1078	347	539	0	0	347	0	0
Stage 1	451	451	-	519	519	-	-	-	-	-	-	-
Stage 2	530	519	-	499	559	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	230	254	626	216	219	696	1029	-	-	1212	-	-
Stage 1	590	573	-	540	533	-	-	-	-	-	-	-
Stage 2	534	534	-	554	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	206	231	626	169	199	696	1029	-	-	1212	-	-
Mov Cap-2 Maneuver	206	231	-	169	199	-	-	-	-	-	-	-
Stage 1	540	568	-	495	488	-	-	-	-	-	-	-
Stage 2	473	489	-	465	507	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42.7	12.4	1.8	0.1
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1029	-	-	206	626	506	1212	-	-
HCM Lane V/C Ratio	0.084	-	-	0.75	0.149	0.044	0.008	-	-
HCM Control Delay (s)	8.8	-	-	61.4	11.8	12.4	8	-	-
HCM Lane LOS	A	-	-	F	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	5	0.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	176	20	66	214	22	48
Future Vol, veh/h	176	20	66	214	22	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	2	2
Mvmt Flow	196	22	73	238	24	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	218	0	591	207
Stage 1	-	-	-	-	207	-
Stage 2	-	-	-	-	384	-
Critical Hdwy	-	-	4.11	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.209	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1358	-	470	833
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1358	-	441	833
Mov Cap-2 Maneuver	-	-	-	-	441	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	645	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	651	-	-	1358	-
HCM Lane V/C Ratio	0.119	-	-	0.054	-
HCM Control Delay (s)	11.3	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	401	365	0
Future Vol, veh/h	0	13	0	401	365	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	0	446	406	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	406	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	645	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	645	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	645	-
HCM Lane V/C Ratio	-	0.022	-
HCM Control Delay (s)	-	10.7	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

APPENDIX I

Mitigation Synchro (AM/PM/SAT)

AM 2025, 2035 – Build MIT

PM 2025, 2035 – Build MIT

SAT 2025, 2035 – Build MIT

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	64	23	17	79	11	20	0	37	7	0	1
Future Vol, veh/h	2	64	23	17	79	11	20	0	37	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	60	60	60	90	90	90	67	67	67
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	85	31	28	132	18	22	0	41	10	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	150	0	0	116	0	0	305	313	101	324	319	141
Stage 1	-	-	-	-	-	-	107	107	-	197	197	-
Stage 2	-	-	-	-	-	-	198	206	-	127	122	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1401	-	-	1473	-	-	647	602	954	629	598	907
Stage 1	-	-	-	-	-	-	898	807	-	805	738	-
Stage 2	-	-	-	-	-	-	804	731	-	877	795	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1401	-	-	1473	-	-	635	589	954	593	585	907
Mov Cap-2 Maneuver	-	-	-	-	-	-	635	589	-	593	585	-
Stage 1	-	-	-	-	-	-	896	805	-	803	724	-
Stage 2	-	-	-	-	-	-	787	717	-	838	793	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.2	9.8	10.9
HCM LOS			A	B

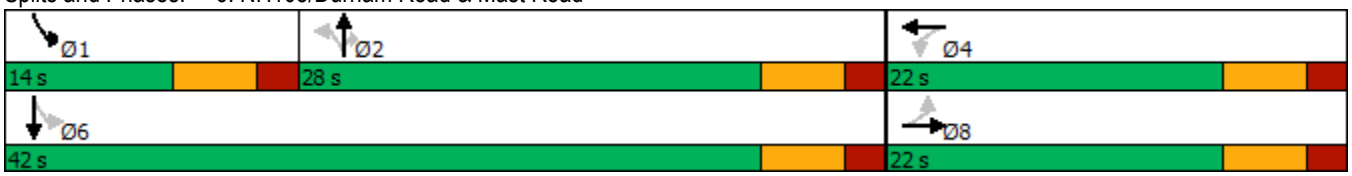
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	811	1401	-	-	1473	-	-	620
HCM Lane V/C Ratio	0.078	0.002	-	-	0.019	-	-	0.019
HCM Control Delay (s)	9.8	7.6	0	-	7.5	-	-	10.9
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	70	28	64	29	16	402	37	56	427
Future Volume (vph)	70	28	64	29	16	402	37	56	427
Lane Group Flow (vph)	88	48	81	118	0	470	42	64	568
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	11.3	11.3	11.3	11.3		25.3	25.3	30.2	31.5
Actuated g/C Ratio	0.24	0.24	0.24	0.24		0.54	0.54	0.65	0.68
v/c Ratio	0.29	0.11	0.25	0.25		0.48	0.05	0.10	0.46
Control Delay	20.5	14.6	19.7	9.7		14.0	0.1	4.7	6.8
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	20.5	14.6	19.7	9.7		14.0	0.1	4.7	6.8
LOS	C	B	B	A		B	A	A	A
Approach Delay		18.4		13.8		12.8			6.5
Approach LOS		B		B		B			A
Queue Length 50th (ft)	23	9	21	9		111	0	6	72
Queue Length 95th (ft)	52	28	48	36		226	0	19	153
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	538	765	573	756		1082	1007	661	1453
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.16	0.06	0.14	0.16		0.43	0.04	0.10	0.39

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 46.6
Natural Cycle: 40
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 10.8
Intersection LOS: B
Intersection Capacity Utilization 63.7%
ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	28	10	64	29	64	16	402	37	56	427	67
Future Volume (vph)	70	28	10	64	29	64	16	402	37	56	427	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.90			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1787		1770	1671			1859	1583	1752	1807	
Flt Permitted	0.68	1.00		0.73	1.00			0.97	1.00	0.33	1.00	
Satd. Flow (perm)	1269	1787		1352	1671			1810	1583	602	1807	
Peak-hour factor, PHF	0.80	0.80	0.80	0.79	0.79	0.79	0.89	0.89	0.89	0.87	0.87	0.87
Adj. Flow (vph)	88	35	12	81	37	81	18	452	42	64	491	77
RTOR Reduction (vph)	0	11	0	0	66	0	0	0	22	0	8	0
Lane Group Flow (vph)	88	37	0	81	52	0	0	470	20	64	560	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	7.3	7.3		7.3	7.3			21.7	21.7	31.0	31.0	
Effective Green, g (s)	9.3	9.3		9.3	9.3			23.7	23.7	33.0	33.0	
Actuated g/C Ratio	0.18	0.18		0.18	0.18			0.47	0.47	0.66	0.66	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	234	330		249	308			852	745	516	1185	
v/s Ratio Prot		0.02			0.03					0.01	c0.31	
v/s Ratio Perm	c0.07			0.06				c0.26	0.01	0.07		
v/c Ratio	0.38	0.11		0.33	0.17			0.55	0.03	0.12	0.47	
Uniform Delay, d1	18.0	17.1		17.8	17.2			9.5	7.1	4.0	4.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.2		0.8	0.3			0.8	0.0	0.1	0.3	
Delay (s)	19.0	17.2		18.5	17.5			10.3	7.1	4.1	4.6	
Level of Service	B	B		B	B			B	A	A	A	
Approach Delay (s)		18.4			17.9			10.0			4.6	
Approach LOS		B			B			B			A	

Intersection Summary

HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	50.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	0	40	1	0	16	53	383	1	4	444	84
Future Vol, veh/h	55	0	40	1	0	16	53	383	1	4	444	84
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	93	93	93	90	90	90
Heavy Vehicles, %	7	7	7	2	2	2	4	4	4	5	5	5
Mvmt Flow	61	0	44	1	0	18	57	412	1	4	493	93

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1084	1075	540	1097	1121	413	586	0	0	413	0	0
Stage 1	548	548	-	527	527	-	-	-	-	-	-	-
Stage 2	536	527	-	570	594	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.12	6.52	6.22	4.14	-	-	4.15	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.518	4.018	3.318	2.236	-	-	2.245	-	-
Pot Cap-1 Maneuver	190	215	532	191	206	639	979	-	-	1130	-	-
Stage 1	512	509	-	535	528	-	-	-	-	-	-	-
Stage 2	520	520	-	506	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	176	202	532	167	193	639	979	-	-	1130	-	-
Mov Cap-2 Maneuver	176	202	-	167	193	-	-	-	-	-	-	-
Stage 1	482	507	-	504	497	-	-	-	-	-	-	-
Stage 2	476	490	-	462	491	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.1	11.8	1.1	0.1
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	979	-	-	176	532	548	1130	-	-
HCM Lane V/C Ratio	0.058	-	-	0.347	0.084	0.034	0.004	-	-
HCM Control Delay (s)	8.9	-	-	36	12.4	11.8	8.2	-	-
HCM Lane LOS	A	-	-	E	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	16	58	79	17	41
Future Vol, veh/h	54	16	58	79	17	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	7	7	7	7	2	2
Mvmt Flow	60	18	64	88	19	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	78	0	285	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	216	-
Critical Hdwy	-	-	4.17	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.263	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1489	-	705	994
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1489	-	675	994
Mov Cap-2 Maneuver	-	-	-	-	675	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	785	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	873	-	-	1489	-
HCM Lane V/C Ratio	0.074	-	-	0.043	-
HCM Control Delay (s)	9.5	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	429	480	0
Future Vol, veh/h	0	13	0	429	480	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	4	5	5
Mvmt Flow	0	14	0	477	533	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	533	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	547	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	547	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	547	-
HCM Lane V/C Ratio	-	0.026	-
HCM Control Delay (s)	-	11.8	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	71	23	17	87	11	20	0	37	7	0	1
Future Vol, veh/h	2	71	23	17	87	11	20	0	37	7	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	7	7	7	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	79	26	19	97	12	22	0	41	8	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	109	0	0	105	0	0	238	243	92	258	250	103
Stage 1	-	-	-	-	-	-	96	96	-	141	141	-
Stage 2	-	-	-	-	-	-	142	147	-	117	109	-
Critical Hdwy	4.17	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.263	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1451	-	-	1486	-	-	716	659	965	695	653	952
Stage 1	-	-	-	-	-	-	911	815	-	862	780	-
Stage 2	-	-	-	-	-	-	861	775	-	888	805	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1451	-	-	1486	-	-	707	650	965	658	644	952
Mov Cap-2 Maneuver	-	-	-	-	-	-	707	650	-	658	644	-
Stage 1	-	-	-	-	-	-	910	814	-	861	770	-
Stage 2	-	-	-	-	-	-	849	765	-	849	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.1	9.5	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	855	1451	-	-	1486	-	-	684
HCM Lane V/C Ratio	0.074	0.002	-	-	0.013	-	-	0.013
HCM Control Delay (s)	9.5	7.5	0	-	7.5	-	-	10.3
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	75	30	70	32	17	443	41	62	469
Future Volume (vph)	75	30	70	32	17	443	41	62	469
Lane Group Flow (vph)	83	45	78	115	0	511	46	69	603
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	11.2	11.2	11.2	11.2		26.0	26.0	31.0	32.3
Actuated g/C Ratio	0.24	0.24	0.24	0.24		0.55	0.55	0.66	0.68
v/c Ratio	0.28	0.10	0.24	0.25		0.51	0.05	0.12	0.48
Control Delay	20.7	14.9	20.1	9.9		14.6	0.1	4.6	6.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	20.7	14.9	20.1	9.9		14.6	0.1	4.6	6.9
LOS	C	B	C	A		B	A	A	A
Approach Delay		18.7		14.0		13.4			6.7
Approach LOS		B		B		B			A
Queue Length 50th (ft)	23	9	22	10		124	0	6	77
Queue Length 95th (ft)	57	31	54	44		#258	0	21	175
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	530	753	565	743		1067	996	640	1445
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.16	0.06	0.14	0.15		0.48	0.05	0.11	0.42

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 47.2
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 69.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	30	11	70	32	71	17	443	41	62	469	74
Future Volume (vph)	75	30	11	70	32	71	17	443	41	62	469	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.96		1.00	0.90			1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1788		1770	1671			1859	1583	1752	1807	
Flt Permitted	0.68	1.00		0.73	1.00			0.97	1.00	0.30	1.00	
Satd. Flow (perm)	1272	1788		1356	1671			1809	1583	552	1807	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	33	12	78	36	79	19	492	46	69	521	82
RTOR Reduction (vph)	0	10	0	0	65	0	0	0	24	0	7	0
Lane Group Flow (vph)	83	35	0	78	50	0	0	511	22	69	596	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	7.2	7.2		7.2	7.2			22.5	22.5	31.9	31.9	
Effective Green, g (s)	9.2	9.2		9.2	9.2			24.5	24.5	33.9	33.9	
Actuated g/C Ratio	0.18	0.18		0.18	0.18			0.48	0.48	0.66	0.66	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	229	321		244	300			867	758	493	1198	
v/s Ratio Prot		0.02			0.03					0.01	c0.33	
v/s Ratio Perm	c0.07			0.06				c0.28	0.01	0.08		
v/c Ratio	0.36	0.11		0.32	0.17			0.59	0.03	0.14	0.50	
Uniform Delay, d1	18.4	17.5		18.2	17.7			9.7	7.0	4.2	4.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.2		0.8	0.3			1.0	0.0	0.1	0.3	
Delay (s)	19.4	17.7		19.0	18.0			10.7	7.0	4.3	4.6	
Level of Service	B	B		B	B			B	A	A	A	
Approach Delay (s)		18.8			18.4			10.4			4.6	
Approach LOS		B			B			B			A	

Intersection Summary

HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	51.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	0	40	1	0	16	53	424	1	4	492	84
Future Vol, veh/h	55	0	40	1	0	16	53	424	1	4	492	84
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	93	93	93	90	90	90
Heavy Vehicles, %	7	7	7	2	2	2	4	4	4	5	5	5
Mvmt Flow	61	0	44	1	0	18	57	456	1	4	547	93

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1182	1173	594	1195	1219	457	640	0	0	457	0	0
Stage 1	602	602	-	571	571	-	-	-	-	-	-	-
Stage 2	580	571	-	624	648	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.12	6.52	6.22	4.14	-	-	4.15	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.518	4.018	3.318	2.236	-	-	2.245	-	-
Pot Cap-1 Maneuver	163	188	496	163	180	604	935	-	-	1088	-	-
Stage 1	478	481	-	506	505	-	-	-	-	-	-	-
Stage 2	491	497	-	473	466	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	150	176	496	141	168	604	935	-	-	1088	-	-
Mov Cap-2 Maneuver	150	176	-	141	168	-	-	-	-	-	-	-
Stage 1	449	479	-	475	474	-	-	-	-	-	-	-
Stage 2	447	467	-	429	464	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.3	12.4	1	0.1
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	935	-	-	150	496	506	1088	-	-
HCM Lane V/C Ratio	0.061	-	-	0.407	0.09	0.037	0.004	-	-
HCM Control Delay (s)	9.1	-	-	44.6	13	12.4	8.3	-	-
HCM Lane LOS	A	-	-	E	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.8	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	16	58	79	17	41
Future Vol, veh/h	54	16	58	79	17	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	7	7	7	7	2	2
Mvmt Flow	60	18	64	88	19	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	78	0	285	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	216	-
Critical Hdwy	-	-	4.17	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.263	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1489	-	705	994
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1489	-	675	994
Mov Cap-2 Maneuver	-	-	-	-	675	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	785	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	873	-	-	1489	-
HCM Lane V/C Ratio	0.074	-	-	0.043	-
HCM Control Delay (s)	9.5	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	470	528	0
Future Vol, veh/h	0	13	0	470	528	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	4	5	5
Mvmt Flow	0	14	0	522	587	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	587	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	510	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	510	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	510	-
HCM Lane V/C Ratio	-	0.028	-
HCM Control Delay (s)	-	12.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	85	17	18	54	27	22	0	56	48	4	9
Future Vol, veh/h	5	85	17	18	54	27	22	0	56	48	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	87	87	87	90	90	90	41	41	41
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	105	21	21	62	31	24	0	62	117	10	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	93	0	0	126	0	0	264	263	116	279	258	78
Stage 1	-	-	-	-	-	-	128	128	-	120	120	-
Stage 2	-	-	-	-	-	-	136	135	-	159	138	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1501	-	-	1460	-	-	689	642	936	673	646	983
Stage 1	-	-	-	-	-	-	876	790	-	884	796	-
Stage 2	-	-	-	-	-	-	867	785	-	843	782	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1501	-	-	1460	-	-	657	630	936	619	634	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	657	630	-	619	634	-
Stage 1	-	-	-	-	-	-	872	787	-	880	785	-
Stage 2	-	-	-	-	-	-	825	774	-	784	779	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.4	9.8	12.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	836	1501	-	-	1460	-	-	656
HCM Lane V/C Ratio	0.104	0.004	-	-	0.014	-	-	0.227
HCM Control Delay (s)	9.8	7.4	0	-	7.5	-	-	12.1
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.9

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	72	41	75	22	2	610	94	80	561
Future Volume (vph)	72	41	75	22	2	610	94	80	561
Lane Group Flow (vph)	96	60	103	168	0	672	103	82	615
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	12.0	12.0	12.0	12.0		28.4	28.4	34.0	35.2
Actuated g/C Ratio	0.23	0.23	0.23	0.23		0.56	0.56	0.67	0.69
v/c Ratio	0.36	0.14	0.33	0.34		0.64	0.11	0.17	0.48
Control Delay	22.6	17.2	21.4	8.1		19.4	1.4	5.5	7.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	22.6	17.2	21.4	8.1		19.4	1.4	5.5	7.5
LOS	C	B	C	A		B	A	A	A
Approach Delay		20.5		13.1		17.0			7.2
Approach LOS		C		B		B			A
Queue Length 50th (ft)	28	15	30	8		191	0	8	87
Queue Length 95th (ft)	53	33	53	30		#445	13	26	200
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	422	684	495	692		1045	958	528	1448
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.23	0.09	0.21	0.24		0.64	0.11	0.16	0.42

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 51.1
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 87.9% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	41	4	75	22	101	2	610	94	80	561	36
Future Volume (vph)	72	41	4	75	22	101	2	610	94	80	561	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.88			1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1839		1770	1633			1881	1599	1770	1846	
Flt Permitted	0.61	1.00		0.72	1.00			1.00	1.00	0.19	1.00	
Satd. Flow (perm)	1139	1839		1337	1633			1879	1599	355	1846	
Peak-hour factor, PHF	0.75	0.75	0.75	0.73	0.73	0.73	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	96	55	5	103	30	138	2	670	103	82	578	37
RTOR Reduction (vph)	0	4	0	0	112	0	0	0	52	0	3	0
Lane Group Flow (vph)	96	56	0	103	56	0	0	672	51	82	612	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	8.3	8.3		8.3	8.3			25.2	25.2	34.9	34.9	
Effective Green, g (s)	10.3	10.3		10.3	10.3			27.2	27.2	36.9	36.9	
Actuated g/C Ratio	0.19	0.19		0.19	0.19			0.49	0.49	0.67	0.67	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	212	343		249	304			925	787	383	1234	
v/s Ratio Prot		0.03			0.03					0.02	c0.33	
v/s Ratio Perm	c0.08			0.08				c0.36	0.03	0.12		
v/c Ratio	0.45	0.16		0.41	0.18			0.73	0.06	0.21	0.50	
Uniform Delay, d1	19.9	18.8		19.8	18.9			11.1	7.3	6.0	4.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	0.2		1.1	0.3			2.9	0.0	0.3	0.3	
Delay (s)	21.5	19.1		20.9	19.2			13.9	7.4	6.3	4.9	
Level of Service	C	B		C	B			B	A	A	A	
Approach Delay (s)		20.6			19.8			13.1			5.0	
Approach LOS		C			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	27.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	138	2	76	2	0	10	91	513	2	22	412	199
Future Vol, veh/h	138	2	76	2	0	10	91	513	2	22	412	199
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	90	90	90	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	148	2	82	2	0	11	97	546	2	24	453	219

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1358	1353	563	1394	1461	547	672	0	0	548	0	0
Stage 1	611	611	-	741	741	-	-	-	-	-	-	-
Stage 2	747	742	-	653	720	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	~ 126	150	526	119	129	537	923	-	-	1027	-	-
Stage 1	481	484	-	408	423	-	-	-	-	-	-	-
Stage 2	405	422	-	456	432	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 112	131	526	90	113	537	923	-	-	1027	-	-
Mov Cap-2 Maneuver	~ 112	131	-	90	113	-	-	-	-	-	-	-
Stage 1	430	473	-	365	379	-	-	-	-	-	-	-
Stage 2	355	378	-	374	422	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	182.2	17.8	1.4	0.3
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	923	-	-	112	526	294	1027	-	-
HCM Lane V/C Ratio	0.105	-	-	1.344	0.155	0.045	0.024	-	-
HCM Control Delay (s)	9.4	-	-	274	13.1	17.8	8.6	-	-
HCM Lane LOS	A	-	-	F	B	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	10.3	0.5	0.1	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	188	6	40	249	8	28
Future Vol, veh/h	188	6	40	249	8	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	7	44	277	9	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	578	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1354	-	478	827
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	463	827
Mov Cap-2 Maneuver	-	-	-	-	463	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	680	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	704	-	-	1354	-
HCM Lane V/C Ratio	0.057	-	-	0.033	-
HCM Control Delay (s)	10.4	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	593	486	0
Future Vol, veh/h	0	7	0	593	486	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	0	8	0	659	540	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	540	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	542	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	542	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	542	-
HCM Lane V/C Ratio	-	0.014	-
HCM Control Delay (s)	-	11.7	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑			↕			↕	
Traffic Vol, veh/h	5	94	17	18	60	27	22	0	56	48	4	9
Future Vol, veh/h	5	94	17	18	60	27	22	0	56	48	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	104	19	20	67	30	24	0	62	53	4	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	97	0	0	123	0	0	255	263	114	279	257	82
Stage 1	-	-	-	-	-	-	126	126	-	122	122	-
Stage 2	-	-	-	-	-	-	129	137	-	157	135	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1496	-	-	1464	-	-	698	642	939	673	647	978
Stage 1	-	-	-	-	-	-	878	792	-	882	795	-
Stage 2	-	-	-	-	-	-	875	783	-	845	785	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1496	-	-	1464	-	-	678	630	939	620	635	978
Mov Cap-2 Maneuver	-	-	-	-	-	-	678	630	-	620	635	-
Stage 1	-	-	-	-	-	-	874	789	-	878	784	-
Stage 2	-	-	-	-	-	-	849	772	-	786	782	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	1.3	9.7	11.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	847	1496	-	-	1464	-	-	656
HCM Lane V/C Ratio	0.102	0.004	-	-	0.014	-	-	0.103
HCM Control Delay (s)	9.7	7.4	0	-	7.5	-	-	11.1
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	78	45	83	25	2	673	104	88	617
Future Volume (vph)	78	45	83	25	2	673	104	88	617
Lane Group Flow (vph)	87	54	92	152	0	742	114	91	676
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	11.3	11.3	11.3	11.3		29.2	29.2	38.0	39.0
Actuated g/C Ratio	0.21	0.21	0.21	0.21		0.54	0.54	0.70	0.72
v/c Ratio	0.35	0.14	0.33	0.35		0.74	0.12	0.22	0.51
Control Delay	23.6	18.0	22.5	8.7		23.3	1.8	5.5	7.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	23.6	18.0	22.5	8.7		23.3	1.8	5.5	7.3
LOS	C	B	C	A		C	A	A	A
Approach Delay		21.4		13.9		20.4			7.1
Approach LOS		C		B		C			A
Queue Length 50th (ft)	25	14	26	8		220	0	9	97
Queue Length 95th (ft)	61	38	62	46		#494	16	27	219
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	397	620	450	630		1006	927	462	1352
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.22	0.09	0.20	0.24		0.74	0.12	0.20	0.50

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 54.5
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 14.6 Intersection LOS: B
Intersection Capacity Utilization 95.7% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	45	4	83	25	112	2	673	104	88	617	39
Future Volume (vph)	78	45	4	83	25	112	2	673	104	88	617	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.88			1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1842		1770	1635			1881	1599	1770	1846	
Flt Permitted	0.64	1.00		0.72	1.00			1.00	1.00	0.14	1.00	
Satd. Flow (perm)	1184	1842		1345	1635			1879	1599	262	1846	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.97	0.97	0.97
Adj. Flow (vph)	87	50	4	92	28	124	2	740	114	91	636	40
RTOR Reduction (vph)	0	3	0	0	103	0	0	0	58	0	3	0
Lane Group Flow (vph)	87	51	0	92	49	0	0	742	56	91	673	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	7.9	7.9		7.9	7.9			26.2	26.2	37.4	37.4	
Effective Green, g (s)	9.9	9.9		9.9	9.9			28.2	28.2	39.4	39.4	
Actuated g/C Ratio	0.17	0.17		0.17	0.17			0.49	0.49	0.69	0.69	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	204	318		232	282			924	786	369	1269	
v/s Ratio Prot		0.03			0.03					0.03	c0.36	
v/s Ratio Perm	c0.07			0.07				c0.39	0.04	0.14		
v/c Ratio	0.43	0.16		0.40	0.18			0.80	0.07	0.25	0.53	
Uniform Delay, d1	21.2	20.2		21.0	20.2			12.2	7.7	7.1	4.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.2		1.1	0.3			5.1	0.0	0.4	0.4	
Delay (s)	22.6	20.4		22.2	20.5			17.3	7.7	7.5	4.8	
Level of Service	C	C		C	C			B	A	A	A	
Approach Delay (s)		21.8			21.1			16.0			5.1	
Approach LOS		C			C			B			A	

Intersection Summary

HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	37.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	138	2	76	2	0	10	91	568	2	22	456	199
Future Vol, veh/h	138	2	76	2	0	10	91	568	2	22	456	199
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	90	90	90	94	94	94	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	1	1	1	1	1	1
Mvmt Flow	148	2	82	2	0	11	97	604	2	24	501	219

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1464	1459	611	1500	1567	605	720	0	0	606	0	0
Stage 1	659	659	-	799	799	-	-	-	-	-	-	-
Stage 2	805	800	-	701	768	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	~ 106	129	494	100	111	498	886	-	-	977	-	-
Stage 1	453	461	-	379	398	-	-	-	-	-	-	-
Stage 2	376	397	-	429	411	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 93	112	494	74	96	498	886	-	-	977	-	-
Mov Cap-2 Maneuver	~ 93	112	-	74	96	-	-	-	-	-	-	-
Stage 1	404	449	-	338	355	-	-	-	-	-	-	-
Stage 2	327	354	-	348	401	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	264.7	19.9	1.3	0.3
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	886	-	-	93	494	255	977	-	-
HCM Lane V/C Ratio	0.109	-	-	1.619	0.165	0.052	0.025	-	-
HCM Control Delay (s)	9.6	-	-	$ 401	13.7	19.9	8.8	-	-
HCM Lane LOS	A	-	-	F	B	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	11.9	0.6	0.2	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	188	6	40	249	8	28
Future Vol, veh/h	188	6	40	249	8	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	7	44	277	9	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	578	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1354	-	478	827
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	463	827
Mov Cap-2 Maneuver	-	-	-	-	463	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	680	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	704	-	-	1354	-
HCM Lane V/C Ratio	0.057	-	-	0.033	-
HCM Control Delay (s)	10.4	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	648	530	0
Future Vol, veh/h	0	7	0	648	530	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	0	8	0	720	589	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	589	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	508	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	508	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	508	-
HCM Lane V/C Ratio	-	0.015	-
HCM Control Delay (s)	-	12.2	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0	-

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	109	42	28	139	0	39	3	80	1	3	1
Future Vol, veh/h	1	109	42	28	139	0	39	3	80	1	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	78	78	78	90	90	90	42	42	42
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	133	51	36	178	0	43	3	89	2	7	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	184	0	0	416	411	159	457	436	178
Stage 1	-	-	-	-	-	-	161	161	-	250	250	-
Stage 2	-	-	-	-	-	-	255	250	-	207	186	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1404	-	-	1391	-	-	547	531	886	514	514	865
Stage 1	-	-	-	-	-	-	841	765	-	754	700	-
Stage 2	-	-	-	-	-	-	749	700	-	795	746	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1404	-	-	1391	-	-	528	517	886	451	500	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	517	-	451	500	-
Stage 1	-	-	-	-	-	-	840	764	-	753	682	-
Stage 2	-	-	-	-	-	-	720	682	-	711	745	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.3	11.2	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	718	1404	-	-	1391	-	-	533
HCM Lane V/C Ratio	0.189	0.001	-	-	0.026	-	-	0.022
HCM Control Delay (s)	11.2	7.6	0	-	7.7	-	-	11.9
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.1

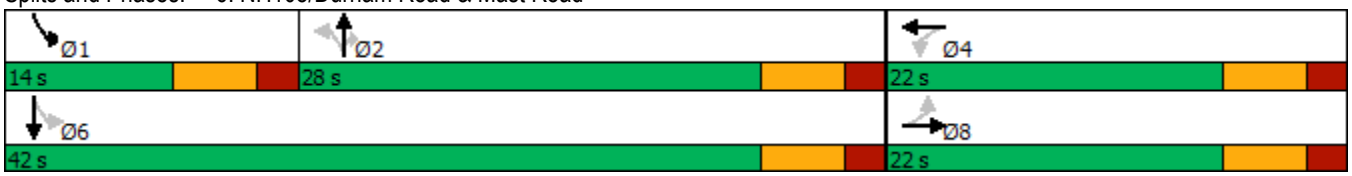
6: NH108/Durham Road & Mast Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	134	46	58	51	5	436	48	50	411
Future Volume (vph)	134	46	58	51	5	436	48	50	411
Lane Group Flow (vph)	168	71	64	119	0	507	55	57	590
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	14.1	14.1	13.8	13.8		26.4	26.4	31.2	32.6
Actuated g/C Ratio	0.28	0.28	0.28	0.28		0.53	0.53	0.63	0.65
v/c Ratio	0.46	0.13	0.18	0.23		0.52	0.06	0.10	0.49
Control Delay	22.7	14.9	18.2	10.9		16.4	0.1	5.7	8.2
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	22.7	14.9	18.2	10.9		16.4	0.1	5.7	8.2
LOS	C	B	B	B		B	A	A	A
Approach Delay		20.4		13.5		14.8			8.0
Approach LOS		C		B		B			A
Queue Length 50th (ft)	51	16	18	16		141	0	7	94
Queue Length 95th (ft)	91	37	45	51		252	0	20	182
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	514	743	532	727		1049	964	611	1399
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.33	0.10	0.12	0.16		0.48	0.06	0.09	0.42

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 49.9
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 62.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	46	10	58	51	56	5	436	48	50	411	108
Future Volume (vph)	134	46	10	58	51	56	5	436	48	50	411	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.92			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	1830		1770	1717			1862	1583	1770	1804	
Flt Permitted	0.68	1.00		0.71	1.00			0.99	1.00	0.29	1.00	
Satd. Flow (perm)	1280	1830		1324	1717			1850	1583	539	1804	
Peak-hour factor, PHF	0.80	0.80	0.80	0.90	0.90	0.90	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	168	58	12	64	57	62	6	501	55	57	467	123
RTOR Reduction (vph)	0	10	0	0	49	0	0	0	30	0	13	0
Lane Group Flow (vph)	168	61	0	64	70	0	0	507	25	57	577	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	9.6	9.6		9.6	9.6			22.8	22.8	32.1	32.1	
Effective Green, g (s)	11.6	11.6		11.6	11.6			24.8	24.8	34.1	34.1	
Actuated g/C Ratio	0.22	0.22		0.22	0.22			0.46	0.46	0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	276	395		286	370			854	731	463	1145	
v/s Ratio Prot		0.03			0.04					0.01	c0.32	
v/s Ratio Perm	c0.13			0.05				c0.27	0.02	0.07		
v/c Ratio	0.61	0.15		0.22	0.19			0.59	0.03	0.12	0.50	
Uniform Delay, d1	19.0	17.1		17.3	17.2			10.7	7.9	5.0	5.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	0.2		0.4	0.3			1.1	0.0	0.1	0.4	
Delay (s)	22.8	17.3		17.7	17.5			11.8	7.9	5.1	5.6	
Level of Service	C	B		B	B			B	A	A	A	
Approach Delay (s)		21.1			17.6			11.4			5.6	
Approach LOS		C			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	9.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	136	3	84	0	3	17	83	333	0	9	291	194
Future Vol, veh/h	136	3	84	0	3	17	83	333	0	9	291	194
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	96	96	96	90	90	90
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	3	93	0	3	19	86	347	0	10	323	216

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	981	970	431	1018	1078	347	539	0	0	347	0	0
Stage 1	451	451	-	519	519	-	-	-	-	-	-	-
Stage 2	530	519	-	499	559	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	230	254	626	216	219	696	1029	-	-	1212	-	-
Stage 1	590	573	-	540	533	-	-	-	-	-	-	-
Stage 2	534	534	-	554	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	206	231	626	169	199	696	1029	-	-	1212	-	-
Mov Cap-2 Maneuver	206	231	-	169	199	-	-	-	-	-	-	-
Stage 1	540	568	-	495	488	-	-	-	-	-	-	-
Stage 2	473	489	-	465	507	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42.7	12.4	1.8	0.1
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1029	-	-	206	626	506	1212	-	-
HCM Lane V/C Ratio	0.084	-	-	0.75	0.149	0.044	0.008	-	-
HCM Control Delay (s)	8.8	-	-	61.4	11.8	12.4	8	-	-
HCM Lane LOS	A	-	-	F	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	5	0.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	176	20	66	214	22	48
Future Vol, veh/h	176	20	66	214	22	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	2	2
Mvmt Flow	196	22	73	238	24	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	218	0	591	207
Stage 1	-	-	-	-	207	-
Stage 2	-	-	-	-	384	-
Critical Hdwy	-	-	4.11	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.209	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1358	-	470	833
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1358	-	445	833
Mov Cap-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	654	-	-	1358	-
HCM Lane V/C Ratio	0.119	-	-	0.054	-
HCM Control Delay (s)	11.2	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	401	365	0
Future Vol, veh/h	0	13	0	401	365	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	0	446	406	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	406	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	645	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	645	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	645	-
HCM Lane V/C Ratio	-	0.022	-
HCM Control Delay (s)	-	10.7	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	122	42	28	155	0	39	3	80	1	3	1
Future Vol, veh/h	1	122	42	28	155	0	39	3	80	1	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	136	47	31	172	0	43	3	89	1	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	172	0	0	183	0	0	398	396	160	442	419	172
Stage 1	-	-	-	-	-	-	162	162	-	234	234	-
Stage 2	-	-	-	-	-	-	236	234	-	208	185	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1411	-	-	1392	-	-	562	541	885	526	525	872
Stage 1	-	-	-	-	-	-	840	764	-	769	711	-
Stage 2	-	-	-	-	-	-	767	711	-	794	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1411	-	-	1392	-	-	549	529	885	462	513	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	549	529	-	462	513	-
Stage 1	-	-	-	-	-	-	839	763	-	768	695	-
Stage 2	-	-	-	-	-	-	745	695	-	710	746	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.2	11.1	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	730	1411	-	-	1392	-	-	546
HCM Lane V/C Ratio	0.186	0.001	-	-	0.022	-	-	0.01
HCM Control Delay (s)	11.1	7.6	0	-	7.6	-	-	11.7
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0

6: NH108/Durham Road & Mast Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	145	50	63	56	6	480	52	55	449
Future Volume (vph)	145	50	63	56	6	480	52	55	449
Lane Group Flow (vph)	161	68	70	131	0	540	58	61	631
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		8		4		2		1	6
Permitted Phases	8		4		2		2	6	
Detector Phase	8	8	4	4	2	2	2	1	6
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	22.0	22.0	22.0	22.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	43.8%	43.8%	43.8%	21.9%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0
Lead/Lag					Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	Min	Min	Min	None	Min
Act Effct Green (s)	14.0	14.0	13.7	13.7		26.7	26.7	31.7	33.0
Actuated g/C Ratio	0.28	0.28	0.27	0.27		0.53	0.53	0.63	0.66
v/c Ratio	0.46	0.13	0.19	0.25		0.55	0.06	0.11	0.53
Control Delay	22.9	15.1	18.5	11.0		17.3	0.1	5.7	8.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	22.9	15.1	18.5	11.0		17.3	0.1	5.7	8.6
LOS	C	B	B	B		B	A	A	A
Approach Delay		20.6		13.6		15.6			8.3
Approach LOS		C		B		B			A
Queue Length 50th (ft)	49	15	20	17		153	0	7	103
Queue Length 95th (ft)	102	42	49	54		#327	0	21	210
Internal Link Dist (ft)		1120		720		420			720
Turn Bay Length (ft)	150		25				175	125	
Base Capacity (vph)	501	732	525	721		1042	959	592	1399
Starvation Cap Reductn	0	0	0	0		0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.32	0.09	0.13	0.18		0.52	0.06	0.10	0.45

Intersection Summary

Cycle Length: 64
Actuated Cycle Length: 50.2
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 67.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6: NH108/Durham Road & Mast Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	50	11	63	56	62	6	480	52	55	449	119
Future Volume (vph)	145	50	11	63	56	62	6	480	52	55	449	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.92			1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	1831		1770	1716			1862	1583	1770	1804	
Flt Permitted	0.67	1.00		0.71	1.00			0.99	1.00	0.27	1.00	
Satd. Flow (perm)	1266	1831		1328	1716			1847	1583	494	1804	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	161	56	12	70	62	69	7	533	58	61	499	132
RTOR Reduction (vph)	0	9	0	0	54	0	0	0	31	0	13	0
Lane Group Flow (vph)	161	59	0	70	77	0	0	540	27	61	618	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4			2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	9.6	9.6		9.6	9.6			23.1	23.1	32.5	32.5	
Effective Green, g (s)	11.6	11.6		11.6	11.6			25.1	25.1	34.5	34.5	
Actuated g/C Ratio	0.21	0.21		0.21	0.21			0.46	0.46	0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	271	392		284	367			856	734	442	1150	
v/s Ratio Prot		0.03			0.04					0.01	c0.34	
v/s Ratio Perm	c0.13			0.05				c0.29	0.02	0.07		
v/c Ratio	0.59	0.15		0.25	0.21			0.63	0.04	0.14	0.54	
Uniform Delay, d1	19.1	17.2		17.6	17.5			11.0	7.9	5.2	5.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	0.2		0.5	0.3			1.5	0.0	0.1	0.5	
Delay (s)	22.6	17.4		18.1	17.8			12.5	7.9	5.4	5.9	
Level of Service	C	B		B	B			B	A	A	A	
Approach Delay (s)		21.1			17.9			12.1			5.8	
Approach LOS		C			B			B			A	

Intersection Summary

HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	11.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	136	3	84	0	3	17	83	370	0	9	323	194
Future Vol, veh/h	136	3	84	0	3	17	83	370	0	9	323	194
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	96	96	96	90	90	90
Heavy Vehicles, %	1	1	1	2	2	2	2	2	2	2	2	2
Mvmt Flow	151	3	93	0	3	19	86	385	0	10	359	216

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1055	1044	467	1092	1152	385	575	0	0	385	0	0
Stage 1	487	487	-	557	557	-	-	-	-	-	-	-
Stage 2	568	557	-	535	595	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	204	230	598	192	198	663	998	-	-	1173	-	-
Stage 1	564	552	-	515	512	-	-	-	-	-	-	-
Stage 2	509	514	-	529	492	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	181	208	598	149	179	663	998	-	-	1173	-	-
Mov Cap-2 Maneuver	181	208	-	149	179	-	-	-	-	-	-	-
Stage 1	515	547	-	471	468	-	-	-	-	-	-	-
Stage 2	449	470	-	440	488	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	57	13	1.6	0.1
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	998	-	-	182	598	472	1173	-	-
HCM Lane V/C Ratio	0.087	-	-	0.849	0.156	0.047	0.009	-	-
HCM Control Delay (s)	8.9	-	-	84.1	12.1	13	8.1	-	-
HCM Lane LOS	A	-	-	F	B	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	6.1	0.6	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	176	20	66	214	22	48
Future Vol, veh/h	176	20	66	214	22	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	2	2
Mvmt Flow	196	22	73	238	24	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	218	0	591	207
Stage 1	-	-	-	-	207	-
Stage 2	-	-	-	-	384	-
Critical Hdwy	-	-	4.11	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.209	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1358	-	470	833
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1358	-	445	833
Mov Cap-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	654	-	-	1358	-
HCM Lane V/C Ratio	0.119	-	-	0.054	-
HCM Control Delay (s)	11.2	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	0	438	397	0
Future Vol, veh/h	0	13	0	438	397	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	0	487	441	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	441	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	616	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	616	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	616	-
HCM Lane V/C Ratio	-	0.023	-
HCM Control Delay (s)	-	11	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

APPENDIX J

PM Queue/Delay Calibration Calculations

Peak Hour: 4:45pm 7/25/2024
Grapevine Drive

D=DARK C=CAR
L=LIGHT T-TRUCK
R=RED S=SUV

Left = 114, Thru = 2

Vehicle ID	Vehicle color	Vehicle Type	Entered Queue	Cleared Queue	Delay	Left or Thru	Queue Length @ arrival
1	L	S	4:45:00	4:45:01	0:00:01	L	2
2	L	S	4:45:49	4:46:07	0:00:18	L	2
3	L	C	4:45:54	4:46:09	0:00:15	L	2
4	L	S	4:45:54	4:46:15	0:00:21	L	3
5	D	S	4:46:25	4:46:38	0:00:13	L	2
6	L	S	4:45:39	4:46:49	0:01:10	L	2
7	D	S	4:47:32	4:47:46	0:00:14	L	2
8	L	S	4:47:42	4:47:53	0:00:11	L	2
9	L	C	4:47:49	4:48:07	0:00:18	L	2
10	L	T	4:48:28	4:49:07	0:00:39	L	2
11	R	C	4:48:33	4:49:15	0:00:42	L	2
12	L	C	4:48:59	4:49:22	0:00:23	L	3
13	L	T	4:49:36	4:49:36	0:00:00	L	2
14	D	C	4:49:48	4:50:37	0:00:49	L	2
15	L	C	4:49:58	4:50:44	0:00:46	L	2
16	L	C	4:51:03	4:51:42	0:00:39	L	2
17	L	S	4:51:10	4:52:09	0:00:59	L	2
18	L	S	4:51:20	4:52:15	0:00:55	L	3
19	L	S	4:51:49	4:52:27	0:00:38	L	3
20	L	C	4:52:06	4:52:32	0:00:26	L	4
21	L	C	4:54:03	4:54:08	0:00:05	L	2
22	D	C	4:54:23	4:54:44	0:00:21	L	2
23	D	C	4:54:32	4:55:11	0:00:39	L	2
24	D	S	4:54:32	4:55:20	0:00:48	L	3
25	L	C	4:54:53	4:55:26	0:00:33	L	3
26	D	C	4:55:53	4:55:57	0:00:04	L	2
27	L	C	4:56:24	4:56:28	0:00:04	L	2
28	D	C	4:56:35	4:57:02	0:00:27	L	2
29	D	C	4:57:29	4:57:41	0:00:12	L	2
30	R	T	4:57:57	4:57:58	0:00:01	L	2
31	D	C	4:59:26	5:00:18	0:00:52	L	2
32	D	C	4:59:34	5:00:24	0:00:50	L	2
33	L	C	5:00:06	5:00:36	0:00:30	L	3
34	D	S	5:00:17	5:00:39	0:00:22	L	4
35	D	T	5:01:34	5:02:11	0:00:37	L	1
36	D	C	5:02:46	5:02:50	0:00:04	L	1
37	D	C	5:03:18	5:03:25	0:00:07	L	1
38	L	S	5:03:34	5:03:42	0:00:08	L	1
39	R	T	5:03:45	5:04:42	0:00:57	L	1
40	D	S	5:04:44	5:04:47	0:00:03	L	1
41	L	C	5:04:52	5:05:26	0:00:34	L	1
42	D	C	5:05:53	5:06:39	0:00:46	L	1
43	D	S	5:06:26	5:06:40	0:00:14	L	2
44	L	C	5:07:02	5:07:09	0:00:07	L	1
45	D	C	5:10:57	5:11:36	0:00:39	L	1
46	D	S	5:11:17	5:11:40	0:00:23	L	2
47	L	C	5:10:35	5:11:45	0:01:10	L	3
48	D	S	5:11:48	5:11:51	0:00:03	L	2
49	D	S	5:11:50	5:11:52	0:00:02	L	2
50	D	C	5:11:54	5:12:20	0:00:26	L	1
51	L	S	5:12:36	5:13:13	0:00:37	L	1
52	L	C	5:12:41	5:13:18	0:00:37	L	2
53	D	C	5:12:57	5:13:26	0:00:29	L	3
54	L	S	5:13:44	5:14:11	0:00:27	L	1
55	L	S	5:14:43	5:14:48	0:00:05	L	1
56	D	S	5:15:06	5:15:18	0:00:12	T	1
57	D	S	5:15:38	5:15:44	0:00:06	L	1
58	D	S	5:16:18	5:17:16	0:00:58	L	1
59	L	C	5:16:22	5:17:57	0:01:35	L	2
60	L	C	5:16:24	5:18:00	0:01:36	L	3
61	L	S	5:16:44	5:18:14	0:01:30	L	4
62	D	S	5:19:21	5:20:12	0:00:51	L	1
63	D	C	5:19:33	5:20:22	0:00:49	L	3

Right = 58

Vehicle ID	Vehicle color	Vehicle Type	Entered Queue	Cleared Queue	Delay
1	D	C	4:45:15	4:45:15	0:00:00
2	L	C	4:45:38	4:45:49	0:00:11
3	L	C	4:45:45	4:46:07	0:00:22
4	D	C	4:46:27	4:46:29	0:00:02
5	D	C	4:47:20	4:47:24	0:00:04
6	L	C	4:47:54	4:47:58	0:00:04
7	L	C	4:49:43	4:49:43	0:00:00
8	D	C	4:49:54	4:50:25	0:00:31
9	D	S	4:53:10	4:53:10	0:00:00
10	D	T	4:53:45	4:53:45	0:00:00
11	D	C	4:54:12	4:54:23	0:00:11
12	L	C	4:54:53	4:54:56	0:00:03
13	L	S	4:55:55	4:56:01	0:00:06
14	L	C	4:57:25	4:57:25	0:00:00
15	L	S	4:57:35	4:57:35	0:00:00
16	L	T	4:57:46	4:57:49	0:00:03
17	D	C	4:58:27	4:58:33	0:00:06
18	D	C	4:58:54	4:58:55	0:00:01
19	D	S	5:01:25	5:01:26	0:00:01
20	L	C	5:01:58	5:02:02	0:00:04
21	L	S	5:03:42	5:03:45	0:00:03
22	L	T	5:04:23	5:04:28	0:00:05
23	L	C	5:06:21	5:06:29	0:00:08
24	R	C	5:07:36	5:07:45	0:00:09
25	D	S	5:07:49	5:07:51	0:00:02
26	L	T	5:08:41	5:08:41	0:00:00
27	L	T	5:10:01	5:10:09	0:00:08
28	D	S	5:10:38	5:10:43	0:00:05
29	D	S	5:12:08	5:12:12	0:00:04
30	D	C	5:13:13	5:13:13	0:00:00
31	D	C	5:15:35	5:15:36	0:00:01
32	D	C	5:16:00	5:16:04	0:00:04
33	D	S	5:18:57	5:18:57	0:00:00
34	D	S	5:19:21	5:19:22	0:00:01
35	R	S	5:19:26	5:19:55	0:00:29
36	L	T	5:21:02	5:21:02	0:00:00
37	D	T	5:21:44	5:21:59	0:00:15
38	L	C	5:22:56	5:22:56	0:00:00
39	D	S	5:23:06	5:23:09	0:00:03
40	D	C	5:24:18	5:24:19	0:00:01
41	L	T	5:24:24	5:24:25	0:00:01
42	L	S	5:24:41	5:24:44	0:00:03
43	D	T	5:24:48	5:24:48	0:00:00
44	D	S	5:24:54	5:24:55	0:00:01
45	D	C	5:26:21	5:26:29	0:00:08
46	D	S	5:26:37	5:26:39	0:00:02
47	L	C	5:28:52	5:29:17	0:00:25
48	L	C	5:29:15	5:29:22	0:00:07
49	D	S	5:31:20	5:31:20	0:00:00
50	D	C	5:34:45	5:34:48	0:00:03
51	D	S	5:34:55	5:34:55	0:00:00
52	D	S	5:35:29	5:35:31	0:00:02
53	D	S	5:36:00	5:36:03	0:00:03
54	D	S	5:37:54	5:38:04	0:00:10
55	L	T	5:38:18	5:38:20	0:00:02
56	L	T	5:38:25	5:38:33	0:00:08
57	L	C	5:40:22	5:40:29	0:00:07
58	D	T	5:41:37	5:41:41	0:00:04
59	L	S	5:43:09	5:43:27	0:00:18

AVERAGE DELAY	*0:00:05*
Max Delay	0:00:31

Peak Hour: 4:45pm 7/25/2024
Grapevine Drive

L=LIGHT T-TRUCK
R=RED S=SUV

Left = 114, Thru = 2

Vehicle ID	Vehicle color	Vehicle Type	Entered Queue	Cleared Queue	Delay	Left or Thru	Queue Length @ arrival
64	D	C	5:19:42	5:21:44	0:02:02	L	4
65	L	S	5:21:55	5:22:09	0:00:14	L	1
66	R	C	5:22:10	5:22:14	0:00:04	L	1
67	D	S	5:22:16	5:22:18	0:00:02	L	
68	L	C	5:22:25	5:22:25	0:00:00	L	
69	L	T	5:23:29	5:24:14	0:00:45	L	
70	D	C	5:24:32	5:24:41	0:00:09	L	
71	D	T	5:24:24	5:24:24	0:00:00	L	
72	L	C	5:25:27	5:25:36	0:00:09	L	
73	L	S	5:25:31	5:25:40	0:00:09	L	
74	D	S	5:25:51	5:26:11	0:00:20	L	
75	D	S	5:26:14	5:26:14	0:00:00	L	
76	D	C	5:26:25	5:26:26	0:00:01	L	
77	L	S	5:26:38	5:26:43	0:00:05	L	
78	D	S	5:28:18	5:28:35	0:00:17	L	
79	D	S	5:28:24	5:28:38	0:00:14	L	
80	L	T	5:28:25	5:28:42	0:00:17	L	3
81	L	C	5:28:34	5:29:46	0:01:12	L	4
82	D	C	5:28:49	5:29:50	0:01:01	L	
83	D	C	5:29:27	5:30:00	0:00:33	L	
84	D	C	5:30:08	5:30:13	0:00:05	L	
85	D	T	5:30:56	5:31:29	0:00:33	L	
86	R	S	5:31:36	5:32:08	0:00:32	L	
87	D	C	5:33:07	5:33:21	0:00:14	L	
88	D	C	5:33:07	5:33:30	0:00:23	L	
89	D	C	5:33:14	5:33:35	0:00:21	L	3
90	D	S	5:34:00	5:34:45	0:00:45	L	
91	D	S	5:34:36	5:35:10	0:00:34	L	
92	L	C	5:35:00	5:35:41	0:00:41	L	
93	D	S	5:35:10	5:35:43	0:00:33	L	
94	D	S	5:35:25	5:35:50	0:00:25	L	3
95	D	C	5:35:31	5:36:05	0:00:34	L	4
96	D	C	5:35:57	5:37:14	0:01:17	L	
97	L	T	5:36:55	5:38:41	0:01:46	L	
98	D	S	5:36:55	5:38:43	0:01:48	L	3
99	L	C	5:37:00	5:39:11	0:02:11	L	4
100	L	S	5:37:10	5:39:16	0:02:06	L	5
101	L	S	5:37:25	5:39:59	0:02:34	L	5
102	R	C	5:37:44	5:40:30	0:02:46	L	6
103	L	C	5:38:25	5:40:41	0:02:16	L	7
104	L	C	5:38:45	5:40:42	0:01:57	L	6
105	L	S	5:39:37	5:40:49	0:01:12	L	5
106	D	S	5:40:05	5:40:52	0:00:47	L	5
107	L	C	5:40:14	5:41:26	0:01:12	L	
108	D	C	5:40:59	5:41:28	0:00:29	L	
109	D	S	5:41:31	5:41:49	0:00:18	L	
110	D	S	5:41:35	5:41:51	0:00:16	L	
111	L	S	5:41:43	5:41:55	0:00:12	L	
112	L	S	5:41:48	5:41:59	0:00:11	T	4
113	L	S	5:42:17	5:42:19	0:00:02	L	
114	L	S	5:42:18	5:42:25	0:00:07	L	
115	R	C	5:42:54	5:43:02	0:00:08	L	
116	D	S	5:42:56	5:43:04	0:00:08	L	
117	L	S	5:43:09	5:43:41	0:00:32	L	
118	D	S	5:44:11	5:44:17	0:00:06	L	
119	D	S	5:44:21	5:44:36	0:00:15	L	

Right = 58

Vehicle ID	Vehicle color	Vehicle Type	Entered Queue	Cleared Queue	Delay

PEAK HR AVG DELAY	*0:00:35*
Max Delay	0:02:46
PEAK 15M AVG DELAY	*0:00:31*

7	Max Queue
2.5125	Ave Queue

APPENDIX K

Turning Movement Counts

PDI

Accurate Counts

PRECISION DATA INDUSTRIES, LLC

Location Map: 240098 Dover, NH

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: datarequests@pdillc.com

(3) 7-9am/3-6pm TMCs
(3) Sat 11am-2pm TMCs

** 5 VCUs
2 VCUs @ A and B



Client:	Engineer:	Site Code:	Date:	PDI Job #	City, State:
TF Moran	J. Porter	46001.32	Thurs 7/25 and Sat 7/27/2024	240098	Dover, NH

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	4	87	1	0	92	3	0	0	0	3	0	60	7	0	67	1	0	9	0	10	172
7:15 AM	5	96	1	0	102	1	0	1	0	2	0	74	3	0	77	4	0	8	0	12	193
7:30 AM	11	125	1	0	137	6	0	0	0	6	0	94	7	0	101	4	0	3	0	7	251
7:45 AM	9	112	0	0	121	3	0	0	0	3	1	91	4	0	96	6	0	12	0	18	238
Total	29	420	3	0	452	13	0	1	0	14	1	319	21	0	341	15	0	32	0	47	854
8:00 AM	10	95	2	0	107	4	0	1	0	5	0	104	4	0	108	1	0	5	0	6	226
8:15 AM	8	112	1	0	121	3	0	0	0	3	0	93	4	0	97	7	0	5	0	12	233
8:30 AM	16	107	0	0	123	3	0	0	0	3	1	85	6	0	92	5	0	8	0	13	231
8:45 AM	13	89	3	0	105	5	0	1	0	6	0	91	4	0	95	4	0	11	0	15	221
Total	47	403	6	0	456	15	0	2	0	17	1	373	18	0	392	17	0	29	0	46	911
Grand Total	76	823	9	0	908	28	0	3	0	31	2	692	39	0	733	32	0	61	0	93	1765
Approach %	8.4	90.6	1.0	0.0		90.3	0.0	9.7	0.0		0.3	94.4	5.3	0.0		34.4	0.0	65.6	0.0		
Total %	4.3	46.6	0.5	0.0	51.4	1.6	0.0	0.2	0.0	1.8	0.1	39.2	2.2	0.0	41.5	1.8	0.0	3.5	0.0	5.3	
Exiting Leg Total					781					11					858					115	1765
Cars	74	782	8	0	864	28	0	3	0	31	2	656	36	0	694	30	0	59	0	89	1678
% Cars	97.4	95.0	88.9	0.0	95.2	100.0	0.0	100.0	0.0	100.0	100.0	94.8	92.3	0.0	94.7	93.8	0.0	96.7	0.0	95.7	95.1
Exiting Leg Total					743					10					815					110	1678
Heavy Vehicles	2	41	1	0	44	0	0	0	0	0	0	36	3	0	39	2	0	2	0	4	87
% Heavy Vehicles	2.6	5.0	11.1	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	5.2	7.7	0.0	5.3	6.3	0.0	3.3	0.0	4.3	4.9
Exiting Leg Total					38					1					43					5	87

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	11	125	1	0	137	6	0	0	0	6	0	94	7	0	101	4	0	3	0	7	251
7:45 AM	9	112	0	0	121	3	0	0	0	3	1	91	4	0	96	6	0	12	0	18	238
8:00 AM	10	95	2	0	107	4	0	1	0	5	0	104	4	0	108	1	0	5	0	6	226
8:15 AM	8	112	1	0	121	3	0	0	0	3	0	93	4	0	97	7	0	5	0	12	233
Total Volume	38	444	4	0	486	16	0	1	0	17	1	382	19	0	402	18	0	25	0	43	948
% Approach Total	7.8	91.4	0.8	0.0		94.1	0.0	5.9	0.0		0.2	95.0	4.7	0.0		41.9	0.0	58.1	0.0		
PHF	0.864	0.888	0.500	0.000	0.887	0.667	0.000	0.250	0.000	0.708	0.250	0.918	0.679	0.000	0.931	0.643	0.000	0.521	0.000	0.597	0.944
Cars	36	423	4	0	463	16	0	1	0	17	1	365	17	0	383	17	0	23	0	40	903
Cars %	94.7	95.3	100.0	0.0	95.3	100.0	0.0	100.0	0.0	100.0	100.0	95.5	89.5	0.0	95.3	94.4	0.0	92.0	0.0	93.0	95.3
Heavy Vehicles	2	21	0	0	23	0	0	0	0	0	0	17	2	0	19	1	0	2	0	3	45
Heavy Vehicles %	5.3	4.7	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	4.5	10.5	0.0	4.7	5.6	0.0	8.0	0.0	7.0	4.7
Cars Enter Leg	36	423	4	0	463	16	0	1	0	17	1	365	17	0	383	17	0	23	0	40	903
Heavy Enter Leg	2	21	0	0	23	0	0	0	0	0	0	17	2	0	19	1	0	2	0	3	45
Total Entering Leg	38	444	4	0	486	16	0	1	0	17	1	382	19	0	402	18	0	25	0	43	948
Cars Exiting Leg					404					5					441					53	903
Heavy Exiting Leg					19					0					22					4	45
Total Exiting Leg					423					5					463					57	948

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Cars**

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	4	84	1	0	89	3	0	0	0	3	0	55	6	0	61	0	0	9	0	9	162
7:15 AM	5	87	1	0	93	1	0	1	0	2	0	69	3	0	72	4	0	8	0	12	179
7:30 AM	10	120	1	0	131	6	0	0	0	6	0	86	7	0	93	4	0	3	0	7	237
7:45 AM	9	105	0	0	114	3	0	0	0	3	1	89	3	0	93	6	0	11	0	17	227
Total	28	396	3	0	427	13	0	1	0	14	1	299	19	0	319	14	0	31	0	45	805
8:00 AM	9	89	2	0	100	4	0	1	0	5	0	100	3	0	103	1	0	4	0	5	213
8:15 AM	8	109	1	0	118	3	0	0	0	3	0	90	4	0	94	6	0	5	0	11	226
8:30 AM	16	105	0	0	121	3	0	0	0	3	1	80	6	0	87	5	0	8	0	13	224
8:45 AM	13	83	2	0	98	5	0	1	0	6	0	87	4	0	91	4	0	11	0	15	210
Total	46	386	5	0	437	15	0	2	0	17	1	357	17	0	375	16	0	28	0	44	873
Grand Total	74	782	8	0	864	28	0	3	0	31	2	656	36	0	694	30	0	59	0	89	1678
Approach %	8.6	90.5	0.9	0.0		90.3	0.0	9.7	0.0		0.3	94.5	5.2	0.0		33.7	0.0	66.3	0.0		
Total %	4.4	46.6	0.5	0.0	51.5	1.7	0.0	0.2	0.0	1.8	0.1	39.1	2.1	0.0	41.4	1.8	0.0	3.5	0.0	5.3	
Exiting Leg Total					743					10					815					110	1678

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	10	120	1	0	131	6	0	0	0	6	0	86	7	0	93	4	0	3	0	7	237
7:45 AM	9	105	0	0	114	3	0	0	0	3	1	89	3	0	93	6	0	11	0	17	227
8:00 AM	9	89	2	0	100	4	0	1	0	5	0	100	3	0	103	1	0	4	0	5	213
8:15 AM	8	109	1	0	118	3	0	0	0	3	0	90	4	0	94	6	0	5	0	11	226
Total Volume	36	423	4	0	463	16	0	1	0	17	1	365	17	0	383	17	0	23	0	40	903
% Approach Total	7.8	91.4	0.9	0.0		94.1	0.0	5.9	0.0		0.3	95.3	4.4	0.0		42.5	0.0	57.5	0.0		
PHF	0.900	0.881	0.500	0.000	0.884	0.667	0.000	0.250	0.000	0.708	0.250	0.913	0.607	0.000	0.930	0.708	0.000	0.523	0.000	0.588	0.953
Entering Leg	36	423	4	0	463	16	0	1	0	17	1	365	17	0	383	17	0	23	0	40	903
Exiting Leg					404					5					441					53	903
Total					867					22					824					93	1806

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	3	0	0	3	0	0	0	0	0	0	5	1	0	6	1	0	0	0	1	10
7:15 AM	0	9	0	0	9	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	14
7:30 AM	1	5	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14
7:45 AM	0	7	0	0	7	0	0	0	0	0	0	2	1	0	3	0	0	1	0	1	11
Total	1	24	0	0	25	0	0	0	0	0	0	20	2	0	22	1	0	1	0	2	49
8:00 AM	1	6	0	0	7	0	0	0	0	0	0	4	1	0	5	0	0	1	0	1	13
8:15 AM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	7
8:30 AM	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7
8:45 AM	0	6	1	0	7	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	11
Total	1	17	1	0	19	0	0	0	0	0	0	16	1	0	17	1	0	1	0	2	38
Grand Total	2	41	1	0	44	0	0	0	0	0	0	36	3	0	39	2	0	2	0	4	87
Approach %	4.5	93.2	2.3	0.0		0.0	0.0	0.0	0.0		0.0	92.3	7.7	0.0		50.0	0.0	50.0	0.0		
Total %	2.3	47.1	1.1	0.0	50.6	0.0	0.0	0.0	0.0	0.0	0.0	41.4	3.4	0.0	44.8	2.3	0.0	2.3	0.0	4.6	
Exiting Leg Total					38					1					43					5	87
Buses	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7
% Buses	0.0	14.6	0.0	0.0	13.6	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	8.0
Exiting Leg Total					1					0					6					0	7
Single-Unit Trucks	2	31	1	0	34	0	0	0	0	0	0	24	3	0	27	1	0	2	0	3	64
% Single-Unit	100.0	75.6	100.0	0.0	77.3	0.0	0.0	0.0	0.0	0.0	0.0	66.7	100.0	0.0	69.2	50.0	0.0	100.0	0.0	75.0	73.6
Exiting Leg Total					26					1					32					5	64
Articulated Trucks	0	4	0	0	4	0	0	0	0	0	0	11	0	0	11	1	0	0	0	1	16
% Articulated	0.0	9.8	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	30.6	0.0	0.0	28.2	50.0	0.0	0.0	0.0	25.0	18.4
Exiting Leg Total					11					0					5					0	16

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	0	9	0	0	9	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	14
7:30 AM	1	5	0	0	6	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	14
7:45 AM	0	7	0	0	7	0	0	0	0	0	0	2	1	0	3	0	0	1	0	1	11
8:00 AM	1	6	0	0	7	0	0	0	0	0	0	4	1	0	5	0	0	1	0	1	13
Total Volume	2	27	0	0	29	0	0	0	0	0	0	19	2	0	21	0	0	2	0	2	52
% Approach Total	6.9	93.1	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.5	9.5	0.0		0.0	0.0	100.0	0.0		
PHF	0.500	0.750	0.000	0.000	0.806	0.000	0.000	0.000	0.000	0.000	0.000	0.594	0.500	0.000	0.656	0.000	0.000	0.500	0.000	0.500	0.929
Buses	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Buses %	0.0	18.5	0.0	0.0	17.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6
Single-Unit Trucks	2	19	0	0	21	0	0	0	0	0	0	13	2	0	15	0	0	2	0	2	38
Single-Unit %	100.0	70.4	0.0	0.0	72.4	0.0	0.0	0.0	0.0	0.0	0.0	68.4	100.0	0.0	71.4	0.0	0.0	100.0	0.0	100.0	73.1
Articulated Trucks	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	9
Articulated %	0.0	11.1	0.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.0	31.6	0.0	0.0	28.6	0.0	0.0	0.0	0.0	0.0	17.3
Buses	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Single-Unit Trucks	2	19	0	0	21	0	0	0	0	0	0	13	2	0	15	0	0	2	0	2	38
Articulated Trucks	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	9
Total Entering Leg	2	27	0	0	29	0	0	0	0	0	0	19	2	0	21	0	0	2	0	2	52
Buses					0					0					5					0	5
Single-Unit Trucks					15					0					19					4	38
Articulated Trucks					6					0					3					0	9
Total Exiting Leg					21					0					27					4	52

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Buses**

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Grand Total	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	85.7	0.0	0.0	85.7	0.0	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					1					0					6					0	7

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.625	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
Entering Leg	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Exiting Leg					0					0					5					0	5
Total					5					0					5					0	10

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Single-Unit Trucks**

	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	2	0	0	2	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	5
7:15 AM	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	10
7:30 AM	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
7:45 AM	0	5	0	0	5	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	8
Total	1	17	0	0	18	0	0	0	0	0	0	12	2	0	14	0	0	1	0	1	33
8:00 AM	1	4	0	0	5	0	0	0	0	0	0	3	1	0	4	0	0	1	0	1	10
8:15 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	5
8:30 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
8:45 AM	0	6	1	0	7	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	10
Total	1	14	1	0	16	0	0	0	0	0	0	12	1	0	13	1	0	1	0	2	31
Grand Total	2	31	1	0	34	0	0	0	0	0	0	24	3	0	27	1	0	2	0	3	64
Approach %	5.9	91.2	2.9	0.0		0.0	0.0	0.0	0.0		0.0	88.9	11.1	0.0		33.3	0.0	66.7	0.0		
Total %	3.1	48.4	1.6	0.0	53.1	0.0	0.0	0.0	0.0	0.0	0.0	37.5	4.7	0.0	42.2	1.6	0.0	3.1	0.0	4.7	
Exiting Leg Total					26					1					32					5	64

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	0	6	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	10
7:30 AM	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
7:45 AM	0	5	0	0	5	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	8
8:00 AM	1	4	0	0	5	0	0	0	0	0	0	3	1	0	4	0	0	1	0	1	10
Total Volume	2	19	0	0	21	0	0	0	0	0	0	13	2	0	15	0	0	2	0	2	38
% Approach Total	9.5	90.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	86.7	13.3	0.0		0.0	0.0	100.0	0.0		
PHF	0.500	0.792	0.000	0.000	0.875	0.000	0.000	0.000	0.000	0.000	0.000	0.650	0.500	0.000	0.750	0.000	0.000	0.500	0.000	0.500	0.950
Entering Leg	2	19	0	0	21	0	0	0	0	0	0	13	2	0	15	0	0	2	0	2	38
Exiting Leg					15					0					19					4	38
Total					36					0					34					6	76

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Articulated Trucks

	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	4
7:15 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	12
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
Grand Total	0	4	0	0	4	0	0	0	0	0	0	11	0	0	11	1	0	0	0	1	16
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		
Total %	0.0	25.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	68.8	0.0	0.0	68.8	6.3	0.0	0.0	0.0	6.3	
Exiting Leg Total					11					0					5					0	16

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	4
7:15 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total Volume	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	12
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		
PHF	0.000	0.375	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.667	0.250	0.000	0.000	0.000	0.250	0.750
Entering Leg	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	12
Exiting Leg					8					0					4					0	12
Total					11					0					12					1	24

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Bicycles (on Roadway and Crosswalks)

	Durham Road							Deerfield Drive							Durham Road							Grapevine Drive							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total							0							1							0							0	1

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Durham Road							Deerfield Drive							Durham Road							Grapevine Drive							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Exiting Leg							0							1							0							0	1
Total							0							2							0							0	2

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Pedestrians

	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
Grand Total	0	0	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5
Approach %	0	0	0	0	0	0		0	0	0	0	75	25		0	0	0	0	0	0		0	0	0	0	0	100		
Total %	0	0	0	0	0	0	0	0	0	0	0	60	20	80	0	0	0	0	0	0	0	0	0	0	0	0	20	20	
Exiting Leg Total							0							4							0							1	5

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	66.7	33.3		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
Exiting Leg							0							3							0							1	4
Total							0							6							0							2	8

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	29	85	2	1	117	4	0	0	0	4	0	100	13	0	113	5	0	15	0	20	254
3:15 PM	32	86	4	0	122	2	2	0	0	4	1	105	11	0	117	15	0	20	0	35	278
3:30 PM	26	88	15	0	129	3	1	1	0	5	0	121	16	0	137	15	1	30	0	46	317
3:45 PM	25	97	5	0	127	3	2	0	0	5	0	115	9	0	124	10	3	24	0	37	293
Total	112	356	26	1	495	12	5	1	0	18	1	441	49	0	491	45	4	89	0	138	1142
4:00 PM	30	80	7	0	117	2	0	0	0	2	1	109	15	0	125	6	2	22	0	30	274
4:15 PM	28	88	5	0	121	5	0	0	0	5	0	114	17	0	131	11	1	25	0	37	294
4:30 PM	38	82	6	0	126	3	0	0	0	3	0	101	14	0	115	13	3	25	0	41	285
4:45 PM	40	112	10	0	162	4	0	1	0	5	1	116	11	0	128	18	0	29	0	47	342
Total	136	362	28	0	526	14	0	1	0	15	2	440	57	0	499	48	6	101	0	155	1195
5:00 PM	38	103	7	0	148	1	0	0	0	1	1	137	14	0	152	9	0	25	0	34	335
5:15 PM	34	103	2	0	139	3	0	1	0	4	0	127	14	0	141	19	2	26	0	47	331
5:30 PM	43	96	3	0	142	2	0	0	0	2	0	130	20	0	150	12	0	34	0	46	340
5:45 PM	33	71	4	0	108	1	1	0	0	2	0	91	9	0	100	11	0	32	0	43	253
Total	148	373	16	0	537	7	1	1	0	9	1	485	57	0	543	51	2	117	0	170	1259
Grand Total	396	1091	70	1	1558	33	6	3	0	42	4	1366	163	0	1533	144	12	307	0	463	3596
Approach %	25.4	70.0	4.5	0.1		78.6	14.3	7.1	0.0		0.3	89.1	10.6	0.0		31.1	2.6	66.3	0.0		
Total %	11.0	30.3	1.9	0.0	43.3	0.9	0.2	0.1	0.0	1.2	0.1	38.0	4.5	0.0	42.6	4.0	0.3	8.5	0.0	12.9	
Exiting Leg Total					1707					86					1238					565	3596
Cars	393	1067	70	1	1531	32	6	3	0	41	4	1336	163	0	1503	144	12	304	0	460	3535
% Cars	99.2	97.8	100.0	100.0	98.3	97.0	100.0	100.0	0.0	97.6	100.0	97.8	100.0	0.0	98.0	100.0	100.0	99.0	0.0	99.4	98.3
Exiting Leg Total					1673					86					1214					562	3535
Heavy Vehicles	3	24	0	0	27	1	0	0	0	1	0	30	0	0	30	0	0	3	0	3	61
% Heavy Vehicles	0.8	2.2	0.0	0.0	1.7	3.0	0.0	0.0	0.0	2.4	0.0	2.2	0.0	0.0	2.0	0.0	0.0	1.0	0.0	0.6	1.7
Exiting Leg Total					34					0					24					3	61

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:45 PM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	40	112	10	0	162	4	0	1	0	5	1	116	11	0	128	18	0	29	0	47	342
5:00 PM	38	103	7	0	148	1	0	0	0	1	1	137	14	0	152	9	0	25	0	34	335
5:15 PM	34	103	2	0	139	3	0	1	0	4	0	127	14	0	141	19	2	26	0	47	331
5:30 PM	43	96	3	0	142	2	0	0	0	2	0	130	20	0	150	12	0	34	0	46	340
Total Volume	155	414	22	0	591	10	0	2	0	12	2	510	59	0	571	58	2	114	0	174	1348
% Approach Total	26.2	70.1	3.7	0.0		83.3	0.0	16.7	0.0		0.4	89.3	10.3	0.0		33.3	1.1	65.5	0.0		
PHF	0.901	0.924	0.550	0.000	0.912	0.625	0.000	0.500	0.000	0.600	0.500	0.931	0.738	0.000	0.939	0.763	0.250	0.838	0.000	0.926	0.985
Cars	154	412	22	0	588	9	0	2	0	11	2	505	59	0	566	58	2	114	0	174	1339
Cars %	99.4	99.5	100.0	0.0	99.5	90.0	0.0	100.0	0.0	91.7	100.0	99.0	100.0	0.0	99.1	100.0	100.0	100.0	0.0	100.0	99.3
Heavy Vehicles	1	2	0	0	3	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	9
Heavy Vehicles %	0.6	0.5	0.0	0.0	0.5	10.0	0.0	0.0	0.0	8.3	0.0	1.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.7
Cars Enter Leg	154	412	22	0	588	9	0	2	0	11	2	505	59	0	566	58	2	114	0	174	1339
Heavy Enter Leg	1	2	0	0	3	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	9
Total Entering Leg	155	414	22	0	591	10	0	2	0	12	2	510	59	0	571	58	2	114	0	174	1348
Cars Exiting Leg					628					26					472					213	1339
Heavy Exiting Leg					6					0					2					1	9
Total Exiting Leg					634					26					474					214	1348

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Cars**

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	29	78	2	1	110	4	0	0	0	4	0	94	13	0	107	5	0	15	0	20	241
3:15 PM	30	83	4	0	117	2	2	0	0	4	1	101	11	0	113	15	0	20	0	35	269
3:30 PM	26	86	15	0	127	3	1	1	0	5	0	114	16	0	130	15	1	28	0	44	306
3:45 PM	25	93	5	0	123	3	2	0	0	5	0	113	9	0	122	10	3	24	0	37	287
Total	110	340	26	1	477	12	5	1	0	18	1	422	49	0	472	45	4	87	0	136	1103
4:00 PM	30	77	7	0	114	2	0	0	0	2	1	106	15	0	122	6	2	22	0	30	268
4:15 PM	28	87	5	0	120	5	0	0	0	5	0	112	17	0	129	11	1	25	0	37	291
4:30 PM	38	80	6	0	124	3	0	0	0	3	0	101	14	0	115	13	3	25	0	41	283
4:45 PM	39	112	10	0	161	3	0	1	0	4	1	115	11	0	127	18	0	29	0	47	339
Total	135	356	28	0	519	13	0	1	0	14	2	434	57	0	493	48	6	101	0	155	1181
5:00 PM	38	103	7	0	148	1	0	0	0	1	1	136	14	0	151	9	0	25	0	34	334
5:15 PM	34	103	2	0	139	3	0	1	0	4	0	125	14	0	139	19	2	26	0	47	329
5:30 PM	43	94	3	0	140	2	0	0	0	2	0	129	20	0	149	12	0	34	0	46	337
5:45 PM	33	71	4	0	108	1	1	0	0	2	0	90	9	0	99	11	0	31	0	42	251
Total	148	371	16	0	535	7	1	1	0	9	1	480	57	0	538	51	2	116	0	169	1251
Grand Total	393	1067	70	1	1531	32	6	3	0	41	4	1336	163	0	1503	144	12	304	0	460	3535
Approach %	25.7	69.7	4.6	0.1		78.0	14.6	7.3	0.0		0.3	88.9	10.8	0.0		31.3	2.6	66.1	0.0		
Total %	11.1	30.2	2.0	0.0	43.3	0.9	0.2	0.1	0.0	1.2	0.1	37.8	4.6	0.0	42.5	4.1	0.3	8.6	0.0	13.0	
Exiting Leg Total					1673					86					1214					562	3535

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:45 PM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	39	112	10	0	161	3	0	1	0	4	1	115	11	0	127	18	0	29	0	47	339
5:00 PM	38	103	7	0	148	1	0	0	0	1	1	136	14	0	151	9	0	25	0	34	334
5:15 PM	34	103	2	0	139	3	0	1	0	4	0	125	14	0	139	19	2	26	0	47	329
5:30 PM	43	94	3	0	140	2	0	0	0	2	0	129	20	0	149	12	0	34	0	46	337
Total Volume	154	412	22	0	588	9	0	2	0	11	2	505	59	0	566	58	2	114	0	174	1339
% Approach Total	26.2	70.1	3.7	0.0		81.8	0.0	18.2	0.0		0.4	89.2	10.4	0.0		33.3	1.1	65.5	0.0		
PHF	0.895	0.920	0.550	0.000	0.913	0.750	0.000	0.500	0.000	0.688	0.500	0.928	0.738	0.000	0.937	0.763	0.250	0.838	0.000	0.926	0.987
Entering Leg	154	412	22	0	588	9	0	2	0	11	2	505	59	0	566	58	2	114	0	174	1339
Exiting Leg					628					26					472					213	1339
Total					1216					37					1038					387	2678

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	7	0	0	7	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	13
3:15 PM	2	3	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
3:30 PM	0	2	0	0	2	0	0	0	0	0	0	7	0	0	7	0	0	2	0	2	11
3:45 PM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
Total	2	16	0	0	18	0	0	0	0	0	0	19	0	0	19	0	0	2	0	2	39
4:00 PM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	1	0	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	3
Total	1	6	0	0	7	1	0	0	0	1	0	6	0	0	6	0	0	0	0	0	14
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
5:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	2
Total	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	8
Grand Total	3	24	0	0	27	1	0	0	0	1	0	30	0	0	30	0	0	3	0	3	61
Approach %	11.1	88.9	0.0	0.0		100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
Total %	4.9	39.3	0.0	0.0	44.3	1.6	0.0	0.0	0.0	1.6	0.0	49.2	0.0	0.0	49.2	0.0	0.0	4.9	0.0	4.9	
Exiting Leg Total					34					0					24					3	61
Buses	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Buses	0.0	4.2	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	3.3
Exiting Leg Total					1					0					1					0	2
Single-Unit Trucks	2	16	0	0	18	1	0	0	0	1	0	23	0	0	23	0	0	2	0	2	44
% Single-Unit	66.7	66.7	0.0	0.0	66.7	100.0	0.0	0.0	0.0	100.0	0.0	76.7	0.0	0.0	76.7	0.0	0.0	66.7	0.0	66.7	72.1
Exiting Leg Total					26					0					16					2	44
Articulated Trucks	1	7	0	0	8	0	0	0	0	0	0	6	0	0	6	0	0	1	0	1	15
% Articulated	33.3	29.2	0.0	0.0	29.6	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	33.3	0.0	33.3	24.6
Exiting Leg Total					7					0					7					1	15

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	7	0	0	7	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	13
3:15 PM	2	3	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
3:30 PM	0	2	0	0	2	0	0	0	0	0	0	7	0	0	7	0	0	2	0	2	11
3:45 PM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
Total Volume	2	16	0	0	18	0	0	0	0	0	0	19	0	0	19	0	0	2	0	2	39
% Approach Total	11.1	88.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
PHF	0.250	0.571	0.000	0.000	0.643	0.000	0.000	0.000	0.000	0.000	0.000	0.679	0.000	0.000	0.679	0.000	0.000	0.250	0.000	0.250	0.750
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	2.6
Single-Unit Trucks	1	11	0	0	12	0	0	0	0	0	0	14	0	0	14	0	0	1	0	1	27
Single-Unit %	50.0	68.8	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	73.7	0.0	0.0	73.7	0.0	0.0	50.0	0.0	50.0	69.2
Articulated Trucks	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	11
Articulated %	50.0	31.3	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	21.1	0.0	0.0	21.1	0.0	0.0	50.0	0.0	50.0	28.2
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Single-Unit Trucks	1	11	0	0	12	0	0	0	0	0	0	14	0	0	14	0	0	1	0	1	27
Articulated Trucks	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	11
Total Entering Leg	2	16	0	0	18	0	0	0	0	0	0	19	0	0	19	0	0	2	0	2	39
Buses					1					0					0					0	1
Single-Unit Trucks					15					0					11					1	27
Articulated Trucks					5					0					5					1	11
Total Exiting Leg					21					0					16					2	39

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Buses**

	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					1					0					1					0	2

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Exiting Leg					1					0					0					0	1
Total					1					0					1					0	2

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Single-Unit Trucks**

	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	11
3:15 PM	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
3:30 PM	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	7
3:45 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Total	1	11	0	0	12	0	0	0	0	0	0	14	0	0	14	0	0	1	0	1	27
4:00 PM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	1	0	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	3
Total	1	5	0	0	6	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	12
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	2
Total	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	5
Grand Total	2	16	0	0	18	1	0	0	0	1	0	23	0	0	23	0	0	2	0	2	44
Approach %	11.1	88.9	0.0	0.0		100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
Total %	4.5	36.4	0.0	0.0	40.9	2.3	0.0	0.0	0.0	2.3	0.0	52.3	0.0	0.0	52.3	0.0	0.0	4.5	0.0	4.5	
Exiting Leg Total					26					0					16					2	44

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	11
3:15 PM	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
3:30 PM	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	7
3:45 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Total Volume	1	11	0	0	12	0	0	0	0	0	0	14	0	0	14	0	0	1	0	1	27
% Approach Total	8.3	91.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
PHF	0.250	0.458	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.700	0.000	0.000	0.700	0.000	0.000	0.250	0.000	0.250	0.614
Entering Leg	1	11	0	0	12	0	0	0	0	0	0	14	0	0	14	0	0	1	0	1	27
Exiting Leg					15					0					11					1	27
Total					27					0					25					2	54

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Articulated Trucks

	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
3:15 PM	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
3:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3
3:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	11
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Grand Total	1	7	0	0	8	0	0	0	0	0	0	6	0	0	6	0	0	1	0	1	15
Approach %	12.5	87.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
Total %	6.7	46.7	0.0	0.0	53.3	0.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	40.0	0.0	0.0	6.7	0.0	6.7	
Exiting Leg Total					7					0					7					1	15

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
3:15 PM	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
3:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3
3:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	11
% Approach Total	16.7	83.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
PHF	0.250	0.625	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.250	0.000	0.250	0.688
Entering Leg	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	11
Exiting Leg					5					0					5					1	11
Total					11					0					9					2	22

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Bicycles (on Roadway and Crosswalks)

	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	1	1	0	0	0	2	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Grand Total	0	2	1	0	0	0	3	0	1	0	0	0	0	1	0	2	0	0	0	0	2	0	0	1	0	0	0	1	7
Approach %	0.0	66.7	33.3	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		
Total %	0.0	28.6	14.3	0.0	0.0	0.0	42.9	0.0	14.3	0.0	0.0	0.0	0.0	14.3	0.0	28.6	0.0	0.0	0.0	0.0	28.6	0.0	0.0	14.3	0.0	0.0	0.0	14.3	
Exiting Leg Total							3							1							2							1	7

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:30 PM	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:30 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	0	2	1	0	0	0	3	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5
% Approach Total	0.0	66.7	33.3	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		
PHF	0.000	0.500	0.250	0.000	0.000	0.000	0.750	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.625
Entering Leg	0	2	1	0	0	0	3	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5
Exiting Leg							1							1							2							1	5
Total							4							2							2							2	10

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Pedestrians

	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Approach %	0	0	0	0	0	100		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total							1							0							0							0	1

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Exiting Leg							1							0							0							0	1
Total							2							0							0							0	2

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	37	63	2	0	102	2	1	0	0	3	0	69	13	0	82	12	0	15	1	28	215
11:15 AM	26	53	5	0	84	3	2	0	0	5	0	72	10	0	82	9	0	20	0	29	200
11:30 AM	36	65	1	0	102	1	1	0	0	2	0	85	8	0	93	11	2	35	0	48	245
11:45 AM	40	82	3	0	125	9	0	0	0	9	0	87	11	0	98	11	1	21	0	33	265
Total	139	263	11	0	413	15	4	0	0	19	0	313	42	0	355	43	3	91	1	138	925
12:00 PM	23	73	2	0	98	5	0	0	0	5	0	83	8	0	91	11	0	24	0	35	229
12:15 PM	26	66	3	0	95	3	1	0	0	4	0	84	7	0	91	16	0	30	0	46	236
12:30 PM	34	77	1	0	112	0	2	0	0	2	0	84	11	0	95	15	2	20	0	37	246
12:45 PM	32	61	4	0	97	3	0	0	0	3	0	83	10	0	93	17	2	25	0	44	237
Total	115	277	10	0	402	11	3	0	0	14	0	334	36	0	370	59	4	99	0	162	948
1:00 PM	31	59	3	0	93	7	0	0	0	7	0	82	8	0	90	6	1	21	0	28	218
1:15 PM	27	69	4	0	100	0	0	0	0	0	1	57	8	0	66	8	0	29	0	37	203
1:30 PM	20	58	2	0	80	5	0	0	0	5	0	84	10	0	94	15	1	27	0	43	222
1:45 PM	27	51	6	0	84	4	1	0	0	5	0	102	9	0	111	9	1	20	0	30	230
Total	105	237	15	0	357	16	1	0	0	17	1	325	35	0	361	38	3	97	0	138	873
Grand Total	359	777	36	0	1172	42	8	0	0	50	1	972	113	0	1086	140	10	287	1	438	2746
Approach %	30.6	66.3	3.1	0.0		84.0	16.0	0.0	0.0		0.1	89.5	10.4	0.0		32.0	2.3	65.5	0.2		
Total %	13.1	28.3	1.3	0.0	42.7	1.5	0.3	0.0	0.0	1.8	0.0	35.4	4.1	0.0	39.5	5.1	0.4	10.5	0.0	16.0	
Exiting Leg Total					1301					47					917					481	2746
Cars	358	768	36	0	1162	41	8	0	0	49	1	957	109	0	1067	140	9	282	1	432	2710
% Cars	99.7	98.8	100.0	0.0	99.1	97.6	100.0	0.0	0.0	98.0	100.0	98.5	96.5	0.0	98.3	100.0	90.0	98.3	100.0	98.6	98.7
Exiting Leg Total					1280					46					908					476	2710
Heavy Vehicles	1	9	0	0	10	1	0	0	0	1	0	15	4	0	19	0	1	5	0	6	36
% Heavy Vehicles	0.3	1.2	0.0	0.0	0.9	2.4	0.0	0.0	0.0	2.0	0.0	1.5	3.5	0.0	1.7	0.0	10.0	1.7	0.0	1.4	1.3
Exiting Leg Total					21					1					9					5	36

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:45 AM	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:45 AM	40	82	3	0	125	9	0	0	0	9	0	87	11	0	98	11	1	21	0	33	265
12:00 PM	23	73	2	0	98	5	0	0	0	5	0	83	8	0	91	11	0	24	0	35	229
12:15 PM	26	66	3	0	95	3	1	0	0	4	0	84	7	0	91	16	0	30	0	46	236
12:30 PM	34	77	1	0	112	0	2	0	0	2	0	84	11	0	95	15	2	20	0	37	246
Total Volume	123	298	9	0	430	17	3	0	0	20	0	338	37	0	375	53	3	95	0	151	976
% Approach Total	28.6	69.3	2.1	0.0		85.0	15.0	0.0	0.0		0.0	90.1	9.9	0.0		35.1	2.0	62.9	0.0		
PHF	0.769	0.909	0.750	0.000	0.860	0.472	0.375	0.000	0.000	0.556	0.000	0.971	0.841	0.000	0.957	0.828	0.375	0.792	0.000	0.821	0.921
Cars	122	292	9	0	423	16	3	0	0	19	0	332	37	0	369	53	2	92	0	147	958
Cars %	99.2	98.0	100.0	0.0	98.4	94.1	100.0	0.0	0.0	95.0	0.0	98.2	100.0	0.0	98.4	100.0	66.7	96.8	0.0	97.4	98.2
Heavy Vehicles	1	6	0	0	7	1	0	0	0	1	0	6	0	0	6	0	1	3	0	4	18
Heavy Vehicles %	0.8	2.0	0.0	0.0	1.6	5.9	0.0	0.0	0.0	5.0	0.0	1.8	0.0	0.0	1.6	0.0	33.3	3.2	0.0	2.6	1.8
Cars Enter Leg	122	292	9	0	423	16	3	0	0	19	0	332	37	0	369	53	2	92	0	147	958
Heavy Enter Leg	1	6	0	0	7	1	0	0	0	1	0	6	0	0	6	0	1	3	0	4	18
Total Entering Leg	123	298	9	0	430	17	3	0	0	20	0	338	37	0	375	53	3	95	0	151	976
Cars Exiting Leg					440					11					345					162	958
Heavy Exiting Leg					10					1					6					1	18
Total Exiting Leg					450					12					351					163	976

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Cars

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	37	62	2	0	101	2	1	0	0	3	0	68	12	0	80	12	0	13	1	26	210
11:15 AM	26	52	5	0	83	3	2	0	0	5	0	72	8	0	80	9	0	20	0	29	197
11:30 AM	36	65	1	0	102	1	1	0	0	2	0	82	8	0	90	11	2	35	0	48	242
11:45 AM	40	81	3	0	124	9	0	0	0	9	0	85	11	0	96	11	1	19	0	31	260
Total	139	260	11	0	410	15	4	0	0	19	0	307	39	0	346	43	3	87	1	134	909
12:00 PM	23	70	2	0	95	4	0	0	0	4	0	83	8	0	91	11	0	24	0	35	225
12:15 PM	25	66	3	0	94	3	1	0	0	4	0	81	7	0	88	16	0	29	0	45	231
12:30 PM	34	75	1	0	110	0	2	0	0	2	0	83	11	0	94	15	1	20	0	36	242
12:45 PM	32	61	4	0	97	3	0	0	0	3	0	83	10	0	93	17	2	25	0	44	237
Total	114	272	10	0	396	10	3	0	0	13	0	330	36	0	366	59	3	98	0	160	935
1:00 PM	31	58	3	0	92	7	0	0	0	7	0	80	8	0	88	6	1	21	0	28	215
1:15 PM	27	69	4	0	100	0	0	0	0	0	1	57	8	0	66	8	0	29	0	37	203
1:30 PM	20	58	2	0	80	5	0	0	0	5	0	82	10	0	92	15	1	27	0	43	220
1:45 PM	27	51	6	0	84	4	1	0	0	5	0	101	8	0	109	9	1	20	0	30	228
Total	105	236	15	0	356	16	1	0	0	17	1	320	34	0	355	38	3	97	0	138	866
Grand Total	358	768	36	0	1162	41	8	0	0	49	1	957	109	0	1067	140	9	282	1	432	2710
Approach %	30.8	66.1	3.1	0.0		83.7	16.3	0.0	0.0		0.1	89.7	10.2	0.0		32.4	2.1	65.3	0.2		
Total %	13.2	28.3	1.3	0.0	42.9	1.5	0.3	0.0	0.0	1.8	0.0	35.3	4.0	0.0	39.4	5.2	0.3	10.4	0.0	15.9	
Exiting Leg Total					1280					46					908					476	2710

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:30 AM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:30 AM	36	65	1	0	102	1	1	0	0	2	0	82	8	0	90	11	2	35	0	48	242
11:45 AM	40	81	3	0	124	9	0	0	0	9	0	85	11	0	96	11	1	19	0	31	260
12:00 PM	23	70	2	0	95	4	0	0	0	4	0	83	8	0	91	11	0	24	0	35	225
12:15 PM	25	66	3	0	94	3	1	0	0	4	0	81	7	0	88	16	0	29	0	45	231
Total Volume	124	282	9	0	415	17	2	0	0	19	0	331	34	0	365	49	3	107	0	159	958
% Approach Total	29.9	68.0	2.2	0.0		89.5	10.5	0.0	0.0		0.0	90.7	9.3	0.0		30.8	1.9	67.3	0.0		
PHF	0.775	0.870	0.750	0.000	0.837	0.472	0.500	0.000	0.000	0.528	0.000	0.974	0.773	0.000	0.951	0.766	0.375	0.764	0.000	0.828	0.921
Entering Leg	124	282	9	0	415	17	2	0	0	19	0	331	34	0	365	49	3	107	0	159	958
Exiting Leg					455					12					331					160	958
Total					870					31					696					319	1916

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	0	0	2	0	2	5
11:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	5
Total	0	3	0	0	3	0	0	0	0	0	0	6	3	0	9	0	0	4	0	4	16
12:00 PM	0	3	0	0	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
12:15 PM	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	5
12:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	4
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	5	0	0	6	1	0	0	0	1	0	4	0	0	4	0	1	1	0	2	13
1:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
Total	0	1	0	0	1	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	7
Grand Total	1	9	0	0	10	1	0	0	0	1	0	15	4	0	19	0	1	5	0	6	36
Approach %	10.0	90.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	78.9	21.1	0.0		0.0	16.7	83.3	0.0		
Total %	2.8	25.0	0.0	0.0	27.8	2.8	0.0	0.0	0.0	2.8	0.0	41.7	11.1	0.0	52.8	0.0	2.8	13.9	0.0	16.7	
Exiting Leg Total					21					1					9					5	36
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total					0					0					0					0	0
Single-Unit Trucks	1	9	0	0	10	1	0	0	0	1	0	14	4	0	18	0	1	5	0	6	35
% Single-Unit	100.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0	0.0	93.3	100.0	0.0	94.7	0.0	100.0	100.0	0.0	100.0	97.2
Exiting Leg Total					20					1					9					5	35
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	2.8
Exiting Leg Total					1					0					0					0	1

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:45 AM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	5
12:00 PM	0	3	0	0	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
12:15 PM	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	5
12:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	4
Total Volume	1	6	0	0	7	1	0	0	0	1	0	6	0	0	6	0	1	3	0	4	18
% Approach Total	14.3	85.7	0.0	0.0		100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	25.0	75.0	0.0		
PHF	0.250	0.500	0.000	0.000	0.583	0.250	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.500	0.000	0.250	0.375	0.000	0.500	0.900
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	1	6	0	0	7	1	0	0	0	1	0	5	0	0	5	0	1	3	0	4	17
Single-Unit %	100.0	100.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0	0.0	83.3	0.0	0.0	83.3	0.0	100.0	100.0	0.0	100.0	94.4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	5.6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	1	6	0	0	7	1	0	0	0	1	0	5	0	0	5	0	1	3	0	4	17
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total Entering Leg	1	6	0	0	7	1	0	0	0	1	0	6	0	0	6	0	1	3	0	4	18
Buses					0					0					0					0	0
Single-Unit Trucks					9					1					6					1	17
Articulated Trucks					1					0					0					0	1
Total Exiting Leg					10					1					6					1	18

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Buses**

	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:00 AM	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg					0					0					0					0	0
Total					0					0					0					0	0

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Single-Unit Trucks

	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	0	0	2	0	2	5
11:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	5
Total	0	3	0	0	3	0	0	0	0	0	0	6	3	0	9	0	0	4	0	4	16
12:00 PM	0	3	0	0	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
12:15 PM	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	4
12:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	4
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	5	0	0	6	1	0	0	0	1	0	3	0	0	3	0	1	1	0	2	12
1:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
Total	0	1	0	0	1	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	7
Grand Total	1	9	0	0	10	1	0	0	0	1	0	14	4	0	18	0	1	5	0	6	35
Approach %	10.0	90.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	77.8	22.2	0.0		0.0	16.7	83.3	0.0		
Total %	2.9	25.7	0.0	0.0	28.6	2.9	0.0	0.0	0.0	2.9	0.0	40.0	11.4	0.0	51.4	0.0	2.9	14.3	0.0	17.1	
Exiting Leg Total					20					1					9					5	35

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:45 AM	Durham Road from North					Deerfield Drive from East					Durham Road from South					Grapevine Drive from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	5
12:00 PM	0	3	0	0	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
12:15 PM	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	4
12:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	4
Total Volume	1	6	0	0	7	1	0	0	0	1	0	5	0	0	5	0	1	3	0	4	17
% Approach Total	14.3	85.7	0.0	0.0		100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	25.0	75.0	0.0		
PHF	0.250	0.500	0.000	0.000	0.583	0.250	0.000	0.000	0.000	0.250	0.000	0.625	0.000	0.000	0.625	0.000	0.250	0.375	0.000	0.500	0.850
Entering Leg	1	6	0	0	7	1	0	0	0	1	0	5	0	0	5	0	1	3	0	4	17
Exiting Leg					9					1					6					1	17
Total					16					2					11					5	34

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Articulated Trucks

	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					1					0					0					0	1

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:30 AM	Durham Road					Deerfield Drive					Durham Road					Grapevine Drive					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Exiting Leg					1					0					0					0	1
Total					1					0					1					0	2

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Bicycles (on Roadway and Crosswalks)

	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total							0							0							0							0	0

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:00 AM	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg							0							0							0							0	0
Total							0							0							0							0	0

PDI File #: **240098 A**
Location: **N: Durham Road S: Durham Road**
Location: **E: Deerfield Drive W: Grapevine Drive**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Pedestrians

	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Total	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Grand Total	0	0	0	0	0	2	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	3	6
Approach %	0	0	0	0	0	100		0	0	0	0	100	0		0	0	0	0	0	0		0	0	0	0	66.7	33.3		
Total %	0	0	0	0	0	33.3	33.3	0	0	0	0	16.7	0	16.7	0	0	0	0	0	0	0	0	0	0	0	33.3	16.7	50	
Exiting Leg Total							2							1							0							3	6

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:30 AM	Durham Road from North							Deerfield Drive from East							Durham Road from South							Grapevine Drive from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3
Total Volume	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4
% Approach Total	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	50.0	50.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.250	0.333
Entering Leg	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4
Exiting Leg							1							1							0							2	4
Total							2							2							0							4	8

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	5	69	10	0	84	9	4	12	0	25	6	64	4	0	74	1	0	5	0	6	189
7:15 AM	2	80	6	0	88	13	4	15	0	32	8	70	3	0	81	7	2	14	0	23	224
7:30 AM	10	101	16	0	127	9	7	18	0	34	8	86	4	0	98	2	6	7	0	15	274
7:45 AM	15	95	19	0	129	10	1	19	0	30	5	100	2	0	107	2	5	8	0	15	281
Total	32	345	51	0	428	41	16	64	0	121	27	320	13	0	360	12	13	34	0	59	968
8:00 AM	7	89	10	0	106	14	4	16	0	34	6	108	4	0	118	0	7	12	0	19	277
8:15 AM	9	102	18	0	129	12	5	16	0	33	10	91	1	0	102	2	6	6	0	14	278
8:30 AM	25	104	15	0	144	21	9	16	0	46	11	80	6	0	97	3	8	13	0	24	311
8:45 AM	19	92	10	0	121	14	9	10	0	33	8	92	4	0	104	5	1	20	0	26	284
Total	60	387	53	0	500	61	27	58	0	146	35	371	15	0	421	10	22	51	0	83	1150
Grand Total	92	732	104	0	928	102	43	122	0	267	62	691	28	0	781	22	35	85	0	142	2118
Approach %	9.9	78.9	11.2	0.0		38.2	16.1	45.7	0.0		7.9	88.5	3.6	0.0		15.5	24.6	59.9	0.0		
Total %	4.3	34.6	4.9	0.0	43.8	4.8	2.0	5.8	0.0	12.6	2.9	32.6	1.3	0.0	36.9	1.0	1.7	4.0	0.0	6.7	
Exiting Leg Total					878					201					876					163	2118
Cars	76	704	103	0	883	100	40	120	0	260	61	675	5	0	741	6	33	65	0	104	1988
% Cars	82.6	96.2	99.0	0.0	95.2	98.0	93.0	98.4	0.0	97.4	98.4	97.7	17.9	0.0	94.9	27.3	94.3	76.5	0.0	73.2	93.9
Exiting Leg Total					840					197					830					121	1988
Heavy Vehicles	16	28	1	0	45	2	3	2	0	7	1	16	23	0	40	16	2	20	0	38	130
% Heavy Vehicles	17.4	3.8	1.0	0.0	4.8	2.0	7.0	1.6	0.0	2.6	1.6	2.3	82.1	0.0	5.1	72.7	5.7	23.5	0.0	26.8	6.1
Exiting Leg Total					38					4					46					42	130

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
8:00 AM	7	89	10	0	106	14	4	16	0	34	6	108	4	0	118	0	7	12	0	19	277
8:15 AM	9	102	18	0	129	12	5	16	0	33	10	91	1	0	102	2	6	6	0	14	278
8:30 AM	25	104	15	0	144	21	9	16	0	46	11	80	6	0	97	3	8	13	0	24	311
8:45 AM	19	92	10	0	121	14	9	10	0	33	8	92	4	0	104	5	1	20	0	26	284
Total Volume	60	387	53	0	500	61	27	58	0	146	35	371	15	0	421	10	22	51	0	83	1150
% Approach Total	12.0	77.4	10.6	0.0		41.8	18.5	39.7	0.0		8.3	88.1	3.6	0.0		12.0	26.5	61.4	0.0		
PHF	0.600	0.930	0.736	0.000	0.868	0.726	0.750	0.906	0.000	0.793	0.795	0.859	0.625	0.000	0.892	0.500	0.688	0.638	0.000	0.798	0.924
Cars	51	374	53	0	478	61	25	57	0	143	35	364	3	0	402	4	20	44	0	68	1091
Cars %	85.0	96.6	100.0	0.0	95.6	100.0	92.6	98.3	0.0	97.9	100.0	98.1	20.0	0.0	95.5	40.0	90.9	86.3	0.0	81.9	94.9
Heavy Vehicles	9	13	0	0	22	0	2	1	0	3	0	7	12	0	19	6	2	7	0	15	59
Heavy Vehicles %	15.0	3.4	0.0	0.0	4.4	0.0	7.4	1.7	0.0	2.1	0.0	1.9	80.0	0.0	4.5	60.0	9.1	13.7	0.0	18.1	5.1
Cars Enter Leg	51	374	53	0	478	61	25	57	0	143	35	364	3	0	402	4	20	44	0	68	1091
Heavy Enter Leg	9	13	0	0	22	0	2	1	0	3	0	7	12	0	19	6	2	7	0	15	59
Total Entering Leg	60	387	53	0	500	61	27	58	0	146	35	371	15	0	421	10	22	51	0	83	1150
Cars Exiting Leg					469					108					435					79	1091
Heavy Exiting Leg					14					2					20					23	59
Total Exiting Leg					483					110					455					102	1150

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	3	66	10	0	79	9	4	12	0	25	6	62	0	0	68	0	0	5	0	5	177
7:15 AM	1	75	6	0	82	13	4	15	0	32	7	69	0	0	76	1	2	6	0	9	199
7:30 AM	9	98	15	0	122	7	6	18	0	31	8	81	1	0	90	1	6	4	0	11	254
7:45 AM	12	91	19	0	122	10	1	18	0	29	5	99	1	0	105	0	5	6	0	11	267
Total	25	330	50	0	405	39	15	63	0	117	26	311	2	0	339	2	13	21	0	36	897
8:00 AM	5	83	10	0	98	14	4	16	0	34	6	105	1	0	112	0	6	9	0	15	259
8:15 AM	8	100	18	0	126	12	5	16	0	33	10	88	0	0	98	1	5	5	0	11	268
8:30 AM	22	103	15	0	140	21	8	16	0	45	11	80	1	0	92	2	8	12	0	22	299
8:45 AM	16	88	10	0	114	14	8	9	0	31	8	91	1	0	100	1	1	18	0	20	265
Total	51	374	53	0	478	61	25	57	0	143	35	364	3	0	402	4	20	44	0	68	1091
Grand Total	76	704	103	0	883	100	40	120	0	260	61	675	5	0	741	6	33	65	0	104	1988
Approach %	8.6	79.7	11.7	0.0		38.5	15.4	46.2	0.0		8.2	91.1	0.7	0.0		5.8	31.7	62.5	0.0		
Total %	3.8	35.4	5.2	0.0	44.4	5.0	2.0	6.0	0.0	13.1	3.1	34.0	0.3	0.0	37.3	0.3	1.7	3.3	0.0	5.2	
Exiting Leg Total					840					197					830					121	1988

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:45 AM	12	91	19	0	122	10	1	18	0	29	5	99	1	0	105	0	5	6	0	11	267
8:00 AM	5	83	10	0	98	14	4	16	0	34	6	105	1	0	112	0	6	9	0	15	259
8:15 AM	8	100	18	0	126	12	5	16	0	33	10	88	0	0	98	1	5	5	0	11	268
8:30 AM	22	103	15	0	140	21	8	16	0	45	11	80	1	0	92	2	8	12	0	22	299
Total Volume	47	377	62	0	486	57	18	66	0	141	32	372	3	0	407	3	24	32	0	59	1093
% Approach Total	9.7	77.6	12.8	0.0		40.4	12.8	46.8	0.0		7.9	91.4	0.7	0.0		5.1	40.7	54.2	0.0		
PHF	0.534	0.915	0.816	0.000	0.868	0.679	0.563	0.917	0.000	0.783	0.727	0.886	0.750	0.000	0.908	0.375	0.750	0.667	0.000	0.670	0.914
Entering Leg	47	377	62	0	486	57	18	66	0	141	32	372	3	0	407	3	24	32	0	59	1093
Exiting Leg					461					118					446					68	1093
Total					947					259					853					127	2186

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	2	3	0	0	5	0	0	0	0	0	0	2	4	0	6	1	0	0	0	1	12
7:15 AM	1	5	0	0	6	0	0	0	0	0	1	1	3	0	5	6	0	8	0	14	25
7:30 AM	1	3	1	0	5	2	1	0	0	3	0	5	3	0	8	1	0	3	0	4	20
7:45 AM	3	4	0	0	7	0	0	1	0	1	0	1	1	0	2	2	0	2	0	4	14
Total	7	15	1	0	23	2	1	1	0	4	1	9	11	0	21	10	0	13	0	23	71
8:00 AM	2	6	0	0	8	0	0	0	0	0	0	3	3	0	6	0	1	3	0	4	18
8:15 AM	1	2	0	0	3	0	0	0	0	0	0	3	1	0	4	1	1	1	0	3	10
8:30 AM	3	1	0	0	4	0	1	0	0	1	0	0	5	0	5	1	0	1	0	2	12
8:45 AM	3	4	0	0	7	0	1	1	0	2	0	1	3	0	4	4	0	2	0	6	19
Total	9	13	0	0	22	0	2	1	0	3	0	7	12	0	19	6	2	7	0	15	59
Grand Total	16	28	1	0	45	2	3	2	0	7	1	16	23	0	40	16	2	20	0	38	130
Approach %	35.6	62.2	2.2	0.0		28.6	42.9	28.6	0.0		2.5	40.0	57.5	0.0		42.1	5.3	52.6	0.0		
Total %	12.3	21.5	0.8	0.0	34.6	1.5	2.3	1.5	0.0	5.4	0.8	12.3	17.7	0.0	30.8	12.3	1.5	15.4	0.0	29.2	
Exiting Leg Total					38					4					46					42	130
Buses	0	5	0	0	5	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	7
% Buses	0.0	17.9	0.0	0.0	11.1	50.0	0.0	0.0	0.0	14.3	0.0	6.3	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	5.4
Exiting Leg Total					2					0					5					0	7
Single-Unit Trucks	8	22	1	0	31	1	2	2	0	5	0	14	14	0	28	12	2	15	0	29	93
% Single-Unit	50.0	78.6	100.0	0.0	68.9	50.0	66.7	100.0	0.0	71.4	0.0	87.5	60.9	0.0	70.0	75.0	100.0	75.0	0.0	76.3	71.5
Exiting Leg Total					30					3					36					24	93
Articulated Trucks	8	1	0	0	9	0	1	0	0	1	1	1	9	0	11	4	0	5	0	9	30
% Articulated	50.0	3.6	0.0	0.0	20.0	0.0	33.3	0.0	0.0	14.3	100.0	6.3	39.1	0.0	27.5	25.0	0.0	25.0	0.0	23.7	23.1
Exiting Leg Total					6					1					5					18	30

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	1	5	0	0	6	0	0	0	0	0	1	1	3	0	5	6	0	8	0	14	25
7:30 AM	1	3	1	0	5	2	1	0	0	3	0	5	3	0	8	1	0	3	0	4	20
7:45 AM	3	4	0	0	7	0	0	1	0	1	0	1	1	0	2	2	0	2	0	4	14
8:00 AM	2	6	0	0	8	0	0	0	0	0	0	3	3	0	6	0	1	3	0	4	18
Total Volume	7	18	1	0	26	2	1	1	0	4	1	10	10	0	21	9	1	16	0	26	77
% Approach Total	26.9	69.2	3.8	0.0		50.0	25.0	25.0	0.0		4.8	47.6	47.6	0.0		34.6	3.8	61.5	0.0		
PHF	0.583	0.750	0.250	0.000	0.813	0.250	0.250	0.250	0.000	0.333	0.250	0.500	0.833	0.000	0.656	0.375	0.250	0.500	0.000	0.464	0.770
Buses	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
Buses %	0.0	22.2	0.0	0.0	15.4	50.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5
Single-Unit Trucks	4	14	1	0	19	1	1	1	0	3	0	9	7	0	16	6	1	13	0	20	58
Single-Unit %	57.1	77.8	100.0	0.0	73.1	50.0	100.0	100.0	0.0	75.0	0.0	90.0	70.0	0.0	76.2	66.7	100.0	81.3	0.0	76.9	75.3
Articulated Trucks	3	0	0	0	3	0	0	0	0	0	1	1	3	0	5	3	0	3	0	6	14
Articulated %	42.9	0.0	0.0	0.0	11.5	0.0	0.0	0.0	0.0	0.0	100.0	10.0	30.0	0.0	23.8	33.3	0.0	18.8	0.0	23.1	18.2
Buses	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
Single-Unit Trucks	4	14	1	0	19	1	1	1	0	3	0	9	7	0	16	6	1	13	0	20	58
Articulated Trucks	3	0	0	0	3	0	0	0	0	0	1	1	3	0	5	3	0	3	0	6	14
Total Entering Leg	7	18	1	0	26	2	1	1	0	4	1	10	10	0	21	9	1	16	0	26	77
Buses					1					0					4					0	5
Single-Unit Trucks					23					2					21					12	58
Articulated Trucks					4					1					3					6	14
Total Exiting Leg					28					3					28					18	77

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Buses**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Grand Total	0	5	0	0	5	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	7
Approach %	0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	71.4	0.0	0.0	71.4	14.3	0.0	0.0	0.0	14.3	0.0	14.3	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					2					0					5					0	7

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
% Approach Total	0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	1.000	0.000	0.000	1.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
Entering Leg	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
Exiting Leg					1					0					4					0	5
Total					5					1					4					0	10

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Single-Unit Trucks**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	4
7:15 AM	1	4	0	0	5	0	0	0	0	0	0	1	2	0	3	4	0	8	0	12	20
7:30 AM	0	2	1	0	3	1	1	0	0	2	0	4	2	0	6	1	0	1	0	2	13
7:45 AM	3	3	0	0	6	0	0	1	0	1	0	1	1	0	2	1	0	2	0	3	12
Total	4	10	1	0	15	1	1	1	0	3	0	8	5	0	13	7	0	11	0	18	49
8:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	2	0	5	0	1	2	0	3	13
8:15 AM	0	2	0	0	2	0	0	0	0	0	0	2	1	0	3	0	1	0	0	1	6
8:30 AM	3	1	0	0	4	0	1	0	0	1	0	0	4	0	4	1	0	0	0	1	10
8:45 AM	1	4	0	0	5	0	0	1	0	1	0	1	2	0	3	4	0	2	0	6	15
Total	4	12	0	0	16	0	1	1	0	2	0	6	9	0	15	5	2	4	0	11	44
Grand Total	8	22	1	0	31	1	2	2	0	5	0	14	14	0	28	12	2	15	0	29	93
Approach %	25.8	71.0	3.2	0.0		20.0	40.0	40.0	0.0		0.0	50.0	50.0	0.0		41.4	6.9	51.7	0.0		
Total %	8.6	23.7	1.1	0.0	33.3	1.1	2.2	2.2	0.0	5.4	0.0	15.1	15.1	0.0	30.1	12.9	2.2	16.1	0.0	31.2	
Exiting Leg Total					30					3					36					24	93

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	1	4	0	0	5	0	0	0	0	0	0	1	2	0	3	4	0	8	0	12	20
7:30 AM	0	2	1	0	3	1	1	0	0	2	0	4	2	0	6	1	0	1	0	2	13
7:45 AM	3	3	0	0	6	0	0	1	0	1	0	1	1	0	2	1	0	2	0	3	12
8:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	2	0	5	0	1	2	0	3	13
Total Volume	4	14	1	0	19	1	1	1	0	3	0	9	7	0	16	6	1	13	0	20	58
% Approach Total	21.1	73.7	5.3	0.0		33.3	33.3	33.3	0.0		0.0	56.3	43.8	0.0		30.0	5.0	65.0	0.0		
PHF	0.333	0.700	0.250	0.000	0.792	0.250	0.250	0.250	0.000	0.375	0.000	0.563	0.875	0.000	0.667	0.375	0.250	0.406	0.000	0.417	0.725
Entering Leg	4	14	1	0	19	1	1	1	0	3	0	9	7	0	16	6	1	13	0	20	58
Exiting Leg					23					2					21					12	58
Total					42					5					37					32	116

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Articulated Trucks**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	2	1	0	0	3	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	7
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	2	0	0	0	2	4
7:30 AM	1	0	0	0	1	0	0	0	0	0	0	1	1	0	2	0	0	2	0	2	5
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	3	1	0	0	4	0	0	0	0	0	1	1	6	0	8	3	0	2	0	5	17
8:00 AM	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	4
8:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	2
8:45 AM	2	0	0	0	2	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	4
Total	5	0	0	0	5	0	1	0	0	1	0	0	3	0	3	1	0	3	0	4	13
Grand Total	8	1	0	0	9	0	1	0	0	1	1	1	9	0	11	4	0	5	0	9	30
Approach %	88.9	11.1	0.0	0.0		0.0	100.0	0.0	0.0		9.1	9.1	81.8	0.0		44.4	0.0	55.6	0.0		
Total %	26.7	3.3	0.0	0.0	30.0	0.0	3.3	0.0	0.0	3.3	3.3	3.3	30.0	0.0	36.7	13.3	0.0	16.7	0.0	30.0	
Exiting Leg Total					6					1					5					18	30

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	2	1	0	0	3	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	7
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	2	0	0	0	2	4
7:30 AM	1	0	0	0	1	0	0	0	0	0	0	1	1	0	2	0	0	2	0	2	5
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	3	1	0	0	4	0	0	0	0	0	1	1	6	0	8	3	0	2	0	5	17
% Approach Total	75.0	25.0	0.0	0.0		0.0	0.0	0.0	0.0		12.5	12.5	75.0	0.0		60.0	0.0	40.0	0.0		
PHF	0.375	0.250	0.000	0.000	0.333	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.375	0.000	0.500	0.375	0.000	0.250	0.000	0.625	0.607
Entering Leg	3	1	0	0	4	0	0	0	0	0	1	1	6	0	8	3	0	2	0	5	17
Exiting Leg					3					1					4					9	17
Total					7					1					12					14	34

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Bicycles (on Roadway and Crosswalks)

	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	1	2
7:15 AM	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	0	0	1	1	1	0	0	0	0	2	0	0	1	0	0	0	1	0	0	1	0	0	0	1	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	1	0	0	0	1	1	1	0	0	0	1	3	0	0	1	0	0	0	1	0	0	1	0	0	0	1	6
Approach %	0.0	0.0	100.0	0.0	0.0	0.0		33.3	33.3	0.0	0.0	0.0	33.3		0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		
Total %	0.0	0.0	16.7	0.0	0.0	0.0	16.7	16.7	16.7	0.0	0.0	0.0	16.7	50.0	0.0	0.0	16.7	0.0	0.0	0.0	16.7	0.0	0.0	16.7	0.0	0.0	0.0	16.7	
Exiting Leg Total							2							2							0							2	6

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	1	2
7:15 AM	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	1	0	0	0	1	1	1	0	0	0	0	2	0	0	1	0	0	0	1	0	0	1	0	0	0	1	5
% Approach Total	0.0	0.0	100.0	0.0	0.0	0.0		50.0	50.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.625
Entering Leg	0	0	1	0	0	0	1	1	1	0	0	0	0	2	0	0	1	0	0	0	1	0	0	1	0	0	0	1	5
Exiting Leg							2							1							0							2	5
Total							3							3							1							3	10

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Pedestrians

	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	2	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	3	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Grand Total	0	0	0	0	0	2	2	0	0	0	0	4	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Approach %	0	0	0	0	0	100		0	0	0	0	66.7	33.3		0	0	0	0	0	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	25	25	0	0	0	0	50	25	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total							2							6							0							0	8

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:45 AM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	2	2	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
% Approach Total	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	66.7	33.3		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.500	0.250	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
Entering Leg	0	0	0	0	0	2	2	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Exiting Leg							2							3							0							0	5
Total							4							6							0							0	10

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	20	96	12	0	128	11	4	17	0	32	12	108	3	0	123	5	9	25	0	39	322
3:15 PM	15	96	20	0	131	15	10	17	0	42	13	113	2	0	128	4	7	21	0	32	333
3:30 PM	10	104	19	0	133	18	3	22	0	43	18	135	3	0	156	3	15	43	0	61	393
3:45 PM	16	110	14	0	140	12	8	11	0	31	23	119	1	0	143	4	8	22	0	34	348
Total	61	406	65	0	532	56	25	67	0	148	66	475	9	0	550	16	39	111	0	166	1396
4:00 PM	8	97	14	0	119	22	5	20	0	47	18	106	3	0	127	1	5	12	0	18	311
4:15 PM	7	104	17	0	128	18	6	15	0	39	16	128	3	0	147	1	6	13	0	20	334
4:30 PM	5	107	18	0	130	21	2	19	0	42	16	111	0	0	127	3	13	16	0	32	331
4:45 PM	10	135	17	0	162	26	7	31	0	64	23	129	0	0	152	1	9	11	0	21	399
Total	30	443	66	0	539	87	20	85	0	192	73	474	6	0	553	6	33	52	0	91	1375
5:00 PM	14	127	22	0	163	26	3	18	0	47	26	144	2	0	172	1	15	16	0	32	414
5:15 PM	4	127	15	0	146	23	5	11	0	39	20	145	0	0	165	1	8	11	0	20	370
5:30 PM	5	133	23	0	161	23	6	9	0	38	21	164	0	0	185	1	5	17	0	23	407
5:45 PM	8	86	7	0	101	18	6	22	0	46	11	109	3	0	123	0	7	16	0	23	293
Total	31	473	67	0	571	90	20	60	0	170	78	562	5	0	645	3	35	60	0	98	1484
Grand Total	122	1322	198	0	1642	233	65	212	0	510	217	1511	20	0	1748	25	107	223	0	355	4255
Approach %	7.4	80.5	12.1	0.0		45.7	12.7	41.6	0.0		12.4	86.4	1.1	0.0		7.0	30.1	62.8	0.0		
Total %	2.9	31.1	4.7	0.0	38.6	5.5	1.5	5.0	0.0	12.0	5.1	35.5	0.5	0.0	41.1	0.6	2.5	5.2	0.0	8.3	
Exiting Leg Total					1967					522					1559					207	4255
Cars	102	1310	196	0	1608	233	63	212	0	508	217	1486	8	0	1711	10	107	213	0	330	4157
% Cars	83.6	99.1	99.0	0.0	97.9	100.0	96.9	100.0	0.0	99.6	100.0	98.3	40.0	0.0	97.9	40.0	100.0	95.5	0.0	93.0	97.7
Exiting Leg Total					1932					520					1532					173	4157
Heavy Vehicles	20	12	2	0	34	0	2	0	0	2	0	25	12	0	37	15	0	10	0	25	98
% Heavy Vehicles	16.4	0.9	1.0	0.0	2.1	0.0	3.1	0.0	0.0	0.4	0.0	1.7	60.0	0.0	2.1	60.0	0.0	4.5	0.0	7.0	2.3
Exiting Leg Total					35					2					27					34	98

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:45 PM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	10	135	17	0	162	26	7	31	0	64	23	129	0	0	152	1	9	11	0	21	399
5:00 PM	14	127	22	0	163	26	3	18	0	47	26	144	2	0	172	1	15	16	0	32	414
5:15 PM	4	127	15	0	146	23	5	11	0	39	20	145	0	0	165	1	8	11	0	20	370
5:30 PM	5	133	23	0	161	23	6	9	0	38	21	164	0	0	185	1	5	17	0	23	407
Total Volume	33	522	77	0	632	98	21	69	0	188	90	582	2	0	674	4	37	55	0	96	1590
% Approach Total	5.2	82.6	12.2	0.0		52.1	11.2	36.7	0.0		13.4	86.4	0.3	0.0		4.2	38.5	57.3	0.0		
PHF	0.589	0.967	0.837	0.000	0.969	0.942	0.750	0.556	0.000	0.734	0.865	0.887	0.250	0.000	0.911	1.000	0.617	0.809	0.000	0.750	0.960
Cars	24	520	77	0	621	98	21	69	0	188	90	574	2	0	666	3	37	55	0	95	1570
Cars %	72.7	99.6	100.0	0.0	98.3	100.0	100.0	100.0	0.0	100.0	100.0	98.6	100.0	0.0	98.8	75.0	100.0	100.0	0.0	99.0	98.7
Heavy Vehicles	9	2	0	0	11	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	20
Heavy Vehicles %	27.3	0.4	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	1.2	25.0	0.0	0.0	0.0	1.0	1.3
Cars Enter Leg	24	520	77	0	621	98	21	69	0	188	90	574	2	0	666	3	37	55	0	95	1570
Heavy Enter Leg	9	2	0	0	11	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	20
Total Entering Leg	33	522	77	0	632	98	21	69	0	188	90	582	2	0	674	4	37	55	0	96	1590
Cars Exiting Leg					727					204					592					47	1570
Heavy Exiting Leg					8					0					3					9	20
Total Exiting Leg					735					204					595					56	1590

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Cars**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	17	92	12	0	121	11	4	17	0	32	12	104	0	0	116	2	9	23	0	34	303
3:15 PM	13	94	20	0	127	15	9	17	0	41	13	111	1	0	125	1	7	21	0	29	322
3:30 PM	6	104	19	0	129	18	3	22	0	43	18	129	0	0	147	1	15	39	0	55	374
3:45 PM	15	109	13	0	137	12	7	11	0	30	23	116	1	0	140	1	8	20	0	29	336
Total	51	399	64	0	514	56	23	67	0	146	66	460	2	0	528	5	39	103	0	147	1335
4:00 PM	8	95	13	0	116	22	5	20	0	47	18	105	1	0	124	0	5	12	0	17	304
4:15 PM	6	104	17	0	127	18	6	15	0	39	16	128	1	0	145	0	6	11	0	17	328
4:30 PM	5	106	18	0	129	21	2	19	0	42	16	111	0	0	127	2	13	16	0	31	329
4:45 PM	8	134	17	0	159	26	7	31	0	64	23	126	0	0	149	1	9	11	0	21	393
Total	27	439	65	0	531	87	20	85	0	192	73	470	2	0	545	3	33	50	0	86	1354
5:00 PM	11	127	22	0	160	26	3	18	0	47	26	143	2	0	171	1	15	16	0	32	410
5:15 PM	1	127	15	0	143	23	5	11	0	39	20	143	0	0	163	1	8	11	0	20	365
5:30 PM	4	132	23	0	159	23	6	9	0	38	21	162	0	0	183	0	5	17	0	22	402
5:45 PM	8	86	7	0	101	18	6	22	0	46	11	108	2	0	121	0	7	16	0	23	291
Total	24	472	67	0	563	90	20	60	0	170	78	556	4	0	638	2	35	60	0	97	1468
Grand Total	102	1310	196	0	1608	233	63	212	0	508	217	1486	8	0	1711	10	107	213	0	330	4157
Approach %	6.3	81.5	12.2	0.0		45.9	12.4	41.7	0.0		12.7	86.8	0.5	0.0		3.0	32.4	64.5	0.0		
Total %	2.5	31.5	4.7	0.0	38.7	5.6	1.5	5.1	0.0	12.2	5.2	35.7	0.2	0.0	41.2	0.2	2.6	5.1	0.0	7.9	
Exiting Leg Total					1932					520					1532					173	4157

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:45 PM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	8	134	17	0	159	26	7	31	0	64	23	126	0	0	149	1	9	11	0	21	393
5:00 PM	11	127	22	0	160	26	3	18	0	47	26	143	2	0	171	1	15	16	0	32	410
5:15 PM	1	127	15	0	143	23	5	11	0	39	20	143	0	0	163	1	8	11	0	20	365
5:30 PM	4	132	23	0	159	23	6	9	0	38	21	162	0	0	183	0	5	17	0	22	402
Total Volume	24	520	77	0	621	98	21	69	0	188	90	574	2	0	666	3	37	55	0	95	1570
% Approach Total	3.9	83.7	12.4	0.0		52.1	11.2	36.7	0.0		13.5	86.2	0.3	0.0		3.2	38.9	57.9	0.0		
PHF	0.545	0.970	0.837	0.000	0.970	0.942	0.750	0.556	0.000	0.734	0.865	0.886	0.250	0.000	0.910	0.750	0.617	0.809	0.000	0.742	0.957
Entering Leg	24	520	77	0	621	98	21	69	0	188	90	574	2	0	666	3	37	55	0	95	1570
Exiting Leg					727					204					592					47	1570
Total					1348					392					1258					142	3140

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	3	4	0	0	7	0	0	0	0	0	0	4	3	0	7	3	0	2	0	5	19
3:15 PM	2	2	0	0	4	0	1	0	0	1	0	2	1	0	3	3	0	0	0	3	11
3:30 PM	4	0	0	0	4	0	0	0	0	0	0	6	3	0	9	2	0	4	0	6	19
3:45 PM	1	1	1	0	3	0	1	0	0	1	0	3	0	0	3	3	0	2	0	5	12
Total	10	7	1	0	18	0	2	0	0	2	0	15	7	0	22	11	0	8	0	19	61
4:00 PM	0	2	1	0	3	0	0	0	0	0	0	1	2	0	3	1	0	0	0	1	7
4:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	2	0	2	1	0	2	0	3	6
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
4:45 PM	2	1	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
Total	3	4	1	0	8	0	0	0	0	0	0	4	4	0	8	3	0	2	0	5	21
5:00 PM	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
5:15 PM	3	0	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
5:30 PM	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
Total	7	1	0	0	8	0	0	0	0	0	0	6	1	0	7	1	0	0	0	1	16
Grand Total	20	12	2	0	34	0	2	0	0	2	0	25	12	0	37	15	0	10	0	25	98
Approach %	58.8	35.3	5.9	0.0		0.0	100.0	0.0	0.0		0.0	67.6	32.4	0.0		60.0	0.0	40.0	0.0		
Total %	20.4	12.2	2.0	0.0	34.7	0.0	2.0	0.0	0.0	2.0	0.0	25.5	12.2	0.0	37.8	15.3	0.0	10.2	0.0	25.5	
Exiting Leg Total					35					2					27					34	98
Buses	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Buses	0.0	8.3	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	2.0
Exiting Leg Total					1					0					1					0	2
Single-Unit Trucks	12	10	2	0	24	0	2	0	0	2	0	21	8	0	29	7	0	9	0	16	71
% Single-Unit	60.0	83.3	100.0	0.0	70.6	0.0	100.0	0.0	0.0	100.0	0.0	84.0	66.7	0.0	78.4	46.7	0.0	90.0	0.0	64.0	72.4
Exiting Leg Total					30					2					17					22	71
Articulated Trucks	8	1	0	0	9	0	0	0	0	0	0	3	4	0	7	8	0	1	0	9	25
% Articulated	40.0	8.3	0.0	0.0	26.5	0.0	0.0	0.0	0.0	0.0	0.0	12.0	33.3	0.0	18.9	53.3	0.0	10.0	0.0	36.0	25.5
Exiting Leg Total					4					0					9					12	25

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	3	4	0	0	7	0	0	0	0	0	0	4	3	0	7	3	0	2	0	5	19
3:15 PM	2	2	0	0	4	0	1	0	0	1	0	2	1	0	3	3	0	0	0	3	11
3:30 PM	4	0	0	0	4	0	0	0	0	0	0	6	3	0	9	2	0	4	0	6	19
3:45 PM	1	1	1	0	3	0	1	0	0	1	0	3	0	0	3	3	0	2	0	5	12
Total Volume	10	7	1	0	18	0	2	0	0	2	0	15	7	0	22	11	0	8	0	19	61
% Approach Total	55.6	38.9	5.6	0.0		0.0	100.0	0.0	0.0		0.0	68.2	31.8	0.0		57.9	0.0	42.1	0.0		
PHF	0.625	0.438	0.250	0.000	0.643	0.000	0.500	0.000	0.000	0.500	0.000	0.625	0.583	0.000	0.611	0.917	0.000	0.500	0.000	0.792	0.803
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	1.6
Single-Unit Trucks	6	6	1	0	13	0	2	0	0	2	0	12	4	0	16	5	0	7	0	12	43
Single-Unit %	60.0	85.7	100.0	0.0	72.2	0.0	100.0	0.0	0.0	100.0	0.0	80.0	57.1	0.0	72.7	45.5	0.0	87.5	0.0	63.2	70.5
Articulated Trucks	4	1	0	0	5	0	0	0	0	0	0	2	3	0	5	6	0	1	0	7	17
Articulated %	40.0	14.3	0.0	0.0	27.8	0.0	0.0	0.0	0.0	0.0	0.0	13.3	42.9	0.0	22.7	54.5	0.0	12.5	0.0	36.8	27.9
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Single-Unit Trucks	6	6	1	0	13	0	2	0	0	2	0	12	4	0	16	5	0	7	0	12	43
Articulated Trucks	4	1	0	0	5	0	0	0	0	0	0	2	3	0	5	6	0	1	0	7	17
Total Entering Leg	10	7	1	0	18	0	2	0	0	2	0	15	7	0	22	11	0	8	0	19	61
Buses					1					0					0					0	1
Single-Unit Trucks					19					1					11					12	43
Articulated Trucks					3					0					7					7	17
Total Exiting Leg					23					1					18					19	61

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Buses**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					1					0					1					0	2

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Exiting Leg					1					0					0					0	1
Total					1					0					1					0	2

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Single-Unit Trucks**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	2	4	0	0	6	0	0	0	0	0	0	3	2	0	5	2	0	2	0	4	15
3:15 PM	1	1	0	0	2	0	1	0	0	1	0	2	1	0	3	2	0	0	0	2	8
3:30 PM	2	0	0	0	2	0	0	0	0	0	0	4	1	0	5	1	0	3	0	4	11
3:45 PM	1	1	1	0	3	0	1	0	0	1	0	3	0	0	3	0	0	2	0	2	9
Total	6	6	1	0	13	0	2	0	0	2	0	12	4	0	16	5	0	7	0	12	43
4:00 PM	0	2	1	0	3	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	6
4:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	2	0	3	5
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
4:45 PM	2	1	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
Total	3	4	1	0	8	0	0	0	0	0	0	4	3	0	7	2	0	2	0	4	19
5:00 PM	2	0	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
5:30 PM	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
Total	3	0	0	0	3	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	9
Grand Total	12	10	2	0	24	0	2	0	0	2	0	21	8	0	29	7	0	9	0	16	71
Approach %	50.0	41.7	8.3	0.0		0.0	100.0	0.0	0.0		0.0	72.4	27.6	0.0		43.8	0.0	56.3	0.0		
Total %	16.9	14.1	2.8	0.0	33.8	0.0	2.8	0.0	0.0	2.8	0.0	29.6	11.3	0.0	40.8	9.9	0.0	12.7	0.0	22.5	
Exiting Leg Total					30					2					17					22	71

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	2	4	0	0	6	0	0	0	0	0	0	3	2	0	5	2	0	2	0	4	15
3:15 PM	1	1	0	0	2	0	1	0	0	1	0	2	1	0	3	2	0	0	0	2	8
3:30 PM	2	0	0	0	2	0	0	0	0	0	0	4	1	0	5	1	0	3	0	4	11
3:45 PM	1	1	1	0	3	0	1	0	0	1	0	3	0	0	3	0	0	2	0	2	9
Total Volume	6	6	1	0	13	0	2	0	0	2	0	12	4	0	16	5	0	7	0	12	43
% Approach Total	46.2	46.2	7.7	0.0		0.0	100.0	0.0	0.0		0.0	75.0	25.0	0.0		41.7	0.0	58.3	0.0		
PHF	0.750	0.375	0.250	0.000	0.542	0.000	0.500	0.000	0.000	0.500	0.000	0.750	0.500	0.000	0.800	0.625	0.000	0.583	0.000	0.750	0.717
Entering Leg	6	6	1	0	13	0	2	0	0	2	0	12	4	0	16	5	0	7	0	12	43
Exiting Leg					19					1					11					12	43
Total					32					3					27					24	86

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Articulated Trucks

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	1	0	0	0	1	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	4
3:15 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
3:30 PM	2	0	0	0	2	0	0	0	0	0	0	1	2	0	3	1	0	1	0	2	7
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
Total	4	1	0	0	5	0	0	0	0	0	0	2	3	0	5	6	0	1	0	7	17
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
5:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	3	0	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4	0	0	0	4	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	6
Grand Total	8	1	0	0	9	0	0	0	0	0	0	3	4	0	7	8	0	1	0	9	25
Approach %	88.9	11.1	0.0	0.0		0.0	0.0	0.0	0.0		0.0	42.9	57.1	0.0		88.9	0.0	11.1	0.0		
Total %	32.0	4.0	0.0	0.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.0	0.0	28.0	32.0	0.0	4.0	0.0	36.0	
Exiting Leg Total					4					0					9					12	25

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	1	0	0	0	1	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	4
3:15 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
3:30 PM	2	0	0	0	2	0	0	0	0	0	0	1	2	0	3	1	0	1	0	2	7
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
Total Volume	4	1	0	0	5	0	0	0	0	0	0	2	3	0	5	6	0	1	0	7	17
% Approach Total	80.0	20.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	40.0	60.0	0.0		85.7	0.0	14.3	0.0		
PHF	0.500	0.250	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.375	0.000	0.417	0.500	0.000	0.250	0.000	0.583	0.607
Entering Leg	4	1	0	0	5	0	0	0	0	0	0	2	3	0	5	6	0	1	0	7	17
Exiting Leg					3					0					7					7	17
Total					8					0					12					14	34

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Bicycles (on Roadway and Crosswalks)

	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	1	2
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	1	0	0	0	1	3
4:00 PM	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	2	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4
5:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	4
Grand Total	2	1	1	0	0	0	4	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	4	0	1	0	5	11
Approach %	50.0	25.0	25.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		50.0	50.0	0.0	0.0	0.0	0.0		0.0	0.0	80.0	0.0	20.0	0.0		
Total %	18.2	9.1	9.1	0.0	0.0	0.0	36.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	9.1	0.0	0.0	0.0	0.0	18.2	0.0	0.0	36.4	0.0	9.1	0.0	45.5	
Exiting Leg Total							5							2							1							3	11

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:30 PM	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:30 PM	1	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
5:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	1	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	6
% Approach Total	33.3	33.3	33.3	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	66.7	0.0	33.3	0.0		
PHF	0.250	0.250	0.250	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.250	0.000	0.750	0.750
Entering Leg	1	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	6
Exiting Leg							2							1							1							2	6
Total							5							1							1							5	12

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Pedestrians

	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Approach %	0	0	0	0	0	0		0	0	0	0	50	50		0	0	0	0	0	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	50	50	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total							0							2							0							0	2

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:00 PM	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Exiting Leg							0							2							0							0	2
Total							0							4							0							0	4

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	31	85	13	0	129	13	16	11	0	40	9	81	2	0	92	5	16	26	0	47	308
11:15 AM	20	75	11	0	106	10	13	7	0	30	8	98	1	0	107	3	9	26	0	38	281
11:30 AM	23	90	8	0	121	17	9	13	0	39	18	109	1	0	128	0	7	28	0	35	323
11:45 AM	24	102	16	0	142	13	10	19	0	42	8	110	1	0	119	2	8	20	0	30	333
Total	98	352	48	0	498	53	48	50	0	151	43	398	5	0	446	10	40	100	0	150	1245
12:00 PM	19	81	12	0	112	14	7	13	0	34	12	105	1	0	118	4	6	22	0	32	296
12:15 PM	25	81	8	0	114	8	11	11	0	30	13	98	0	0	111	2	8	13	0	23	278
12:30 PM	25	93	10	0	128	6	7	12	0	25	14	89	1	0	104	2	10	27	0	39	296
12:45 PM	20	80	9	0	109	10	5	13	0	28	14	94	1	0	109	1	7	19	0	27	273
Total	89	335	39	0	463	38	30	49	0	117	53	386	3	0	442	9	31	81	0	121	1143
1:00 PM	16	82	15	0	113	12	12	12	0	36	18	88	1	0	107	1	8	20	0	29	285
1:15 PM	16	79	14	0	109	11	7	20	0	38	13	75	2	0	90	0	10	15	0	25	262
1:30 PM	18	67	8	0	93	9	4	12	0	25	19	96	1	0	116	2	6	17	0	25	259
1:45 PM	19	74	8	0	101	7	6	10	0	23	12	111	0	0	123	2	10	18	0	30	277
Total	69	302	45	0	416	39	29	54	0	122	62	370	4	0	436	5	34	70	0	109	1083
Grand Total	256	989	132	0	1377	130	107	153	0	390	158	1154	12	0	1324	24	105	251	0	380	3471
Approach %	18.6	71.8	9.6	0.0		33.3	27.4	39.2	0.0		11.9	87.2	0.9	0.0		6.3	27.6	66.1	0.0		
Total %	7.4	28.5	3.8	0.0	39.7	3.7	3.1	4.4	0.0	11.2	4.6	33.2	0.3	0.0	38.1	0.7	3.0	7.2	0.0	10.9	
Exiting Leg Total					1535					395					1166					375	3471
Cars	254	981	132	0	1367	130	107	153	0	390	156	1138	9	0	1303	20	105	250	0	375	3435
% Cars	99.2	99.2	100.0	0.0	99.3	100.0	100.0	100.0	0.0	100.0	98.7	98.6	75.0	0.0	98.4	83.3	100.0	99.6	0.0	98.7	99.0
Exiting Leg Total					1518					393					1154					370	3435
Heavy Vehicles	2	8	0	0	10	0	0	0	0	0	2	16	3	0	21	4	0	1	0	5	36
% Heavy Vehicles	0.8	0.8	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	1.3	1.4	25.0	0.0	1.6	16.7	0.0	0.4	0.0	1.3	1.0
Exiting Leg Total					17					2					12					5	36

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:00 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	31	85	13	0	129	13	16	11	0	40	9	81	2	0	92	5	16	26	0	47	308
11:15 AM	20	75	11	0	106	10	13	7	0	30	8	98	1	0	107	3	9	26	0	38	281
11:30 AM	23	90	8	0	121	17	9	13	0	39	18	109	1	0	128	0	7	28	0	35	323
11:45 AM	24	102	16	0	142	13	10	19	0	42	8	110	1	0	119	2	8	20	0	30	333
Total Volume	98	352	48	0	498	53	48	50	0	151	43	398	5	0	446	10	40	100	0	150	1245
% Approach Total	19.7	70.7	9.6	0.0		35.1	31.8	33.1	0.0		9.6	89.2	1.1	0.0		6.7	26.7	66.7	0.0		
PHF	0.790	0.863	0.750	0.000	0.877	0.779	0.750	0.658	0.000	0.899	0.597	0.905	0.625	0.000	0.871	0.500	0.625	0.893	0.000	0.798	0.935
Cars	98	350	48	0	496	53	48	50	0	151	42	390	4	0	436	9	40	100	0	149	1232
Cars %	100.0	99.4	100.0	0.0	99.6	100.0	100.0	100.0	0.0	100.0	97.7	98.0	80.0	0.0	97.8	90.0	100.0	100.0	0.0	99.3	99.0
Heavy Vehicles	0	2	0	0	2	0	0	0	0	0	1	8	1	0	10	1	0	0	0	1	13
Heavy Vehicles %	0.0	0.6	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	2.3	2.0	20.0	0.0	2.2	10.0	0.0	0.0	0.0	0.7	1.0
Cars Enter Leg	98	350	48	0	496	53	48	50	0	151	42	390	4	0	436	9	40	100	0	149	1232
Heavy Enter Leg	0	2	0	0	2	0	0	0	0	0	1	8	1	0	10	1	0	0	0	1	13
Total Entering Leg	98	352	48	0	498	53	48	50	0	151	43	398	5	0	446	10	40	100	0	150	1245
Cars Exiting Leg					543					130					409					150	1232
Heavy Exiting Leg					8					1					3					1	13
Total Exiting Leg					551					131					412					151	1245

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Cars

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	31	85	13	0	129	13	16	11	0	40	9	79	2	0	90	4	16	26	0	46	305
11:15 AM	20	74	11	0	105	10	13	7	0	30	8	97	1	0	106	3	9	26	0	38	279
11:30 AM	23	90	8	0	121	17	9	13	0	39	17	107	1	0	125	0	7	28	0	35	320
11:45 AM	24	101	16	0	141	13	10	19	0	42	8	107	0	0	115	2	8	20	0	30	328
Total	98	350	48	0	496	53	48	50	0	151	42	390	4	0	436	9	40	100	0	149	1232
12:00 PM	19	78	12	0	109	14	7	13	0	34	11	105	1	0	117	3	6	22	0	31	291
12:15 PM	25	80	8	0	113	8	11	11	0	30	13	96	0	0	109	2	8	13	0	23	275
12:30 PM	24	92	10	0	126	6	7	12	0	25	14	87	0	0	101	1	10	26	0	37	289
12:45 PM	20	80	9	0	109	10	5	13	0	28	14	94	1	0	109	1	7	19	0	27	273
Total	88	330	39	0	457	38	30	49	0	117	52	382	2	0	436	7	31	80	0	118	1128
1:00 PM	16	81	15	0	112	12	12	12	0	36	18	86	1	0	105	1	8	20	0	29	282
1:15 PM	16	79	14	0	109	11	7	20	0	38	13	75	2	0	90	0	10	15	0	25	262
1:30 PM	18	67	8	0	93	9	4	12	0	25	19	95	0	0	114	1	6	17	0	24	256
1:45 PM	18	74	8	0	100	7	6	10	0	23	12	110	0	0	122	2	10	18	0	30	275
Total	68	301	45	0	414	39	29	54	0	122	62	366	3	0	431	4	34	70	0	108	1075
Grand Total	254	981	132	0	1367	130	107	153	0	390	156	1138	9	0	1303	20	105	250	0	375	3435
Approach %	18.6	71.8	9.7	0.0		33.3	27.4	39.2	0.0		12.0	87.3	0.7	0.0		5.3	28.0	66.7	0.0		
Total %	7.4	28.6	3.8	0.0	39.8	3.8	3.1	4.5	0.0	11.4	4.5	33.1	0.3	0.0	37.9	0.6	3.1	7.3	0.0	10.9	
Exiting Leg Total					1518					393					1154					370	3435

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:00 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	31	85	13	0	129	13	16	11	0	40	9	79	2	0	90	4	16	26	0	46	305
11:15 AM	20	74	11	0	105	10	13	7	0	30	8	97	1	0	106	3	9	26	0	38	279
11:30 AM	23	90	8	0	121	17	9	13	0	39	17	107	1	0	125	0	7	28	0	35	320
11:45 AM	24	101	16	0	141	13	10	19	0	42	8	107	0	0	115	2	8	20	0	30	328
Total Volume	98	350	48	0	496	53	48	50	0	151	42	390	4	0	436	9	40	100	0	149	1232
% Approach Total	19.8	70.6	9.7	0.0		35.1	31.8	33.1	0.0		9.6	89.4	0.9	0.0		6.0	26.8	67.1	0.0		
PHF	0.790	0.866	0.750	0.000	0.879	0.779	0.750	0.658	0.000	0.899	0.618	0.911	0.500	0.000	0.872	0.563	0.625	0.893	0.000	0.810	0.939
Entering Leg	98	350	48	0	496	53	48	50	0	151	42	390	4	0	436	9	40	100	0	149	1232
Exiting Leg					543					130					409					150	1232
Total					1039					281					845					299	2464

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	3
11:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	3
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	5
Total	0	2	0	0	2	0	0	0	0	0	1	8	1	0	10	1	0	0	0	1	13
12:00 PM	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	5
12:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
12:30 PM	1	1	0	0	2	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	7
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	5	0	0	6	0	0	0	0	0	1	4	1	0	6	2	0	1	0	3	15
1:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	3
1:45 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	1	1	0	0	2	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	8
Grand Total	2	8	0	0	10	0	0	0	0	0	2	16	3	0	21	4	0	1	0	5	36
Approach %	20.0	80.0	0.0	0.0		0.0	0.0	0.0	0.0		9.5	76.2	14.3	0.0		80.0	0.0	20.0	0.0		
Total %	5.6	22.2	0.0	0.0	27.8	0.0	0.0	0.0	0.0	0.0	5.6	44.4	8.3	0.0	58.3	11.1	0.0	2.8	0.0	13.9	
Exiting Leg Total					17					2					12					5	36
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total					0					0					0					0	0
Single-Unit Trucks	2	7	0	0	9	0	0	0	0	0	2	16	3	0	21	4	0	1	0	5	35
% Single-Unit	100.0	87.5	0.0	0.0	90.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	0.0	100.0	97.2
Exiting Leg Total					17					2					11					5	35
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Articulated	0.0	12.5	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Exiting Leg Total					0					0					1					0	1

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:45 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	5
12:00 PM	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	5
12:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
12:30 PM	1	1	0	0	2	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	7
Total Volume	1	6	0	0	7	0	0	0	0	0	1	7	2	0	10	2	0	1	0	3	20
% Approach Total	14.3	85.7	0.0	0.0		0.0	0.0	0.0	0.0		10.0	70.0	20.0	0.0		66.7	0.0	33.3	0.0		
PHF	0.250	0.500	0.000	0.000	0.583	0.000	0.000	0.000	0.000	0.000	0.250	0.583	0.500	0.000	0.625	0.500	0.000	0.250	0.000	0.375	0.714
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	1	5	0	0	6	0	0	0	0	0	1	7	2	0	10	2	0	1	0	3	19
Single-Unit %	100.0	83.3	0.0	0.0	85.7	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	0.0	100.0	95.0
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Articulated %	0.0	16.7	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	1	5	0	0	6	0	0	0	0	0	1	7	2	0	10	2	0	1	0	3	19
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Entering Leg	1	6	0	0	7	0	0	0	0	0	1	7	2	0	10	2	0	1	0	3	20
Buses					0					0					0					0	0
Single-Unit Trucks					8					1					7					3	19
Articulated Trucks					0					0					1					0	1
Total Exiting Leg					8					1					8					3	20

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Buses**

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:00 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg					0					0					0					0	0
Total					0					0					0					0	0

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Single-Unit Trucks

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	3
11:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	3
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	5
Total	0	2	0	0	2	0	0	0	0	0	1	8	1	0	10	1	0	0	0	1	13
12:00 PM	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	4
12:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
12:30 PM	1	1	0	0	2	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	7
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	4	0	0	5	0	0	0	0	0	1	4	1	0	6	2	0	1	0	3	14
1:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	3
1:45 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	1	1	0	0	2	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	8
Grand Total	2	7	0	0	9	0	0	0	0	0	2	16	3	0	21	4	0	1	0	5	35
Approach %	22.2	77.8	0.0	0.0		0.0	0.0	0.0	0.0		9.5	76.2	14.3	0.0		80.0	0.0	20.0	0.0		
Total %	5.7	20.0	0.0	0.0	25.7	0.0	0.0	0.0	0.0	0.0	5.7	45.7	8.6	0.0	60.0	11.4	0.0	2.9	0.0	14.3	
Exiting Leg Total					17					2					11					5	35

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:45 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	5
12:00 PM	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	4
12:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
12:30 PM	1	1	0	0	2	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	7
Total Volume	1	5	0	0	6	0	0	0	0	0	1	7	2	0	10	2	0	1	0	3	19
% Approach Total	16.7	83.3	0.0	0.0		0.0	0.0	0.0	0.0		10.0	70.0	20.0	0.0		66.7	0.0	33.3	0.0		
PHF	0.250	0.625	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.250	0.583	0.500	0.000	0.625	0.500	0.000	0.250	0.000	0.375	0.679
Entering Leg	1	5	0	0	6	0	0	0	0	0	1	7	2	0	10	2	0	1	0	3	19
Exiting Leg					8					1					7					3	19
Total					14					1					17					6	38

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Articulated Trucks

	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					0					0					1					0	1

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:15 AM	Durham Road from North					Mast Road from East					Durham Road from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Exiting Leg					0					0					1					0	1
Total					1					0					1					0	2

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Bicycles (on Roadway and Crosswalks)

	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	66.7	
Exiting Leg Total							3							0							0							0	3

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:30 AM	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
Total Volume	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.375
Entering Leg	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3
Exiting Leg							3							0							0							0	3
Total							3							1							0							2	6

PDI File #: **240098 B**
Location: **N: Durham Road S: Durham Road**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Pedestrians

	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Approach %	0	0	0	0	0	0		0	0	0	0	50	50		0	0	0	0	0	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	50	50	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total							0							4							0							0	4

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

12:00 PM	Durham Road from North							Mast Road from East							Durham Road from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Exiting Leg							0							2							0							0	2
Total							0							4							0							0	4

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	1	0	1	0	2	4	10	0	0	14	1	0	0	0	1	0	4	2	0	6	23
7:15 AM	1	0	0	0	1	0	10	0	0	10	1	1	1	0	3	2	22	1	0	25	39
7:30 AM	1	0	2	0	3	7	13	1	0	21	5	1	1	0	7	2	11	0	0	13	44
7:45 AM	0	0	0	0	0	4	14	0	0	18	1	0	1	0	2	2	13	0	0	15	35
Total	3	0	3	0	6	15	47	1	0	63	8	2	3	0	13	6	50	3	0	59	141
8:00 AM	0	0	2	0	2	3	10	1	0	14	4	0	2	0	6	1	12	0	0	13	35
8:15 AM	0	0	2	0	2	1	11	4	0	16	1	0	2	0	3	4	9	1	0	14	35
8:30 AM	1	0	2	0	3	4	33	3	1	41	1	0	3	0	4	3	22	1	0	26	74
8:45 AM	0	0	1	0	1	3	24	1	0	28	5	0	1	0	6	4	21	0	0	25	60
Total	1	0	7	0	8	11	78	9	1	99	11	0	8	0	19	12	64	2	0	78	204
Grand Total	4	0	10	0	14	26	125	10	1	162	19	2	11	0	32	18	114	5	0	137	345
Approach %	28.6	0.0	71.4	0.0		16.0	77.2	6.2	0.6		59.4	6.3	34.4	0.0		13.1	83.2	3.6	0.0		
Total %	1.2	0.0	2.9	0.0	4.1	7.5	36.2	2.9	0.3	47.0	5.5	0.6	3.2	0.0	9.3	5.2	33.0	1.4	0.0	39.7	
Exiting Leg Total					33					144					28					140	345
Cars	3	0	4	0	7	16	93	10	1	120	18	2	8	0	28	15	77	4	0	96	251
% Cars	75.0	0.0	40.0	0.0	50.0	61.5	74.4	100.0	100.0	74.1	94.7	100.0	72.7	0.0	87.5	83.3	67.5	80.0	0.0	70.1	72.8
Exiting Leg Total					22					100					25					104	251
Heavy Vehicles	1	0	6	0	7	10	32	0	0	42	1	0	3	0	4	3	37	1	0	41	94
% Heavy Vehicles	25.0	0.0	60.0	0.0	50.0	38.5	25.6	0.0	0.0	25.9	5.3	0.0	27.3	0.0	12.5	16.7	32.5	20.0	0.0	29.9	27.2
Exiting Leg Total					11					44					3					36	94

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
8:00 AM	0	0	2	0	2	3	10	1	0	14	4	0	2	0	6	1	12	0	0	13	35
8:15 AM	0	0	2	0	2	1	11	4	0	16	1	0	2	0	3	4	9	1	0	14	35
8:30 AM	1	0	2	0	3	4	33	3	1	41	1	0	3	0	4	3	22	1	0	26	74
8:45 AM	0	0	1	0	1	3	24	1	0	28	5	0	1	0	6	4	21	0	0	25	60
Total Volume	1	0	7	0	8	11	78	9	1	99	11	0	8	0	19	12	64	2	0	78	204
% Approach Total	12.5	0.0	87.5	0.0		11.1	78.8	9.1	1.0		57.9	0.0	42.1	0.0		15.4	82.1	2.6	0.0		
PHF	0.250	0.000	0.875	0.000	0.667	0.688	0.591	0.563	0.250	0.604	0.550	0.000	0.667	0.000	0.792	0.750	0.727	0.500	0.000	0.750	0.689
Cars	1	0	3	0	4	5	61	9	1	76	11	0	6	0	17	11	48	2	0	61	158
Cars %	100.0	0.0	42.9	0.0	50.0	45.5	78.2	100.0	100.0	76.8	100.0	0.0	75.0	0.0	89.5	91.7	75.0	100.0	0.0	78.2	77.5
Heavy Vehicles	0	0	4	0	4	6	17	0	0	23	0	0	2	0	2	1	16	0	0	17	46
Heavy Vehicles %	0.0	0.0	57.1	0.0	50.0	54.5	21.8	0.0	0.0	23.2	0.0	0.0	25.0	0.0	10.5	8.3	25.0	0.0	0.0	21.8	22.5
Cars Enter Leg	1	0	3	0	4	5	61	9	1	76	11	0	6	0	17	11	48	2	0	61	158
Heavy Enter Leg	0	0	4	0	4	6	17	0	0	23	0	0	2	0	2	1	16	0	0	17	46
Total Entering Leg	1	0	7	0	8	11	78	9	1	99	11	0	8	0	19	12	64	2	0	78	204
Cars Exiting Leg					7					63					20					68	158
Heavy Exiting Leg					6					20					1					19	46
Total Exiting Leg					13					83					21					87	204

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	1	0	1	1	7	0	0	8	1	0	0	0	1	0	3	1	0	4	14
7:15 AM	1	0	0	0	1	0	5	0	0	5	1	1	1	0	3	2	9	1	0	12	21
7:30 AM	1	0	0	0	1	6	9	1	0	16	4	1	0	0	5	1	9	0	0	10	32
7:45 AM	0	0	0	0	0	4	11	0	0	15	1	0	1	0	2	1	8	0	0	9	26
Total	2	0	1	0	3	11	32	1	0	44	7	2	2	0	11	4	29	2	0	35	93
8:00 AM	0	0	1	0	1	1	7	1	0	9	4	0	1	0	5	1	9	0	0	10	25
8:15 AM	0	0	0	0	0	0	10	4	0	14	1	0	1	0	2	4	7	1	0	12	28
8:30 AM	1	0	1	0	2	4	24	3	1	32	1	0	3	0	4	3	20	1	0	24	62
8:45 AM	0	0	1	0	1	0	20	1	0	21	5	0	1	0	6	3	12	0	0	15	43
Total	1	0	3	0	4	5	61	9	1	76	11	0	6	0	17	11	48	2	0	61	158
Grand Total	3	0	4	0	7	16	93	10	1	120	18	2	8	0	28	15	77	4	0	96	251
Approach %	42.9	0.0	57.1	0.0		13.3	77.5	8.3	0.8		64.3	7.1	28.6	0.0		15.6	80.2	4.2	0.0		
Total %	1.2	0.0	1.6	0.0	2.8	6.4	37.1	4.0	0.4	47.8	7.2	0.8	3.2	0.0	11.2	6.0	30.7	1.6	0.0	38.2	
Exiting Leg Total					22					100					25					104	251

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
8:00 AM	0	0	1	0	1	1	7	1	0	9	4	0	1	0	5	1	9	0	0	10	25
8:15 AM	0	0	0	0	0	0	10	4	0	14	1	0	1	0	2	4	7	1	0	12	28
8:30 AM	1	0	1	0	2	4	24	3	1	32	1	0	3	0	4	3	20	1	0	24	62
8:45 AM	0	0	1	0	1	0	20	1	0	21	5	0	1	0	6	3	12	0	0	15	43
Total Volume	1	0	3	0	4	5	61	9	1	76	11	0	6	0	17	11	48	2	0	61	158
% Approach Total	25.0	0.0	75.0	0.0		6.6	80.3	11.8	1.3		64.7	0.0	35.3	0.0		18.0	78.7	3.3	0.0		
PHF	0.250	0.000	0.750	0.000	0.500	0.313	0.635	0.563	0.250	0.594	0.550	0.000	0.500	0.000	0.708	0.688	0.600	0.500	0.000	0.635	0.637
Entering Leg	1	0	3	0	4	5	61	9	1	76	11	0	6	0	17	11	48	2	0	61	158
Exiting Leg					7					63					20					68	158
Total					11					139					37					129	316

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	1	0	0	0	1	3	3	0	0	6	0	0	0	0	0	0	1	1	0	2	9
7:15 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	13	0	0	13	18
7:30 AM	0	0	2	0	2	1	4	0	0	5	1	0	1	0	2	1	2	0	0	3	12
7:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	5	0	0	6	9
Total	1	0	2	0	3	4	15	0	0	19	1	0	1	0	2	2	21	1	0	24	48
8:00 AM	0	0	1	0	1	2	3	0	0	5	0	0	1	0	1	0	3	0	0	3	10
8:15 AM	0	0	2	0	2	1	1	0	0	2	0	0	1	0	1	0	2	0	0	2	7
8:30 AM	0	0	1	0	1	0	9	0	0	9	0	0	0	0	0	0	2	0	0	2	12
8:45 AM	0	0	0	0	0	3	4	0	0	7	0	0	0	0	0	1	9	0	0	10	17
Total	0	0	4	0	4	6	17	0	0	23	0	0	2	0	2	1	16	0	0	17	46
Grand Total	1	0	6	0	7	10	32	0	0	42	1	0	3	0	4	3	37	1	0	41	94
Approach %	14.3	0.0	85.7	0.0		23.8	76.2	0.0	0.0		25.0	0.0	75.0	0.0		7.3	90.2	2.4	0.0		
Total %	1.1	0.0	6.4	0.0	7.4	10.6	34.0	0.0	0.0	44.7	1.1	0.0	3.2	0.0	4.3	3.2	39.4	1.1	0.0	43.6	
Exiting Leg Total					11					44					3					36	94
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total					0					0					0					0	0
Single-Unit Trucks	1	0	0	0	1	0	22	0	0	22	1	0	3	0	4	2	32	1	0	35	62
% Single-Unit	100.0	0.0	0.0	0.0	14.3	0.0	68.8	0.0	0.0	52.4	100.0	0.0	100.0	0.0	100.0	66.7	86.5	100.0	0.0	85.4	66.0
Exiting Leg Total					1					33					2					26	62
Articulated Trucks	0	0	6	0	6	10	10	0	0	20	0	0	0	0	0	1	5	0	0	6	32
% Articulated	0.0	0.0	100.0	0.0	85.7	100.0	31.3	0.0	0.0	47.6	0.0	0.0	0.0	0.0	0.0	33.3	13.5	0.0	0.0	14.6	34.0
Exiting Leg Total					10					11					1					10	32

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	13	0	0	13	18
7:30 AM	0	0	2	0	2	1	4	0	0	5	1	0	1	0	2	1	2	0	0	3	12
7:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	5	0	0	6	9
8:00 AM	0	0	1	0	1	2	3	0	0	5	0	0	1	0	1	0	3	0	0	3	10
Total Volume	0	0	3	0	3	3	15	0	0	18	1	0	2	0	3	2	23	0	0	25	49
% Approach Total	0.0	0.0	100.0	0.0		16.7	83.3	0.0	0.0		33.3	0.0	66.7	0.0		8.0	92.0	0.0	0.0		
PHF	0.000	0.000	0.375	0.000	0.375	0.375	0.750	0.000	0.000	0.900	0.250	0.000	0.500	0.000	0.375	0.500	0.442	0.000	0.000	0.481	0.681
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	0	0	0	0	0	10	0	0	10	1	0	2	0	3	2	19	0	0	21	34
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	55.6	100.0	0.0	100.0	0.0	100.0	100.0	82.6	0.0	0.0	84.0	69.4
Articulated Trucks	0	0	3	0	3	3	5	0	0	8	0	0	0	0	0	0	4	0	0	4	15
Articulated %	0.0	0.0	100.0	0.0	100.0	100.0	33.3	0.0	0.0	44.4	0.0	0.0	0.0	0.0	0.0	0.0	17.4	0.0	0.0	16.0	30.6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	0	0	0	0	10	0	0	10	1	0	2	0	3	2	19	0	0	21	34
Articulated Trucks	0	0	3	0	3	3	5	0	0	8	0	0	0	0	0	0	4	0	0	4	15
Total Entering Leg	0	0	3	0	3	3	15	0	0	18	1	0	2	0	3	2	23	0	0	25	49
Buses					0					0					0					0	0
Single-Unit Trucks					0					20					2					12	34
Articulated Trucks					3					7					0					5	15
Total Exiting Leg					3					27					2					17	49

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Buses

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg					0					0					0					0	0
Total					0					0					0					0	0

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Single-Unit Trucks**

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3
7:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	11	0	0	11	14
7:30 AM	0	0	0	0	0	0	3	0	0	3	1	0	1	0	2	1	1	0	0	2	7
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	4	0	0	5	7
Total	1	0	0	0	1	0	8	0	0	8	1	0	1	0	2	2	17	1	0	20	31
8:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	3	0	0	3	6
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	3
8:30 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	2	0	0	2	10
8:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	9	0	0	9	12
Total	0	0	0	0	0	0	14	0	0	14	0	0	2	0	2	0	15	0	0	15	31
Grand Total	1	0	0	0	1	0	22	0	0	22	1	0	3	0	4	2	32	1	0	35	62
Approach %	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		25.0	0.0	75.0	0.0		5.7	91.4	2.9	0.0		
Total %	1.6	0.0	0.0	0.0	1.6	0.0	35.5	0.0	0.0	35.5	1.6	0.0	4.8	0.0	6.5	3.2	51.6	1.6	0.0	56.5	
Exiting Leg Total					1					33					2					26	62

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	11	0	0	11	14
7:30 AM	0	0	0	0	0	0	3	0	0	3	1	0	1	0	2	1	1	0	0	2	7
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	4	0	0	5	7
8:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	3	0	0	3	6
Total Volume	0	0	0	0	0	0	10	0	0	10	1	0	2	0	3	2	19	0	0	21	34
% Approach Total	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		33.3	0.0	66.7	0.0		9.5	90.5	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.833	0.000	0.000	0.833	0.250	0.000	0.500	0.000	0.375	0.500	0.432	0.000	0.000	0.477	0.607
Entering Leg	0	0	0	0	0	0	10	0	0	10	1	0	2	0	3	2	19	0	0	21	34
Exiting Leg					0					20					2					12	34
Total					0					30					5					33	68

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Articulated Trucks

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	6
7:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
7:30 AM	0	0	2	0	2	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	5
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	2	0	2	4	7	0	0	11	0	0	0	0	0	0	4	0	0	4	17
8:00 AM	0	0	1	0	1	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	4
8:30 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	3	1	0	0	4	0	0	0	0	0	1	0	0	0	1	5
Total	0	0	4	0	4	6	3	0	0	9	0	0	0	0	0	1	1	0	0	2	15
Grand Total	0	0	6	0	6	10	10	0	0	20	0	0	0	0	0	1	5	0	0	6	32
Approach %	0.0	0.0	100.0	0.0		50.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0		16.7	83.3	0.0	0.0		
Total %	0.0	0.0	18.8	0.0	18.8	31.3	31.3	0.0	0.0	62.5	0.0	0.0	0.0	0.0	0.0	3.1	15.6	0.0	0.0	18.8	
Exiting Leg Total					10					11					1					10	32

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	6
7:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
7:30 AM	0	0	2	0	2	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	5
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total Volume	0	0	2	0	2	4	7	0	0	11	0	0	0	0	0	0	4	0	0	4	17
% Approach Total	0.0	0.0	100.0	0.0		36.4	63.6	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.250	0.000	0.250	0.333	0.583	0.000	0.000	0.458	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.708
Entering Leg	0	0	2	0	2	4	7	0	0	11	0	0	0	0	0	0	4	0	0	4	17
Exiting Leg					4					6					0					7	17
Total					6					17					0					11	34

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Bicycles (on Roadway and Crosswalks)

	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	0	0	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	1	0	0	0	0	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Grand Total	1	0	0	0	0	1	2	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	5
Approach %	50.0	0.0	0.0	0.0	0.0	50.0		50.0	50.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		
Total %	20.0	0.0	0.0	0.0	0.0	20.0	40.0	20.0	20.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	20.0	
Exiting Leg Total							2							1							0							2	5

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	0	0	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	1	0	0	0	0	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
% Approach Total	50.0	0.0	0.0	0.0	0.0	50.0		100.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.000	0.000	0.250	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	1	0	0	0	0	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Exiting Leg							2							0							0							1	3
Total							4							1							0							1	6

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **7:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Pedestrians**

	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3
Total	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	5
Grand Total	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	7
Approach %	0	0	0	0	66.7	33.3		0	0	0	0	0	0		0	0	0	0	75	25		0	0	0	0	0	0		
Total %	0	0	0	0	28.6	14.3	42.9	0	0	0	0	0	0	0	0	0	0	0	42.9	14.3	57.1	0	0	0	0	0	0	0	
Exiting Leg Total							3							0							4							0	7

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	5
% Approach Total	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	66.7	33.3		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.417
Entering Leg	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	5
Exiting Leg							2							0							3							0	5
Total							4							0							6							0	10

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	1	1	5	0	7	5	19	3	0	27	8	1	7	0	16	2	29	0	0	31	81
3:15 PM	0	0	7	0	7	6	17	3	0	26	7	0	3	0	10	5	20	2	0	27	70
3:30 PM	6	3	28	0	37	4	11	2	0	17	9	0	3	0	12	5	22	0	0	27	93
3:45 PM	2	0	7	0	9	12	8	4	0	24	9	0	4	0	13	0	13	3	0	16	62
Total	9	4	47	0	60	27	55	12	0	94	33	1	17	0	51	12	84	5	0	101	306
4:00 PM	0	2	4	0	6	0	11	3	0	14	6	2	3	0	11	4	8	0	0	12	43
4:15 PM	0	0	5	0	5	2	10	6	0	18	6	0	5	0	11	4	11	0	0	15	49
4:30 PM	0	0	5	0	5	0	3	3	0	6	9	0	7	0	16	3	14	0	0	17	44
4:45 PM	0	1	3	0	4	0	14	3	0	17	7	0	3	0	10	3	12	0	0	15	46
Total	0	3	17	0	20	2	38	15	0	55	28	2	18	0	48	14	45	0	0	59	182
5:00 PM	0	0	3	0	3	1	13	5	0	19	9	0	5	0	14	5	21	0	0	26	62
5:15 PM	1	0	1	0	2	3	7	1	0	11	7	0	3	0	10	5	9	0	0	14	37
5:30 PM	1	0	2	0	3	1	8	2	0	11	11	0	4	0	15	6	13	0	0	19	48
5:45 PM	0	0	3	0	3	2	10	3	0	15	11	0	7	0	18	5	6	0	0	11	47
Total	2	0	9	0	11	7	38	11	0	56	38	0	19	0	57	21	49	0	0	70	194
Grand Total	11	7	73	0	91	36	131	38	0	205	99	3	54	0	156	47	178	5	0	230	682
Approach %	12.1	7.7	80.2	0.0		17.6	63.9	18.5	0.0		63.5	1.9	34.6	0.0		20.4	77.4	2.2	0.0		
Total %	1.6	1.0	10.7	0.0	13.3	5.3	19.2	5.6	0.0	30.1	14.5	0.4	7.9	0.0	22.9	6.9	26.1	0.7	0.0	33.7	
Exiting Leg Total					44					350					92					196	682
Cars	11	7	64	0	82	25	110	38	0	173	99	3	54	0	156	47	165	4	0	216	627
% Cars	100.0	100.0	87.7	0.0	90.1	69.4	84.0	100.0	0.0	84.4	100.0	100.0	100.0	0.0	100.0	100.0	92.7	80.0	0.0	93.9	91.9
Exiting Leg Total					32					328					92					175	627
Heavy Vehicles	0	0	9	0	9	11	21	0	0	32	0	0	0	0	0	0	13	1	0	14	55
% Heavy Vehicles	0.0	0.0	12.3	0.0	9.9	30.6	16.0	0.0	0.0	15.6	0.0	0.0	0.0	0.0	0.0	0.0	7.3	20.0	0.0	6.1	8.1
Exiting Leg Total					12					22					0					21	55

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	1	1	5	0	7	5	19	3	0	27	8	1	7	0	16	2	29	0	0	31	81
3:15 PM	0	0	7	0	7	6	17	3	0	26	7	0	3	0	10	5	20	2	0	27	70
3:30 PM	6	3	28	0	37	4	11	2	0	17	9	0	3	0	12	5	22	0	0	27	93
3:45 PM	2	0	7	0	9	12	8	4	0	24	9	0	4	0	13	0	13	3	0	16	62
Total Volume	9	4	47	0	60	27	55	12	0	94	33	1	17	0	51	12	84	5	0	101	306
% Approach Total	15.0	6.7	78.3	0.0		28.7	58.5	12.8	0.0		64.7	2.0	33.3	0.0		11.9	83.2	5.0	0.0		
PHF	0.375	0.333	0.420	0.000	0.405	0.563	0.724	0.750	0.000	0.870	0.917	0.250	0.607	0.000	0.797	0.600	0.724	0.417	0.000	0.815	0.823
Cars	9	4	40	0	53	21	43	12	0	76	33	1	17	0	51	12	75	4	0	91	271
Cars %	100.0	100.0	85.1	0.0	88.3	77.8	78.2	100.0	0.0	80.9	100.0	100.0	100.0	0.0	100.0	100.0	89.3	80.0	0.0	90.1	88.6
Heavy Vehicles	0	0	7	0	7	6	12	0	0	18	0	0	0	0	0	0	9	1	0	10	35
Heavy Vehicles %	0.0	0.0	14.9	0.0	11.7	22.2	21.8	0.0	0.0	19.1	0.0	0.0	0.0	0.0	0.0	0.0	10.7	20.0	0.0	9.9	11.4
Cars Enter Leg	9	4	40	0	53	21	43	12	0	76	33	1	17	0	51	12	75	4	0	91	271
Heavy Enter Leg	0	0	7	0	7	6	12	0	0	18	0	0	0	0	0	0	9	1	0	10	35
Total Entering Leg	9	4	47	0	60	27	55	12	0	94	33	1	17	0	51	12	84	5	0	101	306
Cars Exiting Leg					26					148					28					69	271
Heavy Exiting Leg					7					16					0					12	35
Total Exiting Leg					33					164					28					81	306

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	1	1	4	0	6	4	15	3	0	22	8	1	7	0	16	2	26	0	0	28	72
3:15 PM	0	0	6	0	6	5	15	3	0	23	7	0	3	0	10	5	19	1	0	25	64
3:30 PM	6	3	26	0	35	1	6	2	0	9	9	0	3	0	12	5	19	0	0	24	80
3:45 PM	2	0	4	0	6	11	7	4	0	22	9	0	4	0	13	0	11	3	0	14	55
Total	9	4	40	0	53	21	43	12	0	76	33	1	17	0	51	12	75	4	0	91	271
4:00 PM	0	2	3	0	5	0	9	3	0	12	6	2	3	0	11	4	8	0	0	12	40
4:15 PM	0	0	5	0	5	1	8	6	0	15	6	0	5	0	11	4	8	0	0	12	43
4:30 PM	0	0	5	0	5	0	3	3	0	6	9	0	7	0	16	3	13	0	0	16	43
4:45 PM	0	1	3	0	4	0	13	3	0	16	7	0	3	0	10	3	12	0	0	15	45
Total	0	3	16	0	19	1	33	15	0	49	28	2	18	0	48	14	41	0	0	55	171
5:00 PM	0	0	3	0	3	0	11	5	0	16	9	0	5	0	14	5	21	0	0	26	59
5:15 PM	1	0	1	0	2	0	7	1	0	8	7	0	3	0	10	5	9	0	0	14	34
5:30 PM	1	0	1	0	2	1	7	2	0	10	11	0	4	0	15	6	13	0	0	19	46
5:45 PM	0	0	3	0	3	2	9	3	0	14	11	0	7	0	18	5	6	0	0	11	46
Total	2	0	8	0	10	3	34	11	0	48	38	0	19	0	57	21	49	0	0	70	185
Grand Total	11	7	64	0	82	25	110	38	0	173	99	3	54	0	156	47	165	4	0	216	627
Approach %	13.4	8.5	78.0	0.0		14.5	63.6	22.0	0.0		63.5	1.9	34.6	0.0		21.8	76.4	1.9	0.0		
Total %	1.8	1.1	10.2	0.0	13.1	4.0	17.5	6.1	0.0	27.6	15.8	0.5	8.6	0.0	24.9	7.5	26.3	0.6	0.0	34.4	
Exiting Leg Total					32					328					92					175	627

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	1	1	4	0	6	4	15	3	0	22	8	1	7	0	16	2	26	0	0	28	72
3:15 PM	0	0	6	0	6	5	15	3	0	23	7	0	3	0	10	5	19	1	0	25	64
3:30 PM	6	3	26	0	35	1	6	2	0	9	9	0	3	0	12	5	19	0	0	24	80
3:45 PM	2	0	4	0	6	11	7	4	0	22	9	0	4	0	13	0	11	3	0	14	55
Total Volume	9	4	40	0	53	21	43	12	0	76	33	1	17	0	51	12	75	4	0	91	271
% Approach Total	17.0	7.5	75.5	0.0		27.6	56.6	15.8	0.0		64.7	2.0	33.3	0.0		13.2	82.4	4.4	0.0		
PHF	0.375	0.333	0.385	0.000	0.379	0.477	0.717	0.750	0.000	0.826	0.917	0.250	0.607	0.000	0.797	0.600	0.721	0.333	0.000	0.813	0.847
Entering Leg	9	4	40	0	53	21	43	12	0	76	33	1	17	0	51	12	75	4	0	91	271
Exiting Leg					26					148					28					69	271
Total					79					224					79					160	542

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	1	0	1	1	4	0	0	5	0	0	0	0	0	0	3	0	0	3	9
3:15 PM	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	0	1	1	0	2	6
3:30 PM	0	0	2	0	2	3	5	0	0	8	0	0	0	0	0	0	3	0	0	3	13
3:45 PM	0	0	3	0	3	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	7
Total	0	0	7	0	7	6	12	0	0	18	0	0	0	0	0	0	9	1	0	10	35
4:00 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	3	0	0	3	6
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	1	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	11
5:00 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	1	4	4	0	0	8	0	0	0	0	0	0	0	0	0	0	9
Grand Total	0	0	9	0	9	11	21	0	0	32	0	0	0	0	0	0	13	1	0	14	55
Approach %	0.0	0.0	100.0	0.0		34.4	65.6	0.0	0.0		0.0	0.0	0.0	0.0		0.0	92.9	7.1	0.0		
Total %	0.0	0.0	16.4	0.0	16.4	20.0	38.2	0.0	0.0	58.2	0.0	0.0	0.0	0.0	0.0	0.0	23.6	1.8	0.0	25.5	
Exiting Leg Total					12					22					0					21	55
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total					0					0					0					0	0
Single-Unit Trucks	0	0	2	0	2	2	18	0	0	20	0	0	0	0	0	0	11	1	0	12	34
% Single-Unit	0.0	0.0	22.2	0.0	22.2	18.2	85.7	0.0	0.0	62.5	0.0	0.0	0.0	0.0	0.0	0.0	84.6	100.0	0.0	85.7	61.8
Exiting Leg Total					3					13					0					18	34
Articulated Trucks	0	0	7	0	7	9	3	0	0	12	0	0	0	0	0	0	2	0	0	2	21
% Articulated	0.0	0.0	77.8	0.0	77.8	81.8	14.3	0.0	0.0	37.5	0.0	0.0	0.0	0.0	0.0	0.0	15.4	0.0	0.0	14.3	38.2
Exiting Leg Total					9					9					0					3	21

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	1	0	1	1	4	0	0	5	0	0	0	0	0	0	3	0	0	3	9
3:15 PM	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	0	1	1	0	2	6
3:30 PM	0	0	2	0	2	3	5	0	0	8	0	0	0	0	0	0	3	0	0	3	13
3:45 PM	0	0	3	0	3	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	7
Total Volume	0	0	7	0	7	6	12	0	0	18	0	0	0	0	0	0	9	1	0	10	35
% Approach Total	0.0	0.0	100.0	0.0		33.3	66.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.0	10.0	0.0		
PHF	0.000	0.000	0.583	0.000	0.583	0.500	0.600	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.250	0.000	0.833	0.673
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	0	2	0	2	2	9	0	0	11	0	0	0	0	0	0	7	1	0	8	21
Single-Unit %	0.0	0.0	28.6	0.0	28.6	33.3	75.0	0.0	0.0	61.1	0.0	0.0	0.0	0.0	0.0	0.0	77.8	100.0	0.0	80.0	60.0
Articulated Trucks	0	0	5	0	5	4	3	0	0	7	0	0	0	0	0	0	2	0	0	2	14
Articulated %	0.0	0.0	71.4	0.0	71.4	66.7	25.0	0.0	0.0	38.9	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	20.0	40.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	2	0	2	2	9	0	0	11	0	0	0	0	0	0	7	1	0	8	21
Articulated Trucks	0	0	5	0	5	4	3	0	0	7	0	0	0	0	0	0	2	0	0	2	14
Total Entering Leg	0	0	7	0	7	6	12	0	0	18	0	0	0	0	0	0	9	1	0	10	35
Buses					0					0					0					0	0
Single-Unit Trucks					3					9					0					9	21
Articulated Trucks					4					7					0					3	14
Total Exiting Leg					7					16					0					12	35

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Buses**

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg					0					0					0					0	0
Total					0					0					0					0	0

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Single-Unit Trucks

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
3:15 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	1	1	0	2	4
3:30 PM	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	6
3:45 PM	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	4
Total	0	0	2	0	2	2	9	0	0	11	0	0	0	0	0	0	7	1	0	8	21
4:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
5:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
Grand Total	0	0	2	0	2	2	18	0	0	20	0	0	0	0	0	0	11	1	0	12	34
Approach %	0.0	0.0	100.0	0.0		10.0	90.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	91.7	8.3	0.0		
Total %	0.0	0.0	5.9	0.0	5.9	5.9	52.9	0.0	0.0	58.8	0.0	0.0	0.0	0.0	0.0	0.0	32.4	2.9	0.0	35.3	
Exiting Leg Total					3					13					0					18	34

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
3:15 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	1	1	0	2	4
3:30 PM	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	6
3:45 PM	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	4
Total Volume	0	0	2	0	2	2	9	0	0	11	0	0	0	0	0	0	7	1	0	8	21
% Approach Total	0.0	0.0	100.0	0.0		18.2	81.8	0.0	0.0		0.0	0.0	0.0	0.0		0.0	87.5	12.5	0.0		
PHF	0.000	0.000	0.500	0.000	0.500	0.500	0.563	0.000	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.250	0.000	0.667	0.750
Entering Leg	0	0	2	0	2	2	9	0	0	11	0	0	0	0	0	0	7	1	0	8	21
Exiting Leg					3					9					0					9	21
Total					5					20					0					17	42

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Articulated Trucks

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
3:15 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
3:30 PM	0	0	1	0	1	3	2	0	0	5	0	0	0	0	0	0	1	0	0	1	7
3:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
Total	0	0	5	0	5	4	3	0	0	7	0	0	0	0	0	0	2	0	0	2	14
4:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
Grand Total	0	0	7	0	7	9	3	0	0	12	0	0	0	0	0	0	2	0	0	2	21
Approach %	0.0	0.0	100.0	0.0		75.0	25.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	33.3	0.0	33.3	42.9	14.3	0.0	0.0	57.1	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	0.0	9.5	
Exiting Leg Total					9					9					0					3	21

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
3:15 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
3:30 PM	0	0	1	0	1	3	2	0	0	5	0	0	0	0	0	0	1	0	0	1	7
3:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
Total Volume	0	0	5	0	5	4	3	0	0	7	0	0	0	0	0	0	2	0	0	2	14
% Approach Total	0.0	0.0	100.0	0.0		57.1	42.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.625	0.000	0.625	0.333	0.375	0.000	0.000	0.350	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.500
Entering Leg	0	0	5	0	5	4	3	0	0	7	0	0	0	0	0	0	2	0	0	2	14
Exiting Leg					4					7					0					3	14
Total					9					14					0					5	28

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Bicycles (on Roadway and Crosswalks)

	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
Grand Total	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0	0	0	0	4	5
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0	0.0	0.0	0.0	0.0	80.0	
Exiting Leg Total							0							4							0							1	5

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:15 PM	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.500
Entering Leg	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
Exiting Leg							0							1							0							1	2
Total							0							2							0							2	4

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Thursday, July 25, 2024**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Pedestrians

	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Approach %	0	0	0	0	0	0		0	0	0	0	100	0		0	0	0	0	100	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	50	0	50	0	0	0	0	50	0	50	0	0	0	0	0	0	0	
Exiting Leg Total							0							1							1							0	2

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:45 PM	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Exiting Leg							0							1							1							0	2
Total							0							2							2							0	4

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	1	0	0	1	0	48	2	0	50	15	0	5	0	20	6	35	0	0	41	112
11:15 AM	0	0	0	0	0	0	34	3	0	37	6	0	6	0	12	4	25	1	0	30	79
11:30 AM	0	2	1	0	3	0	30	4	0	34	8	1	5	0	14	6	32	0	0	38	89
11:45 AM	1	0	0	0	1	0	30	4	0	34	4	2	4	0	10	5	20	0	0	25	70
Total	1	3	1	0	5	0	142	13	0	155	33	3	20	0	56	21	112	1	0	134	350
12:00 PM	0	0	4	0	4	2	24	3	0	29	9	0	1	0	10	12	19	0	0	31	74
12:15 PM	0	0	0	0	0	1	32	4	0	37	6	0	5	0	11	4	23	1	0	28	76
12:30 PM	0	1	0	0	1	1	28	4	0	33	4	0	6	0	10	2	32	0	0	34	78
12:45 PM	0	1	0	0	1	0	20	6	0	26	5	1	3	0	9	3	22	1	0	26	62
Total	0	2	4	0	6	4	104	17	0	125	24	1	15	0	40	21	96	2	0	119	290
1:00 PM	0	0	1	0	1	0	22	4	1	27	6	0	7	0	13	2	19	0	0	21	62
1:15 PM	0	0	0	0	0	0	23	4	0	27	7	0	0	0	7	5	17	0	0	22	56
1:30 PM	0	0	0	0	0	0	23	2	0	25	6	0	4	0	10	4	21	1	0	26	61
1:45 PM	0	0	1	0	1	1	18	3	0	22	5	0	1	0	6	1	22	1	0	24	53
Total	0	0	2	0	2	1	86	13	1	101	24	0	12	0	36	12	79	2	0	93	232
Grand Total	1	5	7	0	13	5	332	43	1	381	81	4	47	0	132	54	287	5	0	346	872
Approach %	7.7	38.5	53.8	0.0		1.3	87.1	11.3	0.3		61.4	3.0	35.6	0.0		15.6	82.9	1.4	0.0		
Total %	0.1	0.6	0.8	0.0	1.5	0.6	38.1	4.9	0.1	43.7	9.3	0.5	5.4	0.0	15.1	6.2	32.9	0.6	0.0	39.7	
Exiting Leg Total					14					376					102					380	872
Cars	1	5	7	0	13	5	330	42	1	378	80	4	46	0	130	52	284	5	0	341	862
% Cars	100.0	100.0	100.0	0.0	100.0	100.0	99.4	97.7	100.0	99.2	98.8	100.0	97.9	0.0	98.5	96.3	99.0	100.0	0.0	98.6	98.9
Exiting Leg Total					14					372					99					377	862
Heavy Vehicles	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	2	3	0	0	5	10
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.3	0.0	0.8	1.2	0.0	2.1	0.0	1.5	3.7	1.0	0.0	0.0	1.4	1.1
Exiting Leg Total					0					4					3					3	10

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:00 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	1	0	0	1	0	48	2	0	50	15	0	5	0	20	6	35	0	0	41	112
11:15 AM	0	0	0	0	0	0	34	3	0	37	6	0	6	0	12	4	25	1	0	30	79
11:30 AM	0	2	1	0	3	0	30	4	0	34	8	1	5	0	14	6	32	0	0	38	89
11:45 AM	1	0	0	0	1	0	30	4	0	34	4	2	4	0	10	5	20	0	0	25	70
Total Volume	1	3	1	0	5	0	142	13	0	155	33	3	20	0	56	21	112	1	0	134	350
% Approach Total	20.0	60.0	20.0	0.0		0.0	91.6	8.4	0.0		58.9	5.4	35.7	0.0		15.7	83.6	0.7	0.0		
PHF	0.250	0.375	0.250	0.000	0.417	0.000	0.740	0.813	0.000	0.775	0.550	0.375	0.833	0.000	0.700	0.875	0.800	0.250	0.000	0.817	0.781
Cars	1	3	1	0	5	0	142	13	0	155	33	3	19	0	55	20	111	1	0	132	347
Cars %	100.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	100.0	95.0	0.0	98.2	95.2	99.1	100.0	0.0	98.5	99.1
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	3
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	1.8	4.8	0.9	0.0	0.0	1.5	0.9
Cars Enter Leg	1	3	1	0	5	0	142	13	0	155	33	3	19	0	55	20	111	1	0	132	347
Heavy Enter Leg	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	3
Total Entering Leg	1	3	1	0	5	0	142	13	0	155	33	3	20	0	56	21	112	1	0	134	350
Cars Exiting Leg					4					145					36					162	347
Heavy Exiting Leg					0					1					1					1	3
Total Exiting Leg					4					146					37					163	350

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Cars

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	1	0	0	1	0	48	2	0	50	15	0	5	0	20	6	34	0	0	40	111
11:15 AM	0	0	0	0	0	0	34	3	0	37	6	0	6	0	12	3	25	1	0	29	78
11:30 AM	0	2	1	0	3	0	30	4	0	34	8	1	4	0	13	6	32	0	0	38	88
11:45 AM	1	0	0	0	1	0	30	4	0	34	4	2	4	0	10	5	20	0	0	25	70
Total	1	3	1	0	5	0	142	13	0	155	33	3	19	0	55	20	111	1	0	132	347
12:00 PM	0	0	4	0	4	2	24	3	0	29	8	0	1	0	9	11	19	0	0	30	72
12:15 PM	0	0	0	0	0	1	32	4	0	37	6	0	5	0	11	4	23	1	0	28	76
12:30 PM	0	1	0	0	1	1	27	3	0	31	4	0	6	0	10	2	31	0	0	33	75
12:45 PM	0	1	0	0	1	0	20	6	0	26	5	1	3	0	9	3	22	1	0	26	62
Total	0	2	4	0	6	4	103	16	0	123	23	1	15	0	39	20	95	2	0	117	285
1:00 PM	0	0	1	0	1	0	22	4	1	27	6	0	7	0	13	2	19	0	0	21	62
1:15 PM	0	0	0	0	0	0	23	4	0	27	7	0	0	0	7	5	17	0	0	22	56
1:30 PM	0	0	0	0	0	0	22	2	0	24	6	0	4	0	10	4	20	1	0	25	59
1:45 PM	0	0	1	0	1	1	18	3	0	22	5	0	1	0	6	1	22	1	0	24	53
Total	0	0	2	0	2	1	85	13	1	100	24	0	12	0	36	12	78	2	0	92	230
Grand Total	1	5	7	0	13	5	330	42	1	378	80	4	46	0	130	52	284	5	0	341	862
Approach %	7.7	38.5	53.8	0.0		1.3	87.3	11.1	0.3		61.5	3.1	35.4	0.0		15.2	83.3	1.5	0.0		
Total %	0.1	0.6	0.8	0.0	1.5	0.6	38.3	4.9	0.1	43.9	9.3	0.5	5.3	0.0	15.1	6.0	32.9	0.6	0.0	39.6	
Exiting Leg Total					14					372					99					377	862

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:00 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	1	0	0	1	0	48	2	0	50	15	0	5	0	20	6	34	0	0	40	111
11:15 AM	0	0	0	0	0	0	34	3	0	37	6	0	6	0	12	3	25	1	0	29	78
11:30 AM	0	2	1	0	3	0	30	4	0	34	8	1	4	0	13	6	32	0	0	38	88
11:45 AM	1	0	0	0	1	0	30	4	0	34	4	2	4	0	10	5	20	0	0	25	70
Total Volume	1	3	1	0	5	0	142	13	0	155	33	3	19	0	55	20	111	1	0	132	347
% Approach Total	20.0	60.0	20.0	0.0		0.0	91.6	8.4	0.0		60.0	5.5	34.5	0.0		15.2	84.1	0.8	0.0		
PHF	0.250	0.375	0.250	0.000	0.417	0.000	0.740	0.813	0.000	0.775	0.550	0.375	0.792	0.000	0.688	0.833	0.816	0.250	0.000	0.825	0.782
Entering Leg	1	3	1	0	5	0	142	13	0	155	33	3	19	0	55	20	111	1	0	132	347
Exiting Leg					4					145					36					162	347
Total					9					300					91					294	694

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	1	1	0	0	2	5
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Grand Total	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	2	3	0	0	5	10
Approach %	0.0	0.0	0.0	0.0		0.0	66.7	33.3	0.0		50.0	0.0	50.0	0.0		40.0	60.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	20.0	10.0	0.0	30.0	10.0	0.0	10.0	0.0	20.0	20.0	30.0	0.0	0.0	50.0	
Exiting Leg Total					0					4					3					3	10
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total					0					0					0					0	0
Single-Unit Trucks	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	2	3	0	0	5	10
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0
Exiting Leg Total					0					4					3					3	10
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:45 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
Total Volume	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	1	1	0	0	2	5
% Approach Total	0.0	0.0	0.0	0.0		0.0	50.0	50.0	0.0		100.0	0.0	0.0	0.0		50.0	50.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.250	0.250	0.000	0.000	0.500	0.417
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	1	1	0	0	2	5
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	0.0	0.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	1	1	0	0	2	5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	1	1	0	0	2	5
Buses					0					0					0					0	0
Single-Unit Trucks					0					2					2					1	5
Articulated Trucks					0					0					0					0	0
Total Exiting Leg					0					2					2					1	5

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class: **Buses**

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:00 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg					0					0					0					0	0
Total					0					0					0					0	0

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
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Email: datarequests@pdillc.com

Single-Unit Trucks

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	1	1	0	0	2	5
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Grand Total	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	2	3	0	0	5	10
Approach %	0.0	0.0	0.0	0.0		0.0	66.7	33.3	0.0		50.0	0.0	50.0	0.0		40.0	60.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	20.0	10.0	0.0	30.0	10.0	0.0	10.0	0.0	20.0	20.0	30.0	0.0	0.0	50.0	
Exiting Leg Total					0					4					3					3	10

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:45 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
Total Volume	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	1	1	0	0	2	5
% Approach Total	0.0	0.0	0.0	0.0		0.0	50.0	50.0	0.0		100.0	0.0	0.0	0.0		50.0	50.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.250	0.250	0.000	0.000	0.500	0.417
Entering Leg	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	1	1	0	0	2	5
Exiting Leg					0					2					2					1	5
Total					0					4					3					3	10

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Articulated Trucks

	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:00 AM	Stonewall Drive from North					Mast Road from East					Grapevine Drive from South					Mast Road from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg					0					0					0					0	0
Total					0					0					0					0	0

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Class:

Bicycles (on Roadway and Crosswalks)

	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	2	3
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	3	4
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	0.0	0.0	0.0	0.0	75.0	
Exiting Leg Total							0							3							0							1	4

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:30 AM	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
Total Volume	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	3	4
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.375	0.500
Entering Leg	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	3	4
Exiting Leg							0							3							0							1	4
Total							0							4							0							4	8

PDI File #: **240098 C**
Location: **N: Stonewall Drive S: Grapevine Drive**
Location: **E: Mast Road W: Mast Road**
City, State: **Dover, NH**
Client: **TFMoran/J. Porter**
Site Code: **46001.32**
Count Date: **Saturday, July 27, 2024**
Start Time: **11:00 AM**
End Time: **2:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
508-875-0100 datarequests@pdillc.com
Email: datarequests@pdillc.com

Pedestrians

	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Approach %	0	0	0	0	0	0		0	0	0	0	0	100		0	0	0	0	100	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	50	50	0	0	0	0	50	0	50	0	0	0	0	0	0	0	
Exiting Leg Total							0							1							1							0	2

Peak Hour Analysis from 11:00 AM to 02:00 PM begins at:

11:15 AM	Stonewall Drive from North							Mast Road from East							Grapevine Drive from South							Mast Road from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Exiting Leg							0							1							1							0	2
Total							0							2							2							0	4

APPENDIX L

Signal Timing Reference

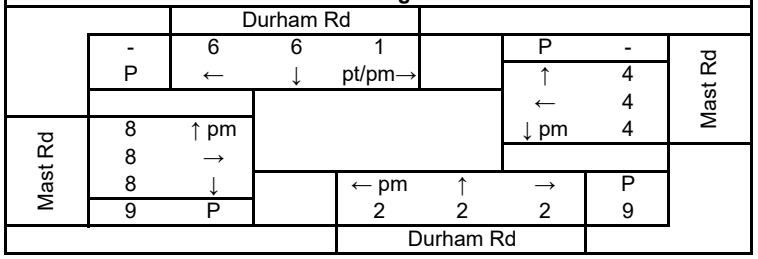
Existing Signal Timings: 10/27/2023
Durham Rd (Route 108) at Mast Rd
Dover, NH

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CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

Schedule

	Su	M	Tu	W	Th	F	Sa	DayPlan
1	x	x	x	x	x	x	x	1

Phase Assignment



Day Plan 1

Event	TOD	Action
1	00:00	254
2		
3		
4		
5		
6		

Day Plan -

Event	TOD	Action

Action Table

Action	Pattern
54	254

Sequence 1 / Ring & Barrier

1	2	4	9
	6	8	

P.Assignment Key

pt	Protected
pm	Permissive
ov	Overlap

Test Operation Mode: 0

Pattern Table

Pat	Cycle	Offset	Split	Seq
254	FREE	FREE	FREE	1

Phase Timings

Phase	1	2	3	4	5	6	7	8	9
Min Gr	4	4	0	4	0	4	0	4	7
GapExt	3	3	0	0	0	3	0	3	0
Max 1	8	22	0	16	0	32	0	16	23
Max 2	0	0	0	0	0	0	0	0	0
Yellow	4	4	0	4	4	4	0	4	3
Red	2	2	0	2	2	2	0	2	0
Walk	0	0	0	0	0	0	0	0	7
PedClr	0	0	0	0	0	0	0	0	16
Recall	NON	MIN	NON	NON	NON	MIN	NON	NON	NON
D.Entry	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF

Coordination Constants

Pat	Strat	F.Off	Trans	Mode
254	FREE	FREE	FREE	FREE

Split Table -

Phase	1	2	3	4	5	6	7	8
Time	-	-	-	-	-	-	-	-
Recall	NON	NON	NON	NON	NON	NON	NON	NON
C-Ph	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Overlap

	Incl Ph	Type	Green	Yellow	Red

Split Table -

Phase	1	2	3	4	5	6	7	8
Time	-	-	-	-	-	-	-	-
Recall	NON	NON	NON	NON	NON	NON	NON	NON
C-Ph	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Split Table -

Phase	1	2	3	4	5	6	7	8
Time	-	-	-	-	-	-	-	-
Recall	NON	NON	NON	NON	NON	NON	NON	NON
C-Ph	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Split Table -

Phase	1	2	3	4	5	6	7	8
Time	-	-	-	-	-	-	-	-
Recall	NON	NON	NON	NON	NON	NON	NON	NON
C-Ph	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Split Table -

Phase	1	2	3	4	5	6	7	8
Time	-	-	-	-	-	-	-	-
Recall	NON	NON	NON	NON	NON	NON	NON	NON
C-Ph	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

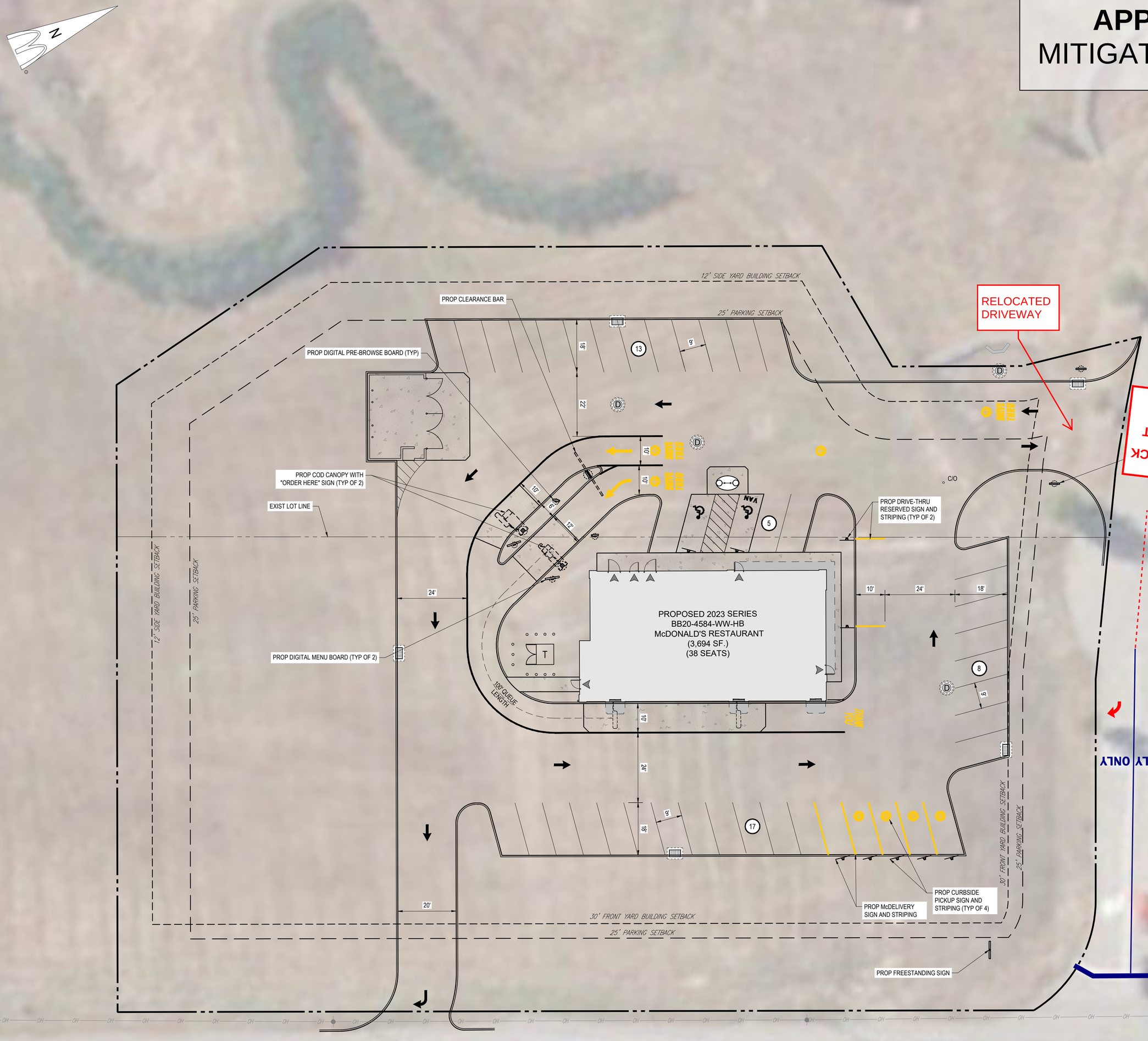
Prepared By: C.Thompson

APPENDIX M

Plan

Mitigation Exhibit

APPENDIX M
MITIGATION EXHIBIT



DURHAM ROAD (NH ROUTE 108)

TFM Since 1968 | BOHLER

APPENDIX N

Crash Data

Data from Dover PD

CRASH DATA - Dover Police Department
DURHAM ROAD (NH ROUTE 108)
area of DOVER FIELDS development
October 2020 - October 2024 (4 years)
Note: Durham Road (NH 108) is oriented north/south on this segment

	Date	Hour	DOW	DPD case#	Location	Crash Type	# Veh	Severity	Towed?	Weather / Surface	Crash Summary (ex: EB = Eastbound, FTY = Failure to Yield)
1	9/30/2021	1500	Thur	2021-031364	Durham @ Grapevine	Rear End	2	Property	No	Clear/Dry	Unit 1 NB on Durham Rd stopped for backed up traffic at light, rear-ended by Unit 2 (inattention)
2	2/2/2022	1600	Wed	2022-002203	Durham @ Grapevine	Angle	2	Property	No	Clear/Dry	Unit 1 making left turn exiting Grapevine Dr, FTY to Unit 2 SB on Durham Rd
3	10/28/2022	1100	Fri	2022-021772	Durham @ Grapevine	Angle	2	Property	No	Clear/Dry	Unit 1 exiting Grapevine Dr turning right, makes improper wide turn, strikes Unit 2 stopped in NB left turn lane
4	12/10/2022	1700	Sat	2022-024722	Durham @ Grapevine	Angle	2	Property	Yes	Clear/Dry	Unit 1 NB on Durham Rd turning left onto Grapevine, FTY to Unit 2 SB on Durham Rd
5	12/12/2022	1200	Mon	2022-024797	Durham @ Grapevine	Fixed Object	1	Property	Yes	Clear/Dry	Unit 1 NB on Durham Rd, driver suffers medical condition, crosses over and strikes utility pole support wire
6	1/23/2023	1900	Mon	2023-001752	Durham @ Grapevine	Fixed Object	1	Property	Yes	Snow/Icy	Unit 1 SB on Durham Rd making right turn onto Grapevine, slides and strikes snow bank
7	1/24/2023	1700	Tue	2023-001873	Durham @ Grapevine	Angle	2	Property	No	Clear/Dry	Unit 1 WB on Deerfield Dr thru to Grapevine, Unit 2 left turn exiting Grapevine, each assumed other would yield
8	2/27/2023	2200	Mon	2023-004459	Durham @ Grapevine	Animal	1	Property	No	Clear/Dry	Unit 1 SB on Durham Road v. deer
9	5/7/2023	2300	Sun	2023-010011	Durham @ Grapevine	Animal	1	Property	No	Clear/Dry	Unit 1 SB on Durham Road v. deer
10	12/28/2023	1500	Thur	2023-030454	Durham @ Grapevine	Angle	2	Property	Yes	Clear/Dry	Unit 1 making left turn exiting Grapevine Dr, FTY to Unit 2 NB on Durham Rd
11	5/3/2024	1900	Fri	2024-011226	Durham @ Grapevine	Angle	2	Injury	Yes	Clear/Dry	Unit 1 making left turn exiting Grapevine Dr, FTY to Unit 2 SB on Durham Rd
1	4/15/2021	0900	Thur	2021-009480	Durham @ Mast	Sideswipe	2	Property	No	Clear/Dry	Unit 1 SB on Durham Rd in wrong (left turn) lane, continues through light trying to merge, sideswipes Unit 2 SB
2	9/11/2021	1300	Sat	2021-022470	Durham @ Mast	Fixed Object	1	Property	No	Clear/Dry	Hit-and-run: likely a TT unit EB on Mast Rd turning left onto Durham Rd damages traffic light pole NE corner
3	11/20/2021	1200	Sat	2021-035535	Durham @ Mast	Angle	2	Injury	Yes	Clear/Dry	Unit 1 SB on Durham Rd making left turn (on green ball) FTY to Unit 2 NB on Durham Rd
4	12/16/2021	1800	Thur	2021-037419	Durham @ Mast	Angle	2	Property	Yes	Clear / Wet	Unit 1 SB on Durham Rd making left turn (on green ball) FTY to Unit 2 NB on Durham Rd
5	12/9/2022	0100	Fri	2022-024616	Durham @ Mast	Rear End	2	Property	No	Clear/Dry	Both units EB on Mast Rd stopped at red light, rear driver mistakenly steps on accelerator
6	12/30/2022	1100	Fri	2022-025984	Durham @ Mast	Animal	1	Property	No	Clear/Dry	Unit 1 NB on Durham Rd v. deer
7	3/21/2023	1600	Tue	2023-006156	Durham @ Mast	Rear End	2	Property	No	Clear/Dry	Both units NB on Durham Rd stopping at red light, rear driver inattentive
8	4/10/2023	1500	Mon	2023-007573	Durham @ Mast	Angle	2	Property	Yes	Clear/Dry	Unit 1 WB on Mast Road straight thru on green light, Unit 2 NB on Durham Rd runs red light
9	6/22/2023	2200	Thur	2023-014309	Durham @ Mast	Rear End	2	Property	No	Clear/Dry	Both units SB on Durham Rd stopping at red light, rear driver inattentive
10	7/7/2023	1700	Fri	2023-015705	Durham @ Mast	Angle	2	Property	No	Clear/Dry	Unit 1 EB on Mast Road making left turn on green light, Unit 2 NB on Durham Rd runs red light
11	7/30/2023	1600	Sun	2023-017585	Durham @ Mast	Angle	2	Property	No	Clear/Dry	Unit 1 EB on Mast Road straight thru on green light, Unit 2 NB on Durham Rd runs red light
12	3/23/2024	1900	Sat	2024-007388	Durham @ Mast	Angle	2	Injury	Yes	Rain/Wet	Unit 1 SB on Durham Rd making left turn (on green ball) FTY to Unit 2 NB on Durham Rd
13	4/5/2024	1400	Fri	2024-008477	Durham @ Mast	Sideswipe	2	Property	No	Rain/Wet	Unit 1 (TT unit) had pulled over SB on Durham Rd, pulls out to proceed SB and FTY to Unit 2 SB alongside
14	4/16/2024	1300	Tue	2024-009461	Durham @ Mast	Rear End	3	Property	No	Clear/Dry	All units SB on Durham Rd stopping at red light, rear driver following too closely and inattentive
15	4/19/2024	0900	Fri	2024-009823	Durham @ Mast	Angle	3	Property	Yes	Cloudy/Dry	Unit 1 SB Durham Rd inattentive, runs red, broadsides Unit 2 WB on Mast, which strikes Unit 3 EB on Mast
16	4/25/2024	2000	Thur	2024-010462	Durham @ Mast	Angle	2	Property	Yes	Clear/Dry	Unit 1 NB on Durham Rd making left turn (on green ball) FTY to Unit 2 SB on Durham Rd
1	9/26/2021	1700	Sun	2021-031047	Mast @ Grapevine	Fixed Object	1	Property	Yes	Clear/Dry	Unit 1 EB on Mast Rd, claims unknown veh in opposite direction cuts off abruptly, reacts and strikes curb
2	10/13/2021	1500	Wed	2021-032418	Mast @ Grapevine	Angle	2	Injury	Yes	Clear/Dry	Unit 1 on Grapevine Dr NB going straight across to Stonewall Dr, FTY to Unit 2 WB on Mast Rd
3	6/19/2023	1200	Mon	2023-013937	Mast @ Grapevine	Angle	2	Property	No	Clear/Dry	Unit 1 making right turn exiting Grapevine Dr, FTY to Unit 2 EB on Mast Road

Prepared by: Lt. Marn Speidel

Mixed Use Development - Residential
Dover, NH
Sewer Pump Station Calculations
Revised 5/21/2025

1.) Flow Calculations (based on Env-Wq 1008.03 Table 1008-1)

UNITS	USE		FLOW RATE		FLOW		NOTES:
36,550	S.F. Supermarket with Meat Department with Garbage Grinder (Unit 1)		11	GPD / 100 S.F.=	4,021	GPD	Flow Rate per Env-Wq 1000 Table 1008-1 (Septic Design)
66	Congregate Care Bedrooms (Unit 5)		75	GPD / Bedroom =	4,950	GPD	75 GPD per bed plus 7.5 gpd per employee per Table 3-4 of Metcalf and Eddy.
10	Congregate Care Employees		7.5	GPD/Employee =	75	GPD	See above
30	Coffee Shop/Fast Food seats (Unit 2)		20	GPD/Seat =	600	GPD	Flow rate per Env-Wq 1000 Table 1008-1 (Septic Design)
2	Coffee Shop/Fast Food seats (Unit 2)		20	GPD/emplyoee =	40	GPD	Flow rate per Env-Wq 1000 Table 1008-1 (Septic Design)
60	Gym participants (no showers) (Unit 2)		10	GPD / partipant	600	GPD	Flow rate per Env-Wq 1000 Table 1008-1 (Septic Design)
22	1 Bedrooms residential Units (Unit 2)	2 people /bed	77	GPD / person =	3,388	GPD	Flow rate per Table 3-2 of Metcalf and Eddy.
27	2 Bedrooms residential Units (Unit 2)	1.35 people /bed	68	GPD / person =	4,957	GPD	Flow rate per Table 3-2 of Metcalf and Eddy.
40	Taco Bell/Fast Food seats (Unit 3)		20	GPD/Seat =	800	GPD	Flow rate per Env-Wq 1000 Table 1008-1 (Septic Design)
3,150	S.F. Retail (Dry Goods) (Unit 4)		5	GPD / 100 S.F.=	158	GPD	Flow rate per Env-Wq 1000 Table 1008-1 (Septic Design)
4	S.F. Retail (Dry Goods) (Unit 4)		10	GPD / employee=	40	GPD	Flow rate per Env-Wq 1000 Table 1008-1 (Septic Design)
	4" Sewer Infiltration Allowance	300 / inch pipe diameter / mile or 0.23 per lf	415.7	LF	96	GPD	
	6" Sewer Infiltration Allowance	300 / inch pipe diameter / mile or 0.34 per lf	287.6	LF	98	GPD	
	8" Sewer Infiltration Allowance	300 / inch pipe diameter / mile or 0.45 per lf	1502.2	LF	676	GPD	
				Total	20,498	GPD	
	Peak Factor = 6.0						per Env-Wq 704.03 (d)
	6 x 17,928 GPD (1 DAY / 24 HR) (1 HR / 60 Min) =	85 GPM					

2.) Design Condition

Based on the above criteria, the proposed pump station must have the capacity to pump a minimum of 112 GPM
Using the existing 3" Forcemain, we should pump a minmum of 66 GPM for design in order to maintain a 3 FPS minimum velocity
The existing forcemain is 3" diameter. At 112 GPM (0.243 cf/s) the flow velocity is 5.08 ft/s which is good.
Note: The Design Capacity of the 2010 design was 17,200 G.P.D. total and 80 GPM. NHDES Approved a flow of 19,730 GPD.
So capacity improvements are needed

3.) NHDES Design Criteria

Protect from 100 Year Flood Elevation
Prefabricated station shall not exceed 28 foot depth
Wet well division walls required for stations of less than 500 GPM
Alarm signals telemeter to alarm panel inside the building
Minimum Velocity of 3 FPS in forcemain

4.) Design

Use the existing 3" PVC SDR 21 Forcemain

Pump Flow Rate	85.2	GPM		
Finished Grade at Pump Station	108.0±			
Inv. In Wet Well	98.5			
High Water Alarm	93.50			
2nd Pump On Elevation	93.50			
1st Pump On Elevation	92.70			
Pump Off Elevation	92.20			
Low Water Alarm	91.20			
Inside Chamber Bottom Elevation	90.70			
Top of Slab Elevation	108.5±			
Invert at Manhole (S300)	132.47			
Length of Forcemain			795	Feet
Equivalent Lengths				
2 90° Elbow	6		12	Feet
4 45° Elbow	4		16	Feet
1 Gate Valve	2		2	Feet
1 Check Valve	15		15	Feet
1 Tee	15		15	Feet
Total Equivalent Length			855	Feet
	USE		855	Feet

Mixed Use Development - Residential
Dover, NH
Sewer Pump Station Calculations
Revised 5/21/2025

5.) Static Head

Invert at Manhole (S300)	132.47
Pump Off Elevation	92.20
Static Head=	40.27

6.) Friction Head (2" PVC Forcemain) / Friction Head (2.5" PVC Forcemain) / Friction Head (3.0" PVC Forcemain)

Flow Rate	C=150 f	C=150 Hf	C=150 f	C=150 Hf	C=150 f	C=150 Hf
40	3.12	26.7	1.28	10.9	0.444	3.8
45	3.85	32.9	1.54	13.2	0.552	4.7
50	4.68	40.0	1.93	16.5	0.655	5.6
60	6.62	56.6	2.72	23.3	0.938	8.0
70	8.86	75.8	3.67	31.4	1.25	10.7
80	11.50	98.3	4.69	40.1	1.59	13.6
90	14.30	122.3	5.83	49.8	1.99	17.0

7.) Dynamic Head (2" PVC Forcemain) / Dynamic Head (2.5" PVC Forcemain) / Dynamic Head (3.0" PVC Forcemain)

Flow Rate	C=150	C=150	C=150	
40	66.9	51.2	44.1	
45	73.2	53.4	45.0	
50	80.3	56.8	45.9	
60	96.9	63.5	48.3	Minimum forcemain cleanout velocity of 66 gpm at 50' head
70	116.0	71.6	51.0	
80	138.6	80.4	53.9	Replacement Barnes SGV 3 HP Pump provides 85.2 gpm at 56' total head
90	162.5	90.1	57.3	

8.) Wet Well and Emergency Storage Tanks

6,000 Gallon Utility Tank (16'x9' internal)=	1,077 Gallons/Foot (Above fillets)	
Auxiliary Storage required for 6 hours (based on Total flow (GPD) / 24 hours x 6 hours =		5,124 Gallons
Total Auxiliary Storage provided between high water alarm (93.5) and invert in (98.5), in wet well =		5,386 Gallons
Storage Deficit	None	Gallons

9.) Run Time

Design flow per day	20,498	GPD
Pump Rate	85.2	GPM
Average Run Time	4.0	Hrs. / Day

< 12 hours per day = OK

Volume between Lead Pump on and Lead Pump Off (using wet well only, not Emergency Storage)	538.6	Gal.
Average Inflow	14.2	GPM
Average Cycle Time (average minutes Pumps are Off between cycles)	37.8	Minutes
Peak Inflow	85.4	GPM
Peak Cycle time (Minimum minutes Pumps are Off between cycles)	6.3	Minutes

9.) Floatation Computation for emergency storage tanks (wet well is existing).

Groundwater Estimated at Elevation 102.0

	Length		Width		Height			
Tank Dimensions (feet)	14		8		6.1			
Depth below Water Table=	102	-	96.8	=			5.2	Feet
Volume of Water Displaced =							582	Cubic Feet (cf)
Weight of Water Displaced =							36,342	Pounds (lbs)
Weight of Utility Tank (concrete only) =							34,880	Pounds (lbs)
Weight of riser and top (concrete only) =							5,900	Pounds (lbs)
Weight of Soil over Tank minus area for riser =	92	SF	x	5.67	x	100	52,164	Pounds (lbs)
Volume displaced by Tank=							36,342	Pounds (lbs)
Total Weight of Concrete Tank, Riser and Earth=							92,944	Pounds (lbs)
Additional Weight Required to prevent floatation =							-34,980	Pounds (lbs)

A negative number indicates that the structure weighs enough to prevent buoyancy.

The factor of safety for the buoyancy forces is = 2.9

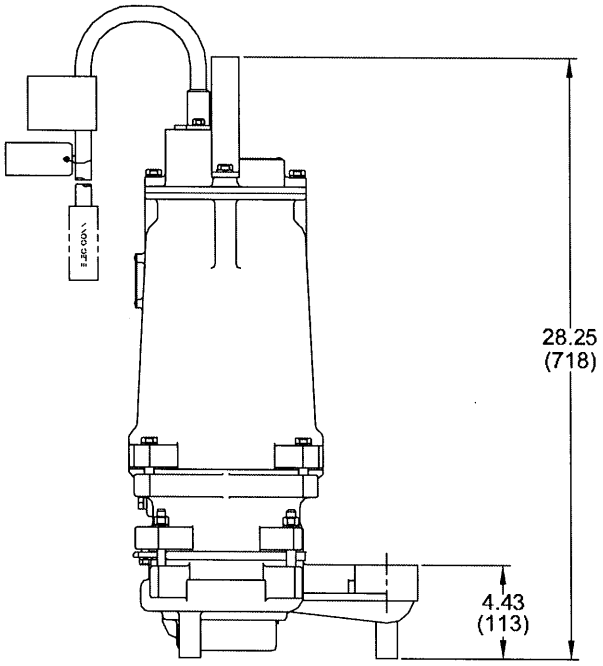
Series SGV

Recessed Vortex

BARNES®

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Submersible Grinder Pumps



inches
(mm)

Barnes SGV 3hp 3 phase Grinder pumps

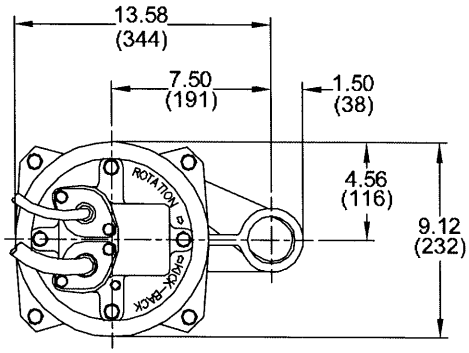


FIGURE SHOWN WITHOUT LIFTING BAIL

MODEL NO	PART NO	HP	VOLT/PH	Hz	RPM (Nom)	NEMA START CODE	FULL LOAD AMPS	LOCKED ROTOR AMPS	CORD SIZE	CORD TYPE	CORD O.D. ± .02 (.5) in (mm)
SGV3072L	111608	3	200/240/1	60	3450	G	25.2/21.7	86/75	10/4	SOW	.75 (19)
SGV3062L	111612	3	200/3	60	3450	J	17.0	65.0	10/4	SOW	.75 (19)
SGV3032L	111609	3	240/3	60	3450	K	14.5	62.0	10/4	SOW	.75 (19)
SGV3042L	111610	3	480/3	60	3450	K	7.2	31.0	10/4	SOW	.75 (19)
SGV3052L	111611	3	600/3	60	3450	J	5.6	22.6	10/4	SOW	.75 (19)
SGV5002L	115657	5	200/1	60	3450	F	42.0	134.0	6/4	SOW	1.03 (26)
SGV5022L	115658	5	240/1	60	3450	H	39.0	136.0	8/4	SOW	.93 (24)
SGV5062L	111619	5	200/3	60	3450	K	25.0	122.0	10/4	SOW	.75 (19)
SGV5032L	111616	5	240/3	60	3450	L	21.9	120.0	10/4	SOW	.75 (19)
SGV5042L	111617	5	480/3	60	3450	L	11.0	60.0	10/4	SOW	.75 (19)
SGV5052L	111618	5	600/3	60	3450	L	8.8	46.0	10/4	SOW	.75 (19)
SGV7532L	111613	7.5	240/3	60	3450	J	22.3	136.0	10/4	SOW	.75 (19)
SGV7542L	111614	7.5	480/3	60	3450	J	11.2	68.0	10/4	SOW	.75 (19)
SGV7552L	111615	7.5	600/3	60	3450	G	8.2	45.0	10/4	SOW	.75 (19)

Temperature sensor cord for SGV5002L & SGV5022L is 14/2 SOW, 0.55 (14mm) ± .02 (.51mm) O.D.
Temperature sensor cord for all other models is 14/3 SOW, 0.55 (14mm) ± .02 (.51mm) O.D.
Optional - Moisture and Temperature sensor cord for all models is 18/5 SOW, 0.47 (12mm) ± .02 (.51mm) O.D., replaces Temperature sensor cord.

IMPORTANT !

1.) PUMP MAY BE OPERATED "DRY" FOR EXTENDED PERIODS WITHOUT DAMAGE TO MOTOR AND/OR SEALS.
2.) THIS PUMP IS APPROPRIATE FOR THOSE APPLICATIONS SPECIFIED AS CLASS I DIVISION II HAZARDOUS LOCATIONS.
3.) THIS PUMP IS NOT APPROPRIATE FOR THOSE APPLICATIONS SPECIFIED AS CLASS I DIVISION I HAZARDOUS LOCATIONS.
4.) INSTALLATIONS SUCH AS DECORATIVE FOUNTAINS OR WATER FEATURES PROVIDED FOR VISUAL ENJOYMENT MUST BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE ANSI/NFPA 70 AND/OR THE AUTHORITY HAVING JURISDICTION. THIS PUMP IS NOT INTENDED FOR USE IN SWIMMING POOLS, RECREATIONAL WATER PARKS, OR INSTALLATIONS IN WHICH HUMAN CONTACT WITH PUMPED MEDIA IS A COMMON OCCURRENCE.

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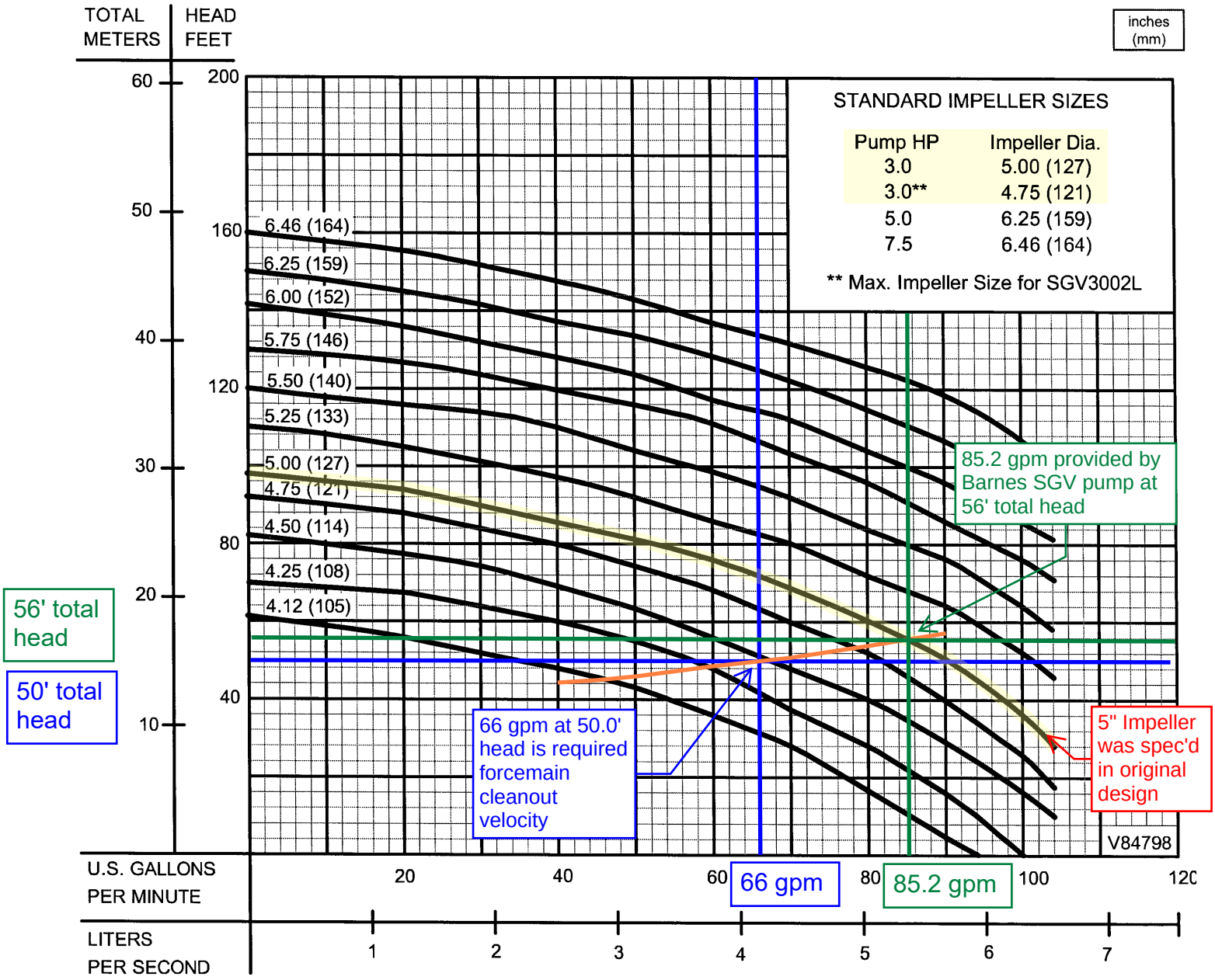
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Series SGV

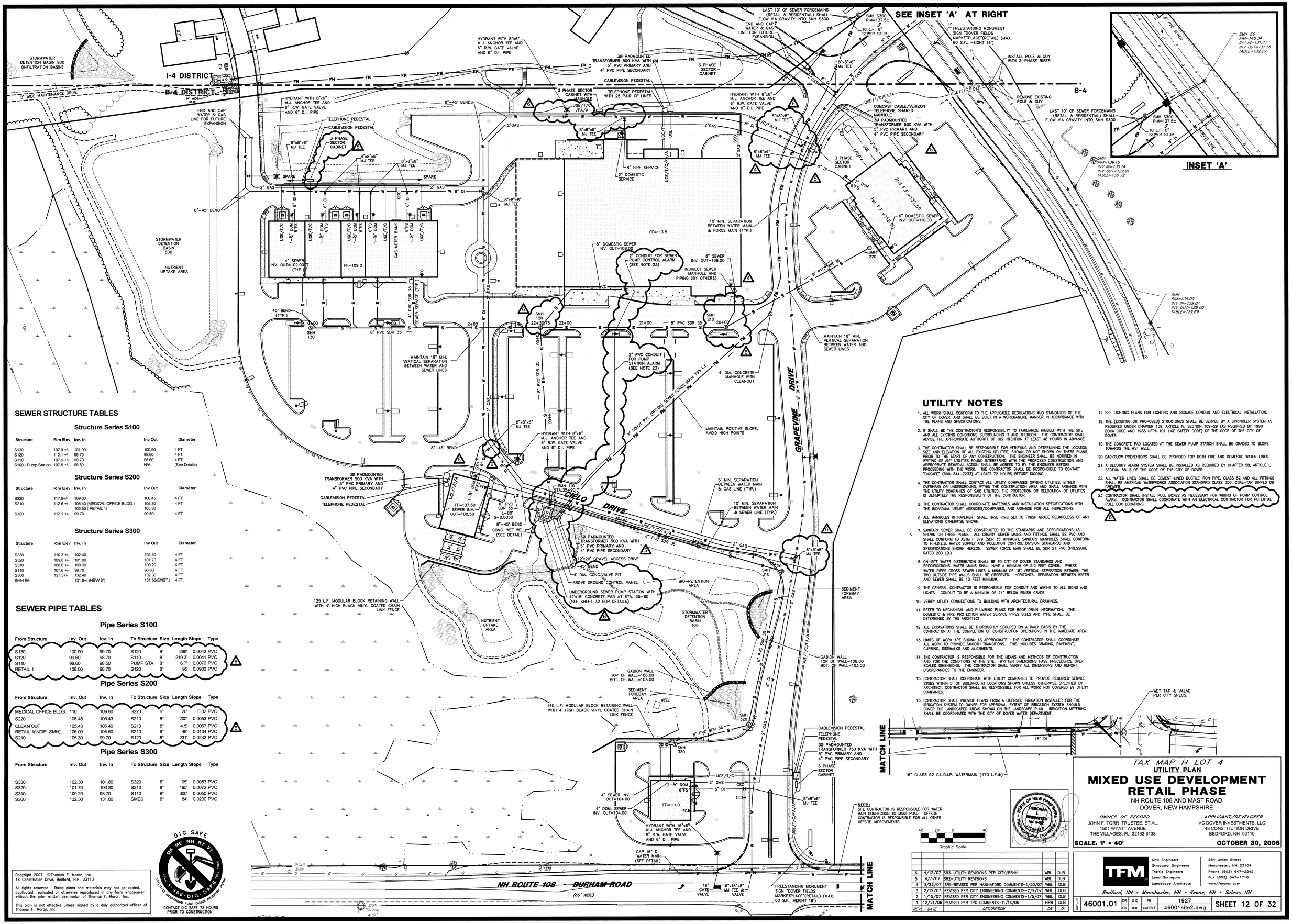
Performance Curve

3, 5, 7.5 HP, 3450RPM, 60Hz

Submersible Grinder Pumps



Testing is performed with water, specific gravity 1.0 @ 68° F @ (20°C), other fluids may vary performance



SEWER STRUCTURE TABLES

Structure Series S100

Structure	Rim Elev	Inv. In	Inv Out	Diameter
S130	107.9 +/-	101.00	100.90	4 FT.
S120	112.1 +/-	99.70	99.60	4 FT.
S110	107.6 +/-	98.70	98.60	4 FT.
S100 - Pump Station	107.6 +/-	98.50	N/A	(See Details)

Structure Series S200

Structure	Rim Elev	Inv. In	Inv Out	Diameter
S220	117.9+/-	109.60	106.45	4 FT.
S210	112.5 +/-	105.40 (MEDICAL OFFICE BLDG.)	105.30	4 FT.
		105.50 (RETAIL 1)	105.30	
S120	112.1 +/-	99.70	99.60	4 FT.

Structure Series S300

Structure	Rim Elev	Inv. In	Inv Out	Diameter
S330	110.3 +/-	102.40	102.30	4 FT.
S320	109.8 +/-	101.80	101.70	4 FT.
S310	108.6 +/-	100.30	100.20	4 FT.
S110	107.6 +/-	98.70	98.60	4 FT.
S300	137.5+/-	132.40	132.30	4 FT.
SMH E6		131.8+/-(NEW 8")	131.56(EXIST.)	4 FT.

SEWER PIPE TABLES

Pipe Series S100

From Structure	Inv. Out	Inv. In	To Structure	Size	Length	Slope	Type
S130	100.90	99.70	S120	8"	286'	0.0042	PVC
S120	99.60	98.70	S110	8"	219.3'	0.0041	PVC
S110	98.60	98.50	PUMP STA.	8"	6.7'	0.0070	PVC
RETAIL 1	108.00	98.70	S120	8"	95	0.0980	PVC

Pipe Series S200

From Structure	Inv. Out	Inv. In	To Structure	Size	Length	Slope	Type
MEDICAL OFFICE BLDG.	110	109.60	S220	6"	20'	0.02	PVC
S220	106.45	105.43	S210	8"	200'	0.0053	PVC
CLEAN OUT	105.43	105.40	S210	8"	4.5'	0.0067	PVC
RETAIL 1(INDIR. SMH)	106.00	105.50	S210	6"	48'	0.0104	PVC
S210	105.30	99.70	S120	8"	231'	0.0242	PVC

Pipe Series S300

From Structure	Inv. Out	Inv. In	To Structure	Size	Length	Slope	Type
S330	102.30	101.80	S320	8"	95'	0.0053	PVC
S320	101.70	100.30	S310	8"	195'	0.0072	PVC
S310	100.20	98.70	S110	8"	300'	0.0050	PVC
S300	132.30	131.80	SME6	8"	84'	0.0200	PVC

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE CITY OF DOVER, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTION AT LEAST 48 HOURS IN ADVANCE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (800-344-7233) AT LEAST 72 HOURS BEFORE DIGGING.
4. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL ARRANGE WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.
6. ALL MANHOLES IN PAVEMENT SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.
7. SANITARY SEWER SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL GRAVITY SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). SANITARY MANHOLES SHALL CONFORM TO N.H.D.E.S. WATER SUPPLY AND POLLUTION CONTROL DIVISION STANDARDS AND SPECIFICATIONS SHOWN HEREON. SEWER FORCE MAIN SHALL BE SDR 21 PVC (PRESSURE RATED 200 LB.)
8. ON-SITE WATER DISTRIBUTION SHALL BE TO CITY OF DOVER STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.0 FEET COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10 FEET MINIMUM.
9. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
10. VERIFY UTILITY CONNECTIONS TO BUILDING WITH ARCHITECTURAL DRAWINGS.
11. REFER TO MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION. THE DOMESTIC & FIRE PROTECTION WATER SERVICE PIPES SIZES AND TYPE SHALL BE DETERMINED BY THE ARCHITECT.
12. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
13. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS AND ALIGNMENTS.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
15. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO PROVIDE REQUIRED SERVICE STUBS WITHIN 5' OF BUILDING, AT LOCATIONS SHOWN UNLESS OTHERWISE SPECIFIED BY ARCHITECT. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK NOT COVERED BY UTILITY COMPANIES.
16. CONTRACTOR SHALL PROVIDE PLANS FROM A LICENSED IRRIGATION INSTALLER FOR THE IRRIGATION SYSTEM TO OWNER FOR APPROVAL. EXTENT OF IRRIGATION SYSTEM SHOULD COVER THE LANDSCAPED AREAS SHOWN ON THE LANDSCAPE PLAN. IRRIGATION METERING SHALL BE COORDINATED WITH THE CITY OF DOVER WATER DEPARTMENT.
17. SEE LIGHTING PLANS FOR LIGHTING AND SIGNAGE CONDUIT AND ELECTRICAL INSTALLATION.
18. THE (EXISTING OR PROPOSED) STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED UNDER CHAPTER 109, ARTICLE IV, SECTION 109-29 (AS REQUIRED BY 1990 BOCA CODE AND 1988 NFPA 101 LIFE SAFETY CODE) OF THE CODE OF THE CITY OF DOVER.
19. THE CONCRETE PAD LOCATED AT THE SEWER PUMP STATION SHALL BE GRADED TO SLOPE TOWARDS THE WET WELL.
20. BACKFLOW PREVENTORS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
21. A SECURITY ALARM SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 58, ARTICLE I, SECTION 58-2 OF THE CODE OF THE CITY OF DOVER.
22. ALL WATER LINES SHALL BE CEMENT-LINED DUCTILE IRON PIPE, CLASS 52 AND ALL FITTINGS SHALL BE AMERICAN WATERWORKS ASSOCIATION STANDARD CLASS 350, COAL-TAR DIPPED OR GREATER.
23. CONTRACTOR SHALL INSTALL PULL BOXES AS NECESSARY FOR WIRING OF PUMP CONTROL ALARM. CONTRACTOR SHALL COORDINATE WITH AN ELECTRICAL CONTRACTOR FOR POTENTIAL PULL BOX LOCATIONS.

NOTE: SITE CONTRACTOR IS RESPONSIBLE FOR WATER MAIN CONNECTION TO MAST ROAD. OFFSITE CONTRACTOR IS RESPONSIBLE FOR ALL OTHER OFFSITE IMPROVEMENTS.

Graphic Scale 40 20 0 40

REV	DATE	DESCRIPTION	DR	CK
6	4/12/07	SR3-UTILITY REVISIONS PER CITY/PSNH	WBL	DLB
5	4/3/07	SR2-UTILITY REVISIONS	WBL	DLB
4	3/22/07	SR1-REVISED PER HANNAFORD COMMENTS-1/30/07	WBL	DLB
3	2/12/07	REVISED PER CITY ENGINEERING COMMENTS-2/9/07	WBL	DLB
2	1/15/07	REVISED PER CITY ENGINEERING COMMENTS-1/5/07	WBL	DLB
1	12/21/06	REVISED PER TRC COMMENTS-11/16/06	HRB	DLB

TAX MAP H LOT 4

UTILITY PLAN

MIXED USE DEVELOPMENT RETAIL PHASE

NH ROUTE 108 AND MAST ROAD
DOVER, NEW HAMPSHIRE

OWNER OF RECORD
JOHN F. TORR TRUSTEE, ET.AL.
1501 WYATT AVENUE
THE VILLAGES, FL 32162-6138

APPLICANT/DEVELOPER
VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110

SCALE: 1" = 40'

OCTOBER 30, 2006

DEBORAH L. BRENGLEY NH 9406 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

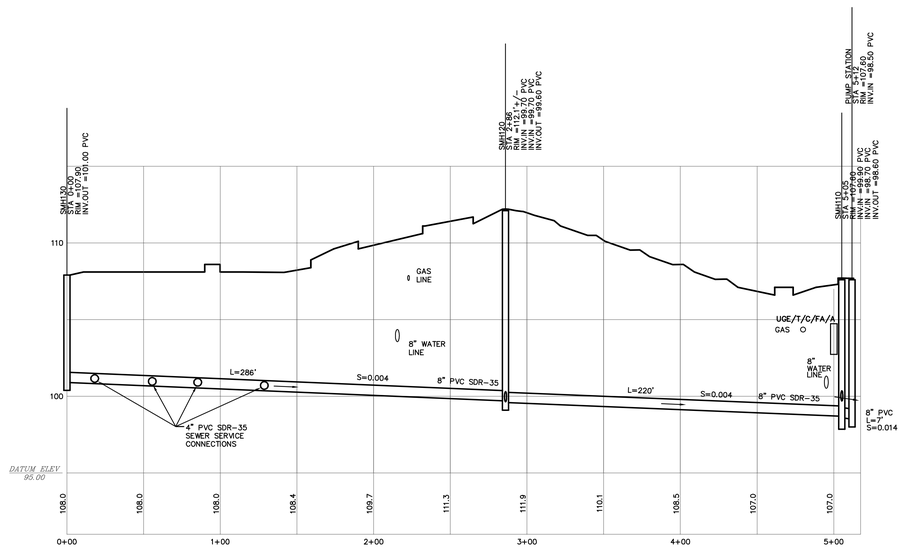
TFM Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects
554 Union Street, Manchester, NH 03104
Phone (603) 647-2242, Fax (603) 647-1716, www.tfmoran.com
Bedford, NH • Manchester, NH • Keene, NH • Salem, NH

JOB	DR	XX	FB	1927	SHEET 12 OF 32
46001.01	CK	XX	CADFILE	46001site2.dwg	

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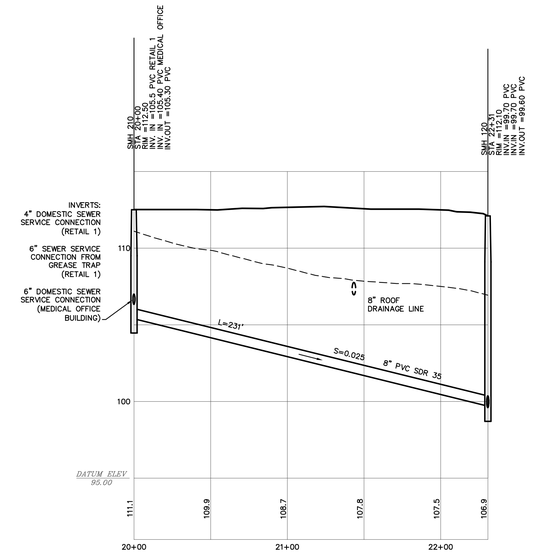
DIG SAFE MA ME NH RI VT CALL 1-888-DIG-SAFE (344-7233) UTILITIES MUST BE LOCATED PRIOR TO ANY EXCAVATION
CONTACT DIG SAFE 72 HOURS PRIOR TO CONSTRUCTION

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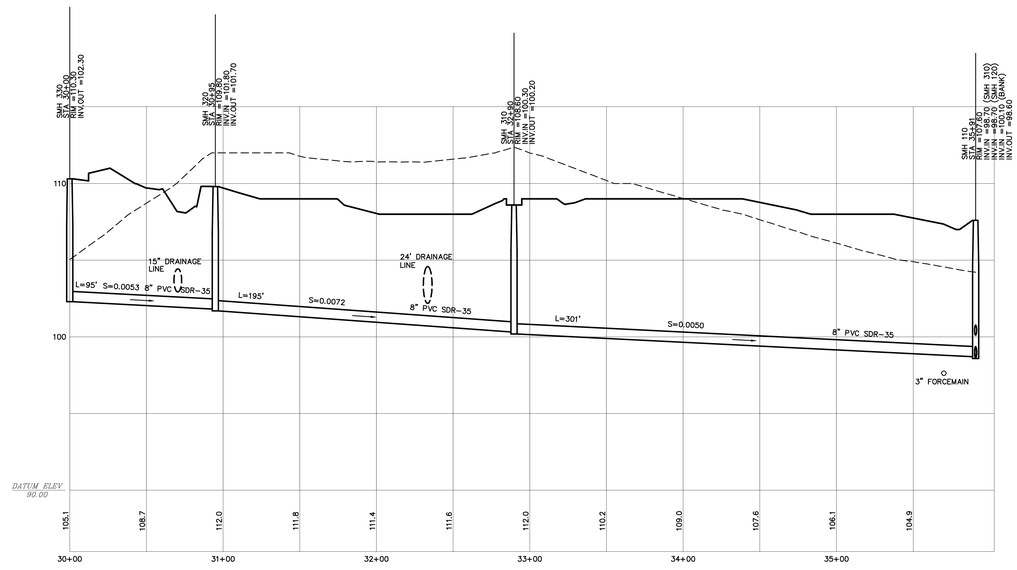
PROFILE S100

(FROM SMH S130 TO PUMP STATION)
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'



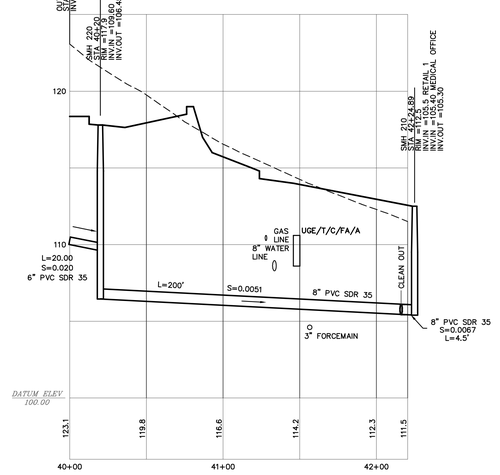
PROFILE S200

(FROM SMH S210 TO SMH S120)
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'



PROFILE S300

(FROM COFFEE SHOP TO PUMP STATION)
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'



PROFILE S400

(FROM MEDICAL OFFICE BUILDING TO SMH S210)
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

Horizontal Scale 1"=40'
40 20 0 40
Vertical Scale 1"=4'

TAX MAP H LOT 4

SEWER PROFILES

MIXED USE DEVELOPMENT
RETAIL PHASE

NH ROUTE 108 AND MAST ROAD
DOVER, NEW HAMPSHIRE

OWNER OF RECORD
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SCALE: AS SHOWN **OCTOBER 30, 2006**

REV.	DATE	DESCRIPTION	DR	CK

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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
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Manchester, NH 03104
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www.tfmoran.com
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PROJECT #	DR	CK			
46001.01	SWS	HRB	FB	CADFILE 46001Sewer Profiles	1927

SHEET 13 OF 32

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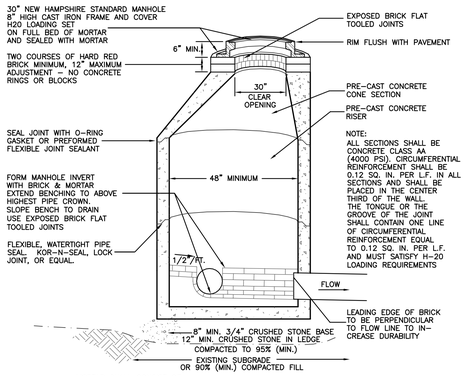
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DIG SAFE
NH ME NH RI VT
CALL 1-888-DIG-SAFE
UTILITY MARK-OUTAND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE
DESIGNED
STEVEN W. SMITH
No. 7927
PROFESSIONAL ENGINEER
10/25/07

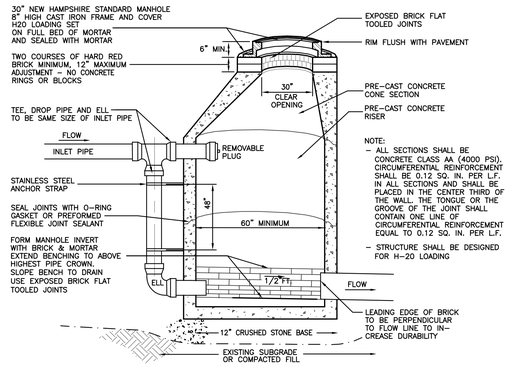
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MORTAR SHALL CONSIST OF:
1 PART BY VOLUME PORTLAND CEMENT, 2 PARTS BY VOLUME, DAMP WASHED COARSE SAND AND POTABLE WATER TO PRODUCE A CONSISTENCY OF STIFF PASTE. SEAL ALL PRECAST JOINTS WITH MORTAR.

SEWER MANHOLE

NOT TO SCALE

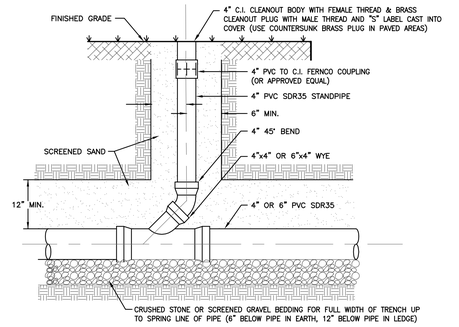


MORTAR SHALL CONSIST OF:
1 PART BY VOLUME PORTLAND CEMENT, 2 PARTS BY VOLUME, DAMP WASHED COARSE SAND AND POTABLE WATER TO PRODUCE A CONSISTENCY OF STIFF PASTE. SEAL ALL PRECAST JOINTS WITH MORTAR.

DROP SEWER MANHOLE

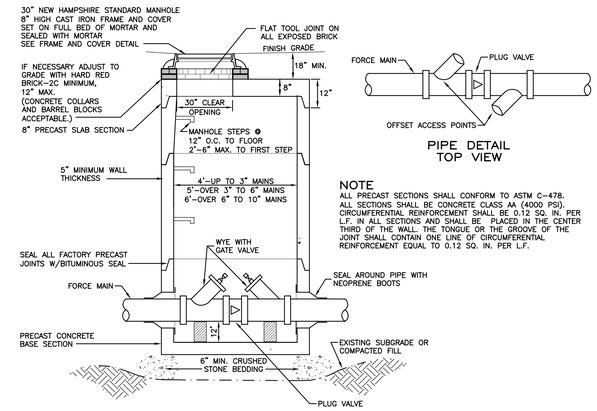
EXTERNAL

NOT TO SCALE



SEWER SERVICE CLEANOUT

NOT TO SCALE



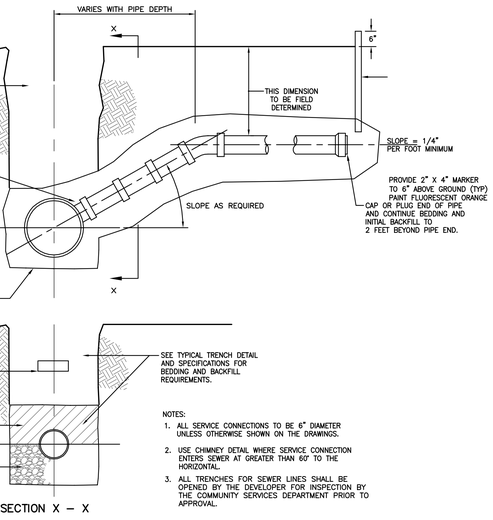
PIPE DETAIL
TOP VIEW

NOTE
ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C-478. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI) CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.

FORCE MAIN CLEANOUT MANHOLE

SLAB TOP

NOT TO SCALE

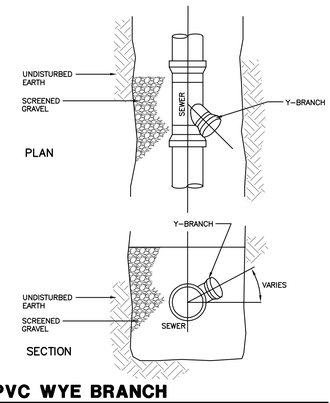


SECTION X – X

NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6" DIAMETER UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.
3. ALL TRENCHES FOR SEWER LINES SHALL BE OPENED BY THE DEVELOPER FOR INSPECTION BY THE COMMUNITY SERVICES DEPARTMENT PRIOR TO APPROVAL.

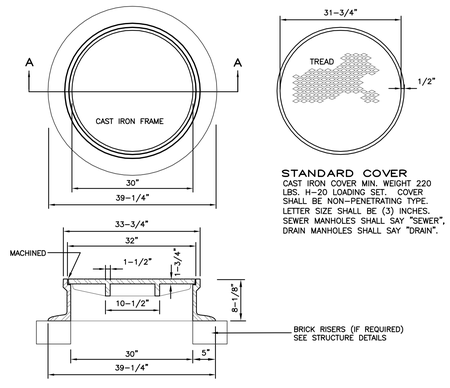
SEWER SERVICE CONNECTION

NOT TO SCALE



PVC WYE BRANCH

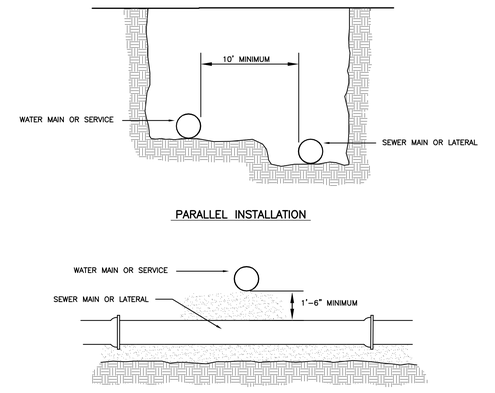
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STANDARD COVER
CAST IRON COVER MIN. WEIGHT 220 LBS. H-20 LOADING SET. COVER SHALL BE NON-PENETRATING TYPE. LETTER SIZE SHALL BE (3) INCHES. SEWER MANHOLES SHALL SAY "SEWER", DRAIN MANHOLES SHALL SAY "DRAIN".

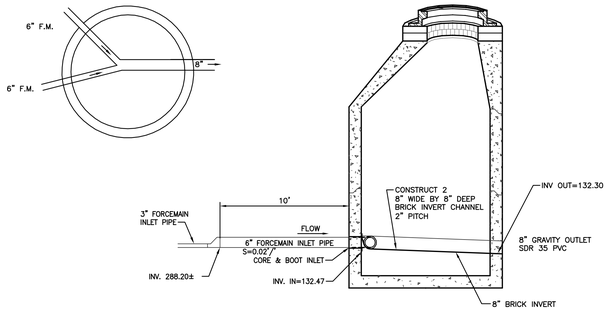
MANHOLE FRAME AND COVER

NOT TO SCALE



WATER - SEWER SEPARATION

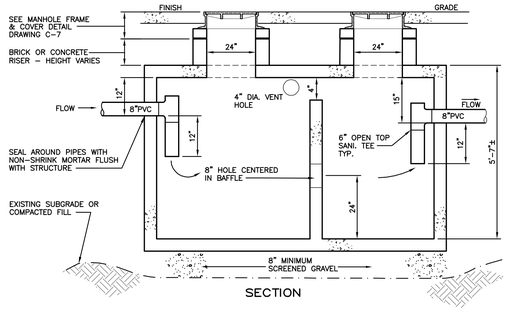
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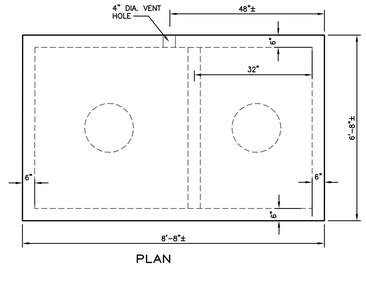
FORCE MAIN CONNECTION DETAIL

SMH S300

NOT TO SCALE



SECTION



PLAN

NOTES:
1. CONCRETE: 5,000 PSI @ 28 DAYS. CEMENT TO BE TYPE III PER ASTM C-150.
2. REINFORCED TO MEET OR EXCEED REQUIREMENTS OF HS20-44 LOADING, 1'-5" COVER.
3. REINFORCING BARS PER ASTM A-615, GRADE 60 DEFORMED BARS. COVER TO BE 1" MINIMUM UNLESS OTHERWISE NOTED.
4. OPENINGS SIZED AND LOCATED TO SUIT FIELD CONDITIONS.
5. BUTYL RUBBER JOINT SEALANT PROVIDED.
6. PENN INSERT LIFTING IRONS PROVIDED FOR LIFTING AND HANDLING PURPOSES.

ALT-TYPICAL 1,000 GALLON (GREASE TRAP)

NOT TO SCALE

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REV.	DATE	DESCRIPTION	DR	CK
3	2/12/06	REVISED PER CITY ENGINEERING COMMENTS-2/9/07	WBL	DLB
1	12/21/06	REVISED PER TRC COMMENTS-11/16/06	WBL	DLB

TAX MAP H LOT 4

SEWER DETAILS

MIXED USE DEVELOPMENT
RETAIL PHASE

NH ROUTE 108 AND MAST ROAD
DOVER, NEW HAMPSHIRE

OWNER OF RECORD
JOHN F. TORR TRUSTEE, ET.AL.
1501 WYATT AVENUE
THE VILLAGES, FL 32162-6138

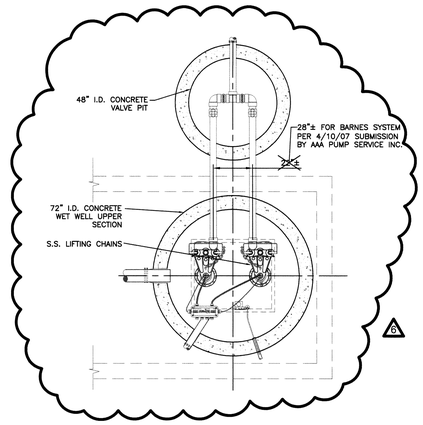
APPLICANT/DEVELOPER
VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110

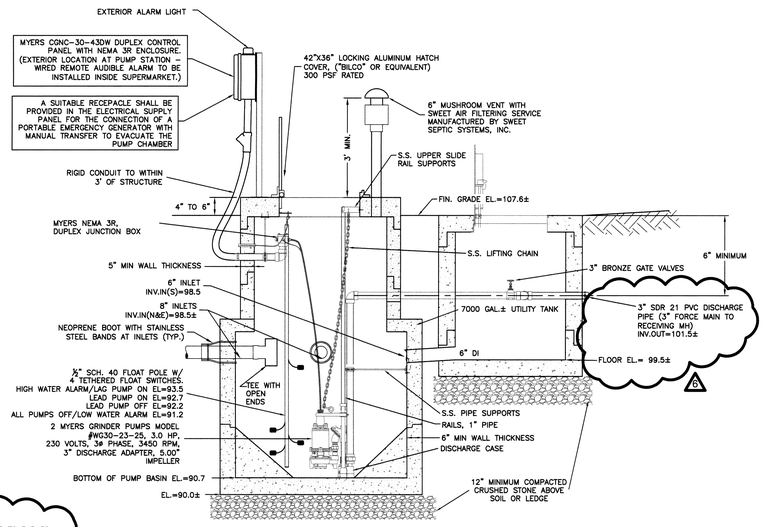
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FILE 46001.01 | DR KE | FB 1927 | CK MAV | CADFILE 46001Details | SHEET 29 OF 32

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NOTE:
PUMP SYSTEM HAS BEEN CHANGED TO BARNES FROM MYERS PER CONTRACTOR'S SUBMITTALS. THIS DETAIL & SPEC'S ARE NOT REVISED TO BARNES.

B

PUMP INFORMATION.

ELEV. HEAD: 33.9 FEET
HEAD LOSSES: 17.3 FEET
TOTAL HEAD: 51.2 FEET (SEE PERFORMANCE CURVE)

WASTEWATER FLOW INFORMATION.

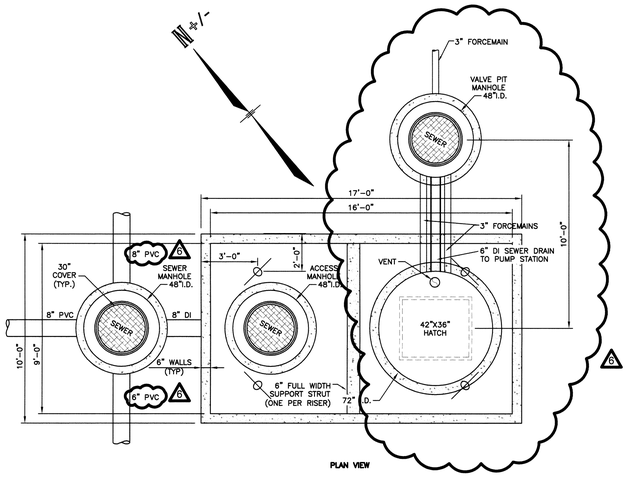
DESIGN FLOW: 9,300 GALLONS PER DAY (AVERAGE)
39 GALLONS PER MIN. (PEAK)
VOLUME OF WET WELL = 5,168 GALLONS @ 6'4" DEPTH
CYCLE VOLUME = 250 GALLONS
PUMPING TIME = 3.0 MIN @ 80 GPM
3" FORCE MAIN = 795 L.F. + 41 L.F.(FITTING FRICTION) = 836± L.F., USE 850 EQUIVALENT LENGTH
VELOCITY = 3.6 FT./SEC.

CAUTION
THIS IS A CONFINED SPACE. DO NOT ENTER WITHOUT FOLLOWING OSHA CONFINED SPACE ACCESS REGULATIONS.

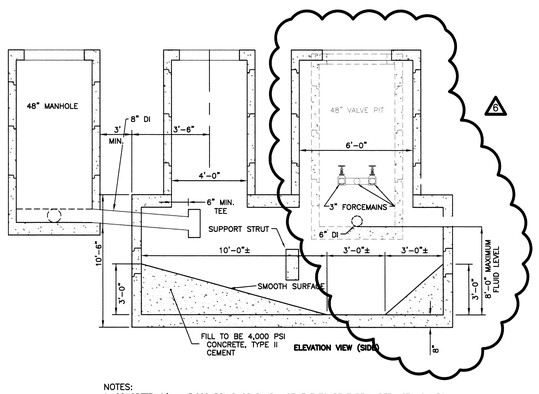
PUMP STATION NOTES:

1. OUTSIDE OF PUMP WETWELL SHALL BE SEALED WITH A FACTORY APPLIED BITUMINOUS WATERPROOFING COATING TO ENSURE WATER TIGHTNESS. A DOUBLE RING OF MASTIC SEALANT SHALL BE USED TO SEAL THE JOINTS BETWEEN PRE-CAST SECTIONS.
2. ALL JOINTS SHALL BE SEALED WITH A BUTYL JOINT SEALANT.
3. CONTROL PANEL TO BE WIRED TO ALTERNATE OPERATION OF PUMPS.
4. SEPARATE ELECTRICAL CIRCUITS SHALL BE PROVIDED FOR THE PUMPS AND ALARM SYSTEMS.
5. THE PUMPS SHALL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS TO PREVENT FAILURE OF BOTH PUMPS AT ANY GIVEN TIME.
6. PUMP STATION AND FORCEMAIN TESTING SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF ENVIRONMENTAL SERVICES STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWERAGE AND WASTEWATER TREATMENT FACILITIES (ENV-WS 700).
7. CONTRACTOR SHALL PERFORM A LEAK TEST ON THE PUMP STATION WET WELL OBSERVED BY THE DOVER SEWER DEPARTMENT.

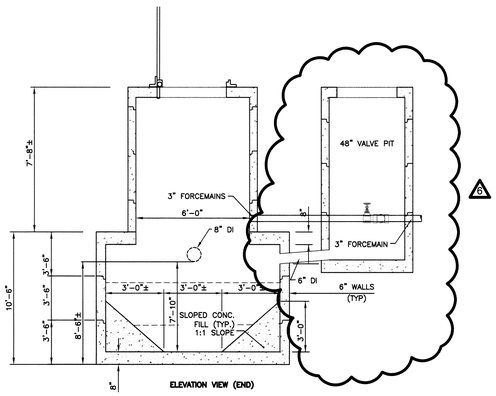
PUMP STATION DETAIL



PLAN VIEW



ELEVATION VIEW (SIDE)



ELEVATION VIEW (END)

NOTES:
1. CONCRETE: f/c = 5,000 PSI @ 28 DAYS. CEMENT TO BE TYPE II PER ASTM C-150.
2. REINFORCED TO MEET OR EXCEED REQUIREMENTS OF AASHTO HS20-44. COVER: 8".
3. ALL SECTION JOINTS SEALED WITH BUTYL RUBBER JOINT SEALANT PER ASTM C-990 & AASHTO M-198.
4. PENN INSERT PI-U1 LIFTING IRONS PROVIDED FOR LIFTING, HANDLING AND SETTING PURPOSES.
5. HEAVIEST SECTION TO WEIGH: 29,090#±.
7. TANK VOLUME = 6818 GAL. @ 6'-4" DEPTH, LESS 1650± GAL. DISPLACED BY CONCRETE FILL = 5168±GAL. NET

COMMERCIAL UTILITY TANK (H-20)

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of Thomas F. Moran, Inc.

TAX MAP H LOT 4
PUMP STATION DETAILS

MIXED USE DEVELOPMENT
RETAIL PHASE

NH ROUTE 108 AND MAST ROAD
DOVER, NEW HAMPSHIRE

OWNER OF RECORD
JOHN F. TORR TRUSTEE, ET.AL.
1501 WYATT AVENUE
THE VILLAGES, FL 32162-6138

APPLICANT/DEVELOPER
VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110

SCALE: AS SHOWN **OCTOBER 30, 2006**

STATE OF NEW HAMPSHIRE — DEBORAH L. BREWSTER No. 9458 LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION	DR	CK
6	4/12/07	SR3 ROTATE VALVE PIT PER CITY COMMENTS 4/5/07	WBL	DLB
1	12/21/06	REVISED PER TRC COMMENTS-11/16/06	WBL	DLB

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Land Planners, Landscape Architects
554 Union Street, Manchester, NH 03104
Phone (603) 647-2242
Fax (603) 647-1716
www.tfmoran.com
Bedford, NH • Manchester, NH • Keene, NH • Salem, NH

Project No.		DR	KE	FB	1927	
	46001.01	CK	MAV	CADFILE	46001Details	SHEET 32 OF 32

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Proposed McDonald's
Durham Road & Grapevine Drive
Dover, NH
Bohler Job Number: MAA240177.00
February 18, 2025

Rip Rap Sizing Calculations

Rip Rap Sizing Calculations **Design Period Storm:**		**100**	**Year**			
Location	Pipe Size (in)	Pipe Size (ft)	Q (cfs)	TW* (ft)	D_{50} (ft)	D_{50**} (in)
B-10	12	1.0	0.86	0.3	0.03	**6**
C-10	12	1.0	1.77	0.3	0.09	**6**
C-20	12	1.0	1.77	0.3	0.09	**6**

Based on Eq. 11.35 of ConnDOT Drainage Manual

* Assume tailwater =
** Q<10 cfs - min. 6" stone size, Q>10 cfs - min. 12" stone size

Outlet Protection Sizing Calculations **Design Period Storm:**		**100**	**Year**			
Location	Pipe Size (in)	Pipe Size (ft)	Q (cfs)	W1 (ft)	La (ft)	W2 (ft)
B-10	12	1.0	0.86	3.00	10	10
C-10	12	1.0	1.77	3.00	10	12
C-20	12	1.0	1.77	3.00	10	12

Based ConnDOT Drainage Manual - Type A Riprap Apron

Prepared By: Bohler Engineering
352 Turnpike Road
Southborough, MA 01772
(508) 480-9900

Prepared By: Bohler Engineering
352 Turnpike Road
Southborough, MA 01772
(508) 480-9900

STORMWATER OPERATION AND MAINTENANCE PLAN

McDonald's
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY DURING CONSTRUCTION:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY POST CONSTRUCTION:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

Construction Phase

During the construction phase, all erosion control devices and measures shall be maintained in accordance with the final record plans, local/state approvals and conditions, the EPA Construction General Permit and the Stormwater Pollution Prevention Plan (SWPPP) if applicable. Additionally, the maintenance of all erosion / siltation control measures during construction shall be the responsibility of the general contractor. Contact information of the OWNER and CONTRACTOR shall be listed in the SWPPP for this site. The SWPPP also includes information regarding construction period allowable and illicit discharges, housekeeping and emergency response procedures. Upon proper notice to the property owner, the Town/City or its authorized designee shall be allowed to enter the property at a reasonable time and in a reasonable manner for the purposes of inspection.

Post Development Controls

Once construction is completed, the post development stormwater controls are to be operated and maintained in compliance with the following permanent procedures (note that the continued implementation of these procedures shall be the responsibility of the Owner or its assignee):

1. Parking lots: Sweep at least one (1) time per year and on a more frequent basis depending on sanding operations, preferably as soon as possible after the snow melts to reduce the amount of sand, grit, and debris and associated pollutants from winter sanding from entering surface waters. Swept areas shall include all parking, drive aisles, and access aisles. All resulting sweepings shall be collected and properly disposed of offsite in accordance with NHDES and other applicable requirements.

2. Catch basins, yard drains, manholes and piping: Inspect two (2) times per year at the end of foliage and snow-removal seasons. These features shall be cleaned two (2) times per year or whenever the depth of deposits is half the sump depth. Accumulated sediment and hydrocarbons present must be removed and properly disposed of off-site in accordance with NHDES and other applicable requirements.

3. Riprap apron / Scour Hole: Riprap and scour holes should be checked at least annually and after every major storm event (generally equal or greater to 3.0 inches in 24 hours) for displaced stones, slumping, and erosion at edges, especially downstream or downslope. If the riprap is damaged, it should be repaired before further damage can take place. Note and repair any erosion, stone displacement or low spots in the areas. Woody vegetation should be removed from the riprap annually.

4. Underground Infiltration Basins: Follow manufacturer's recommendations (attached). At a minimum, inspection of infiltration components at least twice annually and following any rainfall event exceeding 2.5 inches in a 24-hour period, with maintenance or rehabilitation conducted as warranted by such inspection. Inspection of pretreatment measures at least twice annually, and removal of accumulated sediment as warranted by inspection, but no less than once annually. If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limited to removal of accumulated sediments or reconstruction of the infiltration basin.

5. Water Quality Swale: Inspect swales for the first few months after construction and at least twice a year thereafter to make sure vegetation is adequate and slopes are not eroding. Check for rilling and gullying. Repair eroded areas and revegetate. Mow dry swales as needed. Wet swales may not need to be mowed depending on vegetation. Do not cut the grass shorter than four inches, and do not let the grass height exceed six inches. Regular maintenance includes mowing, fertilizing, liming, watering, pruning, weeding, and pest control as necessary. Remove sediment and debris manually at least once a year. Re-seed as necessary. Any sediment removed shall be disposed of in accordance with NHDES and other applicable requirements.

6. Trench Drain: Inspect four (4) times per year at the end of foliage and snow-removal seasons and throughout the summer season. These features shall be cleaned four (4) times per year including at the end of snow-removal season to remove debris accumulated during the winter months, in the summer to prevent debris build-up, maintain efficient drainage, and inspect for any signs of blockage, and in the autumn to remove leaves, twigs, and other debris to prepare the channel drainage system for increased winter runoff. These features shall also be cleaned whenever the depth of deposits is half the sump depth to prevent excess sediment build up. Accumulated sediment and hydrocarbons present must be removed and properly disposed of off-site in accordance with NHDES and other applicable requirements.

All components of the stormwater system shall be accessible by the owner or their assignee.

STORMWATER MANAGEMENT SYSTEM

POST-CONSTRUCTION INSPECTION REPORT

LOCATION:

McDonald's
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

NAME OF INSPECTOR:	INSPECTION DATE:
Note Condition of the Following (sediment depth, debris, standing water, damage, etc.):	
Catch Basins:	
Discharge Points/ Flared End Sections / Rip Rap:	
Underground Infiltration Basins:	
Water Quality Swale:	
Trench Drain:	
Other:	

Note Recommended Actions to be taken (sediment and/or debris removal, repairs, etc.):
Catch Basins:
Discharge Points/ Flared End Sections / Rip Rap:
Underground Infiltration Basins:
Water Quality Swale:
Trench Drain:
Other:
Comments:

STORMWATER INSPECTION AND MAINTENANCE LOG FORM

McDonald's
NH Route 108 & Grapevine Drive – Dover, NH 03820

Stormwater Management Practice	Responsible Party	Date	Maintenance Activity Performed

LONG-TERM POLLUTION PREVENTION PLAN

McDonald's
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY DURING CONSTRUCTION:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

RESPONSIBLE PARTY POST CONSTRUCTION:

McDonald's USA, LLC
NH Route 108 & Grapevine Drive
Dover, NH 03820

For this site, the Long-Term Pollution Prevention Plan (LTPPP) will consist of the following:

- The property owner shall be responsible for "good housekeeping" including proper periodic maintenance of building and pavement areas, curbing, landscaping, etc.
- Proper storage and removal of solid waste (dumpsters).
- Sweeping of roadways, parking lots, drive aisles and access aisles a minimum of twice per year with a commercial cleaning unit. Any sediment removed shall be disposed of in accordance with applicable local and state requirements.
- Regular inspections and maintenance of Stormwater Management System as noted in the "O&M Plan".
- No outdoor maintenance or washing of vehicles allowed.
- Trash and other debris shall be removed from all areas of the site at least twice yearly.
- Reseed any bare areas as soon as they occur. Erosion control measures shall be installed in these areas to prevent deposits of sediment from entering the drainage system.
- Grass shall be maintained at a minimum blade height of two to three inches and only 1/3 of the plant height shall be removed at a time. Clippings shall not be disposed of within stormwater management areas or adjacent resource areas.
- Deliveries shall be monitored by owner or owner's representative to ensure proper delivery and in the event that a spillage occurs it shall be contained and cleaned up immediately in accordance with the spill prevention program for the project.

- Recycle materials whenever possible. Provide separate containers for recycle materials. Recycling products will be removed by a certified waste hauler.

- Long-Term Pollution Prevention measures during winter conditions:

    - Snow removal shall be the responsibility of the property owner. Snow shall not be plowed, dumped and/or placed in forebays, infiltration basins or similar stormwater controls. Salting and/or sanding of pavement / walkway areas during winter conditions shall only be done in accordance with all state/local requirements and approvals.

    - Snow piles shall be located adjacent to or on pervious surfaces in upland areas. This will allow snow melt water to filter into the soil, leaving behind sand and debris which can be removed in the springtime.

    - In no case shall snow be disposed of or stored in resource areas (wetlands, floodplain, streams, or other water bodies).

    - If necessary, stockpiled snow will be removed from the Site and disposed of at an off-site location in accordance with all local, state and federal regulations.

    - The amount of sand and deicing chemicals shall be kept at the minimum amount required to provide safe pedestrian and vehicle travel.

    - Deicing chemicals are recommended as a pretreatment to storm events to minimize the amount of applied sand.

    - Sand and deicing chemicals should be stockpiled under covered storage facilities that prevent precipitation and adjacent runoff from coming in contact with the deicing materials. Stockpile areas shall be located outside resource areas.

    - The primary agents used for deicing at parking lots, sidewalks and the access roads shall consist of salt alternatives such as calcium carbonate ($CaCO3$) or potassium chloride (KCl).

SPILL PREVENTION AND RESPONSE PROCEDURES (POST CONSTRUCTION)

In order to prevent or minimize the potential for a spill of Hazardous Substances or Oil or come into contact with stormwater, the following steps will be implemented:

1. All Hazardous Substances or Oil (such as pesticides, petroleum products, fertilizers, detergents, acids, paints, paint solvents, cleaning solvents, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on site.

3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided on site.

4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

5. It is the OWNER's responsibility to ensure that all Hazardous Waste on site is disposed of properly by a licensed hazardous material disposal company. The OWNER is responsible for not exceeding Hazardous Waste storage requirements mandated by the EPA or state and local authorities.

In the event of a spill of Hazardous Substances or Oil, the following procedures should be followed:

1. All measures should be taken to contain and abate the spill and to prevent the discharge of the Hazardous Substance or Oil to stormwater or off-site. (The spill area should be kept well ventilated and personnel should wear appropriate protective clothing to prevent injury from contact with the Hazardous Substances.)

2. For spills of less than five (5) gallons of material, proceed with source control and containment, clean-up with absorbent materials or other applicable means unless an imminent hazard or other circumstances dictate that the spill should be treated by a professional emergency response contractor.

3. For spills greater than five (5) gallons of material immediately contact the NHDES at the toll-free 24-hour statewide emergency number: **1-603-271-3899**, the local fire department (**9-1-1**) and an approved emergency response contractor. Provide information on the type of material spilled, the location of the spill, the quantity spilled, and the time of the spill to the emergency response contractor or coordinator, and proceed with prevention, containment and/or clean-up if so desired. (Use the form provided, or similar).

4. If there is a Reportable Quantity (RQ) release, then the National Response Center should be notified immediately at (800) 424-8802; within 14 days a report should be submitted to the EPA regional office describing the release, the date and circumstances of the release and the steps taken to prevent another release. This Pollution Prevention Plan should be updated to reflect any such steps or actions taken and measures to prevent the same from reoccurring.

SPILL PREVENTION CONTROL AND COUNTERMEASURE FORM

McDonald's
NH Route 108 & Grapevine Drive
Dover, NH 03820

Where a release containing a hazardous substance occurs, the following steps shall be taken by the facility manager and/or supervisor:

1. Immediately notify The City of Dover Fire Department (at **9-1-1**)

2. All measures must be taken to contain and abate the spill and to prevent the discharge of the pollutant(s) to off-site locations, receiving waters, wetlands and/or resource areas.

3. Notify the City of Dover Health Officer at (603) 516-6038 and the Conservation Commission at (603) 781-7297.

4. Provide documentation from licensed contractor showing disposal and cleanup procedures were completed as well as details on chemicals that were spilled to the Health Officer and Conservation Commission.

Date of spill:_____ Time:_____ Reported By:_____

Weather Conditions:_____

Material Spilled	**Location of Spill**	**Approximate Quantity of Spill (in gallons)**	**Agency(s) Notified**	**Date of Notification**

Cause of Spill:_____

_____

Measures Taken to Clean up Spill:_____

_____

Type of equipment: _____ Make: _____ Size:_____

License or S/N: _____

Location and Method of Disposal_____

_____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring:_____

_____

_____

Additional Contact Numbers:

- NHDES SPILL RESPONSE EMERGENCY PHONE:
  - MON-FRI 8AM-4PM: (603) 271-3899
  - ALL OTHER TIMES: (603) 223-4381
- NATIONAL RESPONSE CENTER PHONE: (800) 424-8802
- U.S. ENVIRONMENTAL PROTECTION AGENCY PHONE: (888) 372-7341

Isolator® Row Plus
O&M Manual



ADS StormTech™

The Isolator® Row Plus

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row Plus is a technique to inexpensively enhance Total Suspended Solids (TSS), Total Phosphorus (TP), Total Petroluem Hydrocarbons (TPH) and Total Nitrogen (TN) removal with easy access for inspection and maintenance.

The Isolator Row Plus

The Isolator Row Plus is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, SC-800, MC-3500, MC-4500 or MC-7200 models, are lined with filter fabric and connected to a closely located manhole for easy access. The fabric lined chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric. The open bottom chambers allow stormwater to flow vertically out of the chambers. Sediments are captured in the Isolator Row Plus protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS Isolator Row and Plus fabric are placed between the stone and the Isolator Row Plus chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting.

The Isolator Row Plus is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row Plus and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

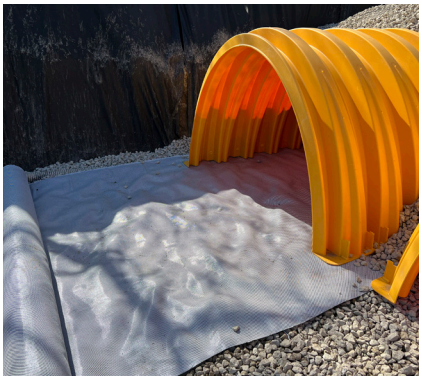
The Isolator Row Plus Flamp™ is a flared end ramp apparatus attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance by enhancing outflow of solid debris that would otherwise collect at the chamber's end, or more difficult to remove and require confined space entry into the chamber area. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

The Isolator Row Plus may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row Plus to minimize maintenance requirements and maintenance costs.

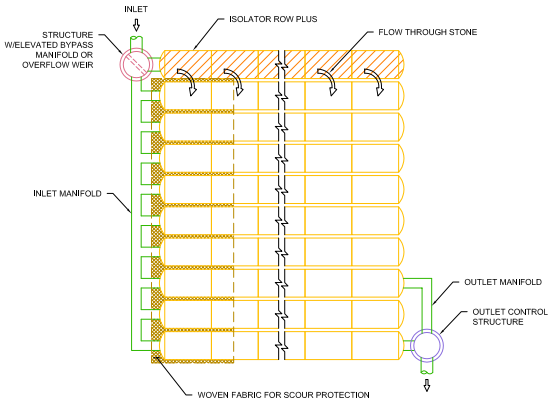
Note: *See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row Plus.*



Looking down the Isolator Row Plus from the manhole opening, ADS Plus Fabric is shown between the chamber and stone base.



StormTech Isolator Row Plus with Overflow Structure (not to scale)



Isolator Row Plus Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row Plus should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

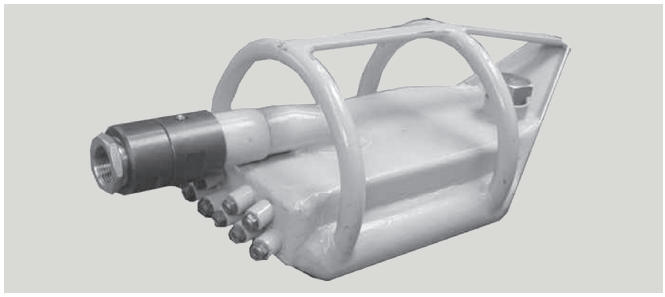
The Isolator Row Plus incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3" (75 mm) throughout the length of the Isolator Row Plus, clean-out should be performed.

Maintenance

The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entry.

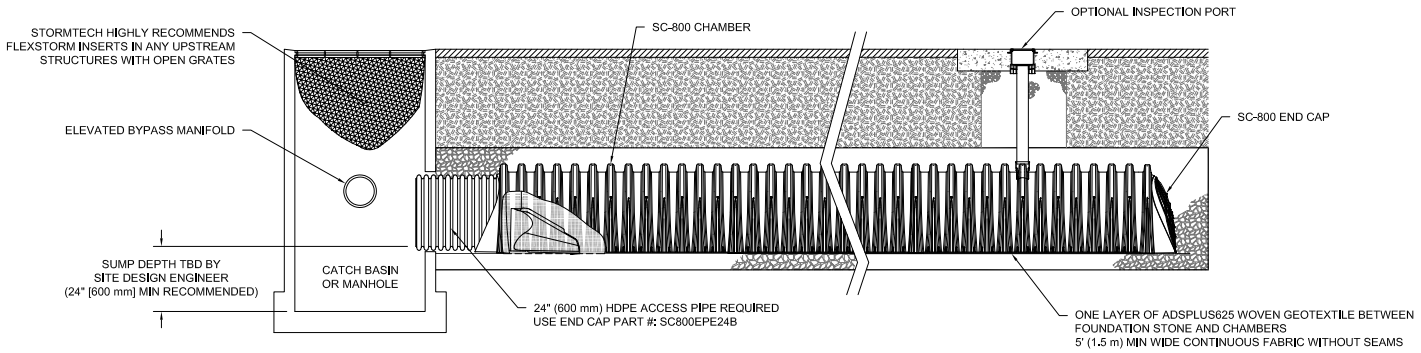
Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45” are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row Plus lengths up to 200' (61 m). **The JetVac process shall only be performed on StormTech Isolator Row Plus that have ADS Plus Fabric (as specified by StormTech) over their angular base stone.**







StormTech Isolator Row Plus (*not to scale*)



Isolator Row Plus Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row Plus for sediment.

A) Inspection ports (if present)
   i. Remove lid from floor box frame
   ii. Remove cap from inspection riser
   iii. Using a flashlight and stadia rod,measure depth of sediment and record results on maintenance log.
   iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.

B) All Isolator Row Plus
   i. Remove cover from manhole at upstream end of Isolator Row Plus
   ii. Using a flashlight, inspect down Isolator Row Plus through outlet pipe
      1. Mirrors on poles or cameras may be used to avoid a confined space entry
      2. Follow OSHA regulations for confined space entry if entering manhole
   iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2.
   If not, proceed to Step 3.

Step 2

Clean out Isolator Row Plus using the JetVac process.

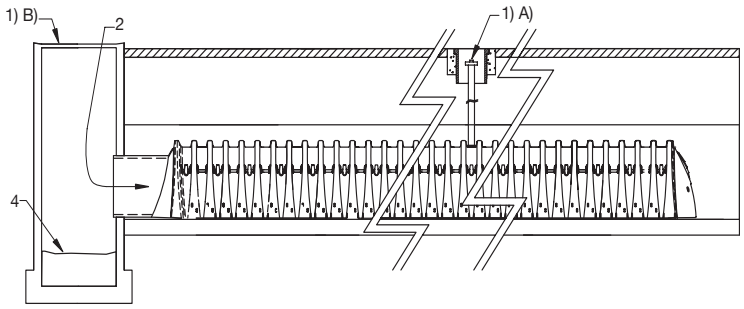
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1)–(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row Plus, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

adspipe.com
800-821-6710

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com
The ADS logo and the Green Stripe are registered trademarks of Advanced Drainage Systems, Inc.
StormTech® and the Isolator® Row Plus are registered trademarks of StormTech, Inc.
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50 Washington Street, Suite 2000
Westborough, MA 01581
508.480.9900

May 22, 2025

City of Dover
Planning and Community Development
288 Central Ave
Dover, MA 03820

Re: Site Development Design Criteria
Site Plan Review, 30 Grapevine Drive
(Assessor's Map H, Lot 4-3)

Dear Members of the Planning Board:

Pursuant to §153-14 of the City of Dover Zoning Ordinance, the Applicant provides the following narrative for each site development design criteria as outlined below:

A. Stormwater management, erosion control and flood hazards

The proposed stormwater management system illustrated on the drawings prepared by Bohler, meets, or exceeds the standards set forth in the New Hampshire Stormwater Manual. The proposed development provides water quality, including the removal of TSS, Total Nitrogen, and Total Phosphorus, and required groundwater recharge through the proposed underground infiltration basin. Additionally, the proposed development results in the reduction of peak rates of stormwater runoff from the subject site when compared to pre-development conditions for the analyzed 2-, 10-, 25-, 50-, and 100-year storm events. This project required an Alteration of Terrain amendment through NHDES and is actively being reviewed by NHDES.

The proposed development does not contribute pollutants to an impaired water body and uses low-impact development strategies including an underground infiltration basin. Wetlands onsite have delineated by Goddard Consulting on 4/29/2025, and the proposed disturbance within the existing wetland buffers consists of proposed parking areas and grading activities as outlined in Conditional Use Permit #COND-2025-0005. No direct impacts to the existing wetland area are proposed. No storage of fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials are proposed as part of this development

Erosion control measures are proposed throughout construction and meet the design standards set forth in the New Hampshire Stormwater Management Manual Volume 3. The project proposed disturbance within the 50' wetland buffer including grading and permanent parking areas as outlined in Conditional Use Permit #COND-2025-0005, and perimeter site controls are to be placed within the wetland buffer accordingly. Refer to Sheets C-801 and C-802 of the "Proposed Site Plan Documents" prepared by Bohler for additional information regarding erosion control measures. The Applicant shall be responsible for applicable inspection requirements as outlined in Section 153-14.A.(3)(e).Additionally, an operation and maintenance manual has been provided and includes scheduled maintenance and periodic inspections of stormwater management structures.

Refer to the "Proposed Site Plan Documents" prepared by Bohler and the "Stormwater Management Drainage Report" prepared by TF Moran, Inc. for additional information regarding stormwater management on site.

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B. Utilities

As the proposed development has access to existing water services within Grapevine drive, no extensions to the public water mains are proposed. Additionally, sanitary sewer services are provided to the site via an existing manhole with a gravity service connecting to the existing pump station and force main within the overall property. Sewer pump calculations demonstrating the capacity to service the proposed McDonald's use have been including in this application. All proposed water and sewer connections shall be in accordance with Chapter 121 of the Code of the City of Dover. All proposed electric, cable, and telephone lines are to be installed underground. Refer to Sheet C-501 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.

C. Driveways, accessways and internal roads

The proposed development provides one (1) full access driveway to Grapevine drive, which is a private roadway, and one (1) right-out only egress drive to Durham Road under NHDOT jurisdiction. The width of the proposed driveway are 30' and 18', respectively. The proposed exit only driveway to Durham Road is actively being reviewed by NHDOT under Driveway Permit #IA-0000000841.

D. Parking

The proposed development provides a total of 37 parking spaces on site which exceeds the maximum number of parking spaces for a retail use outlined in the Parking Regulation Table. A Conditional Use permit is required to increase the number of parking spaces permitted for the proposed use and has been requested with the City under application #COND-2025-0004. Of the 37 total parking spaces proposed, 8 spaces are reserved for curbside pickup, drive-thru pull forward, and courier parking. Employees on the maximum shift may use 12 spaces, which leaves 17 parking spaces for in-house dining, takeout customers, and drive-thru patrons who choose to park and eat within their vehicles. If drive-thru hours are restricted, during the restricted hours customers which would typically use the drive-thru under normal operations would have to park and use takeout or dine-in options, increasing parking demand. The 23 parking spaces proposed above the maximum 14 permitted spaces are proposed to be constructed of pervious pavers. 32 parking spaces are proposed at 75° and 9' in width and 19.5 in length, 3 parking spaces are proposed at 90° and 9' in width and 19.5' in length, and 2 parallel parking spaces are proposed at 10' in width and intended to be reserved for customers waiting on larger drive-thru orders. Minimum aisle width on site is 22', with the exception of the 18'-wide right-out only drive to Durham Road.

A total of seven (7) electric vehicle ready parking spaces are proposed as part of this project. A parking space meets electric vehicle readiness requirements if one or more dedicated circuits on the electrical panels such that the service capacity to accommodate the required number of Level 2 EVSE. Conduit is proposed to be installed at the EV Ready parking spaces to allow the addition of all necessary wiring to electrify installed EVSE at the parking space without having to excavate to do so, therefore meeting the requirement for electric vehicles readiness. As such, no EV charging stations are proposed at this time.

This project is a non-residential project and per Chapter 153-14 D.(3)(a)[2] of the City of Dover, NH Planning Board Regulations, 2% of the total number of new parking spaces must be provided Electric Vehicle Charging Readiness. 2% of the total 37 parking spaces proposed is calculated to be 1 electric vehicle charging ready parking space. 2 additional spaces are required for every 10 spaces above the maximum permitted. There are 23 spaces proposed above the maximum 14 spaces permitted which results in an additional 4 electric vehicle charging ready spaces, and the total number of electric vehicle charging ready spaces required is calculated to be 5 spaces.

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E. Outdoor lighting

The proposed development provides site lighting throughout the parking area and around all sides of the proposed building for security purposes. The proposed lot lighting has been designed to not cause glare or direct illumination on to adjacent properties or streets. The light fixtures are proposed to be mounted at a height of 21' with the minimum illumination level within the parking lot to be 0.5 fc, and a uniformity ratio of 6:1 is provided. All wiring for outdoor lighting is proposed to be placed underground. Refer to Sheet L-201 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.

F. Fire Hazards

Fire lanes are provided via the one-way drive aisles around site with full access to all sides of the proposed building. No storage of explosives, flammable liquids, liquefied petroleum gas or similar materials are proposed to be stored on site.

G. Landscaping

The proposed landscaping meets the requirements outlined in 153-14.G. by preserving existing landscaping where feasible, providing a minimum of 8% interior landscaping, and providing a total of 12 native trees and 119 shrubs. The proposed landscaping consists of native species and fosters biological diversity while providing a visual buffer. Additional landscaping has also been provided at the request of City Planning Staff along the trash enclosure at the rear of the site to provide an enhanced visual buffer. Refer to Sheets L-101 and L-102 of the "Proposed Site Plan Documents" prepared by Bohler for additional information.

H. Driveway location and spacing standards for nonresidential uses in the C, CM, and IT Districts

Two (2) driveways are proposed as part of this project consisting of one (1) full access driveway to Grapevine Drive and one (1) right-out only driveway to Durham Road (NH-108). The location of the driveway along Grapevine Drive as currently proposed is the result of previous feedback from NHDOT to shift the driveway farther from the intersection of Grapevine Drive and Durham Road to avoid potential conflicts with vehicles queuing at the signalized intersection. The proposed right-out only driveway to Durham Road is actively being reviewed by NHDOT under Driveway Permit #IA-0000000841.

I. Incentives for reducing the number of driveways in the C, CM, and IT Districts

Incentives for reducing the number of driveways are not applicable as the maximum lot coverage requirement is met. The proposed development is located in the Commercial (C) District and the maximum lot coverage permitted is 50%, whereas 43.3% lot coverage is proposed.

J. Interconnections between parcels.

The proposed project provides one full access driveway to Grapevine Drive which is a private roadway connecting Durham Road to Mast Road and serves as an interconnecting drive to the existing Hannaford plaza.

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K. Location of parking lots.

The proposed development is within the Commercial (C) District and provides a total of 37 parking spaces which are located on the front and sides of the proposed building. The site has frontage along Durham Road and Grapevine Drive (private). A total of 13 parking spaces are proposed in front of the proposed building (closer to the front lot line) in relation to the Durham Road frontage which is 35% of the proposed parking spaces. Grapevine Drive is a private right-of-way and has been excluded from this calculation.

L. Architectural design standards.

The architecture of the proposed building has been revised from the prototypical McDonald's architecture to reflect the local climate, topography, and history of Dover. The site is located within the Commercial (C) District which has an auto-mobile-oriented and big box character already established, however the proposed architecture modifications look to provide an enhanced appearance for the City of Dover through the use of natural materials and color palette, the articulation of the building entrance, the addition of parapets along the roof, and other elements of building design and scale to reflect more traditional New England style architecture.

We trust the provided information is sufficient for your needs at this time. Should you have any questions or require additional information, please do not hesitate to contact me at 508-480-9900.

Sincerely,

BOHLER

Eric Dubrule, PE

Connor Ennis

WHITESTONE
An Employee-Owned Company

3 EXECUTIVE PARK DRIVE
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REPORT OF GEOTECHNICAL INVESTIGATION

PROPOSED McDONALD'S RESTAURANT #28-0178
NEW HAMPSHIRE ROUTE 108 & GRAPEVINE DRIVE
MAP H4, PORTION OF LOT 3
DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE



Prepared for:

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Whitestone Project No.: GM2421922.000
June 11, 2024

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An Employee-Owned Company

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June 11, 2024

via email

McDONALD'S USA, LLC
110 North Street
Chicago, Illinois 60607

Attention: Mr. Eric Wagner
Area Construction Manager

Regarding: PROPOSED McDONALD'S RESTAURANT #28-0178
NEW HAMPSHIRE ROUTE 108 & GRAPEVINE DRIVE
MAP H4, PORTION OF LOT 3
DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE
WHITESTONE PROJECT NO.: GM2421922.000

Dear Mr. Wagner:

Whitestone Associates, Inc. (Whitestone) is pleased to submit the attached *Report of Geotechnical Investigation* for the above-referenced project. The report presents the results of Whitestone's site visit and subsurface exploration, and includes design recommendations for the proposed foundations, floor slab, and pavements, and related earthwork associated with the proposed McDonald's restaurant.

Whitestone appreciates the opportunity to be of continued service to McDonald's USA, LLC. Should you have questions regarding the attached report, please contact us at (603) 514-2230.

Sincerely,

WHITESTONE ASSOCIATES, INC.

Richard W.M. McLaren, P.E.
Senior Consultant

Ryan R. Roy, P.E.
Vice President

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Enclosures
Copy: Laurence W. Keller, P.E., Whitestone Associates, Inc.

REPORT OF
GEOTECHNICAL INVESTIGATION
Proposed McDonald's Restaurant #28-0178
New Hampshire Route 108 & Grapevine Drive
Dover, Strafford County, New Hampshire

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REPORT OF
GEOTECHNICAL INVESTIGATION
Proposed McDonald's Restaurant #0178
New Hampshire Route 108 & Grapevine Drive
Dover, Strafford County, New Hampshire

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APPENDIX C Supplemental Information (USCS, Terms & Symbols)

SECTION 1.0
Summary of Findings

Whitestone Associates, Inc. (Whitestone) has conducted an exploration and evaluation of the subsurface conditions at the site of the proposed McDonald's restaurant to be located southwest of the intersection of New Hampshire Route 108 and Grapevine Drive in the City of Dover, Strafford County, New Hampshire. Based on an April 29, 2024 *Concept Sketch 'A'* prepared by Bohler Engineering MA, LLC of Bedford, New Hampshire, the proposed project will include the construction of new single-story restaurant with a footprint of 3,694 square feet, drive-thru facilities, pavement, utilities, and landscaped areas. Whitestone anticipates that the building will be constructed close to existing site grade. Stormwater management areas are planned to the west and south of the restaurant. No new retaining walls are shown on the *Concept Sketch 'A'*.

The geotechnical investigation included conducting a reconnaissance of the project site, advancing 14 borings, and collecting soil samples for laboratory testing and characterization. Site subsurface conditions consisted of topsoil/subsoil overlying intermittent existing fill, which is underlain by a natural marine deposit. Groundwater was encountered in the borings during the exploration at depths ranging from two feet below ground surface (fbgs) to seven fbgs.

The results of the investigation indicate the site is suitable for conventional shallow foundations bearing on properly inspected and approved natural marine deposit or structural fill placed over the marine deposit, and the subgrade reviewed by the geotechnical engineer, as specified in this report. Footing subgrade should be undercut by a minimum of eight inches and replaced with crushed stone wrapped in geotextile separation fabric. Intermittent existing fill, which was encountered at the site to a depth of more than six fbgs, was within the northern portion of the site and outside the proposed building footprint. However, existing fill may be encountered during building construction between the widely spaced borings and associated with the retaining wall to be removed. Overexcavation of existing fill within foundation influence zones and replacement with structural fill may be required within a portion of the building footprint. The results of the investigation also indicate the site is suitable for a ground-supported floor slab deriving support from the properly inspected, improved, and approved marine deposit or existing fill, and/or compacted structural fill, as specified in this report. Additionally, the site conditions support the use of typical pavement sections using standard State of New Hampshire Department of Transportation (NHDOT) specified materials.

The above summary is intended to provide an overview of the geotechnical findings and recommendations and is not fully developed. Greater detail is presented in the following sections. The entire report must be read for comprehensive understanding of the information contained herein.

SECTION 2.0
Introduction

2.1 AUTHORIZATION

Mr. Eric Wagner, Area Construction Manager at McDonald's USA, LLC issued authorization to Whitestone to conduct a geotechnical investigation on the site relevant to a proposed McDonald's restaurant southwest of the intersection of New Hampshire Route 108 and Grapevine Drive in the City of Dover, Strafford County, New Hampshire. The geotechnical investigation was conducted in general accordance with Whitestone's May 17, 202 *Service Supplier Proposal*.

2.2 PURPOSE

The purpose of this exploration and analysis was to:

- ascertain the various soil profile components at test locations;
- conduct preliminary infiltration testing;
- estimate the engineering characteristics of the proposed foundation bearing and subgrade materials;
- provide geotechnical criteria for use by the design engineers in preparing the foundation, floor slab, and pavement design;
- provide recommendations for required earthwork and subgrade preparation;
- record groundwater and/or bedrock levels (if encountered) at the time of the investigation and discuss the potential impact on the proposed construction; and
- recommend additional investigation and/or analysis, if warranted.

2.3 SCOPE

The scope of the exploration and analysis included the subsurface exploration, field testing and sampling, laboratory testing, evaluation of the subsurface materials, and a geotechnical engineering analysis. This *Report of Geotechnical Investigation* is limited to addressing the site conditions related to the physical support of the proposed construction. A *Phase I Environmental Site Assessment* (ESA) was completed concurrently with the geotechnical investigation. The ESA report was issued under separate cover.

2.3.1 Field Exploration

Field exploration of the project site was conducted by means of 14 borings, identified as B-1 through B-14, advanced with an all terrain vehicle (ATV) mounted CME 55LC drill rig equipped with hollow stem

augers to termination depths that ranged from approximately six fbgs to 22 fbgs. The borings were backfilled with excavated soils generated from the investigation. Test locations are shown on the *Boring Location Plan* included as Figure 1.

Test locations were based on project information provided to Whitestone at the time of the investigation, including the April 29, 2024 *Concept Sketch 'A'*. The subsurface testing was conducted in the presence of a Whitestone representative, who conducted field tests, recorded visual classifications, and collected samples of the various strata encountered. The tests were located in the field using phone-based GPS. These locations are presumed to be accurate to the degree implied by the method used (± 20 feet).

Borings and Standard Penetration Tests (SPTs) were conducted in general accordance with ASTM International (ASTM) designation D1586. The Standard Penetration Resistance value (N) can be used as an indicator of the consistency of fine-grained soils and the relative density of coarse-grained soils. The N-value for various soil types can be correlated with the engineering behavior of earthworks and foundations. The soil classification information along with other pertinent information was recorded on the boring logs and included in Appendix A on the *Records of Subsurface Exploration*.

Groundwater level observations, where encountered, were recorded during and immediately following the completion of the field operations prior to backfilling the borings. Seasonal variations, temperature effects, and recent rainfall conditions may influence the levels of the groundwater, and observed levels will depend on the permeability of the soils. Groundwater elevations derived from sources other than seasonally observed groundwater monitoring wells may not be representative of true groundwater levels.

2.3.2 Infiltration Testing

Borings B-8 and B-11 were advanced to a depth of seven fbgs to evaluate soil conditions prior to infiltration testing. Infiltration tests I-1 and I-2 were then conducted as falling head tests in cased holes at the locations shown on the *Boring Location Plan*. PVC casing, four inches in diameter, was installed to the depths tabulated below. The soil was pre-soaked for approximately 30 minutes. Following testing, the casings were removed. The results are tabulated below.

SUMMARY OF INFILTRATION TESTING				
Location	**Approximate Ground Elevation (feet)**	**Test Depth (fbgs)**	**Approximate Test Elevation (feet)**	**Infiltration Rate (in/hr)**
I-1 (B-8)	110	4.2	106	0.0
I-1 (B-11)	100	3.6	96	0.0

Typically, a Factor of Safety (FoS) is applied to measured infiltration rates to account for siltation and consolidation of soil below the systems over time. Safety factors used should consider how critical the systems are to the development and the available storage. If the system is critical or storage limited, a higher FoS should be applied. Infiltration rates are variable and dependent on test depth and stratification.

2.3.3 Laboratory Testing

Laboratory testing was conducted to determine pertinent engineering characteristics of representative samples of on-site soils. The laboratory testing was conducted in general accordance with applicable ASTM standard test methods and included physical testing of the marine deposit.

Physical/Textural Analysis: Two representative samples of the site soils were subjected to laboratory testing that included moisture content determinations (ASTM D2216) and washed gradation analyses (ASTM D422) in order to conduct supplementary engineering soil classifications and to assess possible re-use of the site soils as structural fill. The results of the laboratory testing are summarized in the following table:

LABORATORY TESTING SUMMARY					
Boring	**Sample Number**	**Depth (fbgs)**	**Moisture Content (%)**	**Passing No. 200 Sieve (%)**	**USCS Classification**
B-2	S-2	2.0 - 4.0	26.9	78.3	ML
B-4	S-3	5.0 - 7.0	33.0	28.6	SM

The engineering classifications are useful when considered in conjunction with the additional site data to estimate properties of the soil types encountered and to predict soil behavior under construction and service loads. Laboratory test results are provided in Appendix B.

SECTION 3.0
Site Description

3.1 LOCATION & DESCRIPTION

The subject property is located immediately southwest of the intersection of New Hampshire Route 108 and Grapevine Drive in the City of Dover, Strafford County, New Hampshire, Latitude 43.1664 North, and Longitude 70.8922 West. The undeveloped site is an approximately 0.5-acre portion of a 10.85-acre parcel, further identified as Map H4, Lot 3.

The approximately rectangular site is bounded to the east by New Hampshire Route 108 (Durham Road); to the north by Grapevine Drive; to the west by a large stormwater management basin; and to south by undeveloped land, then a high tension power corridor. Access to the site is from Grapevine Drive. The site of the proposed construction is shown on the *Boring Location Plan* included as Figure 1.

3.2 EXISTING CONDITIONS

Existing Development: At the time of Whitestone's investigation, the site was generally undeveloped and grass covered. However, there was a low, masonry block retaining wall extending approximately north to south, just to the west of the proposed building footprint. Whitestone understands that this retaining wall will be removed and the site regraded.

Topography: Based on a review of the *USGS 7.5 Minute Series Dover West Quadrangle, New Hampshire* (2021) and on Whitestone's visual observations, the site slopes down to the southwest from approximately 110 feet above National American Vertical Datum of 1988 (NAVD) to 100 feet above NAVD.

Utilities: The site is not serviced by underground utilities. The utility information contained in this report is presented for general discussion only and is not intended for construction purposes.

Site Drainage: Surface run-off will follow site topography, flowing to the southwest.

3.3 SITE GEOLOGY

From a review of the *Surficial Geologic Map of the Dover West Quadrangle, Strafford County, New Hampshire (1989)*, the site is underlain by marine sand. The mapped boundary with stratified glacial sand and gravel is immediately west of the site. The *Geologic Map of New Hampshire*, prepared by U.S. Geological Survey, indicates that the subject property is underlain, at depth, by Early Devonian-age Exeter Diorite, consisting of gabbro and diorite, with minor granite and granodiorite.

3.4 PROPOSED CONSTRUCTION

Based on the aforementioned Bohler *Concept Sketch 'A'*, the proposed project will include the construction of new single-story restaurant with a footprint of 3,694 square feet, drive-thru facilities, pavement, utilities, and landscaped areas. Whitestone anticipates that the building will be constructed close to existing site grade. Stormwater management areas are planned to the west and south of the restaurant. No new retaining walls are shown on the *Concept Sketch 'A'*.

Whitestone anticipates the proposed building will be a single-story, masonry and metal-framed structure constructed with a ground-supported concrete floor slab and no basement. Maximum column and wall loads are expected to be on the order of:

- interior column loads - 60.0 kips;
- load bearing walls - 2.0 kips per linear foot; and
- floor slab loads - 100 pounds per square foot.

The scope of Whitestone's investigation and the professional advice contained in this report were generated based on the project details and loading noted herein. Revisions or additions to the design details enumerated in this report should be brought to the attention of Whitestone for additional evaluation as warranted.

SECTION 4.0
Subsurface Conditions

Details of the subsurface materials encountered in the borings are presented on the *Records of Subsurface Exploration* in Appendix A of this report. The subsurface soil conditions encountered in the test locations consisted of the following generalized strata in order of increasing depth.

4.1 SUBSURFACE SOIL CONDITIONS

Surface Cover Materials: The borings encountered three inches to nine inches of topsoil at the ground surface, generally underlain by three inches to 11 inches of subsoil with roots.

Existing Fill (intermittent): Beneath the surface cover materials, borings B-13 and B-14 encountered existing fill, consisting of brown to gray-brown, medium dense to dense, silty sand with gravel. SPT N-values recorded within the existing fill were variable, ranging from 21 blows per foot (bpf) to 37 bpf. Where penetrated in boring B-13, the existing fill extended to a depth of four fbgs. Boring B-14 terminated in the existing fill at a depth of six fbgs. Existing fill should also be expected in the vicinity of the retaining wall to be removed.

Marine Deposit: Beneath the surface cover materials or existing fill, the borings, except B-14, encountered a marine deposit, consisting of gray to brown, loose to medium dense (occasionally very loose), sandy silt (USCS: ML) to silty sand (USCS: SM). SPT N-values recorded within the marine deposit were variable, ranging from two bpf to 29 bpf. The borings, except B-14, terminated in the marine deposit at depths of six fbgs to 22 fbgs.

4.2 GROUNDWATER

Groundwater was encountered in the borings at depths ranging from two fbgs to seven fbgs during Whitestone's subsurface exploration activities. The shallower groundwater is likely perched. Static and perched/trapped water conditions generally will fluctuate seasonally and following periods of precipitation.

SECTION 5.0
Conclusions & Recommendations

5.1 GENERAL

The results of the investigation indicate the site is suitable for conventional shallow foundations bearing on properly inspected and approved natural marine deposit or structural fill placed over the marine deposit, and the subgrade reviewed by the geotechnical engineer, as specified in this report. Footing subgrade should be undercut by a minimum of eight inches and replaced with crushed stone wrapped in geotextile separation fabric. Intermittent existing fill, which was encountered at the site to a depth of more than six fbgs, was within the northern portion of the site and outside the proposed building footprint. However, existing fill may be encountered during building construction between the widely spaced borings and associated with the retaining wall to be removed. Overexcavation of existing fill within foundation influence zones and replacement with structural fill may be required within a portion of the building footprint. The results of the investigation also indicate the site is suitable for a ground-supported floor slab deriving support from the properly inspected, improved, and approved marine deposit or existing fill, and/or compacted structural fill, as specified in this report. Additionally, the site conditions support the use of typical pavement sections using standard NHDOT specified materials.

5.2 SITE PREPARATION & EARTHWORK

Surface Cover Stripping and Demolition: Prior to stripping operations, any utilities should be identified and secured. Vegetation, topsoil, organic subsoil, and other organic matter should be removed from within and at least five feet beyond the limits of the proposed building footprint, as well as any other area that will require controlled structural fill placement. Any tree/shrub removal should include the removal of stumps and root material, which will require removal of more than the few inches of topsoil encountered in the borings. The existing retaining wall should be removed entirely within and up to five feet around the proposed building footprint. Elsewhere, under paved areas, the retaining wall components should be removed to a minimum of two feet below pavement subgrade. The contractor should be required to conduct earthwork in accordance with the recommendations in this report, including backfilling any excavation, etc. with structural fill. Fill or backfill placed within the proposed building and slab areas should be placed as structural fill in accordance with Sections 5.2, 5.3, and 5.11 of this report.

Surface Preparation/Proofrolling: Prior to placing fill or subbase materials to raise or restore grades to the desired subgrade elevations, the existing exposed soils should be compacted to a firm surface with several passes in two perpendicular directions of a minimum 10-ton vibratory roller. The surface should then be proofrolled with a loaded tandem axle truck in the presence of the geotechnical engineer to help identify soft or loose pockets that may require removal and replacement, or further evaluation. Proofrolling should be conducted after a suitable period of dry and non-freezing weather to reduce the

likelihood of degrading an otherwise stable subgrade. Should construction be attempted in the winter or when temperatures are below freezing, Whitestone should be contacted for alternative surface preparation recommendations. Fill or backfill should be placed and compacted in accordance with Section 5.3.

Weather Performance Criteria: The site soils are moisture sensitive. Every effort should be made to maintain drainage of surface water runoff away from construction areas by grading and limiting the exposure of excavations and prepared subgrades to rainfall. Accordingly, excavation and fill placement procedures should be conducted during favorable weather conditions. Overexcavation of wet or disturbed soils and replacement with controlled structural fill per Section 5.3 of this report may be required prior to resuming work on subgrade soils.

Subgrade Protection and Maintenance: The site soils are moisture sensitive and will degrade if exposed to inclement weather, freeze-thaw cycles, or repeated construction traffic. However, if properly protected and maintained as recommended herein, the site soils will provide adequate support for the proposed construction. The site contractors should employ appropriate means and methods to protect the subgrade, including but not limited to the following:

- sealing exposed subgrade soils on a daily basis with a smooth drum roller operated in static mode;
- regrading the site as needed to maintain positive drainage away from open earthwork construction areas and to prevent standing water;
- removing wet surficial soils and ruts immediately; and
- limiting exposure to construction traffic and precipitation especially following inclement weather and subgrade thawing.

5.3 STRUCTURAL FILL & BACKFILL

Imported Fill Material: Imported material placed as structural fill or backfill to raise elevations or restore design grades should consist of clean, relatively well graded sand or gravel with a maximum particle size of three inches and up to 15 percent, by weight, of material finer than a #200 sieve. Imported material should be free of silt, clay, organics, and deleterious material. Imported material should be approved by a qualified geotechnical engineer prior to delivery to the site.

On-Site Material Reuse: The fine-grained marine deposit encountered throughout the site is marginally acceptable for reuse as structural fill and/or backfill because of its difficult workability. Reuse of the fine-grained soil will likely require extensive moisture conditioning and/or drying during extended periods of warm, dry weather to facilitate reuse, workability, and compaction in fill areas. The more granular portions of the existing fill may be suitable for reuse as structural fill and/or backfill, but the quantity is limited. Reuse of the site soils will be contingent on careful inspection in the field by the owner's geotechnical engineer.

Stringent quality control and inspection by the geotechnical engineer will be required for suitable portions of the on-site soils to be reused as structural fill and backfill, and to confirm that the soils are properly placed and compacted within two percent of their optimum moisture content.

Immediate re-use of on-site soils for structural fill or backfill should not be anticipated as the natural soils are moisture sensitive. On-site materials that are or become wet will require extensive handling, such as discing and aerating, which may not be practical during wet seasons or where site area is limited. In order to attempt the re-use of on-site soil, the contractor should cover stockpiled soils, seal subgrades each day with a smooth drum roller, and provide proper surface drainage during forecasted wet weather. Alternatively, imported fill materials may be required to expedite earthwork operations. The stripped surface cover materials should not be used as structural fill or backfill.

Submerged Fill: In the wet (flooding, perched water, or groundwater), consideration should be given to placing an open-graded, 0.75-inch crushed stone to provide a working mat, expedite dewatering efforts and enable subsequent placement of structural fill or backfill in the dry. Prior to placing submerged fill materials, free water and disturbed materials should be removed to the extent recommended by the geotechnical engineer. A fines barrier geotextile, such as *Mirafi 140N* or equivalent, should be placed at the base and sides of the overexcavation to separate the crushed stone from underlying and adjacent soils. The fabric also should be placed on top of the crushed stone prior to subsequent fill placement, if fill soils with a substantial amount of fines are to be used to restore grade.

Compaction and Placement Requirements: Fill and backfill should be placed in maximum 12-inch thick loose lifts when compacted using a vibratory drum roller with a minimum weight of one ton, and in maximum eight-inch thick loose lifts when compacted with a plate compactor. A sheepsfoot roller may be appropriate if fine-grained material is used as fill. Structural fill and backfill should be compacted to at least 95 percent of the maximum dry density within three percent of the optimum moisture content, as determined by ASTM D1557 (Modified Proctor).

Structural Fill Testing: A sample of the imported fill material or on-site material proposed for reuse as structural fill or backfill should be submitted to the owner's geotechnical engineer for analysis and approval at least one week prior to its use. The placement of fill and backfill should be monitored by a qualified engineering technician, such that the specified material and lift thicknesses are properly installed. A sufficient number of in-place density tests should be conducted, such that the specified compaction is achieved throughout the height of the fill or backfill.

5.4 GROUNDWATER CONTROL

Shallow groundwater was encountered within the borings during this investigation. In addition, perched/trapped water may be encountered during construction above non-permeable strata. As such, construction phase dewatering will consist of temporarily lowering the groundwater table and removing surface water runoff, infiltrating water, or trapped water. While construction phase dewatering may be possible by installing temporary sump pits and filtered pumps within trenches and excavations, depending on depth of excavation, groundwater level at time of construction, and rate of flow into the excavation, an enhanced dewatering system, such as well points, may be required.

Proper grading and drainage should be incorporated into the site design and construction phase grading to discourage ponding of surface runoff. Every effort should be made to maintain drainage of surface run-off away from construction areas by grading. The contractor should limit exposure of excavations and prepared subgrades to rainfall. Overexcavation of wet soils and replacement with controlled structural fill per Section 5.3 of this report may be required prior to resuming work on disturbed subgrade soils.

Because of the shallow groundwater, Whitestone recommends that permanent drainage measures be implemented. The permanent drainage should include a foundation perimeter drain close to the underside of footing level around the building and a network of interceptor drains extending from stormwater inlet structures within proposed pavement areas.

5.5 FOUNDATIONS

Whitestone considers that the proposed structure may be supported on conventional spread and continuous wall footings designed to bear on the natural marine deposit or structural fill placed on the marine deposit, provided these materials are properly evaluated, placed, and compacted in accordance with Sections 5.2, 5.3, and 5.11 of this report. Existing fill was not encountered in the five borings advanced within or close to the proposed building footprint, however, existing fill was encountered to a depth of more than six fbgs in boring B-14, north of the proposed building footprint. In addition, existing fill may be encountered during construction between the widely spaced borings and associated with the retaining to be removed. Therefore, overexcavation of existing fill under footings and replacement with structural fill may be required within a portion of the building footprint. Foundation subgrades in the marine deposit should be undercut by at least eight inches and replaced with minus 0.75-inch crushed stone wrapped in geotextile separation fabric (*Mirafi 140N*, or similar). Foundations bearing on suitably prepared subgrades may be designed to impart a maximum allowable net bearing pressure of 3,000 pounds per square foot. Regardless of loading conditions, new foundations should be sized no less than minimum dimensions of 24 inches for continuous wall footings and 36 inches for isolated column footings.

Foundation subgrades should be compacted with a roller operated in static mode in the presence of the geotechnical engineer to densify any disturbed soils. The fine-grained soils are susceptible to disturbance by vibrations from compaction equipment and other construction activity. Compaction should therefore only be attempted under the direction of the geotechnical engineer, such that the underlying fine-grained materials do not become disturbed by the compaction process. A smooth bladed bucket would be appropriate for excavation of the fine-grained soils. Consideration should be given to the option of placing geotextile separation fabric and a few inches of crushed stone over the fine-grained soils exposed in the bottom of foundation excavations to reduce the likelihood of disturbance and provide a working surface for formwork and reinforcing steel placement.

Footings should be designed such that the maximum toe pressure due to the combined effect of vertical loads (including soil weight) and overturning moment does not exceed the recommended maximum allowable bearing pressure. In addition, positive contact pressure should be maintained throughout the base of the footings such that no uplift or tension exists between the base of the footings and the

supporting soil. Uplift loads should be resisted by the weight of the concrete footing. Side friction should be neglected when proportioning the footings, and lateral resistance should be provided by friction resistance at the base of the footings. A coefficient of friction (ultimate) against sliding of 0.3 is recommended for use in the design of concrete foundations bearing within the site soils or imported structural fill.

Foundation Inspection/Overexcavation Criteria: Whitestone recommends that the suitability of the bearing materials along new footing bottoms be reviewed by a geotechnical engineer prior to placing concrete for the footings. Special attention should be given to any areas of the site underlain by soft/loose conditions. In the event that isolated areas of unsuitable materials are encountered in footing excavations, overexcavation and replacement of the materials or deeper foundation embedment may be necessary to provide a suitable footing subgrade. Overexcavation to be restored with structural fill should extend at least one foot laterally beyond footing edges for each vertical foot of overexcavation. Lateral overexcavation may be eliminated if grade is restored with lean concrete.

Settlement: Whitestone estimates post construction settlements of new building foundations will be on the order of less than one inch, if the recommendations outlined in this report are properly implemented. Differential settlements of new building foundations should be less than about one half inch.

Frost Coverage: Footings subject to frost action should be placed at least 48 inches below adjacent exterior grades, in accordance with the *State of New Hampshire Building Code* to provide protection from frost penetration. Interior footings not subject to frost action (including during construction) may be placed at a minimum depth of 18 inches below the slab subgrade, but should not be placed on existing fill.

5.6 FLOOR SLAB

Whitestone anticipates that the properly inspected and approved marine deposit, or existing fill improved with surface compaction, and/or compacted structural fill will be suitable for support of the proposed floor slab provided these materials are properly evaluated, compacted, and proofrolled in accordance with Sections 5.2, 5.3, and 5.11 of this report during favorable weather conditions. Areas that are, or become, softened or disturbed as a result of wetting and/or repeated exposure to construction traffic or contain objectionable materials should be removed and replaced with compacted structural fill. The properly prepared on-site soils are expected to yield a minimum subgrade modulus (k) of 150 psi/in.

A minimum 12-inch thick layer of NHDOT *304.3 Crushed Gravel* (or approved equivalent) should be placed below the floor slab to provide a uniform subbase. A moisture vapor barrier should be installed beneath the floor slab in accordance with flooring manufacturer's recommendations. A moisture vapor barrier should also be installed if the floor supports moisture-sensitive equipment.

5.7 PAVEMENT DESIGN CRITERIA

General: Whitestone anticipates that the properly inspected and approved marine deposit, or existing fill improved with surface compaction, and/or compacted structural fill placed to raise or restore design elevations will be suitable for support of the proposed pavements, provided these materials are properly evaluated, compacted, and proofrolled in accordance with Sections 5.2, 5.3, and 5.11 of this report during favorable weather conditions.

Design Criteria: A California Bearing Ratio of 5.0 has been assigned to the properly prepared subgrade soils for pavement design purposes. This value was correlated with pertinent soil support values and assumed traffic loads to prepare flexible and rigid pavement designs per the AASHTO *Guide for the Design of Pavement Structures*.

Design traffic loads were assumed based on typical volumes for similar facilities and correlated with 18-kip equivalent single axle loads (ESAL) for a 20-year life. Estimated maximum pavement loads of 30,000 ESALs and 75,000 ESALs were used for the standard-duty and heavy-duty pavement areas, respectively. These values assume the pavements primarily will accommodate both automobile and limited heavier truck traffic, with the heavier truck traffic designated to the main drive lanes. Actual loading experienced is anticipated to be less than these values.

Pavement Sections: Pavement components should meet material specifications from NHDOT *Standard Specifications* specified below. The recommended flexible pavement sections are tabulated below:

FLEXIBLE PAVEMENT SECTION			
LAYER	**Material**	**Standard-Duty Thickness (inches)**	**Heavy-Duty Thickness (inches)**
Asphalt Surface Course	NHDOT "Wearing Course"	1.5	1.5
Asphalt Binder Course	NHDOT "Binder Course"	1.5	2.5
Granular Subbase	NHDOT 304.3 Crushed Gravel	12.0	12.0

A rigid concrete pavement should be used to provide suitable support at areas of high traffic or severe turns, such as at the drive-thru, trash enclosure, and ingress/egress locations. The recommended rigid pavement is tabulated below:

RIGID PAVEMENT SECTION		
LAYER	**Material**	**Thickness (inches)**
Surface	4,000 psi Air-Entrained Concrete	6.0[1]
Granular Subbase	NHDOT 304.3 Crushed Gravel	12.0

Note [1]: The outer edges of concrete pavements are susceptible to damage as trucks move from rigid pavement to adjacent flexible pavement. Therefore, the thickness at the outer two feet of the rigid concrete pavement should be 12 inches. The concrete should be reinforced with at least one layer of six-inch by six-inch W5.4/W5.4 welded wire fabric (ASTM A185).

Pavement Drainage Systems: Because of the shallow groundwater, Whitestone recommends installing a network of interceptor drains extending from stormwater inlet structures to improve drainage within proposed pavement areas. Interceptor drains typically consist of top perforated polyvinyl chloride (PVC) piping within a 12-inch by 12-inch, clean 0.75-inch crushed stone layer surrounded by a fines separation fabric. For the fine-grained soils present on the subject site, a woven fabric, such as long term clog resistant *Mirafi FW700*, or approved equivalent, is recommended. Interceptor drains should be designed to pitch towards and discharge into the stormwater drainage system. The pipes should have a minimum slope of 0.5 percent.

Additional Design Considerations: The pavement section thickness designs presented in this report are based on the design parameters detailed herein and are contingent on proper construction, inspection, and maintenance. Additional pavement thickness may be required by local code. The designs are contingent on achieving the minimum soil support value in the field. To accomplish this requirement, subgrade soil and supporting fill or backfill should be placed, compacted, and evaluated in accordance with Sections 5.2, 5.3, and 5.11 of this report. Proper drainage should be provided for the pavement structure, including appropriate grading and surface water control, a network of interceptor drains, and an edge drain where the pavement abuts higher ground.

The performance of the pavement also will depend on the quality of materials and workmanship. Whitestone recommends that NHDOT standards for materials, workmanship, and maintenance be applied to this site. Project specifications should include verifying that the installed asphaltic concrete material composition is within tolerance for the specified materials and that the percentage of air voids of the installed pavement is within specified ranges for the respective materials. Rigid concrete pavements should be suitably air-entrained, jointed, and reinforced in general accordance with ACI 330R-08 *Guide for the Design and Construction of Concrete Parking Lots*.

5.8 RETAINING WALLS/BELOW GRADE WALLS

Proposed site retaining walls were not indicated at this time. Whitestone should be notified if retaining walls or structures resisting lateral earth pressures are planned. The following recommendations are provided for preliminary planning of any retaining walls, below-grade walls, and other structures reliant on granular materials to provide adequate drainage. However, the parameters are not directly applicable to the design of mechanically stabilized earth (MSE) retaining walls, which require proprietary design methods for the selected earth retention system.

Lateral Earth Pressures: Retaining/below-grade walls should be capable of withstanding active and at-rest earth pressures. With an active earth pressure coefficient (K_a) of 0.33 and assuming a level backfill and an assumed maximum backfill soil unit weight of 140 pounds per cubic foot (pcf), an equivalent fluid pressure of 46 psf per foot of wall height should be used in design of retaining/below-grade walls which are free to rotate.

Retaining/below-grade walls and wall corners typically are restrained from lateral movement and should be designed using at-rest earth pressures. A coefficient of at-rest earth pressure (K_o) of 0.5, for a level backfill, is recommended for retaining/below-grade walls designed to resist at-rest earth pressures, which assume no lateral movement. With an assumed maximum total unit weight of backfill of approximately 140 pcf, an equivalent fluid pressure of 70 psf of wall height should be used in design of restrained retaining/below-grade wall and wall corners. A coefficient of friction of 0.3 against sliding can be used for concrete on the existing site soils. Additional lateral earth pressures from a sloped backfill or any temporary or long-term surcharge loads also should be included in the design. Retaining wall design should include a global stability analysis.

Backfill Criteria: Whitestone recommends that granular soils be used to backfill behind retaining walls. The granular backfill materials should consist of clean, relatively well-graded sand or gravel with a maximum particle size of three inches and up to 15 percent of material finer than a #200 U.S. Standard sieve.

Whitestone recommends that backfill directly behind any walls be compacted with light, hand-held compactors. Heavy compactors and grading equipment should not be allowed to operate within a zone of influence measured at a 45-degree angle from the base of the walls during backfilling to avoid developing excessive temporary or long-term lateral soil pressures.

Wall Drainage: Positive drainage should be provided at the base of the below-grade walls. Where wall drainage is not provided, the wall should be designed to withstand full hydrostatic pressure. All below grade walls should also include a minimum 18 inches of open graded stone backfill immediately adjacent to the wall that re-directs water from the building. Geotextile separation fabric should be placed between the open graded stone and the site soils.

Whitestone should be notified if any retaining structures or design considerations requiring lateral earth pressure estimations are proposed. Specific recommendations for temporary retaining structures are beyond Whitestone's scope of services.

5.9 SEISMIC & LIQUEFACTION CONSIDERATIONS

The subsurface conditions are most consistent with a Site Class D, as defined by the *State of New Hampshire Building Code*. Based on the building type (single story), seismic zone, and soil profile, liquefaction considerations are not expected to have a substantial impact on design.

5.10 EXCAVATIONS

The site soils encountered during this investigation typically are, at a minimum, consistent with Type C Soil Conditions as defined by 29 CFR Part 1926 (OSHA), which require a maximum unbraced excavation angle of 1.5:1 (horizontal:vertical). Actual conditions encountered during construction should be evaluated by a competent person (as defined by OSHA), such that safe excavation methods and/or shoring and bracing requirements are implemented.

5.11 SUPPLEMENTAL POST INVESTIGATION SERVICES

Structural & Grading Plan Review: Whitestone should be provided with the final structural and grading plans to review and confirm the final design plans are consistent with the recommendations in this report. Whitestone should review site grading and proposed fill placement.

Construction Inspection and Monitoring: Earthwork inspections, testing, and consultation should be conducted during construction as described in previous sections of this report. Monitoring and testing should also be conducted to confirm that any encountered underground structures are properly backfilled, the existing surface cover materials are properly removed, and suitable materials, used for controlled fill, are properly placed and compacted over suitable subgrade soils. Overexcavation of any existing fill beneath proposed foundations and proofrolling of all subgrades prior to foundation, slab, and pavement support should be witnessed and documented by the owner's geotechnical engineer to confirm earthwork is conducted in accordance with the recommendations herein.

SECTION 6.0
General Comments

Supplemental recommendations may be required upon finalization of construction plans or if significant changes are made in the characteristics or location of the proposed structure. Soil bearing conditions should be checked at the appropriate time for consistency with those conditions encountered during Whitestone's geotechnical investigation.

The recommendations presented herein should be utilized by a qualified engineer in preparing the project plans and specifications. The engineer should consider these recommendations as minimum physical standards, which may be superseded by local and regional building codes and structural considerations. These recommendations are prepared for the sole use of the McDonald's USA, LLC for the specific project detailed and should not be used by any third party. These recommendations are relevant to the design phase and should not be substituted for construction specifications.

The possibility exists that conditions between borings may differ from those at specific test locations, and conditions may not be as anticipated by the designers or contractors. In addition, the construction process may alter soil and rock conditions. Therefore, experienced geotechnical personnel should observe and document the construction procedures used and the conditions encountered.

Whitestone assumes that a qualified contractor will be employed to conduct the construction work, and that the contractor will be required to exercise care to ensure excavations are conducted in accordance with applicable regulations and good practice. Particular attention should be paid to avoiding damaging or undermining adjacent buildings/properties and maintaining slope stability.

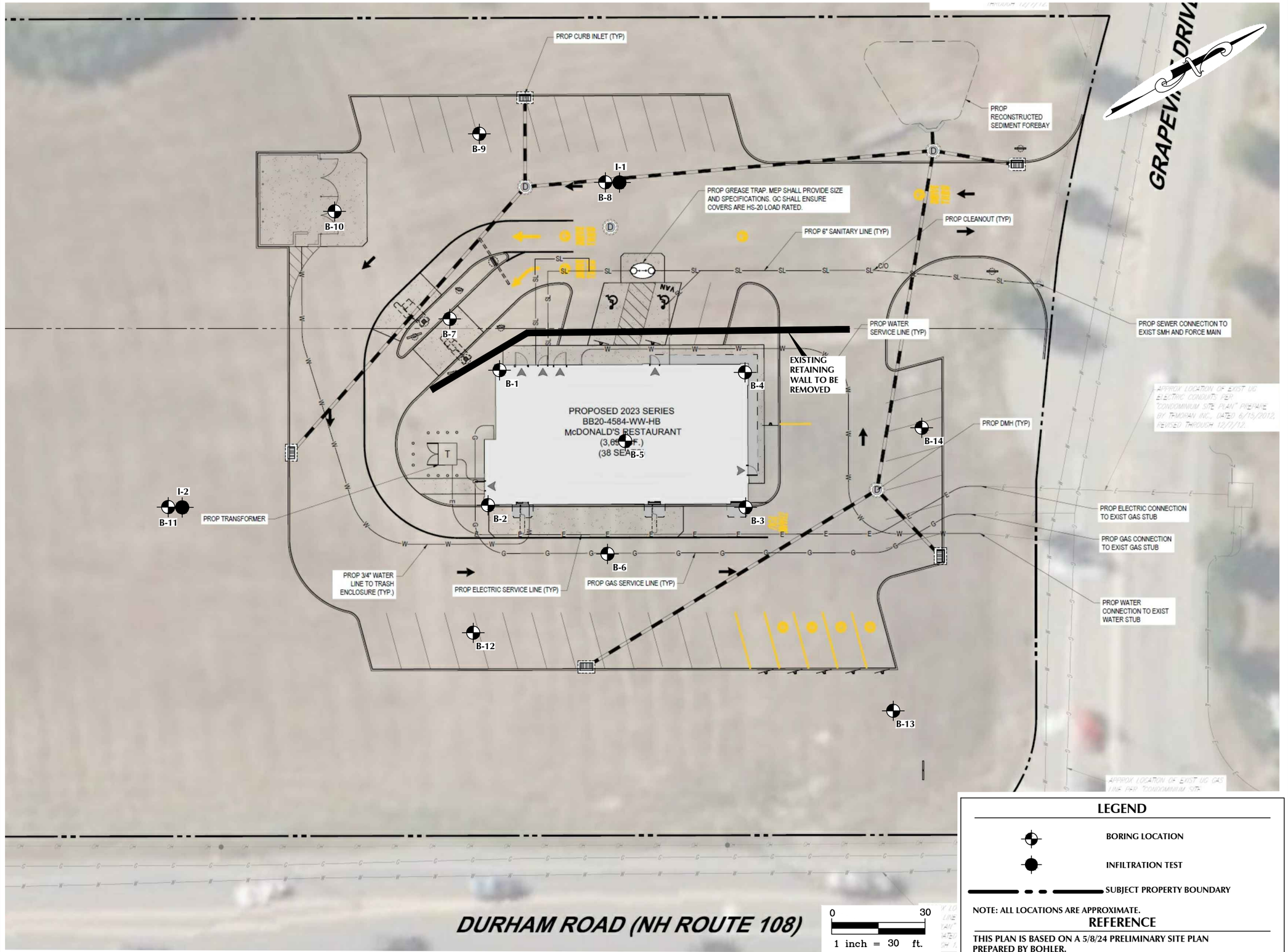
Whitestone recommends that the services of the geotechnical engineer be engaged to test and evaluate the materials in the footing excavations prior to concreting in order to determine that the materials will support the bearing pressures. Monitoring and testing also should be conducted to check that suitable materials are used for controlled fills and that they are properly placed and compacted over suitable subgrade.

The exploration and analysis of the foundation conditions reported herein are considered sufficient in detail and scope to form a reasonable basis for the foundation design. The recommendations submitted for the proposed construction are based on the available soil information and the design details furnished by McDonald's USA, LLC and Bohler Engineering MA, LLC. Deviations from the noted subsurface conditions encountered during construction should be brought to the attention of the geotechnical engineer.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been promulgated after being prepared in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology. No other warranties, express or implied, are made.

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FIGURE 1
Boring Location Plan



LEGEND

- BORING LOCATION
- INFILTRATION TEST
- SUBJECT PROPERTY BOUNDARY

NOTE: ALL LOCATIONS ARE APPROXIMATE.

REFERENCE

THIS PLAN IS BASED ON A 5/8/24 PRELIMINARY SITE PLAN PREPARED BY BOHLER.

WHITESTONE
An Employee-Owned Company
3 EXECUTIVE PARK DRIVE, SUITE 202, BEDFORD, NH 03110
PHONE: 603.514.2230 WHITESTONEASSOC.COM

DRAWING TITLE: **BORING LOCATION PLAN**

CLIENT: McDONALD'S USA, LLC

PROJECT: PROPOSED McDONALD'S RESTAURANT # 28-0178
NH ROUTE 108 & GRAPEVINE DRIVE
DOVER, NEW HAMPSHIRE

PROJECT #: GM2421922.000	
DESIGNED BY: MR	PROJ. MGR.: RR
DATE: 5/31/24	FIGURE: 1
SCALE: 1" = 30'	

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APPENDIX A
Records of Subsurface Exploration

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RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-1

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	22.0 feet bgs	**Date Completed:**	5/28/2024				
Proposed Location:	Building	**Logged By:**	ZH	**During:**	5.0 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1		WOH - 1 - 3 - 5	16	4		TS		6" Topsoil	
									Gray-Brown, Very Loose to Loose, Sandy Silt (ML)	
2 - 4	S-2		4 - 4 - 7 - 9	24	11				As Above, Gray, Medium Dense (ML)	
						5.0 ▽				
5 - 7	S-3		3 - 4 - 5 - 6	24	9				As Above, Gray-Brown, Loose (ML)	
7 - 9	S-4		4 - 6 - 5 - 6	24	11				As Above, Medium Dense (ML)	
						10.0				
10 - 12	S-5		3 - 4 - 6 - 6	21	10		MARINE DEPOSIT		As Above, Brown, Loose to Medium Dense (ML)	
						15.0				
15 - 17	S-6		1 - 1 - 1 - 3	22	2				As Above, Gray, Very Loose (ML)	
						20.0				
20 - 22	S-7		2 - 1 - 2 - 4	22	3				As Above, Gray-Brown (ML)	
						25.0			Boring Log B-1 Terminated at Depth of 22.0 feet below ground surface.	

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-2

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024	**Water Depth | Elevation (feet bgs) | (ft NAVD88)**		**Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)**
Termination Depth:	19.0 feet bgs	**Date Completed:**	5/28/2024			
Proposed Location:	Building	**Logged By:**	ZH	**During:**	2.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	7.0 | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	1 - 2 - 2 - 3	21	4		TS		3" Topsoil	
							SUBSOIL		9" Subsoil, Roots	
									Gray-Brown, Very Loose to Loose, Sandy Silt (ML)	
2 - 4	S-2	X	3 - 4 - 7 - 9	24	11				As Above, Medium Dense (ML)	
						5.0				
5 - 7	S-3	X	4 - 4 - 5 - 5	24	9				As Above, Loose (ML)	
7 - 9	S-4	X	5 - 5 - 5 - 6	24	10				As Above, Loose to Medium Dense (ML)	
						10.0	MARINE DEPOSIT			
10 - 12	S-5	X	2 - 3 - 5 - 5	24	8				As Above, Loose (ML)	
						15.0				
15 - 17	S-6	X	WOH - 1 - 2 - 2	24	3				As Above, Very Loose (ML)	
17 - 19	S-7	X	1 - 2 - 2 - 1	22	4				As Above, Very Loose to Loose (ML)	
						20.0			Boring Log B-2 Terminated at Depth of 19.0 feet below ground surface.	
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-3

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		
Termination Depth:	19.0 feet bgs	**Date Completed:**	5/28/2024		
Proposed Location:	Building	**Logged By:**	ZH	**During:** 7.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	3 - 4 - 5 - 6	21	9		TS		9" Topsoil	
							SUBSOIL		10" Subsoil	
2 - 4	S-2	X	4 - 7 - 5 - 6	15	12				Gray-Brown, Medium Dense, Silty Sand (SM)	
						5.0				
5 - 7	S-3	X	3 - 4 - 6 - 7	22	10				As Above, Loose to Medium Dense (SM)	
7 - 9	S-4	X	6 - 6 - 6 - 7	23	12				As Above, Medium Dense (SM)	
						10.0	MARINE DEPOSIT			
10 - 12	S-5	X	4 - 6 - 9 - 8	24	15				As Above, Brown (SM)	
						15.0				
15 - 17	S-6	X	3 - 5 - 6 - 4	16	11				As Above, Gray to Brown (SM)	
17 - 19	S-7	X	2 - 2 - 7 - 13	24	9				As Above, Gray-Brown, Loose (SM)	
						20.0			Boring Log B-3 Terminated at Depth of 19.0 feet below ground surface.	
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

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RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-4

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		
Termination Depth:	19.0 feet bgs	**Date Completed:**	5/28/2024		
Proposed Location:	Building	**Logged By:**	ZH	**During:** 7.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	2 - 3 - 4 - 4	21	7		TS		8" Topsoil	
							SUBSOIL		11" Subsoil	
2 - 4	S-2	X	4 - 5 - 4 - 7	16	9				Gray-Brown, Loose, Silty Sand (SM)	
						5.0				
5 - 7	S-3	X	2 - 3 - 5 - 6	22	8				As Above (SM)	
7 - 9	S-4	X	5 - 6 - 7 - 9	24	13				As Above, Medium Dense (SM)	
						10.0	MARINE DEPOSIT			
10 - 12	S-5	X	2 - 2 - 5 - 7	24	7				As Above, Loose (SM)	
						15.0				
15 - 17	S-6	X	1 - 2 - 3 - 2	24	5				As Above (SM)	
17 - 19	S-7	X	5 - 7 - 8 - 8	24	15				As Above, Brown, Medium Dense (SM)	
						20.0			Boring Log B-4 Terminated at Depth of 19.0 feet below ground surface.	
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

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RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-5

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	19.0 feet bgs	**Date Completed:**	5/28/2024				
Proposed Location:	Building	**Logged By:**	ZH	**During:**	7.0 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	2 - 3 - 5 - 5	20	8		TS		3" Topsoil	
							SUBSOIL		5" Subsoil, Roots	
									Brown, Loose, Sandy Silt (ML)	
2 - 4	S-2	X	4 - 6 - 5 - 5	18	11				As Above, Gray-Brown, Medium Dense (ML)	
						5.0				
5 - 7	S-3	X	3 - 4 - 5 - 5	20	9				As Above, Gray, Loose (ML)	
7 - 9	S-4	X	5 - 6 - 5 - 6	22	11				As Above, Gray-Brown, Medium Dense (ML)	
						10.0	MARINE DEPOSIT			
10 - 12	S-5	X	4 - 5 - 8 - 8	23	13				As Above, Brown (ML)	
						15.0				
15 - 17	S-6	X	3 - 6 - 5 - 5	18	11				As Above (ML)	
17 - 19	S-7	X	2 - 3 - 6 - 10	23	9				As Above, Loose (ML)	
						20.0			Boring Log B-5 Terminated at Depth of 19.0 feet below ground surface.	
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-6

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/28/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	17.0 feet bgs	**Date Completed:**	5/28/2024				
Proposed Location:	Grease Trap	**Logged By:**	ZH	**During:**	7.0 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	1 - 1 - 2 - 3	19	3		TS		4" Topsoil	
							SUBSOIL		7" Subsoil, Roots	
									Gray, Loose, Sandy Silt (ML)	
2 - 4	S-2	X	3 - 3 - 6 - 8	22	9				As Above (ML)	
						5.0				
5 - 7	S-3	X	4 - 5 - 4 - 4	24	9				As Above (ML)	
7 - 9	S-4	X	4 - 5 - 5 - 5	24	10				As Above, Gray-Brown, Loose to Medium Dense (ML)	
							MARINE DEPOSIT			
						10.0				
10 - 12	S-5	X	2 - 3 - 4 - 6	23	7				As Above, Brown, Loose (ML)	
						15.0				
15 - 17	S-6	X	WOH - 1 - 1 - 1	24	2				As Above, Gray, Very Loose (ML)	
									Boring Log B-6 Terminated at Depth of 17.0 feet below ground surface.	
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-7

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		
Termination Depth:	12.0 feet bgs	**Date Completed:**	5/29/2024		
Proposed Location:	Drive-thru / Order Boards	**Logged By:**	ZH	**During:** 5.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1		WOH - 2 - 2 - 8	15	4		TS		5" Topsoil	
							SUBSOIL		6" Subsoil, Roots	
2 - 4	S-2		8 - 10 - 8 - 6	18	18				Brown, Loose, Silty Sand (SM)	
						5.0			As Above, Gray-Brown, Medium Dense (SM)	
5 - 7	S-3		3 - 2 - 4 - 3	24	6		MARINE DEPOSIT		Gray-Brown, Loose, Sandy Silt (ML)	
7 - 9	S-4		4 - 5 - 5 - 6	24	10				As Above, Loose to Medium Dense (ML)	
						10.0				
10 - 12	S-5		6 - 8 - 6 - 6	24	14				As Above, Gray, Medium Dense (ML)	
						15.0			Boring Log B-7 Terminated at Depth of 12.0 feet below ground surface.	
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-8

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		
Termination Depth:	7.0 feet bgs	**Date Completed:**	5/29/2024		
Proposed Location:	SWM Area	**Logged By:**	ZH	**During:** 6.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		5" Topsoil	
							SUBSOIL		7" Subsoil, Roots	
1 - 3	S-1	X	2 - 3 - 4 - 5	23	7				Gray, Loose, Sandy Silt (ML)	
3 - 5	S-2	X	5 - 6 - 8 - 10	18	14		MARINE DEPOSIT		As Above, Medium Dense (ML)	
						5.0				
5 - 7	S-3	X	3 - 3 - 8 - 8	12	11				As Above, Gray-Brown (ML)	
									Boring Log B-8 Terminated at Depth of 7.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-9

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	7.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	Parking	**Logged By:**	ZH	**During:**	-- | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		6" Topsoil	
							SUBSOIL		6" Subsoil, Roots	
1 - 3	S-1	X	2 - 3 - 4 - 4	15	7		MARINE DEPOSIT		Gray- Brown, Loose, Sandy Silt (ML)	
3 - 5	S-2	X	4 - 6 - 9 - 11	21	15	5.0			As Above, Medium Dense (ML)	
5 - 7	S-3	X	3 - 4 - 10 - 9	20	14				As Above, Gray (ML)	
									Boring Log B-9 Terminated at Depth of 7.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-10

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	11.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	Dumpster Pad	**Logged By:**	ZH	**During:**	5.5 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		4" Topsoil	
							SUBSOIL		5" Subsoil, Roots	
1 - 3	S-1	X	3 - 6 - 6 - 8	24	12				Gray-Brown, Medium Dense, Sandy Silt (ML)	
3 - 5	S-2	X	2 - 5 - 5 - 9	17	10				As Above, Gray, Loose to Medium Dense (ML)	
						5.0				
5 - 7	S-3	X	5 - 7 - 7 - 8	24	14		MARINE DEPOSIT		As Above, Medium Dense (ML)	
7 - 9	S-4	X	6 - 7 - 6 - 6	24	13				As Above, Brown (ML)	
9 - 11	S-5	X	3 - 3 - 3 - 4	9	6	10.0			As Above, Loose (ML)	
									Boring Log B-10 Terminated at Depth of 11.0 feet below ground surface.	
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-11

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		
Termination Depth:	7.0 feet bgs	**Date Completed:**	5/29/2024		
Proposed Location:	SWM Area	**Logged By:**	ZH	**During:** 3.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		5" Topsoil	
							SUBSOIL		7" Subsoil, Roots	
1 - 3	S-1	X	2 - 4 - 8 - 11	24	12				Gray-Brown, Medium Dense, Silty Sand (SM)	
3 - 5	S-2	X	3 - 6 - 9 - 15	20	15		MARINE DEPOSIT		As Above (SM)	
						5.0				
5 - 7	S-3	X	4 - 6 - 8 - 12	12	14				As Above, Brown (SM)	
									Boring Log B-11 Terminated at Depth of 7.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-12

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	6.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	Parking	**Logged By:**	ZH	**During:**	2.0 | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		4" Topsoil; 3" Subsoil, Roots	
0 - 2	S-1		1 - 2 - 3 - 5	24	5				Gray-Brown, Loose, Sandy Silt (ML)	
2 - 4	S-2		6 - 9 - 11 - 11	24	20		MARINE DEPOSIT		As Above, Medium Dense (ML)	
4 - 6	S-3		4 - 6 - 6 - 9	11	12	5.0			As Above (ML)	
									Boring Log B-12 Terminated at Depth of 6.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-13

Page 1 of 1

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

				Water Depth | Elevation (feet bgs) | (ft NAVD88)	Cave-In Depth | Elevation (feet bgs) | (ft NAVD88)
Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		
Termination Depth:	17.0 feet bgs	**Date Completed:**	5/29/2024		
Proposed Location:	Sign	**Logged By:**	ZH	**During:** 7.0 | --	
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:** -- | --	**At Completion:** -- | --
		Equipment:	CME 55LC	**24 Hours:** -- | --	**24 Hours:** -- | --

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
							TS		6" Topsoil	
							SUBSOIL		6" Subsoil, Roots	
1 - 3	S-1	X	5 - 6 - 15 - 28	24	21		EXISTING FILL		Brown, Medium Dense, Silty Sand with Gravel (FILL)	
3 - 5	S-2	X	18 - 13 - 10 - 15	20	23	4.0			As Above (FILL)	
						5.0			Gray, Medium Dense, Sandy Silt (ML)	
5 - 7	S-3	X	4 - 5 - 10 - 12	18	15				As Above (ML)	
7 - 9	S-4	X	12 - 14 - 15 - 15	24	29				As Above (ML)	
						10.0				
10 - 12	S-5	X	2 - 3 - 7 - 10	23	10		MARINE DEPOSIT		Brown, Loose to Medium Dense, Silty Sand (SM)	
						15.0				
15 - 17	S-6	X	4 - 2 - 3 - 4	17	5				Brown, Loose, Sandy Silt (ML)	
									Boring Log B-13 Terminated at Depth of 17.0 feet below ground surface.	
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-14

Project:	Proposed McDonald's Restaurant #28-0178	**WAI Project No.:**	GM2421922.000
Location:	NH Route 108 & Grapevine Drive, Dover, Strafford County, New Hampshire	**Client:**	McDonald's USA, LLC

Surface Elevation:	± NS feet Above NAVD88	**Date Started:**	5/29/2024		**Water Depth | Elevation** (feet bgs) | (ft NAVD88)		**Cave-In Depth | Elevation** (feet bgs) | (ft NAVD88)
Termination Depth:	6.0 feet bgs	**Date Completed:**	5/29/2024				
Proposed Location:	Parking	**Logged By:**	ZH	**During:**	-- | --		
Drill / Test Method:	HSA / SPT (Autohammer)	**Contractor:**	DE	**At Completion:**	-- | --	**At Completion:**	-- | --
		Equipment:	CME 55LC	**24 Hours:**	-- | --	**24 Hours:**	-- | --

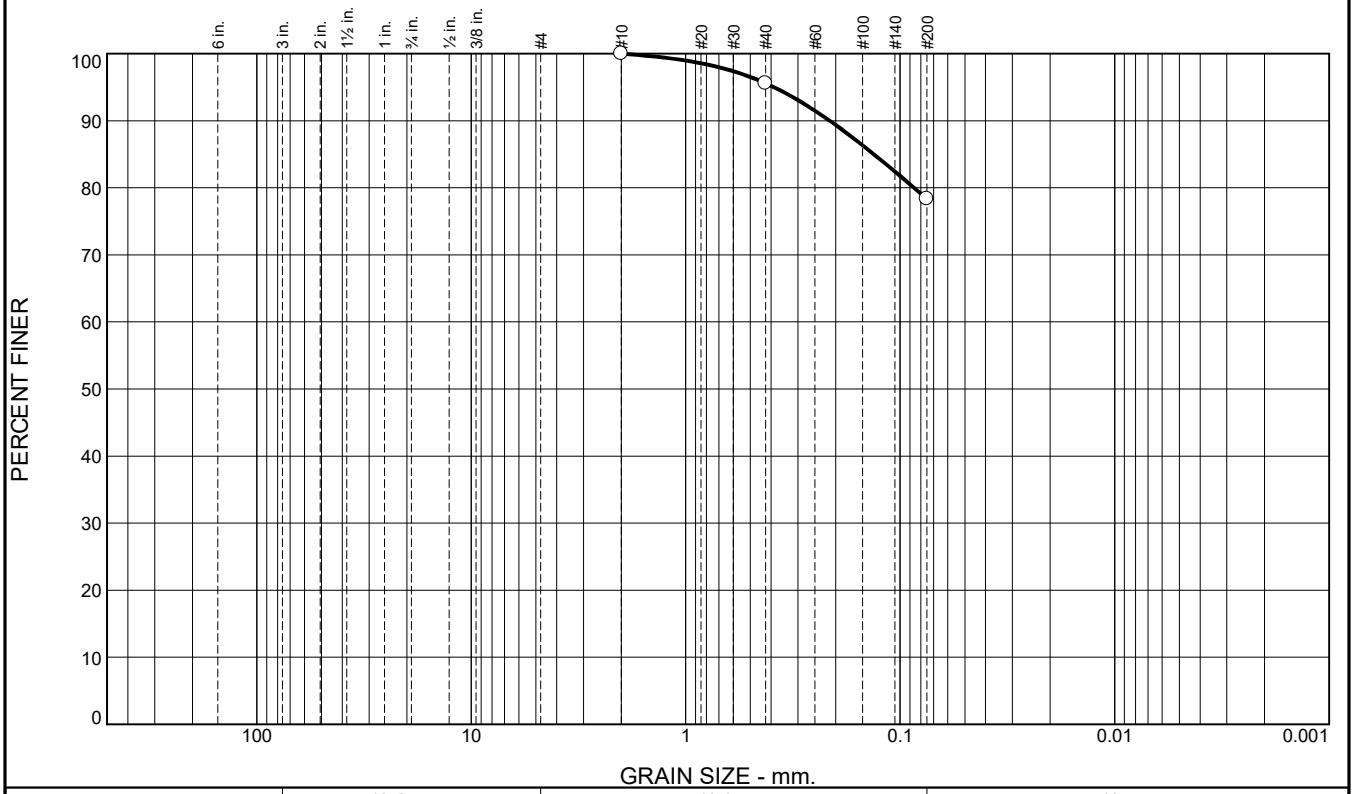
SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1	X	2 - 6 - 22 - 16	22	28		TS		5" Topsoil	
							SUBSOIL		5" Subsoil, Roots	
							EXISTING FILL		Brown, Dense, Silty Sand with Gravel (FILL)	
2 - 4	S-2	X	6 - 7 - 25 - 33	24	32				As Above (FILL)	
4 - 6	S-3	X	15 - 22 - 15 - 14	22	37	5.0			As Above, Gray-Brown (FILL)	
									Boring Log B-14 Terminated at Depth of 6.0 feet below ground surface.	
						10.0				
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, msl = mean sea level, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

APPENDIX B
Laboratory Test Results

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.4	17.3	78.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#40	95.6		
#200	78.3		

* (no specification provided)

Material Description

Silt with Sand

Atterberg Limits

PL= NP LL= NV PI= NV

Coefficients

D_{90}= 0.2137 D_{85}= 0.1331 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Moisture Content: 26.9%

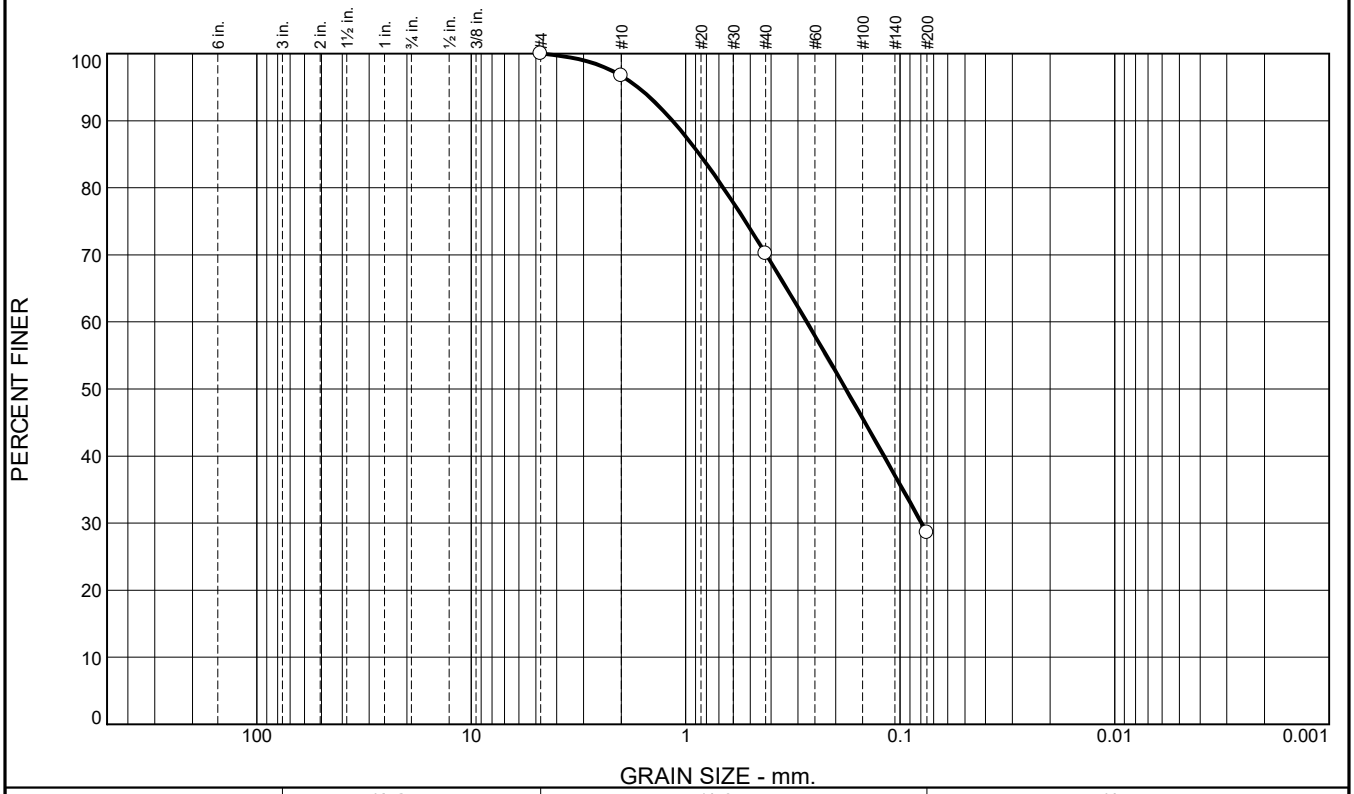
Location: B-2
Sample Number: S-2 **Depth:** 2' - 4' **Date:** 6/4/24

WHITESTONE

Client: McDonald's USA, LLC
Project: Proposed McDonald's Restaurant #28-0178
NH Route 108 & Grapevine Drive, Dover, Strafford County, NH
Project No: GM2421922.000 **Figure** S-1

Tested By: MM **Checked By:** RWM

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	3.3	26.5	41.6	28.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	96.7		
#40	70.2		
#200	28.6		

* (no specification provided)

Material Description

Silty Sand

Atterberg Limits

PL= NP LL= NV PI= NV

Coefficients

D_{90}= 1.1558 D_{85}= 0.8638 D_{60}= 0.2730
D_{50}= 0.1795 D_{30}= 0.0795 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Moisture Content: 33.0%

Location: B-4
Sample Number: S-3 **Depth:** 5' - 7' **Date:** 6/4/24

WHITESTONE

Client: McDonald's USA, LLC
Project: Proposed McDonald's Restaurant #28-0178
NH Route 108 & Grapevine Drive, Dover, Strafford County, NH
Project No: GM2421922.000 **Figure** S-2

Tested By: MM **Checked By:** RWM

WHITESTONE

APPENDIX C
Supplemental Information (USCS, Terms & Symbols)

WHITESTONE
An Employee-Owned Company

3 EXECUTIVE PARK DRIVE
SUITE 202
BEDFORD, NH 03110
813.851.0690
whitestoneassoc.com

UNIFIED SOIL CLASSIFICATION SYSTEM

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMITS LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMITS GREATER THAN 50	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS FOR SAMPLES WITH 5% TO 12% FINES

GRADATION*

% FINER BY WEIGHT

TRACE..... 1% TO 10%
LITTLE..... 10% TO 20%
SOME..... 20% TO 35%
AND..... 35% TO 50%

COMPACTNESS*
Sand and/or Gravel

RELATIVE DENSITY

LOOSE. ..... 0% TO 40%
MEDIUM DENSE.... 40% TO 70%
DENSE..... 70% TO 90%
VERY DENSE..... 90% TO 100%

CONSISTENCY*
Clay and/or Silt

RANGE OF SHEARING STRENGTH IN POUNDS PER SQUARE FOOT

VERY SOFT..... LESS THAN 250
SOFT..... ..... 250 TO 500
MEDIUM..... 500 TO 1000
STIFF..... 1000 TO 2000
VERY STIFF..... 2000 TO 4000
HARD..... GREATER THAN 4000

** VALUES ARE FROM LABORATORY OR FIELD TEST DATA, WHERE APPLICABLE. WHEN NO TESTING WAS PERFORMED, VALUES ARE ESTIMATED.*

L:\Geotechnical Forms and References\Reports\USCSTRMSSYM MA.docx

WHITESTONE
An Employee-Owned Company

3 EXECUTIVE PARK DRIVE
SUITE 202
BEDFORD, NH 03110
813.851.0690
whitestoneassoc.com

GEOTECHNICAL TERMS AND SYMBOLS

SAMPLE IDENTIFICATION

The Unified Soil Classification System is used to identify the soil unless otherwise noted.

SOIL PROPERTY SYMBOLS

N: Standard Penetration Value: Blows per ft. of a 140 lb. hammer falling 30" on a 2" O.D. split-spoon.
Qu: Unconfined compressive strength, TSF.
Qp: Penetrometer value, unconfined compressive strength, TSF.
Mc: Moisture content, %.
LL: Liquid limit, %.
PI: Plasticity index, %.
δd: Natural dry density, PCF.
▼: Apparent groundwater level at time noted after completion of boring.

DRILLING AND SAMPLING SYMBOLS

NE: Not Encountered (Groundwater was not encountered).
SS: Split-Spoon - 1 ⅜" I.D., 2" O.D., except where noted.
ST: Shelby Tube - 3" O.D., except where noted.
AU: Auger Sample.
OB: Diamond Bit.
CB: Carbide Bit
WS: Washed Sample.

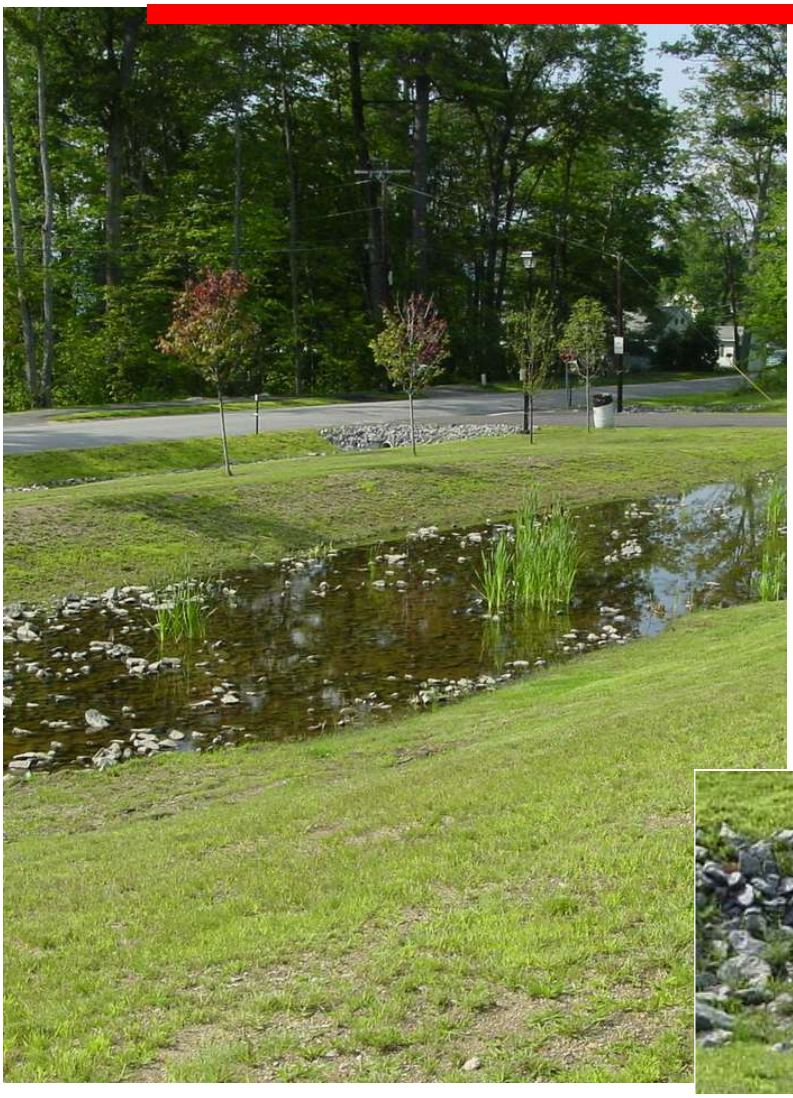
RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

Term (Non-Cohesive Soils)	Standard Penetration Resistance
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

Term (Cohesive Soils)	Qu (TSF)
Very Soft	0 - 0.25
Soft	0.25 - 0.50
Firm (Medium)	0.50 - 1.00
Stiff	1.00 - 2.00
Very Stiff	2.00 - 4.00
Hard	4.00+

PARTICLE SIZE

Boulders	8 in.+	Coarse Sand	5mm-0.6mm	Silt	0.074mm-0.005mm
Cobbles	8 in.-3 in.	Medium Sand	0.6mm-0.2mm	Clay	-0.005mm
Gravel	3 in.-5mm	Fine Sand	0.2mm-0.074mm		





Stormwater Management Drainage Report

~~December 11, 2024~~
Revised Feb. 18 2025

McDonald's®
Unit 4

Grapevine Drive and Durham Road (NH Route 108)
DOVER, NH 03820

Prepared for:
VC Dover Investments, LLC
48 Constitution Drive
Bedford, NH 03110

Prepared by:

TFMORAN INC.
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Land Planners
Landscape Architects
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Bedford, NH | Portsmouth, NH

STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER –
ROBERT E. DUVAL
No. 7105
LICENSED
18 Feb. 2025

Dover Fields Units 4 – McDonald's:
VC Dover Investments, LLC
Grapevine Drive & Durham Road (NH Route 108), Dover, NH
~~December 11, 2024~~
Rev 1: February 18, 2025

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Summary

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Post-development Drainage Plan

Executive Summary

- VC Dover Investments, LLC. is proposing revisions to the previously permitted Dover Fields Mixed-Use Project, on tax map H lot 4-3 in Dover, NH, in conjunction with Bohler Engineering LLC to construct a McDonalds's® 3,700 sf fast food restaurant on Unit 4.

- The previously permitted design for a 2,500 sf fast food restaurant will be revised for a 3,700 sf fast food restaurant.

- The revised fast food restaurant layout will maintain drainage flow paths designed for the previously approved restaurant proposed for Unit 4, and provide treatment and recharge of stormwater runoff within the constructed systems.

- The previous AoT submission was for a Mixed-Use building on Unit 2 (with 49 residential units) and Taco Bell fast food restaurant on Unit 4. The application for Unit 2 was fully approved by both AoT and The City of Dover Planning Board, but has not yet been constructed. The Taco Bell Application on Unit 4 was approved by AoT but the Site Plan application to the City of Dover was withdrawn without being approved.

- Additional impervious surfaces are proposed (including proposed Unit 4, previously constructed surfaces on Unit 5, and 2,000 SF of additional impervious to account for widening of Grapevine Drive) which represents an increase of 2.9% of the impervious area originally approved.

- In post-development conditions for the 2-year, 10-year, 25- year, and 50-year storm events, there is no increase in the peak rate of runoff at the previously analyzed discharge point as compared to the pre-development conditions. Stormwater volume calculations reveal similar quantities to the approved design, thus maintaining the design intent.

- The site's constructed stormwater treatment and detention basins include sediment forebays, low marsh wetlands, high marsh wetlands, and deep water, and is similar to the current shallow wetland design. The existing stormwater system substantially meets the intent of the current design criteria, and has the capacity to accept the flow from the additional impervious area. Modifications to the system include filling part of the largest Stormwater Basin 100P to locate the proposed fast food restaurant's driveway further from Route 108 compared to the previously approved design to account for more traffic queueing.

- The proposed McDonald's site has a larger parking lot than the previously approved design for Unit 4. An additional underground StormTech system is proposed under the Unit 4 parking area to mitigate the impact of the proposed increased impervious area on Unit 4 and the decreased storage volume in Basin 100P. Also modifications to the outlet control structure for Basin 100AP are proposed to mitigate a decrease in freeboard (less than 1 foot) resulting from increased runoff volumes and increased rainfall depths. The original 2007 design used NRCS Technical Paper-60 derived rainfall estimates, while this report utilizes Northeast Regional Climate Center (NRCC) rainfall estimates.

Description of Project

VC Dover is proposing revisions to the previously permitted Dover Fields Mixed-Use Project, Commercial Phase on tax map H lot 4-3 near the intersection of Mast Road and Route 108 in Dover, NH. The changes included in the application include a larger fast food restaurant on Unit 4 and a slight widening of Grapevine Drive to accommodate a turning lane into the proposed McDonald's fast food restaurant proposed on Unit 4. The previously approved designs for Unit 4 (original approval in 2007 and partially permitted proposed Taco Bell in 2023) were not constructed.

Grapevine Drive is private street serving the Dover Fields Development, located on common land of the development and established by easements and commercial condominium covenants.

The Dover Fields site is located within the I-4 and B-4 zoning districts and the RCM Overlay in the City of Dover. A portion of the Cielo Drive residential phase is in the General Residential and Agricultural district in the Town of Madbury.

Other areas of the site are completed, including a Hannaford grocery store on Unit 1, and the HINEC Congregate Care Senior Housing on the corner of Mast Road and Grapevine Drive (Unit 5). Currently under construction or completed are 121 units of age-restricted single family residential, with clubhouse, on tax map H lot 4 (Cielo & Windsor Drives). The Mixed-Use building on Unit 2 (on lot 4-3), consisting of 49 apartments and a fitness center (3,851 sf), and coffee shop (2,367 sf) has been approved and construction is currently expected to begin Spring of 2025. The project described herein refers to the proposed revisions which are only applicable to the Dover Fields portion of the project on lot 4-3, which involve a Mixed Use building on Lot 4-3 Unit 2, consisting of 49 apartments and a gym and coffee shop, and a proposed Taco Bell fast food restaurant on Lot 4-3 Unit 4. Note the Unit 2 mixed use building project also included adding an emergency generator to the site's sewer pump station.

Approval by the NHDES Alteration of Terrain Bureau was obtained in Nov. 2006 (Permit #WPS-7657E), and that permit has been kept current, as indicated by the documents in Appendix Part 1. Approval by the Dover Planning Board is needed for this site development project.

To be consistent with previous phases of the project, the intent of this report is to address the changes associated with the proposed congregate care facility and its associated impervious surfaces.

The intent of this report is: 1) to update the previous analysis with the proposed revisions to the residential development and compare the pre-development and post-development conditions and 2) to provide the appropriate stormwater management systems in accordance with the intent of the original design, and the requirements of NHDES and the City of Dover.

Storm Water Methodology

Pre-Development Conditions

(Taken from: Residential–Commercial Mixed Use Development Stormwater Management Drainage Report, previously revised August 26, 2010, with appropriate revisions to referenced appendixes)

The existing 55.7± acre development lot was analyzed in the pre-development condition to ensure that the development program would mitigate any stormwater impacts to the existing drainage infrastructure located on or adjacent to abutting property and Right-of-Ways. The most current version of the computer program HydroCAD was used to calculate the runoff from various design storms including the 2 and 10-year storms as required by the various permitting agencies. HydroCAD is a computer aided design program used for modeling the hydrology of stormwater runoff that is based on the SCS TR-20 technique.

According to the SCS Soil Surveys of Strafford County this site contains Windsor loamy sand (WdA, WdB), Hinckley (HaB), Elmwood (EaA), Windsor clay subsoil variant (WfB) and Swanton (SwA). Windsor loamy sand consists of excessively drained soils. Hinckley loamy sand consists of excessively drained soils that formed in thick deposits of stratified sand and gravel. Elmwood fine sandy loam consists of moderately well drained soils. Windsor loamy fine sand, clay subsoil variant consists of well drained soils. Swanton fine sandy loam consists of poorly drained soils. Even though these soils offer varying permeability's, it can be concluded that a portion of the stormwater flows infiltrate on-site.

The site's watershed was analyzed as nine (9) distinct drainage area basins which were split along slight ridgelines located in various sections of the site or they were created to more accurately compare pre and post development flows. Stormwater runoff from the northeasterly and easterly portion of the site (Subcatchment 1) generally develops from the crown of Mast Road which is conveyed through sheet and shallow concentrated flow courses along Mast Road to the Durham Road (NH Route 108) (Subcatchment 13) intersection and into the ditch line along Durham Road (NH Route 108) which outlets into the easterly side of a wetland area referenced as Wetland Area 1 (Subcatchment 12).

Wetland Area 1 is located in the southeast corner of the property adjacent to Durham Road (NH Route 108) and the existing 165' wide P.S.N.H. easement with overhead electrical transmission lines. Wetland Area 1 is primarily an open field that was once used for agriculture. This open area was actively being cut during the spring, summer and fall months, prior to 2006. The remainder of the wetland is forested and lies adjacent to the PSNH easement. The total area of this wetland on the development lot is approximately greater than 1.0 acre. This wetland area continues in a southerly direction onto the abutting property to the south. The abutting land use surrounding this wetland is a mixture of forested and open space areas. Vegetation noted in the open area was primarily a mixture of various types of grasses. This is a result of being continually mowed. Wetland Area 1 is also unique in that as runoff from multiple subcatchments reaches this wetland area, which is the lowest elevation on the development lot, runoff accumulates because it is not able to flow freely through the lowest of three natural watercourses across the PSNH easement. The natural watercourses convey the runoff across the PSNH Easement onto Lot H-2 where they eventually converge into an existing channel.

Runoff from the middle of the property (Subcatchment 2) is conveyed across the property through sheet and shallow concentrated flow courses into the westerly side of Wetland Area 1 (Subcatchment 11). Runoff from the middle section of the development lot (Subcatchment 3)

starts form the crown in Mast Road and is conveyed in sheet and shallow concentrated flow courses to a small isolated wetland area referenced as Wetland Area 2.

Wetland Area 2 is a small isolated wet area lying along the southern boundary of the property and within the existing P.S.N.H. easement approximately 900 linear feet west of Durham Road (NH Route 108). The adjacent land use surrounding this wetland is a mixture of forested and open space associated with the P.S.N.H. easement.

Runoff from the central western portion of the development lot (Subcatchment 4) starts from the crown in Mast Road and is conveyed in sheet and shallow concentrated flow courses to a larger wetland area referenced as Wetland Area 3. Wetland Area 3 lies along the southern boundary of the property and within the existing P.S.N.H. easement approximately 1,200 linear feet west of Durham Road (NH Route 108). Runoff from the westerly portion of the development lot (Subcatchment 5) starts from the crown in Mast Road and is conveyed in sheet and shallow concentrated flow courses to abutting lot H-2A where it enters into Wetland Area 3.

Wetland Area 3 slowly drains easterly toward Durham Road (NH Route 108) where it crosses an all-terrain vehicle (ATV)/Snowmobile trail. Wetland Area 2 slowly drains southerly toward Freshet Road where it flows along the ATV/Snowmobile trail. As these flows converge, they create a small stream that flows southeasterly toward Durham Road (NH Route 108). As this stream flows toward Durham Road (NH Route 108), a few more water courses enter this stream from the north, specifically from the westerly end of Wetland Area 1. This stream eventually converges with the easterly water courses of Wetland Area 1 which flows to an existing 48" Reinforced Concrete Pipe (RCP) that crosses Durham Road (NH Route 108). This stream continues easterly where it intersects with Johnson's Creek. Johnson's Creek flows in a southerly direction into the tidal flats of the Oyster River. From here, the Oyster River flows in an easterly direction into Little Bay, Little Bay outlets into the Piscataqua River near Dover Point before continuing on to Portsmouth.

In addition to reviewing the SCS Soil Survey of Strafford County, TFM also performed several test pits to more accurately classify the types of soils on this property. TFM was able to determine that there were mainly two types of soils on the property by performing the test pits in various locations throughout the development lot. On the eastern third of the lot, the underlying soils are composed of silt, silty clay loam and clay. As such, the rates of runoff are higher in this area because stormwater is more likely to flow along the surface rather than percolate through the deeper soils. However, on the westerly two-thirds of the lot, the underlying soils are composed of sand and sandy loam. As such, the rates of runoff are minimal as most of the stormwater percolates easily into the deeper sandy soils. This theory is further supported as this site is in close proximity to the sand pit operations that abut this project.

TFM also reviewed the entire watershed for the existing 48" RCP culvert that crosses Durham Road (NH Route 108). Additional subcatchments (Subcatchments 14 and 15) were added to the pre-development model to complete the culvert's watershed. The culvert was analyzed with its entire watershed to ensure that the culvert has sufficient capacity in the pre-development condition. This information will also be used in the post-development condition to verify that the post-development hydrology would not adversely impact the existing culvert.

Rainfall

A previous project on this site (conversion of the medical office building to a congregate care facility at Unit 5) was constructed in 2010 and was the first project on this site to use newer NRCC rainfall amounts. At that time, like most projects in the State of New Hampshire at that time, was still relying on NRCS Technical Paper 60 for rainfall data. In the intervening years newer and more rigorous sourced from the Northeast Regional Climate Center at Cornell University has come into common use and is now recommended by NH DES Stormwater Management Manual, Volume 2, Appendix A and required by City of Dover Site Review Regulations 149-14.A.(3)(b)(iii). This project reuses existing BMP's designed for full buildout of all Units under the old rainfall data, but checked in this report using the new rainfall data. A rainfall comparison follows:

Storm Average Recurrence Interval	Old NRCS TP-60 24- Hr. Rainfall (No longer used) (in.)	NRCC 24- Hr. Rainfall (in.)	NOAA Atlas 14 24- Hr. Rainfall (Not Used) (in.)
2-Year	3.0	3.14	3.28
10-Year	4.3	4.74	5.26
25 -Year	5.2	6.01	6.50
50-Year	5.7	7.18	7.41
100 -Year	6.4	8.59	8.41

The NCRS Type III rainfall distribution curves are still used per Volume 1 Section 2.1 of the NH Stormwater Manual, consistent with the original thru 2023 projects on this site.

Post-Development Conditions

The objectives for the post-development drainage design are to manage stormwater in a manner consistent with the systems designed and approved for the proposed mixed use residential and retail building, while also meeting the requirements of the City of Dover and NHDES Alteration of Terrain Bureau.

The stormwater design for the McDonald's site proposes a closed drainage system, consistent with the design for the previously approved smaller fast restaurant on Unit 4. There are some minor changes to the impervious areas. The 1.91-acre Unit 4 McDonald's site is proposed to have 34,010 SF of impervious surface or 40.8% impervious. This drainage analysis includes 2,000 SF of added impervious area in subcatchment 310S to account for proposed widening of Grapevine Drive. This drainage analysis includes 15,128 SF of impervious area on Unit 3 which has not yet been constructed. When the Unit 2 site gets constructed, it will have an impervious area of 71,747 sf (including existing road surface) which is included in this analysis. The total proposed paved and gravel area in this study area is 24.377. The total paved and gravel area in the original study area is 23.254 acres. Thus 48,920 sf (1.123 acres) of additional impervious areas are proposed (including previously approved surfaces on Units 2 and 5) which represent an increase of 4.8% of the impervious area originally (2007) approved, compared to a 2.9% increase in the previously approved 2023 AoT amendment.

The current proposal fills over the northeast forebay area of basin 100P, reducing available the storage volume in the basin. The forebay is proposed to be reconstructed further into the basin.

This fill is required to move the proposed driveway for the proposed McDonald's westward (compared to the original 2007 design) further from Route 108 to allow for more traffic queuing space for the turning movements onto Route 108, as recommended by NH DOT staff in Driveway permitting discussions. TFM looked at compensatory excavation, including moving the berm embankment of basin 100P to restore its volume. However, enlarging the proposed StormTech under the McDonalds parking area, and modifying the outlet structure of basin 100AP were found to be more effective options, compared to compensatory storage excavation.

The area being developed for this phase of the project drains to the approved stormwater treatment and detention system that was previously constructed for the overall mixed-use project. This system includes sediment forebays, low marsh wetlands, high marsh wetlands, and deep water, and is similar to the current shallow wetland design. Since the constructed system substantially meets the intent of the current criteria, and has the capacity to accept the flow from the additional impervious area, we do not recommend making any changes to the system.

The post-development drainage model represents the site divided into multiple subcatchments based on the layout of the proposed stormwater collection system. Pre-development discharge points previously analyzed as part of the original report have been re-analyzed in post-development conditions with the proposed revisions.

The freeboard at each detention basin for the 50-year storm event is given below in Table 1. The minimum required freeboard is 1.0'. Without alterations to the outlet control structure, the freeboard at basin at 100AP would be 0.80 feet. which is less than the required 1.0 feet, primarily due to the increased rainfall volume relative to the previously designed rainfall volume. The previous AoT permit Amendment for this site requested a waiver of this requirement for reduced freeboard at basin 100AP. This amendment finds that fixing the freeboard issue also improves stormwater attenuation rates in basin 100AP and 100P.

Basin Freeboard Summary (50-Year):

Basin ID	Top of berm	Water Surface Elevation	**Freeboard**	Check
100P	106.0	104.94	1.06	Okay
100AP	104.0	102.99	1.01	Okay
801P	105.0	102.95	2.05	Okay
600P	101.0	99.96	1.04	Okay

Stormwater Treatment

Stormwater treatment will be accomplished downstream of the Mixed Use Development Unit sites within the Best Management Practices constructed for the overall development on common land, including the wet basins on site. Within the McDonald's development itself, 4' deep catch basin sumps and outlet hoods allow sediment to settle out of the stormwater and floatables to be captured within the structure, providing required pretreatment. In addition the proposed StormTech system has an isolator row which provides additional sediment and floatable trash capture and storage capacity.

Erosion Control Measures

Erosion Control Measures are found on the Storm Water Management Plan within the plan set. The erosion control notes and construction sequence notes on the Detail Sheets contain specifications for stabilizing disturbed areas and limiting the length of time these areas are exposed.

Temporary Erosion Control Measures

Compost filter socks are proposed along the edges of downstream site work to prevent sediment from leaving the project area. Stabilized construction entrances are proposed at the driveways along Grapevine Drive and Route 108 to keep sediment from being tracked onto the street during construction. Catch Basin Erosion Protection is also proposed to keep sediment out of the closed drainage system until the site reaches final stabilization. Blanket slope protection is proposed on slopes greater than 3:1.

Permanent Erosion Control Measures

A combination of an open and closed drainage system is proposed on the site to capture the runoff from the project. Slope stabilizations measures are also proposed to prevent erosion on slopes greater than 3:1.

Flood Protection

Examination of the Flood Insurance Rate Map for Strafford County, New Hampshire, Panel 320 of 405, Map Number 33017C0320D, Effective Date: May 17, 2005, indicates that the subject parcel is not located within a Flood Hazard Area.

No Infiltration Model

At the request of the City of Dover, Section 6 of this report contains output from a duplicate post development model, assuming zero infiltration at BMP-1 (McDonald's StormTech system, Node BMP-1). This demonstrates that the drainage system still works if the infiltration component of this BMP should fail for any reason in the future.

Conclusion

1. 48,920 sf (1.123 acres) of additional impervious areas are proposed (including previously approved surfaces on Units 2 and 5) which represent an increase of 4.8% of the impervious area originally approved (compared to a 2.9% increase in the previously approved 2023 AoT amendment).

2. Stormwater is being discharged to the constructed stormwater detention and treatment system, maintaining similar peak discharge flow rates and volumes for all design storms in comparison to the previously approved project.

3. There is a reduction in the peak rate of runoff leaving the site for the 10, 25, and 50 year storm events in comparison to the pre-development conditions. The peak rate of runoff leaving the site is matched for the two year storm event.

4. The constructed stormwater treatment and detention system includes deep sump hooded catch basins, sediment forebays, low marsh wetlands, high marsh wetlands, and deep water, and is similar to the current shallow wetland design. Since the constructed system substantially meets the intent of the current criteria, and has the capacity to accept the flow from the additional impervious area, we do not recommend making any changes to the system.

5. The site redevelopment will maintain the quality of the runoff proposed by the previous project.

Discharge Point Summary

Discharge	**PRE-DEVELOPMENT**				**POST-DEVELOPMENT (proposed 2025)**			
Point	**2-yr**	**10-yr**	**25-yr**	**50-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
10P								
Qout (cfs)	7.0	24.8	56.6	93.3	6.8	15.7	39.3	67.8
Volume (af)	1.42	5.23	9.86	15.14	2.79	7.07	12.02	17.69

*** NOTE: This chart does not match originally approved report charts because we are using different rainfall amounts. As noted above, previous projects on the site used NRCS Technical Paper 60 Rainfall data. This project is using more recent NRCC rainfall data.

The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

April 26, 2023

VC Dover Investments, LLC
Attn: Dylan Cruess
48 Constitution Drive
Bedford, NH 03110

Re: Dover Fields - Mixed Use Development
Tax Map H, Lot 4-3, Unit 2, Dover, NH

Permit: WPS-7657F
Original Permit Issuance: November 22, 2006

Dear Applicant:

Based upon a recent request, we are hereby amending RSA 485-A:17 Alteration of Terrain Permit WPS-7657E. **The amendment consists of plan modifications for development of a parcel identified as Unit 2 for construction of 49 apartment units, a fitness center, coffee shop, and associated access and parking facilities, as shown on plans by TFMoran, Inc., entitled "Mixed Use Development, Residential Phase, Dover Fields", dated October 18, 2022, latest revision dated February 28, 2023 .** As part of the processing of this amendment, DES granted approval to waiving specific requirements of Env-Wq 1503.22(c)(4), finding the increase in project impervious area of greater than 10,000 square feet could be addressed through the permit amendment process, and finding that granting the waiver would not have an adverse impact on the environment, public health, public safety, or abutting properties, and that granting the request is consistent with the intent and purpose of the rules waived. Additional documentation relative to the waiver request is contained within the file. The amended permit number is WPS-7657F and is subject to the following conditions:

1. Activities shall not cause or contribute to violations of the surface water quality standards established in Administrative Rule Env-Wq 1700.

2. Revised plans shall be submitted for permit amendment prior to any changes in construction details or sequences. The Department must be notified in writing within ten days of a change in ownership.

3. You must notify the Department in writing upon completion of construction. Forms are available at: https://www.des.nh.gov/land/land-development.

4. The approved plans and supporting documentation in the permit file are a part of this approval.

5. This permit expires on **November 22, 2025**. No earth moving activities shall occur on the project after this expiration date unless the permit has been extended by the Department. If requesting an extension, the request must be received by the department before the permit expires. The Amendment Request form is available at: https://www.des.nh.gov/land/land-development.

6. **All stormwater practices shall be inspected and maintained in accordance with Env-Wq 1507.08 and the project Inspection and Maintenance (I&M) Manual**. All record keeping required by the I&M Manual shall be maintained by the identified responsible party and be made available to the department upon request.

7. **Upon completion of construction, a written notice signed by the permit holder and a qualified engineer shall be submitted to the Department, in accordance with Env-Wq 1503.21(c)(1), stating that the project was completed in accordance with the approved plans and specifications**. If deviations were made, the permit holder shall review the requirements in Env-Wq 1503.21(c)(2).

8. This permit does not relieve the applicant from the obligation to obtain other local, state or federal permits that may be required (e.g. from US EPA, US Army Corps of Engineers, etc.) Projects disturbing over 1 acre require a federal stormwater permit from EPA. Information regarding this permitting process can be obtained through the following e-mail address: https://www.epa.gov/npdes/2022-construction-general-permit-cgp

9. This project has been screened for potential impact to known occurrences of protected species and exemplary natural communities in the immediate area. Since many areas have never been surveyed, or only cursory surveys have been performed, unidentified sensitive species or communities may be present. This permit does not absolve the permittee from due diligence in regard to state, local or federal laws regarding such communities or species. This permit does not authorize in any way the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.

Sincerely,



Ridgely Mauck, P.E.
Alteration of Terrain Bureau

cc: Dover Planning Board
ec: TFMoran, Inc.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Planners

July 3, 2012

Ridgely Mauck, P.E.
NHDES – Alteration of Terrain
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

Re: NHDES Amended Alteration of Terrain Application
WPS-7657B
Senior Housing Project
Grapevine Drive, Dover, NH

Dear Ridge:

On behalf of our client, Housing Initiatives of New England Corp., and the property owner, VC Dover Investments, LLC, of 48 Constitution Drive, Bedford, NH 03110, we respectfully request the following waivers from the following Administrative Rules:

- Env-Wq 1503.22(c)(4) for increase in total impervious area >10,000 sf
- Env-Wq 1504.14(b) for field measurement of infiltration rate in Hinckley soils
- Env-Wq 1507.05(b)(1)(a) for volume increase >0.1 acre-feet
- Env-Wq 1508.06(a)(2) for a filtering practice without a liner in group A soils

Env-Wq 1503.22(c)(4)

A waiver is requested to allow this application to be processed as an amendment to the previous approval. The total increase in impervious area being proposed is 11,282 sf (only slightly more than the 10,000 sf threshold). Of this area, an additional 9,510 sf of roof area is associated with the larger building, with the remaining 1,772 sf being additional sidewalks and parking lot pavement. It is also noted that 3,342 sf of permeable sidewalk is now being proposed, resulting in a net reduction in the amount of non-permeable pavement on the site. Therefore, the intent of the rule is being met in that the amount of impervious area is minimal compared to the size of the development. This increase represents a difference of only 1.1%, where the rule allows up to 10%. Furthermore, the overall mixed-use development is a phased project being constructed by multiple developers, and the intent of the original design is being maintained. There are no changes proposed to the portion of the drainage system that has been constructed.

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

Env-Wq 1504.14(b)
A waiver is requested from the requirement for field measurement of the infiltration rate for Hinckley soils. A test pit conducted at the site revealed a depth to groundwater of greater than 120" (10'). Given this separation between the filtration practice (permeable pavement) and groundwater, adequate treatment will be provided by the underlying soils prior to intercepting groundwater. The following calculations are provided in support of this request:

Treatment time required: (0.10 hr/in x 12 in/1 ft x 1 ft) = 1.2 hours

"Worst Case" infiltration rate to achieve required treatment time:

Existing elevation 122.0
Groundwater Elevation = 112.0 (based on Test Pit #10)
Proposed surface elevation 117.7
Bottom of practice elevation = 115.95
Separation to groundwater proposed = 115.95 – 112.0 = 3.95'
Infiltration rate required = 1.2 hr/(12 in/1 ft x 3.95 ft) = 0.025 hr/in = 40 in/hr

As shown in the soils report, this infiltration rate can easily be met by the Hinckley soils, which are expected to be between 6 and 20 in/hr.

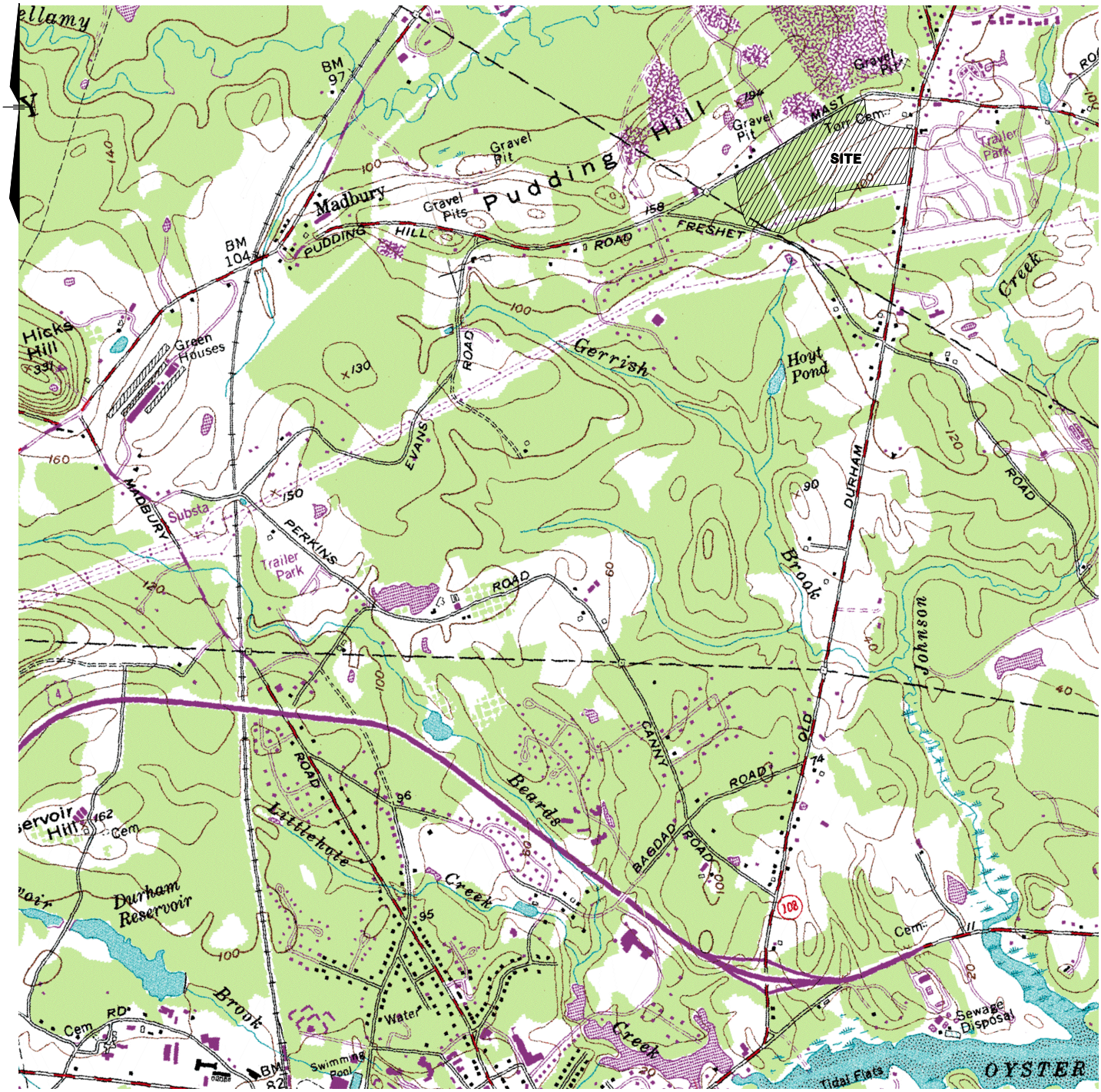
Env-Wq 1507.05(b)(1)(a)
A waiver is requested to allow a 2 year, 24 hour volume increase greater than 0.1 acre-feet. The original approval was granted prior to the current version of the rules being adopted. The approved application included a volume increase from 1.195 af to 2.522 af. The design that is currently proposed maintains the intent of the original design and its associated detention and treatment systems, and proposes a volume increase of 0.066 af, which is less than 0.1 af compared to the approved design. In addition, the peak runoff rates are matched or are significantly reduced in each of the three storms compared to pre-development conditions.

Env-Wq 1508.06(a)(2)
A waiver is requested to allow a filtering practice to be constructed in an area of group A soils without a sidewall liner. Based on the calculations provided above, adequate treatment will be accomplished prior to the stormwater intercepting groundwater; thus, the sidewall liner is unnecessary in this instance.

If you have any questions, please contact either myself or Jeff Kevan at 472-4488.

Sincerely,
TFMORAN INC.

Michael T. O'Donnell, P.E.
Project Manager



U.S.G.S. LOCUS MAP

SCALE: 1"=2,000'

TFM

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects

48 Constitution Dr
Bedford, NH 03110
Phone (603) 472-4488

www.tfmoran.com

Bedford, NH

TAX MAP H LOT 4

MIXED USE DEVELOPMENT

DOVER, NH

PREPARED FOR:

VC DOVER INVESTMENTS LLC

FILE	46001.31	DATE	10/24/22	SHEET 1 OF 1
		CADFILE	USGS	

INFILTRATION PRACTICE CRITERIA
(Env-Wq 1508.06)

Type/Node Name: **Stormtech SC-800 Underground Infiltration System (BMP-1)**

Enter the type of infiltration practice (e.g., basin, trench) and the node name in the drainage analysis, if applicable.

Yes		Have you reviewed Env-Wq 1508.06(a) to ensure that infiltration is allowed?	← **yes**
0.96	ac	A = Area draining to the practice	
0.75	ac	A_I = Impervious area draining to the practice	
0.78	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.75	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.72	ac-in	WQV= 1" x Rv x A	
2,624	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
656	cf	25% x WQV (check calc for sediment forebay volume)	
Isolator Row		Method of pretreatment? (not required for clean or roof runoff)	
-	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	≥ **25%WQV**
3,231	cf	V = Volume[1] (attach a stage-storage table)	≥ **WQV**
2,035	sf	A_{SA} = Surface area of the bottom of the pond	
0.27	iph	$Ksat_{DESIGN}$ = Design infiltration rate[2]	
57.3	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	≤ **72-hrs**
101.85	feet	E_{BTM} = Elevation of the bottom of the basin	
96.00	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
95.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
5.85	feet	D_{SHWT} = Separation from SHWT	≥ *[3]
6.8	feet	D_{ROCK} = Separation from bedrock	≥ *[3]
N/A	ft	D_{amend} = Depth of amended soil, if applicable due high infiltation rate	≥ **24"**
N/A	ft	D_T = Depth of trench, if trench proposed	**4 - 10 ft**
Yes	Yes/No	If a trench or underground system is proposed, has observation well been provided?	←**yes**
No		If a trench is proposed, does materialmeet Env-Wq 1508.06(k)(2) requirements.[4]	← **yes**
No	Yes/No	If a basin is proposed, Is the perimeter curvilinear, and basin floor flat?	← **yes**
No	:1	If a basin is proposed, pond side slopes.	≥**3:1**
104.98	ft	Peak elevation of the 10-year storm event (infiltration can be used in analysis)	
105.15	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
105.60	ft	Elevation of the top of the practice (if a basin, this is the elevation of the berm)	
YES		10 peak elevation ≤ Elevation of the top of the trench?[5]	← **yes**
YES		If a basin is proposed, 50-year peak elevation ≤ Elevation of berm?	← **yes**

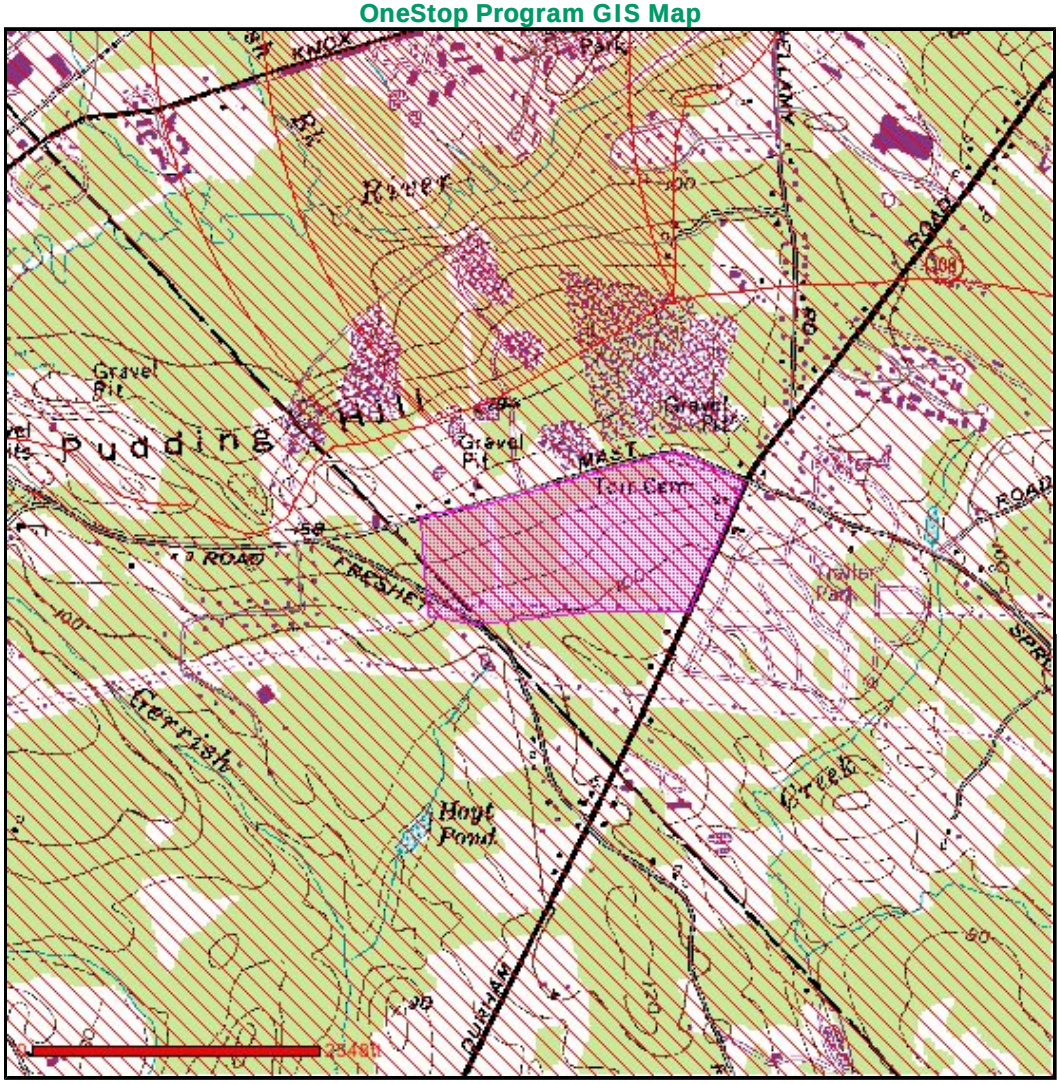
1. Volume below the lowest invert of the outlet structure and excludes forebay volume
2. $Ksat_{DESIGN}$ includes a factor of safety. See Env-Wq 1504.14 for requirements for determining the infiltr. rate
3. 1' separation if treatment not required; 4' for treatment in GPAs & WSIPAs; & 3' in all other areas.
4. Clean, washed well graded diameter of 1.5 to 3 inches above the in-situ soil.
5. If 50-year peak elevation exceeds top of trench, the overflow must be routed in HydroCAD as secondary discharge.

Designer's Notes:

New Hampshire Department of Environmental Services

OneStop Program GIS

OneStop Program GIS Map



Map Scale = 1 : 22888 (1" = 1907 feet or 0.4 miles)

The information contained in the OneStop Program GIS is the best available according to the procedures and standards of each of the contributing programs and of the GIS. The different programs are regularly maintaining the information in their databases. As a result, the GIS may not always provide access to all existing information, and it may occasionally contain unintentional inaccuracies. The Department can not be responsible for the misuse or misinterpretation of the information presented by this system.

Map prepared 9/8/2010 4:53:53 PM

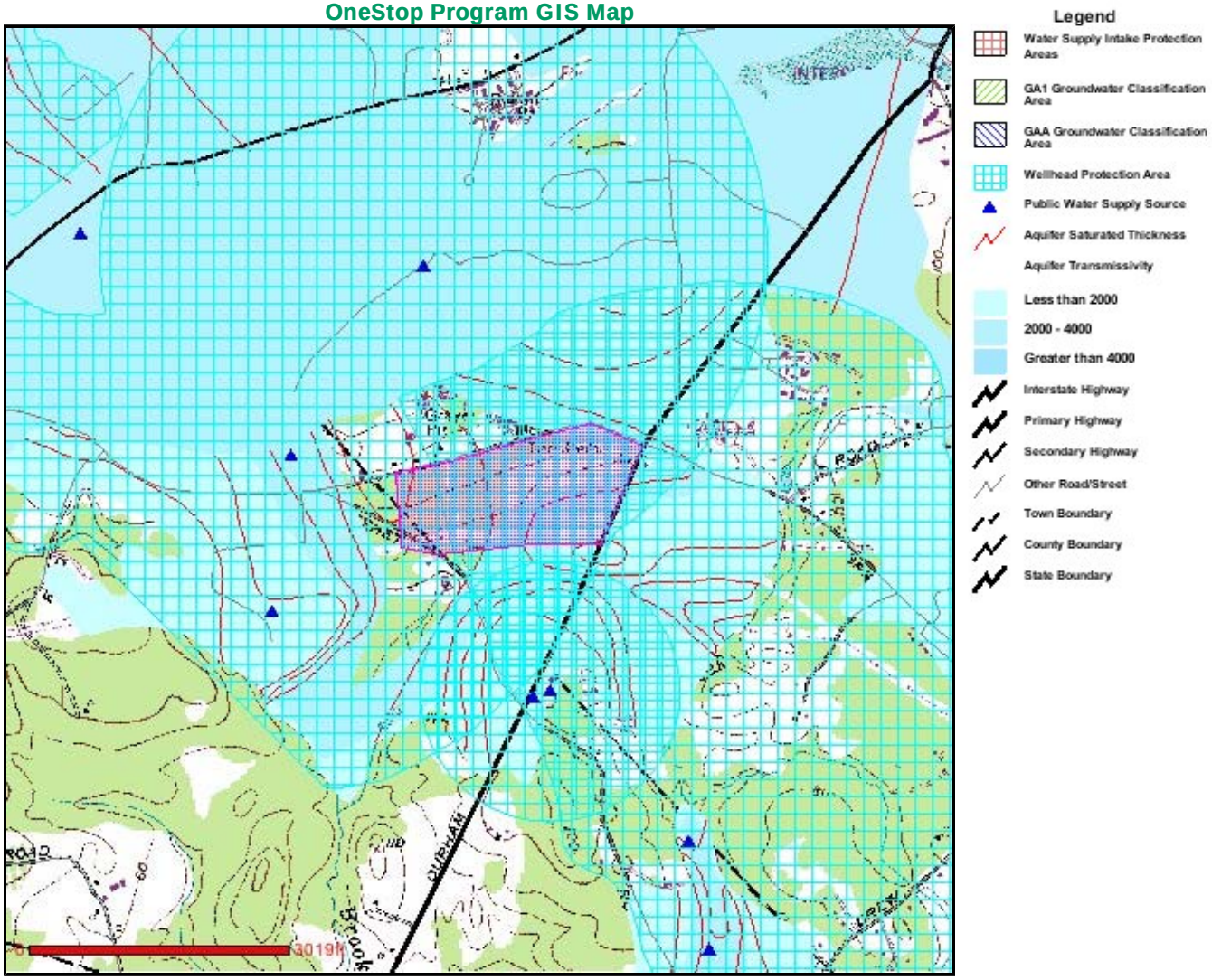
GRANIT Complex Systems Research Center

Developed in cooperation with NH GRANIT

New Hampshire Department of Environmental Services

OneStop Program GIS

OneStop Program GIS Map



Map Scale = 1 : 27126 (1" = 2261 feet or 0.4 miles)

The information contained in the OneStop Program GIS is the best available according to the procedures and standards of each of the contributing programs and of the GIS. The different programs are regularly maintaining the information in their databases. As a result, the GIS may not always provide access to all existing information, and it may occasionally contain unintentional inaccuracies. The Department can not be responsible for the misuse or misinterpretation of the information presented by this system.

Map prepared 9/8/2010 4:57:24 PM

GRANIT Complex Systems Research Center

Developed in cooperation with NH GRANIT

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Strafford County, New Hampshire



August 23, 2010

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:6,260 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 10, Oct 27, 2009

Date(s) aerial images were photographed: 8/23/2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Strafford County, New Hampshire (NH017)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BzB	Buxton silt loam, 3 to 8 percent slopes	0.7	0.6%
EaA	Elmwood fine sandy loam, 0 to 3 percent slopes	10.8	9.5%
HaB	Hinckley loamy sand, 3 to 8 percent slopes	41.9	36.7%
ScA	Scantic silt loam, 0 to 3 percent slopes	0.7	0.7%
SwA	Swanton fine sandy loam, 0 to 3 percent slopes	7.9	6.9%
WdA	Windsor loamy sand, 0 to 3 percent slopes	8.4	7.3%
WdB	Windsor loamy sand, 3 to 8 percent slopes	31.5	27.6%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	12.2	10.7%
Totals for Area of Interest		**114.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the

contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Strafford County, New Hampshire

BzB—Buxton silt loam, 3 to 8 percent slopes

Map Unit Composition

Buxton and similar soils: 85 percent
Minor components: 15 percent

Description of Buxton

Setting

Parent material: Glaciomarine

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 2e

Minor Components

Elmwood

Percent of map unit: 10 percent

Not named

Percent of map unit: 5 percent

EaA—Elmwood fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

Elevation: 0 to 1,000 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 120 to 200 days

Map Unit Composition

Elmwood and similar soils: 85 percent
Minor components: 15 percent

Description of Elmwood

Setting

Parent material: Glaciomarine

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 2w

Minor Components

Deerfield
Percent of map unit: 5 percent

Not named
Percent of map unit: 5 percent

Swanton
Percent of map unit: 5 percent
Landform: Marine terraces

HaB—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting
Elevation: 0 to 1,000 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 200 days

Map Unit Composition
Hinckley and similar soils: 85 percent
Minor components: 15 percent

Description of Hinckley

Setting
Parent material: Stratified sandy and gravelly outwash

Properties and qualities
Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 3s

Minor Components

Not named
Percent of map unit: 10 percent

Windsor
Percent of map unit: 5 percent

ScA—Scantic silt loam, 0 to 3 percent slopes

Map Unit Composition
Scantic and similar soils: 85 percent
Minor components: 15 percent

Description of Scantic

Setting
Landform: Marine terraces

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 4w

Minor Components

Biddeford
Percent of map unit: 5 percent
Landform: Marine terraces

Not named wet
Percent of map unit: 5 percent
Landform: Marine terraces

Swanton
Percent of map unit: 5 percent
Landform: Marine terraces

SwA—Swanton fine sandy loam, 0 to 3 percent slopes

Map Unit Composition

Swanton and similar soils: 85 percent
Minor components: 15 percent

Description of Swanton

Setting

Landform: Marine terraces

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 4w

Minor Components

Not named wet

Percent of map unit: 10 percent
Landform: Marine terraces

Scantic

Percent of map unit: 5 percent
Landform: Marine terraces

WdA—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

Elevation: 0 to 1,000 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 200 days

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent

Description of Windsor

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 3s

Minor Components

Deerfield

Percent of map unit: 5 percent

Hinckley

Percent of map unit: 5 percent

Not named

Percent of map unit: 5 percent

WdB—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

Elevation: 0 to 1,000 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 200 days

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent

Description of Windsor

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 3s

Minor Components

Deerfield
Percent of map unit: 5 percent

Hinckley
Percent of map unit: 5 percent

Not named
Percent of map unit: 5 percent

WfB—Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes

Map Unit Composition
Windsor variant and similar soils: 85 percent
Minor components: 15 percent

Description of Windsor Variant

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups
Land capability (nonirrigated): 3s

Minor Components

Not named
Percent of map unit: 15 percent

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

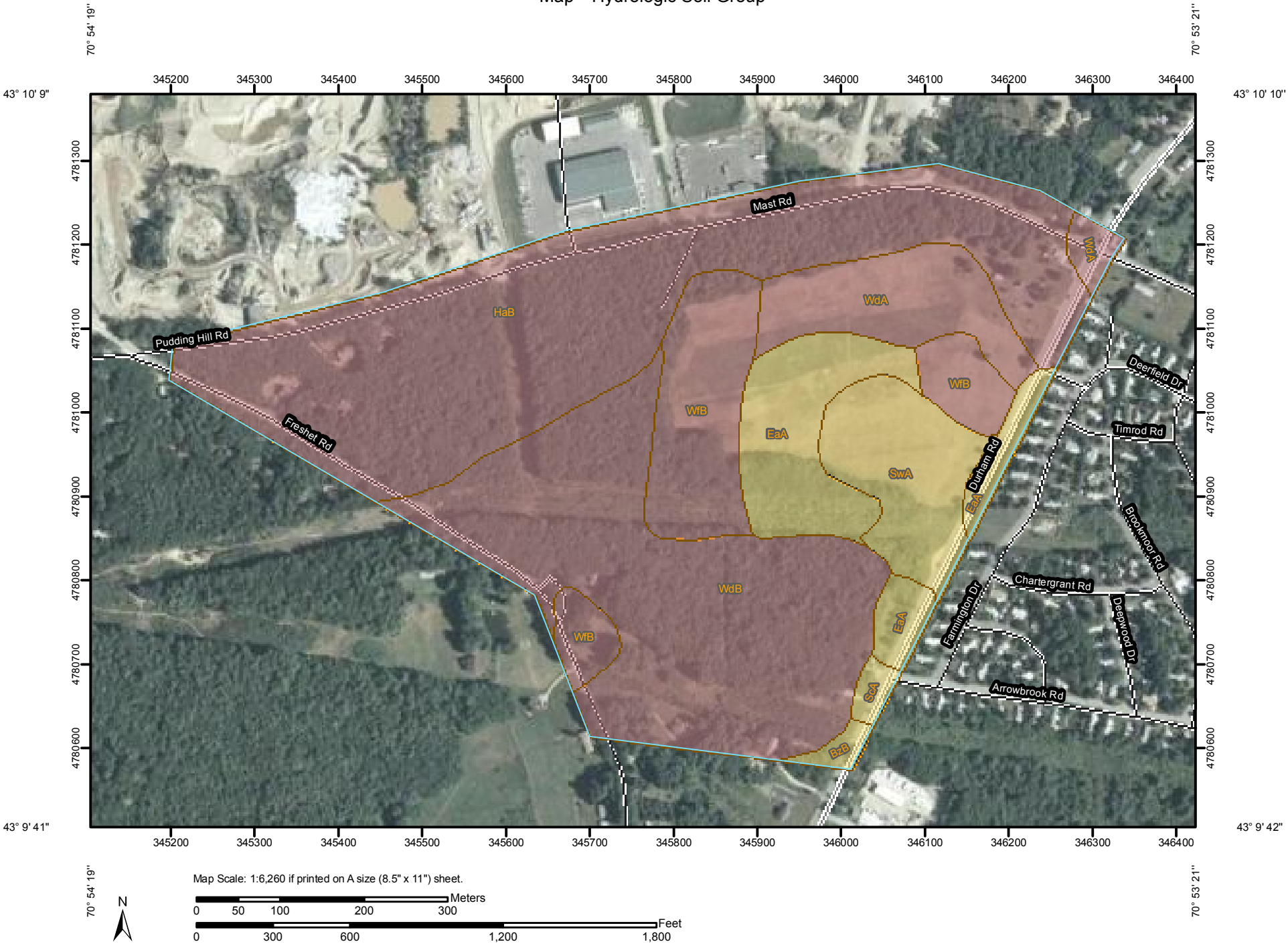
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:6,260 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 10, Oct 27, 2009

Date(s) aerial images were photographed: 8/23/2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Strafford County, New Hampshire				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
BzB	Buxton silt loam, 3 to 8 percent slopes	C	0.7	0.6%
EaA	Elmwood fine sandy loam, 0 to 3 percent slopes	C	10.8	9.5%
HaB	Hinckley loamy sand, 3 to 8 percent slopes	A	41.9	36.7%
ScA	Scantic silt loam, 0 to 3 percent slopes	C	0.7	0.7%
SwA	Swanton fine sandy loam, 0 to 3 percent slopes	C	7.9	6.9%
WdA	Windsor loamy sand, 0 to 3 percent slopes	A	8.4	7.3%
WdB	Windsor loamy sand, 3 to 8 percent slopes	A	31.5	27.6%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	A	12.2	10.7%
Totals for Area of Interest			**114.1**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

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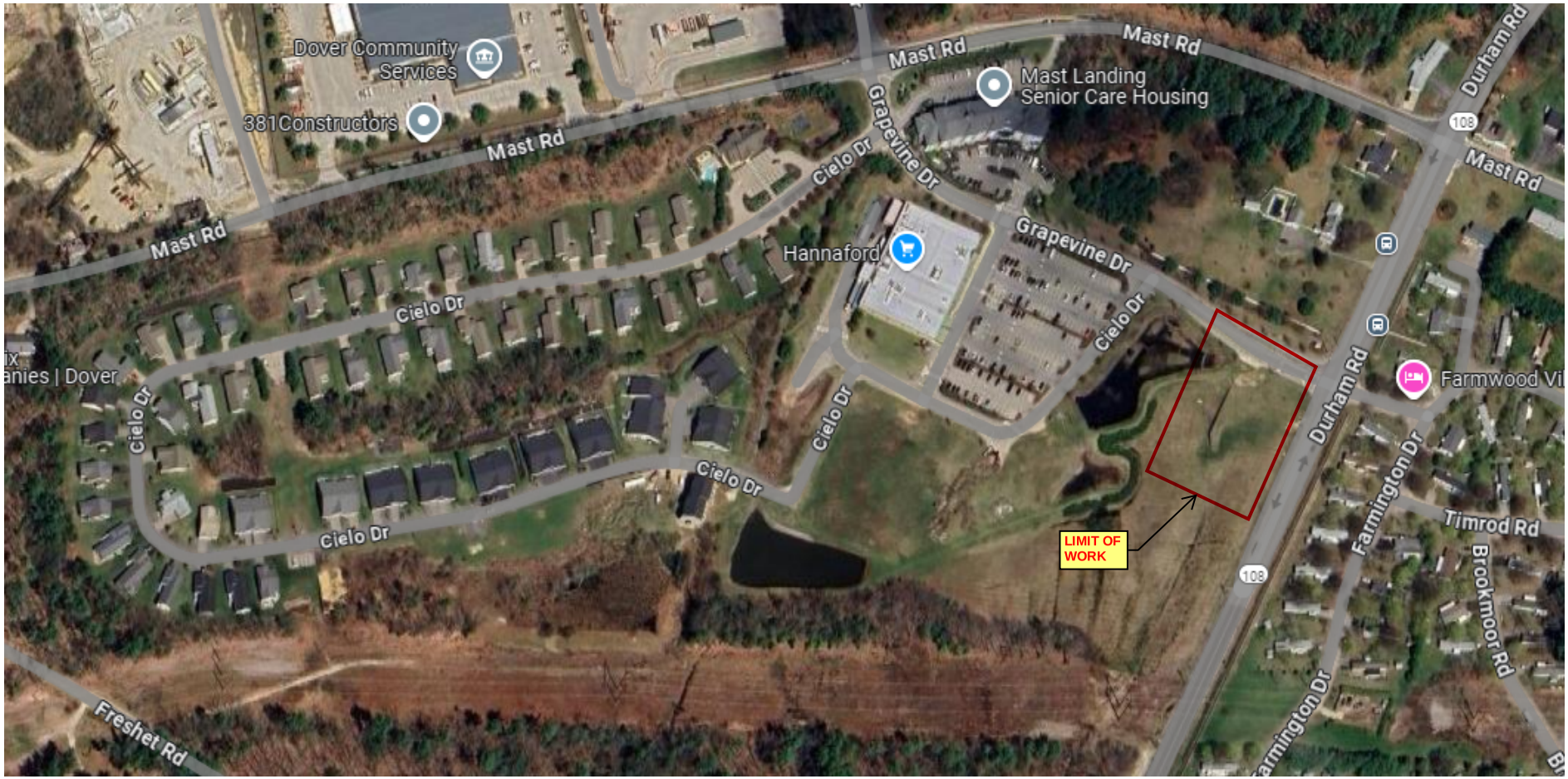
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United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://soils.usda.gov/

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Dover Community Services
381Constructors
Mast Rd
Mast Landing Senior Care Housing
Durham Rd
108
Grapevine Dr
Cielo Dr
Hannaford
Farmwood Vi
Durham Rd
Farmington Dr
Timrod Rd
Brookmoor Rd
LIMIT OF WORK
Freshet Rd

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Project #46001.33

Site Photos

Of

Dover Fields - Unit 4
McDonald's Site

Photo #1 – Looking west across site and Grapevine Drive and Durham Road (Route 108) intersection.



© credits Google Street View Image 2024

Photo #2 – Looking northwest across site from Durham Road (Route 108).



© credits Google Street View Image 2024

` Photo #3 – Looking north across site from Durham Road (Route 108).



© credits Google Street View Image 2024

Photo #4 – Looking north along site’s Durham Road (Route 108).frontage.



© credits Google Street View Image 2024

Photo #5 - Looking northeast across main wet basin (100P) at Grapevine Drive.



Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

RECEIVED NOV 0 3 2022

DHR Use Only	
R&C #	14388
Log In Date	11/3/22
Response Date	11/17/22
Sent Date	11/29/22

Request for Project Review by the New Hampshire Division of Historical Resources

RECEIVED DEC 0 1 2022

☒ This is a new submittal
☐ This is additional information relating to DHR Review & Compliance (R&C) #:

GENERAL PROJECT INFORMATION

Project Title Mixed Use Development

Project Location Grapevine Dr and Mast Road

City/Town Dover Tax Map H Lot # 4-3

NH State Plane - Feet Geographic Coordinates: Easting 1190165 Northing 243725
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact *(if applicable)*
(Agency providing funds, licenses, or permits)
Permit Type and Permit or Job Reference #

State Agency and Contact *(if applicable)* NHDES

Permit Type and Permit or Job Reference # AoT

APPLICANT INFORMATION

Applicant Name VC Dover Investments, LLC c/o Alex Vailas

Mailing Address 48 Constituiton Dr Phone Number 603-472-4488

City Bedford State NH Zip 03310 Email alexvailasllc@aol.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company James Robinson, TF Moran, Inc.

Mailing Address 48 Constituiton Phone Number 6034724488

City Bedford State NH Zip 03310 Email jrobinson@tfmoran.com

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. *Please refer to the Request for Project Review Instructions for direction on completing this form.* Submit one copy of this project review form for each project for which review is requested. Please include a self-addressed stamped envelope. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.s.labash@dncr.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

Project Boundaries and Description

- ☒ Attach the Project Mapping ***using EMMIT or relevant portion of a 7.5' USGS Map.*** *(See RPR Instructions and R&C FAQs for guidance.)*
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) *(Informative photo captions are requested.)*
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1**. *(Blank table forms are available on the DHR website.)* Please note, using EMMIT Guest View for an RPR records search does not provide the necessary information needed for DHR review.
  EMMIT or in-house records search conducted on 10/24/2022.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☐ Yes ☒ No
If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s):

- ☒ Photographs of ***each*** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No
If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☐ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review.

☐ No Potential to cause Effects ☑ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect

Comments: _____

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: Jamie Nucci, DSHPO Date: 11/17/22

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

To: Jonathan Devine
48 constitutional dr
Bedford, NH 03110

From: NHB Review, NH Natural Heritage Bureau
Date: 11/1/2022 (valid until 11/01/2023)
Re: Review by NH Natural Heritage Bureau
Permits: MUNICIPAL POR - Dover, NHDES - Alteration of Terrain Permit, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: **NHB22-3411** Town: Dover Location: Grapevine Drive
Description: The project is a mixed-use development next to the Hannaford's. Constuction start contingent of permitting schedule.

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments **NHB: Please provide representative photos of all proposed impact areas during the growing season. Please provide aerial overlay with proposed limits of disturbance.**
F&G: No comments at this time.

Plant species	State[1]	Federal	Notes
greater fringed-gentian (*Gentianopsis crinita*)*	T	--	Vulnerable to shading by invading trees and to disturbances that destroy plants or impede their ability to reproduce (such as mowing in the mid-summer while the plants are in bloom).
lopsided rush (*Juncus secundus*)*	E	--	Occurs on talus slopes, cliffs/ledges, sandplains/disturbed openings, and dry forests/thin woods. Threats would include recreational or development activities that would trample the plants or disturb their habitat.

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Disclaimer: A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

for certain species. An on-site survey would provide better information on what species and communities are indeed present.

IMPORTANT: NHFG Consultation

If this NHB Datacheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB Datacheck results letter number and "Fis 1004 consultation request" in the subject line.**

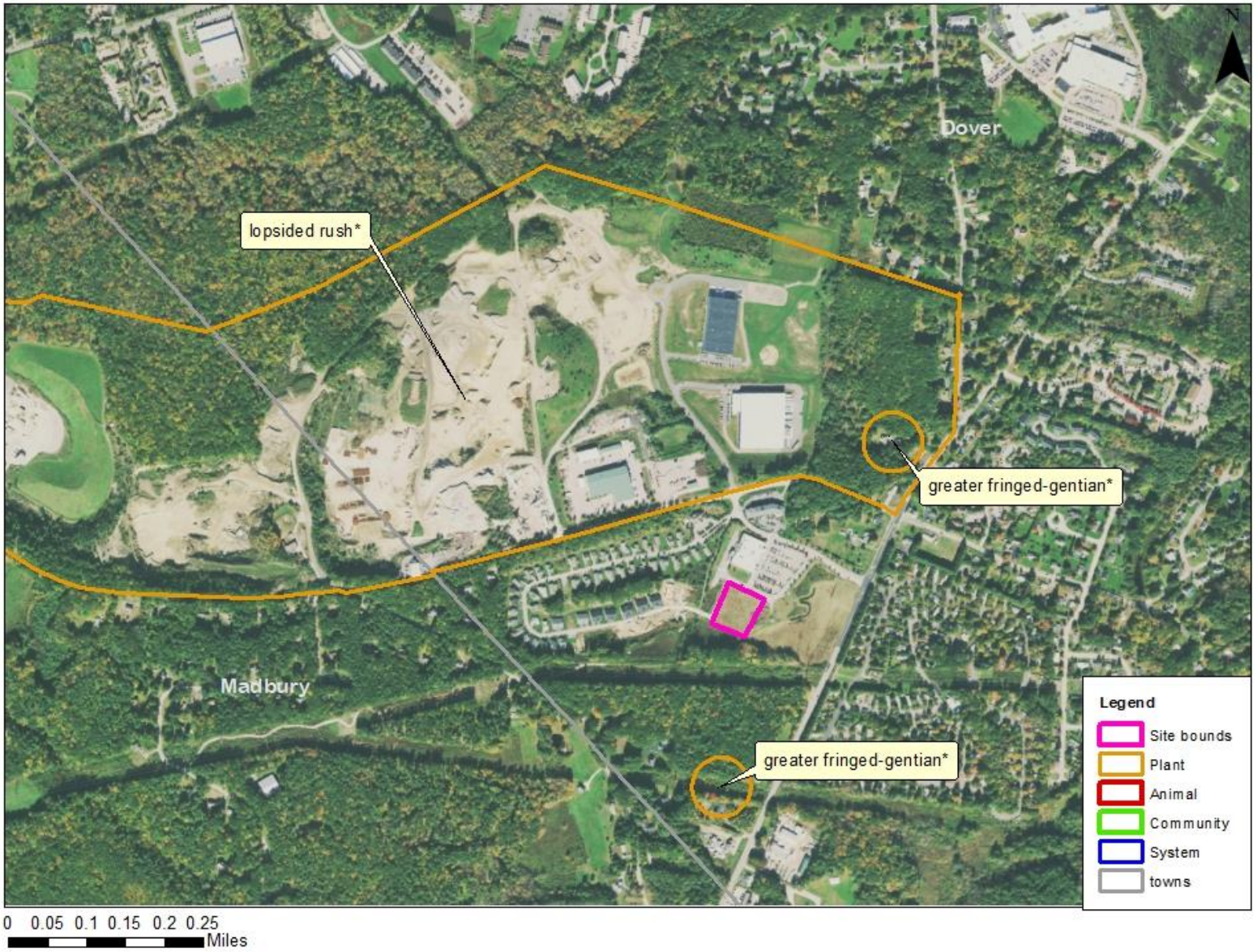
If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule)*, coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email: Kim Tuttle *kim.tuttle@wildlife.nh.gov* with a copy to NHFGreview@wildlife.nh.gov, and include the NHB Datacheck results letter number and "review request" in the email subject line.

Contact NH Fish & Game at (603) 271-0467 with questions.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

NHB22-3411


N
Dover
lopsided rush*
greater fringed-gentian*
Madbury
greater fringed-gentian*
Legend
Site bounds
Plant
Animal
Community
System
towns
0 0.05 0.1 0.15 0.2 0.25
Miles

New Hampshire Natural Heritage Bureau - Plant Record

greater fringed-gentian (*Gentianopsis crinita*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1985: Between 51-100 plants in leaf, bud, flower, fruit, and seed dispersing. Population area full of large, mature specimens at every stage of growth. Specimen collected.
General Area: 1985: Moist, flat, open light. Associated species include *Aster umbellatus* (tall flat-topped white aster) and *Aster novae-angliae* (New England aster).
General Comments: --
Management Comments: --

Location

Survey Site Name: Dover Gentian
Managed By:

County: Strafford
Town(s): Dover
Size: 2.8 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Southwest of Dover, north of Rte. 108.

Dates documented

First reported: 1985 Last reported: 1985

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Plant Record

greater fringed-gentian (*Gentianopsis crinita*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank:	Excellent quality, condition and landscape context ('A' on a scale of A-D).
Comments on Rank:	Excellent population and site.
Detailed Description:	1987: ca. 1,000 vigorous flowering, fruiting and vegetative plants. Specimen collected.
General Area:	1987: Field: moist, flat, and open. With *Spiranthes cernua* (nodding ladies'-tresses), Eriophorum sp. (cotton-grass), *Pycnanthemum tenuifolium* (narrow-leaved mountain mint), and other wet meadow plants.
General Comments:	--
Management Comments:	1987: Needs periodic mowing.

Location

Survey Site Name: Rte. 108 Powerline
Managed By:

County: Strafford
Town(s): Dover
Size: 2.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: At junction of Rte. 108 and powerline, ca. 0.5 miles northeast of Hoyt Pond.

Dates documented

First reported: 1987-09-01 Last reported: 1987-09-01

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Plant Record

lopsided rush (*Juncus secundus*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1966: Specimen collected.
General Area: 1966: Gravel pit.
General Comments: --
Management Comments: --

Location

Survey Site Name: Madbury Gravel Pit
Managed By: Griffin Well

County: Strafford
Town(s): Dover
Size: 348.5 acres
Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: Madbury. Gravel pit.

Dates documented

First reported: 1966-08-09
Last reported: 1966-08-09

CONFIDENTIAL – NH Dept. of Environmental Services review

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.894 degrees West
Latitude	43.167 degrees North
Elevation	0 feet
Date/Time	Fri, 01 Jul 2022 08:46:21 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.20	1.55	2.00	2.60	2.85	**1yr**	2.30	2.75	3.14	3.87	4.44	**1yr**
2yr	0.32	0.49	0.61	0.81	1.01	1.29	**2yr**	0.88	1.17	1.50	1.91	2.45	3.14	3.49	**2yr**	2.78	3.36	3.85	4.58	5.22	**2yr**
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.38	3.07	3.97	4.47	**5yr**	3.52	4.30	4.92	5.79	6.55	**5yr**
10yr	0.40	0.63	0.80	1.09	1.42	1.84	**10yr**	1.22	1.69	2.18	2.82	3.66	4.74	5.40	**10yr**	4.20	5.19	5.92	6.92	7.79	**10yr**
25yr	0.46	0.74	0.94	1.29	1.72	2.26	**25yr**	1.48	2.09	2.69	3.52	4.60	6.01	6.92	**25yr**	5.32	6.66	7.56	8.75	9.79	**25yr**
50yr	0.51	0.83	1.06	1.48	1.99	2.66	**50yr**	1.72	2.46	3.17	4.18	5.49	7.18	8.36	**50yr**	6.36	8.04	9.11	10.47	11.65	**50yr**
100yr	0.58	0.93	1.20	1.70	2.31	3.11	**100yr**	2.00	2.88	3.74	4.95	6.53	8.59	10.11	**100yr**	7.60	9.72	10.98	12.52	13.87	**100yr**
200yr	0.64	1.04	1.35	1.94	2.69	3.66	**200yr**	2.32	3.39	4.41	5.88	7.79	10.28	12.22	**200yr**	9.10	11.75	13.23	14.98	16.51	**200yr**
500yr	0.75	1.24	1.61	2.34	3.28	4.52	**500yr**	2.83	4.21	5.48	7.36	9.82	13.04	15.71	**500yr**	11.54	15.10	16.94	18.99	20.82	**500yr**

Lower Confidence Limits

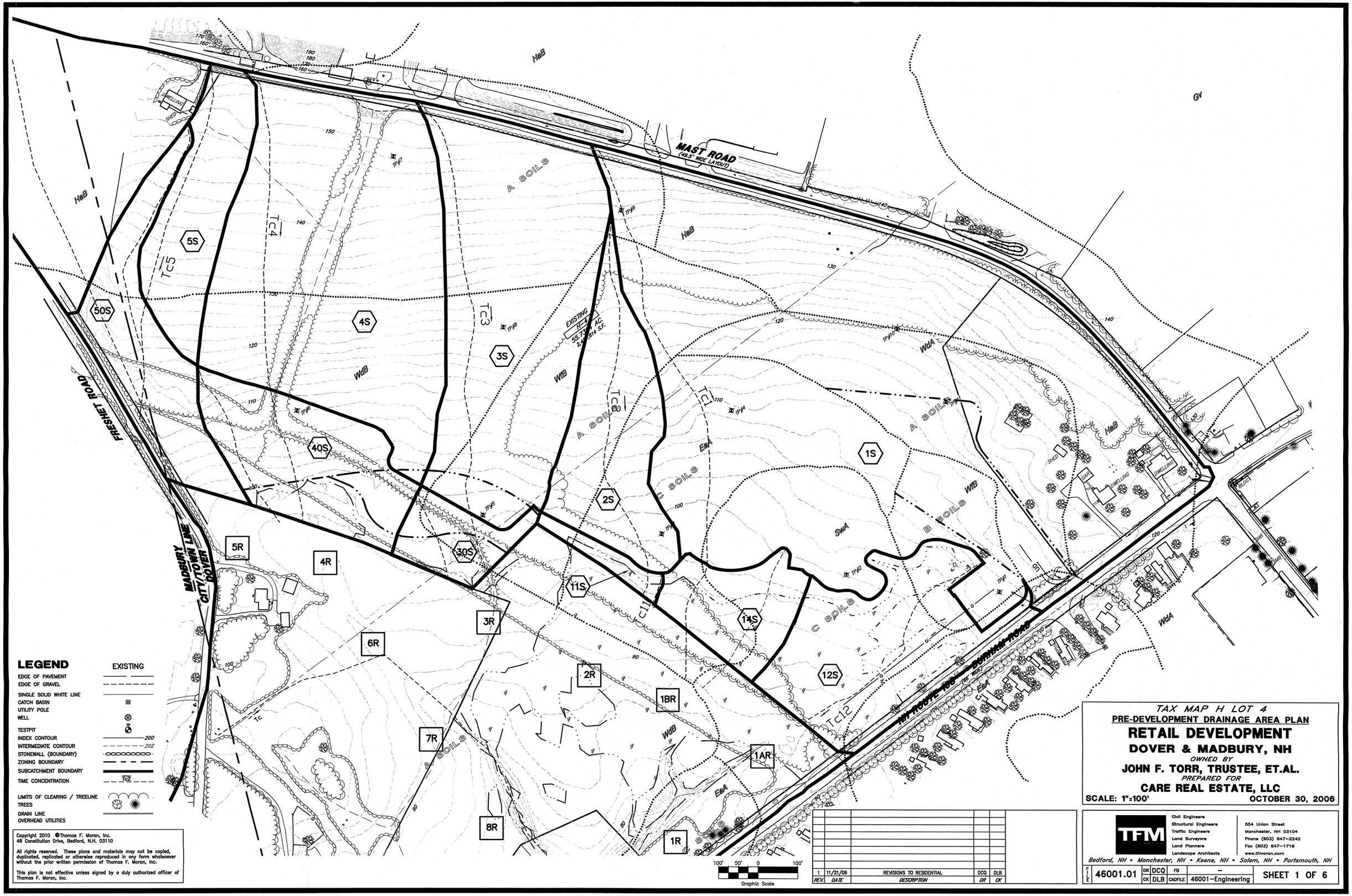
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.60	0.74	0.90	**1yr**	0.64	0.88	0.91	1.26	1.57	2.08	2.48	**1yr**	1.84	2.38	2.90	3.32	4.02	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.16	1.36	1.83	2.36	3.04	3.39	**2yr**	2.69	3.26	3.74	4.46	5.05	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.15	2.78	3.71	4.12	**5yr**	3.28	3.96	4.60	5.41	6.11	**5yr**
10yr	0.38	0.59	0.73	1.02	1.31	1.60	**10yr**	1.13	1.56	1.82	2.45	3.13	4.27	4.79	**10yr**	3.78	4.60	5.31	6.25	7.02	**10yr**
25yr	0.44	0.66	0.83	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.85	3.66	4.98	5.80	**25yr**	4.41	5.58	6.49	7.58	8.45	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.19	**50yr**	1.52	2.14	2.35	3.20	4.11	5.69	6.70	**50yr**	5.04	6.44	7.54	8.76	9.71	**50yr**
100yr	0.54	0.81	1.01	1.47	2.01	2.50	**100yr**	1.74	2.45	2.63	3.59	4.59	6.50	7.74	**100yr**	5.75	7.44	8.77	10.12	11.13	**100yr**
200yr	0.59	0.90	1.13	1.64	2.29	2.86	**200yr**	1.98	2.80	2.94	4.01	5.13	7.41	8.93	**200yr**	6.56	8.59	10.19	11.71	12.79	**200yr**
500yr	0.69	1.03	1.33	1.93	2.74	3.45	**500yr**	2.37	3.37	3.40	4.65	5.96	8.79	10.79	**500yr**	7.78	10.38	12.43	14.21	15.31	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	**1yr**	0.75	1.05	1.24	1.74	2.22	2.86	3.06	**1yr**	2.53	2.94	3.40	4.20	4.79	**1yr**
2yr	0.33	0.51	0.62	0.85	1.04	1.25	**2yr**	0.90	1.22	1.48	1.96	2.51	3.27	3.60	**2yr**	2.90	3.46	3.97	4.73	5.42	**2yr**
5yr	0.39	0.60	0.75	1.03	1.31	1.58	**5yr**	1.13	1.55	1.85	2.50	3.20	4.23	4.82	**5yr**	3.74	4.63	5.25	6.20	6.96	**5yr**
10yr	0.46	0.70	0.87	1.21	1.57	1.92	**10yr**	1.35	1.88	2.23	3.05	3.85	5.21	6.01	**10yr**	4.61	5.78	6.58	7.60	8.49	**10yr**
25yr	0.55	0.84	1.05	1.50	1.97	2.47	**25yr**	1.70	2.42	2.88	3.96	4.95	7.04	8.06	**25yr**	6.23	7.75	8.78	10.01	11.06	**25yr**
50yr	0.64	0.97	1.21	1.74	2.34	2.99	**50yr**	2.02	2.92	3.49	4.83	6.01	8.70	10.09	**50yr**	7.70	9.70	10.94	12.30	13.53	**50yr**
100yr	0.74	1.12	1.41	2.03	2.79	3.61	**100yr**	2.41	3.53	4.23	5.91	7.30	10.76	12.62	**100yr**	9.52	12.14	13.62	15.15	16.55	**100yr**
200yr	0.86	1.30	1.64	2.38	3.32	4.38	**200yr**	2.86	4.28	5.15	7.24	8.86	13.34	15.82	**200yr**	11.81	15.21	16.96	18.64	20.28	**200yr**
500yr	1.05	1.57	2.01	2.93	4.16	5.62	**500yr**	3.59	5.50	6.65	9.47	11.47	17.76	21.32	**500yr**	15.71	20.50	22.70	24.55	26.55	**500yr**

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4



LEGEND

	EXISTING
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
SINGLE SOLID WHITE LINE	
CATCH BASIN	
UTILITY POLE	
WELL	W
TESTPIT	TP
INDEX CONTOUR	200
INTERMEDIATE CONTOUR	202
STONEWALL (BOUNDARY)	
ZONING BOUNDARY	
SUBCATCHMENT BOUNDARY	
TIME CONCENTRATION	Tc2
LIMITS OF CLEARING / TREELINE	
TREES	
DRAIN LINE	
OVERHEAD UTILITIES	

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REV.	DATE	DESCRIPTION	DR	CK
1	11/21/06	REVISIONS TO RESIDENTIAL	DCQ	DLB

TAX MAP H LOT 4

PRE-DEVELOPMENT DRAINAGE AREA PLAN

RETAIL DEVELOPMENT

DOVER & MADBURY, NH

OWNED BY

JOHN F. TORR, TRUSTEE, ET.AL.

PREPARED FOR

CARE REAL ESTATE, LLC

SCALE: 1"=100' **OCTOBER 30, 2006**

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FILE	46001.01	DR	DCQ	FB	–	SHEET 1 OF 6
		CK	DLB	CADFILE	46001-Engineering	

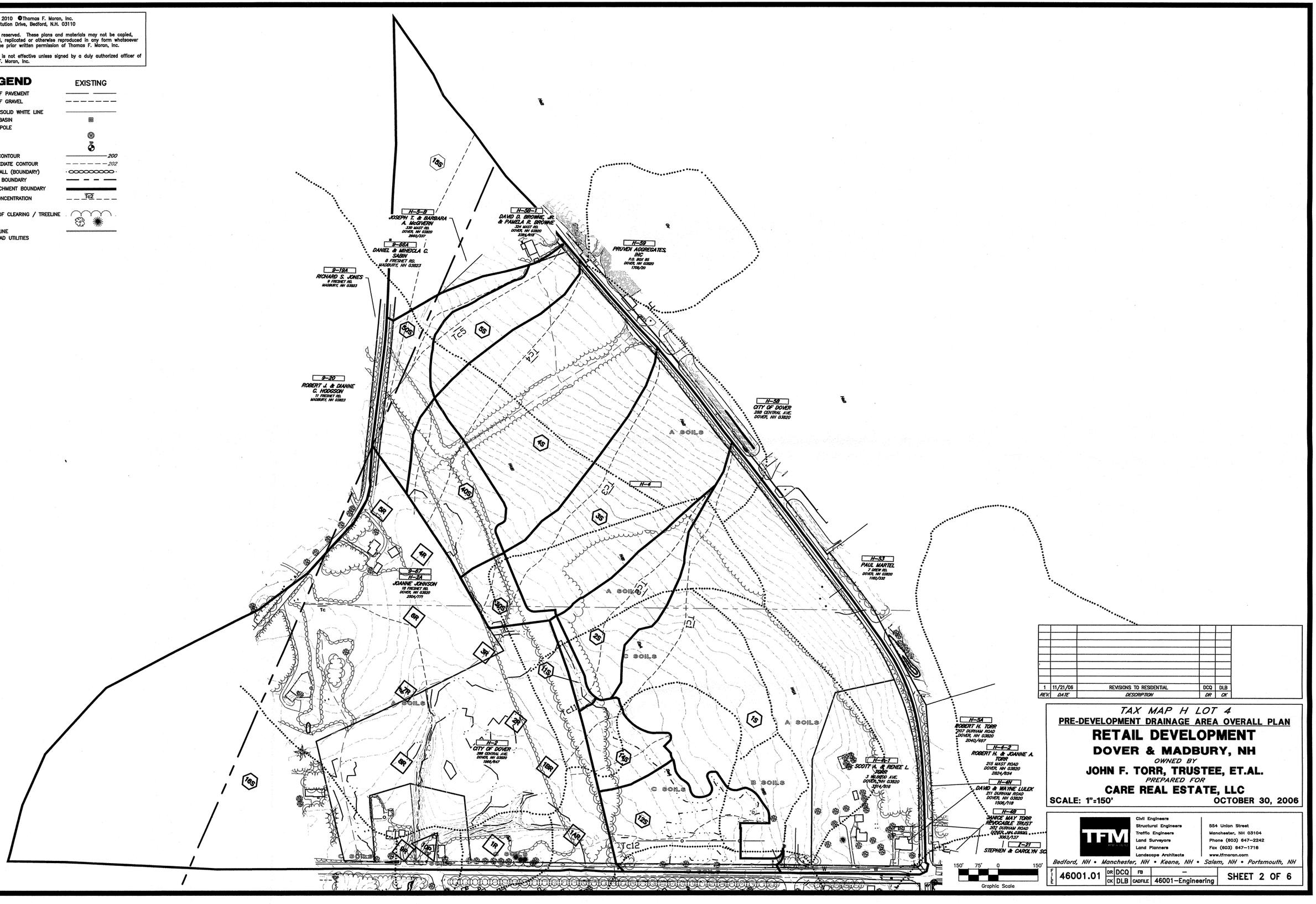
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LEGEND

	EXISTING
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
SINGLE SOLID WHITE LINE	
CATCH BASIN	
UTILITY POLE	
WELL	
TESTPIT	
INDEX CONTOUR	200
INTERMEDIATE CONTOUR	202
STONEWALL (BOUNDARY)	
ZONING BOUNDARY	
SUBCATCHMENT BOUNDARY	
TIME CONCENTRATION	Tc2
LIMITS OF CLEARING / TREELINE	
TREES	
DRAIN LINE	
OVERHEAD UTILITIES	



REV.	DATE	DESCRIPTION	DR	CK
1	11/21/06	REVISIONS TO RESIDENTIAL	DCQ	DLB

TAX MAP H LOT 4

PRE-DEVELOPMENT DRAINAGE AREA OVERALL PLAN

RETAIL DEVELOPMENT

DOVER & MADBURY, NH

OWNED BY

JOHN F. TORR, TRUSTEE, ET.AL.

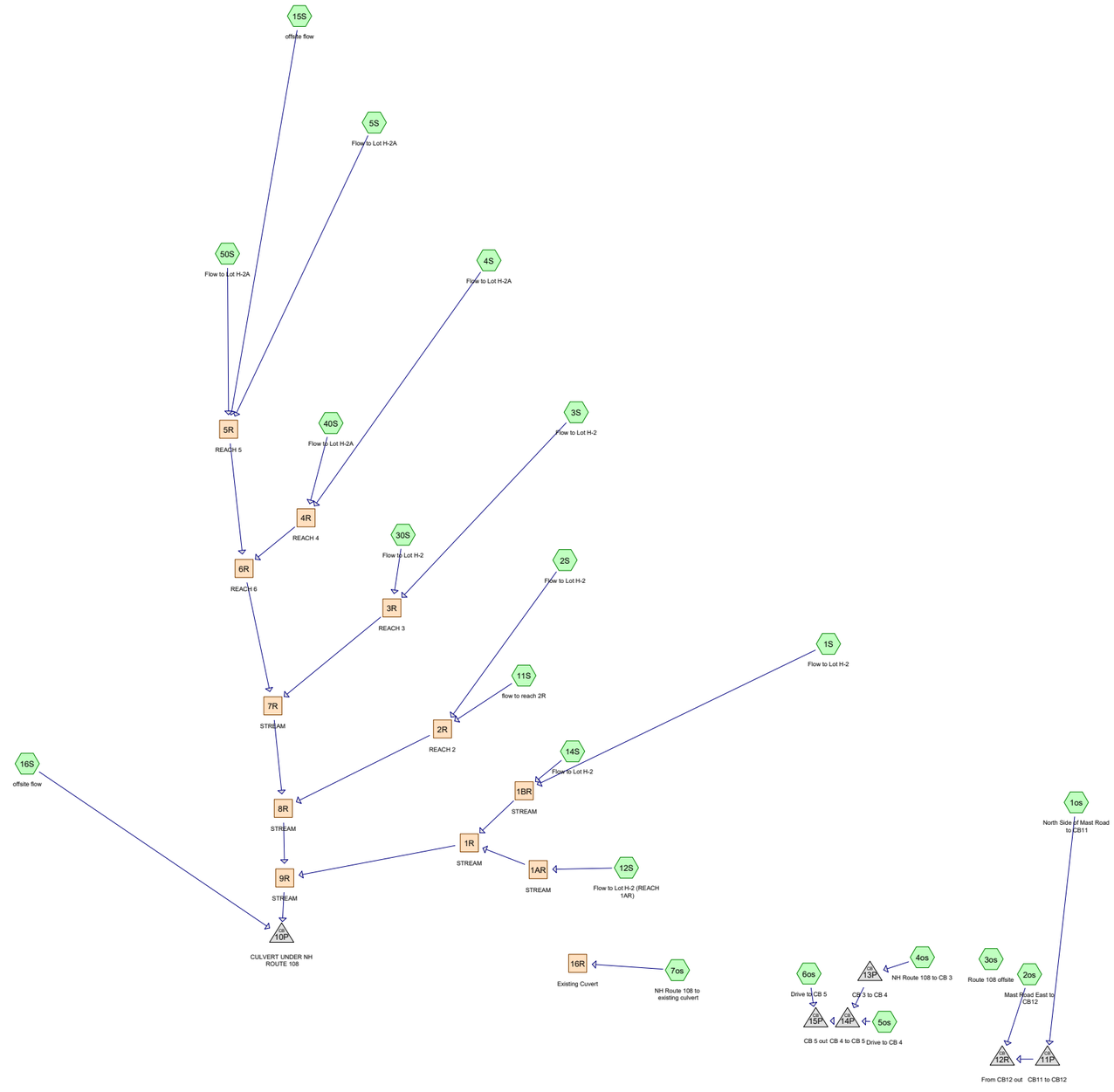
PREPARED FOR

CARE REAL ESTATE, LLC

SCALE: 1"=150' OCTOBER 30, 2006

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Structural Engineers
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Land Surveyors
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FILE	DR	CK	FB	CADFILE		
46001.01	DCQ	DLB	–	46001-Engineering	SHEET 2 OF 6	

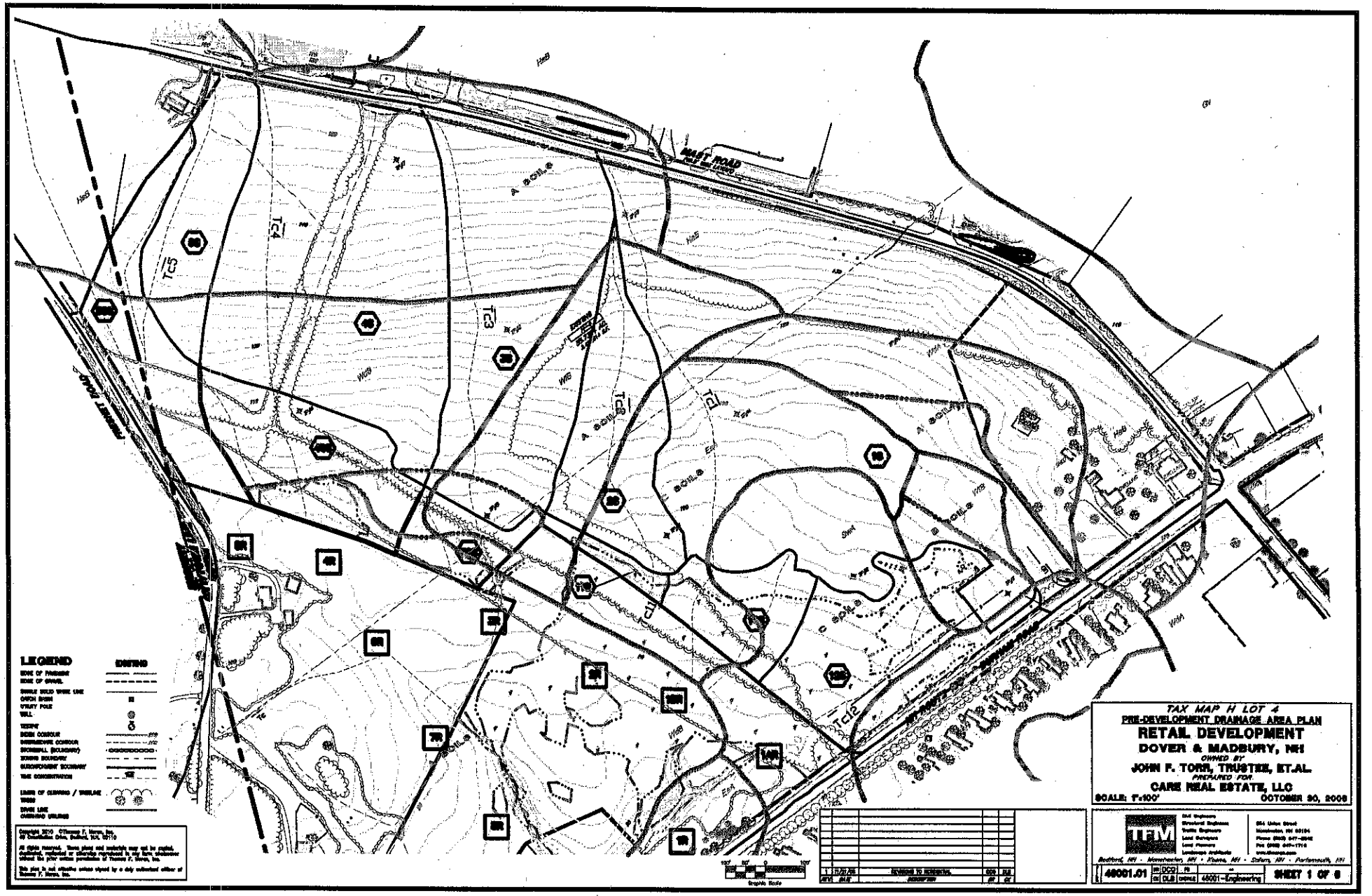


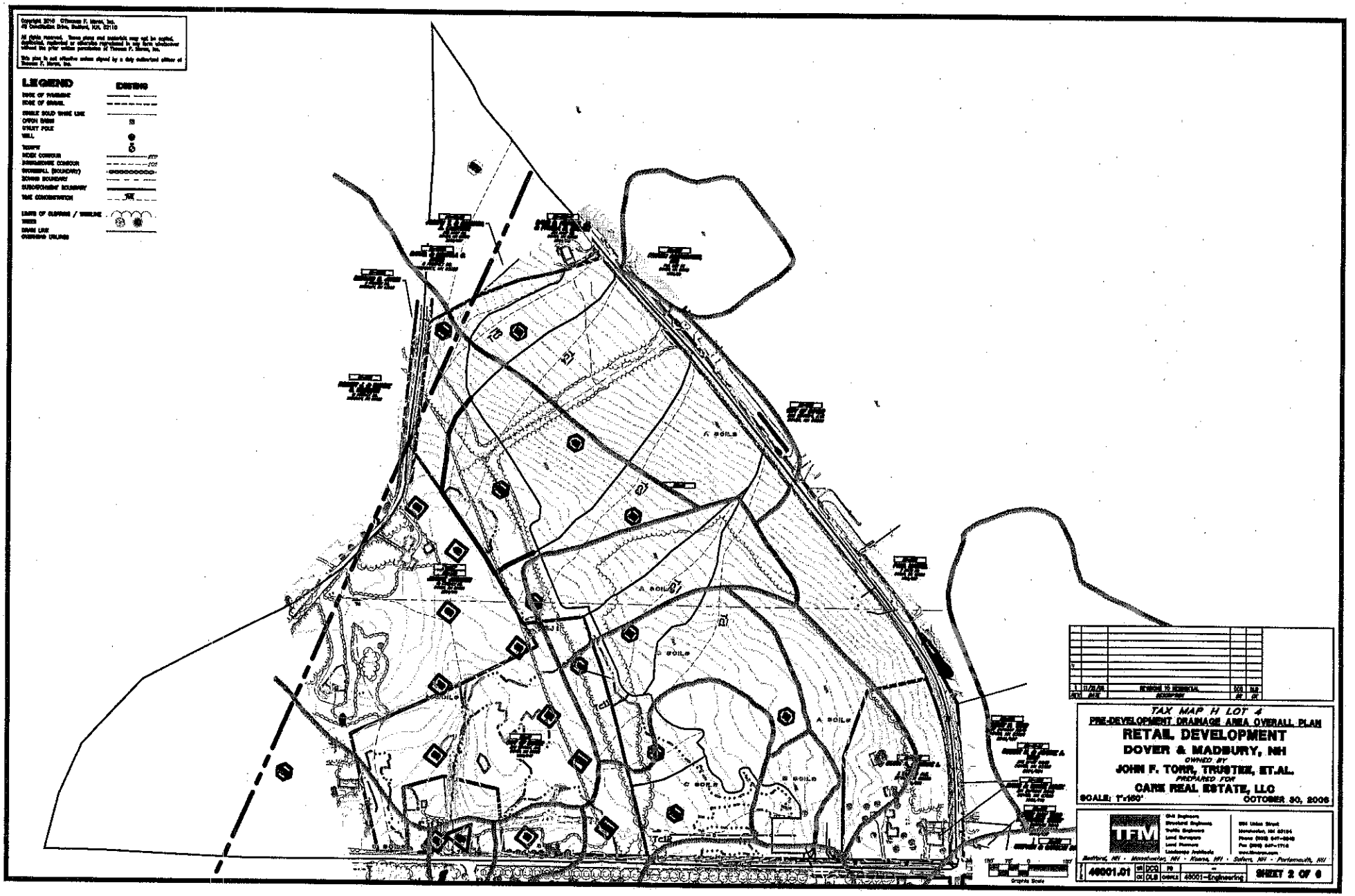
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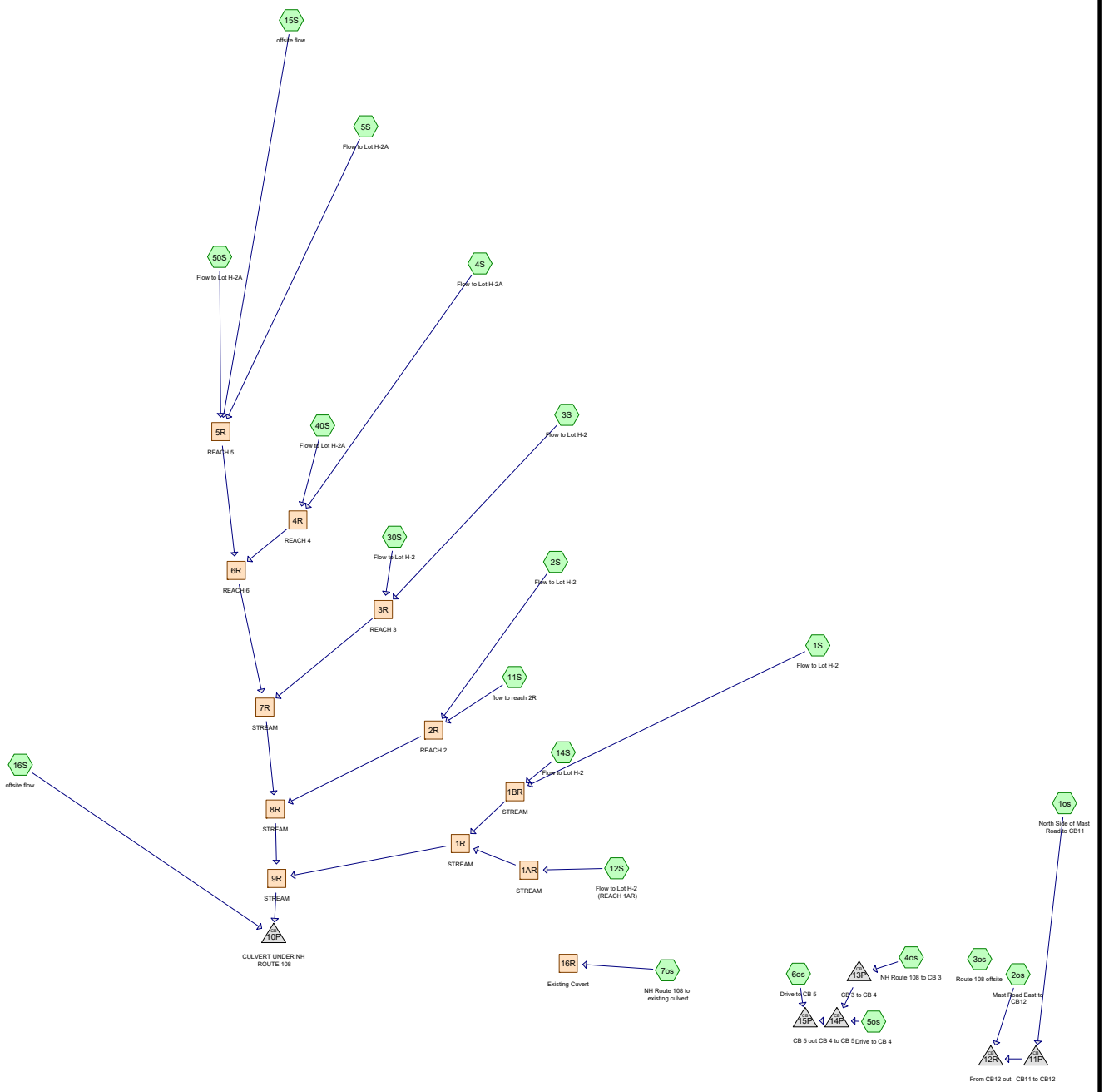
Routing Diagram for 46001.31 Pre Dev

Prepared by TF Moran, Inc., Printed 12/5/2022

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MAST ROAD
TC5
TC4
TC3
TC2
TC1
A SOILS
C SOILS
LEGEND
EXISTING
TAX MAP H LOT 4
PRE-DEVELOPMENT DRAINAGE AREA PLAN
RETAIL DEVELOPMENT
DOVER & MADBURY, NH
OWNED BY
JOHN F. TORR, TRUSTEE, ET.AL.
PREPARED FOR
CARE REAL ESTATE, LLC
SCALE: 1"=100'
OCTOBER 30, 2008
46001.01
SHEET 1 OF 8


LEGEND
EXISTING
A SOILS
B SOILS
C SOILS
D SOILS
TAX MAP H LOT 4
PRE-DEVELOPMENT DRAINAGE AREA OVERALL PLAN
RETAIL DEVELOPMENT
DOVER & MADBURY, NH
OWNED BY
JOHN F. TORR, TRUSTEE, ET.AL.
PREPARED FOR
CARK REAL ESTATE, LLC
SCALE: 1"=100'
OCTOBER 30, 2006
TFM
Bedford, NH · Manchester, NH · Keene, NH · Salem, NH · Portsmouth, NH
46001.01
46001-Engineering
SHEET 2 OF 6



Routing Diagram for 46001.31 Pre Dev
Prepared by TF Moran, Inc., Printed 12/5/2022
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
9.013	39	>75% Grass cover, Good, HSG A (1os, 2os, 3os, 4os, 15S, 16S)
1.814	74	>75% Grass cover, Good, HSG C (4os, 7os, 16S)
0.374	80	>75% Grass cover, Good, HSG D (16S)
3.397	35	Brush, Fair, HSG A (4S, 16S, 40S, 50S)
0.645	56	Brush, Fair, HSG B (30S, 40S)
1.516	70	Brush, Fair, HSG C (16S, 30S, 40S)
0.933	77	Brush, Fair, HSG D (12S, 16S)
0.343	76	Gravel roads, HSG A (4S, 40S, 50S)
0.067	85	Gravel roads, HSG B (30S, 40S)
0.025	89	Gravel roads, HSG C (30S)
1.143	98	Impervious (1S, 3S, 4S, 5S, 12S, 50S)
0.702	79	Pasture/grassland/range, Fair, HSG C (16S)
9.303	39	Pasture/grassland/range, Good, HSG A (1S, 2S, 3S)
2.443	61	Pasture/grassland/range, Good, HSG B (1S)
8.169	74	Pasture/grassland/range, Good, HSG C (1S, 2S, 12S, 14S)
6.200	80	Pasture/grassland/range, Good, HSG D (1S, 12S, 14S, 16S)
4.511	98	Paved parking & roofs (1S, 15S, 16S)
1.375	98	Paved roads w/curbs & sewers (1os, 2os, 3os, 4os, 5os, 6os, 7os)
59.619	30	Woods, Good, HSG A (1os, 1S, 2S, 3S, 4S, 5S, 11S, 15S, 16S, 30S, 40S, 50S)
0.789	55	Woods, Good, HSG B (1S, 3S, 4S, 30S, 40S)
8.714	70	Woods, Good, HSG C (2S, 11S, 12S, 14S, 16S, 30S, 40S)
0.800	77	Woods, Good, HSG D (12S, 14S, 16S)
121.897	**47**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
81.675	HSG A	1os, 1S, 2os, 2S, 3os, 3S, 4os, 4S, 5S, 11S, 15S, 16S, 30S, 40S, 50S
3.944	HSG B	1S, 3S, 4S, 30S, 40S
20.941	HSG C	1S, 2S, 4os, 7os, 11S, 12S, 14S, 16S, 30S, 40S
8.308	HSG D	1S, 12S, 14S, 16S
7.029	Other	1os, 1S, 2os, 3os, 3S, 4os, 4S, 5os, 5S, 6os, 7os, 12S, 15S, 16S, 50S
121.897		**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1os: North Side of Mast Runoff Area=45,066 sf 48.76% Impervious Runoff Depth=0.66"
Tc=5.0 min CN=67 Runoff=0.68 cfs 0.057 af

Subcatchment 1S: Flow to Lot H-2 Runoff Area=1,111,987 sf 4.32% Impervious Runoff Depth=0.16"
Flow Length=1,432' Tc=24.2 min CN=52 Runoff=0.82 cfs 0.338 af

Subcatchment 2os: Mast Road East to CB12 Runoff Area=9,930 sf 98.00% Impervious Runoff Depth=2.80"
Tc=5.0 min CN=97 Runoff=0.71 cfs 0.053 af

Subcatchment 2S: Flow to Lot H-2 Runoff Area=150,958 sf 0.00% Impervious Runoff Depth=0.16"
Flow Length=1,010' Tc=20.6 min CN=52 Runoff=0.12 cfs 0.046 af

Subcatchment 3os: Route 108 offsite Runoff Area=2,934 sf 71.71% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=81 Runoff=0.12 cfs 0.008 af

Subcatchment 3S: Flow to Lot H-2 Runoff Area=360,829 sf 1.36% Impervious Runoff Depth=0.00"
Flow Length=1,229' Tc=29.2 min CN=33 Runoff=0.00 cfs 0.000 af

Subcatchment 4os: NH Route 108 to CB 3 Runoff Area=13,932 sf 52.00% Impervious Runoff Depth=1.11"
Tc=5.0 min CN=76 Runoff=0.42 cfs 0.030 af

Subcatchment 4S: Flow to Lot H-2A Runoff Area=452,681 sf 1.02% Impervious Runoff Depth=0.00"
Flow Length=1,166' Tc=23.8 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment 5os: Drive to CB 4 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 5S: Flow to Lot H-2A Runoff Area=107,760 sf 0.62% Impervious Runoff Depth=0.00"
Flow Length=1,116' Tc=26.8 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 6os: Drive to CB 5 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment 7os: NH Route 108 to Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=87 Runoff=1.27 cfs 0.087 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=0.42"
Flow Length=79' Tc=10.3 min CN=61 Runoff=0.10 cfs 0.014 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=191,637 sf 5.59% Impervious Runoff Depth=1.29"
Flow Length=645' Tc=10.0 min CN=79 Runoff=5.71 cfs 0.474 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,123 sf 0.00% Impervious Runoff Depth=1.11"
Flow Length=416' Tc=10.4 min CN=76 Runoff=1.88 cfs 0.162 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.00"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=0.08"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=0.50 cfs 0.315 af

Subcatchment 30S: Flow to Lot H-2 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=0.53"
Flow Length=250' Slope=0.0200 '/' Tc=17.4 min CN=64 Runoff=0.36 cfs 0.049 af

Subcatchment 40S: Flow to Lot H-2A Runoff Area=144,239 sf 0.00% Impervious Runoff Depth=0.06"
Flow Length=452' Tc=14.5 min CN=47 Runoff=0.03 cfs 0.018 af

Subcatchment 50S: Flow to Lot H-2A Runoff Area=135,787 sf 4.02% Impervious Runoff Depth=0.00"
Flow Length=987' Tc=24.8 min CN=34 Runoff=0.00 cfs 0.000 af

Reach 1AR: STREAM Avg. Flow Depth=0.42' Max Vel=2.57 fps Inflow=5.71 cfs 0.474 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=5.52 cfs 0.474 af

Reach 1BR: STREAM Avg. Flow Depth=0.21' Max Vel=1.90 fps Inflow=1.88 cfs 0.500 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=1.81 cfs 0.500 af

Reach 1R: STREAM Avg. Flow Depth=0.58' Max Vel=2.22 fps Inflow=7.33 cfs 0.974 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=7.02 cfs 0.974 af

Reach 2R: REACH 2 Avg. Flow Depth=0.06' Max Vel=0.61 fps Inflow=0.17 cfs 0.060 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=0.14 cfs 0.060 af

Reach 3R: REACH 3 Avg. Flow Depth=0.08' Max Vel=0.78 fps Inflow=0.36 cfs 0.049 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=0.33 cfs 0.049 af

Reach 4R: REACH 4 Avg. Flow Depth=0.02' Max Vel=0.23 fps Inflow=0.03 cfs 0.018 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=0.03 cfs 0.018 af

Reach 5R: REACH 5 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.00 cfs 0.000 af

Reach 6R: REACH 6 Avg. Flow Depth=0.03' Max Vel=0.22 fps Inflow=0.03 cfs 0.018 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=0.03 cfs 0.018 af

Reach 7R: STREAM Avg. Flow Depth=0.08' Max Vel=0.93 fps Inflow=0.33 cfs 0.067 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=0.33 cfs 0.067 af

Reach 8R: STREAM Avg. Flow Depth=0.10' Max Vel=0.97 fps Inflow=0.43 cfs 0.127 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=0.40 cfs 0.127 af

Reach 9R: STREAM Avg. Flow Depth=0.56' Max Vel=2.33 fps Inflow=7.03 cfs 1.100 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=7.01 cfs 1.100 af

Reach 16R: Existing Cuvert Avg. Flow Depth=0.35' Max Vel=4.53 fps Inflow=1.27 cfs 0.087 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=1.27 cfs 0.087 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=68.91' Inflow=7.01 cfs 1.415 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=7.01 cfs 1.415 af

Pond 11P: CB11 to CB12 Peak Elev=105.59' Inflow=0.68 cfs 0.057 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=0.68 cfs 0.057 af

Pond 12R: From CB12 out Peak Elev=105.36' Inflow=1.38 cfs 0.110 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=1.38 cfs 0.110 af

Pond 13P: CB 3 to CB 4 Peak Elev=106.95' Inflow=0.42 cfs 0.030 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=0.42 cfs 0.030 af

Pond 14P: CB 4 to CB 5 Peak Elev=105.98' Inflow=0.54 cfs 0.039 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=0.54 cfs 0.039 af

Pond 15P: CB 5 out Peak Elev=104.86' Inflow=0.81 cfs 0.060 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=0.81 cfs 0.060 af

Total Runoff Area = 121.897 ac Runoff Volume = 1.680 af Average Runoff Depth = 0.17"
94.23% Pervious = 114.868 ac 5.77% Impervious = 7.029 ac

Summary for Subcatchment 1os: North Side of Mast Road to CB11

Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
21,973	98	Paved roads w/curbs & sewers
5,800	30	Woods, Good, HSG A
17,293	39	>75% Grass cover, Good, HSG A
45,066	67	Weighted Average
23,093		51.24% Pervious Area
21,973		48.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 1S: Flow to Lot H-2

Runoff = 0.82 cfs @ 12.71 hrs, Volume= 0.338 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
23,422	98	Impervious
335,880	30	Woods, Good, HSG A
215,930	39	Pasture/grassland/range, Good, HSG A
148,379	74	Pasture/grassland/range, Good, HSG C
41,694	80	Pasture/grassland/range, Good, HSG D
71,102	74	Pasture/grassland/range, Good, HSG C
70,496	80	Pasture/grassland/range, Good, HSG D
25,455	39	Pasture/grassland/range, Good, HSG A
106,398	61	Pasture/grassland/range, Good, HSG B
470	55	Woods, Good, HSG B
44,985	39	Pasture/grassland/range, Good, HSG A
274	74	Pasture/grassland/range, Good, HSG C
24,572	98	Paved parking & roofs
2,930	30	Woods, Good, HSG A
1,111,987	52	Weighted Average
1,063,993		95.68% Pervious Area
47,994		4.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0200	0.97		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
5.0	30	0.0730	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
4.3	325	0.0630	1.25		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
10.3	833	0.0370	1.35		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
4.3	224	0.0300	0.87		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
24.2	1,432	Total			

Summary for Subcatchment 2os: Mast Road East to CB12

Runoff = 0.71 cfs @ 12.07 hrs, Volume= 0.053 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,731	98	Paved roads w/curbs & sewers
199	39	>75% Grass cover, Good, HSG A
9,930	97	Weighted Average
199		2.00% Pervious Area
9,731		98.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 2S: Flow to Lot H-2

Runoff = 0.12 cfs @ 12.65 hrs, Volume= 0.046 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
10,946	30	Woods, Good, HSG A
77,737	39	Pasture/grassland/range, Good, HSG A
259	30	Woods, Good, HSG A
53,984	74	Pasture/grassland/range, Good, HSG C
8,032	70	Woods, Good, HSG C
150,958	52	Weighted Average
150,958		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0540	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
1.2	101	0.0790	1.41		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
8.7	744	0.0417	1.43		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
2.1	115	0.0322	0.90		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
20.6	1,010	Total			

Summary for Subcatchment 3os: Route 108 offsite

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.008 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,104	98	Paved roads w/curbs & sewers
830	39	>75% Grass cover, Good, HSG A
2,934	81	Weighted Average
830		28.29% Pervious Area
2,104		71.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 3S: Flow to Lot H-2

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
41,153	39	Pasture/grassland/range, Good, HSG A
4,922	98	Impervious
20,887	55	Woods, Good, HSG B
293,867	30	Woods, Good, HSG A
360,829	33	Weighted Average
355,907		98.64% Pervious Area
4,922		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	14	0.0200	0.90		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
10.0	36	0.0190	0.06		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
12.9	910	0.0550	1.17		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	147	0.0270	0.82		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	122	0.0189	0.69		**Shallow Concentrated Flow, FLOW THROUGH BRUSH** Woodland Kv= 5.0 fps
29.2	1,229	Total			

Summary for Subcatchment 4os: NH Route 108 to CB 3

Runoff = 0.42 cfs @ 12.08 hrs, Volume= 0.030 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
7,244	98	Paved roads w/curbs & sewers
2,648	74	>75% Grass cover, Good, HSG C
4,040	39	>75% Grass cover, Good, HSG A
13,932	76	Weighted Average
6,688		48.00% Pervious Area
7,244		52.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 4S: Flow to Lot H-2A

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
384,995	30	Woods, Good, HSG A
7,520	76	Gravel roads, HSG A
4,607	98	Impervious
1,641	55	Woods, Good, HSG B
53,918	35	Brush, Fair, HSG A
452,681	32	Weighted Average
448,074		98.98% Pervious Area
4,607		1.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	16	0.0200	0.92		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
6.8	34	0.0440	0.08		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
10.7	731	0.0520	1.14		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
4.5	302	0.0510	1.13		**Shallow Concentrated Flow, FLOW THROUGH BRUSH** Woodland Kv= 5.0 fps
1.5	83	0.0360	0.95		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
23.8	1,166	Total			

Summary for Subcatchment 5os: Drive to CB 4

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,717	98	Paved roads w/curbs & sewers
1,717		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 5S: Flow to Lot H-2A

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
670	98	Impervious
107,090	30	Woods, Good, HSG A
107,760	30	Weighted Average
107,090		99.38% Pervious Area
670		0.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	5	0.0200	0.73		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
8.9	45	0.0400	0.08		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
11.1	739	0.0490	1.11		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.3	33	0.1818	2.13		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	117	0.0171	0.65		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.4	177	0.0300	0.87		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
26.8	1,116	Total			

Summary for Subcatchment 6os: Drive to CB 5

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,747	98	Paved roads w/curbs & sewers
3,747		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 7os: NH Route 108 to existing culvert

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
13,369	98	Paved roads w/curbs & sewers
11,049	74	>75% Grass cover, Good, HSG C
24,418	87	Weighted Average
11,049		45.25% Pervious Area
13,369		54.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 11S: flow to reach 2R

Runoff = 0.10 cfs @ 12.20 hrs, Volume= 0.014 af, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,803	30	Woods, Good, HSG A
13,564	70	Woods, Good, HSG C
17,367	61	Weighted Average
17,367		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
0.6	29	0.0241	0.78		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.3	79	Total			

Summary for Subcatchment 12S: Flow to Lot H-2 (REACH 1AR)

Runoff = 5.71 cfs @ 12.14 hrs, Volume= 0.474 af, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
551	70	Woods, Good, HSG C
37,556	74	Pasture/grassland/range, Good, HSG C
701	70	Woods, Good, HSG C
19,528	74	Pasture/grassland/range, Good, HSG C
7,813	74	Pasture/grassland/range, Good, HSG C
8,566	77	Woods, Good, HSG D
120	77	Brush, Fair, HSG D
82,531	80	Pasture/grassland/range, Good, HSG D
23,565	80	Pasture/grassland/range, Good, HSG D
10,706	98	Impervious
191,637	79	Weighted Average
180,931		94.41% Pervious Area
10,706		5.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	50	0.0800	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
3.6	263	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	332	0.0250	3.59	334.67	**Parabolic Channel,** W=140.00' D=1.00' Area=93.3 sf Perim=140.0' n= 0.050
10.0	645	Total			

Summary for Subcatchment 14S: Flow to Lot H-2

Runoff = 1.88 cfs @ 12.15 hrs, Volume= 0.162 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
17,221	74	Pasture/grassland/range, Good, HSG C
36,737	80	Pasture/grassland/range, Good, HSG D
18,706	70	Woods, Good, HSG C
3,459	77	Woods, Good, HSG D
76,123	76	Weighted Average
76,123		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	50	0.0220	0.10		**Sheet Flow, FLOW THROUGH PASTURE** Grass: Dense n= 0.240 P2= 3.00"
0.8	74	0.0439	1.47		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
0.7	152	0.0310	3.44	220.23	**Parabolic Channel,** W=120.00' D=0.80' Area=64.0 sf Perim=120.0' n= 0.050
0.8	140	0.0236	3.00	192.15	**Parabolic Channel,** W=120.00' D=0.80' Area=64.0 sf Perim=120.0' n= 0.050
10.4	416	Total			

Summary for Subcatchment 15S: offsite flow

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
308,398	30	Woods, Good, HSG A
6,100	98	Paved parking & roofs
43,560	39	>75% Grass cover, Good, HSG A
358,058	32	Weighted Average
351,958		98.30% Pervious Area
6,100		1.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0200	0.87		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
7.6	38	0.0420	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
19.7	1,210	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.5	1,260	Total			

Summary for Subcatchment 16S: offsite flow

Runoff = 0.50 cfs @ 15.05 hrs, Volume= 0.315 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,858	30	Woods, Good, HSG A
13,459	35	Brush, Fair, HSG A
25,519	70	Woods, Good, HSG C
28,002	70	Brush, Fair, HSG C
40,537	77	Brush, Fair, HSG D
15,070	80	Pasture/grassland/range, Good, HSG D
12,170	77	Woods, Good, HSG D
4,441	98	Paved parking & roofs
32,048	70	Woods, Good, HSG C
30,577	79	Pasture/grassland/range, Fair, HSG C
5,334	98	Paved parking & roofs
16,304	80	>75% Grass cover, Good, HSG D
10,644	77	Woods, Good, HSG D
9,584	98	Paved parking & roofs
58,128	98	Paved parking & roofs
65,340	74	>75% Grass cover, Good, HSG C
260,648	70	Woods, Good, HSG C
999,761	30	Woods, Good, HSG A
326,700	39	>75% Grass cover, Good, HSG A
88,350	98	Paved parking & roofs
2,052,474	48	Weighted Average
1,886,637		91.92% Pervious Area
165,837		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.9	100	0.0150	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
7.6	370	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	136	0.0126	6.06	262.50	**Parabolic Channel,** W=50.00' D=1.30' Area=43.3 sf Perim=50.1' n= 0.025
0.3	194	0.0284	9.61	153.83	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.0 '/' Top.W=12.00' n= 0.030
0.9	512	0.0258	9.08	163.39	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.5 '/' Top.W=14.00' n= 0.030
0.2	100	0.0190	7.79	140.22	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.5 '/' Top.W=14.00' n= 0.030
34.3	1,412	Total			

Summary for Subcatchment 30S: Flow to Lot H-2

Runoff = 0.36 cfs @ 12.31 hrs, Volume= 0.049 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
215	30	Woods, Good, HSG A
1,600	85	Gravel roads, HSG B
1,110	89	Gravel roads, HSG C
10,188	55	Woods, Good, HSG B
1,310	70	Woods, Good, HSG C
22,056	70	Brush, Fair, HSG C
11,719	56	Brush, Fair, HSG B
48,198	64	Weighted Average
48,198		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	50	0.0200	0.07		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
4.7	200	0.0200	0.71		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
17.4	250	Total			

Summary for Subcatchment 40S: Flow to Lot H-2A

Runoff = 0.03 cfs @ 15.06 hrs, Volume= 0.018 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
18,496	70	Woods, Good, HSG C
15,979	70	Brush, Fair, HSG C
16,386	56	Brush, Fair, HSG B
1,188	55	Woods, Good, HSG B
1,320	85	Gravel roads, HSG B
30,854	30	Woods, Good, HSG A
5,490	76	Gravel roads, HSG A
1,978	30	Woods, Good, HSG A
52,548	35	Brush, Fair, HSG A
144,239	47	Weighted Average
144,239		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.0560	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
6.1	402	0.0490	1.11		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
14.5	452	Total			

Summary for Subcatchment 50S: Flow to Lot H-2A

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
100,348	30	Woods, Good, HSG A
5,456	98	Impervious
1,920	76	Gravel roads, HSG A
28,063	35	Brush, Fair, HSG A
135,787	34	Weighted Average
130,331		95.98% Pervious Area
5,456		4.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0500	0.09		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
9.3	610	0.0479	1.09		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.3	33	0.1818	2.13		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	117	0.0171	0.65		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.4	177	0.0300	0.87		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
24.8	987	Total			

Summary for Reach 1AR: STREAM

Inflow Area = 4.399 ac, 5.59% Impervious, Inflow Depth = 1.29" for 2 YR event
Inflow = 5.71 cfs @ 12.14 hrs, Volume= 0.474 af
Outflow = 5.52 cfs @ 12.17 hrs, Volume= 0.474 af, Atten= 3%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.57 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.81 fps, Avg. Travel Time= 7.6 min

Peak Storage= 794 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 108.07 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 370.0' Slope= 0.0314 '/'
Inlet Invert= 87.70', Outlet Invert= 76.10'



Summary for Reach 1BR: STREAM

Inflow Area = 27.275 ac, 4.04% Impervious, Inflow Depth = 0.22" for 2 YR event
Inflow = 1.88 cfs @ 12.15 hrs, Volume= 0.500 af
Outflow = 1.81 cfs @ 12.18 hrs, Volume= 0.500 af, Atten= 4%, Lag= 1.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.90 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 5.2 min

Peak Storage= 296 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 119.58 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 310.0' Slope= 0.0384 '/'
Inlet Invert= 88.00', Outlet Invert= 76.10'



Summary for Reach 1R: STREAM

[62] Hint: Exceeded Reach 1AR OUTLET depth by 0.18' @ 12.26 hrs
[62] Hint: Exceeded Reach 1BR OUTLET depth by 0.37' @ 12.22 hrs

Inflow Area = 31.675 ac, 4.25% Impervious, Inflow Depth = 0.37" for 2 YR event
Inflow = 7.33 cfs @ 12.17 hrs, Volume= 0.974 af
Outflow = 7.02 cfs @ 12.21 hrs, Volume= 0.974 af, Atten= 4%, Lag= 2.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.22 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 7.5 min

Peak Storage= 1,199 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 78.59 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 380.0' Slope= 0.0166 '/'
Inlet Invert= 76.10', Outlet Invert= 69.80'



Summary for Reach 2R: REACH 2

Inflow Area = 3.864 ac, 0.00% Impervious, Inflow Depth = 0.19" for 2 YR event
Inflow = 0.17 cfs @ 12.56 hrs, Volume= 0.060 af
Outflow = 0.14 cfs @ 12.76 hrs, Volume= 0.060 af, Atten= 13%, Lag= 12.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.61 fps, Min. Travel Time= 15.4 min
Avg. Velocity = 0.37 fps, Avg. Travel Time= 24.9 min

Peak Storage= 134 cf @ 12.76 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 1.50' Flow Area= 10.5 sf, Capacity= 42.77 cfs

4.00' x 1.50' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 10.00'
Length= 560.0' Slope= 0.0193 '/'
Inlet Invert= 93.80', Outlet Invert= 83.00'



Summary for Reach 3R: REACH 3

Inflow Area = 9.390 ac, 1.20% Impervious, Inflow Depth = 0.06" for 2 YR event
Inflow = 0.36 cfs @ 12.31 hrs, Volume= 0.049 af
Outflow = 0.33 cfs @ 12.42 hrs, Volume= 0.049 af, Atten= 8%, Lag= 6.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.78 fps, Min. Travel Time= 7.3 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 18.4 min

Peak Storage= 145 cf @ 12.42 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 24.05 cfs

5.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 9.00'
Length= 340.0' Slope= 0.0200 '/'
Inlet Invert= 95.30', Outlet Invert= 88.50'



‡

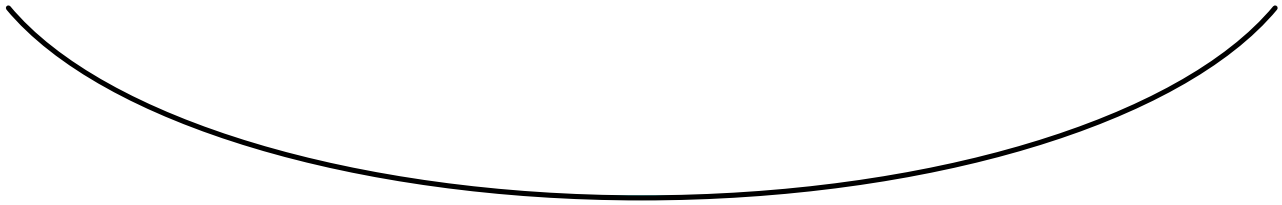
Summary for Reach 4R: REACH 4

Inflow Area = 13.703 ac, 0.77% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.03 cfs @ 15.06 hrs, Volume= 0.018 af
Outflow = 0.03 cfs @ 15.23 hrs, Volume= 0.018 af, Atten= 1%, Lag= 10.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.23 fps, Min. Travel Time= 18.6 min
Avg. Velocity = 0.21 fps, Avg. Travel Time= 20.5 min

Peak Storage= 31 cf @ 15.23 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 468.29 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050
Length= 255.0' Slope= 0.0149 '/'
Inlet Invert= 95.80', Outlet Invert= 92.00'



‡

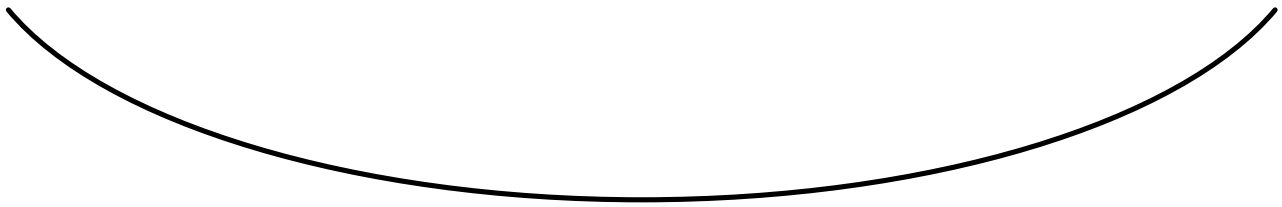
Summary for Reach 5R: REACH 5

Inflow Area = 13.811 ac, 2.03% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.30' Flow Area= 99.7 sf, Capacity= 409.57 cfs

115.00' x 1.30' deep Parabolic Channel, n= 0.050
Length= 540.0' Slope= 0.0231 '/'
Inlet Invert= 104.50', Outlet Invert= 92.00'



‡

Summary for Reach 6R: REACH 6

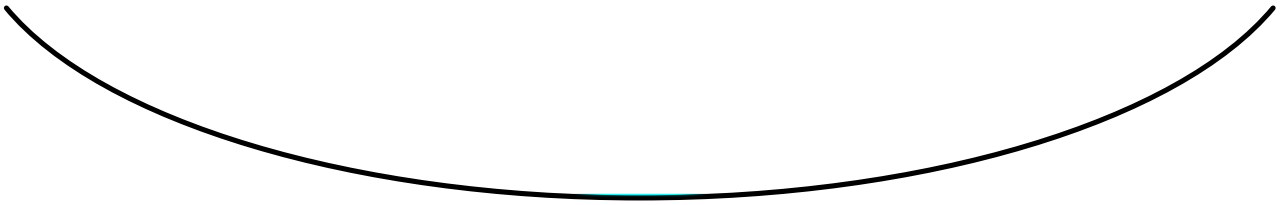
[62] Hint: Exceeded Reach 4R OUTLET depth by 0.01' @ 24.76 hrs
[62] Hint: Exceeded Reach 5R OUTLET depth by 0.03' @ 15.51 hrs

Inflow Area = 27.514 ac, 1.40% Impervious, Inflow Depth = 0.01" for 2 YR event
Inflow = 0.03 cfs @ 15.23 hrs, Volume= 0.018 af
Outflow = 0.03 cfs @ 15.51 hrs, Volume= 0.018 af, Atten= 1%, Lag= 16.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.22 fps, Min. Travel Time= 20.6 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 24.9 min

Peak Storage= 34 cf @ 15.51 hrs
Average Depth at Peak Storage= 0.03'
Bank-Full Depth= 1.30' Flow Area= 43.3 sf, Capacity= 131.20 cfs

50.00' x 1.30' deep Parabolic Channel, n= 0.050
Length= 278.0' Slope= 0.0126 '/'
Inlet Invert= 92.00', Outlet Invert= 88.50'



‡

Summary for Reach 7R: STREAM

[62] Hint: Exceeded Reach 3R OUTLET depth by 0.01' @ 15.71 hrs
[62] Hint: Exceeded Reach 6R OUTLET depth by 0.08' @ 12.47 hrs

Inflow Area = 36.904 ac, 1.35% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.33 cfs @ 12.42 hrs, Volume= 0.067 af
Outflow = 0.33 cfs @ 12.47 hrs, Volume= 0.067 af, Atten= 1%, Lag= 2.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.93 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 0.45 fps, Avg. Travel Time= 7.1 min

Peak Storage= 68 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 92.22 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 194.0' Slope= 0.0284 '/'
Inlet Invert= 88.50', Outlet Invert= 83.00'



Summary for Reach 8R: STREAM

[62] Hint: Exceeded Reach 2R OUTLET depth by 0.04' @ 12.60 hrs
[62] Hint: Exceeded Reach 7R OUTLET depth by 0.03' @ 12.96 hrs

Inflow Area = 40.769 ac, 1.23% Impervious, Inflow Depth = 0.04" for 2 YR event
Inflow = 0.43 cfs @ 12.55 hrs, Volume= 0.127 af
Outflow = 0.40 cfs @ 12.67 hrs, Volume= 0.127 af, Atten= 6%, Lag= 7.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.97 fps, Min. Travel Time= 8.8 min
Avg. Velocity = 0.53 fps, Avg. Travel Time= 16.1 min

Peak Storage= 212 cf @ 12.67 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 98.00 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 512.0' Slope= 0.0258 '/'
Inlet Invert= 83.00', Outlet Invert= 69.80'



Summary for Reach 9R: STREAM

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.02' @ 12.74 hrs
[62] Hint: Exceeded Reach 8R OUTLET depth by 0.55' @ 12.21 hrs

Inflow Area = 72.443 ac, 2.55% Impervious, Inflow Depth = 0.18" for 2 YR event
Inflow = 7.03 cfs @ 12.21 hrs, Volume= 1.100 af
Outflow = 7.01 cfs @ 12.22 hrs, Volume= 1.100 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.33 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 1.9 min

Peak Storage= 301 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.56'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 84.13 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 100.0' Slope= 0.0190 '/'
Inlet Invert= 69.80', Outlet Invert= 67.90'



Summary for Reach 16R: Existing Cuvert

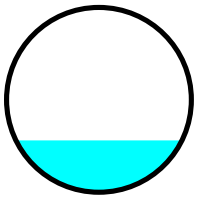
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.561 ac, 54.75% Impervious, Inflow Depth = 1.86" for 2 YR event
Inflow = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af
Outflow = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.53 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.55 fps, Avg. Travel Time= 0.5 min

Peak Storage= 13 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.45 cfs

15.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 45.0' Slope= 0.0113 '/'
Inlet Invert= 90.05', Outlet Invert= 89.54'



Summary for Pond 10P: CULVERT UNDER NH ROUTE 108

[62] Hint: Exceeded Reach 9R OUTLET depth by 0.46' @ 12.22 hrs

Inflow Area = 119.561 ac, 4.73% Impervious, Inflow Depth = 0.14" for 2 YR event
Inflow = 7.01 cfs @ 12.22 hrs, Volume= 1.415 af
Outflow = 7.01 cfs @ 12.22 hrs, Volume= 1.415 af, Atten= 0%, Lag= 0.0 min
Primary = 7.01 cfs @ 12.22 hrs, Volume= 1.415 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Peak Elev= 68.91' @ 12.22 hrs
Flood Elev= 74.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.90'	**48.0" Round Culvert** L= 63.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 67.90' / 67.50' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf

Primary OutFlow Max=7.01 cfs @ 12.22 hrs HW=68.91' (Free Discharge)
1=Culvert (Barrel Controls 7.01 cfs @ 4.21 fps)

Summary for Pond 11P: CB11 to CB12

[57] Hint: Peaked at 105.59' (Flood elevation advised)

Inflow Area = 1.035 ac, 48.76% Impervious, Inflow Depth = 0.66" for 2 YR event
Inflow = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af
Outflow = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.68 cfs @ 12.09 hrs, Volume= 0.057 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 105.59' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	105.11'	**12.0" Round Culvert** L= 19.0' Ke= 0.500 Inlet / Outlet Invert= 105.11' / 104.86' S= 0.0132 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.69 cfs @ 12.09 hrs HW=105.58' TW=105.35' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.69 cfs @ 2.73 fps)

Summary for Pond 12R: From CB12 out

Inflow Area = 1.263 ac, 57.65% Impervious, Inflow Depth = 1.04" for 2 YR event
Inflow = 1.38 cfs @ 12.08 hrs, Volume= 0.110 af
Outflow = 1.38 cfs @ 12.08 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 12.08 hrs, Volume= 0.110 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 105.36' @ 12.08 hrs
Flood Elev= 109.68'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.63'	**12.0" Round Culvert** L= 20.0' Square-edged headwall, Ke= 0.500 Inlet / Outlet Invert= 104.63' / 104.53' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.37 cfs @ 12.08 hrs HW=105.36' (Free Discharge)
1=Culvert (Barrel Controls 1.37 cfs @ 3.14 fps)

Summary for Pond 13P: CB 3 to CB 4

[57] Hint: Peaked at 106.95' (Flood elevation advised)

Inflow Area = 0.320 ac, 52.00% Impervious, Inflow Depth = 1.11" for 2 YR event
Inflow = 0.42 cfs @ 12.08 hrs, Volume= 0.030 af
Outflow = 0.42 cfs @ 12.08 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
Primary = 0.42 cfs @ 12.08 hrs, Volume= 0.030 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 106.95' @ 12.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	106.63'	**12.0" Round Culvert** L= 98.0' Ke= 0.500 Inlet / Outlet Invert= 106.63' / 105.64' S= 0.0101 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.41 cfs @ 12.08 hrs HW=106.95' TW=105.98' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.41 cfs @ 2.81 fps)

Summary for Pond 14P: CB 4 to CB 5

[57] Hint: Peaked at 105.98' (Flood elevation advised)

Inflow Area = 0.359 ac, 57.26% Impervious, Inflow Depth = 1.31" for 2 YR event
Inflow = 0.54 cfs @ 12.07 hrs, Volume= 0.039 af
Outflow = 0.54 cfs @ 12.07 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min
Primary = 0.54 cfs @ 12.07 hrs, Volume= 0.039 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Peak Elev= 105.98' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	105.61'	**12.0" Round Culvert** L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 105.61' / 104.40' S= 0.0484 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.54 cfs @ 12.07 hrs HW=105.98' TW=104.86' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.54 cfs @ 2.06 fps)

Summary for Pond 15P: CB 5 out

[57] Hint: Peaked at 104.86' (Flood elevation advised)

Inflow Area = 0.445 ac, 65.52% Impervious, Inflow Depth = 1.62" for 2 YR event
Inflow = 0.81 cfs @ 12.07 hrs, Volume= 0.060 af
Outflow = 0.81 cfs @ 12.07 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min
Primary = 0.81 cfs @ 12.07 hrs, Volume= 0.060 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Peak Elev= 104.86' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	104.33'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 104.33' / 104.23' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.81 cfs @ 12.07 hrs HW=104.86' (Free Discharge)
1=Culvert (Barrel Controls 0.81 cfs @ 2.81 fps)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1os: North Side of Mast Runoff Area=45,066 sf 48.76% Impervious Runoff Depth=1.62"
Tc=5.0 min CN=67 Runoff=1.96 cfs 0.140 af

Subcatchment 1S: Flow to Lot H-2 Runoff Area=1,111,987 sf 4.32% Impervious Runoff Depth=0.69"
Flow Length=1,432' Tc=24.2 min CN=52 Runoff=8.88 cfs 1.469 af

Subcatchment 2os: Mast Road East to CB12 Runoff Area=9,930 sf 98.00% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=97 Runoff=1.09 cfs 0.083 af

Subcatchment 2S: Flow to Lot H-2 Runoff Area=150,958 sf 0.00% Impervious Runoff Depth=0.69"
Flow Length=1,010' Tc=20.6 min CN=52 Runoff=1.27 cfs 0.199 af

Subcatchment 3os: Route 108 offsite Runoff Area=2,934 sf 71.71% Impervious Runoff Depth=2.76"
Tc=5.0 min CN=81 Runoff=0.23 cfs 0.015 af

Subcatchment 3S: Flow to Lot H-2 Runoff Area=360,829 sf 1.36% Impervious Runoff Depth=0.02"
Flow Length=1,229' Tc=29.2 min CN=33 Runoff=0.02 cfs 0.015 af

Subcatchment 4os: NH Route 108 to CB 3 Runoff Area=13,932 sf 52.00% Impervious Runoff Depth=2.32"
Tc=5.0 min CN=76 Runoff=0.90 cfs 0.062 af

Subcatchment 4S: Flow to Lot H-2A Runoff Area=452,681 sf 1.02% Impervious Runoff Depth=0.01"
Flow Length=1,166' Tc=23.8 min CN=32 Runoff=0.02 cfs 0.010 af

Subcatchment 5os: Drive to CB 4 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment 5S: Flow to Lot H-2A Runoff Area=107,760 sf 0.62% Impervious Runoff Depth=0.00"
Flow Length=1,116' Tc=26.8 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment 6os: Drive to CB 5 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment 7os: NH Route 108 to Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=3.32"
Tc=5.0 min CN=87 Runoff=2.23 cfs 0.155 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=1.22"
Flow Length=79' Tc=10.3 min CN=61 Runoff=0.44 cfs 0.040 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=191,637 sf 5.59% Impervious Runoff Depth=2.58"
Flow Length=645' Tc=10.0 min CN=79 Runoff=11.63 cfs 0.946 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,123 sf 0.00% Impervious Runoff Depth=2.32"
Flow Length=416' Tc=10.4 min CN=76 Runoff=4.09 cfs 0.338 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.01"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.02 cfs 0.008 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=0.49"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=8.26 cfs 1.939 af

Subcatchment 30S: Flow to Lot H-2 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=1.41"
Flow Length=250' Slope=0.0200 '/' Tc=17.4 min CN=64 Runoff=1.21 cfs 0.130 af

Subcatchment 40S: Flow to Lot H-2A Runoff Area=144,239 sf 0.00% Impervious Runoff Depth=0.45"
Flow Length=452' Tc=14.5 min CN=47 Runoff=0.64 cfs 0.124 af

Subcatchment 50S: Flow to Lot H-2A Runoff Area=135,787 sf 4.02% Impervious Runoff Depth=0.04"
Flow Length=987' Tc=24.8 min CN=34 Runoff=0.01 cfs 0.009 af

Reach 1AR: STREAM Avg. Flow Depth=0.63' Max Vel=3.21 fps Inflow=11.63 cfs 0.946 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=11.36 cfs 0.946 af

Reach 1BR: STREAM Avg. Flow Depth=0.58' Max Vel=3.38 fps Inflow=10.69 cfs 1.808 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=10.66 cfs 1.808 af

Reach 1R: STREAM Avg. Flow Depth=0.94' Max Vel=2.90 fps Inflow=17.68 cfs 2.753 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=17.42 cfs 2.753 af

Reach 2R: REACH 2 Avg. Flow Depth=0.23' Max Vel=1.43 fps Inflow=1.54 cfs 0.240 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=1.46 cfs 0.240 af

Reach 3R: REACH 3 Avg. Flow Depth=0.17' Max Vel=1.24 fps Inflow=1.21 cfs 0.146 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=1.16 cfs 0.146 af

Reach 4R: REACH 4 Avg. Flow Depth=0.09' Max Vel=0.57 fps Inflow=0.64 cfs 0.133 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=0.60 cfs 0.133 af

Reach 5R: REACH 5 Avg. Flow Depth=0.01' Max Vel=0.22 fps Inflow=0.03 cfs 0.017 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.03 cfs 0.017 af

Reach 6R: REACH 6 Avg. Flow Depth=0.10' Max Vel=0.56 fps Inflow=0.60 cfs 0.150 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=0.54 cfs 0.150 af

Reach 7R: STREAM Avg. Flow Depth=0.20' Max Vel=1.58 fps Inflow=1.36 cfs 0.296 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=1.36 cfs 0.296 af

Reach 8R: STREAM Avg. Flow Depth=0.30' Max Vel=1.93 fps Inflow=2.82 cfs 0.536 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=2.78 cfs 0.536 af

Reach 9R: STREAM Avg. Flow Depth=0.95' Max Vel=3.13 fps Inflow=19.05 cfs 3.289 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=19.05 cfs 3.289 af

Reach 16R: Existing Cuvert Avg. Flow Depth=0.47' Max Vel=5.30 fps Inflow=2.23 cfs 0.155 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=2.23 cfs 0.155 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=69.95' Inflow=24.79 cfs 5.228 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=24.79 cfs 5.228 af

Pond 11P: CB11 to CB12 Peak Elev=106.21' Inflow=1.96 cfs 0.140 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=1.96 cfs 0.140 af

Pond 12R: From CB12 out Peak Elev=105.94' Inflow=3.04 cfs 0.223 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=3.04 cfs 0.223 af

Pond 13P: CB 3 to CB 4 Peak Elev=107.13' Inflow=0.90 cfs 0.062 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=0.90 cfs 0.062 af

Pond 14P: CB 4 to CB 5 Peak Elev=106.15' Inflow=1.09 cfs 0.077 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=1.09 cfs 0.077 af

Pond 15P: CB 5 out Peak Elev=105.09' Inflow=1.50 cfs 0.109 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.50 cfs 0.109 af

Total Runoff Area = 121.897 ac Runoff Volume = 5.732 af Average Runoff Depth = 0.56"
94.23% Pervious = 114.868 ac 5.77% Impervious = 7.029 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1os: North Side of Mast Runoff Area=45,066 sf 48.76% Impervious Runoff Depth=2.54"
Tc=5.0 min CN=67 Runoff=3.15 cfs 0.219 af

Subcatchment 1S: Flow to Lot H-2 Runoff Area=1,111,987 sf 4.32% Impervious Runoff Depth=1.29"
Flow Length=1,432' Tc=24.2 min CN=52 Runoff=20.18 cfs 2.754 af

Subcatchment 2os: Mast Road East to CB12 Runoff Area=9,930 sf 98.00% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=97 Runoff=1.38 cfs 0.107 af

Subcatchment 2S: Flow to Lot H-2 Runoff Area=150,958 sf 0.00% Impervious Runoff Depth=1.29"
Flow Length=1,010' Tc=20.6 min CN=52 Runoff=2.91 cfs 0.374 af

Subcatchment 3os: Route 108 offsite Runoff Area=2,934 sf 71.71% Impervious Runoff Depth=3.89"
Tc=5.0 min CN=81 Runoff=0.32 cfs 0.022 af

Subcatchment 3S: Flow to Lot H-2 Runoff Area=360,829 sf 1.36% Impervious Runoff Depth=0.17"
Flow Length=1,229' Tc=29.2 min CN=33 Runoff=0.19 cfs 0.118 af

Subcatchment 4os: NH Route 108 to CB 3 Runoff Area=13,932 sf 52.00% Impervious Runoff Depth=3.39"
Tc=5.0 min CN=76 Runoff=1.32 cfs 0.090 af

Subcatchment 4S: Flow to Lot H-2A Runoff Area=452,681 sf 1.02% Impervious Runoff Depth=0.13"
Flow Length=1,166' Tc=23.8 min CN=32 Runoff=0.19 cfs 0.117 af

Subcatchment 5os: Drive to CB 4 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment 5S: Flow to Lot H-2A Runoff Area=107,760 sf 0.62% Impervious Runoff Depth=0.07"
Flow Length=1,116' Tc=26.8 min CN=30 Runoff=0.02 cfs 0.015 af

Subcatchment 6os: Drive to CB 5 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment 7os: NH Route 108 to Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=4.53"
Tc=5.0 min CN=87 Runoff=2.99 cfs 0.211 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=2.01"
Flow Length=79' Tc=10.3 min CN=61 Runoff=0.77 cfs 0.067 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=191,637 sf 5.59% Impervious Runoff Depth=3.69"
Flow Length=645' Tc=10.0 min CN=79 Runoff=16.59 cfs 1.352 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,123 sf 0.00% Impervious Runoff Depth=3.39"
Flow Length=416' Tc=10.4 min CN=76 Runoff=6.00 cfs 0.493 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.13"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.15 cfs 0.092 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=1.01"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=22.36 cfs 3.952 af

Subcatchment 30S: Flow to Lot H-2 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=2.27"
Flow Length=250' Slope=0.0200 '/' Tc=17.4 min CN=64 Runoff=2.03 cfs 0.209 af

Subcatchment 40S: Flow to Lot H-2A Runoff Area=144,239 sf 0.00% Impervious Runoff Depth=0.94"
Flow Length=452' Tc=14.5 min CN=47 Runoff=1.92 cfs 0.259 af

Subcatchment 50S: Flow to Lot H-2A Runoff Area=135,787 sf 4.02% Impervious Runoff Depth=0.21"
Flow Length=987' Tc=24.8 min CN=34 Runoff=0.09 cfs 0.055 af

Reach 1AR: STREAM Avg. Flow Depth=0.77' Max Vel=3.57 fps Inflow=16.59 cfs 1.352 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=16.28 cfs 1.352 af

Reach 1BR: STREAM Avg. Flow Depth=0.88' Max Vel=4.25 fps Inflow=23.10 cfs 3.247 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=23.07 cfs 3.247 af

Reach 1R: STREAM Avg. Flow Depth=1.29' Max Vel=3.44 fps Inflow=32.27 cfs 4.599 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=32.24 cfs 4.599 af

Reach 2R: REACH 2 Avg. Flow Depth=0.37' Max Vel=1.89 fps Inflow=3.40 cfs 0.441 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=3.29 cfs 0.441 af

Reach 3R: REACH 3 Avg. Flow Depth=0.24' Max Vel=1.51 fps Inflow=2.03 cfs 0.327 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=1.97 cfs 0.327 af

Reach 4R: REACH 4 Avg. Flow Depth=0.15' Max Vel=0.79 fps Inflow=1.92 cfs 0.375 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=1.78 cfs 0.375 af

Reach 5R: REACH 5 Avg. Flow Depth=0.04' Max Vel=0.43 fps Inflow=0.25 cfs 0.162 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.25 cfs 0.162 af

Reach 6R: REACH 6 Avg. Flow Depth=0.17' Max Vel=0.79 fps Inflow=1.78 cfs 0.537 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=1.68 cfs 0.537 af

Reach 7R: STREAM Avg. Flow Depth=0.33' Max Vel=2.16 fps Inflow=3.38 cfs 0.865 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=3.37 cfs 0.865 af

Reach 8R: STREAM Avg. Flow Depth=0.49' Max Vel=2.54 fps Inflow=6.66 cfs 1.305 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=6.55 cfs 1.305 af

Reach 9R: STREAM Avg. Flow Depth=1.36' Max Vel=3.79 fps Inflow=38.21 cfs 5.904 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=38.21 cfs 5.904 af

Reach 16R: Existing Cuvert Avg. Flow Depth=0.55' Max Vel=5.74 fps Inflow=2.99 cfs 0.211 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=2.99 cfs 0.211 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=71.28' Inflow=56.60 cfs 9.856 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=56.60 cfs 9.856 af

Pond 11P: CB11 to CB12 Peak Elev=107.25' Inflow=3.15 cfs 0.219 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=3.15 cfs 0.219 af

Pond 12R: From CB12 out Peak Elev=106.56' Inflow=4.53 cfs 0.326 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=4.53 cfs 0.326 af

Pond 13P: CB 3 to CB 4 Peak Elev=107.26' Inflow=1.32 cfs 0.090 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=1.32 cfs 0.090 af

Pond 14P: CB 4 to CB 5 Peak Elev=106.28' Inflow=1.56 cfs 0.109 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=1.56 cfs 0.109 af

Pond 15P: CB 5 out Peak Elev=105.27' Inflow=2.08 cfs 0.151 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=2.08 cfs 0.151 af

Total Runoff Area = 121.897 ac Runoff Volume = 10.566 af Average Runoff Depth = 1.04"
94.23% Pervious = 114.868 ac 5.77% Impervious = 7.029 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1os: North Side of Mast Runoff Area=45,066 sf 48.76% Impervious Runoff Depth=3.45"
Tc=5.0 min CN=67 Runoff=4.33 cfs 0.298 af

Subcatchment 1S: Flow to Lot H-2 Runoff Area=1,111,987 sf 4.32% Impervious Runoff Depth=1.95"
Flow Length=1,432' Tc=24.2 min CN=52 Runoff=32.85 cfs 4.155 af

Subcatchment 2os: Mast Road East to CB12 Runoff Area=9,930 sf 98.00% Impervious Runoff Depth=6.82"
Tc=5.0 min CN=97 Runoff=1.66 cfs 0.130 af

Subcatchment 2S: Flow to Lot H-2 Runoff Area=150,958 sf 0.00% Impervious Runoff Depth=1.95"
Flow Length=1,010' Tc=20.6 min CN=52 Runoff=4.76 cfs 0.564 af

Subcatchment 3os: Route 108 offsite Runoff Area=2,934 sf 71.71% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=81 Runoff=0.40 cfs 0.028 af

Subcatchment 3S: Flow to Lot H-2 Runoff Area=360,829 sf 1.36% Impervious Runoff Depth=0.42"
Flow Length=1,229' Tc=29.2 min CN=33 Runoff=0.77 cfs 0.287 af

Subcatchment 4os: NH Route 108 to CB 3 Runoff Area=13,932 sf 52.00% Impervious Runoff Depth=4.42"
Tc=5.0 min CN=76 Runoff=1.71 cfs 0.118 af

Subcatchment 4S: Flow to Lot H-2A Runoff Area=452,681 sf 1.02% Impervious Runoff Depth=0.36"
Flow Length=1,166' Tc=23.8 min CN=32 Runoff=0.73 cfs 0.307 af

Subcatchment 5os: Drive to CB 4 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment 5S: Flow to Lot H-2A Runoff Area=107,760 sf 0.62% Impervious Runoff Depth=0.24"
Flow Length=1,116' Tc=26.8 min CN=30 Runoff=0.08 cfs 0.050 af

Subcatchment 6os: Drive to CB 5 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.63 cfs 0.050 af

Subcatchment 7os: NH Route 108 to Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=87 Runoff=3.70 cfs 0.264 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=2.83"
Flow Length=79' Tc=10.3 min CN=61 Runoff=1.12 cfs 0.094 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=191,637 sf 5.59% Impervious Runoff Depth=4.75"
Flow Length=645' Tc=10.0 min CN=79 Runoff=21.25 cfs 1.741 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,123 sf 0.00% Impervious Runoff Depth=4.42"
Flow Length=416' Tc=10.4 min CN=76 Runoff=7.80 cfs 0.643 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.36"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.55 cfs 0.243 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=1.59"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=39.62 cfs 6.228 af

Subcatchment 30S: Flow to Lot H-2 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=3.14"
Flow Length=250' Slope=0.0200 '/' Tc=17.4 min CN=64 Runoff=2.86 cfs 0.289 af

Subcatchment 40S: Flow to Lot H-2A Runoff Area=144,239 sf 0.00% Impervious Runoff Depth=1.50"
Flow Length=452' Tc=14.5 min CN=47 Runoff=3.62 cfs 0.413 af

Subcatchment 50S: Flow to Lot H-2A Runoff Area=135,787 sf 4.02% Impervious Runoff Depth=0.48"
Flow Length=987' Tc=24.8 min CN=34 Runoff=0.42 cfs 0.124 af

Reach 1AR: STREAM Avg. Flow Depth=0.88' Max Vel=3.84 fps Inflow=21.25 cfs 1.741 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=20.90 cfs 1.741 af

Reach 1BR: STREAM Avg. Flow Depth=1.12' Max Vel=4.84 fps Inflow=36.84 cfs 4.799 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=36.80 cfs 4.799 af

Reach 1R: STREAM Avg. Flow Depth=1.59' Max Vel=3.85 fps Inflow=48.78 cfs 6.540 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=48.71 cfs 6.540 af

Reach 2R: REACH 2 Avg. Flow Depth=0.49' Max Vel=2.21 fps Inflow=5.49 cfs 0.658 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=5.35 cfs 0.658 af

Reach 3R: REACH 3 Avg. Flow Depth=0.29' Max Vel=1.71 fps Inflow=2.89 cfs 0.576 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=2.82 cfs 0.576 af

Reach 4R: REACH 4 Avg. Flow Depth=0.21' Max Vel=0.97 fps Inflow=3.62 cfs 0.721 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=3.43 cfs 0.721 af

Reach 5R: REACH 5 Avg. Flow Depth=0.08' Max Vel=0.62 fps Inflow=0.98 cfs 0.418 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.87 cfs 0.418 af

Reach 6R: REACH 6 Avg. Flow Depth=0.24' Max Vel=0.97 fps Inflow=3.43 cfs 1.139 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=3.28 cfs 1.139 af

Reach 7R: STREAM Avg. Flow Depth=0.46' Max Vel=2.60 fps Inflow=5.95 cfs 1.715 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=5.94 cfs 1.715 af

Reach 8R: STREAM Avg. Flow Depth=0.66' Max Vel=2.98 fps Inflow=11.28 cfs 2.373 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=11.13 cfs 2.373 af

Reach 9R: STREAM Avg. Flow Depth=1.69' Max Vel=4.26 fps Inflow=59.37 cfs 8.913 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=59.36 cfs 8.913 af

Reach 16R: Existing Cuvert Avg. Flow Depth=0.62' Max Vel=6.06 fps Inflow=3.70 cfs 0.264 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=3.70 cfs 0.264 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=72.79' Inflow=93.34 cfs 15.141 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=93.34 cfs 15.141 af

Pond 11P: CB11 to CB12 Peak Elev=108.93' Inflow=4.33 cfs 0.298 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=4.33 cfs 0.298 af

Pond 12R: From CB12 out Peak Elev=107.63' Inflow=5.98 cfs 0.427 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=5.98 cfs 0.427 af

Pond 13P: CB 3 to CB 4 Peak Elev=107.37' Inflow=1.71 cfs 0.118 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=1.71 cfs 0.118 af

Pond 14P: CB 4 to CB 5 Peak Elev=106.40' Inflow=2.00 cfs 0.141 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=2.00 cfs 0.141 af

Pond 15P: CB 5 out Peak Elev=105.45' Inflow=2.63 cfs 0.190 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=2.63 cfs 0.190 af

Total Runoff Area = 121.897 ac Runoff Volume = 16.050 af Average Runoff Depth = 1.58"
94.23% Pervious = 114.868 ac 5.77% Impervious = 7.029 ac



LEGEND

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION
- 5 — SUBCATCHMENT
- 1 — POND
- 9 — REACH
- A — DISCHARGE POINT

TAX MAP H LOT 4–3

POST-DEVELOPMENT DRAINAGE AREA PLAN

MCDONALD'S

NH ROUTE 108 AND GRAPEVINE DRIVE
DOVER, NEW HAMPSHIRE

OWNER OF RECORD	*AND*	*APPLICANT/DEVELOPER*
n/f VC DOVER INVESTMENTS, LLC 48 CONSTITUTION DRIVE BEDFORD, NH 03110		BOHLER ENGINEERING, LLC 352 TURNPIKE RD, 3RD FLOOR SOUTHBOROUGH, MA 01772

SCALE: 1"=100' **DECEMBER 5, 2024**

REV.	DATE	DESCRIPTION	DR	CK

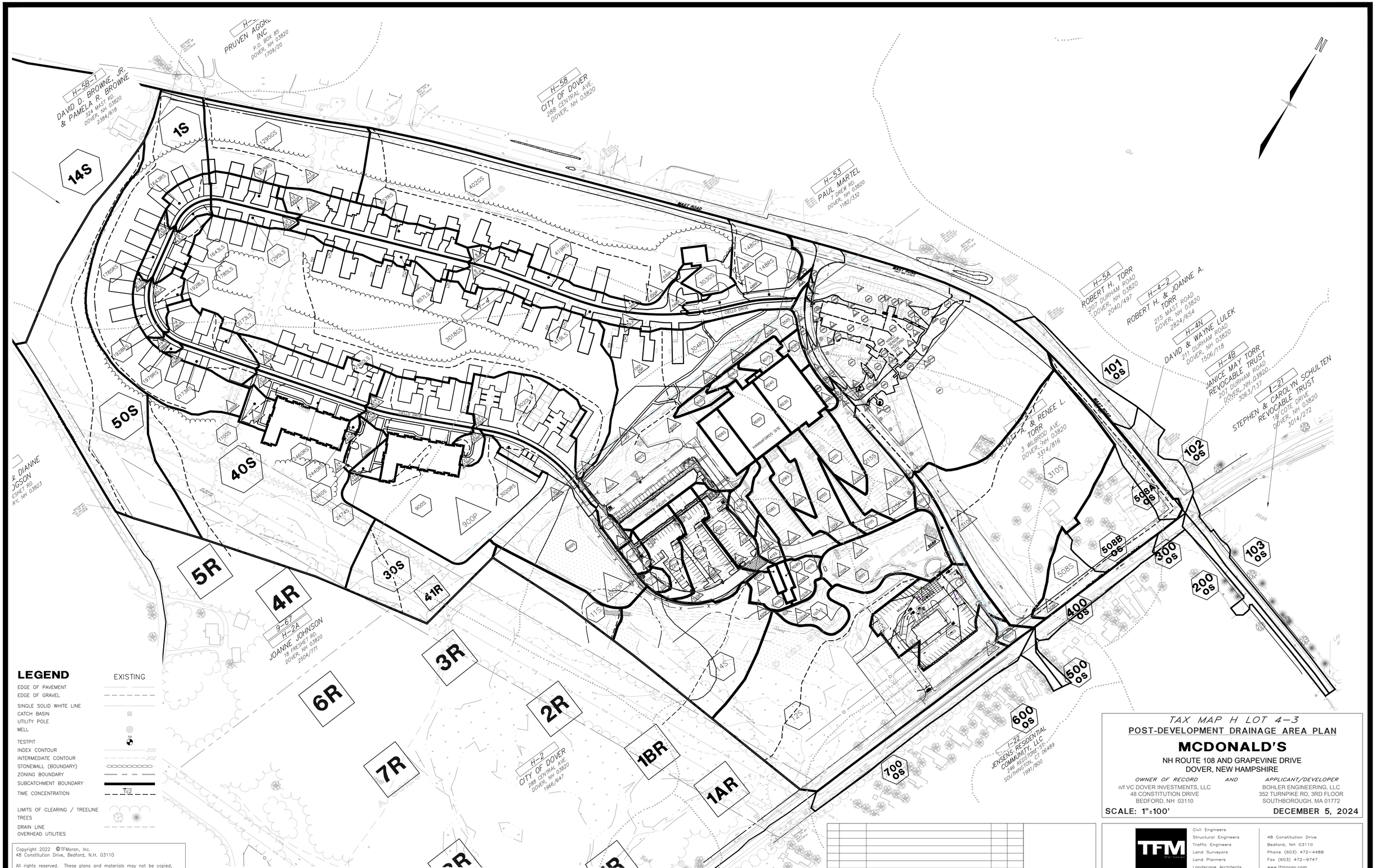
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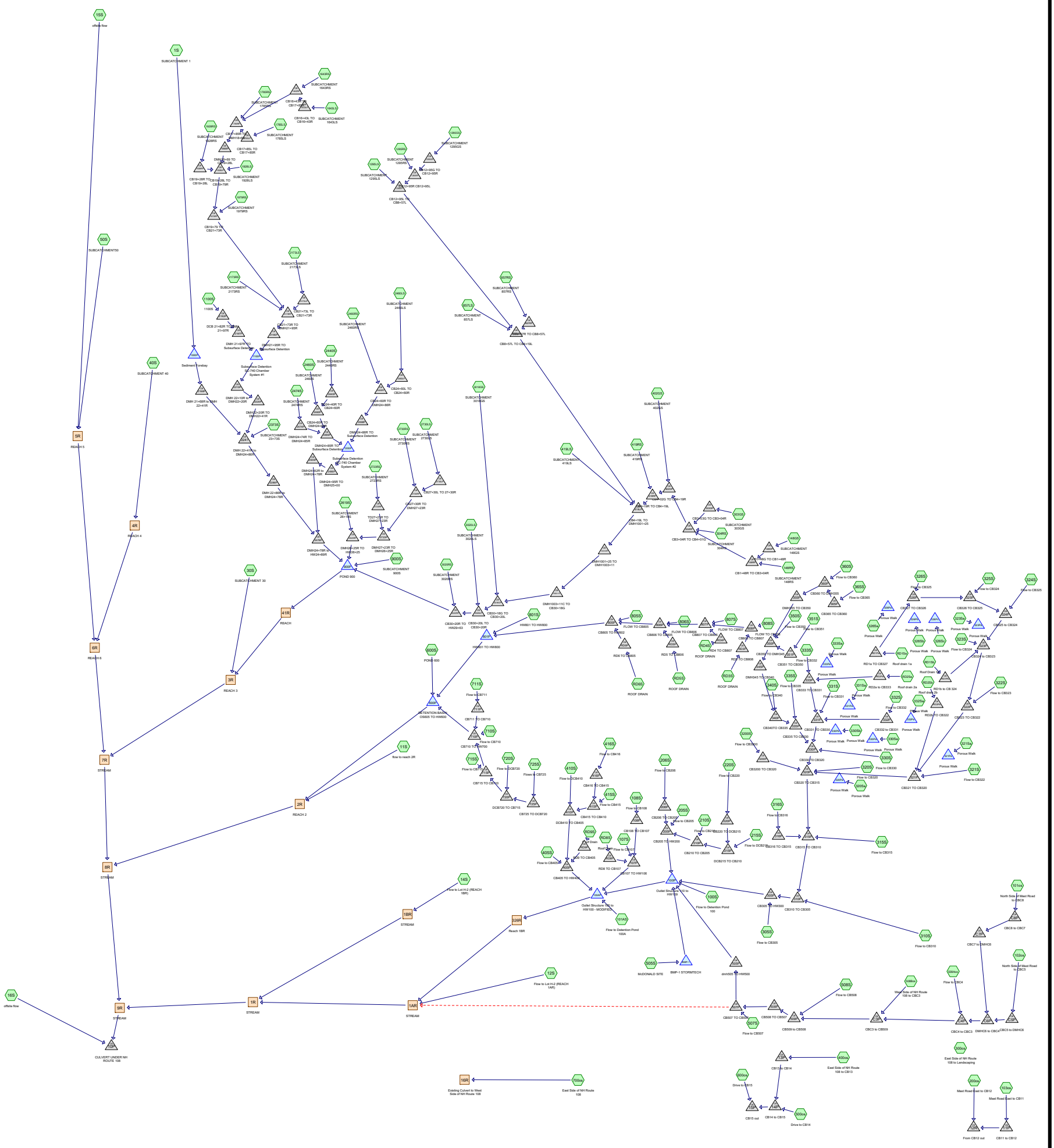
FILE	46001.33	DR	JMR	FB	–	SHEET 3 OF 4
		CK	RED	CADFILE	46001.33 DRAINAGE	

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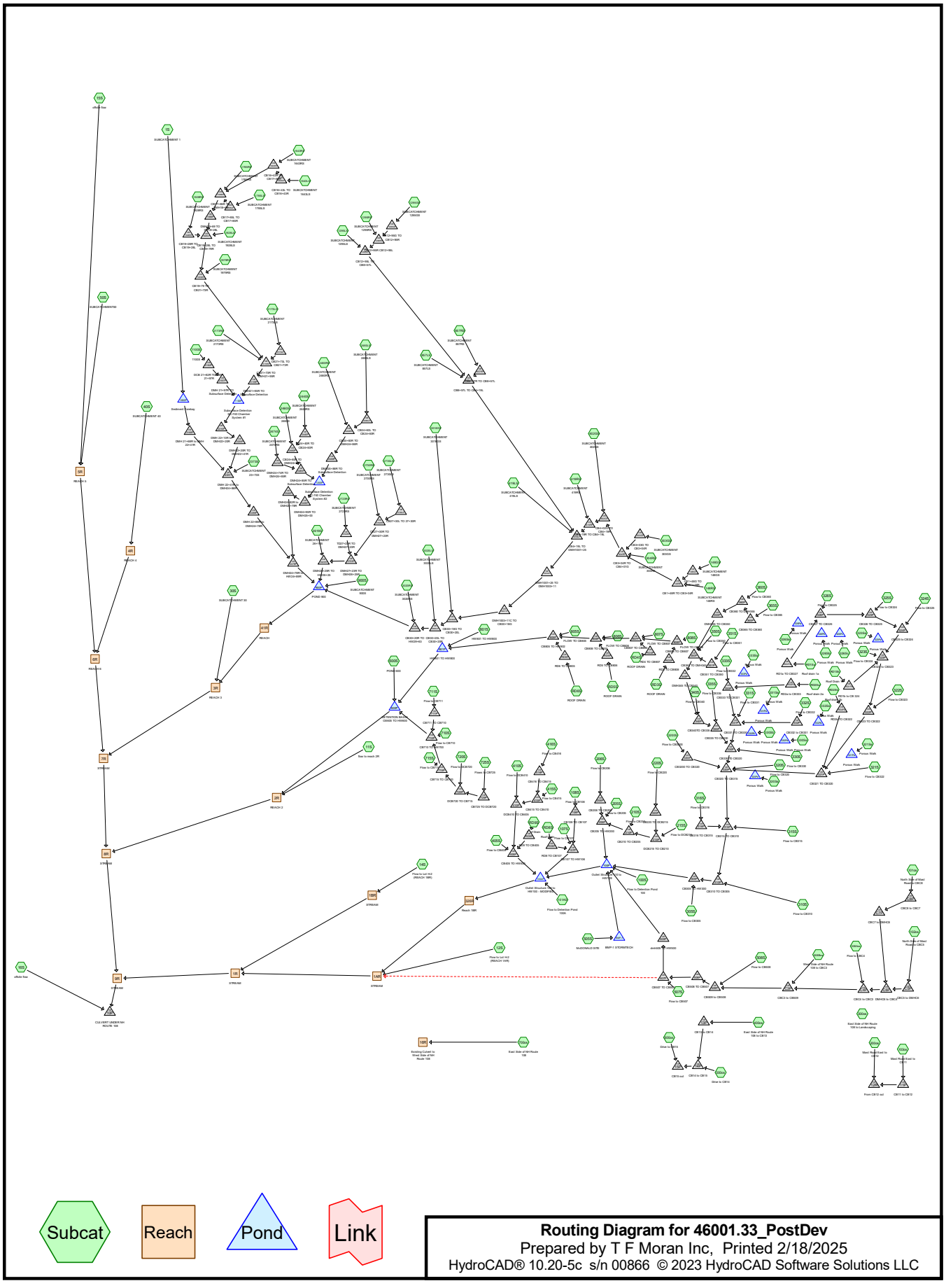

H–5B–1
DAVID D. BROWNE, JR. & PAMELA R. BROWNE
124 MAST RD.
DOVER, NH 03820
2384/618
H–
PRUVEN AGGKL INC
P.O. BOX 85
DOVER, NH 03820
1709/20
H–58
CITY OF DOVER
288 CENTRAL AVE.
DOVER, NH 03820
H–53
PAUL MARTEL
7 DREW RD
DOVER, NH 03820
1182/332
MAST ROAD
H–5A
ROBERT H. TORR
207 DURHAM ROAD
DOVER, NH 03820
2040/497
H–4–2
ROBERT H. & JOANNE A. TORR
215 MAST ROAD
DOVER, NH 03820
2824/654
H–4N
DAVID & WAYNE LULEK
211 DURHAM ROAD
DOVER, NH 03820
1506/118
H–4B
JANICE MAY TORR REVOCABLE TRUST
207 DURHAM ROAD
DOVER, NH 03820
3063/157
I–21
STEPHEN & CAROLYN SCHULTEN REVOCABLE TRUST
19 COTE DRIVE
DOVER, NH 03820
3014/272
I–4–3–7
SCOTT A. & RENEE L. TORR
3 WILBROD AVE.
DOVER, NH 03820
3314/616
I–22
JENSENS RESIDENTIAL COMMUNITY, LLC
246 REDTOWNE ST.
SOUTHINGTON, CT 06489
1991/800
H–2
CITY OF DOVER
288 CENTRAL AVE.
DOVER, NH 03820
1966/647
9–67
H–24
JOANNE JOHNSON
18 FRESHET RD.
DOVER, NH 03820
2504/771
& DIANNE
OGSON
ESHET RD.
R, NH 03823
1S
14S
50S
40S
5R
4R
6R
7R
3R
2R
1BR
1AR
30S
41R
101 OS
102 OS
103 OS
310S
508A OS
508B OS
508S
300 OS
200 OS
400 OS
500 OS
600 OS
700 OS
HANNAFORDS SITE
BUILDING 1 10,000 SF
BUILDING 2 5,000 SF
BUILDING 3 5,000 SF
BUILDING 4 5,000 SF
BUILDING 5 5,000 SF
BUILDING 6 5,000 SF
BUILDING 7 5,000 SF
BUILDING 8 5,000 SF
BUILDING 9 5,000 SF
BUILDING 10 5,000 SF
BUILDING 11 5,000 SF
BUILDING



Routing Diagram for 46001.33_PostDev

Prepared by T F Moran Inc, Printed 12/11/2024

HydroCAD® 10.20-6a s/n 00866 © 2024 HydroCAD Software Solutions LLC



Routing Diagram for 46001.33_PostDev
Prepared by T F Moran Inc, Printed 2/18/2025
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
29.094	39	>75% Grass cover, Good, HSG A (1S, 11S, 12S, 14S, 15S, 16S, 30S, 40S, 101os, 102os, 148GS, 148RS, 215S, 220S, 300os, 303GS, 304RS, 315S, 316S, 320S, 321S, 322S, 323S, 326S, 326Sa, 330S, 330Sa, 330Sb, 331S, 331Sa, 332S, 332Sa, 333S, 333Sa, 335S, 340S, 350S, 351S, 402GS, 419LS, 419RS, 508Aos, 508Bos, 508S, 600S, 801S, 805S, 806S, 807S, 808S, 857LS, 857RS, 900S, 1100S, 1295GS, 1295LS, 1295RS, 1643LS, 1643RS, 1785LS, 1785RS, 1928LS, 1928RS, 1979RS, 2173LS, 2173RS, 2440S, 2460LS, 2460RS, 2460S, 2474S, 2723RS, 2730LS, 2730RS, 3018GS, 3020LS, 3020RS, 3200S)
1.833	61	>75% Grass cover, Good, HSG B (12S, 14S, 30S, 40S, 100S, 210S, 215S, 220S, 305S, 310S, 316S, 505S)
4.698	74	>75% Grass cover, Good, HSG C (11S, 12S, 16S, 100S, 108S, 205S, 206S, 210S, 215S, 220S, 310S, 400os, 410S, 416S, 505S, 507S, 508S, 600S, 700os, 710S, 711S, 715S, 720S, 725S, 801S, 805S, 3018GS, 3020LS, 3020RS)
1.173	80	>75% Grass cover, Good, HSG D (12S, 16S, 100S, 101AS, 107S, 108S, 205S, 206S, 405S, 410S, 415S, 416S, 715S, 720S, 725S)
2.336	35	Brush, Fair, HSG A (16S, 40S, 50S, 1295GS)
0.630	56	Brush, Fair, HSG B (30S, 40S)
1.521	70	Brush, Fair, HSG C (16S, 30S, 40S)
0.933	77	Brush, Fair, HSG D (12S, 16S)
0.170	76	Gravel roads, HSG A (40S, 50S)
0.068	85	Gravel roads, HSG B (30S, 40S)
0.036	89	Gravel roads, HSG C (30S, 801S)
0.009	91	Gravel roads, HSG D (101AS)
0.020	76	Gravel, HSG A (419LS, 600S, 1295GS, 3020RS)
0.044	85	Gravel, HSG B (100S)
0.026	89	Gravel, HSG C (11S, 100S, 600S)
0.016	91	Gravel, HSG D (12S, 108S)
6.725	98	Impervious (12S, 50S, 101AS, 107S, 148GS, 215S, 303GS, 305S, 402GS, 405S, 419RS, 507S, 600S, 857LS, 857RS, 900S, 1295GS, 1295LS, 1643LS, 1643RS, 1785LS, 1785RS, 1928LS, 1928RS, 2173LS, 2173RS, 2440S, 2460RS, 2460S, 2474S, 2723RS, 2730LS, 2730RS, 3018GS, RD4S, RD5S, RD6S, RD8S, RD9S)
0.702	79	Pasture/grassland/range, Fair, HSG C (16S)
1.712	39	Pasture/grassland/range, Good, HSG A (310S)
0.076	61	Pasture/grassland/range, Good, HSG B (310S)
1.478	74	Pasture/grassland/range, Good, HSG C (12S, 14S)
2.928	80	Pasture/grassland/range, Good, HSG D (12S, 14S, 16S)
0.577	98	Paved parking (505S)
11.731	98	Paved parking & roofs (15S, 16S, 108S, 148RS, 205S, 206S, 210S, 220S, 300os, 303GS, 304RS, 310S, 320S, 400os, 410S, 415S, 416S, 508Bos, 508S, 710S, 711S, 720S, 725S, 801S, 805S, 806S, 807S, 1295RS, 2460LS, 3020LS, 3020RS, RD1Sa, RD1Sb, RD2Sa, RD2Sb, RD3S)

Area Listing (all nodes) (continued)

Area (acres)	CN	Description (subcatchment-numbers)
0.086	98	Paved parking - Porous Pavement (505S)
0.594	98	Paved parking, HSG A (1S, 320S, 330S, 1100S, 1979RS)
2.429	98	Paved roads w/curbs & sewers (101os, 102os, 103os, 200os, 316S, 325S, 335S, 340S, 350S, 351S, 360S, 365S, 419LS, 500os, 508Aos, 600os, 700os, 715S)
1.010	98	Paved roads w/curbs & sewers, HSG A (315S, 320S, 320Sa, 321Sa, 323Sa, 324S, 326S, 326Sa, 326Sb, 326Sc, 330S, 330Sa, 330Sb, 331S, 331Sa, 332S, 332Sa, 333Sa)
0.085	98	Roofs (505S)
0.718	98	Roofs, HSG A (320Sa, 2373S, 2619S)
39.264	30	Woods, Good, HSG A (1S, 11S, 15S, 16S, 40S, 50S, 101os, 148GS, 303GS, 310S, 315S, 402GS, 508Aos, 508Bos, 600S, 900S, 1295GS, 3018GS)
0.029	55	Woods, Good, HSG B (30S, 310S)
8.357	70	Woods, Good, HSG C (11S, 12S, 14S, 16S, 30S, 40S)
0.788	77	Woods, Good, HSG D (12S, 14S, 16S)
121.896	**55**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
74.920	HSG A	1S, 11S, 12S, 14S, 15S, 16S, 30S, 40S, 50S, 101os, 102os, 148GS, 148RS, 215S, 220S, 300os, 303GS, 304RS, 310S, 315S, 316S, 320S, 320Sa, 321S, 321Sa, 322S, 323S, 323Sa, 324S, 326S, 326Sa, 326Sb, 326Sc, 330S, 330Sa, 330Sb, 331S, 331Sa, 332S, 332Sa, 333S, 333Sa, 335S, 340S, 350S, 351S, 402GS, 419LS, 419RS, 508Aos, 508Bos, 508S, 600S, 801S, 805S, 806S, 807S, 808S, 857LS, 857RS, 900S, 1100S, 1295GS, 1295LS, 1295RS, 1643LS, 1643RS, 1785LS, 1785RS, 1928LS, 1928RS, 1979RS, 2173LS, 2173RS, 2373S, 2440S, 2460LS, 2460RS, 2460S, 2474S, 2619S, 2723RS, 2730LS, 2730RS, 3018GS, 3020LS, 3020RS, 3200S
2.680	HSG B	12S, 14S, 30S, 40S, 100S, 210S, 215S, 220S, 305S, 310S, 316S, 505S
16.818	HSG C	11S, 12S, 14S, 16S, 30S, 40S, 100S, 108S, 205S, 206S, 210S, 215S, 220S, 310S, 400os, 410S, 416S, 505S, 507S, 508S, 600S, 700os, 710S, 711S, 715S, 720S, 725S, 801S, 805S, 3018GS, 3020LS, 3020RS
5.846	HSG D	12S, 14S, 16S, 100S, 101AS, 107S, 108S, 205S, 206S, 405S, 410S, 415S, 416S, 715S, 720S, 725S
21.633	Other	12S, 15S, 16S, 50S, 101AS, 101os, 102os, 103os, 107S, 108S, 148GS, 148RS, 200os, 205S, 206S, 210S, 215S, 220S, 300os, 303GS, 304RS, 305S, 310S, 316S, 320S, 325S, 335S, 340S, 350S, 351S, 360S, 365S, 400os, 402GS, 405S, 410S, 415S, 416S, 419LS, 419RS, 500os, 505S, 507S, 508Aos, 508Bos, 508S, 600os, 600S, 700os, 710S, 711S, 715S, 720S, 725S, 801S, 805S, 806S, 807S, 857LS, 857RS, 900S, 1295GS, 1295LS, 1295RS, 1643LS, 1643RS, 1785LS, 1785RS, 1928LS, 1928RS, 2173LS, 2173RS, 2440S, 2460LS, 2460RS, 2460S, 2474S, 2723RS, 2730LS, 2730RS, 3018GS, 3020LS, 3020RS, RD1Sa, RD1Sb, RD2Sa, RD2Sb, RD3S, RD4S, RD5S, RD6S, RD8S, RD9S
121.896		**TOTAL AREA**

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SUBCATCHMENT 1 Runoff Area=116,725 sf 15.99% Impervious Runoff Depth=0.06"
Flow Length=928' Tc=34.5 min CN=47 Runoff=0.02 cfs 0.014 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=0.49"
Flow Length=80' Tc=8.0 min CN=63 Runoff=0.15 cfs 0.016 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=176,084 sf 10.04% Impervious Runoff Depth=1.29"
Flow Length=645' Tc=9.0 min CN=79 Runoff=5.42 cfs 0.435 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,548 sf 0.00% Impervious Runoff Depth=0.89"
Flow Length=416' Tc=9.0 min CN=72 Runoff=1.52 cfs 0.131 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.00"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=0.08"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=0.50 cfs 0.315 af

Subcatchment 30S: SUBCATCHMENT 30 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=0.57"
Flow Length=154' Slope=0.0200 '/' Tc=23.5 min CN=65 Runoff=0.36 cfs 0.053 af

Subcatchment 40S: SUBCATCHMENT 40 Runoff Area=152,210 sf 0.00% Impervious Runoff Depth=0.06"
Flow Length=452' Tc=14.5 min CN=47 Runoff=0.03 cfs 0.019 af

Subcatchment 50S: SUBCATCHMENT50 Runoff Area=125,909 sf 4.33% Impervious Runoff Depth=0.00"
Flow Length=987' Tc=24.8 min CN=35 Runoff=0.00 cfs 0.000 af

Subcatchment 100S: Flow to Detention Runoff Area=42,732 sf 0.00% Impervious Runoff Depth=0.79"
Tc=5.0 min CN=70 Runoff=0.84 cfs 0.065 af

Subcatchment 101AS: Flow to Detention Runoff Area=12,152 sf 1.03% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=81 Runoff=0.48 cfs 0.033 af

Subcatchment 101os: North Side of Mast Runoff Area=17,404 sf 27.18% Impervious Runoff Depth=0.18"
Tc=5.0 min CN=53 Runoff=0.02 cfs 0.006 af

Subcatchment 102os: North Side of Mast Runoff Area=15,661 sf 51.62% Impervious Runoff Depth=0.75"
Tc=5.0 min CN=69 Runoff=0.28 cfs 0.022 af

Subcatchment 103os: Mast Road East to Runoff Area=12,002 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.87 cfs 0.067 af

Subcatchment 107S: Flow to CB107 Runoff Area=7,160 sf 86.56% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=96 Runoff=0.50 cfs 0.037 af

Subcatchment 108S: Flow to CB108 Runoff Area=20,254 sf 84.37% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=1.38 cfs 0.100 af

Subcatchment 148GS: SUBCATCHMENT Runoff Area=24,508 sf 16.32% Impervious Runoff Depth=0.03"
Flow Length=178' Tc=6.3 min CN=44 Runoff=0.00 cfs 0.001 af

Subcatchment 148RS: SUBCATCHMENT Runoff Area=4,316 sf 70.81% Impervious Runoff Depth=1.42"
Tc=5.0 min CN=81 Runoff=0.17 cfs 0.012 af

Subcatchment 200os: Mast Road East to Runoff Area=9,931 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.72 cfs 0.055 af

Subcatchment 205S: Flow to CB205 Runoff Area=21,237 sf 94.10% Impervious Runoff Depth=2.80"
Tc=5.0 min CN=97 Runoff=1.51 cfs 0.114 af

Subcatchment 206S: Flow to CB206 Runoff Area=10,095 sf 95.84% Impervious Runoff Depth=2.80"
Tc=5.0 min CN=97 Runoff=0.72 cfs 0.054 af

Subcatchment 210S: Flow to CB210 Runoff Area=7,732 sf 75.04% Impervious Runoff Depth=2.20"
Tc=5.0 min CN=91 Runoff=0.47 cfs 0.033 af

Subcatchment 215S: Flow to DCB215 Runoff Area=28,399 sf 86.64% Impervious Runoff Depth=2.39"
Tc=5.0 min CN=93 Runoff=1.83 cfs 0.130 af

Subcatchment 220S: Flow to CB220 Runoff Area=15,024 sf 95.13% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=96 Runoff=1.05 cfs 0.077 af

Subcatchment 300os: East Side of NH Runoff Area=2,933 sf 81.69% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=87 Runoff=0.15 cfs 0.010 af

Subcatchment 303GS: SUBCATCHMENT Runoff Area=10,545 sf 75.15% Impervious Runoff Depth=1.56"
Tc=5.0 min CN=83 Runoff=0.46 cfs 0.031 af

Subcatchment 304RS: SUBCATCHMENT Runoff Area=5,196 sf 51.33% Impervious Runoff Depth=0.75"
Tc=5.0 min CN=69 Runoff=0.09 cfs 0.007 af

Subcatchment 305S: Flow to CB305 Runoff Area=7,928 sf 84.02% Impervious Runoff Depth=2.29"
Tc=5.0 min CN=92 Runoff=0.50 cfs 0.035 af

Subcatchment 310S: Flow to CB310 Runoff Area=145,473 sf 12.09% Impervious Runoff Depth=0.06"
Flow Length=469' Tc=13.1 min CN=47 Runoff=0.03 cfs 0.018 af

Subcatchment 315S: Flow to CB315 Runoff Area=116,325 sf 6.81% Impervious Runoff Depth=0.00"
Flow Length=537' Tc=9.9 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 316S: Flow to CB316 Runoff Area=3,776 sf 88.61% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=94 Runoff=0.25 cfs 0.018 af

Subcatchment 320S: Flow to CB320 Runoff Area=3,127 sf 97.95% Impervious Runoff Depth=2.80"
Tc=5.0 min CN=97 Runoff=0.22 cfs 0.017 af

Subcatchment 320Sa: Porous Walk Runoff Area=404 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.03 cfs 0.002 af

Subcatchment 321S: Flow to CB322 Runoff Area=1,903 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 321Sa: Porous Walk Runoff Area=456 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.03 cfs 0.003 af

Subcatchment 322S: Flow to CB323 Runoff Area=4,253 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 323S: Flow to CB324 Runoff Area=1,844 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 323Sa: Porous Walk Runoff Area=498 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment 324S: Flow to CB325 Runoff Area=2,213 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.16 cfs 0.012 af

Subcatchment 325S: Flow to CB324 Runoff Area=1,665 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.12 cfs 0.009 af

Subcatchment 326S: Flow to CB325 Runoff Area=34,308 sf 60.15% Impervious Runoff Depth=1.00"
Tc=5.0 min CN=74 Runoff=0.90 cfs 0.066 af

Subcatchment 326Sa: Porous Walk Runoff Area=1,787 sf 44.21% Impervious Runoff Depth=0.57"
Tc=5.0 min CN=65 Runoff=0.02 cfs 0.002 af

Subcatchment 326Sb: Porous Walk Runoff Area=57 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.00 cfs 0.000 af

Subcatchment 326Sc: Porous Walk Runoff Area=53 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.00 cfs 0.000 af

Subcatchment 330S: Flow to CB330 Runoff Area=3,294 sf 94.11% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=0.22 cfs 0.016 af

Subcatchment 330Sa: Porous Walk Runoff Area=450 sf 41.33% Impervious Runoff Depth=0.49"
Tc=5.0 min CN=63 Runoff=0.00 cfs 0.000 af

Subcatchment 330Sb: Porous Walk Runoff Area=218 sf 39.91% Impervious Runoff Depth=0.49"
Tc=5.0 min CN=63 Runoff=0.00 cfs 0.000 af

Subcatchment 331S: Flow to CB331 Runoff Area=10,020 sf 66.41% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=78 Runoff=0.34 cfs 0.024 af

Subcatchment 331Sa: Porous Walk Runoff Area=1,084 sf 44.83% Impervious Runoff Depth=0.57"
Tc=5.0 min CN=65 Runoff=0.01 cfs 0.001 af

Subcatchment 332S: Flow to CB332 Runoff Area=1,679 sf 74.75% Impervious Runoff Depth=1.56"
Tc=5.0 min CN=83 Runoff=0.07 cfs 0.005 af

Subcatchment 332Sa: Porous Walk Runoff Area=1,526 sf 62.19% Impervious Runoff Depth=1.11"
Tc=5.0 min CN=76 Runoff=0.05 cfs 0.003 af

Subcatchment 333S: Flow to CB332 Runoff Area=2,063 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 333Sa: Porous Walk Runoff Area=1,005 sf 32.34% Impervious Runoff Depth=0.32"
Tc=5.0 min CN=58 Runoff=0.00 cfs 0.001 af

Subcatchment 335S: Flow to CB335 Runoff Area=4,263 sf 62.80% Impervious Runoff Depth=1.11"
Tc=5.0 min CN=76 Runoff=0.13 cfs 0.009 af

Subcatchment 340S: Flow to CB340 Runoff Area=2,616 sf 72.90% Impervious Runoff Depth=1.49"
Tc=5.0 min CN=82 Runoff=0.11 cfs 0.007 af

Subcatchment 350S: Flow to CB350 Runoff Area=3,138 sf 83.08% Impervious Runoff Depth=1.94"
Tc=5.0 min CN=88 Runoff=0.17 cfs 0.012 af

Subcatchment 351S: Flow to CB351 Runoff Area=2,600 sf 93.15% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=94 Runoff=0.17 cfs 0.012 af

Subcatchment 360S: Flow to CB360 Runoff Area=3,507 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.25 cfs 0.020 af

Subcatchment 365S: Flow to CB365 Runoff Area=3,724 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment 400os: East Side of NH Runoff Area=13,932 sf 55.92% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=87 Runoff=0.72 cfs 0.050 af

Subcatchment 402GS: SUBCATCHMENT Runoff Area=196,506 sf 11.43% Impervious Runoff Depth=0.01"
Flow Length=919' Tc=16.0 min CN=42 Runoff=0.01 cfs 0.004 af

Subcatchment 405S: Flow to CB405 Runoff Area=6,080 sf 83.22% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=0.42 cfs 0.030 af

Subcatchment 410S: Flow to DCB410 Runoff Area=16,744 sf 86.87% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=96 Runoff=1.17 cfs 0.086 af

Subcatchment 415S: Flow to CB415 Runoff Area=5,205 sf 79.02% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=94 Runoff=0.35 cfs 0.025 af

Subcatchment 416S: Flow to CB416 Runoff Area=7,343 sf 80.88% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=94 Runoff=0.49 cfs 0.035 af

Subcatchment 419LS: SUBCATCHMENT Runoff Area=32,282 sf 58.86% Impervious Runoff Depth=1.00"
Tc=5.0 min CN=74 Runoff=0.85 cfs 0.062 af

Subcatchment 419RS: SUBCATCHMENT Runoff Area=27,019 sf 48.53% Impervious Runoff Depth=0.70"
Tc=5.0 min CN=68 Runoff=0.45 cfs 0.036 af

Subcatchment 500os: Drive to CB14 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.12 cfs 0.010 af

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=2.20"
Tc=0.0 min CN=91 Runoff=2.96 cfs 0.176 af

Subcatchment 507S: Flow to CB507 Runoff Area=3,338 sf 99.70% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment 508Aos: Flow to CBC4 Runoff Area=17,911 sf 52.06% Impervious Runoff Depth=0.75"
Tc=5.0 min CN=69 Runoff=0.32 cfs 0.026 af

Subcatchment 508Bos: West Side of NH Runoff Area=39,695 sf 30.84% Impervious Runoff Depth=0.29"
Tc=5.0 min CN=57 Runoff=0.12 cfs 0.022 af

Subcatchment 508S: Flow to CB508 Runoff Area=15,987 sf 41.84% Impervious Runoff Depth=0.53"
Tc=5.0 min CN=64 Runoff=0.17 cfs 0.016 af

Subcatchment 600os: Drive to CB15 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment 600S: POND 600 Runoff Area=58,507 sf 0.88% Impervious Runoff Depth=0.46"
Tc=5.0 min CN=62 Runoff=0.49 cfs 0.051 af

Subcatchment 700os: East Side of NH Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=87 Runoff=1.27 cfs 0.087 af

Subcatchment 710S: Flow to CB710 Runoff Area=4,542 sf 89.56% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=0.31 cfs 0.022 af

Subcatchment 711S: Flow to CB711 Runoff Area=4,357 sf 88.02% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=0.30 cfs 0.022 af

Subcatchment 715S: Flow to CB715 Runoff Area=3,324 sf 61.88% Impervious Runoff Depth=2.11"
Tc=5.0 min CN=90 Runoff=0.19 cfs 0.013 af

Subcatchment 720S: Flow to DCB720 Runoff Area=17,720 sf 87.10% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=1.21 cfs 0.088 af

Subcatchment 725S: Flows to CB725 Runoff Area=27,585 sf 84.41% Impervious Runoff Depth=2.59"
Tc=5.0 min CN=95 Runoff=1.88 cfs 0.136 af

Subcatchment 801S: HW801 TO HW800 Runoff Area=150,892 sf 30.25% Impervious Runoff Depth=0.66"
Tc=5.0 min CN=67 Runoff=2.28 cfs 0.189 af

Subcatchment 805S: FLOW TO CB805 Runoff Area=4,093 sf 91.91% Impervious Runoff Depth=2.69"
Tc=5.0 min CN=96 Runoff=0.29 cfs 0.021 af

Subcatchment 806S: FLOW TO CB806 Runoff Area=3,812 sf 92.10% Impervious Runoff Depth=2.39"
Tc=5.0 min CN=93 Runoff=0.25 cfs 0.017 af

Subcatchment 807S: FLOW TO CB807 Runoff Area=5,559 sf 76.47% Impervious Runoff Depth=1.63"
Tc=5.0 min CN=84 Runoff=0.25 cfs 0.017 af

Subcatchment 808S: FLOW TO CB808 Runoff Area=3,999 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 857LS: SUBCATCHMENT Runoff Area=16,981 sf 62.84% Impervious Runoff Depth=1.11"
Tc=5.0 min CN=76 Runoff=0.51 cfs 0.036 af

Subcatchment 857RS: SUBCATCHMENT Runoff Area=31,969 sf 20.90% Impervious Runoff Depth=0.14"
Tc=5.0 min CN=51 Runoff=0.02 cfs 0.008 af

Subcatchment 900S: SUBCATCHMENT 900S Runoff Area=78,149 sf 2.46% Impervious Runoff Depth=0.00"
Flow Length=171' Tc=12.4 min CN=40 Runoff=0.00 cfs 0.000 af

Subcatchment 1100S: 1100S Runoff Area=6,092 sf 52.35% Impervious Runoff Depth=0.79"
Flow Length=100' Tc=2.6 min CN=70 Runoff=0.13 cfs 0.009 af

Subcatchment 1295GS: SUBCATCHMENT Runoff Area=70,690 sf 33.46% Impervious Runoff Depth=0.26"
Flow Length=466' Tc=10.6 min CN=56 Runoff=0.18 cfs 0.035 af

Subcatchment 1295LS: SUBCATCHMENT Runoff Area=8,078 sf 65.64% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=78 Runoff=0.27 cfs 0.019 af

Subcatchment 1295RS: SUBCATCHMENT Runoff Area=12,955 sf 51.46% Impervious Runoff Depth=0.75"
Tc=5.0 min CN=69 Runoff=0.23 cfs 0.018 af

Subcatchment 1643LS: SUBCATCHMENT Runoff Area=1,696 sf 35.38% Impervious Runoff Depth=0.39"
Flow Length=125' Tc=5.2 min CN=60 Runoff=0.01 cfs 0.001 af

Subcatchment 1643RS: SUBCATCHMENT Runoff Area=8,214 sf 54.11% Impervious Runoff Depth=0.84"
Flow Length=163' Tc=7.5 min CN=71 Runoff=0.16 cfs 0.013 af

Subcatchment 1785LS: SUBCATCHMENT Runoff Area=9,115 sf 28.75% Impervious Runoff Depth=0.26"
Flow Length=231' Tc=8.1 min CN=56 Runoff=0.02 cfs 0.005 af

Subcatchment 1785RS: SUBCATCHMENT Runoff Area=5,957 sf 51.59% Impervious Runoff Depth=0.75"
Flow Length=185' Tc=3.9 min CN=69 Runoff=0.11 cfs 0.009 af

Subcatchment 1928LS: SUBCATCHMENT Runoff Area=8,001 sf 41.78% Impervious Runoff Depth=0.53"
Flow Length=173' Tc=6.7 min CN=64 Runoff=0.08 cfs 0.008 af

Subcatchment 1928RS: SUBCATCHMENT Runoff Area=6,211 sf 51.15% Impervious Runoff Depth=0.75"
Flow Length=177' Tc=4.1 min CN=69 Runoff=0.12 cfs 0.009 af

Subcatchment 1979RS: SUBCATCHMENT Runoff Area=2,259 sf 47.94% Impervious Runoff Depth=0.66"
Flow Length=93' Tc=4.4 min CN=67 Runoff=0.03 cfs 0.003 af

Subcatchment 2173LS: SUBCATCHMENT Runoff Area=18,794 sf 40.92% Impervious Runoff Depth=0.49"
Flow Length=205' Tc=6.3 min CN=63 Runoff=0.17 cfs 0.018 af

Subcatchment 2173RS: SUBCATCHMENT Runoff Area=8,515 sf 55.89% Impervious Runoff Depth=0.89"
Flow Length=126' Tc=6.5 min CN=72 Runoff=0.18 cfs 0.015 af

Subcatchment 2373S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=1.13 cfs 0.087 af

Subcatchment 2440S: SUBCATCHMENT Runoff Area=1,462 sf 42.82% Impervious Runoff Depth=0.53"
Flow Length=61' Tc=3.4 min CN=64 Runoff=0.02 cfs 0.001 af

Subcatchment 2460LS: SUBCATCHMENT Runoff Area=26,630 sf 47.56% Impervious Runoff Depth=0.66"
Flow Length=378' Tc=10.9 min CN=67 Runoff=0.33 cfs 0.033 af

Subcatchment 2460RS: SUBCATCHMENT Runoff Area=13,923 sf 51.40% Impervious Runoff Depth=0.75"
Flow Length=261' Tc=3.4 min CN=69 Runoff=0.27 cfs 0.020 af

Subcatchment 2460S: SUBCATCHMENT Runoff Area=6,810 sf 74.21% Impervious Runoff Depth=1.56"
Flow Length=138' Tc=1.6 min CN=83 Runoff=0.33 cfs 0.020 af

Subcatchment 2474S: SUBCATCHMENT Runoff Area=4,253 sf 43.00% Impervious Runoff Depth=0.53"
Flow Length=76' Tc=3.7 min CN=64 Runoff=0.05 cfs 0.004 af

Subcatchment 2619S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=1.13 cfs 0.087 af

Subcatchment 2723RS: SUBCATCHMENT Runoff Area=4,476 sf 61.44% Impervious Runoff Depth=1.05"
Flow Length=85' Tc=4.4 min CN=75 Runoff=0.13 cfs 0.009 af

Subcatchment 2730LS: SUBCATCHMENT Runoff Area=24,016 sf 49.95% Impervious Runoff Depth=0.70"
Flow Length=462' Tc=10.0 min CN=68 Runoff=0.33 cfs 0.032 af

Subcatchment 2730RS: SUBCATCHMENT Runoff Area=12,056 sf 52.21% Impervious Runoff Depth=0.79"
Flow Length=261' Tc=3.9 min CN=70 Runoff=0.25 cfs 0.018 af

Subcatchment 3018GS: Runoff Area=270,071 sf 12.90% Impervious Runoff Depth=0.04"
Flow Length=1,138' Tc=26.5 min CN=45 Runoff=0.03 cfs 0.019 af

Subcatchment 3020LS: SUBCATCHMENT Runoff Area=43,038 sf 52.99% Impervious Runoff Depth=0.79"
Flow Length=349' Tc=10.3 min CN=70 Runoff=0.70 cfs 0.065 af

Subcatchment 3020RS: SUBCATCHMENT Runoff Area=10,119 sf 60.96% Impervious Runoff Depth=1.23"
Flow Length=204' Tc=6.3 min CN=78 Runoff=0.32 cfs 0.024 af

Subcatchment 3200S: Flow to CB3200 Runoff Area=3,537 sf 0.00% Impervious Runoff Depth=0.00"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment RD1Sa: Roof drain 1a Runoff Area=5,231 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.38 cfs 0.029 af

Subcatchment RD1Sb: Roof Drain 1b Runoff Area=3,703 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.27 cfs 0.021 af

Subcatchment RD2Sa: Roof drain 2a Runoff Area=4,238 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.31 cfs 0.024 af

Subcatchment RD2Sb: Roof drain 2b Runoff Area=4,138 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.30 cfs 0.023 af

Subcatchment RD3S: ROOF DRAIN Runoff Area=18,273 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=1.32 cfs 0.102 af

Subcatchment RD4S: ROOF DRAIN Runoff Area=504 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment RD5S: ROOF DRAIN Runoff Area=18,667 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=1.35 cfs 0.104 af

Subcatchment RD6S: ROOF DRAIN Runoff Area=9,690 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.70 cfs 0.054 af

Subcatchment RD8S: Roof Drain Runoff Area=2,295 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.17 cfs 0.013 af

Subcatchment RD9S: Roof Drain Runoff Area=1,575 sf 100.00% Impervious Runoff Depth=2.91"
Tc=5.0 min CN=98 Runoff=0.11 cfs 0.009 af

Reach 1AR: STREAM Avg. Flow Depth=0.43' Max Vel=2.59 fps Inflow=5.81 cfs 1.839 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=5.61 cfs 1.839 af

Reach 1BR: STREAM Avg. Flow Depth=0.18' Max Vel=1.75 fps Inflow=1.52 cfs 0.131 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=1.44 cfs 0.131 af

Reach 1R: STREAM Avg. Flow Depth=0.57' Max Vel=2.20 fps Inflow=7.05 cfs 1.969 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=6.74 cfs 1.969 af

Reach 2R: REACH 2 Avg. Flow Depth=0.06' Max Vel=0.61 fps Inflow=0.18 cfs 0.437 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=0.15 cfs 0.435 af

Reach 3R: REACH 3 Avg. Flow Depth=0.08' Max Vel=0.79 fps Inflow=0.36 cfs 0.053 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=0.34 cfs 0.053 af

Reach 4R: REACH 4 Avg. Flow Depth=0.02' Max Vel=0.23 fps Inflow=0.03 cfs 0.019 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=0.03 cfs 0.019 af

Reach 5R: REACH 5 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.00 cfs 0.000 af

Reach 6R: REACH 6 Avg. Flow Depth=0.03' Max Vel=0.23 fps Inflow=0.03 cfs 0.019 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=0.03 cfs 0.019 af

Reach 7R: STREAM Avg. Flow Depth=0.09' Max Vel=0.95 fps Inflow=0.34 cfs 0.071 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=0.34 cfs 0.071 af

Reach 8R: STREAM Avg. Flow Depth=0.10' Max Vel=1.01 fps Inflow=0.48 cfs 0.507 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=0.45 cfs 0.505 af

Reach 9R: STREAM Avg. Flow Depth=0.55' Max Vel=2.30 fps Inflow=6.76 cfs 2.474 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=6.75 cfs 2.473 af

Reach 16R: Existing Culvert to West Avg. Flow Depth=0.35' Max Vel=4.53 fps Inflow=1.27 cfs 0.087 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=1.27 cfs 0.087 af

Reach 41R: REACH Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=147.0' S=0.0184 '/' Capacity=23.05 cfs Outflow=0.00 cfs 0.000 af

Reach 326R: Reach 1BR Avg. Flow Depth=0.16' Max Vel=1.15 fps Inflow=0.86 cfs 1.404 af
n=0.050 L=358.0' S=0.0288 '/' Capacity=26.39 cfs Outflow=0.86 cfs 1.404 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=68.89' Inflow=6.75 cfs 2.789 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=6.75 cfs 2.789 af

Pond 11P: CB11 to CB12 Peak Elev=105.66' Inflow=0.87 cfs 0.067 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=0.87 cfs 0.067 af

Pond 12R: From CB12 out Peak Elev=105.43' Inflow=1.59 cfs 0.122 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=1.59 cfs 0.122 af

Pond 13P: CB13 to CB14 Peak Elev=107.07' Inflow=0.72 cfs 0.050 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=0.72 cfs 0.050 af

Pond 14P: CB14 to CB15 Peak Elev=106.08' Inflow=0.85 cfs 0.059 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=0.85 cfs 0.059 af

Pond 15P: CB15 out Peak Elev=104.97' Inflow=1.12 cfs 0.080 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.12 cfs 0.080 af

Pond 100AP: Outlet Structure 105 to Peak Elev=101.56' Storage=19,935 cf Inflow=5.85 cfs 1.430 af
Outflow=0.86 cfs 1.404 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=102.27' Storage=19,822 cf Inflow=12.61 cfs 1.063 af
Outflow=1.04 cfs 1.063 af

Pond 107P: CB107 TO HW106 Peak Elev=101.73' Inflow=2.05 cfs 0.150 af
15.0" Round Culvert n=0.009 L=20.0' S=0.0050 '/' Outflow=2.05 cfs 0.150 af

Pond 108P: CB108 TO CB107 Peak Elev=102.21' Inflow=1.38 cfs 0.100 af
15.0" Round Culvert n=0.009 L=106.0' S=0.0052 '/' Outflow=1.38 cfs 0.100 af

Pond 148GP: CB1+48G TO CB1+48R Peak Elev=126.47' Inflow=0.00 cfs 0.001 af
15.0" Round Culvert n=0.011 L=20.0' S=0.0050 '/' Outflow=0.00 cfs 0.001 af

Pond 148RP: CB1+48R TO CB3+04R Peak Elev=126.46' Inflow=0.17 cfs 0.013 af
15.0" Round Culvert n=0.011 L=153.0' S=0.0101 '/' Outflow=0.17 cfs 0.013 af

Pond 205P: CB205 TO HW200 Peak Elev=103.59' Inflow=5.59 cfs 0.407 af
24.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=5.59 cfs 0.407 af

Pond 206P: CB206 TO CB205 Peak Elev=104.12' Inflow=0.72 cfs 0.054 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0110 '/' Outflow=0.72 cfs 0.054 af

Pond 210P: CB210 TO CB205 Peak Elev=104.25' Inflow=3.35 cfs 0.240 af
18.0" Round Culvert n=0.013 L=65.0' S=0.0054 '/' Outflow=3.35 cfs 0.240 af

Pond 215P: DCB215 TO CB210 Peak Elev=104.74' Inflow=2.88 cfs 0.207 af
18.0" Round Culvert n=0.013 L=75.0' S=0.0053 '/' Outflow=2.88 cfs 0.207 af

Pond 220P: CB220 TO DCB215 Peak Elev=105.10' Inflow=1.05 cfs 0.077 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0083 '/' Outflow=1.05 cfs 0.077 af

Pond 303GP: CB3+03G TO CB3+04R Peak Elev=126.45' Inflow=0.46 cfs 0.031 af
15.0" Round Culvert n=0.011 L=60.0' S=0.0233 '/' Outflow=0.46 cfs 0.031 af

Pond 304RP: CB3+04R TO CB4+01G Peak Elev=125.05' Inflow=0.72 cfs 0.052 af
15.0" Round Culvert n=0.011 L=94.0' S=0.0197 '/' Outflow=0.72 cfs 0.052 af

Pond 305P: CB305 TO HW300 Peak Elev=104.40' Inflow=5.13 cfs 0.396 af
24.0" Round Culvert n=0.009 L=16.0' S=0.0062 '/' Outflow=5.13 cfs 0.396 af

Pond 310P: CB310 TO CB305 Peak Elev=104.72' Inflow=4.64 cfs 0.362 af
24.0" Round Culvert n=0.013 L=28.0' S=0.0054 '/' Outflow=4.64 cfs 0.362 af

Pond 315P: CB315 TO CB310 Peak Elev=106.23' Inflow=4.64 cfs 0.344 af
18.0" Round Culvert n=0.009 L=185.0' S=0.0054 '/' Outflow=4.64 cfs 0.344 af

Pond 316P: CB316 TO CB315 Peak Elev=106.24' Inflow=0.25 cfs 0.018 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.25 cfs 0.018 af

Pond 320P: CB320 TO CB315 Peak Elev=108.64' Inflow=4.39 cfs 0.326 af
18.0" Round Culvert n=0.009 L=213.0' S=0.0110 '/' Outflow=4.39 cfs 0.326 af

Pond 320Pa: Porous Walk Peak Elev=111.86' Storage=1 cf Inflow=0.03 cfs 0.002 af
Outflow=0.03 cfs 0.002 af

Pond 321P: CB321 TO CB320 Peak Elev=113.00' Inflow=2.12 cfs 0.160 af
15.0" Round Culvert n=0.013 L=114.0' S=0.0243 '/' Outflow=2.12 cfs 0.160 af

Pond 321Pa: Porous Walk Peak Elev=116.65' Storage=0 cf Inflow=0.03 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 322P: CB323 TO CB322 Peak Elev=118.63' Inflow=1.83 cfs 0.137 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0800 '/' Outflow=1.83 cfs 0.137 af

Pond 323P: CB324 to CB323 Peak Elev=121.82' Inflow=1.83 cfs 0.137 af
15.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=1.83 cfs 0.137 af

Pond 323Pa: Porous Walk Peak Elev=129.25' Storage=0 cf Inflow=0.04 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 324P: CB325 to CB324 Peak Elev=122.39' Inflow=1.56 cfs 0.116 af
15.0" Round Culvert n=0.013 L=57.0' S=0.0100 '/' Outflow=1.56 cfs 0.116 af

Pond 325P: CB326 TO CB325 Peak Elev=123.25' Inflow=1.40 cfs 0.104 af
15.0" Round Culvert n=0.013 L=67.0' S=0.0115 '/' Outflow=1.40 cfs 0.104 af

Pond 326P: CB327 TO CB326 Peak Elev=124.42' Inflow=1.28 cfs 0.095 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0100 '/' Outflow=1.28 cfs 0.095 af

Pond 326Pa: Porous Walk Peak Elev=127.95' Storage=0 cf Inflow=0.02 cfs 0.002 af
Outflow=0.02 cfs 0.002 af

Pond 326Pb: Porous Walk Peak Elev=129.05' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 326Pc: Porous Walk Peak Elev=129.65' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 330P: CB330 T0 CB320 Peak Elev=109.51' Inflow=2.04 cfs 0.149 af
15.0" Round Culvert n=0.009 L=35.0' S=0.0286 '/' Outflow=2.04 cfs 0.149 af

Pond 330Pa: Porous Walk Peak Elev=114.25' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 330Pb: Porous Walk Peak Elev=112.65' Storage=0 cf Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 331P: CB331 TO CB330 Peak Elev=110.49' Inflow=0.72 cfs 0.052 af
15.0" Round Culvert n=0.013 L=12.0' S=0.0100 '/' Outflow=0.72 cfs 0.052 af

Pond 331Pa: Porous Walk Peak Elev=116.25' Storage=0 cf Inflow=0.01 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond 332P: CB332 to CB331 Peak Elev=111.09' Inflow=0.07 cfs 0.005 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0166 '/' Outflow=0.07 cfs 0.005 af

Pond 332Pa: Porous Walk Peak Elev=116.35' Storage=0 cf Inflow=0.05 cfs 0.003 af
Outflow=0.05 cfs 0.003 af

Pond 333P: CB333 TO CB331 Peak Elev=113.01' Inflow=0.31 cfs 0.024 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0193 '/' Outflow=0.31 cfs 0.024 af

Pond 333Pa: Porous Walk Peak Elev=128.65' Storage=0 cf Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 335P: CB335 TO CB330 Peak Elev=110.37' Inflow=1.10 cfs 0.081 af
15.0" Round Culvert n=0.009 L=29.0' S=0.0345 '/' Outflow=1.10 cfs 0.081 af

Pond 340P: CB340TO CB335 Peak Elev=111.93' Inflow=0.97 cfs 0.072 af
15.0" Round Culvert n=0.009 L=31.0' S=0.0355 '/' Outflow=0.97 cfs 0.072 af

Pond 345P: DMH345 TO CB340 Peak Elev=114.10' Inflow=0.87 cfs 0.064 af
15.0" Round Culvert n=0.009 L=59.0' S=0.0356 '/' Outflow=0.87 cfs 0.064 af

Pond 350P: CB350 TO DMH345 Peak Elev=119.10' Inflow=0.87 cfs 0.064 af
15.0" Round Culvert n=0.009 L=64.0' S=0.0344 '/' Outflow=0.87 cfs 0.064 af

Pond 351P: CB351 TO CB350 Peak Elev=120.71' Inflow=0.17 cfs 0.012 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.17 cfs 0.012 af

Pond 355P: DMH355 TO CB350 Peak Elev=124.18' Inflow=0.52 cfs 0.040 af
15.0" Round Culvert n=0.009 L=84.0' S=0.0351 '/' Outflow=0.52 cfs 0.040 af

Pond 360P: CB360 TO DMH355 Peak Elev=131.68' Inflow=0.52 cfs 0.040 af
15.0" Round Culvert n=0.009 L=95.0' S=0.0347 '/' Outflow=0.52 cfs 0.040 af

Pond 365P: CB365 TO CB360 Peak Elev=132.92' Inflow=0.27 cfs 0.021 af
15.0" Round Culvert n=0.009 L=36.0' S=0.0056 '/' Outflow=0.27 cfs 0.021 af

Pond 402GP: CB4+02G TO CB4+19R Peak Elev=123.19' Inflow=0.72 cfs 0.056 af
15.0" Round Culvert n=0.011 L=26.0' S=0.0058 '/' Outflow=0.72 cfs 0.056 af

Pond 405P: CB405 TO HW400 Peak Elev=102.11' Inflow=2.53 cfs 0.185 af
18.0" Round Culvert n=0.013 L=33.0' S=0.0061 '/' Outflow=2.53 cfs 0.185 af

Pond 410P: DCB410 TO CB405 Peak Elev=102.90' Inflow=2.00 cfs 0.146 af
15.0" Round Culvert n=0.013 L=119.0' S=0.0050 '/' Outflow=2.00 cfs 0.146 af

Pond 415P: CB415 TO CB410 Peak Elev=103.09' Inflow=0.83 cfs 0.060 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0054 '/' Outflow=0.83 cfs 0.060 af

Pond 416P: CB416 TO CB415 Peak Elev=103.28' Inflow=0.49 cfs 0.035 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0052 '/' Outflow=0.49 cfs 0.035 af

Pond 419LP: CB4+19L TO DMH1001+25 Peak Elev=117.73' Inflow=3.04 cfs 0.271 af
24.0" Round Culvert n=0.011 L=114.0' S=0.0202 '/' Outflow=3.04 cfs 0.271 af

Pond 419RP: CB4+19R TO CB4+19L Peak Elev=123.01' Inflow=1.17 cfs 0.092 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=1.17 cfs 0.092 af

Pond 505P: dmh505 TO HW500 Peak Elev=104.19' Inflow=1.10 cfs 0.111 af
18.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=1.10 cfs 0.111 af

Pond 507P: CB507 TO CB505 Peak Elev=105.23' Inflow=1.10 cfs 0.111 af
Primary=1.10 cfs 0.111 af Secondary=0.00 cfs 0.000 af Outflow=1.10 cfs 0.111 af

Pond 508P: CB508 TO CB507 Peak Elev=107.47' Inflow=0.87 cfs 0.092 af
18.0" Round Culvert n=0.009 L=77.0' S=0.0286 '/' Outflow=0.87 cfs 0.092 af

Pond 509P: CB509 to CB508 Peak Elev=108.81' Inflow=0.87 cfs 0.092 af
18.0" Round Culvert n=0.009 L=34.0' S=0.0382 '/' Outflow=0.87 cfs 0.092 af

Pond 600P: DETENTION BASIN OS605 TO Peak Elev=98.58' Storage=44,079 cf Inflow=7.45 cfs 0.835 af
Outflow=0.14 cfs 0.421 af

Pond 710P: CB710 TO HW700 Peak Elev=100.76' Inflow=3.89 cfs 0.282 af
18.0" Round Culvert n=0.009 L=109.0' S=0.0055 '/' Outflow=3.89 cfs 0.282 af

Pond 711P: CB711 TO CB710 Peak Elev=103.45' Inflow=0.30 cfs 0.022 af
15.0" Round Culvert n=0.009 L=52.0' S=0.0135 '/' Outflow=0.30 cfs 0.022 af

Pond 715P: CB715 TO CB710 Peak Elev=101.23' Inflow=3.29 cfs 0.238 af
18.0" Round Culvert n=0.009 L=65.0' S=0.0054 '/' Outflow=3.29 cfs 0.238 af

Pond 720P: DCB720 TO CB715 Peak Elev=101.69' Inflow=3.09 cfs 0.224 af
18.0" Round Culvert n=0.009 L=53.0' S=0.0066 '/' Outflow=3.09 cfs 0.224 af

Pond 725P: CB725 TO DCB720 Peak Elev=102.15' Inflow=1.88 cfs 0.136 af
15.0" Round Culvert n=0.009 L=75.0' S=0.0060 '/' Outflow=1.88 cfs 0.136 af

Pond 801P: HW801 TO HW800 Peak Elev=101.43' Storage=3,062 cf Inflow=6.43 cfs 0.507 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0215 '/' Outflow=3.72 cfs 0.502 af

Pond 805P: CB805 TO HW802 Peak Elev=102.17' Inflow=4.20 cfs 0.318 af
18.0" Round Culvert n=0.009 L=68.0' S=0.0051 '/' Outflow=4.20 cfs 0.318 af

Pond 806P: CB806 TO CB805 Peak Elev=103.80' Inflow=3.21 cfs 0.243 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0175 '/' Outflow=3.21 cfs 0.243 af

Pond 807P: CB807 TO CB806 Peak Elev=105.85' Inflow=1.61 cfs 0.122 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0215 '/' Outflow=1.61 cfs 0.122 af

Pond 808P: CB808 TO CB807 Peak Elev=106.73' Inflow=1.32 cfs 0.102 af
15.0" Round Culvert n=0.009 L=128.0' S=0.0051 '/' Outflow=1.32 cfs 0.102 af

Pond 857LP: CB8+57L TO CB4+19L Peak Elev=133.20' Inflow=1.02 cfs 0.117 af
15.0" Round Culvert n=0.011 L=439.0' S=0.0237 '/' Outflow=1.02 cfs 0.117 af

Pond 857RP: CB8+57R TO CB8+57L Peak Elev=133.17' Inflow=0.02 cfs 0.008 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.02 cfs 0.008 af

Pond 900P: POND 900 Peak Elev=98.60' Storage=18,162 cf Inflow=6.72 cfs 0.627 af
Discarded=0.24 cfs 0.554 af Primary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.554 af

Pond 1000P: Sediment Forebay Peak Elev=111.50' Storage=6 cf Inflow=0.02 cfs 0.014 af
Outflow=0.02 cfs 0.014 af

Pond 1100P: Subsurface Detention SC-740 Peak Elev=117.31' Storage=1,137 cf Inflow=0.95 cfs 0.089 af
Discarded=0.13 cfs 0.089 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.089 af

Pond 1200P: Subsurface Detention SC-740 Peak Elev=109.81' Storage=994 cf Inflow=0.79 cfs 0.079 af
Discarded=0.13 cfs 0.079 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.079 af

Pond 1295GP: CB12+95G TO CB12+95R Peak Elev=137.12' Inflow=0.18 cfs 0.035 af
15.0" Round Culvert n=0.011 L=11.0' S=0.0091 '/' Outflow=0.18 cfs 0.035 af

Pond 1295LP: CB12+95L TO CB8+57L Peak Elev=136.78' Inflow=0.52 cfs 0.073 af
15.0" Round Culvert n=0.011 L=438.0' S=0.0083 '/' Outflow=0.52 cfs 0.073 af

Pond 1295RP: CB12+95R CB12+95L Peak Elev=136.98' Inflow=0.28 cfs 0.054 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=0.28 cfs 0.054 af

Pond 1643LP: CB16+43L TO CB16+43R Peak Elev=137.70' Inflow=0.01 cfs 0.001 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.01 cfs 0.001 af

Pond 1643RP: CB16+43R TO CB17+85R Peak Elev=136.33' Inflow=0.17 cfs 0.014 af
12.0" Round Culvert n=0.011 L=143.0' S=0.0346 '/' Outflow=0.17 cfs 0.014 af

Pond 1785LP: CB17+85L TO CB17+85R Peak Elev=131.38' Inflow=0.02 cfs 0.005 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.02 cfs 0.005 af

Pond 1785RP: CB17+85R TO DMH18+69 Peak Elev=130.29' Inflow=0.28 cfs 0.028 af
12.0" Round Culvert n=0.011 L=86.0' S=0.0337 '/' Outflow=0.28 cfs 0.028 af

Pond 1869P: DMH18+69 TO CB19+28L Peak Elev=127.26' Inflow=0.28 cfs 0.028 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0345 '/' Outflow=0.28 cfs 0.028 af

Pond 1928LP: CB19+28L TO CB19+79R Peak Elev=123.63' Inflow=0.46 cfs 0.045 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0282 '/' Outflow=0.46 cfs 0.045 af

Pond 1928RP: CB19+28R TO CB19+28L Peak Elev=125.59' Inflow=0.12 cfs 0.009 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.12 cfs 0.009 af

Pond 1979RP: CB19+79 TO CB21+73R Peak Elev=121.95' Inflow=0.50 cfs 0.047 af
12.0" Round Culvert n=0.011 L=190.0' S=0.0191 '/' Outflow=0.50 cfs 0.047 af

Pond 2168P: DMH 21+68R to DMH 22+41R Peak Elev=105.85' Inflow=0.02 cfs 0.014 af
12.0" Round Culvert n=0.012 L=76.0' S=0.0150 '/' Outflow=0.02 cfs 0.014 af

Pond 2173LP: CB21+73L TO CB21+73R Peak Elev=118.70' Inflow=0.17 cfs 0.018 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0114 '/' Outflow=0.17 cfs 0.018 af

Pond 2173RP: CB21+73R TO DMH21+95R Peak Elev=118.33' Inflow=0.85 cfs 0.080 af
18.0" Round Culvert n=0.011 L=30.0' S=0.0357 '/' Outflow=0.85 cfs 0.080 af

Pond 2182P: DCB 21+82R TO DMH 21+97R Peak Elev=117.31' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=0.13 cfs 0.009 af

Pond 2195P: DMH21+95R TO Subsurface Detention Peak Elev=117.31' Inflow=0.85 cfs 0.080 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=0.85 cfs 0.080 af

Pond 2197P: DMH 21+97R TO Subsurface Detention Peak Elev=117.31' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0000 '/' Outflow=0.13 cfs 0.009 af

Pond 2210P: DMH 22+10R to DMH22+20R Peak Elev=116.80' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.011 L=5.0' S=0.0200 '/' Outflow=0.00 cfs 0.000 af

Pond 2220P: DMH22+20R TO DMH22+41R Peak Elev=108.60' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.011 L=53.0' S=0.0747 '/' Outflow=0.00 cfs 0.000 af

Pond 2241: DMH 22+41R to DMH24+86R Peak Elev=105.09' Inflow=1.13 cfs 0.101 af
12.0" Round Culvert n=0.012 L=188.0' S=0.0150 '/' Outflow=1.13 cfs 0.101 af

Pond 2286P: DMH 22+86R to DMH24+78R Peak Elev=102.17' Inflow=1.13 cfs 0.101 af
12.0" Round Culvert n=0.012 L=54.0' S=0.0150 '/' Outflow=1.13 cfs 0.101 af

Pond 2440P: TD24+40R TO CB24+60R Peak Elev=111.97' Inflow=0.02 cfs 0.001 af
12.0" Round Culvert n=0.011 L=62.0' S=0.0323 '/' Outflow=0.02 cfs 0.001 af

Pond 2460LP: CB24+60L TO CB24+60R Peak Elev=113.69' Inflow=0.33 cfs 0.033 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=0.33 cfs 0.033 af

Pond 2460P: CB24+60R TO DMH24+85R Peak Elev=110.09' Inflow=0.35 cfs 0.022 af
12.0" Round Culvert n=0.011 L=28.0' S=0.0107 '/' Outflow=0.35 cfs 0.022 af

Pond 2460RP: CB24+60R TO DMH24+86R Peak Elev=113.43' Inflow=0.49 cfs 0.053 af
12.0" Round Culvert n=0.011 L=58.0' S=0.0617 '/' Outflow=0.49 cfs 0.053 af

Pond 2468P: DMH24+86R TO Subsurface Detention Peak Elev=109.81' Inflow=0.49 cfs 0.053 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=0.49 cfs 0.053 af

Pond 2474P: DMH24+74R TO DMH24+85R Peak Elev=110.01' Inflow=0.05 cfs 0.004 af
12.0" Round Culvert n=0.011 L=12.0' S=0.0333 '/' Outflow=0.05 cfs 0.004 af

Pond 2478P: DMH24+78R to HW24+89R Peak Elev=101.29' Inflow=1.13 cfs 0.101 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0150 '/' Outflow=1.13 cfs 0.101 af

Pond 2485P: DMH24+85R TO Subsurface Detention Peak Elev=109.81' Inflow=0.38 cfs 0.026 af
24.0" Round Culvert n=0.011 L=6.0' S=0.0000 '/' Outflow=0.38 cfs 0.026 af

Pond 2495P: DMH24+95R TO DMH25+00 Peak Elev=109.40' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0200 '/' Outflow=0.00 cfs 0.000 af

Pond 2505P: DMH24+82R to DMH24+78R Peak Elev=103.60' Inflow=0.00 cfs 0.000 af
12.0" Round Culvert n=0.011 L=43.0' S=0.0649 '/' Outflow=0.00 cfs 0.000 af

Pond 2625RP: DMH26+25R TO HW26+25 Peak Elev=101.52' Inflow=1.73 cfs 0.146 af
12.0" Round Culvert n=0.011 L=15.0' S=0.0200 '/' Outflow=1.73 cfs 0.146 af

Pond 2723P: DMH27+23R TO DMH26+25R Peak Elev=102.80' Inflow=0.63 cfs 0.059 af
12.0" Round Culvert n=0.011 L=93.0' S=0.0161 '/' Outflow=0.63 cfs 0.059 af

Pond 2723RP: TD27+23R TO DMH27+23R Peak Elev=104.77' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=39.0' S=0.0538 '/' Outflow=0.13 cfs 0.009 af

Pond 2730LP: CB27+30L TO 27+30R Peak Elev=109.70' Inflow=0.33 cfs 0.032 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=0.33 cfs 0.032 af

Pond 2730RP: CB27+30R TO DMH27+23R Peak Elev=109.44' Inflow=0.51 cfs 0.050 af
12.0" Round Culvert n=0.011 L=125.0' S=0.0526 '/' Outflow=0.51 cfs 0.050 af

Pond 3018GP: CB30+18G TO CB30+20L Peak Elev=103.21' Inflow=3.04 cfs 0.290 af
24.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=3.04 cfs 0.290 af

Pond 3020LP: CB30+20L TO CB30+20R Peak Elev=102.96' Inflow=3.57 cfs 0.355 af
24.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=3.57 cfs 0.355 af

Pond 3020RP: CB30+20R TO HW29+63 Peak Elev=102.54' Inflow=3.89 cfs 0.379 af
24.0" Round Culvert n=0.011 L=135.0' S=0.0089 '/' Outflow=3.89 cfs 0.379 af

Pond 3200P: CB3200 TO CB320 Peak Elev=108.63' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.009 L=90.0' S=0.0050 '/' Outflow=0.00 cfs 0.000 af

Pond 100125P: DMH1001+25 TO DMH1003+11 Peak Elev=108.33' Inflow=3.04 cfs 0.271 af
24.0" Round Culvert n=0.011 L=194.0' S=0.0201 '/' Outflow=3.04 cfs 0.271 af

Pond 100311P: DMH1003+11C TO CB30+18G Peak Elev=104.33' Inflow=3.04 cfs 0.271 af
24.0" Round Culvert n=0.011 L=130.0' S=0.0092 '/' Outflow=3.04 cfs 0.271 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.02' Storage=3,466 cf Inflow=2.96 cfs 0.176 af
Discarded=0.01 cfs 0.056 af Primary=0.95 cfs 0.083 af Outflow=0.96 cfs 0.139 af

Pond C3P: CBC3 to CB509 Peak Elev=114.23' Inflow=0.70 cfs 0.076 af
18.0" Round Culvert n=0.009 L=183.0' S=0.0295 '/' Outflow=0.70 cfs 0.076 af

Pond C4P: CBC4 to CBC3 Peak Elev=116.46' Inflow=0.61 cfs 0.054 af
15.0" Round Culvert n=0.009 L=212.0' S=0.0092 '/' Outflow=0.61 cfs 0.054 af

Pond C5P: CBC5 to DMHC6 Peak Elev=118.25' Inflow=0.28 cfs 0.022 af
15.0" Round Culvert n=0.013 L=66.0' S=0.0091 '/' Outflow=0.28 cfs 0.022 af

Pond C6P: DMHC6 to CBC4 Peak Elev=117.14' Inflow=0.28 cfs 0.028 af
15.0" Round Culvert n=0.013 L=32.0' S=0.0219 '/' Outflow=0.28 cfs 0.028 af

Pond C7P: CBC7 to DMHC6 Peak Elev=118.63' Inflow=0.02 cfs 0.006 af
15.0" Round Culvert n=0.013 L=189.0' S=0.0082 '/' Outflow=0.02 cfs 0.006 af

Pond C8P: CBC8 to CBC7 Peak Elev=119.07' Inflow=0.02 cfs 0.006 af
15.0" Round Culvert n=0.013 L=33.0' S=0.0106 '/' Outflow=0.02 cfs 0.006 af

Pond RD1Pa: RD1a TO CB327 Peak Elev=125.34' Inflow=0.38 cfs 0.029 af
12.0" Round Culvert n=0.013 L=43.0' S=0.0200 '/' Outflow=0.38 cfs 0.029 af

Pond RD1Pb: RD1b to CB 324 Peak Elev=123.79' Inflow=0.27 cfs 0.021 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0800 '/' Outflow=0.27 cfs 0.021 af

Pond RD2Pa: RD2a to CB333 Peak Elev=113.51' Inflow=0.31 cfs 0.024 af
12.0" Round Culvert n=0.013 L=23.0' S=0.0100 '/' Outflow=0.31 cfs 0.024 af

Pond RD2Pb: RD2b TO CB322 Peak Elev=113.50' Inflow=0.30 cfs 0.023 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0340 '/' Outflow=0.30 cfs 0.023 af

Pond RD3P: RD3 TO CB808 Peak Elev=107.20' Inflow=1.32 cfs 0.102 af
12.0" Round Culvert n=0.009 L=7.0' S=0.0214 '/' Outflow=1.32 cfs 0.102 af

Pond RD4P: RD4 TO CB807 Peak Elev=108.10' Inflow=0.04 cfs 0.003 af
12.0" Round Culvert n=0.009 L=34.0' S=0.0441 '/' Outflow=0.04 cfs 0.003 af

Pond RD5P: RD5 TO CB806 Peak Elev=106.71' Inflow=1.35 cfs 0.104 af
12.0" Round Culvert n=0.009 L=45.0' S=0.0567 '/' Outflow=1.35 cfs 0.104 af

Pond RD6P: RD6 TO CB805 Peak Elev=103.48' Inflow=0.70 cfs 0.054 af
12.0" Round Culvert n=0.009 L=60.0' S=0.0233 '/' Outflow=0.70 cfs 0.054 af

Pond RD8P: RD8 TO CB107 Peak Elev=102.05' Inflow=0.17 cfs 0.013 af
8.0" Round Culvert n=0.009 L=28.0' S=0.0107 '/' Outflow=0.17 cfs 0.013 af

Pond RD9P: RD9 TO CB405 Peak Elev=102.51' Inflow=0.11 cfs 0.009 af
8.0" Round Culvert n=0.009 L=32.0' S=0.0094 '/' Outflow=0.11 cfs 0.009 af

Total Runoff Area = 121.896 ac Runoff Volume = 4.442 af Average Runoff Depth = 0.44"
80.35% Pervious = 97.941 ac 19.65% Impervious = 23.956 ac

Summary for Subcatchment 1S: SUBCATCHMENT 1

Runoff = 0.02 cfs @ 15.37 hrs, Volume= 0.014 af, Depth= 0.06"
Routed to Pond 1000P : Sediment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
15,841	30	Woods, Good, HSG A
82,224	39	>75% Grass cover, Good, HSG A
18,660	98	Paved parking, HSG A
116,725	47	Weighted Average
98,065		84.01% Pervious Area
18,660		15.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0312	0.09		**Sheet Flow, Segment 1** Woods: Light underbrush n= 0.400 P2= 3.00"
11.3	54	0.0312	0.08		**Sheet Flow, Segment 2** Woods: Light underbrush n= 0.400 P2= 3.00"
0.0	20	0.3330	9.29		**Shallow Concentrated Flow, Segment 3** Unpaved Kv= 16.1 fps
1.9	390	0.0500	3.35		**Shallow Concentrated Flow, Segment 4** Grassed Waterway Kv= 15.0 fps
2.1	240	0.0168	1.94		**Shallow Concentrated Flow, Segment 5** Grassed Waterway Kv= 15.0 fps
0.6	124	0.0500	3.35		**Shallow Concentrated Flow, Segment 6** Grassed Waterway Kv= 15.0 fps
34.5	928	Total			

Summary for Subcatchment 11S: flow to reach 2R

Runoff = 0.15 cfs @ 12.14 hrs, Volume= 0.016 af, Depth= 0.49"
Routed to Reach 2R : REACH 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,674	39	>75% Grass cover, Good, HSG A
2,356	30	Woods, Good, HSG A
7,731	70	Woods, Good, HSG C
5,518	74	>75% Grass cover, Good, HSG C
88	89	Gravel, HSG C
17,367	63	Weighted Average
17,367		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	4	0.0100	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
0.7	15	0.3333	0.35		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
1.2	9	0.0333	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
4.6	22	0.0500	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
0.5	30	0.0370	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.0	80	Total			

Summary for Subcatchment 12S: Flow to Lot H-2 (REACH 1AR)

+3420 MPERV FROM MCDONALDS

Runoff = 5.42 cfs @ 12.13 hrs, Volume= 0.435 af, Depth= 1.29"
Routed to Reach 1AR : STREAM

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
661	70	Woods, Good, HSG C
26,644	74	Pasture/grassland/range, Good, HSG C
8,321	61	>75% Grass cover, Good, HSG B
17,674	98	Impervious
120	77	Brush, Fair, HSG D
8,038	77	Woods, Good, HSG D
87,918	80	Pasture/grassland/range, Good, HSG D
1,222	39	>75% Grass cover, Good, HSG A
756	74	>75% Grass cover, Good, HSG C
1,938	74	>75% Grass cover, Good, HSG C
21,858	74	Pasture/grassland/range, Good, HSG C
447	91	Gravel, HSG D
487	80	>75% Grass cover, Good, HSG D
176,084	79	Weighted Average
158,410		89.96% Pervious Area
17,674		10.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	3	0.0200	0.66		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
1.0	22	0.3333	0.37		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.00"
2.8	25	0.0800	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.00"
3.6	263	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	332	0.0250	3.59	334.67	**Parabolic Channel,** W=140.00' D=1.00' Area=93.3 sf Perim=140.0' n= 0.050
9.0	645	Total			

Summary for Subcatchment 14S: Flow to Lot H-2 (REACH 1BR)

Runoff = 1.52 cfs @ 12.13 hrs, Volume= 0.131 af, Depth= 0.89"
Routed to Reach 1BR : STREAM

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
410	39	>75% Grass cover, Good, HSG A
14,327	61	>75% Grass cover, Good, HSG B
15,863	74	Pasture/grassland/range, Good, HSG C
24,534	80	Pasture/grassland/range, Good, HSG D
17,955	70	Woods, Good, HSG C
3,459	77	Woods, Good, HSG D
76,548	72	Weighted Average
76,548		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0125	0.12		**Sheet Flow, FLOW THROUGH GRASS** Grass: Short n= 0.150 P2= 3.00"
0.1	6	0.0125	1.68		**Shallow Concentrated Flow, FLOW THROUGH GRASS** Grassed Waterway Kv= 15.0 fps
0.0	19	0.3333	8.66		**Shallow Concentrated Flow, FLOW THROUGH GRASS** Grassed Waterway Kv= 15.0 fps
0.1	20	0.1000	4.74		**Shallow Concentrated Flow, FLOW THROUGH GRASS** Grassed Waterway Kv= 15.0 fps
0.3	29	0.0690	1.84		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
0.7	152	0.0310	3.44	220.23	**Parabolic Channel,** W=120.00' D=0.80' Area=64.0 sf Perim=120.0' n= 0.050
0.8	140	0.0236	3.00	192.15	**Parabolic Channel,** W=120.00' D=0.80' Area=64.0 sf Perim=120.0' n= 0.050
9.0	416	Total			

Summary for Subcatchment 15S: offsite flow

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach 5R : REACH 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
308,398	30	Woods, Good, HSG A
6,100	98	Paved parking & roofs
43,560	39	>75% Grass cover, Good, HSG A
358,058	32	Weighted Average
351,958		98.30% Pervious Area
6,100		1.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	12	0.0200	0.87		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
7.6	38	0.0420	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
19.7	1,210	0.0420	1.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.5	1,260	Total			

Summary for Subcatchment 16S: offsite flow

Runoff = 0.50 cfs @ 15.05 hrs, Volume= 0.315 af, Depth= 0.08"
Routed to Pond 10P : CULVERT UNDER NH ROUTE 108

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,858	30	Woods, Good, HSG A
13,459	35	Brush, Fair, HSG A
25,519	70	Woods, Good, HSG C
28,002	70	Brush, Fair, HSG C
40,537	77	Brush, Fair, HSG D
15,070	80	Pasture/grassland/range, Good, HSG D
12,170	77	Woods, Good, HSG D
4,441	98	Paved parking & roofs
32,048	70	Woods, Good, HSG C
30,577	79	Pasture/grassland/range, Fair, HSG C
5,334	98	Paved parking & roofs
16,304	80	>75% Grass cover, Good, HSG D
10,644	77	Woods, Good, HSG D
9,584	98	Paved parking & roofs
58,128	98	Paved parking & roofs
65,340	74	>75% Grass cover, Good, HSG C
260,648	70	Woods, Good, HSG C
999,761	30	Woods, Good, HSG A
326,700	39	>75% Grass cover, Good, HSG A
88,350	98	Paved parking & roofs
2,052,474	48	Weighted Average
1,886,637		91.92% Pervious Area
165,837		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.9	100	0.0150	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
7.6	370	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	136	0.0126	6.06	262.50	**Parabolic Channel,** W=50.00' D=1.30' Area=43.3 sf Perim=50.1' n= 0.025
0.3	194	0.0284	9.61	153.83	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.0 '/' Top.W=12.00' n= 0.030
0.9	512	0.0258	9.08	163.39	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.5 '/' Top.W=14.00' n= 0.030
0.2	100	0.0190	7.79	140.22	**Trap/Vee/Rect Channel Flow,** Bot.W=4.00' D=2.00' Z= 2.5 '/' Top.W=14.00' n= 0.030
34.3	1,412	Total			

Summary for Subcatchment 30S: SUBCATCHMENT 30

Runoff = 0.36 cfs @ 12.40 hrs, Volume= 0.053 af, Depth= 0.57"
Routed to Reach 3R : REACH 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,130	55	Woods, Good, HSG B
9,811	61	>75% Grass cover, Good, HSG B
1,630	85	Gravel roads, HSG B
11,050	56	Brush, Fair, HSG B
1,080	89	Gravel roads, HSG C
22,291	70	Brush, Fair, HSG C
991	70	Woods, Good, HSG C
215	39	>75% Grass cover, Good, HSG A
48,198	65	Weighted Average
48,198		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.2	100	0.0200	0.08		**Sheet Flow, Segment 1** Woods: Light underbrush n= 0.400 P2= 3.00"
1.3	54	0.0200	0.71		**Shallow Concentrated Flow, Segment 2** Woodland Kv= 5.0 fps
23.5	154	Total			

Summary for Subcatchment 40S: SUBCATCHMENT 40

Runoff = 0.03 cfs @ 15.06 hrs, Volume= 0.019 af, Depth= 0.06"
Routed to Reach 4R : REACH 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
18,496	70	Woods, Good, HSG C
15,979	70	Brush, Fair, HSG C
16,386	56	Brush, Fair, HSG B
1,188	61	>75% Grass cover, Good, HSG B
1,320	85	Gravel roads, HSG B
30,854	30	Woods, Good, HSG A
5,490	76	Gravel roads, HSG A
9,949	39	>75% Grass cover, Good, HSG A
52,548	35	Brush, Fair, HSG A
152,210	47	Weighted Average
152,210		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	50	0.0560	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
6.1	402	0.0490	1.11		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
14.5	452	Total			

Summary for Subcatchment 50S: SUBCATCHMENT50

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach 5R : REACH 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
88,032	30	Woods, Good, HSG A
5,456	98	Impervious
1,920	76	Gravel roads, HSG A
30,501	35	Brush, Fair, HSG A
125,909	35	Weighted Average
120,453		95.67% Pervious Area
5,456		4.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.0500	0.09		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
9.3	610	0.0479	1.09		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.3	33	0.1818	2.13		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.0	117	0.0171	0.65		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
3.4	177	0.0300	0.87		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
24.8	987	Total			

Summary for Subcatchment 100S: Flow to Detention Pond 100

Runoff = 0.84 cfs @ 12.08 hrs, Volume= 0.065 af, Depth= 0.79"
Routed to Pond 100P : Outlet Structure 110 to HW109

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
14,772	74	>75% Grass cover, Good, HSG C
17,373	61	>75% Grass cover, Good, HSG B
416	74	>75% Grass cover, Good, HSG C
6,983	80	>75% Grass cover, Good, HSG D
119	89	Gravel, HSG C
1,899	85	Gravel, HSG B
1,170	80	>75% Grass cover, Good, HSG D
42,732	70	Weighted Average
42,732		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 101AS: Flow to Detention Pond 100A

Runoff = 0.48 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 1.42"
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
385	91	Gravel roads, HSG D
125	98	Impervious
11,642	80	>75% Grass cover, Good, HSG D
12,152	81	Weighted Average
12,027		98.97% Pervious Area
125		1.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 101os: North Side of Mast Road to CBC8

Runoff = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af, Depth= 0.18"
Routed to Pond C8P : CBC8 to CBC7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,731	98	Paved roads w/curbs & sewers
3,000	30	Woods, Good, HSG A
9,673	39	>75% Grass cover, Good, HSG A
17,404	53	Weighted Average
12,673		72.82% Pervious Area
4,731		27.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 102os: North Side of Mast Road to CBC5

Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.022 af, Depth= 0.75"
Routed to Pond C5P : CBC5 to DMHC6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
8,084	98	Paved roads w/curbs & sewers
7,577	39	>75% Grass cover, Good, HSG A
15,661	69	Weighted Average
7,577		48.38% Pervious Area
8,084		51.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 103os: Mast Road East to CB11

Runoff = 0.87 cfs @ 12.07 hrs, Volume= 0.067 af, Depth= 2.91"
Routed to Pond 11P : CB11 to CB12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
12,002	98	Paved roads w/curbs & sewers
12,002		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 107S: Flow to CB107

Runoff = 0.50 cfs @ 12.07 hrs, Volume= 0.037 af, Depth= 2.69"
Routed to Pond 107P : CB107 TO HW106

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
962	80	>75% Grass cover, Good, HSG D
6,198	98	Impervious
7,160	96	Weighted Average
962		13.44% Pervious Area
6,198		86.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 108S: Flow to CB108

Runoff = 1.38 cfs @ 12.07 hrs, Volume= 0.100 af, Depth= 2.59"
Routed to Pond 108P : CB108 TO CB107

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,335	80	>75% Grass cover, Good, HSG D
594	74	>75% Grass cover, Good, HSG C
17,088	98	Paved parking & roofs
237	91	Gravel, HSG D
20,254	95	Weighted Average
3,166		15.63% Pervious Area
17,088		84.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 148GS: SUBCATCHMENT 148GS

Runoff = 0.00 cfs @ 16.90 hrs, Volume= 0.001 af, Depth= 0.03"
Routed to Pond 148GP : CB1+48G TO CB1+48R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
11,945	30	Woods, Good, HSG A
8,563	39	>75% Grass cover, Good, HSG A
4,000	98	Impervious
24,508	44	Weighted Average
20,508		83.68% Pervious Area
4,000		16.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.01		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.00"
4.2	25	0.0800	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.00"
1.7	128	0.0664	1.29		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.3	178	Total			

Summary for Subcatchment 148RS: SUBCATCHMENT 148RS

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af, Depth= 1.42"
Routed to Pond 148RP : CB1+48R TO CB3+04R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
581	39	>75% Grass cover, Good, HSG A
3,056	98	Paved parking & roofs
679	39	>75% Grass cover, Good, HSG A
4,316	81	Weighted Average
1,260		29.19% Pervious Area
3,056		70.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 200os: Mast Road East to CB12

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 0.055 af, Depth= 2.91"
Routed to Pond 12R : From CB12 out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,931	98	Paved roads w/curbs & sewers
9,931		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 205S: Flow to CB205

Runoff = 1.51 cfs @ 12.07 hrs, Volume= 0.114 af, Depth= 2.80"
Routed to Pond 205P : CB205 TO HW200

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
140	74	>75% Grass cover, Good, HSG C
687	74	>75% Grass cover, Good, HSG C
427	80	>75% Grass cover, Good, HSG D
19,983	98	Paved parking & roofs
21,237	97	Weighted Average
1,254		5.90% Pervious Area
19,983		94.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 206S: Flow to CB206

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 0.054 af, Depth= 2.80"
Routed to Pond 206P : CB206 TO CB205

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
368	74	>75% Grass cover, Good, HSG C
9,675	98	Paved parking & roofs
52	80	>75% Grass cover, Good, HSG D
10,095	97	Weighted Average
420		4.16% Pervious Area
9,675		95.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 210S: Flow to CB210

Runoff = 0.47 cfs @ 12.07 hrs, Volume= 0.033 af, Depth= 2.20"
Routed to Pond 210P : CB210 TO CB205

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,010	74	>75% Grass cover, Good, HSG C
55	74	>75% Grass cover, Good, HSG C
865	61	>75% Grass cover, Good, HSG B
5,802	98	Paved parking & roofs
7,732	91	Weighted Average
1,930		24.96% Pervious Area
5,802		75.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 215S: Flow to DCB215

Runoff = 1.83 cfs @ 12.07 hrs, Volume= 0.130 af, Depth= 2.39"
Routed to Pond 215P : DCB215 TO CB210

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
672	39	>75% Grass cover, Good, HSG A
2,927	61	>75% Grass cover, Good, HSG B
195	74	>75% Grass cover, Good, HSG C
24,605	98	Impervious
28,399	93	Weighted Average
3,794		13.36% Pervious Area
24,605		86.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 220S: Flow to CB220

Runoff = 1.05 cfs @ 12.07 hrs, Volume= 0.077 af, Depth= 2.69"
Routed to Pond 220P : CB220 TO DCB215

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
216	39	>75% Grass cover, Good, HSG A
303	74	>75% Grass cover, Good, HSG C
14,293	98	Paved parking & roofs
212	61	>75% Grass cover, Good, HSG B
15,024	96	Weighted Average
731		4.87% Pervious Area
14,293		95.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 300os: East Side of NH Route 108 to Landscaping

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
537	39	>75% Grass cover, Good, HSG A
2,396	98	Paved parking & roofs
2,933	87	Weighted Average
537		18.31% Pervious Area
2,396		81.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 303GS: SUBCATCHMENT 303GS

Runoff = 0.46 cfs @ 12.07 hrs, Volume= 0.031 af, Depth= 1.56"
Routed to Pond 303GP : CB3+03G TO CB3+04R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,863	39	>75% Grass cover, Good, HSG A
757	30	Woods, Good, HSG A
5,385	98	Paved parking & roofs
2,540	98	Impervious
10,545	83	Weighted Average
2,620		24.85% Pervious Area
7,925		75.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 304RS: SUBCATCHMENT 304RS

Runoff = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 0.75"
Routed to Pond 304RP : CB3+04R TO CB4+01G

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,436	39	>75% Grass cover, Good, HSG A
2,667	98	Paved parking & roofs
1,093	39	>75% Grass cover, Good, HSG A
5,196	69	Weighted Average
2,529		48.67% Pervious Area
2,667		51.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 305S: Flow to CB305

Runoff = 0.50 cfs @ 12.07 hrs, Volume= 0.035 af, Depth= 2.29"
Routed to Pond 305P : CB305 TO HW300

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,267	61	>75% Grass cover, Good, HSG B
6,661	98	Impervious
7,928	92	Weighted Average
1,267		15.98% Pervious Area
6,661		84.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 310S: Flow to CB310

CONVERTED 2,000 SF OF B GRASS TO PAVED TO ACCOUNT FOR MECDONALD'S WIDENING OF GRAPEVINE DRIVE

Runoff = 0.03 cfs @ 15.03 hrs, Volume= 0.018 af, Depth= 0.06"
Routed to Pond 310P : CB310 TO CB305

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
74,593	39	Pasture/grassland/range, Good, HSG A
32,172	30	Woods, Good, HSG A
16,280	61	>75% Grass cover, Good, HSG B
1,363	74	>75% Grass cover, Good, HSG C
17,590	98	Paved parking & roofs
150	55	Woods, Good, HSG B
3,325	61	Pasture/grassland/range, Good, HSG B
145,473	47	Weighted Average
127,883		87.91% Pervious Area
17,590		12.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	50	0.0600	0.10		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
2.0	127	0.0470	1.08		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
2.9	265	0.0490	1.55		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
0.0	22	0.3333	8.66		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
0.0	5	0.0150	2.49		**Shallow Concentrated Flow, FLOW OVER PAVEMENT** Paved Kv= 20.3 fps
13.1	469	Total			

Summary for Subcatchment 315S: Flow to CB315

Runoff = 0.00 cfs @ 24.05 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 315P : CB315 TO CB310

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,071	98	Paved roads w/curbs & sewers, HSG A
31	39	>75% Grass cover, Good, HSG A
11,960	30	Woods, Good, HSG A
1,455	39	>75% Grass cover, Good, HSG A
10,842	39	>75% Grass cover, Good, HSG A
4,446	98	Paved roads w/curbs & sewers, HSG A
108	98	Paved roads w/curbs & sewers, HSG A
35,478	39	>75% Grass cover, Good, HSG A
4,012	39	>75% Grass cover, Good, HSG A
36,179	30	Woods, Good, HSG A
1,259	30	Woods, Good, HSG A
512	30	Woods, Good, HSG A
690	39	>75% Grass cover, Good, HSG A
1,914	39	>75% Grass cover, Good, HSG A
2,294	98	Paved roads w/curbs & sewers, HSG A
3,240	39	>75% Grass cover, Good, HSG A
314	39	>75% Grass cover, Good, HSG A
520	39	>75% Grass cover, Good, HSG A
116,325	39	Weighted Average
108,406		93.19% Pervious Area
7,919		6.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	25	0.0200	1.01		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
4.7	25	0.0600	0.09		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
2.6	198	0.0660	1.28		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
1.3	143	0.0660	1.80		**Shallow Concentrated Flow, FLOW THROUGH PASTURE** Short Grass Pasture Kv= 7.0 fps
0.0	19	0.3333	8.66		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
0.9	127	0.0150	2.49		**Shallow Concentrated Flow, FLOW OVER PAVEMENT** Paved Kv= 20.3 fps
9.9	537	Total			

Summary for Subcatchment 316S: Flow to CB316

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 2.49"
Routed to Pond 316P : CB316 TO CB315

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
47	39	>75% Grass cover, Good, HSG A
3,346	98	Paved roads w/curbs & sewers
383	61	>75% Grass cover, Good, HSG B
3,776	94	Weighted Average
430		11.39% Pervious Area
3,346		88.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 320S: Flow to CB320

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 0.017 af, Depth= 2.80"
Routed to Pond 320P : CB320 TO CB315

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
64	39	>75% Grass cover, Good, HSG A
2,137	98	Paved parking & roofs
365	98	Paved roads w/curbs & sewers, HSG A
35	98	Paved roads w/curbs & sewers, HSG A
526	98	Paved parking, HSG A
3,127	97	Weighted Average
64		2.05% Pervious Area
3,063		97.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 320Sa: Porous Walk

Runoff = 0.03 cfs @ 12.07 hrs, Volume= 0.002 af, Depth= 2.91"
Routed to Pond 320Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
25	98	Roofs, HSG A
379	98	Paved roads w/curbs & sewers, HSG A
404	98	Weighted Average
404		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 321S: Flow to CB322

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 321P : CB321 TO CB320

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,903	39	>75% Grass cover, Good, HSG A
1,903		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 321Sa: Porous Walk

Runoff = 0.03 cfs @ 12.07 hrs, Volume= 0.003 af, Depth= 2.91"
Routed to Pond 321Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
456	98	Paved roads w/curbs & sewers, HSG A
456		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 322S: Flow to CB323

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 322P : CB323 TO CB322

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,155	39	>75% Grass cover, Good, HSG A
98	39	>75% Grass cover, Good, HSG A
4,253	39	Weighted Average
4,253		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 323S: Flow to CB324

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 323P : CB324 to CB323

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,844	39	>75% Grass cover, Good, HSG A
1,844		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 323Sa: Porous Walk

Runoff = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af, Depth= 2.91"
Routed to Pond 323Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
498	98	Paved roads w/curbs & sewers, HSG A
498		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 324S: Flow to CB325

Runoff = 0.16 cfs @ 12.07 hrs, Volume= 0.012 af, Depth= 2.91"
Routed to Pond 324P : CB325 to CB324

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
815	98	Paved roads w/curbs & sewers, HSG A
323	98	Paved roads w/curbs & sewers, HSG A
1,075	98	Paved roads w/curbs & sewers, HSG A
2,213	98	Weighted Average
2,213		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 325S: Flow to CB324

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 2.91"
Routed to Pond 325P : CB326 TO CB325

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,665	98	Paved roads w/curbs & sewers
1,665		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 326S: Flow to CB325

Runoff = 0.90 cfs @ 12.08 hrs, Volume= 0.066 af, Depth= 1.00"
Routed to Pond 326P : CB327 TO CB326

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
6,205	98	Paved roads w/curbs & sewers, HSG A
2,134	39	>75% Grass cover, Good, HSG A
10,791	39	>75% Grass cover, Good, HSG A
2,364	98	Paved roads w/curbs & sewers, HSG A
126	39	>75% Grass cover, Good, HSG A
126	39	>75% Grass cover, Good, HSG A
98	39	>75% Grass cover, Good, HSG A
309	39	>75% Grass cover, Good, HSG A
12,068	98	Paved roads w/curbs & sewers, HSG A
87	39	>75% Grass cover, Good, HSG A
34,308	74	Weighted Average
13,671		39.85% Pervious Area
20,637		60.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 326Sa: Porous Walk

Runoff = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af, Depth= 0.57"
Routed to Pond 326Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
937	39	>75% Grass cover, Good, HSG A
790	98	Paved roads w/curbs & sewers, HSG A
60	39	>75% Grass cover, Good, HSG A
1,787	65	Weighted Average
997		55.79% Pervious Area
790		44.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 326Sb: Porous Walk

Runoff = 0.00 cfs @ 12.07 hrs, Volume= 0.000 af, Depth= 2.91"
Routed to Pond 326Pb : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
57	98	Paved roads w/curbs & sewers, HSG A
57		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 326Sc: Porous Walk

Runoff = 0.00 cfs @ 12.07 hrs, Volume= 0.000 af, Depth= 2.91"
Routed to Pond 326Pc : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
53	98	Paved roads w/curbs & sewers, HSG A
53		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 330S: Flow to CB330

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 0.016 af, Depth= 2.59"
Routed to Pond 330P : CB330 T0 CB320

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
662	98	Paved roads w/curbs & sewers, HSG A
2,438	98	Paved parking, HSG A
46	39	>75% Grass cover, Good, HSG A
102	39	>75% Grass cover, Good, HSG A
46	39	>75% Grass cover, Good, HSG A
3,294	95	Weighted Average
194		5.89% Pervious Area
3,100		94.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 330Sa: Porous Walk

Runoff = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af, Depth= 0.49"
Routed to Pond 330Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
186	98	Paved roads w/curbs & sewers, HSG A
208	39	>75% Grass cover, Good, HSG A
56	39	>75% Grass cover, Good, HSG A
450	63	Weighted Average
264		58.67% Pervious Area
186		41.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 330Sb: Porous Walk

Runoff = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af, Depth= 0.49"
Routed to Pond 330Pb : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
131	39	>75% Grass cover, Good, HSG A
87	98	Paved roads w/curbs & sewers, HSG A
218	63	Weighted Average
131		60.09% Pervious Area
87		39.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 331S: Flow to CB331

Runoff = 0.34 cfs @ 12.07 hrs, Volume= 0.024 af, Depth= 1.23"
Routed to Pond 331P : CB331 TO CB330

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
201	39	>75% Grass cover, Good, HSG A
6,654	98	Paved roads w/curbs & sewers, HSG A
200	39	>75% Grass cover, Good, HSG A
249	39	>75% Grass cover, Good, HSG A
2,283	39	>75% Grass cover, Good, HSG A
433	39	>75% Grass cover, Good, HSG A
10,020	78	Weighted Average
3,366		33.59% Pervious Area
6,654		66.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 331Sa: Porous Walk

Runoff = 0.01 cfs @ 12.09 hrs, Volume= 0.001 af, Depth= 0.57"
Routed to Pond 331Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
598	39	>75% Grass cover, Good, HSG A
486	98	Paved roads w/curbs & sewers, HSG A
1,084	65	Weighted Average
598		55.17% Pervious Area
486		44.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 332S: Flow to CB332

Runoff = 0.07 cfs @ 12.07 hrs, Volume= 0.005 af, Depth= 1.56"
Routed to Pond 332P : CB332 to CB331

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,255	98	Paved roads w/curbs & sewers, HSG A
296	39	>75% Grass cover, Good, HSG A
128	39	>75% Grass cover, Good, HSG A
1,679	83	Weighted Average
424		25.25% Pervious Area
1,255		74.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 332Sa: Porous Walk

Runoff = 0.05 cfs @ 12.08 hrs, Volume= 0.003 af, Depth= 1.11"
Routed to Pond 332Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
701	98	Paved roads w/curbs & sewers, HSG A
34	98	Paved roads w/curbs & sewers, HSG A
214	98	Paved roads w/curbs & sewers, HSG A
126	39	>75% Grass cover, Good, HSG A
451	39	>75% Grass cover, Good, HSG A
1,526	76	Weighted Average
577		37.81% Pervious Area
949		62.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 333S: Flow to CB332

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 333P : CB333 TO CB331

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,063	39	>75% Grass cover, Good, HSG A
2,063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 333Sa: Porous Walk

Runoff = 0.00 cfs @ 12.13 hrs, Volume= 0.001 af, Depth= 0.32"
Routed to Pond 333Pa : Porous Walk

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
428	39	>75% Grass cover, Good, HSG A
252	39	>75% Grass cover, Good, HSG A
325	98	Paved roads w/curbs & sewers, HSG A
1,005	58	Weighted Average
680		67.66% Pervious Area
325		32.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 335S: Flow to CB335

Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 1.11"
Routed to Pond 335P : CB335 TO CB330

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,586	39	>75% Grass cover, Good, HSG A
2,677	98	Paved roads w/curbs & sewers
4,263	76	Weighted Average
1,586		37.20% Pervious Area
2,677		62.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 340S: Flow to CB340

Runoff = 0.11 cfs @ 12.07 hrs, Volume= 0.007 af, Depth= 1.49"
Routed to Pond 340P : CB340TO CB335

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
709	39	>75% Grass cover, Good, HSG A
1,907	98	Paved roads w/curbs & sewers
2,616	82	Weighted Average
709		27.10% Pervious Area
1,907		72.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 350S: Flow to CB350

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af, Depth= 1.94"
Routed to Pond 350P : CB350 TO DMH345

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
531	39	>75% Grass cover, Good, HSG A
2,607	98	Paved roads w/curbs & sewers
3,138	88	Weighted Average
531		16.92% Pervious Area
2,607		83.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 351S: Flow to CB351

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af, Depth= 2.49"
Routed to Pond 351P : CB351 TO CB350

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
178	39	>75% Grass cover, Good, HSG A
2,422	98	Paved roads w/curbs & sewers
2,600	94	Weighted Average
178		6.85% Pervious Area
2,422		93.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 360S: Flow to CB360

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.020 af, Depth= 2.91"
Routed to Pond 360P : CB360 TO DMH355

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,507	98	Paved roads w/curbs & sewers
3,507		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 365S: Flow to CB365

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.91"
Routed to Pond 365P : CB365 TO CB360

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,724	98	Paved roads w/curbs & sewers
3,724		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 400os: East Side of NH Route 108 to CB13

Runoff = 0.72 cfs @ 12.07 hrs, Volume= 0.050 af, Depth= 1.86"
Routed to Pond 13P : CB13 to CB14

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
6,141	74	>75% Grass cover, Good, HSG C
7,791	98	Paved parking & roofs
13,932	87	Weighted Average
6,141		44.08% Pervious Area
7,791		55.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 402GS: SUBCATCHMENT 402GS

Runoff = 0.01 cfs @ 22.20 hrs, Volume= 0.004 af, Depth= 0.01"
Routed to Pond 402GP : CB4+02G TO CB4+19R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
22,451	98	Impervious
71,415	30	Woods, Good, HSG A
102,640	39	>75% Grass cover, Good, HSG A
196,506	42	Weighted Average
174,055		88.57% Pervious Area
22,451		11.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	21	0.0200	0.97		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
8.1	29	0.0210	0.06		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
1.6	88	0.0341	0.92		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.0	18	0.3333	8.66		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
4.7	616	0.0211	2.18		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
1.2	147	0.0200	2.12		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
16.0	919	Total			

Summary for Subcatchment 405S: Flow to CB405

Runoff = 0.42 cfs @ 12.07 hrs, Volume= 0.030 af, Depth= 2.59"
Routed to Pond 405P : CB405 TO HW400

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,020	80	>75% Grass cover, Good, HSG D
5,060	98	Impervious
6,080	95	Weighted Average
1,020		16.78% Pervious Area
5,060		83.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 410S: Flow to DCB410

Runoff = 1.17 cfs @ 12.07 hrs, Volume= 0.086 af, Depth= 2.69"
Routed to Pond 410P : DCB410 TO CB405

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
63	74	>75% Grass cover, Good, HSG C
2,135	80	>75% Grass cover, Good, HSG D
14,546	98	Paved parking & roofs
16,744	96	Weighted Average
2,198		13.13% Pervious Area
14,546		86.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 415S: Flow to CB415

Runoff = 0.35 cfs @ 12.07 hrs, Volume= 0.025 af, Depth= 2.49"
Routed to Pond 415P : CB415 TO CB410

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,092	80	>75% Grass cover, Good, HSG D
4,113	98	Paved parking & roofs
5,205	94	Weighted Average
1,092		20.98% Pervious Area
4,113		79.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 416S: Flow to CB416

Runoff = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af, Depth= 2.49"
Routed to Pond 416P : CB416 TO CB415

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
480	74	>75% Grass cover, Good, HSG C
924	80	>75% Grass cover, Good, HSG D
5,939	98	Paved parking & roofs
7,343	94	Weighted Average
1,404		19.12% Pervious Area
5,939		80.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 419LS: SUBCATCHMENT 419LS

Runoff = 0.85 cfs @ 12.08 hrs, Volume= 0.062 af, Depth= 1.00"
Routed to Pond 419LP : CB4+19L TO DMH1001+25

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
19,001	98	Paved roads w/curbs & sewers
26	76	Gravel, HSG A
13,255	39	>75% Grass cover, Good, HSG A
32,282	74	Weighted Average
13,281		41.14% Pervious Area
19,001		58.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 419RS: SUBCATCHMENT 419RS

Runoff = 0.45 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 0.70"
Routed to Pond 419RP : CB4+19R TO CB4+19L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
13,113	98	Impervious
13,906	39	>75% Grass cover, Good, HSG A
27,019	68	Weighted Average
13,906		51.47% Pervious Area
13,113		48.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 500os: Drive to CB14

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 2.91"
Routed to Pond 14P : CB14 to CB15

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,717	98	Paved roads w/curbs & sewers
1,717		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 505S: McDONALD SITE

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.96 cfs @ 12.00 hrs, Volume= 0.176 af, Depth= 2.20"
Routed to Pond BMP-1 : BMP-1 STORMTECH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
	6,880	61	>75% Grass cover, Good, HSG B
	2,300	74	>75% Grass cover, Good, HSG C
*	25,140	98	Paved parking
*	3,726	98	Paved parking - Porous Pavement
*	3,694	98	Roofs
	41,740	91	Weighted Average
	9,180		21.99% Pervious Area
	32,560		78.01% Impervious Area

Summary for Subcatchment 507S: Flow to CB507

Runoff = 0.24 cfs @ 12.07 hrs, Volume= 0.019 af, Depth= 2.91"
Routed to Pond 507P : CB507 TO CB505

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
10	74	>75% Grass cover, Good, HSG C
3,328	98	Impervious
3,338	98	Weighted Average
10		0.30% Pervious Area
3,328		99.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 508Aos: Flow to CBC4

Runoff = 0.32 cfs @ 12.08 hrs, Volume= 0.026 af, Depth= 0.75"
Routed to Pond C4P : CBC4 to CBC3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,324	98	Paved roads w/curbs & sewers
6,858	39	>75% Grass cover, Good, HSG A
1,729	30	Woods, Good, HSG A
17,911	69	Weighted Average
8,587		47.94% Pervious Area
9,324		52.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 508Bos: West Side of NH Route 108 to CBC3

Runoff = 0.12 cfs @ 12.27 hrs, Volume= 0.022 af, Depth= 0.29"
Routed to Pond C3P : CBC3 to CB509

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
717	30	Woods, Good, HSG A
26,736	39	>75% Grass cover, Good, HSG A
12,242	98	Paved parking & roofs
39,695	57	Weighted Average
27,453		69.16% Pervious Area
12,242		30.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 508S: Flow to CB508

Runoff = 0.17 cfs @ 12.09 hrs, Volume= 0.016 af, Depth= 0.53"
Routed to Pond 509P : CB509 to CB508

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,086	39	>75% Grass cover, Good, HSG A
212	74	>75% Grass cover, Good, HSG C
6,689	98	Paved parking & roofs
15,987	64	Weighted Average
9,298		58.16% Pervious Area
6,689		41.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 600os: Drive to CB15

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.91"
Routed to Pond 15P : CB15 out

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,747	98	Paved roads w/curbs & sewers
3,747		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 600S: POND 600

Runoff = 0.49 cfs @ 12.10 hrs, Volume= 0.051 af, Depth= 0.46"
Routed to Pond 600P : DETENTION BASIN OS605 TO HW600

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
36,757	74	>75% Grass cover, Good, HSG C
18,616	39	>75% Grass cover, Good, HSG A
515	98	Impervious
936	89	Gravel, HSG C
72	76	Gravel, HSG A
1,611	30	Woods, Good, HSG A
58,507	62	Weighted Average
57,992		99.12% Pervious Area
515		0.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 700os: East Side of NH Route 108

Runoff = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af, Depth= 1.86"
Routed to Reach 16R : Existing Culvert to West Side of NH Route 108

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
13,369	98	Paved roads w/curbs & sewers
11,049	74	>75% Grass cover, Good, HSG C
24,418	87	Weighted Average
11,049		45.25% Pervious Area
13,369		54.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 710S: Flow to CB710

Runoff = 0.31 cfs @ 12.07 hrs, Volume= 0.022 af, Depth= 2.59"
Routed to Pond 710P : CB710 TO HW700

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
474	74	>75% Grass cover, Good, HSG C
4,068	98	Paved parking & roofs
4,542	95	Weighted Average
474		10.44% Pervious Area
4,068		89.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 711S: Flow to CB711

Runoff = 0.30 cfs @ 12.07 hrs, Volume= 0.022 af, Depth= 2.59"
Routed to Pond 711P : CB711 TO CB710

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
522	74	>75% Grass cover, Good, HSG C
3,835	98	Paved parking & roofs
4,357	95	Weighted Average
522		11.98% Pervious Area
3,835		88.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 715S: Flow to CB715

Runoff = 0.19 cfs @ 12.07 hrs, Volume= 0.013 af, Depth= 2.11"
Routed to Pond 715P : CB715 TO CB710

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
835	74	>75% Grass cover, Good, HSG C
432	80	>75% Grass cover, Good, HSG D
2,057	98	Paved roads w/curbs & sewers
3,324	90	Weighted Average
1,267		38.12% Pervious Area
2,057		61.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 720S: Flow to DCB720

Runoff = 1.21 cfs @ 12.07 hrs, Volume= 0.088 af, Depth= 2.59"
Routed to Pond 720P : DCB720 TO CB715

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,188	74	>75% Grass cover, Good, HSG C
1,098	80	>75% Grass cover, Good, HSG D
15,434	98	Paved parking & roofs
17,720	95	Weighted Average
2,286		12.90% Pervious Area
15,434		87.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 725S: Flows to CB725

Runoff = 1.88 cfs @ 12.07 hrs, Volume= 0.136 af, Depth= 2.59"
Routed to Pond 725P : CB725 TO DCB720

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
270	74	>75% Grass cover, Good, HSG C
4,030	80	>75% Grass cover, Good, HSG D
23,285	98	Paved parking & roofs
27,585	95	Weighted Average
4,300		15.59% Pervious Area
23,285		84.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 801S: HW801 TO HW800

Runoff = 2.28 cfs @ 12.09 hrs, Volume= 0.189 af, Depth= 0.66"
Routed to Pond 801P : HW801 TO HW800

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
60,146	39	>75% Grass cover, Good, HSG A
44,610	74	>75% Grass cover, Good, HSG C
490	89	Gravel roads, HSG C
45,646	98	Paved parking & roofs
150,892	67	Weighted Average
105,246		69.75% Pervious Area
45,646		30.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 805S: FLOW TO CB805

Runoff = 0.29 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.69"
Routed to Pond 805P : CB805 TO HW802

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
53	39	>75% Grass cover, Good, HSG A
278	74	>75% Grass cover, Good, HSG C
3,762	98	Paved parking & roofs
4,093	96	Weighted Average
331		8.09% Pervious Area
3,762		91.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 806S: FLOW TO CB806

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.017 af, Depth= 2.39"
Routed to Pond 806P : CB806 TO CB805

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
301	39	>75% Grass cover, Good, HSG A
3,511	98	Paved parking & roofs
3,812	93	Weighted Average
301		7.90% Pervious Area
3,511		92.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 807S: FLOW TO CB807

Runoff = 0.25 cfs @ 12.07 hrs, Volume= 0.017 af, Depth= 1.63"
Routed to Pond 807P : CB807 TO CB806

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,308	39	>75% Grass cover, Good, HSG A
4,251	98	Paved parking & roofs
5,559	84	Weighted Average
1,308		23.53% Pervious Area
4,251		76.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 808S: FLOW TO CB808

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 808P : CB808 TO CB807

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,999	39	>75% Grass cover, Good, HSG A
3,999		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 857LS: SUBCATCHMENT 857LS

Runoff = 0.51 cfs @ 12.08 hrs, Volume= 0.036 af, Depth= 1.11"
Routed to Pond 857LP : CB8+57L TO CB4+19L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
10,671	98	Impervious
6,310	39	>75% Grass cover, Good, HSG A
16,981	76	Weighted Average
6,310		37.16% Pervious Area
10,671		62.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 857RS: SUBCATCHMENT 857RS

Runoff = 0.02 cfs @ 12.43 hrs, Volume= 0.008 af, Depth= 0.14"
Routed to Pond 857RP : CB8+57R TO CB8+57L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
6,683	98	Impervious
25,286	39	>75% Grass cover, Good, HSG A
31,969	51	Weighted Average
25,286		79.10% Pervious Area
6,683		20.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 900S: SUBCATCHMENT 900S

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 900P : POND 900

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	1,920	98	Impervious
	74,022	39	>75% Grass cover, Good, HSG A
	2,207	30	Woods, Good, HSG A
	78,149	40	Weighted Average
	76,229		97.54% Pervious Area
	1,920		2.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0714	0.27		**Sheet Flow, Segment 11** Grass: Short n= 0.150 P2= 3.00"
0.1	35	0.3330	9.29		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
5.8	28	0.0450	0.08		**Sheet Flow, Segment 3** Woods: Light underbrush n= 0.400 P2= 3.00"
0.4	8	0.3330	0.31		**Sheet Flow, Segment 4** Grass: Short n= 0.150 P2= 3.00"
12.4	171	Total			

Summary for Subcatchment 1100S: 1100S

Runoff = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af, Depth= 0.79"
Routed to Pond 2182P : DCB 21+82R TO DMH 21+97R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,189	98	Paved parking, HSG A
2,903	39	>75% Grass cover, Good, HSG A
6,092	70	Weighted Average
2,903		47.65% Pervious Area
3,189		52.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	22	0.0454	0.17		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	5	0.0200	0.73		**Sheet Flow, Segment 2** Smooth surfaces n= 0.011 P2= 3.00"
0.3	73	0.0333	3.70		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
2.6	100	Total			

Summary for Subcatchment 1295GS: SUBCATCHMENT 1295GS

Runoff = 0.18 cfs @ 12.39 hrs, Volume= 0.035 af, Depth= 0.26"
Routed to Pond 1295GP : CB12+95G TO CB12+95R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
630	76	Gravel, HSG A
5,236	35	Brush, Fair, HSG A
23,655	98	Impervious
22,746	39	>75% Grass cover, Good, HSG A
18,423	30	Woods, Good, HSG A
70,690	56	Weighted Average
47,035		66.54% Pervious Area
23,655		33.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	16	0.0200	0.92		**Sheet Flow, FLOW OVER PAVEMENT** Smooth surfaces n= 0.011 P2= 3.00"
6.1	34	0.0588	0.09		**Sheet Flow, FLOW THROUGH WOODS** Woods: Light underbrush n= 0.400 P2= 3.00"
0.9	61	0.0557	1.18		**Shallow Concentrated Flow, FLOW THROUGH WOODS** Woodland Kv= 5.0 fps
0.0	12	0.3333	8.66		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
3.3	343	0.0134	1.74		**Shallow Concentrated Flow, FLOW OVER GRASS** Grassed Waterway Kv= 15.0 fps
10.6	466	Total			

Summary for Subcatchment 1295LS: SUBCATCHMENT 1295LS

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.019 af, Depth= 1.23"
Routed to Pond 1295LP : CB12+95L TO CB8+57L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
5,302	98	Impervious
2,776	39	>75% Grass cover, Good, HSG A
8,078	78	Weighted Average
2,776		34.36% Pervious Area
5,302		65.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 1295RS: SUBCATCHMENT 1295RS

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 0.75"
Routed to Pond 1295RP : CB12+95R CB12+95L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
6,666	98	Paved parking & roofs
6,289	39	>75% Grass cover, Good, HSG A
12,955	69	Weighted Average
6,289		48.54% Pervious Area
6,666		51.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 1643LS: SUBCATCHMENT 1643LS

Runoff = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af, Depth= 0.39"
Routed to Pond 1643LP : CB16+43L TO CB16+43R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
600	98	Impervious
1,096	39	>75% Grass cover, Good, HSG A
1,696	60	Weighted Average
1,096		64.62% Pervious Area
600		35.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	34	0.0150	0.12		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.4	91	0.0280	3.40		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
5.2	125	Total			

Summary for Subcatchment 1643RS: SUBCATCHMENT 1643RS

Runoff = 0.16 cfs @ 12.12 hrs, Volume= 0.013 af, Depth= 0.84"
Routed to Pond 1643RP : CB16+43R TO CB17+85R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,445	98	Impervious
3,769	39	>75% Grass cover, Good, HSG A
8,214	71	Weighted Average
3,769		45.89% Pervious Area
4,445		54.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	58	0.0172	0.14		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.5	105	0.0280	3.40		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
7.5	163	Total			

Summary for Subcatchment 1785LS: SUBCATCHMENT 1785LS

Runoff = 0.02 cfs @ 12.35 hrs, Volume= 0.005 af, Depth= 0.26"
Routed to Pond 1785LP : CB17+85L TO CB17+85R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,621	98	Impervious
6,494	39	>75% Grass cover, Good, HSG A
9,115	56	Weighted Average
6,494		71.25% Pervious Area
2,621		28.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	95	0.0368	0.21		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	29	0.0350	3.80		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
0.4	107	0.0429	4.20		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
8.1	231	Total			

Summary for Subcatchment 1785RS: SUBCATCHMENT 1785RS

Runoff = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 0.75"
Routed to Pond 1785RP : CB17+85R TO DMH18+69

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,073	98	Impervious
2,884	39	>75% Grass cover, Good, HSG A
5,957	69	Weighted Average
2,884		48.41% Pervious Area
3,073		51.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	40	0.0625	0.22		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.3	23	0.0400	1.31		**Sheet Flow, Segment 2** Smooth surfaces n= 0.011 P2= 3.00"
0.5	122	0.0429	4.20		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
3.9	185	Total			

Summary for Subcatchment 1928LS: SUBCATCHMENT 1928LS

Runoff = 0.08 cfs @ 12.12 hrs, Volume= 0.008 af, Depth= 0.53"
Routed to Pond 1928LP : CB19+28L TO CB19+79R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,343	98	Impervious
4,658	39	>75% Grass cover, Good, HSG A
8,001	64	Weighted Average
4,658		58.22% Pervious Area
3,343		41.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	85	0.0470	0.22		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	20	0.0500	4.54		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
0.3	68	0.0428	4.20		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
6.7	173	Total			

Summary for Subcatchment 1928RS: SUBCATCHMENT 1928RS

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 0.75"
Routed to Pond 1928RP : CB19+28R TO CB19+28L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,177	98	Impervious
3,034	39	>75% Grass cover, Good, HSG A
6,211	69	Weighted Average
3,034		48.85% Pervious Area
3,177		51.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	45	0.0555	0.21		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.5	132	0.0429	4.20		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
4.1	177	Total			

Summary for Subcatchment 1979RS: SUBCATCHMENT 1979RS

Runoff = 0.03 cfs @ 12.08 hrs, Volume= 0.003 af, Depth= 0.66"
Routed to Pond 1979RP : CB19+79 TO CB21+73R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,083	98	Paved parking, HSG A
1,176	39	>75% Grass cover, Good, HSG A
2,259	67	Weighted Average
1,176		52.06% Pervious Area
1,083		47.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	48	0.0417	0.19		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.2	45	0.0429	4.20		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
4.4	93	Total			

Summary for Subcatchment 2173LS: SUBCATCHMENT 2173LS

Runoff = 0.17 cfs @ 12.11 hrs, Volume= 0.018 af, Depth= 0.49"
Routed to Pond 2173LP : CB21+73L TO CB21+73R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
7,690	98	Impervious
11,104	39	>75% Grass cover, Good, HSG A
18,794	63	Weighted Average
11,104		59.08% Pervious Area
7,690		40.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	83	0.0602	0.25		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	15	0.0500	4.54		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
0.6	107	0.0187	2.78		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
6.3	205	Total			

Summary for Subcatchment 2173RS: SUBCATCHMENT 2173RS

Runoff = 0.18 cfs @ 12.10 hrs, Volume= 0.015 af, Depth= 0.89"
Routed to Pond 2173RP : CB21+73R TO DMH21+95R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,759	98	Impervious
3,756	39	>75% Grass cover, Good, HSG A
8,515	72	Weighted Average
3,756		44.11% Pervious Area
4,759		55.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	72	0.0347	0.19		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.3	54	0.0187	2.78		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
6.5	126	Total			

Summary for Subcatchment 2373S: SUBCATCHMENT 23+73S

Congregate Care Roof

Runoff = 1.13 cfs @ 12.07 hrs, Volume= 0.087 af, Depth= 2.91"
Routed to Pond 2241 : DMH 22+41R to DMH24+86R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
15,629	98	Roofs, HSG A
15,629		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 2440S: SUBCATCHMENT 2440RS

Runoff = 0.02 cfs @ 12.07 hrs, Volume= 0.001 af, Depth= 0.53"
Routed to Pond 2440P : TD24+40R TO CB24+60R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	626	98	Impervious
	836	39	>75% Grass cover, Good, HSG A
	1,462	64	Weighted Average
	836		57.18% Pervious Area
	626		42.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	42	0.0595	0.21		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.0	7	0.0200	2.87		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
0.1	12	0.0200	2.87		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
3.4	61	Total			

Summary for Subcatchment 2460LS: SUBCATCHMENT 2460LS

Runoff = 0.33 cfs @ 12.17 hrs, Volume= 0.033 af, Depth= 0.66"
Routed to Pond 2460LP : CB24+60L TO CB24+60R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
13,964	39	>75% Grass cover, Good, HSG A
12,666	98	Paved parking & roofs
26,630	67	Weighted Average
13,964		52.44% Pervious Area
12,666		47.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0256	0.18		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.2	25	0.0256	2.58		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
1.5	253	0.0187	2.78		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
10.9	378	Total			

Summary for Subcatchment 2460RS: SUBCATCHMENT 2460RS

Runoff = 0.27 cfs @ 12.06 hrs, Volume= 0.020 af, Depth= 0.75"
Routed to Pond 2460RP : CB24+60R TO DMH24+86R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
7,157	98	Impervious
6,766	39	>75% Grass cover, Good, HSG A
13,923	69	Weighted Average
6,766		48.60% Pervious Area
7,157		51.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	21	0.0500	0.17		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.0	5	0.0500	4.54		**Shallow Concentrated Flow, Segment 1** Paved Kv= 20.3 fps
0.1	20	0.0800	4.55		**Shallow Concentrated Flow, Segment 3** Unpaved Kv= 16.1 fps
1.3	215	0.0187	2.78		**Shallow Concentrated Flow, Segment 4** Paved Kv= 20.3 fps
3.4	261	Total			

Summary for Subcatchment 2460S: SUBCATCHMENT 2460S

Runoff = 0.33 cfs @ 12.02 hrs, Volume= 0.020 af, Depth= 1.56"
Routed to Pond 2460P : CB24+60R TO DMH24+85R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	5,054	98	Impervious
	1,756	39	>75% Grass cover, Good, HSG A
	6,810	83	Weighted Average
	1,756		25.79% Pervious Area
	5,054		74.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	24	0.4166	0.42		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.1	7	0.0200	0.78		**Sheet Flow, Segment 2** Smooth surfaces n= 0.011 P2= 3.00"
0.2	49	0.0333	3.70		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
0.3	58	0.0333	2.94		**Shallow Concentrated Flow, Segment 4** Unpaved Kv= 16.1 fps
1.6	138	Total			

Summary for Subcatchment 2474S: SUBCATCHMENT 2474RS

Runoff = 0.05 cfs @ 12.07 hrs, Volume= 0.004 af, Depth= 0.53"
Routed to Pond 2474P : DMH24+74R TO DMH24+85R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	1,829	98	Impervious
	2,424	39	>75% Grass cover, Good, HSG A
	4,253	64	Weighted Average
	2,424		57.00% Pervious Area
	1,829		43.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	12	0.0200	0.11		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.4	8	0.3330	0.31		**Sheet Flow, Segment 2** Grass: Short n= 0.150 P2= 3.00"
1.1	10	0.0500	0.15		**Sheet Flow, Segment 3** Grass: Short n= 0.150 P2= 3.00"
0.1	9	0.0200	2.87		**Shallow Concentrated Flow, Segment 4** Paved Kv= 20.3 fps
0.1	17	0.0333	2.94		**Shallow Concentrated Flow, Segment 5** Unpaved Kv= 16.1 fps
0.1	20	0.0200	2.87		**Shallow Concentrated Flow, Segment 6** Paved Kv= 20.3 fps
3.7	76	Total			

Summary for Subcatchment 2619S: SUBCATCHMENT 26+19S

Congregate Care Roof

Runoff = 1.13 cfs @ 12.07 hrs, Volume= 0.087 af, Depth= 2.91"
Routed to Pond 2625RP : DMH26+25R TO HW26+25

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
15,629	98	Roofs, HSG A
15,629		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment 2723RS: SUBCATCHMENT 2723RS

Runoff = 0.13 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 1.05"
Routed to Pond 2723RP : TD27+23R TO DMH27+23R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
	1,726	39	>75% Grass cover, Good, HSG A
*	2,750	98	Impervious
	4,476	75	Weighted Average
	1,726		38.56% Pervious Area
	2,750		61.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	20	0.3330	0.37		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
3.5	60	0.1000	0.28		**Sheet Flow, Segment 2** Grass: Short n= 0.150 P2= 3.00"
0.0	5	0.0500	4.54		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
4.4	85	Total			

Summary for Subcatchment 2730LS: SUBCATCHMENT 2730LS

Runoff = 0.33 cfs @ 12.16 hrs, Volume= 0.032 af, Depth= 0.70"
Routed to Pond 2730LP : CB27+30L TO 27+30R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	11,996	98	Impervious
	12,020	39	>75% Grass cover, Good, HSG A
	24,016	68	Weighted Average
	12,020		50.05% Pervious Area
	11,996		49.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0400	0.22		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.8	153	0.0400	3.22		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
1.5	209	0.0125	2.27		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
10.0	462	Total			

Summary for Subcatchment 2730RS: SUBCATCHMENT 2730RS

Runoff = 0.25 cfs @ 12.06 hrs, Volume= 0.018 af, Depth= 0.79"
Routed to Pond 2730RP : CB27+30R TO DMH27+23R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
	5,762	39	>75% Grass cover, Good, HSG A
*	6,294	98	Impervious
	12,056	70	Weighted Average
	5,762		47.79% Pervious Area
	6,294		52.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	25	0.0500	0.18		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.0	5	0.0500	3.60		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
0.1	24	0.0500	3.60		**Shallow Concentrated Flow, Segment 3** Unpaved Kv= 16.1 fps
1.5	207	0.0125	2.27		**Shallow Concentrated Flow, Segment 4** Paved Kv= 20.3 fps
3.9	261	Total			

Summary for Subcatchment 3018GS: SUBCATCHMENT 3018GS

Runoff = 0.03 cfs @ 15.81 hrs, Volume= 0.019 af, Depth= 0.04"
Routed to Pond 3018GP : CB30+18G TO CB30+20L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
5,056	74	>75% Grass cover, Good, HSG C
61,349	30	Woods, Good, HSG A
168,836	39	>75% Grass cover, Good, HSG A
34,830	98	Impervious
270,071	45	Weighted Average
235,241		87.10% Pervious Area
34,830		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.2	100	0.0327	0.09		**Sheet Flow, Segment 1** Woods: Light underbrush n= 0.400 P2= 3.00"
1.2	64	0.0327	0.90		**Shallow Concentrated Flow, Segment 2** Woodland Kv= 5.0 fps
0.1	41	0.3330	8.66		**Shallow Concentrated Flow, Segment 3** Grassed Waterway Kv= 15.0 fps
4.8	614	0.0200	2.12		**Shallow Concentrated Flow, Segment 4** Grassed Waterway Kv= 15.0 fps
2.2	319	0.0250	2.37		**Shallow Concentrated Flow, Segment 5** Grassed Waterway Kv= 15.0 fps
26.5	1,138	Total			

Summary for Subcatchment 3020LS: SUBCATCHMENT 3020LS

Runoff = 0.70 cfs @ 12.16 hrs, Volume= 0.065 af, Depth= 0.79"
Routed to Pond 3020LP : CB30+20L TO CB30+20R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
250	74	>75% Grass cover, Good, HSG C
22,804	98	Paved parking & roofs
19,984	39	>75% Grass cover, Good, HSG A
43,038	70	Weighted Average
20,234		47.01% Pervious Area
22,804		52.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0300	0.19		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.5	71	0.0211	2.34		**Shallow Concentrated Flow, Segment 2** Unpaved Kv= 16.1 fps
1.2	178	0.0160	2.57		**Shallow Concentrated Flow, Segment 3** Paved Kv= 20.3 fps
10.3	349	Total			

Summary for Subcatchment 3020RS: SUBCATCHMENT 3020RS

Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.024 af, Depth= 1.23"
Routed to Pond 3020RP : CB30+20R TO HW29+63

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
677	74	>75% Grass cover, Good, HSG C
6,169	98	Paved parking & roofs
3,116	39	>75% Grass cover, Good, HSG A
157	76	Gravel, HSG A
10,119	78	Weighted Average
3,950		39.04% Pervious Area
6,169		60.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	59	0.0339	0.18		**Sheet Flow, Segment 1** Grass: Short n= 0.150 P2= 3.00"
0.9	145	0.0159	2.56		**Shallow Concentrated Flow, Segment 2** Paved Kv= 20.3 fps
6.3	204	Total			

Summary for Subcatchment 3200S: Flow to CB3200

Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond 3200P : CB3200 TO CB320

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
3,537	39	>75% Grass cover, Good, HSG A
3,537		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD1Sa: Roof drain 1a

Runoff = 0.38 cfs @ 12.07 hrs, Volume= 0.029 af, Depth= 2.91"
Routed to Pond RD1Pa : RD1a TO CB327

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
5,231	98	Paved parking & roofs
5,231		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD1Sb: Roof Drain 1b

Runoff = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Depth= 2.91"
Routed to Pond RD1Pb : RD1b to CB 324

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	3,703	98	Paved parking & roofs
	3,703		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD2Sa: Roof drain 2a

Runoff = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af, Depth= 2.91"
Routed to Pond RD2Pa : RD2a to CB333

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
*	4,238	98	Paved parking & roofs
	4,238		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD2Sb: Roof drain 2b

Runoff = 0.30 cfs @ 12.07 hrs, Volume= 0.023 af, Depth= 2.91"
Routed to Pond RD2Pb : RD2b TO CB322

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
4,138	98	Paved parking & roofs
4,138		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD3S: ROOF DRAIN

Runoff = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af, Depth= 2.91"
Routed to Pond RD3P : RD3 TO CB808

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
18,273	98	Paved parking & roofs
18,273		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD4S: ROOF DRAIN

Runoff = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af, Depth= 2.91"
Routed to Pond RD4P : RD4 TO CB807

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
504	98	Impervious
504		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD5S: ROOF DRAIN

Runoff = 1.35 cfs @ 12.07 hrs, Volume= 0.104 af, Depth= 2.91"
Routed to Pond RD5P : RD5 TO CB806

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
18,667	98	Impervious
18,667		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD6S: ROOF DRAIN

Runoff = 0.70 cfs @ 12.07 hrs, Volume= 0.054 af, Depth= 2.91"
Routed to Pond RD6P : RD6 TO CB805

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
9,690	98	Impervious
9,690		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD8S: Roof Drain

Runoff = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Depth= 2.91"
Routed to Pond RD8P : RD8 TO CB107

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
2,295	98	Impervious
2,295		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Subcatchment RD9S: Roof Drain

Runoff = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af, Depth= 2.91"
Routed to Pond RD9P : RD9 TO CB405

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

Area (sf)	CN	Description
1,575	98	Impervious
1,575		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Summary for Reach 1AR: STREAM

[62] Hint: Exceeded Reach 326R OUTLET depth by 0.31' @ 12.15 hrs

Inflow Area = 20.946 ac, 36.63% Impervious, Inflow Depth > 1.05" for 2 YR event
Inflow = 5.81 cfs @ 12.13 hrs, Volume= 1.839 af
Outflow = 5.61 cfs @ 12.16 hrs, Volume= 1.839 af, Atten= 3%, Lag= 1.7 min
Routed to Reach 1R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 2.59 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.85 fps, Avg. Travel Time= 7.2 min

Peak Storage= 803 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.43' , Surface Width= 6.14'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 108.07 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 370.0' Slope= 0.0314 '/'
Inlet Invert= 87.70', Outlet Invert= 76.10'



Summary for Reach 1BR: STREAM

Inflow Area = 1.757 ac, 0.00% Impervious, Inflow Depth = 0.89" for 2 YR event
Inflow = 1.52 cfs @ 12.13 hrs, Volume= 0.131 af
Outflow = 1.44 cfs @ 12.17 hrs, Volume= 0.131 af, Atten= 5%, Lag= 2.0 min
Routed to Reach 1R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 1.75 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.60 fps, Avg. Travel Time= 8.6 min

Peak Storage= 255 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 4.92'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 119.58 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 310.0' Slope= 0.0384 '/'
Inlet Invert= 88.00', Outlet Invert= 76.10'



Summary for Reach 1R: STREAM

[62] Hint: Exceeded Reach 1AR OUTLET depth by 0.16' @ 12.24 hrs
[62] Hint: Exceeded Reach 1BR OUTLET depth by 0.39' @ 12.21 hrs

Inflow Area = 22.703 ac, 33.79% Impervious, Inflow Depth > 1.04" for 2 YR event
Inflow = 7.05 cfs @ 12.16 hrs, Volume= 1.969 af
Outflow = 6.74 cfs @ 12.19 hrs, Volume= 1.969 af, Atten= 4%, Lag= 2.1 min
Routed to Reach 9R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 2.20 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 9.0 min

Peak Storage= 1,166 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.57' , Surface Width= 6.83'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 78.59 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 380.0' Slope= 0.0166 '/'
Inlet Invert= 76.10', Outlet Invert= 69.80'



Summary for Reach 2R: REACH 2

Inflow Area = 8.009 ac, 44.00% Impervious, Inflow Depth > 0.65" for 2 YR event
Inflow = 0.18 cfs @ 12.15 hrs, Volume= 0.437 af
Outflow = 0.15 cfs @ 22.58 hrs, Volume= 0.435 af, Atten= 18%, Lag= 626.2 min
Routed to Reach 8R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.61 fps, Min. Travel Time= 15.2 min
Avg. Velocity = 0.51 fps, Avg. Travel Time= 18.3 min

Peak Storage= 136 cf @ 22.58 hrs
Average Depth at Peak Storage= 0.06' , Surface Width= 4.24'
Bank-Full Depth= 1.50' Flow Area= 10.5 sf, Capacity= 42.77 cfs

4.00' x 1.50' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 10.00'
Length= 560.0' Slope= 0.0193 '/'
Inlet Invert= 93.80', Outlet Invert= 83.00'



Summary for Reach 3R: REACH 3

[62] Hint: Exceeded Reach 41R OUTLET depth by 0.08' @ 12.50 hrs

Inflow Area = 27.711 ac, 26.77% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.36 cfs @ 12.40 hrs, Volume= 0.053 af
Outflow = 0.34 cfs @ 12.50 hrs, Volume= 0.053 af, Atten= 6%, Lag= 6.2 min
Routed to Reach 7R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.79 fps, Min. Travel Time= 7.2 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 18.1 min

Peak Storage= 148 cf @ 12.50 hrs
Average Depth at Peak Storage= 0.08' , Surface Width= 5.34'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 24.05 cfs

5.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 9.00'
Length= 340.0' Slope= 0.0200 '/'
Inlet Invert= 95.30', Outlet Invert= 88.50'



‡

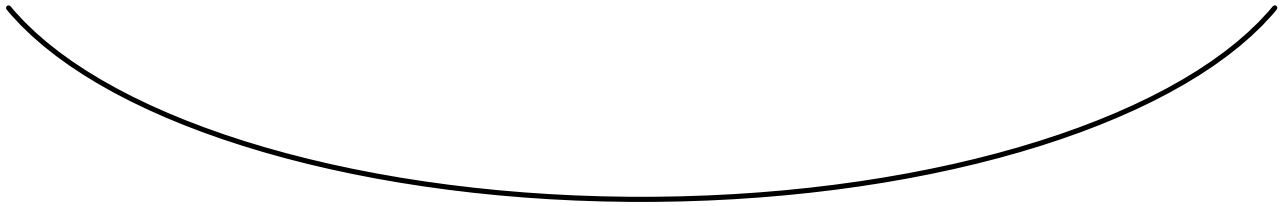
Summary for Reach 4R: REACH 4

Inflow Area = 3.494 ac, 0.00% Impervious, Inflow Depth = 0.06" for 2 YR event
Inflow = 0.03 cfs @ 15.06 hrs, Volume= 0.019 af
Outflow = 0.03 cfs @ 15.23 hrs, Volume= 0.019 af, Atten= 1%, Lag= 10.2 min
Routed to Reach 6R : REACH 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.23 fps, Min. Travel Time= 18.2 min
Avg. Velocity = 0.21 fps, Avg. Travel Time= 20.4 min

Peak Storage= 32 cf @ 15.23 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 8.41'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 468.29 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050
Length= 255.0' Slope= 0.0149 '/'
Inlet Invert= 95.80', Outlet Invert= 92.00'



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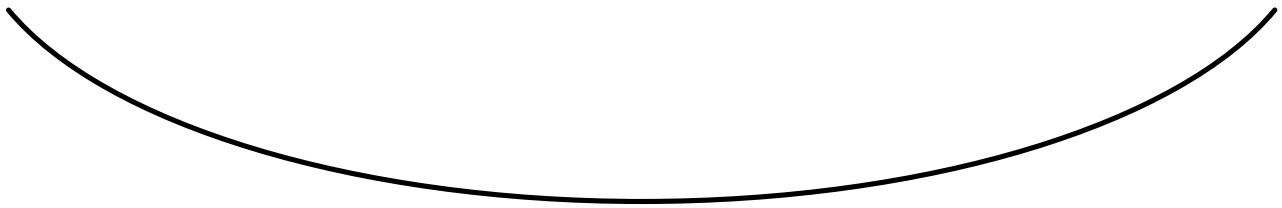
Summary for Reach 5R: REACH 5

Inflow Area = 11.110 ac, 2.39% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 6R : REACH 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.30' Flow Area= 99.7 sf, Capacity= 409.57 cfs

115.00' x 1.30' deep Parabolic Channel, n= 0.050
Length= 540.0' Slope= 0.0231 '/'
Inlet Invert= 104.50', Outlet Invert= 92.00'



‡

Summary for Reach 6R: REACH 6

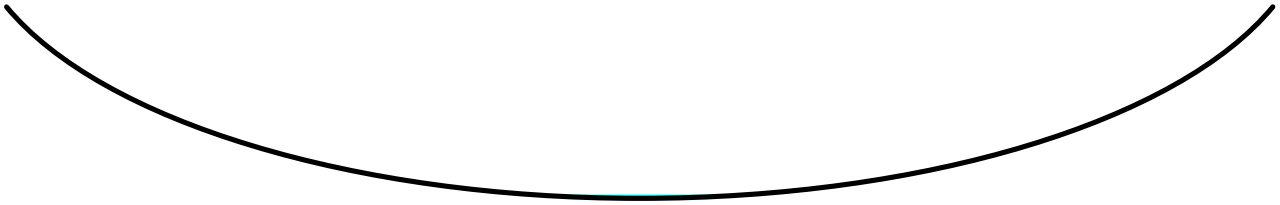
[62] Hint: Exceeded Reach 4R OUTLET depth by 0.01' @ 24.76 hrs
[62] Hint: Exceeded Reach 5R OUTLET depth by 0.03' @ 15.47 hrs

Inflow Area = 14.605 ac, 1.82% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.03 cfs @ 15.23 hrs, Volume= 0.019 af
Outflow = 0.03 cfs @ 15.47 hrs, Volume= 0.019 af, Atten= 1%, Lag= 14.3 min
Routed to Reach 7R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.23 fps, Min. Travel Time= 20.2 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 24.6 min

Peak Storage= 36 cf @ 15.47 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 7.17'
Bank-Full Depth= 1.30' Flow Area= 43.3 sf, Capacity= 131.20 cfs

50.00' x 1.30' deep Parabolic Channel, n= 0.050
Length= 278.0' Slope= 0.0126 '/'
Inlet Invert= 92.00', Outlet Invert= 88.50'



‡

Summary for Reach 7R: STREAM

[62] Hint: Exceeded Reach 3R OUTLET depth by 0.01' @ 15.68 hrs
[62] Hint: Exceeded Reach 6R OUTLET depth by 0.09' @ 12.55 hrs

Inflow Area = 42.315 ac, 18.16% Impervious, Inflow Depth = 0.02" for 2 YR event
Inflow = 0.34 cfs @ 12.50 hrs, Volume= 0.071 af
Outflow = 0.34 cfs @ 12.55 hrs, Volume= 0.071 af, Atten= 1%, Lag= 2.5 min
Routed to Reach 8R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.95 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.46 fps, Avg. Travel Time= 7.0 min

Peak Storage= 69 cf @ 12.55 hrs
Average Depth at Peak Storage= 0.09' , Surface Width= 4.34'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 92.22 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 194.0' Slope= 0.0284 '/'
Inlet Invert= 88.50', Outlet Invert= 83.00'



Summary for Reach 8R: STREAM

[62] Hint: Exceeded Reach 2R OUTLET depth by 0.05' @ 12.69 hrs
[62] Hint: Exceeded Reach 7R OUTLET depth by 0.05' @ 26.36 hrs

Inflow Area = 50.325 ac, 22.27% Impervious, Inflow Depth > 0.12" for 2 YR event
Inflow = 0.48 cfs @ 12.54 hrs, Volume= 0.507 af
Outflow = 0.45 cfs @ 12.66 hrs, Volume= 0.505 af, Atten= 7%, Lag= 7.3 min
Routed to Reach 9R : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 1.01 fps, Min. Travel Time= 8.4 min
Avg. Velocity = 0.59 fps, Avg. Travel Time= 14.4 min

Peak Storage= 227 cf @ 12.66 hrs
Average Depth at Peak Storage= 0.10' , Surface Width= 4.52'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 98.00 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 512.0' Slope= 0.0258 '/'
Inlet Invert= 83.00', Outlet Invert= 69.80'



Summary for Reach 9R: STREAM

[62] Hint: Exceeded Reach 1R OUTLET depth by 0.03' @ 59.99 hrs
[62] Hint: Exceeded Reach 8R OUTLET depth by 0.53' @ 12.20 hrs

Inflow Area = 73.028 ac, 25.85% Impervious, Inflow Depth > 0.41" for 2 YR event
Inflow = 6.76 cfs @ 12.19 hrs, Volume= 2.474 af
Outflow = 6.75 cfs @ 12.20 hrs, Volume= 2.473 af, Atten= 0%, Lag= 0.5 min
Routed to Pond 10P : CULVERT UNDER NH ROUTE 108

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 2.30 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 2.0 min

Peak Storage= 293 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 6.73'
Bank-Full Depth= 2.00' Flow Area= 18.0 sf, Capacity= 84.13 cfs

4.00' x 2.00' deep channel, n= 0.050
Side Slope Z-value= 2.5 '/' Top Width= 14.00'
Length= 100.0' Slope= 0.0190 '/'
Inlet Invert= 69.80', Outlet Invert= 67.90'



Summary for Reach 16R: Existing Culvert to West Side of NH Route 108

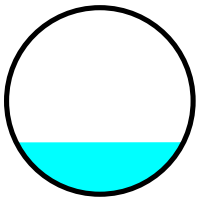
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.561 ac, 54.75% Impervious, Inflow Depth = 1.86" for 2 YR event
Inflow = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af
Outflow = 1.27 cfs @ 12.07 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.1 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 4.53 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.55 fps, Avg. Travel Time= 0.5 min

Peak Storage= 13 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.35' , Surface Width= 1.12'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.45 cfs

15.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 45.0' Slope= 0.0113 '/'
Inlet Invert= 90.05', Outlet Invert= 89.54'



Summary for Reach 41R: REACH

Inflow Area = 26.604 ac, 27.89% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : REACH 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.00' Flow Area= 7.0 sf, Capacity= 23.05 cfs

5.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 2.0 '/' Top Width= 9.00'
Length= 147.0' Slope= 0.0184 '/'
Inlet Invert= 98.00', Outlet Invert= 95.30'



‡

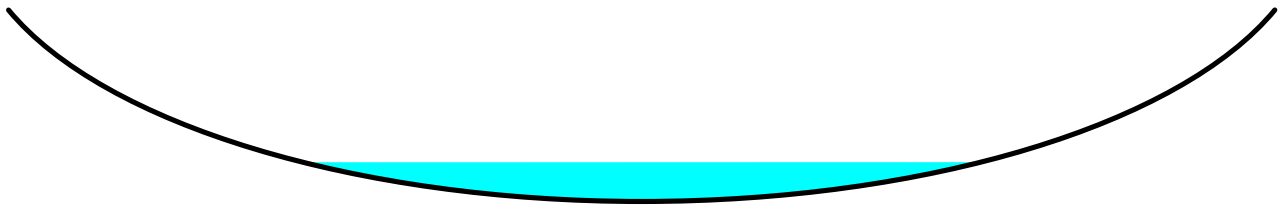
Summary for Reach 326R: Reach 1BR

Inflow Area = 16.904 ac, 42.99% Impervious, Inflow Depth > 1.00" for 2 YR event
Inflow = 0.86 cfs @ 16.51 hrs, Volume= 1.404 af
Outflow = 0.86 cfs @ 16.57 hrs, Volume= 1.404 af, Atten= 0%, Lag= 3.6 min
Routed to Reach 1AR : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 1.15 fps, Min. Travel Time= 5.2 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 8.3 min

Peak Storage= 267 cf @ 16.57 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 6.80'
Bank-Full Depth= 0.80' Flow Area= 8.0 sf, Capacity= 26.39 cfs

15.00' x 0.80' deep Parabolic Channel, n= 0.050
Length= 358.0' Slope= 0.0288 '/'
Inlet Invert= 98.00', Outlet Invert= 87.70'



‡

Summary for Pond 10P: CULVERT UNDER NH ROUTE 108

[62] Hint: Exceeded Reach 9R OUTLET depth by 0.45' @ 12.20 hrs

Inflow Area = 120.147 ac, 18.88% Impervious, Inflow Depth > 0.28" for 2 YR event
Inflow = 6.75 cfs @ 12.20 hrs, Volume= 2.789 af
Outflow = 6.75 cfs @ 12.20 hrs, Volume= 2.789 af, Atten= 0%, Lag= 0.0 min
Primary = 6.75 cfs @ 12.20 hrs, Volume= 2.789 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 68.89' @ 12.20 hrs
Flood Elev= 74.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.90'	**48.0" Round Culvert** L= 63.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 67.90' / 67.50' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf

Primary OutFlow Max=6.74 cfs @ 12.20 hrs HW=68.89' (Free Discharge)
1=Culvert (Barrel Controls 6.74 cfs @ 4.17 fps)

Summary for Pond 11P: CB11 to CB12

Inflow Area = 0.276 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 0.067 af
Outflow = 0.87 cfs @ 12.07 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.07 hrs, Volume= 0.067 af
Routed to Pond 12R : From CB12 out

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.66' @ 12.07 hrs
Flood Elev= 110.26'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.11'	**12.0" Round Culvert** L= 19.0' Ke= 0.500 Inlet / Outlet Invert= 105.11' / 104.86' S= 0.0132 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.87 cfs @ 12.07 hrs HW=105.66' TW=105.42' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.87 cfs @ 2.82 fps)

Summary for Pond 12R: From CB12 out

Inflow Area = 0.504 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 1.59 cfs @ 12.07 hrs, Volume= 0.122 af
Outflow = 1.59 cfs @ 12.07 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min
Primary = 1.59 cfs @ 12.07 hrs, Volume= 0.122 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 105.43' @ 12.07 hrs
Flood Elev= 109.68'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.63'	**12.0" Round Culvert** L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 104.63' / 104.53' S= 0.0050 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.59 cfs @ 12.07 hrs HW=105.42' (Free Discharge)
1=Culvert (Barrel Controls 1.59 cfs @ 3.25 fps)

Summary for Pond 13P: CB13 to CB14

[57] Hint: Peaked at 107.07' (Flood elevation advised)

Inflow Area = 0.320 ac, 55.92% Impervious, Inflow Depth = 1.86" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.050 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.050 af
Routed to Pond 14P : CB14 to CB15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 107.07' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	106.63'	**12.0" Round Culvert** L= 98.0' Ke= 0.500 Inlet / Outlet Invert= 106.63' / 105.64' S= 0.0101 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=107.07' TW=106.08' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.72 cfs @ 3.22 fps)

Summary for Pond 14P: CB14 to CB15

[57] Hint: Peaked at 106.08' (Flood elevation advised)

Inflow Area = 0.359 ac, 60.76% Impervious, Inflow Depth = 1.98" for 2 YR event
Inflow = 0.85 cfs @ 12.07 hrs, Volume= 0.059 af
Outflow = 0.85 cfs @ 12.07 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.07 hrs, Volume= 0.059 af
Routed to Pond 15P : CB15 out

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.08' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	105.61'	**12.0" Round Culvert** L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 105.61' / 104.40' S= 0.0484 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.85 cfs @ 12.07 hrs HW=106.08' TW=104.97' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.85 cfs @ 2.33 fps)

Summary for Pond 15P: CB15 out

[57] Hint: Peaked at 104.97' (Flood elevation advised)

Inflow Area = 0.445 ac, 68.34% Impervious, Inflow Depth = 2.16" for 2 YR event
Inflow = 1.12 cfs @ 12.07 hrs, Volume= 0.080 af
Outflow = 1.12 cfs @ 12.07 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 1.12 cfs @ 12.07 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.97' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	104.33'	**12.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 104.33' / 104.23' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=1.12 cfs @ 12.07 hrs HW=104.97' (Free Discharge)
↑**1=Culvert** (Barrel Controls 1.12 cfs @ 3.02 fps)

Summary for Pond 100AP: Outlet Structure 105 to HW100 - MODIFIED

[80] Warning: Exceeded Pond 107P by 0.06' @ 24.28 hrs (0.01 cfs 0.000 af)

Inflow Area = 16.904 ac, 42.99% Impervious, Inflow Depth = 1.02" for 2 YR event
Inflow = 5.85 cfs @ 12.07 hrs, Volume= 1.430 af
Outflow = 0.86 cfs @ 16.51 hrs, Volume= 1.404 af, Atten= 85%, Lag= 266.2 min
Primary = 0.86 cfs @ 16.51 hrs, Volume= 1.404 af
Routed to Reach 326R : Reach 1BR

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.56' @ 16.51 hrs Surf.Area= 7,300 sf Storage= 19,935 cf
Flood Elev= 104.00' Surf.Area= 10,000 sf Storage= 40,899 cf

Plug-Flow detention time= 413.9 min calculated for 1.404 af (98% of inflow)
Center-of-Mass det. time= 390.2 min (1,448.5 - 1,058.2)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	40,899 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,135	0	0
98.50	4,349	2,121	2,121
99.00	4,780	2,282	4,403
100.00	5,858	5,319	9,722
101.00	6,746	6,302	16,024
102.00	7,741	7,244	23,268
103.00	8,761	8,251	31,519
104.00	10,000	9,381	40,899

Device	Routing	Invert	Outlet Devices
#1	Primary	98.00'	**36.0" Round Culvert** L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 98.00' / 97.90' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 7.07 sf
#2	Device 1	98.00'	**0.5" W x 43.2" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	101.60'	**12.0" W x 15.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	102.90'	**48.0" x 60.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	101.65'	**8.0" Vert. Orifices (4) X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.86 cfs @ 16.51 hrs HW=101.56' TW=98.16' (Dynamic Tailwater)
- **1=Culvert** (Passes 0.86 cfs of 41.72 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 0.86 cfs @ 6.05 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
  - **4=Grate** (Controls 0.00 cfs)
  - **5=Orifices (4)** (Controls 0.00 cfs)

Summary for Pond 100P: Outlet Structure 110 to HW109

Inflow Area = 15.095 ac, 39.48% Impervious, Inflow Depth = 0.84" for 2 YR event
Inflow = 12.61 cfs @ 12.07 hrs, Volume= 1.063 af
Outflow = 1.04 cfs @ 12.53 hrs, Volume= 1.063 af, Atten= 92%, Lag= 27.7 min
Primary = 1.04 cfs @ 12.53 hrs, Volume= 1.063 af
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.27' @ 14.34 hrs Surf.Area= 10,025 sf Storage= 19,822 cf
Flood Elev= 106.00' Surf.Area= 33,480 sf Storage= 105,292 cf

Plug-Flow detention time= 340.3 min calculated for 1.062 af (100% of inflow)
Center-of-Mass det. time= 340.5 min (1,153.5 - 813.0)

Volume	Invert	Avail.Storage	Storage Description
#1	98.50'	105,292 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.50	0	0	0
99.00	483	121	121
100.00	5,808	3,146	3,266
101.00	6,872	6,340	9,606
102.00	8,510	7,691	17,297
103.00	14,070	11,290	28,587
104.00	24,830	19,450	48,037
105.00	28,100	26,465	74,502
106.00	33,480	30,790	105,292

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**30.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.30' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 4.91 sf
#2	Device 1	98.50'	**0.5" x 58.8" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	103.40'	**12.0" W x 15.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	104.70'	**48.0" x 60.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	105.40'	**174.0 deg x 5.0' long x 0.40' rise Sharp-Crested Vee/Trap Weir** Cv= 2.46 (C= 3.08)

Primary OutFlow Max=1.04 cfs @ 12.53 hrs HW=102.04' TW=100.83' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.04 cfs of 26.03 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 1.04 cfs @ 5.30 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
- **5=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Summary for Pond 107P: CB107 TO HW106

Inflow Area = 0.682 ac, 86.11% Impervious, Inflow Depth = 2.64" for 2 YR event
Inflow = 2.05 cfs @ 12.07 hrs, Volume= 0.150 af
Outflow = 2.05 cfs @ 12.07 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min
Primary = 2.05 cfs @ 12.07 hrs, Volume= 0.150 af
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.73' @ 12.07 hrs
Flood Elev= 106.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.90'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.90' / 100.80' S= 0.0050 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=2.05 cfs @ 12.07 hrs HW=101.72' TW=100.12' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.05 cfs @ 3.38 fps)

Summary for Pond 108P: CB108 TO CB107

Inflow Area = 0.465 ac, 84.37% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 1.38 cfs @ 12.07 hrs, Volume= 0.100 af
Outflow = 1.38 cfs @ 12.07 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 12.07 hrs, Volume= 0.100 af
Routed to Pond 107P : CB107 TO HW106

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.21' @ 12.07 hrs
Flood Elev= 106.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.55'	**15.0" Round Culvert** L= 106.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 101.55' / 101.00' S= 0.0052 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=1.38 cfs @ 12.07 hrs HW=102.21' TW=101.72' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.38 cfs @ 3.05 fps)

Summary for Pond 148GP: CB1+48G TO CB1+48R

Inflow Area = 0.563 ac, 16.32% Impervious, Inflow Depth = 0.03" for 2 YR event
Inflow = 0.00 cfs @ 16.90 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 16.90 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 16.90 hrs, Volume= 0.001 af
Routed to Pond 148RP : CB1+48R TO CB3+04R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 126.47' @ 16.90 hrs
Flood Elev= 130.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	126.45'	**15.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 126.45' / 126.35' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 16.90 hrs HW=126.47' TW=126.29' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.00 cfs @ 0.49 fps)

Summary for Pond 148RP: CB1+48R TO CB3+04R

[80] Warning: Exceeded Pond 148GP by 0.01' @ 12.07 hrs (0.00 cfs 0.000 af)

Inflow Area = 0.662 ac, 24.48% Impervious, Inflow Depth = 0.24" for 2 YR event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af
Outflow = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af
Routed to Pond 304RP : CB3+04R TO CB4+01G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 126.46' @ 12.07 hrs
Flood Elev= 132.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	126.25'	**15.0" Round Culvert** L= 153.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 126.25' / 124.70' S= 0.0101 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.17 cfs @ 12.07 hrs HW=126.46' TW=125.05' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.17 cfs @ 1.24 fps)

Summary for Pond 205P: CB205 TO HW200

Inflow Area = 1.894 ac, 90.15% Impervious, Inflow Depth = 2.58" for 2 YR event
Inflow = 5.59 cfs @ 12.07 hrs, Volume= 0.407 af
Outflow = 5.59 cfs @ 12.07 hrs, Volume= 0.407 af, Atten= 0%, Lag= 0.0 min
Primary = 5.59 cfs @ 12.07 hrs, Volume= 0.407 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.59' @ 12.07 hrs
Flood Elev= 106.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.40'	**24.0" Round Culvert** L= 54.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.40' / 102.10' S= 0.0056 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=5.57 cfs @ 12.07 hrs HW=103.58' TW=100.81' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.57 cfs @ 4.13 fps)

Summary for Pond 206P: CB206 TO CB205

Inflow Area = 0.232 ac, 95.84% Impervious, Inflow Depth = 2.80" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.054 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.054 af
Routed to Pond 205P : CB205 TO HW200

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.12' @ 12.07 hrs
Flood Elev= 108.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.70'	**15.0" Round Culvert** L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.70' / 103.15' S= 0.0110 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=104.12' TW=103.58' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.72 cfs @ 2.98 fps)

Summary for Pond 210P: CB210 TO CB205

Inflow Area = 1.174 ac, 87.38% Impervious, Inflow Depth = 2.45" for 2 YR event
Inflow = 3.35 cfs @ 12.07 hrs, Volume= 0.240 af
Outflow = 3.35 cfs @ 12.07 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min
Primary = 3.35 cfs @ 12.07 hrs, Volume= 0.240 af
Routed to Pond 205P : CB205 TO HW200

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.25' @ 12.07 hrs
Flood Elev= 107.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.25'	**18.0" Round Culvert** L= 65.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.25' / 102.90' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=3.34 cfs @ 12.07 hrs HW=104.25' TW=103.58' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 3.34 cfs @ 3.79 fps)

Summary for Pond 215P: DCB215 TO CB210

Inflow Area = 0.997 ac, 89.58% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 2.88 cfs @ 12.07 hrs, Volume= 0.207 af
Outflow = 2.88 cfs @ 12.07 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.0 min
Primary = 2.88 cfs @ 12.07 hrs, Volume= 0.207 af
Routed to Pond 210P : CB210 TO CB205

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.74' @ 12.07 hrs
Flood Elev= 108.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.75'	**18.0" Round Culvert** L= 75.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.75' / 103.35' S= 0.0053 '/' Cc= 0.900

n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=2.88 cfs @ 12.07 hrs HW=104.74' TW=104.25' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.88 cfs @ 3.31 fps)

Summary for Pond 220P: CB220 TO DCB215

Inflow Area = 0.345 ac, 95.13% Impervious, Inflow Depth = 2.69" for 2 YR event
Inflow = 1.05 cfs @ 12.07 hrs, Volume= 0.077 af
Outflow = 1.05 cfs @ 12.07 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.07 hrs, Volume= 0.077 af
Routed to Pond 215P : DCB215 TO CB210

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.10' @ 12.07 hrs
Flood Elev= 109.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.50'	**15.0" Round Culvert** L= 60.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 104.50' / 104.00' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=1.05 cfs @ 12.07 hrs HW=105.10' TW=104.74' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.05 cfs @ 2.62 fps)

Summary for Pond 303GP: CB3+03G TO CB3+04R

Inflow Area = 0.242 ac, 75.15% Impervious, Inflow Depth = 1.56" for 2 YR event
Inflow = 0.46 cfs @ 12.07 hrs, Volume= 0.031 af
Outflow = 0.46 cfs @ 12.07 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.07 hrs, Volume= 0.031 af
Routed to Pond 304RP : CB3+04R TO CB4+01G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 126.45' @ 12.07 hrs
Flood Elev= 130.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	126.10'	**15.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 126.10' / 124.70' S= 0.0233 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.46 cfs @ 12.07 hrs HW=126.45' TW=125.05' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.46 cfs @ 1.60 fps)

Summary for Pond 304RP: CB3+04R TO CB4+01G

Inflow Area = 1.023 ac, 39.60% Impervious, Inflow Depth = 0.61" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af
Routed to Pond 402GP : CB4+02G TO CB4+19R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 125.05' @ 12.07 hrs
Flood Elev= 129.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	124.60'	**15.0" Round Culvert** L= 94.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 124.60' / 122.75' S= 0.0197 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=125.05' TW=123.19' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.72 cfs @ 1.81 fps)

Summary for Pond 305P: CB305 TO HW300

Inflow Area = 8.737 ac, 28.45% Impervious, Inflow Depth = 0.54" for 2 YR event
Inflow = 5.13 cfs @ 12.07 hrs, Volume= 0.396 af
Outflow = 5.13 cfs @ 12.07 hrs, Volume= 0.396 af, Atten= 0%, Lag= 0.0 min
Primary = 5.13 cfs @ 12.07 hrs, Volume= 0.396 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.40' @ 12.07 hrs
Flood Elev= 107.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.25'	**24.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.25' / 103.15' S= 0.0062 '/' Cc= 0.900 n= 0.009, Flow Area= 3.14 sf

Primary OutFlow Max=5.13 cfs @ 12.07 hrs HW=104.40' TW=100.83' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.13 cfs @ 3.94 fps)

Summary for Pond 310P: CB310 TO CB305

Inflow Area = 8.555 ac, 27.26% Impervious, Inflow Depth = 0.51" for 2 YR event
Inflow = 4.64 cfs @ 12.07 hrs, Volume= 0.362 af
Outflow = 4.64 cfs @ 12.07 hrs, Volume= 0.362 af, Atten= 0%, Lag= 0.0 min
Primary = 4.64 cfs @ 12.07 hrs, Volume= 0.362 af
Routed to Pond 305P : CB305 TO HW300

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 104.72' @ 12.07 hrs
Flood Elev= 107.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.50'	**24.0" Round Culvert** L= 28.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.50' / 103.35' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=4.63 cfs @ 12.07 hrs HW=104.72' TW=104.40' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 4.63 cfs @ 3.30 fps)

Summary for Pond 315P: CB315 TO CB310

Inflow Area = 5.215 ac, 36.98% Impervious, Inflow Depth = 0.79" for 2 YR event
Inflow = 4.64 cfs @ 12.07 hrs, Volume= 0.344 af
Outflow = 4.64 cfs @ 12.07 hrs, Volume= 0.344 af, Atten= 0%, Lag= 0.0 min
Primary = 4.64 cfs @ 12.07 hrs, Volume= 0.344 af
Routed to Pond 310P : CB310 TO CB305

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.23' @ 12.07 hrs
Flood Elev= 109.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.00'	**18.0" Round Culvert** L= 185.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.00' / 104.00' S= 0.0054 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=4.63 cfs @ 12.07 hrs HW=106.23' TW=104.72' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 4.63 cfs @ 2.98 fps)

Summary for Pond 316P: CB316 TO CB315

Inflow Area = 0.087 ac, 88.61% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af
Outflow = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.07 hrs, Volume= 0.018 af
Routed to Pond 315P : CB315 TO CB310

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.24' @ 12.07 hrs
Flood Elev= 109.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.40'	**15.0" Round Culvert** L= 24.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.40' / 105.25' S= 0.0063 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.25 cfs @ 12.07 hrs HW=106.24' TW=106.23' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.25 cfs @ 0.29 fps)

Summary for Pond 320P: CB320 TO CB315

[80] Warning: Exceeded Pond 3200P by 0.03' @ 12.03 hrs (0.15 cfs 0.001 af)

Inflow Area = 2.458 ac, 67.94% Impervious, Inflow Depth = 1.59" for 2 YR event
Inflow = 4.39 cfs @ 12.07 hrs, Volume= 0.326 af
Outflow = 4.39 cfs @ 12.07 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min
Primary = 4.39 cfs @ 12.07 hrs, Volume= 0.326 af
Routed to Pond 315P : CB315 TO CB310

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.64' @ 12.07 hrs
Flood Elev= 112.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.45'	**18.0" Round Culvert** L= 213.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.45' / 105.10' S= 0.0110 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=4.38 cfs @ 12.07 hrs HW=108.64' TW=106.23' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.38 cfs @ 2.93 fps)

Summary for Pond 320Pa: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=595)

Inflow Area = 0.009 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.03 cfs @ 12.07 hrs, Volume= 0.002 af
Outflow = 0.03 cfs @ 12.08 hrs, Volume= 0.002 af, Atten= 10%, Lag= 0.9 min
Discarded = 0.03 cfs @ 12.08 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.86' @ 12.10 hrs Surf.Area= 379 sf Storage= 1 cf
Flood Elev= 112.85' Surf.Area= 379 sf Storage= 38 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (755.7 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	111.85'	38 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.85	379	0.0	0	0
112.85	379	10.0	38	38

Device	Routing	Invert	Outlet Devices
#1	Discarded	111.85'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 12.08 hrs HW=111.86' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond 321P: CB321 TO CB320

Inflow Area = 1.360 ac, 63.43% Impervious, Inflow Depth = 1.41" for 2 YR event
Inflow = 2.12 cfs @ 12.07 hrs, Volume= 0.160 af
Outflow = 2.12 cfs @ 12.07 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min
Primary = 2.12 cfs @ 12.07 hrs, Volume= 0.160 af
Routed to Pond 320P : CB320 TO CB315

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.00' @ 12.07 hrs
Flood Elev= 116.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	112.17'	**15.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 112.17' / 109.40' S= 0.0243 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.12 cfs @ 12.07 hrs HW=113.00' TW=108.64' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.12 cfs @ 2.45 fps)

Summary for Pond 321Pa: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=590)

Inflow Area = 0.010 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.03 cfs @ 12.07 hrs, Volume= 0.003 af
Outflow = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.65' @ 12.09 hrs Surf.Area= 456 sf Storage= 0 cf
Flood Elev= 117.65' Surf.Area= 456 sf Storage= 46 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (755.6 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	116.65'	46 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
116.65	456	0.0	0	0
117.65	456	10.0	46	46

Device	Routing	Invert	Outlet Devices
#1	Discarded	116.65'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=116.65' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.03 cfs)

Summary for Pond 322P: CB323 TO CB322

Inflow Area = 1.222 ac, 62.85% Impervious, Inflow Depth = 1.34" for 2 YR event
Inflow = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af
Outflow = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
Primary = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af
Routed to Pond 321P : CB321 TO CB320

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 118.63' @ 12.07 hrs
Flood Elev= 125.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	117.87'	**15.0" Round Culvert** L= 70.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 117.87' / 112.27' S= 0.0800 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.82 cfs @ 12.07 hrs HW=118.63' TW=113.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.82 cfs @ 2.34 fps)

Summary for Pond 323P: CB324 to CB323

Inflow Area = 1.124 ac, 68.31% Impervious, Inflow Depth = 1.46" for 2 YR event
Inflow = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af
Outflow = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min
Primary = 1.83 cfs @ 12.07 hrs, Volume= 0.137 af
Routed to Pond 322P : CB323 TO CB322

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 121.82' @ 12.07 hrs
Flood Elev= 127.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.06'	**15.0" Round Culvert** L= 37.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 121.06' / 120.69' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.82 cfs @ 12.07 hrs HW=121.82' TW=118.63' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.82 cfs @ 2.34 fps)

Summary for Pond 323Pa: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=590)

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af
Outflow = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.03 cfs @ 12.09 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 129.25' @ 12.09 hrs Surf.Area= 498 sf Storage= 0 cf
Flood Elev= 130.25' Surf.Area= 498 sf Storage= 50 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (755.6 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	129.25'	50 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
129.25	498	0.0	0	0
130.25	498	10.0	50	50

Device	Routing	Invert	Outlet Devices
#1	Discarded	129.25'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 12.09 hrs HW=129.25' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Summary for Pond 324P: CB325 to CB324

Inflow Area = 0.997 ac, 68.51% Impervious, Inflow Depth = 1.40" for 2 YR event
Inflow = 1.56 cfs @ 12.07 hrs, Volume= 0.116 af
Outflow = 1.56 cfs @ 12.07 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min
Primary = 1.56 cfs @ 12.07 hrs, Volume= 0.116 af
Routed to Pond 323P : CB324 to CB323

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 122.39' @ 12.07 hrs
Flood Elev= 132.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.73'	**15.0" Round Culvert** L= 57.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 121.73' / 121.16' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.56 cfs @ 12.07 hrs HW=122.39' TW=121.82' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 1.56 cfs @ 3.43 fps)

Summary for Pond 325P: CB326 TO CB325

Inflow Area = 0.946 ac, 66.82% Impervious, Inflow Depth = 1.32" for 2 YR event
Inflow = 1.40 cfs @ 12.07 hrs, Volume= 0.104 af
Outflow = 1.40 cfs @ 12.07 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min
Primary = 1.40 cfs @ 12.07 hrs, Volume= 0.104 af
Routed to Pond 324P : CB325 to CB324

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 123.25' @ 12.07 hrs
Flood Elev= 130.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.60'	**15.0" Round Culvert** L= 67.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.60' / 121.83' S= 0.0115 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.40 cfs @ 12.07 hrs HW=123.25' TW=122.39' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.40 cfs @ 2.17 fps)

Summary for Pond 326P: CB327 TO CB326

Inflow Area = 0.908 ac, 65.42% Impervious, Inflow Depth = 1.25" for 2 YR event
Inflow = 1.28 cfs @ 12.07 hrs, Volume= 0.095 af
Outflow = 1.28 cfs @ 12.07 hrs, Volume= 0.095 af, Atten= 0%, Lag= 0.0 min
Primary = 1.28 cfs @ 12.07 hrs, Volume= 0.095 af
Routed to Pond 325P : CB326 TO CB325

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 124.42' @ 12.07 hrs
Flood Elev= 128.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.80'	**15.0" Round Culvert** L= 120.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 123.80' / 122.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.28 cfs @ 12.07 hrs HW=124.42' TW=123.25' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.28 cfs @ 2.11 fps)

Summary for Pond 326Pa: Porous Walk

Inflow Area = 0.041 ac, 44.21% Impervious, Inflow Depth = 0.57" for 2 YR event
Inflow = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af
Outflow = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.02 cfs @ 12.09 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 127.95' @ 0.00 hrs Surf.Area= 790 sf Storage= 0 cf
Flood Elev= 128.95' Surf.Area= 790 sf Storage= 79 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (896.0 - 896.0)

Volume	Invert	Avail.Storage	Storage Description
#1	127.95'	79 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.95	790	0.0	0	0
128.95	790	10.0	79	79

Device	Routing	Invert	Outlet Devices
#1	Discarded	127.95'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.09 hrs HW=127.95' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 0.05 cfs potential flow)

Summary for Pond 326Pb: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=590)

Inflow Area = 0.001 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.00 cfs @ 12.07 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.09 hrs, Volume= 0.000 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.00 cfs @ 12.09 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 129.05' @ 12.09 hrs Surf.Area= 57 sf Storage= 0 cf
Flood Elev= 130.05' Surf.Area= 57 sf Storage= 6 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (755.6 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	129.05'	6 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
129.05	57	0.0	0	0
130.05	57	10.0	6	6

Device	Routing	Invert	Outlet Devices
#1	Discarded	129.05'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.09 hrs HW=129.05' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.00 cfs)

Summary for Pond 326Pc: Porous Walk

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=590)

Inflow Area = 0.001 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.00 cfs @ 12.07 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.09 hrs, Volume= 0.000 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.00 cfs @ 12.09 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 129.65' @ 12.09 hrs Surf.Area= 53 sf Storage= 0 cf
Flood Elev= 129.65' Surf.Area= 53 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (755.6 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	129.65'	5 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
129.65	53	0.0	0	0
130.65	53	10.0	5	5

Device	Routing	Invert	Outlet Devices
#1	Discarded	129.65'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.09 hrs HW=129.65' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Summary for Pond 330P: CB330 T0 CB320

Inflow Area = 0.944 ac, 78.00% Impervious, Inflow Depth = 1.90" for 2 YR event
Inflow = 2.04 cfs @ 12.07 hrs, Volume= 0.149 af
Outflow = 2.04 cfs @ 12.07 hrs, Volume= 0.149 af, Atten= 0%, Lag= 0.0 min
Primary = 2.04 cfs @ 12.07 hrs, Volume= 0.149 af
Routed to Pond 320P : CB320 TO CB315

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.51' @ 12.07 hrs
Flood Elev= 113.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.70'	**15.0" Round Culvert** L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 108.70' / 107.70' S= 0.0286 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=2.04 cfs @ 12.07 hrs HW=109.51' TW=108.64' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 2.04 cfs @ 2.42 fps)

Summary for Pond 330Pa: Porous Walk

Inflow Area = 0.010 ac, 41.33% Impervious, Inflow Depth = 0.49" for 2 YR event
Inflow = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 114.25' @ 0.00 hrs Surf.Area= 186 sf Storage= 0 cf
Flood Elev= 115.25' Surf.Area= 186 sf Storage= 19 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (905.5 - 905.5)

Volume	Invert	Avail.Storage	Storage Description
#1	114.25'	19 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
114.25	186	0.0	0	0
115.25	186	10.0	19	19

Device	Routing	Invert	Outlet Devices
#1	Discarded	114.25'	**5.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.10 hrs HW=114.25' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 0.02 cfs potential flow)

Summary for Pond 330Pb: Porous Walk

Inflow Area = 0.005 ac, 39.91% Impervious, Inflow Depth = 0.49" for 2 YR event
Inflow = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 12.10 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 112.65' @ 0.00 hrs Surf.Area= 87 sf Storage= 0 cf
Flood Elev= 113.65' Surf.Area= 87 sf Storage= 9 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (905.5 - 905.5)

Volume	Invert	Avail.Storage	Storage Description
#1	112.65'	9 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
112.65	87	0.0	0	0
113.65	87	10.0	9	9

Device	Routing	Invert	Outlet Devices
#1	Discarded	112.65'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.10 hrs HW=112.65' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 0.01 cfs potential flow)

Summary for Pond 331P: CB331 TO CB330

Inflow Area = 0.413 ac, 67.48% Impervious, Inflow Depth = 1.51" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.052 af
Routed to Pond 330P : CB330 T0 CB320

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.49' @ 12.07 hrs
Flood Elev= 117.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	110.02'	**15.0" Round Culvert** L= 12.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 110.02' / 109.90' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=110.49' TW=109.51' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.72 cfs @ 2.52 fps)

Summary for Pond 331Pa: Porous Walk

Inflow Area = 0.025 ac, 44.83% Impervious, Inflow Depth = 0.57" for 2 YR event
Inflow = 0.01 cfs @ 12.09 hrs, Volume= 0.001 af
Outflow = 0.01 cfs @ 12.09 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.01 cfs @ 12.09 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.25' @ 0.00 hrs Surf.Area= 486 sf Storage= 0 cf
Flood Elev= 117.25' Surf.Area= 486 sf Storage= 49 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (896.0 - 896.0)

Volume	Invert	Avail.Storage	Storage Description
#1	116.25'	49 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
116.25	486	0.0	0	0
117.25	486	10.0	49	49

Device	Routing	Invert	Outlet Devices
#1	Discarded	116.25'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.09 hrs HW=116.25' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 0.03 cfs potential flow)

Summary for Pond 332P: CB332 to CB331

Inflow Area = 0.039 ac, 74.75% Impervious, Inflow Depth = 1.56" for 2 YR event
Inflow = 0.07 cfs @ 12.07 hrs, Volume= 0.005 af
Outflow = 0.07 cfs @ 12.07 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.07 cfs @ 12.07 hrs, Volume= 0.005 af
Routed to Pond 331P : CB331 TO CB330

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.09' @ 12.07 hrs
Flood Elev= 115.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	110.95'	**15.0" Round Culvert** L= 50.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 110.95' / 110.12' S= 0.0166 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.07 cfs @ 12.07 hrs HW=111.09' TW=110.49' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.07 cfs @ 1.00 fps)

Summary for Pond 332Pa: Porous Walk

Inflow Area = 0.035 ac, 62.19% Impervious, Inflow Depth = 1.11" for 2 YR event
Inflow = 0.05 cfs @ 12.08 hrs, Volume= 0.003 af
Outflow = 0.05 cfs @ 12.08 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.05 cfs @ 12.08 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.35' @ 12.08 hrs Surf.Area= 949 sf Storage= 0 cf
Flood Elev= 117.35' Surf.Area= 949 sf Storage= 95 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (855.5 - 855.5)

Volume	Invert	Avail.Storage	Storage Description
#1	116.35'	95 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
116.35	949	0.0	0	0
117.35	949	10.0	95	95

Device	Routing	Invert	Outlet Devices
#1	Discarded	116.35'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 12.08 hrs HW=116.35' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.07 cfs)

Summary for Pond 333P: CB333 TO CB331

Inflow Area = 0.145 ac, 67.26% Impervious, Inflow Depth = 1.96" for 2 YR event
Inflow = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af
Outflow = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af
Routed to Pond 331P : CB331 TO CB330

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.01' @ 12.07 hrs
Flood Elev= 117.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	112.72'	**15.0" Round Culvert** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 112.72' / 110.12' S= 0.0193 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.31 cfs @ 12.07 hrs HW=113.01' TW=110.49' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.31 cfs @ 1.44 fps)

Summary for Pond 333Pa: Porous Walk

Inflow Area = 0.023 ac, 32.34% Impervious, Inflow Depth = 0.32" for 2 YR event
Inflow = 0.00 cfs @ 12.13 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 12.13 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 12.13 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 128.65' @ 0.00 hrs Surf.Area= 325 sf Storage= 0 cf
Flood Elev= 129.65' Surf.Area= 325 sf Storage= 33 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (934.7 - 934.7)

Volume	Invert	Avail.Storage	Storage Description
#1	128.65'	33 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.65	325	0.0	0	0
129.65	325	10.0	33	33

Device	Routing	Invert	Outlet Devices
#1	Discarded	128.65'	**3.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 12.13 hrs HW=128.65' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 0.02 cfs potential flow)

Summary for Pond 335P: CB335 TO CB330

Inflow Area = 0.456 ac, 84.86% Impervious, Inflow Depth = 2.13" for 2 YR event
Inflow = 1.10 cfs @ 12.07 hrs, Volume= 0.081 af
Outflow = 1.10 cfs @ 12.07 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.07 hrs, Volume= 0.081 af
Routed to Pond 330P : CB330 T0 CB320

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.37' @ 12.07 hrs
Flood Elev= 114.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.80'	**15.0" Round Culvert** L= 29.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 109.80' / 108.80' S= 0.0345 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=1.10 cfs @ 12.07 hrs HW=110.37' TW=109.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.10 cfs @ 2.03 fps)

Summary for Pond 340P: CB340TO CB335

Inflow Area = 0.358 ac, 90.90% Impervious, Inflow Depth = 2.41" for 2 YR event
Inflow = 0.97 cfs @ 12.07 hrs, Volume= 0.072 af
Outflow = 0.97 cfs @ 12.07 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min
Primary = 0.97 cfs @ 12.07 hrs, Volume= 0.072 af
Routed to Pond 335P : CB335 TO CB330

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.93' @ 12.07 hrs
Flood Elev= 116.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	111.40'	**15.0" Round Culvert** L= 31.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 111.40' / 110.30' S= 0.0355 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.97 cfs @ 12.07 hrs HW=111.93' TW=110.37' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.97 cfs @ 1.96 fps)

Summary for Pond 345P: DMH345 TO CB340

Inflow Area = 0.298 ac, 94.53% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af
Outflow = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af
Routed to Pond 340P : CB340TO CB335

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 114.10' @ 12.07 hrs
Flood Elev= 120.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.60'	**15.0" Round Culvert** L= 59.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.60' / 111.50' S= 0.0356 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.86 cfs @ 12.07 hrs HW=114.10' TW=111.93' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.86 cfs @ 1.90 fps)

Summary for Pond 350P: CB350 TO DMH345

Inflow Area = 0.298 ac, 94.53% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af
Outflow = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.07 hrs, Volume= 0.064 af
Routed to Pond 345P : DMH345 TO CB340

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 119.10' @ 12.07 hrs
Flood Elev= 125.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.60'	**15.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.60' / 116.40' S= 0.0344 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.86 cfs @ 12.07 hrs HW=119.10' TW=114.10' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.86 cfs @ 1.90 fps)

Summary for Pond 351P: CB351 TO CB350

Inflow Area = 0.060 ac, 93.15% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af
Outflow = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.07 hrs, Volume= 0.012 af
Routed to Pond 350P : CB350 TO DMH345

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 120.71' @ 12.07 hrs
Flood Elev= 125.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	120.50'	**15.0" Round Culvert** L= 24.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 120.50' / 120.35' S= 0.0063 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.17 cfs @ 12.07 hrs HW=120.71' TW=119.10' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.17 cfs @ 1.24 fps)

Summary for Pond 355P: DMH355 TO CB350

Inflow Area = 0.166 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af
Outflow = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af
Routed to Pond 350P : CB350 TO DMH345

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 124.18' @ 12.07 hrs
Flood Elev= 132.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.80'	**15.0" Round Culvert** L= 84.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 123.80' / 120.85' S= 0.0351 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.52 cfs @ 12.07 hrs HW=124.18' TW=119.10' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.52 cfs @ 1.66 fps)

Summary for Pond 360P: CB360 TO DMH355

Inflow Area = 0.166 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af
Outflow = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.07 hrs, Volume= 0.040 af
Routed to Pond 355P : DMH355 TO CB350

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 131.68' @ 12.07 hrs
Flood Elev= 136.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	131.30'	**15.0" Round Culvert** L= 95.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 131.30' / 128.00' S= 0.0347 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.52 cfs @ 12.07 hrs HW=131.68' TW=124.18' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.52 cfs @ 1.66 fps)

Summary for Pond 365P: CB365 TO CB360

Inflow Area = 0.085 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af
Outflow = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af
Routed to Pond 360P : CB360 TO DMH355

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 132.92' @ 12.07 hrs
Flood Elev= 137.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.65'	**15.0" Round Culvert** L= 36.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.65' / 132.45' S= 0.0056 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.27 cfs @ 12.07 hrs HW=132.92' TW=131.68' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.27 cfs @ 1.39 fps)

Summary for Pond 402GP: CB4+02G TO CB4+19R

Inflow Area = 5.534 ac, 16.63% Impervious, Inflow Depth = 0.12" for 2 YR event
Inflow = 0.72 cfs @ 12.07 hrs, Volume= 0.056 af
Outflow = 0.72 cfs @ 12.07 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.07 hrs, Volume= 0.056 af
Routed to Pond 419RP : CB4+19R TO CB4+19L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 123.19' @ 12.08 hrs
Flood Elev= 128.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.65'	**15.0" Round Culvert** L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.65' / 122.50' S= 0.0058 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.72 cfs @ 12.07 hrs HW=123.19' TW=123.01' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.72 cfs @ 2.11 fps)

Summary for Pond 405P: CB405 TO HW400

Inflow Area = 0.848 ac, 84.53% Impervious, Inflow Depth = 2.61" for 2 YR event
Inflow = 2.53 cfs @ 12.07 hrs, Volume= 0.185 af
Outflow = 2.53 cfs @ 12.07 hrs, Volume= 0.185 af, Atten= 0%, Lag= 0.0 min
Primary = 2.53 cfs @ 12.07 hrs, Volume= 0.185 af
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.11' @ 12.07 hrs
Flood Elev= 106.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.25'	**18.0" Round Culvert** L= 33.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.25' / 101.05' S= 0.0061 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=2.53 cfs @ 12.07 hrs HW=102.11' TW=100.12' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.53 cfs @ 3.49 fps)

Summary for Pond 410P: DCB410 TO CB405

Inflow Area = 0.672 ac, 83.98% Impervious, Inflow Depth = 2.60" for 2 YR event
Inflow = 2.00 cfs @ 12.07 hrs, Volume= 0.146 af
Outflow = 2.00 cfs @ 12.07 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min
Primary = 2.00 cfs @ 12.07 hrs, Volume= 0.146 af
Routed to Pond 405P : CB405 TO HW400

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.90' @ 12.07 hrs
Flood Elev= 105.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.10'	**15.0" Round Culvert** L= 119.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.10' / 101.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.00 cfs @ 12.07 hrs HW=102.90' TW=102.11' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.00 cfs @ 3.42 fps)

Summary for Pond 415P: CB415 TO CB410

Inflow Area = 0.288 ac, 80.11% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 0.060 af
Outflow = 0.83 cfs @ 12.07 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min
Primary = 0.83 cfs @ 12.07 hrs, Volume= 0.060 af
Routed to Pond 410P : DCB410 TO CB405

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 103.09' @ 12.07 hrs
Flood Elev= 105.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.47'	**15.0" Round Culvert** L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.47' / 102.20' S= 0.0054 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.83 cfs @ 12.07 hrs HW=103.09' TW=102.90' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.83 cfs @ 2.00 fps)

Summary for Pond 416P: CB416 TO CB415

Inflow Area = 0.169 ac, 80.88% Impervious, Inflow Depth = 2.49" for 2 YR event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af
Outflow = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.49 cfs @ 12.07 hrs, Volume= 0.035 af
Routed to Pond 415P : CB415 TO CB410

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.28' @ 12.07 hrs
Flood Elev= 107.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.83'	**15.0" Round Culvert** L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.83' / 102.57' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.49 cfs @ 12.07 hrs HW=103.28' TW=103.09' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.49 cfs @ 1.82 fps)

Summary for Pond 419LP: CB4+19L TO DMH1001+25

Inflow Area = 10.125 ac, 28.38% Impervious, Inflow Depth = 0.32" for 2 YR event
Inflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Outflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Routed to Pond 100125P : DMH1001+25 TO DMH1003+11

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.73' @ 12.08 hrs
Flood Elev= 128.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.90'	**24.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 116.90' / 114.60' S= 0.0202 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.03 cfs @ 12.08 hrs HW=117.73' TW=108.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.03 cfs @ 2.45 fps)

Summary for Pond 419RP: CB4+19R TO CB4+19L

Inflow Area = 6.154 ac, 19.85% Impervious, Inflow Depth = 0.18" for 2 YR event
Inflow = 1.17 cfs @ 12.08 hrs, Volume= 0.092 af
Outflow = 1.17 cfs @ 12.08 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 12.08 hrs, Volume= 0.092 af
Routed to Pond 419LP : CB4+19L TO DMH1001+25

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 123.01' @ 12.08 hrs
Flood Elev= 128.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	122.40'	**15.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 122.40' / 122.25' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=1.17 cfs @ 12.08 hrs HW=123.01' TW=117.73' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.17 cfs @ 2.86 fps)

Summary for Pond 505P: dmh505 TO HW500

Inflow Area = 2.525 ac, 40.36% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af
Outflow = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.19' @ 12.09 hrs
Flood Elev= 109.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.65'	**18.0" Round Culvert** L= 12.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.65' / 103.55' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=1.10 cfs @ 12.09 hrs HW=104.19' TW=100.95' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.10 cfs @ 2.82 fps)

Summary for Pond 507P: CB507 TO CB505

Inflow Area = 2.525 ac, 40.36% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af
Outflow = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min
Primary = 1.10 cfs @ 12.09 hrs, Volume= 0.111 af
Routed to Pond 505P : dmh505 TO HW500
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1AR : STREAM

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.23' @ 12.09 hrs
Flood Elev= 110.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.70'	**18.0" Round Culvert** L= 151.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 104.70' / 103.75' S= 0.0063 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	107.20'	**12.0" Round Culvert** L= 97.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.20' / 105.00' S= 0.0227 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.10 cfs @ 12.09 hrs HW=105.23' TW=104.19' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.10 cfs @ 1.96 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=104.70' TW=87.70' (Dynamic Tailwater)
2=Culvert (Controls 0.00 cfs)

Summary for Pond 508P: CB508 TO CB507

Inflow Area = 2.449 ac, 38.51% Impervious, Inflow Depth = 0.45" for 2 YR event
Inflow = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af
Outflow = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af
Routed to Pond 507P : CB507 TO CB505

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 107.47' @ 12.09 hrs
Flood Elev= 113.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.00'	**18.0" Round Culvert** L= 77.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.00' / 104.80' S= 0.0286 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.87 cfs @ 12.09 hrs HW=107.47' TW=105.23' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.87 cfs @ 1.84 fps)

Summary for Pond 509P: CB509 to CB508

Inflow Area = 2.449 ac, 38.51% Impervious, Inflow Depth = 0.45" for 2 YR event
Inflow = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af
Outflow = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.09 hrs, Volume= 0.092 af
Routed to Pond 508P : CB508 TO CB507

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.81' @ 12.09 hrs
Flood Elev= 114.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.40'	**18.0" Round Culvert** L= 34.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 108.40' / 107.10' S= 0.0382 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.87 cfs @ 12.09 hrs HW=108.81' TW=107.47' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.87 cfs @ 2.19 fps)

Summary for Pond 600P: DETENTION BASIN OS605 TO HW600

Inflow Area = 7.611 ac, 46.30% Impervious, Inflow Depth = 1.32" for 2 YR event
Inflow = 7.45 cfs @ 12.09 hrs, Volume= 0.835 af
Outflow = 0.14 cfs @ 23.73 hrs, Volume= 0.421 af, Atten= 98%, Lag= 698.8 min
Primary = 0.14 cfs @ 23.73 hrs, Volume= 0.421 af
Routed to Reach 2R : REACH 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Starting Elev= 97.50' Surf.Area= 27,329 sf Storage= 13,397 cf
Peak Elev= 98.58' @ 23.73 hrs Surf.Area= 29,649 sf Storage= 44,079 cf (30,683 cf above start)
Flood Elev= 101.00' Surf.Area= 37,948 sf Storage= 123,868 cf (110,472 cf above start)

Plug-Flow detention time= 2,468.6 min calculated for 0.113 af (14% of inflow)
Center-of-Mass det. time= 1,179.1 min (1,999.7 - 820.6)

Volume	Invert	Avail.Storage	Storage Description
#1	97.00'	123,868 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
97.00	26,258	0	0
97.50	27,329	13,397	13,397
98.00	28,384	13,928	27,325
98.50	29,477	14,465	41,790
99.00	30,585	15,016	56,806
100.00	32,796	31,691	88,496
101.00	37,948	35,372	123,868

Device	Routing	Invert	Outlet Devices
#1	Primary	96.20'	**24.0" Round Culvert** L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 96.20' / 96.00' S= 0.0080 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	97.50'	**0.5" W x 18.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	99.00'	**4.0" W x 9.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	99.80'	**48.0" x 60.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.14 cfs @ 23.73 hrs HW=98.58' TW=93.86' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 0.14 cfs of 16.01 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.14 cfs @ 3.33 fps)
—**3=Orifice/Grate** (Controls 0.00 cfs)
—**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 710P: CB710 TO HW700

Inflow Area = 1.321 ac, 84.62% Impervious, Inflow Depth = 2.56" for 2 YR event
Inflow = 3.89 cfs @ 12.07 hrs, Volume= 0.282 af
Outflow = 3.89 cfs @ 12.07 hrs, Volume= 0.282 af, Atten= 0%, Lag= 0.0 min
Primary = 3.89 cfs @ 12.07 hrs, Volume= 0.282 af
Routed to Pond 600P : DETENTION BASIN OS605 TO HW600

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 100.76' @ 12.07 hrs
Flood Elev= 108.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	99.80'	**18.0" Round Culvert** L= 109.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 99.80' / 99.20' S= 0.0055 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=3.89 cfs @ 12.07 hrs HW=100.76' TW=97.85' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 3.89 cfs @ 4.66 fps)

Summary for Pond 711P: CB711 TO CB710

Inflow Area = 0.100 ac, 88.02% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 0.30 cfs @ 12.07 hrs, Volume= 0.022 af
Outflow = 0.30 cfs @ 12.07 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.07 hrs, Volume= 0.022 af
Routed to Pond 710P : CB710 TO HW700

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.45' @ 12.07 hrs
Flood Elev= 109.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.20'	**15.0" Round Culvert** L= 52.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.20' / 102.50' S= 0.0135 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.30 cfs @ 12.07 hrs HW=103.45' TW=100.76' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.30 cfs @ 1.70 fps)

Summary for Pond 715P: CB715 TO CB710

Inflow Area = 1.116 ac, 83.85% Impervious, Inflow Depth = 2.55" for 2 YR event
Inflow = 3.29 cfs @ 12.07 hrs, Volume= 0.238 af
Outflow = 3.29 cfs @ 12.07 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min
Primary = 3.29 cfs @ 12.07 hrs, Volume= 0.238 af
Routed to Pond 710P : CB710 TO HW700

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.23' @ 12.07 hrs
Flood Elev= 106.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.25'	**18.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.25' / 99.90' S= 0.0054 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=3.28 cfs @ 12.07 hrs HW=101.23' TW=100.76' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.28 cfs @ 3.82 fps)

Summary for Pond 720P: DCB720 TO CB715

Inflow Area = 1.040 ac, 85.46% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 3.09 cfs @ 12.07 hrs, Volume= 0.224 af
Outflow = 3.09 cfs @ 12.07 hrs, Volume= 0.224 af, Atten= 0%, Lag= 0.0 min
Primary = 3.09 cfs @ 12.07 hrs, Volume= 0.224 af
Routed to Pond 715P : CB715 TO CB710

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.69' @ 12.07 hrs
Flood Elev= 105.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.70'	**18.0" Round Culvert** L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 100.70' / 100.35' S= 0.0066 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=3.09 cfs @ 12.07 hrs HW=101.69' TW=101.23' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.09 cfs @ 3.54 fps)

Summary for Pond 725P: CB725 TO DCB720

Inflow Area = 0.633 ac, 84.41% Impervious, Inflow Depth = 2.59" for 2 YR event
Inflow = 1.88 cfs @ 12.07 hrs, Volume= 0.136 af
Outflow = 1.88 cfs @ 12.07 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min
Primary = 1.88 cfs @ 12.07 hrs, Volume= 0.136 af
Routed to Pond 720P : DCB720 TO CB715

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.15' @ 12.07 hrs
Flood Elev= 104.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.40'	**15.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.40' / 100.95' S= 0.0060 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=1.88 cfs @ 12.07 hrs HW=102.15' TW=101.69' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.88 cfs @ 3.50 fps)

Summary for Pond 801P: HW801 TO HW800

Inflow Area = 4.947 ac, 48.40% Impervious, Inflow Depth = 1.23" for 2 YR event
Inflow = 6.43 cfs @ 12.07 hrs, Volume= 0.507 af
Outflow = 3.72 cfs @ 12.18 hrs, Volume= 0.502 af, Atten= 42%, Lag= 6.7 min
Primary = 3.72 cfs @ 12.18 hrs, Volume= 0.502 af
Routed to Pond 600P : DETENTION BASIN OS605 TO HW600

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.43' @ 12.18 hrs Surf.Area= 5,411 sf Storage= 3,062 cf
Flood Elev= 104.00' Surf.Area= 12,500 sf Storage= 28,835 cf

Plug-Flow detention time= 30.3 min calculated for 0.502 af (99% of inflow)
Center-of-Mass det. time= 24.1 min (833.4 - 809.3)

Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	28,835 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
100.00	20	0	0
101.00	2,660	1,340	1,340
102.00	9,110	5,885	7,225
104.00	12,500	21,610	28,835

Device	Routing	Invert	Outlet Devices
#1	Primary	100.40'	**15.0" Round Culvert** L= 65.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.40' / 99.00' S= 0.0215 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.72 cfs @ 12.18 hrs HW=101.43' TW=97.95' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.72 cfs @ 3.45 fps)

Summary for Pond 805P: CB805 TO HW802

Inflow Area = 1.483 ac, 90.81% Impervious, Inflow Depth = 2.57" for 2 YR event
Inflow = 4.20 cfs @ 12.07 hrs, Volume= 0.318 af
Outflow = 4.20 cfs @ 12.07 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min
Primary = 4.20 cfs @ 12.07 hrs, Volume= 0.318 af
Routed to Pond 801P : HW801 TO HW800

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.17' @ 12.07 hrs
Flood Elev= 105.85'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.10'	**18.0" Round Culvert** L= 68.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.10' / 100.75' S= 0.0051 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=4.19 cfs @ 12.07 hrs HW=102.16' TW=101.27' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.19 cfs @ 4.38 fps)

Summary for Pond 806P: CB806 TO CB805

Inflow Area = 1.167 ac, 88.96% Impervious, Inflow Depth = 2.50" for 2 YR event
Inflow = 3.21 cfs @ 12.07 hrs, Volume= 0.243 af
Outflow = 3.21 cfs @ 12.07 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min
Primary = 3.21 cfs @ 12.07 hrs, Volume= 0.243 af
Routed to Pond 805P : CB805 TO HW802

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.80' @ 12.07 hrs
Flood Elev= 108.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.95'	**18.0" Round Culvert** L= 100.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.95' / 101.20' S= 0.0175 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=3.20 cfs @ 12.07 hrs HW=103.79' TW=102.16' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.20 cfs @ 3.13 fps)

Summary for Pond 807P: CB807 TO CB806

Inflow Area = 0.650 ac, 81.27% Impervious, Inflow Depth = 2.25" for 2 YR event
Inflow = 1.61 cfs @ 12.07 hrs, Volume= 0.122 af
Outflow = 1.61 cfs @ 12.07 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min
Primary = 1.61 cfs @ 12.07 hrs, Volume= 0.122 af
Routed to Pond 806P : CB806 TO CB805

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.85' @ 12.07 hrs
Flood Elev= 111.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.20'	**18.0" Round Culvert** L= 100.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.20' / 103.05' S= 0.0215 '/' Cc= 0.900 n= 0.009, Flow Area= 1.77 sf

Primary OutFlow Max=1.61 cfs @ 12.07 hrs HW=105.85' TW=103.79' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.61 cfs @ 2.17 fps)

Summary for Pond 808P: CB808 TO CB807

Inflow Area = 0.511 ac, 82.04% Impervious, Inflow Depth = 2.39" for 2 YR event
Inflow = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af
Outflow = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af
Routed to Pond 807P : CB807 TO CB806

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.73' @ 12.07 hrs
Flood Elev= 110.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	106.10'	**15.0" Round Culvert** L= 128.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 106.10' / 105.45' S= 0.0051 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=1.32 cfs @ 12.07 hrs HW=106.73' TW=105.85' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.32 cfs @ 2.13 fps)

Summary for Pond 857LP: CB8+57L TO CB4+19L

[80] Warning: Exceeded Pond 857RP by 0.04' @ 12.12 hrs (0.12 cfs 0.001 af)

Inflow Area = 3.229 ac, 37.66% Impervious, Inflow Depth = 0.44" for 2 YR event
Inflow = 1.02 cfs @ 12.08 hrs, Volume= 0.117 af
Outflow = 1.02 cfs @ 12.08 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.08 hrs, Volume= 0.117 af
Routed to Pond 419LP : CB4+19L TO DMH1001+25

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 133.20' @ 12.08 hrs
Flood Elev= 137.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.65'	**15.0" Round Culvert** L= 439.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.65' / 122.25' S= 0.0237 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=1.02 cfs @ 12.08 hrs HW=133.20' TW=117.73' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.02 cfs @ 1.98 fps)

Summary for Pond 857RP: CB8+57R TO CB8+57L

Inflow Area = 0.734 ac, 20.90% Impervious, Inflow Depth = 0.14" for 2 YR event
Inflow = 0.02 cfs @ 12.43 hrs, Volume= 0.008 af
Outflow = 0.02 cfs @ 12.44 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.1 min
Primary = 0.02 cfs @ 12.44 hrs, Volume= 0.008 af
Routed to Pond 857LP : CB8+57L TO CB4+19L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 133.17' @ 12.05 hrs
Flood Elev= 137.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.90'	**15.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 132.90' / 132.75' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.02 cfs @ 12.44 hrs HW=133.04' TW=133.03' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.02 cfs @ 0.44 fps)

Summary for Pond 900P: POND 900

Inflow Area = 26.604 ac, 27.89% Impervious, Inflow Depth = 0.28" for 2 YR event
Inflow = 6.72 cfs @ 12.08 hrs, Volume= 0.627 af
Outflow = 0.24 cfs @ 19.10 hrs, Volume= 0.554 af, Atten= 96%, Lag= 421.1 min
Discarded = 0.24 cfs @ 19.10 hrs, Volume= 0.554 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 41R : REACH

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 98.60' @ 19.10 hrs Surf.Area= 31,299 sf Storage= 18,162 cf
Flood Elev= 104.00' Surf.Area= 46,635 sf Storage= 227,944 cf

Plug-Flow detention time= 968.6 min calculated for 0.554 af (88% of inflow)
Center-of-Mass det. time= 910.1 min (1,769.2 - 859.1)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	227,944 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	29,679	0	0
100.00	35,118	64,797	64,797
102.00	40,697	75,815	140,612
104.00	46,635	87,332	227,944

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**30.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.00' S= 0.0200 '/' Cc= 0.900 n= 0.009, Flow Area= 4.91 sf
#2	Discarded	98.00'	**6.300 in/hr Exfiltration over Surface area above 98.00'** Excluded Surface area = 29,679 sf
#3	Device 1	99.60'	**1.0" W x 38.4" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	102.80'	**48.0" x 60.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.24 cfs @ 19.10 hrs HW=98.60' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.00' TW=98.00' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)
↑**3=Orifice/Grate** (Controls 0.00 cfs)
↑**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1000P: Sediment Forebay

Inflow Area = 2.680 ac, 15.99% Impervious, Inflow Depth = 0.06" for 2 YR event
Inflow = 0.02 cfs @ 15.37 hrs, Volume= 0.014 af
Outflow = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af, Atten= 0%, Lag= 1.3 min
Primary = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af
Routed to Pond 2168P : DMH 21+68R to DMH 22+41R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.50' @ 15.39 hrs Surf.Area= 1,397 sf Storage= 6 cf
Flood Elev= 114.50' Surf.Area= 3,367 sf Storage= 4,642 cf

Plug-Flow detention time= 5.6 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 5.4 min (1,102.0 - 1,096.5)

Volume	Invert	Avail.Storage	Storage Description
#1	111.50'	4,642 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
111.50	1,394	0	0
112.00	1,668	766	766
113.00	2,934	2,301	3,067
113.50	3,367	1,575	4,642

Device	Routing	Invert	Outlet Devices
#1	Primary	107.38'	**12.0" Round Culvert** L= 60.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 107.38' / 105.88' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	111.50'	**21.0" x 23.2" Horiz. Orifice/Grate X 3.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 15.39 hrs HW=111.50' TW=105.85' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.02 cfs of 7.20 cfs potential flow)
└─**2=Orifice/Grate** (Weir Controls 0.02 cfs @ 0.22 fps)

Summary for Pond 1100P: Subsurface Detention SC-740 Chamber System #1

50 SC-740 Chambers

[92] Warning: Device #4 is above defined storage
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=266)

Inflow Area = 1.718 ac, 45.40% Impervious, Inflow Depth = 0.62" for 2 YR event
Inflow = 0.95 cfs @ 12.09 hrs, Volume= 0.089 af
Outflow = 0.13 cfs @ 11.98 hrs, Volume= 0.089 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.13 cfs @ 11.98 hrs, Volume= 0.089 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2210P : DMH 22+10R to DMH22+20R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.31' @ 13.56 hrs Surf.Area= 1,848 sf Storage= 1,137 cf
Flood Elev= 121.50' Surf.Area= 1,848 sf Storage= 3,966 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 81.2 min (969.8 - 888.6)

Volume	Invert	Avail.Storage	Storage Description
#1	116.30'	1,669 cf	**25.25'W x 73.20'L x 3.50'H Prismatoid** 6,469 cf Overall - 2,297 cf Embedded = 4,172 cf x 40.0% Voids
#2	116.80'	2,297 cf	**ADS_StormTech SC-740** x 50 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		3,966 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	116.30'	**3.000 in/hr Exfiltration over Surface area**
#2	Primary	116.80'	**12.0" Round Culvert** L= 8.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.80' / 116.80' S= 0.0000 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Device 2	119.50'	**4.0" Vert. Orifice/Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#4	Device 2	120.50'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.13 cfs @ 11.98 hrs HW=116.35' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=116.30' TW=116.80' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1200P: Subsurface Detention SC-740 Chamber System #2

50 SC-740 Chambers

[92] Warning: Device #4 is above defined storage
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=327)

Inflow Area = 1.219 ac, 51.49% Impervious, Inflow Depth = 0.78" for 2 YR event
Inflow = 0.79 cfs @ 12.06 hrs, Volume= 0.079 af
Outflow = 0.13 cfs @ 11.95 hrs, Volume= 0.079 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.13 cfs @ 11.95 hrs, Volume= 0.079 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2495P : DMH24+95R TO DMH25+00

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.81' @ 13.07 hrs Surf.Area= 1,848 sf Storage= 994 cf
Flood Elev= 113.90' Surf.Area= 1,848 sf Storage= 3,966 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 64.7 min (938.2 - 873.5)

Volume	Invert	Avail.Storage	Storage Description
#1	108.90'	1,669 cf	**25.25'W x 73.20'L x 3.50'H Prismatoid** 6,469 cf Overall - 2,297 cf Embedded = 4,172 cf x 40.0% Voids
#2	109.40'	2,297 cf	**ADS_StormTech SC-740** x 50 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		3,966 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	108.90'	**3.000 in/hr Exfiltration over Surface area**
#2	Primary	109.40'	**12.0" Round Culvert** L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.40' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf
#3	Device 2	112.10'	**4.0" Vert. Orifice/Grate X 6.00** C= 0.600 Limited to weir flow at low heads
#4	Device 2	113.10'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.13 cfs @ 11.95 hrs HW=108.95' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=108.90' TW=109.40' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 1295GP: CB12+95G TO CB12+95R

Inflow Area = 1.623 ac, 33.46% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 0.18 cfs @ 12.39 hrs, Volume= 0.035 af
Outflow = 0.18 cfs @ 12.39 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 12.39 hrs, Volume= 0.035 af
Routed to Pond 1295RP : CB12+95R CB12+95L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 137.12' @ 12.37 hrs
Flood Elev= 141.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	136.90'	**15.0" Round Culvert** L= 11.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 136.90' / 136.80' S= 0.0091 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.18 cfs @ 12.39 hrs HW=137.12' TW=136.97' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 0.18 cfs @ 1.86 fps)

Summary for Pond 1295LP: CB12+95L TO CB8+57L

Inflow Area = 2.106 ac, 38.84% Impervious, Inflow Depth = 0.41" for 2 YR event
Inflow = 0.52 cfs @ 12.08 hrs, Volume= 0.073 af
Outflow = 0.52 cfs @ 12.08 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.08 hrs, Volume= 0.073 af
Routed to Pond 857LP : CB8+57L TO CB4+19L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 136.78' @ 12.08 hrs
Flood Elev= 142.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	136.40'	**15.0" Round Culvert** L= 438.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 136.40' / 132.75' S= 0.0083 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.51 cfs @ 12.08 hrs HW=136.78' TW=133.19' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.51 cfs @ 1.65 fps)

Summary for Pond 1295RP: CB12+95R CB12+95L

Inflow Area = 1.920 ac, 36.25% Impervious, Inflow Depth = 0.34" for 2 YR event
Inflow = 0.28 cfs @ 12.32 hrs, Volume= 0.054 af
Outflow = 0.28 cfs @ 12.32 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.32 hrs, Volume= 0.054 af
Routed to Pond 1295LP : CB12+95L TO CB8+57L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 136.98' @ 12.32 hrs
Flood Elev= 142.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	136.70'	**15.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 136.70' / 136.50' S= 0.0091 '/' Cc= 0.900 n= 0.011, Flow Area= 1.23 sf

Primary OutFlow Max=0.28 cfs @ 12.32 hrs HW=136.98' TW=136.73' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.28 cfs @ 1.41 fps)

Summary for Pond 1643LP: CB16+43L TO CB16+43R

Inflow Area = 0.039 ac, 35.38% Impervious, Inflow Depth = 0.39" for 2 YR event
Inflow = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af
Outflow = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af
Routed to Pond 1643RP : CB16+43R TO CB17+85R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 137.70' @ 12.11 hrs
Flood Elev= 141.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	137.65'	**12.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 137.65' / 137.50' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.01 cfs @ 12.11 hrs HW=137.70' TW=136.33' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.01 cfs @ 0.94 fps)

Summary for Pond 1643RP: CB16+43R TO CB17+85R

Inflow Area = 0.228 ac, 50.91% Impervious, Inflow Depth = 0.76" for 2 YR event
Inflow = 0.17 cfs @ 12.12 hrs, Volume= 0.014 af
Outflow = 0.17 cfs @ 12.12 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.12 hrs, Volume= 0.014 af
Routed to Pond 1785RP : CB17+85R TO DMH18+69

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 136.33' @ 12.12 hrs
Flood Elev= 141.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	136.10'	**12.0" Round Culvert** L= 143.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 136.10' / 131.15' S= 0.0346 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.17 cfs @ 12.12 hrs HW=136.33' TW=130.29' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.17 cfs @ 1.28 fps)

Summary for Pond 1785LP: CB17+85L TO CB17+85R

Inflow Area = 0.209 ac, 28.75% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 0.02 cfs @ 12.35 hrs, Volume= 0.005 af
Outflow = 0.02 cfs @ 12.35 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 12.35 hrs, Volume= 0.005 af
Routed to Pond 1785RP : CB17+85R TO DMH18+69

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 131.38' @ 12.35 hrs
Flood Elev= 135.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	131.30'	**12.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 131.30' / 131.15' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 12.35 hrs HW=131.38' TW=130.22' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.02 cfs @ 0.77 fps)

Summary for Pond 1785RP: CB17+85R TO DMH18+69

Inflow Area = 0.574 ac, 42.99% Impervious, Inflow Depth = 0.58" for 2 YR event
Inflow = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af
Outflow = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af
Routed to Pond 1869P : DMH18+69 TO CB19+28L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 130.29' @ 12.10 hrs
Flood Elev= 135.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	130.00'	**12.0" Round Culvert** L= 86.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 130.00' / 127.10' S= 0.0337 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.28 cfs @ 12.10 hrs HW=130.29' TW=127.26' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.28 cfs @ 1.45 fps)

Summary for Pond 1869P: DMH18+69 TO CB19+28L

Inflow Area = 0.574 ac, 42.99% Impervious, Inflow Depth = 0.58" for 2 YR event
Inflow = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af
Outflow = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.10 hrs, Volume= 0.028 af
Routed to Pond 1928LP : CB19+28L TO CB19+79R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 127.26' @ 12.10 hrs
Flood Elev= 132.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	127.00'	**12.0" Round Culvert** L= 55.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 127.00' / 125.10' S= 0.0345 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.28 cfs @ 12.10 hrs HW=127.26' TW=123.63' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.28 cfs @ 1.73 fps)

Summary for Pond 1928LP: CB19+28L TO CB19+79R

Inflow Area = 0.900 ac, 44.03% Impervious, Inflow Depth = 0.59" for 2 YR event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.045 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.09 hrs, Volume= 0.045 af
Routed to Pond 1979RP : CB19+79 TO CB21+73R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 123.63' @ 12.09 hrs
Flood Elev= 129.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.25'	**12.0" Round Culvert** L= 55.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 123.25' / 121.70' S= 0.0282 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.46 cfs @ 12.09 hrs HW=123.63' TW=121.95' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.46 cfs @ 1.67 fps)

Summary for Pond 1928RP: CB19+28R TO CB19+28L

Inflow Area = 0.143 ac, 51.15% Impervious, Inflow Depth = 0.75" for 2 YR event
Inflow = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af
Outflow = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.12 cfs @ 12.07 hrs, Volume= 0.009 af
Routed to Pond 1928LP : CB19+28L TO CB19+79R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 125.59' @ 12.07 hrs
Flood Elev= 129.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	125.40'	**12.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 125.40' / 125.25' S= 0.0068 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.12 cfs @ 12.07 hrs HW=125.59' TW=123.63' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.12 cfs @ 1.16 fps)

Summary for Pond 1979RP: CB19+79 TO CB21+73R

Inflow Area = 0.952 ac, 44.25% Impervious, Inflow Depth = 0.60" for 2 YR event
Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.047 af
Outflow = 0.50 cfs @ 12.09 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min
Primary = 0.50 cfs @ 12.09 hrs, Volume= 0.047 af
Routed to Pond 2173RP : CB21+73R TO DMH21+95R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 121.95' @ 12.09 hrs
Flood Elev= 127.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	121.60'	**12.0" Round Culvert** L= 190.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 121.60' / 117.97' S= 0.0191 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.50 cfs @ 12.09 hrs HW=121.95' TW=118.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.50 cfs @ 2.02 fps)

Summary for Pond 2168P: DMH 21+68R to DMH 22+41R

Inflow Area = 2.680 ac, 15.99% Impervious, Inflow Depth = 0.06" for 2 YR event
Inflow = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af
Outflow = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 15.39 hrs, Volume= 0.014 af
Routed to Pond 2241 : DMH 22+41R to DMH24+86R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.85' @ 15.39 hrs
Flood Elev= 109.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.78'	**12.0" Round Culvert** L= 76.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 105.78' / 104.64' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 15.39 hrs HW=105.85' TW=104.66' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.02 cfs @ 0.91 fps)

Summary for Pond 2173LP: CB21+73L TO CB21+73R

Inflow Area = 0.431 ac, 40.92% Impervious, Inflow Depth = 0.49" for 2 YR event
Inflow = 0.17 cfs @ 12.11 hrs, Volume= 0.018 af
Outflow = 0.17 cfs @ 12.11 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.11 hrs, Volume= 0.018 af
Routed to Pond 2173RP : CB21+73R TO DMH21+95R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 118.70' @ 12.11 hrs
Flood Elev= 122.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.47'	**12.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 118.47' / 118.22' S= 0.0114 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.17 cfs @ 12.11 hrs HW=118.70' TW=118.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.17 cfs @ 1.28 fps)

Summary for Pond 2173RP: CB21+73R TO DMH21+95R

Inflow Area = 1.579 ac, 44.78% Impervious, Inflow Depth = 0.61" for 2 YR event
Inflow = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af
Outflow = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af
Routed to Pond 2195P : DMH21+95R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 118.33' @ 12.10 hrs
Flood Elev= 122.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	117.87'	**18.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 117.87' / 116.80' S= 0.0357 '/' Cc= 0.900 n= 0.011, Flow Area= 1.77 sf

Primary OutFlow Max=0.85 cfs @ 12.10 hrs HW=118.33' TW=117.29' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.85 cfs @ 1.83 fps)

Summary for Pond 2182P: DCB 21+82R TO DMH 21+97R

Inflow Area = 0.140 ac, 52.35% Impervious, Inflow Depth = 0.79" for 2 YR event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af
Outflow = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af
Routed to Pond 2197P : DMH 21+97R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.31' @ 13.56 hrs
Flood Elev= 120.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.90'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.90' / 116.80' S= 0.0100 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.13 cfs @ 12.04 hrs HW=117.12' TW=117.04' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.13 cfs @ 1.52 fps)

Summary for Pond 2195P: DMH21+95R TO Subsurface Detention

Inflow Area = 1.579 ac, 44.78% Impervious, Inflow Depth = 0.61" for 2 YR event
Inflow = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af
Outflow = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 0.85 cfs @ 12.10 hrs, Volume= 0.080 af
Routed to Pond 1100P : Subsurface Detention SC-740 Chamber System #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 117.31' @ 13.55 hrs
Flood Elev= 123.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.80'	**24.0" Round Culvert** L= 8.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.80' / 116.80' S= 0.0000 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.85 cfs @ 12.10 hrs HW=117.29' TW=116.71' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.85 cfs @ 2.15 fps)

Summary for Pond 2197P: DMH 21+97R TO Subsurface Detention

Inflow Area = 0.140 ac, 52.35% Impervious, Inflow Depth = 0.79" for 2 YR event
Inflow = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af
Outflow = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.13 cfs @ 12.04 hrs, Volume= 0.009 af
Routed to Pond 1100P : Subsurface Detention SC-740 Chamber System #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.31' @ 13.56 hrs
Flood Elev= 121.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.80'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.80' / 116.80' S= 0.0000 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.13 cfs @ 12.04 hrs HW=117.04' TW=116.49' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.13 cfs @ 1.34 fps)

Summary for Pond 2210P: DMH 22+10R to DMH22+20R

Inflow Area = 1.718 ac, 45.40% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2220P : DMH22+20R TO DMH22+41R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.80' @ 0.00 hrs
Flood Elev= 121.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.80'	**12.0" Round Culvert** L= 5.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.80' / 116.70' S= 0.0200 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=116.80' TW=108.60' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 2220P: DMH22+20R TO DMH22+41R

Inflow Area = 1.718 ac, 45.40% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2241 : DMH 22+41R to DMH24+86R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.60' @ 0.00 hrs
Flood Elev= 121.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.60'	**12.0" Round Culvert** L= 53.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 108.60' / 104.64' S= 0.0747 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=108.60' TW=104.54' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond 2241: DMH 22+41R to DMH24+86R

Inflow Area = 4.757 ac, 32.95% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Outflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Routed to Pond 2286P : DMH 22+86R to DMH24+78R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.09' @ 12.07 hrs
Flood Elev= 112.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.54'	**12.0" Round Culvert** L= 188.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 104.54' / 101.72' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.13 cfs @ 12.07 hrs HW=105.09' TW=102.17' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.13 cfs @ 2.53 fps)

Summary for Pond 2286P: DMH 22+86R to DMH24+78R

Inflow Area = 4.757 ac, 32.95% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Outflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Routed to Pond 2478P : DMH24+78R to HW24+89R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 102.17' @ 12.07 hrs
Flood Elev= 105.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.62'	**12.0" Round Culvert** L= 54.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 101.62' / 100.81' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.13 cfs @ 12.07 hrs HW=102.17' TW=101.29' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.13 cfs @ 2.53 fps)

Summary for Pond 2440P: TD24+40R TO CB24+60R

Inflow Area = 0.034 ac, 42.82% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 0.02 cfs @ 12.07 hrs, Volume= 0.001 af
Outflow = 0.02 cfs @ 12.07 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 12.07 hrs, Volume= 0.001 af
Routed to Pond 2460P : CB24+60R TO DMH24+85R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 111.97' @ 12.07 hrs
Flood Elev= 115.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	111.90'	**12.0" Round Culvert** L= 62.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 111.90' / 109.90' S= 0.0323 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.02 cfs @ 12.07 hrs HW=111.97' TW=110.06' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.02 cfs @ 0.71 fps)

Summary for Pond 2460LP: CB24+60L TO CB24+60R

Inflow Area = 0.611 ac, 47.56% Impervious, Inflow Depth = 0.66" for 2 YR event
Inflow = 0.33 cfs @ 12.17 hrs, Volume= 0.033 af
Outflow = 0.33 cfs @ 12.17 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 12.17 hrs, Volume= 0.033 af
Routed to Pond 2460RP : CB24+60R TO DMH24+86R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.69' @ 12.17 hrs
Flood Elev= 117.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.40'	**12.0" Round Culvert** L= 22.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 113.40' / 113.18' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.32 cfs @ 12.17 hrs HW=113.69' TW=113.42' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.32 cfs @ 2.54 fps)

Summary for Pond 2460P: CB24+60R TO DMH24+85R

Inflow Area = 0.190 ac, 68.67% Impervious, Inflow Depth = 1.38" for 2 YR event
Inflow = 0.35 cfs @ 12.02 hrs, Volume= 0.022 af
Outflow = 0.35 cfs @ 12.02 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.35 cfs @ 12.02 hrs, Volume= 0.022 af
Routed to Pond 2485P : DMH24+85R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.09' @ 12.02 hrs
Flood Elev= 113.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.80'	**12.0" Round Culvert** L= 28.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 109.80' / 109.50' S= 0.0107 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.35 cfs @ 12.02 hrs HW=110.09' TW=109.73' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.35 cfs @ 1.83 fps)

Summary for Pond 2460RP: CB24+60R TO DMH24+86R

Inflow Area = 0.931 ac, 48.88% Impervious, Inflow Depth = 0.69" for 2 YR event
Inflow = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af
Outflow = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af
Routed to Pond 2468P : DMH24+86R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.43' @ 12.11 hrs
Flood Elev= 117.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.08'	**12.0" Round Culvert** L= 58.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 113.08' / 109.50' S= 0.0617 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.49 cfs @ 12.11 hrs HW=113.43' TW=109.77' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.49 cfs @ 2.01 fps)

Summary for Pond 2468P: DMH24+86R TO Subsurface Detention

Inflow Area = 0.931 ac, 48.88% Impervious, Inflow Depth = 0.69" for 2 YR event
Inflow = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af
Outflow = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min
Primary = 0.49 cfs @ 12.11 hrs, Volume= 0.053 af
Routed to Pond 1200P : Subsurface Detention SC-740 Chamber System #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.81' @ 13.05 hrs
Flood Elev= 117.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.40'	**24.0" Round Culvert** L= 8.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.40' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=0.49 cfs @ 12.11 hrs HW=109.77' TW=109.38' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.49 cfs @ 1.83 fps)

Summary for Pond 2474P: DMH24+74R TO DMH24+85R

Inflow Area = 0.098 ac, 43.00% Impervious, Inflow Depth = 0.53" for 2 YR event
Inflow = 0.05 cfs @ 12.07 hrs, Volume= 0.004 af
Outflow = 0.05 cfs @ 12.07 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.05 cfs @ 12.07 hrs, Volume= 0.004 af
Routed to Pond 2485P : DMH24+85R TO Subsurface Detention

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 110.01' @ 12.07 hrs
Flood Elev= 113.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.90'	**12.0" Round Culvert** L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.90' / 109.50' S= 0.0333 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.05 cfs @ 12.07 hrs HW=110.01' TW=109.70' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.05 cfs @ 1.10 fps)

Summary for Pond 2478P: DMH24+78R to HW24+89R

Inflow Area = 5.975 ac, 36.73% Impervious, Inflow Depth = 0.20" for 2 YR event
Inflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Outflow = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.13 cfs @ 12.07 hrs, Volume= 0.101 af
Routed to Pond 900P : POND 900

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 101.29' @ 12.07 hrs
Flood Elev= 103.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.71'	**12.0" Round Culvert** L= 14.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 100.71' / 100.50' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.13 cfs @ 12.07 hrs HW=101.29' TW=98.19' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.13 cfs @ 3.45 fps)

Summary for Pond 2485P: DMH24+85R TO Subsurface Detention

Inflow Area = 0.288 ac, 59.95% Impervious, Inflow Depth = 1.09" for 2 YR event
Inflow = 0.38 cfs @ 12.03 hrs, Volume= 0.026 af
Outflow = 0.38 cfs @ 12.03 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.03 hrs, Volume= 0.026 af
Routed to Pond 1200P : Subsurface Detention SC-740 Chamber System #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.81' @ 13.07 hrs
Flood Elev= 114.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.40'	**24.0" Round Culvert** L= 6.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.40' S= 0.0000 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=0.38 cfs @ 12.03 hrs HW=109.73' TW=109.10' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 0.38 cfs @ 1.73 fps)

Summary for Pond 2495P: DMH24+95R TO DMH25+00

Inflow Area = 1.219 ac, 51.49% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2505P : DMH24+82R to DMH24+78R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.40' @ 0.00 hrs
Flood Elev= 114.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.40'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.20' S= 0.0200 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=109.40' TW=103.60' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond 2505P: DMH24+82R to DMH24+78R

Inflow Area = 1.219 ac, 51.49% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 2478P : DMH24+78R to HW24+89R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.60' @ 0.00 hrs
Flood Elev= 114.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.60'	**12.0" Round Culvert** L= 43.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 103.60' / 100.81' S= 0.0649 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=103.60' TW=100.71' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Summary for Pond 2625RP: DMH26+25R TO HW26+25

Inflow Area = 1.290 ac, 65.27% Impervious, Inflow Depth = 1.36" for 2 YR event
Inflow = 1.73 cfs @ 12.07 hrs, Volume= 0.146 af
Outflow = 1.73 cfs @ 12.07 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min
Primary = 1.73 cfs @ 12.07 hrs, Volume= 0.146 af
Routed to Pond 900P : POND 900

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.52' @ 12.07 hrs
Flood Elev= 104.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	100.80'	**12.0" Round Culvert** L= 15.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 100.80' / 100.50' S= 0.0200 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=1.73 cfs @ 12.07 hrs HW=101.51' TW=98.19' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.73 cfs @ 2.88 fps)

Summary for Pond 2723P: DMH27+23R TO DMH26+25R

Inflow Area = 0.931 ac, 51.89% Impervious, Inflow Depth = 0.77" for 2 YR event
Inflow = 0.63 cfs @ 12.10 hrs, Volume= 0.059 af
Outflow = 0.63 cfs @ 12.10 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
Primary = 0.63 cfs @ 12.10 hrs, Volume= 0.059 af
Routed to Pond 2625RP : DMH26+25R TO HW26+25

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.80' @ 12.10 hrs
Flood Elev= 106.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.40'	**12.0" Round Culvert** L= 93.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 102.40' / 100.90' S= 0.0161 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.63 cfs @ 12.10 hrs HW=102.80' TW=101.49' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.63 cfs @ 2.15 fps)

Summary for Pond 2723RP: TD27+23R TO DMH27+23R

Trench Drain will connect to service line between CB27+30R and DMH27+23R.

Inflow Area = 0.103 ac, 61.44% Impervious, Inflow Depth = 1.05" for 2 YR event
Inflow = 0.13 cfs @ 12.07 hrs, Volume= 0.009 af
Outflow = 0.13 cfs @ 12.07 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.13 cfs @ 12.07 hrs, Volume= 0.009 af
Routed to Pond 2723P : DMH27+23R TO DMH26+25R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 104.77' @ 12.07 hrs
Flood Elev= 109.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.60'	**12.0" Round Culvert** L= 39.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 104.60' / 102.50' S= 0.0538 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.13 cfs @ 12.07 hrs HW=104.77' TW=102.79' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.13 cfs @ 1.41 fps)

Summary for Pond 2730LP: CB27+30L TO 27+30R

Inflow Area = 0.551 ac, 49.95% Impervious, Inflow Depth = 0.70" for 2 YR event
Inflow = 0.33 cfs @ 12.16 hrs, Volume= 0.032 af
Outflow = 0.33 cfs @ 12.16 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
Primary = 0.33 cfs @ 12.16 hrs, Volume= 0.032 af
Routed to Pond 2730RP : CB27+30R TO DMH27+23R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.70' @ 12.15 hrs
Flood Elev= 113.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.40'	**12.0" Round Culvert** L= 22.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.40' / 109.18' S= 0.0100 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.33 cfs @ 12.16 hrs HW=109.70' TW=109.43' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.33 cfs @ 2.55 fps)

Summary for Pond 2730RP: CB27+30R TO DMH27+23R

Inflow Area = 0.828 ac, 50.70% Impervious, Inflow Depth = 0.73" for 2 YR event
Inflow = 0.51 cfs @ 12.11 hrs, Volume= 0.050 af
Outflow = 0.51 cfs @ 12.11 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min
Primary = 0.51 cfs @ 12.11 hrs, Volume= 0.050 af
Routed to Pond 2723P : DMH27+23R TO DMH26+25R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 109.44' @ 12.11 hrs
Flood Elev= 113.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	109.08'	**12.0" Round Culvert** L= 125.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 109.08' / 102.50' S= 0.0526 '/' Cc= 0.900 n= 0.011, Flow Area= 0.79 sf

Primary OutFlow Max=0.51 cfs @ 12.11 hrs HW=109.44' TW=102.80' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.51 cfs @ 2.03 fps)

Summary for Pond 3018GP: CB30+18G TO CB30+20L

Inflow Area = 16.325 ac, 22.50% Impervious, Inflow Depth = 0.21" for 2 YR event
Inflow = 3.04 cfs @ 12.08 hrs, Volume= 0.290 af
Outflow = 3.04 cfs @ 12.08 hrs, Volume= 0.290 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.08 hrs, Volume= 0.290 af
Routed to Pond 3020LP : CB30+20L TO CB30+20R

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.21' @ 12.08 hrs
Flood Elev= 107.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.20'	**24.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 102.20' / 102.10' S= 0.0100 '/' Cc= 0.900

n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.03 cfs @ 12.08 hrs HW=103.21' TW=102.95' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.03 cfs @ 1.91 fps)

Summary for Pond 3020LP: CB30+20L TO CB30+20R

Inflow Area = 17.313 ac, 24.24% Impervious, Inflow Depth = 0.25" for 2 YR event
Inflow = 3.57 cfs @ 12.09 hrs, Volume= 0.355 af
Outflow = 3.57 cfs @ 12.09 hrs, Volume= 0.355 af, Atten= 0%, Lag= 0.0 min
Primary = 3.57 cfs @ 12.09 hrs, Volume= 0.355 af
Routed to Pond 3020RP : CB30+20R TO HW29+63

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.96' @ 12.09 hrs
Flood Elev= 108.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.00'	**24.0" Round Culvert** L= 22.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 102.00' / 101.80' S= 0.0091 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.56 cfs @ 12.09 hrs HW=102.96' TW=102.54' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.56 cfs @ 3.52 fps)

Summary for Pond 3020RP: CB30+20R TO HW29+63

Inflow Area = 17.545 ac, 24.73% Impervious, Inflow Depth = 0.26" for 2 YR event
Inflow = 3.89 cfs @ 12.09 hrs, Volume= 0.379 af
Outflow = 3.89 cfs @ 12.09 hrs, Volume= 0.379 af, Atten= 0%, Lag= 0.0 min
Primary = 3.89 cfs @ 12.09 hrs, Volume= 0.379 af
Routed to Pond 900P : POND 900

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.54' @ 12.09 hrs
Flood Elev= 108.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.70'	**24.0" Round Culvert** L= 135.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 101.70' / 100.50' S= 0.0089 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.89 cfs @ 12.09 hrs HW=102.54' TW=98.20' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.89 cfs @ 3.12 fps)

Summary for Pond 3200P: CB3200 TO CB320

Inflow Area = 0.081 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 YR event
Inflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
Routed to Pond 320P : CB320 TO CB315

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.63' @ 12.07 hrs
Flood Elev= 111.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.15'	**15.0" Round Culvert** L= 90.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 108.15' / 107.70' S= 0.0050 '/' Cc= 0.900 n= 0.009, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 24.02 hrs HW=108.15' TW=107.55' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.00 cfs @ 0.05 fps)

Summary for Pond 100125P: DMH1001+25 TO DMH1003+11

Inflow Area = 10.125 ac, 28.38% Impervious, Inflow Depth = 0.32" for 2 YR event
Inflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Outflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Routed to Pond 100311P : DMH1003+11C TO CB30+18G

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 108.33' @ 12.08 hrs
Flood Elev= 121.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.50'	**24.0" Round Culvert** L= 194.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.50' / 103.60' S= 0.0201 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.03 cfs @ 12.08 hrs HW=108.33' TW=104.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.03 cfs @ 2.45 fps)

Summary for Pond 100311P: DMH1003+11C TO CB30+18G

Inflow Area = 10.125 ac, 28.38% Impervious, Inflow Depth = 0.32" for 2 YR event
Inflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Outflow = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.08 hrs, Volume= 0.271 af
Routed to Pond 3018GP : CB30+18G TO CB30+20L

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 104.33' @ 12.08 hrs
Flood Elev= 108.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.50'	**24.0" Round Culvert** L= 130.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 103.50' / 102.30' S= 0.0092 '/' Cc= 0.900 n= 0.011, Flow Area= 3.14 sf

Primary OutFlow Max=3.03 cfs @ 12.08 hrs HW=104.33' TW=103.21' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.03 cfs @ 2.45 fps)

Summary for Pond BMP-1: BMP-1 STORMTECH

DESIGN BY BOHLER
Add 0.705 feet to NAVD88 to get NGVD29 elevations.

Inflow Area = 0.958 ac, 78.01% Impervious, Inflow Depth = 2.20" for 2 YR event
Inflow = 2.96 cfs @ 12.00 hrs, Volume= 0.176 af
Outflow = 0.96 cfs @ 12.22 hrs, Volume= 0.139 af, Atten= 68%, Lag= 13.5 min
Discarded = 0.01 cfs @ 8.35 hrs, Volume= 0.056 af
Primary = 0.95 cfs @ 12.22 hrs, Volume= 0.083 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.02' @ 12.22 hrs Surf.Area= 2,035 sf Storage= 3,466 cf

Plug-Flow detention time= 606.8 min calculated for 0.139 af (79% of inflow)
Center-of-Mass det. time= 529.2 min (1,326.5 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	102.55'	1,943 cf	**30.00'W x 67.82'L x 3.75'H Field A** 7,629 cf Overall - 2,773 cf Embedded = 4,856 cf x 40.0% Voids
#2A	103.05'	2,773 cf	**ADS_StormTech SC-800 +Cap** x 54 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 54 Chambers in 6 Rows Cap Storage= 3.4 cf x 2 x 6 rows = 41.0 cf
		4,716 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	102.55'	**0.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	103.05'	**12.0" Round Culvert** L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.05' / 102.85' S= 0.0182 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	104.85'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Discarded OutFlow Max=0.01 cfs @ 8.35 hrs HW=102.59' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.95 cfs @ 12.22 hrs HW=105.02' TW=101.51' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.95 cfs of 4.59 cfs potential flow)
└**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.95 cfs @ 1.37 fps)

Summary for Pond C3P: CBC3 to CB509

Inflow Area = 2.082 ac, 37.92% Impervious, Inflow Depth = 0.44" for 2 YR event
Inflow = 0.70 cfs @ 12.09 hrs, Volume= 0.076 af
Outflow = 0.70 cfs @ 12.09 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.09 hrs, Volume= 0.076 af
Routed to Pond 509P : CB509 to CB508

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 114.23' @ 12.09 hrs
Flood Elev= 119.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.90'	**18.0" Round Culvert** L= 183.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 113.90' / 108.50' S= 0.0295 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.70 cfs @ 12.09 hrs HW=114.23' TW=108.81' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.70 cfs @ 2.44 fps)

Summary for Pond C4P: CBC4 to CBC3

Inflow Area = 1.170 ac, 43.43% Impervious, Inflow Depth = 0.55" for 2 YR event
Inflow = 0.61 cfs @ 12.08 hrs, Volume= 0.054 af
Outflow = 0.61 cfs @ 12.08 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.61 cfs @ 12.08 hrs, Volume= 0.054 af
Routed to Pond C3P : CBC3 to CB509

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 116.46' @ 12.08 hrs
Flood Elev= 122.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.10'	**15.0" Round Culvert** L= 212.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.10' / 114.15' S= 0.0092 '/' Cc= 0.900 n= 0.009 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.61 cfs @ 12.08 hrs HW=116.46' TW=114.23' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.61 cfs @ 2.05 fps)

Summary for Pond C5P: CBC5 to DMHC6

Inflow Area = 0.360 ac, 51.62% Impervious, Inflow Depth = 0.75" for 2 YR event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 0.022 af
Outflow = 0.28 cfs @ 12.08 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.08 hrs, Volume= 0.022 af
Routed to Pond C6P : DMHC6 to CBC4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 118.25' @ 12.08 hrs
Flood Elev= 123.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.00'	**15.0" Round Culvert** L= 66.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 118.00' / 117.40' S= 0.0091 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=0.28 cfs @ 12.08 hrs HW=118.25' TW=117.14' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.28 cfs @ 2.43 fps)

Summary for Pond C6P: DMHC6 to CBC4

Inflow Area = 0.759 ac, 38.76% Impervious, Inflow Depth = 0.45" for 2 YR event
Inflow = 0.28 cfs @ 12.08 hrs, Volume= 0.028 af
Outflow = 0.28 cfs @ 12.08 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.08 hrs, Volume= 0.028 af
Routed to Pond C4P : CBC4 to CBC3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 117.14' @ 12.08 hrs
Flood Elev= 122.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	116.90'	**15.0" Round Culvert** L= 32.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 116.90' / 116.20' S= 0.0219 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=0.28 cfs @ 12.08 hrs HW=117.14' TW=116.46' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.28 cfs @ 1.68 fps)

Summary for Pond C7P: CBC7 to DMHC6

Inflow Area = 0.400 ac, 27.18% Impervious, Inflow Depth = 0.18" for 2 YR event
Inflow = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af
Outflow = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af
Routed to Pond C6P : DMHC6 to CBC4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 118.63' @ 12.37 hrs
Flood Elev= 127.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	118.55'	**15.0" Round Culvert** L= 189.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 118.55' / 117.00' S= 0.0082 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=0.02 cfs @ 12.37 hrs HW=118.63' TW=117.07' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.02 cfs @ 1.15 fps)

Summary for Pond C8P: CBC8 to CBC7

Inflow Area = 0.400 ac, 27.18% Impervious, Inflow Depth = 0.18" for 2 YR event
Inflow = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af
Outflow = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min
Primary = 0.02 cfs @ 12.37 hrs, Volume= 0.006 af
Routed to Pond C7P : CBC7 to DMHC6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 119.07' @ 12.37 hrs
Flood Elev= 128.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	119.00'	**15.0" Round Culvert** L= 33.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 119.00' / 118.65' S= 0.0106 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.23 sf

Primary OutFlow Max=0.02 cfs @ 12.37 hrs HW=119.07' TW=118.63' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.02 cfs @ 1.25 fps)

Summary for Pond RD1Pa: RD1a TO CB327

Inflow Area = 0.120 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.38 cfs @ 12.07 hrs, Volume= 0.029 af
Outflow = 0.38 cfs @ 12.07 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.07 hrs, Volume= 0.029 af
Routed to Pond 326P : CB327 TO CB326

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 125.34' @ 12.07 hrs
Flood Elev= 127.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	125.00'	**12.0" Round Culvert** L= 43.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 125.00' / 124.14' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.38 cfs @ 12.07 hrs HW=125.34' TW=124.42' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.38 cfs @ 1.58 fps)

Summary for Pond RD1Pb: RD1b to CB 324

Inflow Area = 0.085 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af
Outflow = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.07 hrs, Volume= 0.021 af
Routed to Pond 323P : CB324 to CB323

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 123.79' @ 12.07 hrs
Flood Elev= 127.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	123.50'	**12.0" Round Culvert** L= 10.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 123.50' / 122.70' S= 0.0800 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.27 cfs @ 12.07 hrs HW=123.79' TW=121.82' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.27 cfs @ 1.44 fps)

Summary for Pond RD2Pa: RD2a to CB333

Inflow Area = 0.097 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af
Outflow = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 12.07 hrs, Volume= 0.024 af
Routed to Pond 333P : CB333 TO CB331

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.51' @ 12.07 hrs
Flood Elev= 115.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.20'	**12.0" Round Culvert** L= 23.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.20' / 112.97' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.31 cfs @ 12.07 hrs HW=113.51' TW=113.01' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.31 cfs @ 1.49 fps)

Summary for Pond RD2Pb: RD2b TO CB322

Inflow Area = 0.095 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.30 cfs @ 12.07 hrs, Volume= 0.023 af
Outflow = 0.30 cfs @ 12.07 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.07 hrs, Volume= 0.023 af
Routed to Pond 321P : CB321 TO CB320

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 113.50' @ 12.07 hrs
Flood Elev= 115.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	113.20'	**12.0" Round Culvert** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 113.20' / 112.52' S= 0.0340 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.30 cfs @ 12.07 hrs HW=113.50' TW=113.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.30 cfs @ 1.48 fps)

Summary for Pond RD3P: RD3 TO CB808

Inflow Area = 0.419 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af
Outflow = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min
Primary = 1.32 cfs @ 12.07 hrs, Volume= 0.102 af
Routed to Pond 808P : CB808 TO CB807

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 107.20' @ 12.07 hrs
Flood Elev= 113.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	106.50'	**12.0" Round Culvert** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 106.50' / 106.35' S= 0.0214 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=1.32 cfs @ 12.07 hrs HW=107.20' TW=106.73' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.32 cfs @ 2.25 fps)

Summary for Pond RD4P: RD4 TO CB807

Inflow Area = 0.012 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af
Outflow = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.04 cfs @ 12.07 hrs, Volume= 0.003 af
Routed to Pond 807P : CB807 TO CB806

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 108.10' @ 12.07 hrs
Flood Elev= 113.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	108.00'	**12.0" Round Culvert** L= 34.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 108.00' / 106.50' S= 0.0441 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=0.04 cfs @ 12.07 hrs HW=108.10' TW=105.85' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.04 cfs @ 0.86 fps)

Summary for Pond RD5P: RD5 TO CB806

Inflow Area = 0.429 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 1.35 cfs @ 12.07 hrs, Volume= 0.104 af
Outflow = 1.35 cfs @ 12.07 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min
Primary = 1.35 cfs @ 12.07 hrs, Volume= 0.104 af
Routed to Pond 806P : CB806 TO CB805

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 106.71' @ 12.07 hrs
Flood Elev= 113.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	106.00'	**12.0" Round Culvert** L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 106.00' / 103.45' S= 0.0567 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=1.35 cfs @ 12.07 hrs HW=106.71' TW=103.79' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.35 cfs @ 2.26 fps)

Summary for Pond RD6P: RD6 TO CB805

Inflow Area = 0.222 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.70 cfs @ 12.07 hrs, Volume= 0.054 af
Outflow = 0.70 cfs @ 12.07 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.07 hrs, Volume= 0.054 af
Routed to Pond 805P : CB805 TO HW802

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 103.48' @ 12.07 hrs
Flood Elev= 113.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.00'	**12.0" Round Culvert** L= 60.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 103.00' / 101.60' S= 0.0233 '/' Cc= 0.900 n= 0.009, Flow Area= 0.79 sf

Primary OutFlow Max=0.70 cfs @ 12.07 hrs HW=103.48' TW=102.16' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.70 cfs @ 1.87 fps)

Summary for Pond RD8P: RD8 TO CB107

Inflow Area = 0.053 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af
Outflow = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.07 hrs, Volume= 0.013 af
Routed to Pond 107P : CB107 TO HW106

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.05' @ 12.07 hrs
Flood Elev= 107.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	101.80'	**8.0" Round Culvert** L= 28.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 101.80' / 101.50' S= 0.0107 '/' Cc= 0.900 n= 0.009, Flow Area= 0.35 sf

Primary OutFlow Max=0.17 cfs @ 12.07 hrs HW=102.05' TW=101.72' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.17 cfs @ 1.36 fps)

Summary for Pond RD9P: RD9 TO CB405

Inflow Area = 0.036 ac,100.00% Impervious, Inflow Depth = 2.91" for 2 YR event
Inflow = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af
Outflow = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Primary = 0.11 cfs @ 12.07 hrs, Volume= 0.009 af
Routed to Pond 405P : CB405 TO HW400

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.51' @ 12.07 hrs
Flood Elev= 107.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	102.30'	**8.0" Round Culvert** L= 32.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 102.30' / 102.00' S= 0.0094 '/' Cc= 0.900 n= 0.009, Flow Area= 0.35 sf

Primary OutFlow Max=0.11 cfs @ 12.07 hrs HW=102.51' TW=102.11' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.11 cfs @ 1.23 fps)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SUBCATCHMENT 1 Runoff Area=116,725 sf 15.99% Impervious Runoff Depth=0.45"
Flow Length=928' Tc=34.5 min CN=47 Runoff=0.40 cfs 0.100 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=1.35"
Flow Length=80' Tc=8.0 min CN=63 Runoff=0.54 cfs 0.045 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=176,084 sf 10.04% Impervious Runoff Depth=2.58"
Flow Length=645' Tc=9.0 min CN=79 Runoff=11.03 cfs 0.869 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,548 sf 0.00% Impervious Runoff Depth=2.00"
Flow Length=416' Tc=9.0 min CN=72 Runoff=3.66 cfs 0.293 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.01"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.02 cfs 0.008 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=0.49"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=8.26 cfs 1.939 af

Subcatchment 30S: SUBCATCHMENT 30 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=1.48"
Flow Length=154' Slope=0.0200 '/' Tc=23.5 min CN=65 Runoff=1.13 cfs 0.137 af

Subcatchment 40S: SUBCATCHMENT 40 Runoff Area=152,210 sf 0.00% Impervious Runoff Depth=0.45"
Flow Length=452' Tc=14.5 min CN=47 Runoff=0.68 cfs 0.131 af

Subcatchment 50S: SUBCATCHMENT50 Runoff Area=125,909 sf 4.33% Impervious Runoff Depth=0.05"
Flow Length=987' Tc=24.8 min CN=35 Runoff=0.02 cfs 0.013 af

Subcatchment 100S: Flow to Detention Runoff Area=42,732 sf 0.00% Impervious Runoff Depth=1.85"
Tc=5.0 min CN=70 Runoff=2.15 cfs 0.151 af

Subcatchment 101AS: Flow to Detention Runoff Area=12,152 sf 1.03% Impervious Runoff Depth=2.76"
Tc=5.0 min CN=81 Runoff=0.93 cfs 0.064 af

Subcatchment 101os: North Side of Mast Runoff Area=17,404 sf 27.18% Impervious Runoff Depth=0.74"
Tc=5.0 min CN=53 Runoff=0.25 cfs 0.025 af

Subcatchment 102os: North Side of Mast Runoff Area=15,661 sf 51.62% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=69 Runoff=0.75 cfs 0.053 af

Subcatchment 103os: Mast Road East to Runoff Area=12,002 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.32 cfs 0.103 af

Subcatchment 107S: Flow to CB107 Runoff Area=7,160 sf 86.56% Impervious Runoff Depth=4.27"
Tc=5.0 min CN=96 Runoff=0.78 cfs 0.059 af

Subcatchment 108S: Flow to CB108 Runoff Area=20,254 sf 84.37% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=2.17 cfs 0.161 af

Subcatchment 148GS: SUBCATCHMENT Runoff Area=24,508 sf 16.32% Impervious Runoff Depth=0.32"
Flow Length=178' Tc=6.3 min CN=44 Runoff=0.07 cfs 0.015 af

Subcatchment 148RS: SUBCATCHMENT Runoff Area=4,316 sf 70.81% Impervious Runoff Depth=2.76"
Tc=5.0 min CN=81 Runoff=0.33 cfs 0.023 af

Subcatchment 200os: Mast Road East to Runoff Area=9,931 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.09 cfs 0.086 af

Subcatchment 205S: Flow to CB205 Runoff Area=21,237 sf 94.10% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=97 Runoff=2.32 cfs 0.178 af

Subcatchment 206S: Flow to CB206 Runoff Area=10,095 sf 95.84% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=97 Runoff=1.10 cfs 0.085 af

Subcatchment 210S: Flow to CB210 Runoff Area=7,732 sf 75.04% Impervious Runoff Depth=3.73"
Tc=5.0 min CN=91 Runoff=0.77 cfs 0.055 af

Subcatchment 215S: Flow to DCB215 Runoff Area=28,399 sf 86.64% Impervious Runoff Depth=3.94"
Tc=5.0 min CN=93 Runoff=2.95 cfs 0.214 af

Subcatchment 220S: Flow to CB220 Runoff Area=15,024 sf 95.13% Impervious Runoff Depth=4.27"
Tc=5.0 min CN=96 Runoff=1.63 cfs 0.123 af

Subcatchment 300os: East Side of NH Runoff Area=2,933 sf 81.69% Impervious Runoff Depth=3.32"
Tc=5.0 min CN=87 Runoff=0.27 cfs 0.019 af

Subcatchment 303GS: SUBCATCHMENT Runoff Area=10,545 sf 75.15% Impervious Runoff Depth=2.94"
Tc=5.0 min CN=83 Runoff=0.86 cfs 0.059 af

Subcatchment 304RS: SUBCATCHMENT Runoff Area=5,196 sf 51.33% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=69 Runoff=0.25 cfs 0.018 af

Subcatchment 305S: Flow to CB305 Runoff Area=7,928 sf 84.02% Impervious Runoff Depth=3.84"
Tc=5.0 min CN=92 Runoff=0.81 cfs 0.058 af

Subcatchment 310S: Flow to CB310 Runoff Area=145,473 sf 12.09% Impervious Runoff Depth=0.45"
Flow Length=469' Tc=13.1 min CN=47 Runoff=0.66 cfs 0.125 af

Subcatchment 315S: Flow to CB315 Runoff Area=116,325 sf 6.81% Impervious Runoff Depth=0.15"
Flow Length=537' Tc=9.9 min CN=39 Runoff=0.06 cfs 0.034 af

Subcatchment 316S: Flow to CB316 Runoff Area=3,776 sf 88.61% Impervious Runoff Depth=4.05"
Tc=5.0 min CN=94 Runoff=0.40 cfs 0.029 af

Subcatchment 320S: Flow to CB320 Runoff Area=3,127 sf 97.95% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=97 Runoff=0.34 cfs 0.026 af

Subcatchment 320Sa: Porous Walk Runoff Area=404 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment 321S: Flow to CB322 Runoff Area=1,903 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 321Sa: Porous Walk Runoff Area=456 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment 322S: Flow to CB323 Runoff Area=4,253 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 323S: Flow to CB324 Runoff Area=1,844 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 323Sa: Porous Walk Runoff Area=498 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment 324S: Flow to CB325 Runoff Area=2,213 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment 325S: Flow to CB324 Runoff Area=1,665 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.18 cfs 0.014 af

Subcatchment 326S: Flow to CB325 Runoff Area=34,308 sf 60.15% Impervious Runoff Depth=2.16"
Tc=5.0 min CN=74 Runoff=2.05 cfs 0.142 af

Subcatchment 326Sa: Porous Walk Runoff Area=1,787 sf 44.21% Impervious Runoff Depth=1.48"
Tc=5.0 min CN=65 Runoff=0.07 cfs 0.005 af

Subcatchment 326Sb: Porous Walk Runoff Area=57 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.000 af

Subcatchment 326Sc: Porous Walk Runoff Area=53 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.000 af

Subcatchment 330S: Flow to CB330 Runoff Area=3,294 sf 94.11% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=0.35 cfs 0.026 af

Subcatchment 330Sa: Porous Walk Runoff Area=450 sf 41.33% Impervious Runoff Depth=1.35"
Tc=5.0 min CN=63 Runoff=0.02 cfs 0.001 af

Subcatchment 330Sb: Porous Walk Runoff Area=218 sf 39.91% Impervious Runoff Depth=1.35"
Tc=5.0 min CN=63 Runoff=0.01 cfs 0.001 af

Subcatchment 331S: Flow to CB331 Runoff Area=10,020 sf 66.41% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=78 Runoff=0.70 cfs 0.048 af

Subcatchment 331Sa: Porous Walk Runoff Area=1,084 sf 44.83% Impervious Runoff Depth=1.48"
Tc=5.0 min CN=65 Runoff=0.04 cfs 0.003 af

Subcatchment 332S: Flow to CB332 Runoff Area=1,679 sf 74.75% Impervious Runoff Depth=2.94"
Tc=5.0 min CN=83 Runoff=0.14 cfs 0.009 af

Subcatchment 332Sa: Porous Walk Runoff Area=1,526 sf 62.19% Impervious Runoff Depth=2.32"
Tc=5.0 min CN=76 Runoff=0.10 cfs 0.007 af

Subcatchment 333S: Flow to CB332 Runoff Area=2,063 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 333Sa: Porous Walk Runoff Area=1,005 sf 32.34% Impervious Runoff Depth=1.03"
Tc=5.0 min CN=58 Runoff=0.02 cfs 0.002 af

Subcatchment 335S: Flow to CB335 Runoff Area=4,263 sf 62.80% Impervious Runoff Depth=2.32"
Tc=5.0 min CN=76 Runoff=0.28 cfs 0.019 af

Subcatchment 340S: Flow to CB340 Runoff Area=2,616 sf 72.90% Impervious Runoff Depth=2.85"
Tc=5.0 min CN=82 Runoff=0.21 cfs 0.014 af

Subcatchment 350S: Flow to CB350 Runoff Area=3,138 sf 83.08% Impervious Runoff Depth=3.42"
Tc=5.0 min CN=88 Runoff=0.29 cfs 0.021 af

Subcatchment 351S: Flow to CB351 Runoff Area=2,600 sf 93.15% Impervious Runoff Depth=4.05"
Tc=5.0 min CN=94 Runoff=0.27 cfs 0.020 af

Subcatchment 360S: Flow to CB360 Runoff Area=3,507 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.39 cfs 0.030 af

Subcatchment 365S: Flow to CB365 Runoff Area=3,724 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment 400os: East Side of NH Runoff Area=13,932 sf 55.92% Impervious Runoff Depth=3.32"
Tc=5.0 min CN=87 Runoff=1.27 cfs 0.089 af

Subcatchment 402GS: SUBCATCHMENT Runoff Area=196,506 sf 11.43% Impervious Runoff Depth=0.25"
Flow Length=919' Tc=16.0 min CN=42 Runoff=0.27 cfs 0.093 af

Subcatchment 405S: Flow to CB405 Runoff Area=6,080 sf 83.22% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=0.65 cfs 0.048 af

Subcatchment 410S: Flow to DCB410 Runoff Area=16,744 sf 86.87% Impervious Runoff Depth=4.27"
Tc=5.0 min CN=96 Runoff=1.81 cfs 0.137 af

Subcatchment 415S: Flow to CB415 Runoff Area=5,205 sf 79.02% Impervious Runoff Depth=4.05"
Tc=5.0 min CN=94 Runoff=0.55 cfs 0.040 af

Subcatchment 416S: Flow to CB416 Runoff Area=7,343 sf 80.88% Impervious Runoff Depth=4.05"
Tc=5.0 min CN=94 Runoff=0.77 cfs 0.057 af

Subcatchment 419LS: SUBCATCHMENT Runoff Area=32,282 sf 58.86% Impervious Runoff Depth=2.16"
Tc=5.0 min CN=74 Runoff=1.93 cfs 0.133 af

Subcatchment 419RS: SUBCATCHMENT Runoff Area=27,019 sf 48.53% Impervious Runoff Depth=1.70"
Tc=5.0 min CN=68 Runoff=1.23 cfs 0.088 af

Subcatchment 500os: Drive to CB14 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=3.73"
Tc=0.0 min CN=91 Runoff=4.88 cfs 0.298 af

Subcatchment 507S: Flow to CB507 Runoff Area=3,338 sf 99.70% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.37 cfs 0.029 af

Subcatchment 508Aos: Flow to CBC4 Runoff Area=17,911 sf 52.06% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=69 Runoff=0.86 cfs 0.061 af

Subcatchment 508Bos: West Side of NH Runoff Area=39,695 sf 30.84% Impervious Runoff Depth=0.97"
Tc=5.0 min CN=57 Runoff=0.88 cfs 0.074 af

Subcatchment 508S: Flow to CB508 Runoff Area=15,987 sf 41.84% Impervious Runoff Depth=1.41"
Tc=5.0 min CN=64 Runoff=0.59 cfs 0.043 af

Subcatchment 600os: Drive to CB15 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment 600S: POND 600 Runoff Area=58,507 sf 0.88% Impervious Runoff Depth=1.28"
Tc=5.0 min CN=62 Runoff=1.90 cfs 0.143 af

Subcatchment 700os: East Side of NH Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=3.32"
Tc=5.0 min CN=87 Runoff=2.23 cfs 0.155 af

Subcatchment 710S: Flow to CB710 Runoff Area=4,542 sf 89.56% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=0.49 cfs 0.036 af

Subcatchment 711S: Flow to CB711 Runoff Area=4,357 sf 88.02% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=0.47 cfs 0.035 af

Subcatchment 715S: Flow to CB715 Runoff Area=3,324 sf 61.88% Impervious Runoff Depth=3.63"
Tc=5.0 min CN=90 Runoff=0.33 cfs 0.023 af

Subcatchment 720S: Flow to DCB720 Runoff Area=17,720 sf 87.10% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=1.89 cfs 0.141 af

Subcatchment 725S: Flows to CB725 Runoff Area=27,585 sf 84.41% Impervious Runoff Depth=4.16"
Tc=5.0 min CN=95 Runoff=2.95 cfs 0.220 af

Subcatchment 801S: HW801 TO HW800 Runoff Area=150,892 sf 30.25% Impervious Runoff Depth=1.62"
Tc=5.0 min CN=67 Runoff=6.55 cfs 0.469 af

Subcatchment 805S: FLOW TO CB805 Runoff Area=4,093 sf 91.91% Impervious Runoff Depth=4.27"
Tc=5.0 min CN=96 Runoff=0.44 cfs 0.033 af

Subcatchment 806S: FLOW TO CB806 Runoff Area=3,812 sf 92.10% Impervious Runoff Depth=3.94"
Tc=5.0 min CN=93 Runoff=0.40 cfs 0.029 af

Subcatchment 807S: FLOW TO CB807 Runoff Area=5,559 sf 76.47% Impervious Runoff Depth=3.03"
Tc=5.0 min CN=84 Runoff=0.47 cfs 0.032 af

Subcatchment 808S: FLOW TO CB808 Runoff Area=3,999 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment 857LS: SUBCATCHMENT Runoff Area=16,981 sf 62.84% Impervious Runoff Depth=2.32"
Tc=5.0 min CN=76 Runoff=1.10 cfs 0.075 af

Subcatchment 857RS: SUBCATCHMENT Runoff Area=31,969 sf 20.90% Impervious Runoff Depth=0.64"
Tc=5.0 min CN=51 Runoff=0.35 cfs 0.039 af

Subcatchment 900S: SUBCATCHMENT 900S Runoff Area=78,149 sf 2.46% Impervious Runoff Depth=0.18"
Flow Length=171' Tc=12.4 min CN=40 Runoff=0.05 cfs 0.027 af

Subcatchment 1100S: 1100S Runoff Area=6,092 sf 52.35% Impervious Runoff Depth=1.85"
Flow Length=100' Tc=2.6 min CN=70 Runoff=0.33 cfs 0.022 af

Subcatchment 1295GS: SUBCATCHMENT Runoff Area=70,690 sf 33.46% Impervious Runoff Depth=0.91"
Flow Length=466' Tc=10.6 min CN=56 Runoff=1.16 cfs 0.123 af

Subcatchment 1295LS: SUBCATCHMENT Runoff Area=8,078 sf 65.64% Impervious Runoff Depth=2.49"
Tc=5.0 min CN=78 Runoff=0.56 cfs 0.039 af

Subcatchment 1295RS: SUBCATCHMENT Runoff Area=12,955 sf 51.46% Impervious Runoff Depth=1.77"
Tc=5.0 min CN=69 Runoff=0.62 cfs 0.044 af

Subcatchment 1643LS: SUBCATCHMENT Runoff Area=1,696 sf 35.38% Impervious Runoff Depth=1.15"
Flow Length=125' Tc=5.2 min CN=60 Runoff=0.05 cfs 0.004 af

Subcatchment 1643RS: SUBCATCHMENT Runoff Area=8,214 sf 54.11% Impervious Runoff Depth=1.92"
Flow Length=163' Tc=7.5 min CN=71 Runoff=0.40 cfs 0.030 af

Subcatchment 1785LS: SUBCATCHMENT Runoff Area=9,115 sf 28.75% Impervious Runoff Depth=0.91"
Flow Length=231' Tc=8.1 min CN=56 Runoff=0.16 cfs 0.016 af

Subcatchment 1785RS: SUBCATCHMENT Runoff Area=5,957 sf 51.59% Impervious Runoff Depth=1.77"
Flow Length=185' Tc=3.9 min CN=69 Runoff=0.30 cfs 0.020 af

Subcatchment 1928LS: SUBCATCHMENT Runoff Area=8,001 sf 41.78% Impervious Runoff Depth=1.41"
Flow Length=173' Tc=6.7 min CN=64 Runoff=0.28 cfs 0.022 af

Subcatchment 1928RS: SUBCATCHMENT Runoff Area=6,211 sf 51.15% Impervious Runoff Depth=1.77"
Flow Length=177' Tc=4.1 min CN=69 Runoff=0.31 cfs 0.021 af

Subcatchment 1979RS: SUBCATCHMENT Runoff Area=2,259 sf 47.94% Impervious Runoff Depth=1.62"
Flow Length=93' Tc=4.4 min CN=67 Runoff=0.10 cfs 0.007 af

Subcatchment 2173LS: SUBCATCHMENT Runoff Area=18,794 sf 40.92% Impervious Runoff Depth=1.35"
Flow Length=205' Tc=6.3 min CN=63 Runoff=0.62 cfs 0.048 af

Subcatchment 2173RS: SUBCATCHMENT Runoff Area=8,515 sf 55.89% Impervious Runoff Depth=2.00"
Flow Length=126' Tc=6.5 min CN=72 Runoff=0.44 cfs 0.033 af

Subcatchment 2373S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.72 cfs 0.135 af

Subcatchment 2440S: SUBCATCHMENT Runoff Area=1,462 sf 42.82% Impervious Runoff Depth=1.41"
Flow Length=61' Tc=3.4 min CN=64 Runoff=0.06 cfs 0.004 af

Subcatchment 2460LS: SUBCATCHMENT Runoff Area=26,630 sf 47.56% Impervious Runoff Depth=1.62"
Flow Length=378' Tc=10.9 min CN=67 Runoff=0.94 cfs 0.083 af

Subcatchment 2460RS: SUBCATCHMENT Runoff Area=13,923 sf 51.40% Impervious Runoff Depth=1.77"
Flow Length=261' Tc=3.4 min CN=69 Runoff=0.71 cfs 0.047 af

Subcatchment 2460S: SUBCATCHMENT Runoff Area=6,810 sf 74.21% Impervious Runoff Depth=2.94"
Flow Length=138' Tc=1.6 min CN=83 Runoff=0.63 cfs 0.038 af

Subcatchment 2474S: SUBCATCHMENT Runoff Area=4,253 sf 43.00% Impervious Runoff Depth=1.41"
Flow Length=76' Tc=3.7 min CN=64 Runoff=0.16 cfs 0.012 af

Subcatchment 2619S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.72 cfs 0.135 af

Subcatchment 2723RS: SUBCATCHMENT Runoff Area=4,476 sf 61.44% Impervious Runoff Depth=2.24"
Flow Length=85' Tc=4.4 min CN=75 Runoff=0.28 cfs 0.019 af

Subcatchment 2730LS: SUBCATCHMENT Runoff Area=24,016 sf 49.95% Impervious Runoff Depth=1.70"
Flow Length=462' Tc=10.0 min CN=68 Runoff=0.92 cfs 0.078 af

Subcatchment 2730RS: SUBCATCHMENT Runoff Area=12,056 sf 52.21% Impervious Runoff Depth=1.85"
Flow Length=261' Tc=3.9 min CN=70 Runoff=0.63 cfs 0.043 af

Subcatchment 3018GS: Runoff Area=270,071 sf 12.90% Impervious Runoff Depth=0.36"
Flow Length=1,138' Tc=26.5 min CN=45 Runoff=0.70 cfs 0.188 af

Subcatchment 3020LS: SUBCATCHMENT Runoff Area=43,038 sf 52.99% Impervious Runoff Depth=1.85"
Flow Length=349' Tc=10.3 min CN=70 Runoff=1.80 cfs 0.152 af

Subcatchment 3020RS: SUBCATCHMENT Runoff Area=10,119 sf 60.96% Impervious Runoff Depth=2.49"
Flow Length=204' Tc=6.3 min CN=78 Runoff=0.67 cfs 0.048 af

Subcatchment 3200S: Flow to CB3200 Runoff Area=3,537 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=39 Runoff=0.00 cfs 0.001 af

Subcatchment RD1Sa: Roof drain 1a Runoff Area=5,231 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.58 cfs 0.045 af

Subcatchment RD1Sb: Roof Drain 1b Runoff Area=3,703 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.41 cfs 0.032 af

Subcatchment RD2Sa: Roof drain 2a Runoff Area=4,238 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.47 cfs 0.037 af

Subcatchment RD2Sb: Roof drain 2b Runoff Area=4,138 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.46 cfs 0.036 af

Subcatchment RD3S: ROOF DRAIN Runoff Area=18,273 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=2.01 cfs 0.157 af

Subcatchment RD4S: ROOF DRAIN Runoff Area=504 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.06 cfs 0.004 af

Subcatchment RD5S: ROOF DRAIN Runoff Area=18,667 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=2.06 cfs 0.161 af

Subcatchment RD6S: ROOF DRAIN Runoff Area=9,690 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=1.07 cfs 0.083 af

Subcatchment RD8S: Roof Drain Runoff Area=2,295 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.25 cfs 0.020 af

Subcatchment RD9S: Roof Drain Runoff Area=1,575 sf 100.00% Impervious Runoff Depth=4.50"
Tc=5.0 min CN=98 Runoff=0.17 cfs 0.014 af

Reach 1AR: STREAM Avg. Flow Depth=0.63' Max Vel=3.22 fps Inflow=11.68 cfs 3.544 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=11.40 cfs 3.544 af

Reach 1BR: STREAM Avg. Flow Depth=0.31' Max Vel=2.39 fps Inflow=3.66 cfs 0.293 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=3.55 cfs 0.293 af

Reach 1R: STREAM Avg. Flow Depth=0.86' Max Vel=2.75 fps Inflow=14.95 cfs 3.837 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=14.46 cfs 3.836 af

Reach 2R: REACH 2 Avg. Flow Depth=0.12' Max Vel=0.96 fps Inflow=0.62 cfs 1.009 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=0.49 cfs 1.006 af

Reach 3R: REACH 3 Avg. Flow Depth=0.17' Max Vel=1.22 fps Inflow=1.13 cfs 0.137 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=1.10 cfs 0.137 af

Reach 4R: REACH 4 Avg. Flow Depth=0.09' Max Vel=0.58 fps Inflow=0.68 cfs 0.131 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=0.63 cfs 0.131 af

Reach 5R: REACH 5 Avg. Flow Depth=0.02' Max Vel=0.23 fps Inflow=0.03 cfs 0.020 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.03 cfs 0.020 af

Reach 6R: REACH 6 Avg. Flow Depth=0.11' Max Vel=0.57 fps Inflow=0.63 cfs 0.151 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=0.57 cfs 0.151 af

Reach 7R: STREAM Avg. Flow Depth=0.21' Max Vel=1.64 fps Inflow=1.52 cfs 0.288 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=1.52 cfs 0.288 af

Reach 8R: STREAM Avg. Flow Depth=0.24' Max Vel=1.68 fps Inflow=1.90 cfs 1.294 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=1.87 cfs 1.292 af

Reach 9R: STREAM Avg. Flow Depth=0.84' Max Vel=2.92 fps Inflow=15.02 cfs 5.128 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=14.99 cfs 5.127 af

Reach 16R: Existing Culvert to West Avg. Flow Depth=0.47' Max Vel=5.30 fps Inflow=2.23 cfs 0.155 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=2.23 cfs 0.155 af

Reach 41R: REACH Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.050 L=147.0' S=0.0184 '/' Capacity=23.05 cfs Outflow=0.00 cfs 0.000 af

Reach 326R: Reach 1BR Avg. Flow Depth=0.28' Max Vel=1.63 fps Inflow=2.66 cfs 2.676 af
n=0.050 L=358.0' S=0.0288 '/' Capacity=26.39 cfs Outflow=2.66 cfs 2.676 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=69.48' Inflow=15.70 cfs 7.067 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=15.70 cfs 7.067 af

Pond 11P: CB11 to CB12 Peak Elev=105.90' Inflow=1.32 cfs 0.103 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=1.32 cfs 0.103 af

Pond 12R: From CB12 out Peak Elev=105.69' Inflow=2.42 cfs 0.189 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=2.42 cfs 0.189 af

Pond 13P: CB13 to CB14 Peak Elev=107.24' Inflow=1.27 cfs 0.089 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=1.27 cfs 0.089 af

Pond 14P: CB14 to CB15 Peak Elev=106.25' Inflow=1.46 cfs 0.103 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=1.46 cfs 0.103 af

Pond 15P: CB15 out Peak Elev=105.21' Inflow=1.87 cfs 0.136 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=1.87 cfs 0.136 af

Pond 100AP: Outlet Structure 105 to Peak Elev=101.94' Storage=22,786 cf Inflow=9.20 cfs 2.713 af
Outflow=2.66 cfs 2.676 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=103.81' Storage=43,550 cf Inflow=27.09 cfs 2.113 af
Outflow=2.14 cfs 2.113 af

Pond 107P: CB107 TO HW106 Peak Elev=101.99' Inflow=3.19 cfs 0.240 af
15.0" Round Culvert n=0.009 L=20.0' S=0.0050 '/' Outflow=3.19 cfs 0.240 af

Pond 108P: CB108 TO CB107 Peak Elev=102.46' Inflow=2.17 cfs 0.161 af
15.0" Round Culvert n=0.009 L=106.0' S=0.0052 '/' Outflow=2.17 cfs 0.161 af

Pond 148GP: CB1+48G TO CB1+48R Peak Elev=126.59' Inflow=0.07 cfs 0.015 af
15.0" Round Culvert n=0.011 L=20.0' S=0.0050 '/' Outflow=0.07 cfs 0.015 af

Pond 148RP: CB1+48R TO CB3+04R Peak Elev=126.55' Inflow=0.33 cfs 0.038 af
15.0" Round Culvert n=0.011 L=153.0' S=0.0101 '/' Outflow=0.33 cfs 0.038 af

Pond 205P: CB205 TO HW200 Peak Elev=103.96' Inflow=8.77 cfs 0.655 af
24.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=8.77 cfs 0.655 af

Pond 206P: CB206 TO CB205 Peak Elev=104.31' Inflow=1.10 cfs 0.085 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0110 '/' Outflow=1.10 cfs 0.085 af

Pond 210P: CB210 TO CB205 Peak Elev=104.62' Inflow=5.34 cfs 0.392 af
18.0" Round Culvert n=0.013 L=65.0' S=0.0054 '/' Outflow=5.34 cfs 0.392 af

Pond 215P: DCB215 TO CB210 Peak Elev=105.12' Inflow=4.57 cfs 0.337 af
18.0" Round Culvert n=0.013 L=75.0' S=0.0053 '/' Outflow=4.57 cfs 0.337 af

Pond 220P: CB220 TO DCB215 Peak Elev=105.39' Inflow=1.63 cfs 0.123 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0083 '/' Outflow=1.63 cfs 0.123 af

Pond 303GP: CB3+03G TO CB3+04R Peak Elev=126.60' Inflow=0.86 cfs 0.059 af
15.0" Round Culvert n=0.011 L=60.0' S=0.0233 '/' Outflow=0.86 cfs 0.059 af

Pond 304RP: CB3+04R TO CB4+01G Peak Elev=125.26' Inflow=1.44 cfs 0.115 af
15.0" Round Culvert n=0.011 L=94.0' S=0.0197 '/' Outflow=1.44 cfs 0.115 af

Pond 305P: CB305 TO HW300 Peak Elev=104.86' Inflow=8.99 cfs 0.820 af
24.0" Round Culvert n=0.009 L=16.0' S=0.0062 '/' Outflow=8.99 cfs 0.820 af

Pond 310P: CB310 TO CB305 Peak Elev=105.25' Inflow=8.18 cfs 0.762 af
24.0" Round Culvert n=0.013 L=28.0' S=0.0054 '/' Outflow=8.18 cfs 0.762 af

Pond 315P: CB315 TO CB310 Peak Elev=107.22' Inflow=8.15 cfs 0.637 af
18.0" Round Culvert n=0.009 L=185.0' S=0.0054 '/' Outflow=8.15 cfs 0.637 af

Pond 316P: CB316 TO CB315 Peak Elev=107.23' Inflow=0.40 cfs 0.029 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.40 cfs 0.029 af

Pond 320P: CB320 TO CB315 Peak Elev=109.53' Inflow=7.76 cfs 0.574 af
18.0" Round Culvert n=0.009 L=213.0' S=0.0110 '/' Outflow=7.76 cfs 0.574 af

Pond 320Pa: Porous Walk Peak Elev=112.03' Storage=7 cf Inflow=0.04 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 321P: CB321 TO CB320 Peak Elev=113.50' Inflow=3.92 cfs 0.290 af
15.0" Round Culvert n=0.013 L=114.0' S=0.0243 '/' Outflow=3.92 cfs 0.290 af

Pond 321Pa: Porous Walk Peak Elev=116.79' Storage=7 cf Inflow=0.05 cfs 0.004 af
Outflow=0.03 cfs 0.004 af

Pond 322P: CB323 TO CB322 Peak Elev=119.04' Inflow=3.46 cfs 0.254 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0800 '/' Outflow=3.46 cfs 0.254 af

Pond 323P: CB324 to CB323 Peak Elev=122.23' Inflow=3.46 cfs 0.253 af
15.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=3.46 cfs 0.253 af

Pond 323Pa: Porous Walk Peak Elev=129.39' Storage=7 cf Inflow=0.05 cfs 0.004 af
Outflow=0.03 cfs 0.004 af

Pond 324P: CB325 to CB324 Peak Elev=122.79' Inflow=3.05 cfs 0.220 af
15.0" Round Culvert n=0.013 L=57.0' S=0.0100 '/' Outflow=3.05 cfs 0.220 af

Pond 325P: CB326 TO CB325 Peak Elev=123.60' Inflow=2.81 cfs 0.201 af
15.0" Round Culvert n=0.013 L=67.0' S=0.0115 '/' Outflow=2.81 cfs 0.201 af

Pond 326P: CB327 TO CB326 Peak Elev=124.75' Inflow=2.63 cfs 0.187 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0100 '/' Outflow=2.63 cfs 0.187 af

Pond 326Pa: Porous Walk Peak Elev=128.00' Storage=4 cf Inflow=0.07 cfs 0.005 af
Outflow=0.05 cfs 0.005 af

Pond 326Pb: Porous Walk Peak Elev=129.19' Storage=1 cf Inflow=0.01 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 326Pc: Porous Walk Peak Elev=129.79' Storage=1 cf Inflow=0.01 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 330P: CB330 T0 CB320 Peak Elev=110.10' Inflow=3.50 cfs 0.257 af
15.0" Round Culvert n=0.009 L=35.0' S=0.0286 '/' Outflow=3.50 cfs 0.257 af

Pond 330Pa: Porous Walk Peak Elev=114.25' Storage=0 cf Inflow=0.02 cfs 0.001 af
Outflow=0.02 cfs 0.001 af

Pond 330Pb: Porous Walk Peak Elev=112.69' Storage=0 cf Inflow=0.01 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond 331P: CB331 TO CB330 Peak Elev=110.68' Inflow=1.30 cfs 0.094 af
15.0" Round Culvert n=0.013 L=12.0' S=0.0100 '/' Outflow=1.30 cfs 0.094 af

Pond 331Pa: Porous Walk Peak Elev=116.29' Storage=2 cf Inflow=0.04 cfs 0.003 af
Outflow=0.03 cfs 0.003 af

Pond 332P: CB332 to CB331 Peak Elev=111.14' Inflow=0.14 cfs 0.009 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0166 '/' Outflow=0.14 cfs 0.009 af

Pond 332Pa: Porous Walk Peak Elev=116.46' Storage=11 cf Inflow=0.10 cfs 0.007 af
Outflow=0.07 cfs 0.007 af

Pond 333P: CB333 TO CB331 Peak Elev=113.08' Inflow=0.47 cfs 0.037 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0193 '/' Outflow=0.47 cfs 0.037 af

Pond 333Pa: Porous Walk Peak Elev=128.66' Storage=0 cf Inflow=0.02 cfs 0.002 af
Outflow=0.02 cfs 0.002 af

Pond 335P: CB335 TO CB330 Peak Elev=110.56' Inflow=1.85 cfs 0.136 af
15.0" Round Culvert n=0.009 L=29.0' S=0.0345 '/' Outflow=1.85 cfs 0.136 af

Pond 340P: CB340TO CB335 Peak Elev=112.10' Inflow=1.57 cfs 0.117 af
15.0" Round Culvert n=0.009 L=31.0' S=0.0355 '/' Outflow=1.57 cfs 0.117 af

Pond 345P: DMH345 TO CB340 Peak Elev=114.24' Inflow=1.36 cfs 0.103 af
15.0" Round Culvert n=0.009 L=59.0' S=0.0356 '/' Outflow=1.36 cfs 0.103 af

Pond 350P: CB350 TO DMH345 Peak Elev=119.24' Inflow=1.36 cfs 0.103 af
15.0" Round Culvert n=0.009 L=64.0' S=0.0344 '/' Outflow=1.36 cfs 0.103 af

Pond 351P: CB351 TO CB350 Peak Elev=120.77' Inflow=0.27 cfs 0.020 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.27 cfs 0.020 af

Pond 355P: DMH355 TO CB350 Peak Elev=124.28' Inflow=0.80 cfs 0.062 af
15.0" Round Culvert n=0.009 L=84.0' S=0.0351 '/' Outflow=0.80 cfs 0.062 af

Pond 360P: CB360 TO DMH355 Peak Elev=131.78' Inflow=0.80 cfs 0.062 af
15.0" Round Culvert n=0.009 L=95.0' S=0.0347 '/' Outflow=0.80 cfs 0.062 af

Pond 365P: CB365 TO CB360 Peak Elev=132.98' Inflow=0.41 cfs 0.032 af
15.0" Round Culvert n=0.009 L=36.0' S=0.0056 '/' Outflow=0.41 cfs 0.032 af

Pond 402GP: CB4+02G TO CB4+19R Peak Elev=123.57' Inflow=1.44 cfs 0.208 af
15.0" Round Culvert n=0.011 L=26.0' S=0.0058 '/' Outflow=1.44 cfs 0.208 af

Pond 405P: CB405 TO HW400 Peak Elev=102.37' Inflow=3.96 cfs 0.296 af
18.0" Round Culvert n=0.013 L=33.0' S=0.0061 '/' Outflow=3.96 cfs 0.296 af

Pond 410P: DCB410 TO CB405 Peak Elev=103.18' Inflow=3.13 cfs 0.234 af
15.0" Round Culvert n=0.013 L=119.0' S=0.0050 '/' Outflow=3.13 cfs 0.234 af

Pond 415P: CB415 TO CB410 Peak Elev=103.35' Inflow=1.32 cfs 0.097 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0054 '/' Outflow=1.32 cfs 0.097 af

Pond 416P: CB416 TO CB415 Peak Elev=103.48' Inflow=0.77 cfs 0.057 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0052 '/' Outflow=0.77 cfs 0.057 af

Pond 419LP: CB4+19L TO DMH1001+25 Peak Elev=118.36' Inflow=7.95 cfs 0.749 af
24.0" Round Culvert n=0.011 L=114.0' S=0.0202 '/' Outflow=7.95 cfs 0.749 af

Pond 419RP: CB4+19R TO CB4+19L Peak Elev=123.41' Inflow=2.68 cfs 0.296 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=2.68 cfs 0.296 af

Pond 505P: dmh505 TO HW500 Peak Elev=104.74' Inflow=3.68 cfs 0.284 af
18.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=3.68 cfs 0.284 af

Pond 507P: CB507 TO CB505 Peak Elev=105.76' Inflow=3.68 cfs 0.284 af
Primary=3.68 cfs 0.284 af Secondary=0.00 cfs 0.000 af Outflow=3.68 cfs 0.284 af

Pond 508P: CB508 TO CB507 Peak Elev=107.99' Inflow=3.32 cfs 0.255 af
18.0" Round Culvert n=0.009 L=77.0' S=0.0286 '/' Outflow=3.32 cfs 0.255 af

Pond 509P: CB509 to CB508 Peak Elev=109.26' Inflow=3.32 cfs 0.255 af
18.0" Round Culvert n=0.009 L=34.0' S=0.0382 '/' Outflow=3.32 cfs 0.255 af

Pond 600P: DETENTION BASIN OS605 TO Peak Elev=99.30' Storage=66,222 cf Inflow=12.92 cfs 1.564 af
Outflow=0.47 cfs 0.964 af

Pond 710P: CB710 TO HW700 Peak Elev=101.09' Inflow=6.12 cfs 0.455 af
18.0" Round Culvert n=0.009 L=109.0' S=0.0055 '/' Outflow=6.12 cfs 0.455 af

Pond 711P: CB711 TO CB710 Peak Elev=103.52' Inflow=0.47 cfs 0.035 af
15.0" Round Culvert n=0.009 L=52.0' S=0.0135 '/' Outflow=0.47 cfs 0.035 af

Pond 715P: CB715 TO CB710 Peak Elev=101.60' Inflow=5.17 cfs 0.384 af
18.0" Round Culvert n=0.009 L=65.0' S=0.0054 '/' Outflow=5.17 cfs 0.384 af

Pond 720P: DCB720 TO CB715 Peak Elev=102.13' Inflow=4.84 cfs 0.361 af
18.0" Round Culvert n=0.009 L=53.0' S=0.0066 '/' Outflow=4.84 cfs 0.361 af

Pond 725P: CB725 TO DCB720 Peak Elev=102.52' Inflow=2.95 cfs 0.220 af
15.0" Round Culvert n=0.009 L=75.0' S=0.0060 '/' Outflow=2.95 cfs 0.220 af

Pond 801P: HW801 TO HW800 Peak Elev=101.98' Storage=7,045 cf Inflow=13.02 cfs 0.971 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0215 '/' Outflow=5.77 cfs 0.966 af

Pond 805P: CB805 TO HW802 Peak Elev=102.53' Inflow=6.50 cfs 0.502 af
18.0" Round Culvert n=0.009 L=68.0' S=0.0051 '/' Outflow=6.50 cfs 0.502 af

Pond 806P: CB806 TO CB805 Peak Elev=104.05' Inflow=4.99 cfs 0.385 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0175 '/' Outflow=4.99 cfs 0.385 af

Pond 807P: CB807 TO CB806 Peak Elev=106.05' Inflow=2.54 cfs 0.195 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0215 '/' Outflow=2.54 cfs 0.195 af

Pond 808P: CB808 TO CB807 Peak Elev=106.90' Inflow=2.01 cfs 0.159 af
15.0" Round Culvert n=0.009 L=128.0' S=0.0051 '/' Outflow=2.01 cfs 0.159 af

Pond 857LP: CB8+57L TO CB4+19L Peak Elev=133.80' Inflow=3.41 cfs 0.320 af
15.0" Round Culvert n=0.011 L=439.0' S=0.0237 '/' Outflow=3.41 cfs 0.320 af

Pond 857RP: CB8+57R TO CB8+57L Peak Elev=133.81' Inflow=0.35 cfs 0.039 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.35 cfs 0.039 af

Pond 900P: POND 900 Peak Elev=99.59' Storage=50,639 cf Inflow=15.10 cfs 1.712 af
Discarded=0.63 cfs 1.500 af Primary=0.00 cfs 0.000 af Outflow=0.63 cfs 1.500 af

Pond 1000P: Sediment Forebay Peak Elev=111.53' Storage=44 cf Inflow=0.40 cfs 0.100 af
Outflow=0.39 cfs 0.100 af

Pond 1100P: Subsurface Detention SC-740 Peak Elev=119.65' Storage=3,857 cf Inflow=2.84 cfs 0.222 af
Discarded=0.13 cfs 0.188 af Primary=0.31 cfs 0.034 af Outflow=0.44 cfs 0.222 af

Pond 1200P: Subsurface Detention SC-740 Peak Elev=112.16' Storage=3,789 cf Inflow=2.06 cfs 0.183 af
Discarded=0.13 cfs 0.179 af Primary=0.05 cfs 0.005 af Outflow=0.18 cfs 0.183 af

Pond 1295GP: CB12+95G TO CB12+95R Peak Elev=137.63' Inflow=1.16 cfs 0.123 af
15.0" Round Culvert n=0.011 L=11.0' S=0.0091 '/' Outflow=1.16 cfs 0.123 af

Pond 1295LP: CB12+95L TO CB8+57L Peak Elev=137.21' Inflow=2.04 cfs 0.206 af
15.0" Round Culvert n=0.011 L=438.0' S=0.0083 '/' Outflow=2.04 cfs 0.206 af

Pond 1295RP: CB12+95R CB12+95L Peak Elev=137.48' Inflow=1.59 cfs 0.167 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=1.59 cfs 0.167 af

Pond 1643LP: CB16+43L TO CB16+43R Peak Elev=137.77' Inflow=0.05 cfs 0.004 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.05 cfs 0.004 af

Pond 1643RP: CB16+43R TO CB17+85R Peak Elev=136.47' Inflow=0.44 cfs 0.034 af
12.0" Round Culvert n=0.011 L=143.0' S=0.0346 '/' Outflow=0.44 cfs 0.034 af

Pond 1785LP: CB17+85L TO CB17+85R Peak Elev=131.52' Inflow=0.16 cfs 0.016 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.16 cfs 0.016 af

Pond 1785RP: CB17+85R TO DMH18+69 Peak Elev=130.54' Inflow=0.85 cfs 0.070 af
12.0" Round Culvert n=0.011 L=86.0' S=0.0337 '/' Outflow=0.85 cfs 0.070 af

Pond 1869P: DMH18+69 TO CB19+28L Peak Elev=127.47' Inflow=0.85 cfs 0.070 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0345 '/' Outflow=0.85 cfs 0.070 af

Pond 1928LP: CB19+28L TO CB19+79R Peak Elev=123.98' Inflow=1.42 cfs 0.113 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0282 '/' Outflow=1.42 cfs 0.113 af

Pond 1928RP: CB19+28R TO CB19+28L Peak Elev=125.71' Inflow=0.31 cfs 0.021 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.31 cfs 0.021 af

Pond 1979RP: CB19+79 TO CB21+73R Peak Elev=122.26' Inflow=1.51 cfs 0.120 af
12.0" Round Culvert n=0.011 L=190.0' S=0.0191 '/' Outflow=1.51 cfs 0.120 af

Pond 2168P: DMH 21+68R to DMH 22+41R Peak Elev=106.09' Inflow=0.39 cfs 0.100 af
12.0" Round Culvert n=0.012 L=76.0' S=0.0150 '/' Outflow=0.39 cfs 0.100 af

Pond 2173LP: CB21+73L TO CB21+73R Peak Elev=119.66' Inflow=0.62 cfs 0.048 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0114 '/' Outflow=0.62 cfs 0.048 af

Pond 2173RP: CB21+73R TO DMH21+95R Peak Elev=119.66' Inflow=2.57 cfs 0.201 af
18.0" Round Culvert n=0.011 L=30.0' S=0.0357 '/' Outflow=2.57 cfs 0.201 af

Pond 2182P: DCB 21+82R TO DMH 21+97R Peak Elev=119.65' Inflow=0.33 cfs 0.022 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=0.33 cfs 0.021 af

Pond 2195P: DMH21+95R TO Subsurface Detention Peak Elev=119.65' Inflow=2.57 cfs 0.201 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=2.57 cfs 0.201 af

Pond 2197P: DMH 21+97R TO Subsurface Detention Peak Elev=119.65' Inflow=0.33 cfs 0.021 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0000 '/' Outflow=0.33 cfs 0.021 af

Pond 2210P: DMH 22+10R to DMH22+20R Peak Elev=117.09' Inflow=0.31 cfs 0.034 af
12.0" Round Culvert n=0.011 L=5.0' S=0.0200 '/' Outflow=0.31 cfs 0.034 af

Pond 2220P: DMH22+20R TO DMH22+41R Peak Elev=108.87' Inflow=0.31 cfs 0.034 af
12.0" Round Culvert n=0.011 L=53.0' S=0.0747 '/' Outflow=0.31 cfs 0.034 af

Pond 2241: DMH 22+41R to DMH24+86R Peak Elev=105.25' Inflow=1.72 cfs 0.269 af
12.0" Round Culvert n=0.012 L=188.0' S=0.0150 '/' Outflow=1.72 cfs 0.269 af

Pond 2286P: DMH 22+86R to DMH24+78R Peak Elev=102.33' Inflow=1.72 cfs 0.269 af
12.0" Round Culvert n=0.012 L=54.0' S=0.0150 '/' Outflow=1.72 cfs 0.269 af

Pond 2440P: TD24+40R TO CB24+60R Peak Elev=112.16' Inflow=0.06 cfs 0.004 af
12.0" Round Culvert n=0.011 L=62.0' S=0.0323 '/' Outflow=0.06 cfs 0.004 af

Pond 2460LP: CB24+60L TO CB24+60R Peak Elev=113.97' Inflow=0.94 cfs 0.083 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=0.94 cfs 0.083 af

Pond 2460P: CB24+60R TO DMH24+85R Peak Elev=112.16' Inflow=0.68 cfs 0.042 af
12.0" Round Culvert n=0.011 L=28.0' S=0.0107 '/' Outflow=0.68 cfs 0.042 af

Pond 2460RP: CB24+60R TO DMH24+86R Peak Elev=113.71' Inflow=1.40 cfs 0.130 af
12.0" Round Culvert n=0.011 L=58.0' S=0.0617 '/' Outflow=1.40 cfs 0.130 af

Pond 2468P: DMH24+86R TO Subsurface Detention Peak Elev=112.16' Inflow=1.40 cfs 0.130 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=1.40 cfs 0.130 af

Pond 2474P: DMH24+74R TO DMH24+85R Peak Elev=112.16' Inflow=0.16 cfs 0.012 af
12.0" Round Culvert n=0.011 L=12.0' S=0.0333 '/' Outflow=0.16 cfs 0.011 af

Pond 2478P: DMH24+78R to HW24+89R Peak Elev=101.47' Inflow=1.72 cfs 0.273 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0150 '/' Outflow=1.72 cfs 0.273 af

Pond 2485P: DMH24+85R TO Subsurface Detention Peak Elev=112.16' Inflow=0.82 cfs 0.054 af
24.0" Round Culvert n=0.011 L=6.0' S=0.0000 '/' Outflow=0.82 cfs 0.054 af

Pond 2495P: DMH24+95R TO DMH25+00 Peak Elev=109.51' Inflow=0.05 cfs 0.005 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0200 '/' Outflow=0.05 cfs 0.005 af

Pond 2505P: DMH24+82R to DMH24+78R Peak Elev=103.71' Inflow=0.05 cfs 0.005 af
12.0" Round Culvert n=0.011 L=43.0' S=0.0649 '/' Outflow=0.05 cfs 0.005 af

Pond 2625RP: DMH26+25R TO HW26+25 Peak Elev=102.08' Inflow=3.33 cfs 0.274 af
12.0" Round Culvert n=0.011 L=15.0' S=0.0200 '/' Outflow=3.33 cfs 0.274 af

Pond 2723P: DMH27+23R TO DMH26+25R Peak Elev=103.09' Inflow=1.65 cfs 0.140 af
12.0" Round Culvert n=0.011 L=93.0' S=0.0161 '/' Outflow=1.65 cfs 0.140 af

Pond 2723RP: TD27+23R TO DMH27+23R Peak Elev=104.86' Inflow=0.28 cfs 0.019 af
12.0" Round Culvert n=0.011 L=39.0' S=0.0538 '/' Outflow=0.28 cfs 0.019 af

Pond 2730LP: CB27+30L TO 27+30R Peak Elev=109.96' Inflow=0.92 cfs 0.078 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=0.92 cfs 0.078 af

Pond 2730RP: CB27+30R TO DMH27+23R Peak Elev=109.70' Inflow=1.39 cfs 0.121 af
12.0" Round Culvert n=0.011 L=125.0' S=0.0526 '/' Outflow=1.39 cfs 0.121 af

Pond 3018GP: CB30+18G TO CB30+20L Peak Elev=104.28' Inflow=7.95 cfs 0.937 af
24.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=7.95 cfs 0.937 af

Pond 3020LP: CB30+20L TO CB30+20R Peak Elev=103.84' Inflow=9.45 cfs 1.089 af
24.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=9.45 cfs 1.089 af

Pond 3020RP: CB30+20R TO HW29+63 Peak Elev=103.16' Inflow=10.12 cfs 1.137 af
24.0" Round Culvert n=0.011 L=135.0' S=0.0089 '/' Outflow=10.12 cfs 1.137 af

Pond 3200P: CB3200 TO CB320 Peak Elev=109.51' Inflow=0.00 cfs 0.001 af
15.0" Round Culvert n=0.009 L=90.0' S=0.0050 '/' Outflow=0.00 cfs 0.001 af

Pond 100125P: DMH1001+25 TO DMH1003+11 Peak Elev=108.96' Inflow=7.95 cfs 0.749 af
24.0" Round Culvert n=0.011 L=194.0' S=0.0201 '/' Outflow=7.95 cfs 0.749 af

Pond 100311P: DMH1003+11C TO CB30+18G Peak Elev=105.06' Inflow=7.95 cfs 0.749 af
24.0" Round Culvert n=0.011 L=130.0' S=0.0092 '/' Outflow=7.95 cfs 0.749 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.34' Storage=3,862 cf Inflow=4.88 cfs 0.298 af
Discarded=0.01 cfs 0.058 af Primary=4.39 cfs 0.203 af Outflow=4.41 cfs 0.261 af

Pond C3P: CBC3 to CB509 Peak Elev=114.58' Inflow=2.73 cfs 0.212 af
18.0" Round Culvert n=0.009 L=183.0' S=0.0295 '/' Outflow=2.73 cfs 0.212 af

Pond C4P: CBC4 to CBC3 Peak Elev=116.77' Inflow=1.85 cfs 0.138 af
15.0" Round Culvert n=0.009 L=212.0' S=0.0092 '/' Outflow=1.85 cfs 0.138 af

Pond C5P: CBC5 to DMHC6 Peak Elev=118.42' Inflow=0.75 cfs 0.053 af
15.0" Round Culvert n=0.013 L=66.0' S=0.0091 '/' Outflow=0.75 cfs 0.053 af

Pond C6P: DMHC6 to CBC4 Peak Elev=117.37' Inflow=1.00 cfs 0.078 af
15.0" Round Culvert n=0.013 L=32.0' S=0.0219 '/' Outflow=1.00 cfs 0.078 af

Pond C7P: CBC7 to DMHC6 Peak Elev=118.80' Inflow=0.25 cfs 0.025 af
15.0" Round Culvert n=0.013 L=189.0' S=0.0082 '/' Outflow=0.25 cfs 0.025 af

Pond C8P: CBC8 to CBC7 Peak Elev=119.23' Inflow=0.25 cfs 0.025 af
15.0" Round Culvert n=0.013 L=33.0' S=0.0106 '/' Outflow=0.25 cfs 0.025 af

Pond RD1Pa: RD1a TO CB327 Peak Elev=125.43' Inflow=0.58 cfs 0.045 af
12.0" Round Culvert n=0.013 L=43.0' S=0.0200 '/' Outflow=0.58 cfs 0.045 af

Pond RD1Pb: RD1b to CB 324 Peak Elev=123.86' Inflow=0.41 cfs 0.032 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0800 '/' Outflow=0.41 cfs 0.032 af

Pond RD2Pa: RD2a to CB333 Peak Elev=113.59' Inflow=0.47 cfs 0.037 af
12.0" Round Culvert n=0.013 L=23.0' S=0.0100 '/' Outflow=0.47 cfs 0.037 af

Pond RD2Pb: RD2b TO CB322 Peak Elev=113.66' Inflow=0.46 cfs 0.036 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0340 '/' Outflow=0.46 cfs 0.036 af

Pond RD3P: RD3 TO CB808 Peak Elev=107.45' Inflow=2.01 cfs 0.157 af
12.0" Round Culvert n=0.009 L=7.0' S=0.0214 '/' Outflow=2.01 cfs 0.157 af

Pond RD4P: RD4 TO CB807 Peak Elev=108.13' Inflow=0.06 cfs 0.004 af
12.0" Round Culvert n=0.009 L=34.0' S=0.0441 '/' Outflow=0.06 cfs 0.004 af

Pond RD5P: RD5 TO CB806 Peak Elev=106.97' Inflow=2.06 cfs 0.161 af
12.0" Round Culvert n=0.009 L=45.0' S=0.0567 '/' Outflow=2.06 cfs 0.161 af

Pond RD6P: RD6 TO CB805 Peak Elev=103.61' Inflow=1.07 cfs 0.083 af
12.0" Round Culvert n=0.009 L=60.0' S=0.0233 '/' Outflow=1.07 cfs 0.083 af

Pond RD8P: RD8 TO CB107 Peak Elev=102.15' Inflow=0.25 cfs 0.020 af
8.0" Round Culvert n=0.009 L=28.0' S=0.0107 '/' Outflow=0.25 cfs 0.020 af

Pond RD9P: RD9 TO CB405 Peak Elev=102.57' Inflow=0.17 cfs 0.014 af
8.0" Round Culvert n=0.009 L=32.0' S=0.0094 '/' Outflow=0.17 cfs 0.014 af

Total Runoff Area = 121.896 ac Runoff Volume = 10.419 af Average Runoff Depth = 1.03"
80.35% Pervious = 97.941 ac 19.65% Impervious = 23.956 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SUBCATCHMENT 1 Runoff Area=116,725 sf 15.99% Impervious Runoff Depth=0.94"
Flow Length=928' Tc=34.5 min CN=47 Runoff=1.14 cfs 0.209 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=2.18"
Flow Length=80' Tc=8.0 min CN=63 Runoff=0.92 cfs 0.073 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=176,084 sf 10.04% Impervious Runoff Depth=3.69"
Flow Length=645' Tc=9.0 min CN=79 Runoff=15.74 cfs 1.243 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,548 sf 0.00% Impervious Runoff Depth=3.00"
Flow Length=416' Tc=9.0 min CN=72 Runoff=5.57 cfs 0.440 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.13"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.15 cfs 0.092 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=1.01"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=22.36 cfs 3.952 af

Subcatchment 30S: SUBCATCHMENT 30 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=2.36"
Flow Length=154' Slope=0.0200 '/' Tc=23.5 min CN=65 Runoff=1.88 cfs 0.217 af

Subcatchment 40S: SUBCATCHMENT 40 Runoff Area=152,210 sf 0.00% Impervious Runoff Depth=0.94"
Flow Length=452' Tc=14.5 min CN=47 Runoff=2.02 cfs 0.273 af

Subcatchment 50S: SUBCATCHMENT50 Runoff Area=125,909 sf 4.33% Impervious Runoff Depth=0.25"
Flow Length=987' Tc=24.8 min CN=35 Runoff=0.11 cfs 0.061 af

Subcatchment 100S: Flow to Detention Runoff Area=42,732 sf 0.00% Impervious Runoff Depth=2.81"
Tc=5.0 min CN=70 Runoff=3.34 cfs 0.230 af

Subcatchment 101AS: Flow to Detention Runoff Area=12,152 sf 1.03% Impervious Runoff Depth=3.89"
Tc=5.0 min CN=81 Runoff=1.31 cfs 0.090 af

Subcatchment 101os: North Side of Mast Runoff Area=17,404 sf 27.18% Impervious Runoff Depth=1.37"
Tc=5.0 min CN=53 Runoff=0.57 cfs 0.046 af

Subcatchment 102os: North Side of Mast Runoff Area=15,661 sf 51.62% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=69 Runoff=1.18 cfs 0.082 af

Subcatchment 103os: Mast Road East to Runoff Area=12,002 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=1.68 cfs 0.133 af

Subcatchment 107S: Flow to CB107 Runoff Area=7,160 sf 86.56% Impervious Runoff Depth=5.54"
Tc=5.0 min CN=96 Runoff=0.99 cfs 0.076 af

Subcatchment 108S: Flow to CB108 Runoff Area=20,254 sf 84.37% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=2.78 cfs 0.210 af

Subcatchment 148GS: SUBCATCHMENT Runoff Area=24,508 sf 16.32% Impervious Runoff Depth=0.74"
Flow Length=178' Tc=6.3 min CN=44 Runoff=0.27 cfs 0.035 af

Subcatchment 148RS: SUBCATCHMENT Runoff Area=4,316 sf 70.81% Impervious Runoff Depth=3.89"
Tc=5.0 min CN=81 Runoff=0.47 cfs 0.032 af

Subcatchment 200os: Mast Road East to Runoff Area=9,931 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=1.39 cfs 0.110 af

Subcatchment 205S: Flow to CB205 Runoff Area=21,237 sf 94.10% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=97 Runoff=2.96 cfs 0.230 af

Subcatchment 206S: Flow to CB206 Runoff Area=10,095 sf 95.84% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=97 Runoff=1.41 cfs 0.109 af

Subcatchment 210S: Flow to CB210 Runoff Area=7,732 sf 75.04% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=91 Runoff=1.01 cfs 0.073 af

Subcatchment 215S: Flow to DCB215 Runoff Area=28,399 sf 86.64% Impervious Runoff Depth=5.19"
Tc=5.0 min CN=93 Runoff=3.82 cfs 0.282 af

Subcatchment 220S: Flow to CB220 Runoff Area=15,024 sf 95.13% Impervious Runoff Depth=5.54"
Tc=5.0 min CN=96 Runoff=2.08 cfs 0.159 af

Subcatchment 300os: East Side of NH Runoff Area=2,933 sf 81.69% Impervious Runoff Depth=4.53"
Tc=5.0 min CN=87 Runoff=0.36 cfs 0.025 af

Subcatchment 303GS: SUBCATCHMENT Runoff Area=10,545 sf 75.15% Impervious Runoff Depth=4.10"
Tc=5.0 min CN=83 Runoff=1.19 cfs 0.083 af

Subcatchment 304RS: SUBCATCHMENT Runoff Area=5,196 sf 51.33% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=69 Runoff=0.39 cfs 0.027 af

Subcatchment 305S: Flow to CB305 Runoff Area=7,928 sf 84.02% Impervious Runoff Depth=5.08"
Tc=5.0 min CN=92 Runoff=1.05 cfs 0.077 af

Subcatchment 310S: Flow to CB310 Runoff Area=145,473 sf 12.09% Impervious Runoff Depth=0.94"
Flow Length=469' Tc=13.1 min CN=47 Runoff=2.00 cfs 0.261 af

Subcatchment 315S: Flow to CB315 Runoff Area=116,325 sf 6.81% Impervious Runoff Depth=0.45"
Flow Length=537' Tc=9.9 min CN=39 Runoff=0.46 cfs 0.100 af

Subcatchment 316S: Flow to CB316 Runoff Area=3,776 sf 88.61% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=94 Runoff=0.51 cfs 0.038 af

Subcatchment 320S: Flow to CB320 Runoff Area=3,127 sf 97.95% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=97 Runoff=0.44 cfs 0.034 af

Subcatchment 320Sa: Porous Walk Runoff Area=404 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.06 cfs 0.004 af

Subcatchment 321S: Flow to CB322 Runoff Area=1,903 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.002 af

Subcatchment 321Sa: Porous Walk Runoff Area=456 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.06 cfs 0.005 af

Subcatchment 322S: Flow to CB323 Runoff Area=4,253 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.004 af

Subcatchment 323S: Flow to CB324 Runoff Area=1,844 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.002 af

Subcatchment 323Sa: Porous Walk Runoff Area=498 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.07 cfs 0.005 af

Subcatchment 324S: Flow to CB325 Runoff Area=2,213 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.31 cfs 0.024 af

Subcatchment 325S: Flow to CB324 Runoff Area=1,665 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment 326S: Flow to CB325 Runoff Area=34,308 sf 60.15% Impervious Runoff Depth=3.19"
Tc=5.0 min CN=74 Runoff=3.06 cfs 0.210 af

Subcatchment 326Sa: Porous Walk Runoff Area=1,787 sf 44.21% Impervious Runoff Depth=2.36"
Tc=5.0 min CN=65 Runoff=0.12 cfs 0.008 af

Subcatchment 326Sb: Porous Walk Runoff Area=57 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.001 af

Subcatchment 326Sc: Porous Walk Runoff Area=53 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.001 af

Subcatchment 330S: Flow to CB330 Runoff Area=3,294 sf 94.11% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=0.45 cfs 0.034 af

Subcatchment 330Sa: Porous Walk Runoff Area=450 sf 41.33% Impervious Runoff Depth=2.18"
Tc=5.0 min CN=63 Runoff=0.03 cfs 0.002 af

Subcatchment 330Sb: Porous Walk Runoff Area=218 sf 39.91% Impervious Runoff Depth=2.18"
Tc=5.0 min CN=63 Runoff=0.01 cfs 0.001 af

Subcatchment 331S: Flow to CB331 Runoff Area=10,020 sf 66.41% Impervious Runoff Depth=3.59"
Tc=5.0 min CN=78 Runoff=1.00 cfs 0.069 af

Subcatchment 331Sa: Porous Walk Runoff Area=1,084 sf 44.83% Impervious Runoff Depth=2.36"
Tc=5.0 min CN=65 Runoff=0.07 cfs 0.005 af

Subcatchment 332S: Flow to CB332 Runoff Area=1,679 sf 74.75% Impervious Runoff Depth=4.10"
Tc=5.0 min CN=83 Runoff=0.19 cfs 0.013 af

Subcatchment 332Sa: Porous Walk Runoff Area=1,526 sf 62.19% Impervious Runoff Depth=3.39"
Tc=5.0 min CN=76 Runoff=0.14 cfs 0.010 af

Subcatchment 333S: Flow to CB332 Runoff Area=2,063 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.002 af

Subcatchment 333Sa: Porous Walk Runoff Area=1,005 sf 32.34% Impervious Runoff Depth=1.76"
Tc=5.0 min CN=58 Runoff=0.05 cfs 0.003 af

Subcatchment 335S: Flow to CB335 Runoff Area=4,263 sf 62.80% Impervious Runoff Depth=3.39"
Tc=5.0 min CN=76 Runoff=0.40 cfs 0.028 af

Subcatchment 340S: Flow to CB340 Runoff Area=2,616 sf 72.90% Impervious Runoff Depth=4.00"
Tc=5.0 min CN=82 Runoff=0.29 cfs 0.020 af

Subcatchment 350S: Flow to CB350 Runoff Area=3,138 sf 83.08% Impervious Runoff Depth=4.64"
Tc=5.0 min CN=88 Runoff=0.39 cfs 0.028 af

Subcatchment 351S: Flow to CB351 Runoff Area=2,600 sf 93.15% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=94 Runoff=0.35 cfs 0.026 af

Subcatchment 360S: Flow to CB360 Runoff Area=3,507 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.49 cfs 0.039 af

Subcatchment 365S: Flow to CB365 Runoff Area=3,724 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment 400os: East Side of NH Runoff Area=13,932 sf 55.92% Impervious Runoff Depth=4.53"
Tc=5.0 min CN=87 Runoff=1.71 cfs 0.121 af

Subcatchment 402GS: SUBCATCHMENT Runoff Area=196,506 sf 11.43% Impervious Runoff Depth=0.62"
Flow Length=919' Tc=16.0 min CN=42 Runoff=1.25 cfs 0.233 af

Subcatchment 405S: Flow to CB405 Runoff Area=6,080 sf 83.22% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=0.83 cfs 0.063 af

Subcatchment 410S: Flow to DCB410 Runoff Area=16,744 sf 86.87% Impervious Runoff Depth=5.54"
Tc=5.0 min CN=96 Runoff=2.32 cfs 0.177 af

Subcatchment 415S: Flow to CB415 Runoff Area=5,205 sf 79.02% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=94 Runoff=0.71 cfs 0.053 af

Subcatchment 416S: Flow to CB416 Runoff Area=7,343 sf 80.88% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=94 Runoff=1.00 cfs 0.075 af

Subcatchment 419LS: SUBCATCHMENT Runoff Area=32,282 sf 58.86% Impervious Runoff Depth=3.19"
Tc=5.0 min CN=74 Runoff=2.88 cfs 0.197 af

Subcatchment 419RS: SUBCATCHMENT Runoff Area=27,019 sf 48.53% Impervious Runoff Depth=2.63"
Tc=5.0 min CN=68 Runoff=1.96 cfs 0.136 af

Subcatchment 500os: Drive to CB14 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.24 cfs 0.019 af

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=4.97"
Tc=0.0 min CN=91 Runoff=6.39 cfs 0.397 af

Subcatchment 507S: Flow to CB507 Runoff Area=3,338 sf 99.70% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.47 cfs 0.037 af

Subcatchment 508Aos: Flow to CBC4 Runoff Area=17,911 sf 52.06% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=69 Runoff=1.35 cfs 0.093 af

Subcatchment 508Bos: West Side of NH Runoff Area=39,695 sf 30.84% Impervious Runoff Depth=1.68"
Tc=5.0 min CN=57 Runoff=1.71 cfs 0.128 af

Subcatchment 508S: Flow to CB508 Runoff Area=15,987 sf 41.84% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=64 Runoff=0.99 cfs 0.069 af

Subcatchment 600os: Drive to CB15 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment 600S: POND 600 Runoff Area=58,507 sf 0.88% Impervious Runoff Depth=2.10"
Tc=5.0 min CN=62 Runoff=3.29 cfs 0.235 af

Subcatchment 700os: East Side of NH Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=4.53"
Tc=5.0 min CN=87 Runoff=2.99 cfs 0.211 af

Subcatchment 710S: Flow to CB710 Runoff Area=4,542 sf 89.56% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=0.62 cfs 0.047 af

Subcatchment 711S: Flow to CB711 Runoff Area=4,357 sf 88.02% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=0.60 cfs 0.045 af

Subcatchment 715S: Flow to CB715 Runoff Area=3,324 sf 61.88% Impervious Runoff Depth=4.86"
Tc=5.0 min CN=90 Runoff=0.43 cfs 0.031 af

Subcatchment 720S: Flow to DCB720 Runoff Area=17,720 sf 87.10% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=2.43 cfs 0.184 af

Subcatchment 725S: Flows to CB725 Runoff Area=27,585 sf 84.41% Impervious Runoff Depth=5.42"
Tc=5.0 min CN=95 Runoff=3.79 cfs 0.286 af

Subcatchment 801S: HW801 TO HW800 Runoff Area=150,892 sf 30.25% Impervious Runoff Depth=2.54"
Tc=5.0 min CN=67 Runoff=10.54 cfs 0.733 af

Subcatchment 805S: FLOW TO CB805 Runoff Area=4,093 sf 91.91% Impervious Runoff Depth=5.54"
Tc=5.0 min CN=96 Runoff=0.57 cfs 0.043 af

Subcatchment 806S: FLOW TO CB806 Runoff Area=3,812 sf 92.10% Impervious Runoff Depth=5.19"
Tc=5.0 min CN=93 Runoff=0.51 cfs 0.038 af

Subcatchment 807S: FLOW TO CB807 Runoff Area=5,559 sf 76.47% Impervious Runoff Depth=4.21"
Tc=5.0 min CN=84 Runoff=0.64 cfs 0.045 af

Subcatchment 808S: FLOW TO CB808 Runoff Area=3,999 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.003 af

Subcatchment 857LS: SUBCATCHMENT Runoff Area=16,981 sf 62.84% Impervious Runoff Depth=3.39"
Tc=5.0 min CN=76 Runoff=1.61 cfs 0.110 af

Subcatchment 857RS: SUBCATCHMENT Runoff Area=31,969 sf 20.90% Impervious Runoff Depth=1.22"
Tc=5.0 min CN=51 Runoff=0.89 cfs 0.075 af

Subcatchment 900S: SUBCATCHMENT 900S Runoff Area=78,149 sf 2.46% Impervious Runoff Depth=0.50"
Flow Length=171' Tc=12.4 min CN=40 Runoff=0.37 cfs 0.075 af

Subcatchment 1100S: 1100S Runoff Area=6,092 sf 52.35% Impervious Runoff Depth=2.81"
Flow Length=100' Tc=2.6 min CN=70 Runoff=0.52 cfs 0.033 af

Subcatchment 1295GS: SUBCATCHMENT Runoff Area=70,690 sf 33.46% Impervious Runoff Depth=1.60"
Flow Length=466' Tc=10.6 min CN=56 Runoff=2.34 cfs 0.217 af

Subcatchment 1295LS: SUBCATCHMENT Runoff Area=8,078 sf 65.64% Impervious Runoff Depth=3.59"
Tc=5.0 min CN=78 Runoff=0.81 cfs 0.055 af

Subcatchment 1295RS: SUBCATCHMENT Runoff Area=12,955 sf 51.46% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=69 Runoff=0.98 cfs 0.067 af

Subcatchment 1643LS: SUBCATCHMENT Runoff Area=1,696 sf 35.38% Impervious Runoff Depth=1.93"
Flow Length=125' Tc=5.2 min CN=60 Runoff=0.09 cfs 0.006 af

Subcatchment 1643RS: SUBCATCHMENT Runoff Area=8,214 sf 54.11% Impervious Runoff Depth=2.91"
Flow Length=163' Tc=7.5 min CN=71 Runoff=0.61 cfs 0.046 af

Subcatchment 1785LS: SUBCATCHMENT Runoff Area=9,115 sf 28.75% Impervious Runoff Depth=1.60"
Flow Length=231' Tc=8.1 min CN=56 Runoff=0.33 cfs 0.028 af

Subcatchment 1785RS: SUBCATCHMENT Runoff Area=5,957 sf 51.59% Impervious Runoff Depth=2.72"
Flow Length=185' Tc=3.9 min CN=69 Runoff=0.47 cfs 0.031 af

Subcatchment 1928LS: SUBCATCHMENT Runoff Area=8,001 sf 41.78% Impervious Runoff Depth=2.27"
Flow Length=173' Tc=6.7 min CN=64 Runoff=0.46 cfs 0.035 af

Subcatchment 1928RS: SUBCATCHMENT Runoff Area=6,211 sf 51.15% Impervious Runoff Depth=2.72"
Flow Length=177' Tc=4.1 min CN=69 Runoff=0.48 cfs 0.032 af

Subcatchment 1979RS: SUBCATCHMENT Runoff Area=2,259 sf 47.94% Impervious Runoff Depth=2.54"
Flow Length=93' Tc=4.4 min CN=67 Runoff=0.16 cfs 0.011 af

Subcatchment 2173LS: SUBCATCHMENT Runoff Area=18,794 sf 40.92% Impervious Runoff Depth=2.18"
Flow Length=205' Tc=6.3 min CN=63 Runoff=1.06 cfs 0.079 af

Subcatchment 2173RS: SUBCATCHMENT Runoff Area=8,515 sf 55.89% Impervious Runoff Depth=3.00"
Flow Length=126' Tc=6.5 min CN=72 Runoff=0.67 cfs 0.049 af

Subcatchment 2373S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=2.19 cfs 0.173 af

Subcatchment 2440S: SUBCATCHMENT Runoff Area=1,462 sf 42.82% Impervious Runoff Depth=2.27"
Flow Length=61' Tc=3.4 min CN=64 Runoff=0.10 cfs 0.006 af

Subcatchment 2460LS: SUBCATCHMENT Runoff Area=26,630 sf 47.56% Impervious Runoff Depth=2.54"
Flow Length=378' Tc=10.9 min CN=67 Runoff=1.52 cfs 0.129 af

Subcatchment 2460RS: SUBCATCHMENT Runoff Area=13,923 sf 51.40% Impervious Runoff Depth=2.72"
Flow Length=261' Tc=3.4 min CN=69 Runoff=1.11 cfs 0.072 af

Subcatchment 2460S: SUBCATCHMENT Runoff Area=6,810 sf 74.21% Impervious Runoff Depth=4.10"
Flow Length=138' Tc=1.6 min CN=83 Runoff=0.87 cfs 0.053 af

Subcatchment 2474S: SUBCATCHMENT Runoff Area=4,253 sf 43.00% Impervious Runoff Depth=2.27"
Flow Length=76' Tc=3.7 min CN=64 Runoff=0.27 cfs 0.018 af

Subcatchment 2619S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=2.19 cfs 0.173 af

Subcatchment 2723RS: SUBCATCHMENT Runoff Area=4,476 sf 61.44% Impervious Runoff Depth=3.29"
Flow Length=85' Tc=4.4 min CN=75 Runoff=0.42 cfs 0.028 af

Subcatchment 2730LS: SUBCATCHMENT Runoff Area=24,016 sf 49.95% Impervious Runoff Depth=2.63"
Flow Length=462' Tc=10.0 min CN=68 Runoff=1.47 cfs 0.121 af

Subcatchment 2730RS: SUBCATCHMENT Runoff Area=12,056 sf 52.21% Impervious Runoff Depth=2.81"
Flow Length=261' Tc=3.9 min CN=70 Runoff=0.98 cfs 0.065 af

Subcatchment 3018GS: Runoff Area=270,071 sf 12.90% Impervious Runoff Depth=0.81"
Flow Length=1,138' Tc=26.5 min CN=45 Runoff=2.32 cfs 0.416 af

Subcatchment 3020LS: SUBCATCHMENT Runoff Area=43,038 sf 52.99% Impervious Runoff Depth=2.81"
Flow Length=349' Tc=10.3 min CN=70 Runoff=2.80 cfs 0.232 af

Subcatchment 3020RS: SUBCATCHMENT Runoff Area=10,119 sf 60.96% Impervious Runoff Depth=3.59"
Flow Length=204' Tc=6.3 min CN=78 Runoff=0.97 cfs 0.069 af

Subcatchment 3200S: Flow to CB3200 Runoff Area=3,537 sf 0.00% Impervious Runoff Depth=0.45"
Tc=5.0 min CN=39 Runoff=0.01 cfs 0.003 af

Subcatchment RD1Sa: Roof drain 1a Runoff Area=5,231 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.73 cfs 0.058 af

Subcatchment RD1Sb: Roof Drain 1b Runoff Area=3,703 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.52 cfs 0.041 af

Subcatchment RD2Sa: Roof drain 2a Runoff Area=4,238 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.59 cfs 0.047 af

Subcatchment RD2Sb: Roof drain 2b Runoff Area=4,138 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.58 cfs 0.046 af

Subcatchment RD3S: ROOF DRAIN Runoff Area=18,273 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=2.56 cfs 0.202 af

Subcatchment RD4S: ROOF DRAIN Runoff Area=504 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.07 cfs 0.006 af

Subcatchment RD5S: ROOF DRAIN Runoff Area=18,667 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=2.61 cfs 0.206 af

Subcatchment RD6S: ROOF DRAIN Runoff Area=9,690 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=1.36 cfs 0.107 af

Subcatchment RD8S: Roof Drain Runoff Area=2,295 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.32 cfs 0.025 af

Subcatchment RD9S: Roof Drain Runoff Area=1,575 sf 100.00% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=98 Runoff=0.22 cfs 0.017 af

Reach 1AR: STREAM Avg. Flow Depth=0.78' Max Vel=3.59 fps Inflow=16.86 cfs 5.090 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=16.60 cfs 5.089 af

Reach 1BR: STREAM Avg. Flow Depth=0.40' Max Vel=2.74 fps Inflow=5.57 cfs 0.440 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=5.43 cfs 0.440 af

Reach 1R: STREAM Avg. Flow Depth=1.05' Max Vel=3.08 fps Inflow=22.02 cfs 5.529 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=21.52 cfs 5.528 af

Reach 2R: REACH 2 Avg. Flow Depth=0.20' Max Vel=1.31 fps Inflow=1.13 cfs 1.638 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=1.13 cfs 1.635 af

Reach 3R: REACH 3 Avg. Flow Depth=0.23' Max Vel=1.47 fps Inflow=1.88 cfs 0.484 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=1.84 cfs 0.484 af

Reach 4R: REACH 4 Avg. Flow Depth=0.16' Max Vel=0.81 fps Inflow=2.02 cfs 0.273 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=1.89 cfs 0.273 af

Reach 5R: REACH 5 Avg. Flow Depth=0.04' Max Vel=0.42 fps Inflow=0.24 cfs 0.153 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.24 cfs 0.153 af

Reach 6R: REACH 6 Avg. Flow Depth=0.18' Max Vel=0.81 fps Inflow=1.89 cfs 0.426 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=1.78 cfs 0.426 af

Reach 7R: STREAM Avg. Flow Depth=0.35' Max Vel=2.20 fps Inflow=3.58 cfs 0.910 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=3.57 cfs 0.910 af

Reach 8R: STREAM Avg. Flow Depth=0.38' Max Vel=2.20 fps Inflow=4.24 cfs 2.545 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=4.16 cfs 2.543 af

Reach 9R: STREAM Avg. Flow Depth=1.05' Max Vel=3.29 fps Inflow=22.93 cfs 8.071 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=22.91 cfs 8.070 af

Reach 16R: Existing Culvert to West Avg. Flow Depth=0.55' Max Vel=5.74 fps Inflow=2.99 cfs 0.211 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=2.99 cfs 0.211 af

Reach 41R: REACH Avg. Flow Depth=0.08' Max Vel=0.71 fps Inflow=0.28 cfs 0.266 af
n=0.050 L=147.0' S=0.0184 '/' Capacity=23.05 cfs Outflow=0.28 cfs 0.266 af

Reach 326R: Reach 1BR Avg. Flow Depth=0.41' Max Vel=2.13 fps Inflow=6.34 cfs 3.848 af
n=0.050 L=358.0' S=0.0288 '/' Capacity=26.39 cfs Outflow=6.33 cfs 3.847 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=70.59' Inflow=39.34 cfs 12.022 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=39.34 cfs 12.022 af

Pond 11P: CB11 to CB12 Peak Elev=106.18' Inflow=1.68 cfs 0.133 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=1.68 cfs 0.133 af

Pond 12R: From CB12 out Peak Elev=105.98' Inflow=3.07 cfs 0.242 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=3.07 cfs 0.242 af

Pond 13P: CB13 to CB14 Peak Elev=107.37' Inflow=1.71 cfs 0.121 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=1.71 cfs 0.121 af

Pond 14P: CB14 to CB15 Peak Elev=106.38' Inflow=1.95 cfs 0.140 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=1.95 cfs 0.140 af

Pond 15P: CB15 out Peak Elev=105.39' Inflow=2.47 cfs 0.181 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=2.47 cfs 0.181 af

Pond 100AP: Outlet Structure 105 to Peak Elev=102.26' Storage=25,319 cf Inflow=11.71 cfs 3.889 af
Outflow=6.34 cfs 3.848 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=104.47' Storage=59,973 cf Inflow=38.75 cfs 3.102 af
Outflow=4.94 cfs 3.102 af

Pond 107P: CB107 TO HW106 Peak Elev=102.28' Inflow=4.09 cfs 0.311 af
15.0" Round Culvert n=0.009 L=20.0' S=0.0050 '/' Outflow=4.09 cfs 0.311 af

Pond 108P: CB108 TO CB107 Peak Elev=102.65' Inflow=2.78 cfs 0.210 af
15.0" Round Culvert n=0.009 L=106.0' S=0.0052 '/' Outflow=2.78 cfs 0.210 af

Pond 148GP: CB1+48G TO CB1+48R Peak Elev=126.78' Inflow=0.27 cfs 0.035 af
15.0" Round Culvert n=0.011 L=20.0' S=0.0050 '/' Outflow=0.27 cfs 0.035 af

Pond 148RP: CB1+48R TO CB3+04R Peak Elev=126.69' Inflow=0.68 cfs 0.067 af
15.0" Round Culvert n=0.011 L=153.0' S=0.0101 '/' Outflow=0.68 cfs 0.067 af

Pond 205P: CB205 TO HW200 Peak Elev=104.47' Inflow=11.28 cfs 0.854 af
24.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=11.28 cfs 0.854 af

Pond 206P: CB206 TO CB205 Peak Elev=104.49' Inflow=1.41 cfs 0.109 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0110 '/' Outflow=1.41 cfs 0.109 af

Pond 210P: CB210 TO CB205 Peak Elev=104.94' Inflow=6.91 cfs 0.515 af
18.0" Round Culvert n=0.013 L=65.0' S=0.0054 '/' Outflow=6.91 cfs 0.515 af

Pond 215P: DCB215 TO CB210 Peak Elev=105.47' Inflow=5.90 cfs 0.441 af
18.0" Round Culvert n=0.013 L=75.0' S=0.0053 '/' Outflow=5.90 cfs 0.441 af

Pond 220P: CB220 TO DCB215 Peak Elev=105.67' Inflow=2.08 cfs 0.159 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0083 '/' Outflow=2.08 cfs 0.159 af

Pond 303GP: CB3+03G TO CB3+04R Peak Elev=126.69' Inflow=1.19 cfs 0.083 af
15.0" Round Culvert n=0.011 L=60.0' S=0.0233 '/' Outflow=1.19 cfs 0.083 af

Pond 304RP: CB3+04R TO CB4+01G Peak Elev=125.46' Inflow=2.24 cfs 0.177 af
15.0" Round Culvert n=0.011 L=94.0' S=0.0197 '/' Outflow=2.24 cfs 0.177 af

Pond 305P: CB305 TO HW300 Peak Elev=105.28' Inflow=12.82 cfs 1.263 af
24.0" Round Culvert n=0.009 L=16.0' S=0.0062 '/' Outflow=12.82 cfs 1.263 af

Pond 310P: CB310 TO CB305 Peak Elev=105.89' Inflow=11.77 cfs 1.186 af
24.0" Round Culvert n=0.013 L=28.0' S=0.0054 '/' Outflow=11.77 cfs 1.186 af

Pond 315P: CB315 TO CB310 Peak Elev=108.60' Inflow=11.07 cfs 0.925 af
18.0" Round Culvert n=0.009 L=185.0' S=0.0054 '/' Outflow=11.07 cfs 0.925 af

Pond 316P: CB316 TO CB315 Peak Elev=108.60' Inflow=0.51 cfs 0.038 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.51 cfs 0.038 af

Pond 320P: CB320 TO CB315 Peak Elev=111.05' Inflow=10.55 cfs 0.787 af
18.0" Round Culvert n=0.009 L=213.0' S=0.0110 '/' Outflow=10.55 cfs 0.787 af

Pond 320Pa: Porous Walk Peak Elev=112.23' Storage=14 cf Inflow=0.06 cfs 0.004 af
Outflow=0.03 cfs 0.004 af

Pond 321P: CB321 TO CB320 Peak Elev=114.15' Inflow=5.43 cfs 0.404 af
15.0" Round Culvert n=0.013 L=114.0' S=0.0243 '/' Outflow=5.43 cfs 0.404 af

Pond 321Pa: Porous Walk Peak Elev=116.97' Storage=14 cf Inflow=0.06 cfs 0.005 af
Outflow=0.03 cfs 0.005 af

Pond 322P: CB323 TO CB322 Peak Elev=119.58' Inflow=4.85 cfs 0.356 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0800 '/' Outflow=4.85 cfs 0.356 af

Pond 323P: CB324 to CB323 Peak Elev=122.77' Inflow=4.85 cfs 0.353 af
15.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=4.85 cfs 0.353 af

Pond 323Pa: Porous Walk Peak Elev=129.57' Storage=16 cf Inflow=0.07 cfs 0.005 af
Outflow=0.03 cfs 0.006 af

Pond 324P: CB325 to CB324 Peak Elev=123.30' Inflow=4.33 cfs 0.310 af
15.0" Round Culvert n=0.013 L=57.0' S=0.0100 '/' Outflow=4.33 cfs 0.310 af

Pond 325P: CB326 TO CB325 Peak Elev=124.05' Inflow=4.02 cfs 0.286 af
15.0" Round Culvert n=0.013 L=67.0' S=0.0115 '/' Outflow=4.02 cfs 0.286 af

Pond 326P: CB327 TO CB326 Peak Elev=125.08' Inflow=3.79 cfs 0.267 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0100 '/' Outflow=3.79 cfs 0.267 af

Pond 326Pa: Porous Walk Peak Elev=128.31' Storage=29 cf Inflow=0.12 cfs 0.008 af
Outflow=0.05 cfs 0.008 af

Pond 326Pb: Porous Walk Peak Elev=129.37' Storage=2 cf Inflow=0.01 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 326Pc: Porous Walk Peak Elev=129.97' Storage=2 cf Inflow=0.01 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 330P: CB330 T0 CB320 Peak Elev=112.04' Inflow=4.69 cfs 0.346 af
15.0" Round Culvert n=0.009 L=35.0' S=0.0286 '/' Outflow=4.69 cfs 0.346 af

Pond 330Pa: Porous Walk Peak Elev=114.31' Storage=1 cf Inflow=0.03 cfs 0.002 af
Outflow=0.02 cfs 0.002 af

Pond 330Pb: Porous Walk Peak Elev=113.03' Storage=3 cf Inflow=0.01 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond 331P: CB331 TO CB330 Peak Elev=112.18' Inflow=1.79 cfs 0.131 af
15.0" Round Culvert n=0.013 L=12.0' S=0.0100 '/' Outflow=1.79 cfs 0.131 af

Pond 331Pa: Porous Walk Peak Elev=116.60' Storage=17 cf Inflow=0.07 cfs 0.005 af
Outflow=0.03 cfs 0.005 af

Pond 332P: CB332 to CB331 Peak Elev=112.18' Inflow=0.19 cfs 0.013 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0166 '/' Outflow=0.19 cfs 0.013 af

Pond 332Pa: Porous Walk Peak Elev=116.75' Storage=38 cf Inflow=0.14 cfs 0.010 af
Outflow=0.07 cfs 0.010 af

Pond 333P: CB333 TO CB331 Peak Elev=113.13' Inflow=0.59 cfs 0.049 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0193 '/' Outflow=0.59 cfs 0.049 af

Pond 333Pa: Porous Walk Peak Elev=128.99' Storage=11 cf Inflow=0.05 cfs 0.003 af
Outflow=0.02 cfs 0.003 af

Pond 335P: CB335 TO CB330 Peak Elev=112.31' Inflow=2.45 cfs 0.182 af
15.0" Round Culvert n=0.009 L=29.0' S=0.0345 '/' Outflow=2.45 cfs 0.182 af

Pond 340P: CB340TO CB335 Peak Elev=112.51' Inflow=2.05 cfs 0.154 af
15.0" Round Culvert n=0.009 L=31.0' S=0.0355 '/' Outflow=2.05 cfs 0.154 af

Pond 345P: DMH345 TO CB340 Peak Elev=114.34' Inflow=1.76 cfs 0.134 af
15.0" Round Culvert n=0.009 L=59.0' S=0.0356 '/' Outflow=1.76 cfs 0.134 af

Pond 350P: CB350 TO DMH345 Peak Elev=119.34' Inflow=1.76 cfs 0.134 af
15.0" Round Culvert n=0.009 L=64.0' S=0.0344 '/' Outflow=1.76 cfs 0.134 af

Pond 351P: CB351 TO CB350 Peak Elev=120.81' Inflow=0.35 cfs 0.026 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.35 cfs 0.026 af

Pond 355P: DMH355 TO CB350 Peak Elev=124.34' Inflow=1.01 cfs 0.080 af
15.0" Round Culvert n=0.009 L=84.0' S=0.0351 '/' Outflow=1.01 cfs 0.080 af

Pond 360P: CB360 TO DMH355 Peak Elev=131.84' Inflow=1.01 cfs 0.080 af
15.0" Round Culvert n=0.009 L=95.0' S=0.0347 '/' Outflow=1.01 cfs 0.080 af

Pond 365P: CB365 TO CB360 Peak Elev=133.03' Inflow=0.52 cfs 0.041 af
15.0" Round Culvert n=0.009 L=36.0' S=0.0056 '/' Outflow=0.52 cfs 0.041 af

Pond 402GP: CB4+02G TO CB4+19R Peak Elev=124.11' Inflow=2.32 cfs 0.409 af
15.0" Round Culvert n=0.011 L=26.0' S=0.0058 '/' Outflow=2.32 cfs 0.409 af

Pond 405P: CB405 TO HW400 Peak Elev=102.56' Inflow=5.08 cfs 0.385 af
18.0" Round Culvert n=0.013 L=33.0' S=0.0061 '/' Outflow=5.08 cfs 0.385 af

Pond 410P: DCB410 TO CB405 Peak Elev=103.41' Inflow=4.02 cfs 0.305 af
15.0" Round Culvert n=0.013 L=119.0' S=0.0050 '/' Outflow=4.02 cfs 0.305 af

Pond 415P: CB415 TO CB410 Peak Elev=103.57' Inflow=1.71 cfs 0.127 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0054 '/' Outflow=1.71 cfs 0.127 af

Pond 416P: CB416 TO CB415 Peak Elev=103.67' Inflow=1.00 cfs 0.075 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0052 '/' Outflow=1.00 cfs 0.075 af

Pond 419LP: CB4+19L TO DMH1001+25 Peak Elev=119.11' Inflow=13.11 cfs 1.267 af
24.0" Round Culvert n=0.011 L=114.0' S=0.0202 '/' Outflow=13.11 cfs 1.267 af

Pond 419RP: CB4+19R TO CB4+19L Peak Elev=123.86' Inflow=4.27 cfs 0.545 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=4.27 cfs 0.545 af

Pond 505P: dmh505 TO HW500 Peak Elev=105.18' Inflow=6.25 cfs 0.454 af
18.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=6.25 cfs 0.454 af

Pond 507P: CB507 TO CB505 Peak Elev=106.32' Inflow=6.25 cfs 0.454 af
Primary=6.25 cfs 0.454 af Secondary=0.00 cfs 0.000 af Outflow=6.25 cfs 0.454 af

Pond 508P: CB508 TO CB507 Peak Elev=108.49' Inflow=5.78 cfs 0.417 af
18.0" Round Culvert n=0.009 L=77.0' S=0.0286 '/' Outflow=5.78 cfs 0.417 af

Pond 509P: CB509 to CB508 Peak Elev=109.62' Inflow=5.78 cfs 0.417 af
18.0" Round Culvert n=0.009 L=34.0' S=0.0382 '/' Outflow=5.78 cfs 0.417 af

Pond 600P: DETENTION BASIN OS605 TO Peak Elev=99.78' Storage=81,375 cf Inflow=17.07 cfs 2.205 af
Outflow=1.09 cfs 1.566 af

Pond 710P: CB710 TO HW700 Peak Elev=101.41' Inflow=7.87 cfs 0.593 af
18.0" Round Culvert n=0.009 L=109.0' S=0.0055 '/' Outflow=7.87 cfs 0.593 af

Pond 711P: CB711 TO CB710 Peak Elev=103.56' Inflow=0.60 cfs 0.045 af
15.0" Round Culvert n=0.009 L=52.0' S=0.0135 '/' Outflow=0.60 cfs 0.045 af

Pond 715P: CB715 TO CB710 Peak Elev=102.02' Inflow=6.65 cfs 0.501 af
18.0" Round Culvert n=0.009 L=65.0' S=0.0054 '/' Outflow=6.65 cfs 0.501 af

Pond 720P: DCB720 TO CB715 Peak Elev=102.87' Inflow=6.22 cfs 0.470 af
18.0" Round Culvert n=0.009 L=53.0' S=0.0066 '/' Outflow=6.22 cfs 0.470 af

Pond 725P: CB725 TO DCB720 Peak Elev=103.27' Inflow=3.79 cfs 0.286 af
15.0" Round Culvert n=0.009 L=75.0' S=0.0060 '/' Outflow=3.79 cfs 0.286 af

Pond 801P: HW801 TO HW800 Peak Elev=102.46' Storage=11,605 cf Inflow=18.84 cfs 1.382 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0215 '/' Outflow=7.08 cfs 1.377 af

Pond 805P: CB805 TO HW802 Peak Elev=103.00' Inflow=8.32 cfs 0.650 af
18.0" Round Culvert n=0.009 L=68.0' S=0.0051 '/' Outflow=8.32 cfs 0.650 af

Pond 806P: CB806 TO CB805 Peak Elev=104.26' Inflow=6.40 cfs 0.499 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0175 '/' Outflow=6.40 cfs 0.499 af

Pond 807P: CB807 TO CB806 Peak Elev=106.18' Inflow=3.27 cfs 0.255 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0215 '/' Outflow=3.27 cfs 0.255 af

Pond 808P: CB808 TO CB807 Peak Elev=107.04' Inflow=2.56 cfs 0.205 af
15.0" Round Culvert n=0.009 L=128.0' S=0.0051 '/' Outflow=2.56 cfs 0.205 af

Pond 857LP: CB8+57L TO CB4+19L Peak Elev=134.95' Inflow=6.05 cfs 0.524 af
15.0" Round Culvert n=0.011 L=439.0' S=0.0237 '/' Outflow=6.05 cfs 0.524 af

Pond 857RP: CB8+57R TO CB8+57L Peak Elev=134.99' Inflow=0.89 cfs 0.075 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.89 cfs 0.075 af

Pond 900P: POND 900 Peak Elev=100.66' Storage=88,635 cf Inflow=23.42 cfs 3.042 af
Discarded=1.06 cfs 2.429 af Primary=0.28 cfs 0.266 af Outflow=1.34 cfs 2.696 af

Pond 1000P: Sediment Forebay Peak Elev=111.56' Storage=89 cf Inflow=1.14 cfs 0.209 af
Outflow=1.14 cfs 0.209 af

Pond 1100P: Subsurface Detention SC-740 Peak Elev=120.75' Storage=3,966 cf Inflow=4.63 cfs 0.349 af
Discarded=0.13 cfs 0.212 af Primary=4.51 cfs 0.137 af Outflow=4.64 cfs 0.349 af

Pond 1200P: Subsurface Detention SC-740 Peak Elev=112.86' Storage=3,966 cf Inflow=3.22 cfs 0.280 af
Discarded=0.13 cfs 0.202 af Primary=1.95 cfs 0.078 af Outflow=2.08 cfs 0.280 af

Pond 1295GP: CB12+95G TO CB12+95R Peak Elev=138.29' Inflow=2.34 cfs 0.217 af
15.0" Round Culvert n=0.011 L=11.0' S=0.0091 '/' Outflow=2.34 cfs 0.217 af

Pond 1295LP: CB12+95L TO CB8+57L Peak Elev=137.65' Inflow=3.69 cfs 0.340 af
15.0" Round Culvert n=0.011 L=438.0' S=0.0083 '/' Outflow=3.69 cfs 0.340 af

Pond 1295RP: CB12+95R CB12+95L Peak Elev=138.07' Inflow=3.04 cfs 0.284 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=3.04 cfs 0.284 af

Pond 1643LP: CB16+43L TO CB16+43R Peak Elev=137.81' Inflow=0.09 cfs 0.006 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.09 cfs 0.006 af

Pond 1643RP: CB16+43R TO CB17+85R Peak Elev=136.58' Inflow=0.69 cfs 0.052 af
12.0" Round Culvert n=0.011 L=143.0' S=0.0346 '/' Outflow=0.69 cfs 0.052 af

Pond 1785LP: CB17+85L TO CB17+85R Peak Elev=131.62' Inflow=0.33 cfs 0.028 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.33 cfs 0.028 af

Pond 1785RP: CB17+85R TO DMH18+69 Peak Elev=130.73' Inflow=1.41 cfs 0.111 af
12.0" Round Culvert n=0.011 L=86.0' S=0.0337 '/' Outflow=1.41 cfs 0.111 af

Pond 1869P: DMH18+69 TO CB19+28L Peak Elev=127.63' Inflow=1.41 cfs 0.111 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0345 '/' Outflow=1.41 cfs 0.111 af

Pond 1928LP: CB19+28L TO CB19+79R Peak Elev=124.36' Inflow=2.33 cfs 0.178 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0282 '/' Outflow=2.33 cfs 0.178 af

Pond 1928RP: CB19+28R TO CB19+28L Peak Elev=125.80' Inflow=0.48 cfs 0.032 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.48 cfs 0.032 af

Pond 1979RP: CB19+79 TO CB21+73R Peak Elev=122.52' Inflow=2.48 cfs 0.189 af
12.0" Round Culvert n=0.011 L=190.0' S=0.0191 '/' Outflow=2.48 cfs 0.189 af

Pond 2168P: DMH 21+68R to DMH 22+41R Peak Elev=109.96' Inflow=1.14 cfs 0.209 af
12.0" Round Culvert n=0.012 L=76.0' S=0.0150 '/' Outflow=1.14 cfs 0.209 af

Pond 2173LP: CB21+73L TO CB21+73R Peak Elev=121.01' Inflow=1.06 cfs 0.079 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0114 '/' Outflow=1.06 cfs 0.079 af

Pond 2173RP: CB21+73R TO DMH21+95R Peak Elev=120.98' Inflow=4.21 cfs 0.316 af
18.0" Round Culvert n=0.011 L=30.0' S=0.0357 '/' Outflow=4.21 cfs 0.316 af

Pond 2182P: DCB 21+82R TO DMH 21+97R Peak Elev=120.75' Inflow=0.52 cfs 0.033 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=0.52 cfs 0.033 af

Pond 2195P: DMH21+95R TO Subsurface Detention Peak Elev=120.78' Inflow=4.21 cfs 0.316 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=4.21 cfs 0.316 af

Pond 2197P: DMH 21+97R TO Subsurface Detention Peak Elev=120.75' Inflow=0.52 cfs 0.033 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0000 '/' Outflow=0.52 cfs 0.033 af

Pond 2210P: DMH 22+10R to DMH22+20R Peak Elev=118.72' Inflow=4.51 cfs 0.137 af
12.0" Round Culvert n=0.011 L=5.0' S=0.0200 '/' Outflow=4.51 cfs 0.137 af

Pond 2220P: DMH22+20R TO DMH22+41R Peak Elev=111.38' Inflow=4.51 cfs 0.137 af
12.0" Round Culvert n=0.011 L=53.0' S=0.0747 '/' Outflow=4.51 cfs 0.137 af

Pond 2241: DMH 22+41R to DMH24+86R Peak Elev=111.53' Inflow=5.79 cfs 0.519 af
12.0" Round Culvert n=0.012 L=188.0' S=0.0150 '/' Outflow=5.79 cfs 0.519 af

Pond 2286P: DMH 22+86R to DMH24+78R Peak Elev=106.03' Inflow=5.79 cfs 0.519 af
12.0" Round Culvert n=0.012 L=54.0' S=0.0150 '/' Outflow=5.79 cfs 0.519 af

Pond 2440P: TD24+40R TO CB24+60R Peak Elev=112.86' Inflow=0.10 cfs 0.006 af
12.0" Round Culvert n=0.011 L=62.0' S=0.0323 '/' Outflow=0.10 cfs 0.006 af

Pond 2460LP: CB24+60L TO CB24+60R Peak Elev=114.20' Inflow=1.52 cfs 0.129 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=1.52 cfs 0.129 af

Pond 2460P: CB24+60R TO DMH24+85R Peak Elev=112.86' Inflow=0.96 cfs 0.060 af
12.0" Round Culvert n=0.011 L=28.0' S=0.0107 '/' Outflow=0.96 cfs 0.060 af

Pond 2460RP: CB24+60R TO DMH24+86R Peak Elev=113.93' Inflow=2.24 cfs 0.202 af
12.0" Round Culvert n=0.011 L=58.0' S=0.0617 '/' Outflow=2.24 cfs 0.202 af

Pond 2468P: DMH24+86R TO Subsurface Detention Peak Elev=112.87' Inflow=2.24 cfs 0.202 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=2.24 cfs 0.201 af

Pond 2474P: DMH24+74R TO DMH24+85R Peak Elev=112.86' Inflow=0.27 cfs 0.018 af
12.0" Round Culvert n=0.011 L=12.0' S=0.0333 '/' Outflow=0.27 cfs 0.018 af

Pond 2478P: DMH24+78R to HW24+89R Peak Elev=104.16' Inflow=6.50 cfs 0.597 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0150 '/' Outflow=6.50 cfs 0.597 af

Pond 2485P: DMH24+85R TO Subsurface Detention Peak Elev=112.86' Inflow=1.20 cfs 0.078 af
24.0" Round Culvert n=0.011 L=6.0' S=0.0000 '/' Outflow=1.20 cfs 0.078 af

Pond 2495P: DMH24+95R TO DMH25+00 Peak Elev=110.21' Inflow=1.95 cfs 0.078 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0200 '/' Outflow=1.95 cfs 0.078 af

Pond 2505P: DMH24+82R to DMH24+78R Peak Elev=104.54' Inflow=1.95 cfs 0.078 af
12.0" Round Culvert n=0.011 L=43.0' S=0.0649 '/' Outflow=1.95 cfs 0.078 af

Pond 2625RP: DMH26+25R TO HW26+25 Peak Elev=102.86' Inflow=4.72 cfs 0.386 af
12.0" Round Culvert n=0.011 L=15.0' S=0.0200 '/' Outflow=4.72 cfs 0.386 af

Pond 2723P: DMH27+23R TO DMH26+25R Peak Elev=103.51' Inflow=2.58 cfs 0.214 af
12.0" Round Culvert n=0.011 L=93.0' S=0.0161 '/' Outflow=2.58 cfs 0.214 af

Pond 2723RP: TD27+23R TO DMH27+23R Peak Elev=104.92' Inflow=0.42 cfs 0.028 af
12.0" Round Culvert n=0.011 L=39.0' S=0.0538 '/' Outflow=0.42 cfs 0.028 af

Pond 2730LP: CB27+30L TO 27+30R Peak Elev=110.18' Inflow=1.47 cfs 0.121 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=1.47 cfs 0.121 af

Pond 2730RP: CB27+30R TO DMH27+23R Peak Elev=109.92' Inflow=2.20 cfs 0.186 af
12.0" Round Culvert n=0.011 L=125.0' S=0.0526 '/' Outflow=2.20 cfs 0.186 af

Pond 3018GP: CB30+18G TO CB30+20L Peak Elev=106.84' Inflow=13.22 cfs 1.683 af
24.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=13.22 cfs 1.683 af

Pond 3020LP: CB30+20L TO CB30+20R Peak Elev=105.62' Inflow=15.65 cfs 1.914 af
24.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=15.65 cfs 1.914 af

Pond 3020RP: CB30+20R TO HW29+63 Peak Elev=103.91' Inflow=16.61 cfs 1.984 af
24.0" Round Culvert n=0.011 L=135.0' S=0.0089 '/' Outflow=16.61 cfs 1.984 af

Pond 3200P: CB3200 TO CB320 Peak Elev=111.02' Inflow=0.01 cfs 0.003 af
15.0" Round Culvert n=0.009 L=90.0' S=0.0050 '/' Outflow=0.01 cfs 0.003 af

Pond 100125P: DMH1001+25 TO DMH1003+11 Peak Elev=109.71' Inflow=13.11 cfs 1.267 af
24.0" Round Culvert n=0.011 L=194.0' S=0.0201 '/' Outflow=13.11 cfs 1.267 af

Pond 100311P: DMH1003+11C TO CB30+18G Peak Elev=108.02' Inflow=13.11 cfs 1.267 af
24.0" Round Culvert n=0.011 L=130.0' S=0.0092 '/' Outflow=13.11 cfs 1.267 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.50' Storage=4,039 cf Inflow=6.39 cfs 0.397 af
Discarded=0.01 cfs 0.059 af Primary=5.29 cfs 0.301 af Outflow=5.30 cfs 0.360 af

Pond C3P: CBC3 to CB509 Peak Elev=114.84' Inflow=4.80 cfs 0.348 af
18.0" Round Culvert n=0.009 L=183.0' S=0.0295 '/' Outflow=4.80 cfs 0.348 af

Pond C4P: CBC4 to CBC3 Peak Elev=117.01' Inflow=3.09 cfs 0.220 af
15.0" Round Culvert n=0.009 L=212.0' S=0.0092 '/' Outflow=3.09 cfs 0.220 af

Pond C5P: CBC5 to DMHC6 Peak Elev=118.53' Inflow=1.18 cfs 0.082 af
15.0" Round Culvert n=0.013 L=66.0' S=0.0091 '/' Outflow=1.18 cfs 0.082 af

Pond C6P: DMHC6 to CBC4 Peak Elev=117.56' Inflow=1.75 cfs 0.127 af
15.0" Round Culvert n=0.013 L=32.0' S=0.0219 '/' Outflow=1.75 cfs 0.127 af

Pond C7P: CBC7 to DMHC6 Peak Elev=118.93' Inflow=0.57 cfs 0.046 af
15.0" Round Culvert n=0.013 L=189.0' S=0.0082 '/' Outflow=0.57 cfs 0.046 af

Pond C8P: CBC8 to CBC7 Peak Elev=119.36' Inflow=0.57 cfs 0.046 af
15.0" Round Culvert n=0.013 L=33.0' S=0.0106 '/' Outflow=0.57 cfs 0.046 af

Pond RD1Pa: RD1a TO CB327 Peak Elev=125.50' Inflow=0.73 cfs 0.058 af
12.0" Round Culvert n=0.013 L=43.0' S=0.0200 '/' Outflow=0.73 cfs 0.058 af

Pond RD1Pb: RD1b to CB 324 Peak Elev=123.91' Inflow=0.52 cfs 0.041 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0800 '/' Outflow=0.52 cfs 0.041 af

Pond RD2Pa: RD2a to CB333 Peak Elev=113.64' Inflow=0.59 cfs 0.047 af
12.0" Round Culvert n=0.013 L=23.0' S=0.0100 '/' Outflow=0.59 cfs 0.047 af

Pond RD2Pb: RD2b TO CB322 Peak Elev=114.19' Inflow=0.58 cfs 0.046 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0340 '/' Outflow=0.58 cfs 0.046 af

Pond RD3P: RD3 TO CB808 Peak Elev=107.77' Inflow=2.56 cfs 0.202 af
12.0" Round Culvert n=0.009 L=7.0' S=0.0214 '/' Outflow=2.56 cfs 0.202 af

Pond RD4P: RD4 TO CB807 Peak Elev=108.14' Inflow=0.07 cfs 0.006 af
12.0" Round Culvert n=0.009 L=34.0' S=0.0441 '/' Outflow=0.07 cfs 0.006 af

Pond RD5P: RD5 TO CB806 Peak Elev=107.27' Inflow=2.61 cfs 0.206 af
12.0" Round Culvert n=0.009 L=45.0' S=0.0567 '/' Outflow=2.61 cfs 0.206 af

Pond RD6P: RD6 TO CB805 Peak Elev=103.71' Inflow=1.36 cfs 0.107 af
12.0" Round Culvert n=0.009 L=60.0' S=0.0233 '/' Outflow=1.36 cfs 0.107 af

Pond RD8P: RD8 TO CB107 Peak Elev=102.29' Inflow=0.32 cfs 0.025 af
8.0" Round Culvert n=0.009 L=28.0' S=0.0107 '/' Outflow=0.32 cfs 0.025 af

Pond RD9P: RD9 TO CB405 Peak Elev=102.67' Inflow=0.22 cfs 0.017 af
8.0" Round Culvert n=0.009 L=32.0' S=0.0094 '/' Outflow=0.22 cfs 0.017 af

Total Runoff Area = 121.896 ac Runoff Volume = 16.706 af Average Runoff Depth = 1.64"
80.35% Pervious = 97.941 ac 19.65% Impervious = 23.956 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: SUBCATCHMENT 1 Runoff Area=116,725 sf 15.99% Impervious Runoff Depth=1.50"
Flow Length=928' Tc=34.5 min CN=47 Runoff=2.08 cfs 0.334 af

Subcatchment 11S: flow to reach 2R Runoff Area=17,367 sf 0.00% Impervious Runoff Depth=3.04"
Flow Length=80' Tc=8.0 min CN=63 Runoff=1.30 cfs 0.101 af

Subcatchment 12S: Flow to Lot H-2 Runoff Area=176,084 sf 10.04% Impervious Runoff Depth=4.75"
Flow Length=645' Tc=9.0 min CN=79 Runoff=20.17 cfs 1.600 af

Subcatchment 14S: Flow to Lot H-2 Runoff Area=76,548 sf 0.00% Impervious Runoff Depth=3.98"
Flow Length=416' Tc=9.0 min CN=72 Runoff=7.41 cfs 0.583 af

Subcatchment 15S: offsite flow Runoff Area=358,058 sf 1.70% Impervious Runoff Depth=0.36"
Flow Length=1,260' Tc=27.5 min CN=32 Runoff=0.55 cfs 0.243 af

Subcatchment 16S: offsite flow Runoff Area=2,052,474 sf 8.08% Impervious Runoff Depth=1.59"
Flow Length=1,412' Tc=34.3 min CN=48 Runoff=39.62 cfs 6.228 af

Subcatchment 30S: SUBCATCHMENT 30 Runoff Area=48,198 sf 0.00% Impervious Runoff Depth=3.24"
Flow Length=154' Slope=0.0200 '/' Tc=23.5 min CN=65 Runoff=2.62 cfs 0.299 af

Subcatchment 40S: SUBCATCHMENT 40 Runoff Area=152,210 sf 0.00% Impervious Runoff Depth=1.50"
Flow Length=452' Tc=14.5 min CN=47 Runoff=3.82 cfs 0.436 af

Subcatchment 50S: SUBCATCHMENT50 Runoff Area=125,909 sf 4.33% Impervious Runoff Depth=0.55"
Flow Length=987' Tc=24.8 min CN=35 Runoff=0.50 cfs 0.131 af

Subcatchment 100S: Flow to Detention Runoff Area=42,732 sf 0.00% Impervious Runoff Depth=3.77"
Tc=5.0 min CN=70 Runoff=4.49 cfs 0.308 af

Subcatchment 101AS: Flow to Detention Runoff Area=12,152 sf 1.03% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=81 Runoff=1.66 cfs 0.116 af

Subcatchment 101os: North Side of Mast Runoff Area=17,404 sf 27.18% Impervious Runoff Depth=2.05"
Tc=5.0 min CN=53 Runoff=0.92 cfs 0.068 af

Subcatchment 102os: North Side of Mast Runoff Area=15,661 sf 51.62% Impervious Runoff Depth=3.66"
Tc=5.0 min CN=69 Runoff=1.60 cfs 0.110 af

Subcatchment 103os: Mast Road East to Runoff Area=12,002 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=2.01 cfs 0.159 af

Subcatchment 107S: Flow to CB107 Runoff Area=7,160 sf 86.56% Impervious Runoff Depth=6.70"
Tc=5.0 min CN=96 Runoff=1.19 cfs 0.092 af

Subcatchment 108S: Flow to CB108 Runoff Area=20,254 sf 84.37% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=3.34 cfs 0.255 af

Subcatchment 148GS: SUBCATCHMENT Runoff Area=24,508 sf 16.32% Impervious Runoff Depth=1.24"
Flow Length=178' Tc=6.3 min CN=44 Runoff=0.60 cfs 0.058 af

Subcatchment 148RS: SUBCATCHMENT Runoff Area=4,316 sf 70.81% Impervious Runoff Depth=4.97"
Tc=5.0 min CN=81 Runoff=0.59 cfs 0.041 af

Subcatchment 200os: Mast Road East to Runoff Area=9,931 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=1.66 cfs 0.132 af

Subcatchment 205S: Flow to CB205 Runoff Area=21,237 sf 94.10% Impervious Runoff Depth=6.82"
Tc=5.0 min CN=97 Runoff=3.55 cfs 0.277 af

Subcatchment 206S: Flow to CB206 Runoff Area=10,095 sf 95.84% Impervious Runoff Depth=6.82"
Tc=5.0 min CN=97 Runoff=1.69 cfs 0.132 af

Subcatchment 210S: Flow to CB210 Runoff Area=7,732 sf 75.04% Impervious Runoff Depth=6.12"
Tc=5.0 min CN=91 Runoff=1.23 cfs 0.090 af

Subcatchment 215S: Flow to DCB215 Runoff Area=28,399 sf 86.64% Impervious Runoff Depth=6.35"
Tc=5.0 min CN=93 Runoff=4.62 cfs 0.345 af

Subcatchment 220S: Flow to CB220 Runoff Area=15,024 sf 95.13% Impervious Runoff Depth=6.70"
Tc=5.0 min CN=96 Runoff=2.50 cfs 0.193 af

Subcatchment 300os: East Side of NH Runoff Area=2,933 sf 81.69% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=87 Runoff=0.44 cfs 0.032 af

Subcatchment 303GS: SUBCATCHMENT Runoff Area=10,545 sf 75.15% Impervious Runoff Depth=5.20"
Tc=5.0 min CN=83 Runoff=1.50 cfs 0.105 af

Subcatchment 304RS: SUBCATCHMENT Runoff Area=5,196 sf 51.33% Impervious Runoff Depth=3.66"
Tc=5.0 min CN=69 Runoff=0.53 cfs 0.036 af

Subcatchment 305S: Flow to CB305 Runoff Area=7,928 sf 84.02% Impervious Runoff Depth=6.23"
Tc=5.0 min CN=92 Runoff=1.28 cfs 0.095 af

Subcatchment 310S: Flow to CB310 Runoff Area=145,473 sf 12.09% Impervious Runoff Depth=1.50"
Flow Length=469' Tc=13.1 min CN=47 Runoff=3.79 cfs 0.417 af

Subcatchment 315S: Flow to CB315 Runoff Area=116,325 sf 6.81% Impervious Runoff Depth=0.83"
Flow Length=537' Tc=9.9 min CN=39 Runoff=1.18 cfs 0.186 af

Subcatchment 316S: Flow to CB316 Runoff Area=3,776 sf 88.61% Impervious Runoff Depth=6.47"
Tc=5.0 min CN=94 Runoff=0.62 cfs 0.047 af

Subcatchment 320S: Flow to CB320 Runoff Area=3,127 sf 97.95% Impervious Runoff Depth=6.82"
Tc=5.0 min CN=97 Runoff=0.52 cfs 0.041 af

Subcatchment 320Sa: Porous Walk Runoff Area=404 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.07 cfs 0.005 af

Subcatchment 321S: Flow to CB322 Runoff Area=1,903 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.003 af

Subcatchment 321Sa: Porous Walk Runoff Area=456 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.08 cfs 0.006 af

Subcatchment 322S: Flow to CB323 Runoff Area=4,253 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.05 cfs 0.007 af

Subcatchment 323S: Flow to CB324 Runoff Area=1,844 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.003 af

Subcatchment 323Sa: Porous Walk Runoff Area=498 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment 324S: Flow to CB325 Runoff Area=2,213 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.37 cfs 0.029 af

Subcatchment 325S: Flow to CB324 Runoff Area=1,665 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.28 cfs 0.022 af

Subcatchment 326S: Flow to CB325 Runoff Area=34,308 sf 60.15% Impervious Runoff Depth=4.20"
Tc=5.0 min CN=74 Runoff=4.02 cfs 0.276 af

Subcatchment 326Sa: Porous Walk Runoff Area=1,787 sf 44.21% Impervious Runoff Depth=3.24"
Tc=5.0 min CN=65 Runoff=0.16 cfs 0.011 af

Subcatchment 326Sb: Porous Walk Runoff Area=57 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.001 af

Subcatchment 326Sc: Porous Walk Runoff Area=53 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.01 cfs 0.001 af

Subcatchment 330S: Flow to CB330 Runoff Area=3,294 sf 94.11% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=0.54 cfs 0.041 af

Subcatchment 330Sa: Porous Walk Runoff Area=450 sf 41.33% Impervious Runoff Depth=3.04"
Tc=5.0 min CN=63 Runoff=0.04 cfs 0.003 af

Subcatchment 330Sb: Porous Walk Runoff Area=218 sf 39.91% Impervious Runoff Depth=3.04"
Tc=5.0 min CN=63 Runoff=0.02 cfs 0.001 af

Subcatchment 331S: Flow to CB331 Runoff Area=10,020 sf 66.41% Impervious Runoff Depth=4.64"
Tc=5.0 min CN=78 Runoff=1.29 cfs 0.089 af

Subcatchment 331Sa: Porous Walk Runoff Area=1,084 sf 44.83% Impervious Runoff Depth=3.24"
Tc=5.0 min CN=65 Runoff=0.10 cfs 0.007 af

Subcatchment 332S: Flow to CB332 Runoff Area=1,679 sf 74.75% Impervious Runoff Depth=5.20"
Tc=5.0 min CN=83 Runoff=0.24 cfs 0.017 af

Subcatchment 332Sa: Porous Walk Runoff Area=1,526 sf 62.19% Impervious Runoff Depth=4.42"
Tc=5.0 min CN=76 Runoff=0.19 cfs 0.013 af

Subcatchment 333S: Flow to CB332 Runoff Area=2,063 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.02 cfs 0.003 af

Subcatchment 333Sa: Porous Walk Runoff Area=1,005 sf 32.34% Impervious Runoff Depth=2.53"
Tc=5.0 min CN=58 Runoff=0.07 cfs 0.005 af

Subcatchment 335S: Flow to CB335 Runoff Area=4,263 sf 62.80% Impervious Runoff Depth=4.42"
Tc=5.0 min CN=76 Runoff=0.52 cfs 0.036 af

Subcatchment 340S: Flow to CB340 Runoff Area=2,616 sf 72.90% Impervious Runoff Depth=5.09"
Tc=5.0 min CN=82 Runoff=0.36 cfs 0.025 af

Subcatchment 350S: Flow to CB350 Runoff Area=3,138 sf 83.08% Impervious Runoff Depth=5.77"
Tc=5.0 min CN=88 Runoff=0.48 cfs 0.035 af

Subcatchment 351S: Flow to CB351 Runoff Area=2,600 sf 93.15% Impervious Runoff Depth=6.47"
Tc=5.0 min CN=94 Runoff=0.43 cfs 0.032 af

Subcatchment 360S: Flow to CB360 Runoff Area=3,507 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.59 cfs 0.047 af

Subcatchment 365S: Flow to CB365 Runoff Area=3,724 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.62 cfs 0.049 af

Subcatchment 400os: East Side of NH Runoff Area=13,932 sf 55.92% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=87 Runoff=2.11 cfs 0.151 af

Subcatchment 402GS: SUBCATCHMENT Runoff Area=196,506 sf 11.43% Impervious Runoff Depth=1.07"
Flow Length=919' Tc=16.0 min CN=42 Runoff=2.80 cfs 0.403 af

Subcatchment 405S: Flow to CB405 Runoff Area=6,080 sf 83.22% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=1.00 cfs 0.077 af

Subcatchment 410S: Flow to DCB410 Runoff Area=16,744 sf 86.87% Impervious Runoff Depth=6.70"
Tc=5.0 min CN=96 Runoff=2.78 cfs 0.215 af

Subcatchment 415S: Flow to CB415 Runoff Area=5,205 sf 79.02% Impervious Runoff Depth=6.47"
Tc=5.0 min CN=94 Runoff=0.85 cfs 0.064 af

Subcatchment 416S: Flow to CB416 Runoff Area=7,343 sf 80.88% Impervious Runoff Depth=6.47"
Tc=5.0 min CN=94 Runoff=1.20 cfs 0.091 af

Subcatchment 419LS: SUBCATCHMENT Runoff Area=32,282 sf 58.86% Impervious Runoff Depth=4.20"
Tc=5.0 min CN=74 Runoff=3.78 cfs 0.259 af

Subcatchment 419RS: SUBCATCHMENT Runoff Area=27,019 sf 48.53% Impervious Runoff Depth=3.56"
Tc=5.0 min CN=68 Runoff=2.68 cfs 0.184 af

Subcatchment 500os: Drive to CB14 Runoff Area=1,717 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=6.12"
Tc=0.0 min CN=91 Runoff=7.78 cfs 0.488 af

Subcatchment 507S: Flow to CB507 Runoff Area=3,338 sf 99.70% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.56 cfs 0.044 af

Subcatchment 508Aos: Flow to CBC4 Runoff Area=17,911 sf 52.06% Impervious Runoff Depth=3.66"
Tc=5.0 min CN=69 Runoff=1.83 cfs 0.125 af

Subcatchment 508Bos: West Side of NH Runoff Area=39,695 sf 30.84% Impervious Runoff Depth=2.43"
Tc=5.0 min CN=57 Runoff=2.58 cfs 0.185 af

Subcatchment 508S: Flow to CB508 Runoff Area=15,987 sf 41.84% Impervious Runoff Depth=3.14"
Tc=5.0 min CN=64 Runoff=1.39 cfs 0.096 af

Subcatchment 600os: Drive to CB15 Runoff Area=3,747 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.63 cfs 0.050 af

Subcatchment 600S: POND 600 Runoff Area=58,507 sf 0.88% Impervious Runoff Depth=2.93"
Tc=5.0 min CN=62 Runoff=4.71 cfs 0.328 af

Subcatchment 700os: East Side of NH Runoff Area=24,418 sf 54.75% Impervious Runoff Depth=5.65"
Tc=5.0 min CN=87 Runoff=3.70 cfs 0.264 af

Subcatchment 710S: Flow to CB710 Runoff Area=4,542 sf 89.56% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=0.75 cfs 0.057 af

Subcatchment 711S: Flow to CB711 Runoff Area=4,357 sf 88.02% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=0.72 cfs 0.055 af

Subcatchment 715S: Flow to CB715 Runoff Area=3,324 sf 61.88% Impervious Runoff Depth=6.00"
Tc=5.0 min CN=90 Runoff=0.52 cfs 0.038 af

Subcatchment 720S: Flow to DCB720 Runoff Area=17,720 sf 87.10% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=2.93 cfs 0.223 af

Subcatchment 725S: Flows to CB725 Runoff Area=27,585 sf 84.41% Impervious Runoff Depth=6.58"
Tc=5.0 min CN=95 Runoff=4.55 cfs 0.347 af

Subcatchment 801S: HW801 TO HW800 Runoff Area=150,892 sf 30.25% Impervious Runoff Depth=3.45"
Tc=5.0 min CN=67 Runoff=14.48 cfs 0.996 af

Subcatchment 805S: FLOW TO CB805 Runoff Area=4,093 sf 91.91% Impervious Runoff Depth=6.70"
Tc=5.0 min CN=96 Runoff=0.68 cfs 0.052 af

Subcatchment 806S: FLOW TO CB806 Runoff Area=3,812 sf 92.10% Impervious Runoff Depth=6.35"
Tc=5.0 min CN=93 Runoff=0.62 cfs 0.046 af

Subcatchment 807S: FLOW TO CB807 Runoff Area=5,559 sf 76.47% Impervious Runoff Depth=5.31"
Tc=5.0 min CN=84 Runoff=0.80 cfs 0.056 af

Subcatchment 808S: FLOW TO CB808 Runoff Area=3,999 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.05 cfs 0.006 af

Subcatchment 857LS: SUBCATCHMENT Runoff Area=16,981 sf 62.84% Impervious Runoff Depth=4.42"
Tc=5.0 min CN=76 Runoff=2.09 cfs 0.144 af

Subcatchment 857RS: SUBCATCHMENT Runoff Area=31,969 sf 20.90% Impervious Runoff Depth=1.86"
Tc=5.0 min CN=51 Runoff=1.49 cfs 0.114 af

Subcatchment 900S: SUBCATCHMENT 900S Runoff Area=78,149 sf 2.46% Impervious Runoff Depth=0.91"
Flow Length=171' Tc=12.4 min CN=40 Runoff=0.89 cfs 0.136 af

Subcatchment 1100S: 1100S Runoff Area=6,092 sf 52.35% Impervious Runoff Depth=3.77"
Flow Length=100' Tc=2.6 min CN=70 Runoff=0.70 cfs 0.044 af

Subcatchment 1295GS: SUBCATCHMENT Runoff Area=70,690 sf 33.46% Impervious Runoff Depth=2.34"
Flow Length=466' Tc=10.6 min CN=56 Runoff=3.59 cfs 0.316 af

Subcatchment 1295LS: SUBCATCHMENT Runoff Area=8,078 sf 65.64% Impervious Runoff Depth=4.64"
Tc=5.0 min CN=78 Runoff=1.04 cfs 0.072 af

Subcatchment 1295RS: SUBCATCHMENT Runoff Area=12,955 sf 51.46% Impervious Runoff Depth=3.66"
Tc=5.0 min CN=69 Runoff=1.32 cfs 0.091 af

Subcatchment 1643LS: SUBCATCHMENT Runoff Area=1,696 sf 35.38% Impervious Runoff Depth=2.73"
Flow Length=125' Tc=5.2 min CN=60 Runoff=0.13 cfs 0.009 af

Subcatchment 1643RS: SUBCATCHMENT Runoff Area=8,214 sf 54.11% Impervious Runoff Depth=3.88"
Flow Length=163' Tc=7.5 min CN=71 Runoff=0.81 cfs 0.061 af

Subcatchment 1785LS: SUBCATCHMENT Runoff Area=9,115 sf 28.75% Impervious Runoff Depth=2.34"
Flow Length=231' Tc=8.1 min CN=56 Runoff=0.50 cfs 0.041 af

Subcatchment 1785RS: SUBCATCHMENT Runoff Area=5,957 sf 51.59% Impervious Runoff Depth=3.66"
Flow Length=185' Tc=3.9 min CN=69 Runoff=0.63 cfs 0.042 af

Subcatchment 1928LS: SUBCATCHMENT Runoff Area=8,001 sf 41.78% Impervious Runoff Depth=3.14"
Flow Length=173' Tc=6.7 min CN=64 Runoff=0.65 cfs 0.048 af

Subcatchment 1928RS: SUBCATCHMENT Runoff Area=6,211 sf 51.15% Impervious Runoff Depth=3.66"
Flow Length=177' Tc=4.1 min CN=69 Runoff=0.66 cfs 0.044 af

Subcatchment 1979RS: SUBCATCHMENT Runoff Area=2,259 sf 47.94% Impervious Runoff Depth=3.45"
Flow Length=93' Tc=4.4 min CN=67 Runoff=0.22 cfs 0.015 af

Subcatchment 2173LS: SUBCATCHMENT Runoff Area=18,794 sf 40.92% Impervious Runoff Depth=3.04"
Flow Length=205' Tc=6.3 min CN=63 Runoff=1.50 cfs 0.109 af

Subcatchment 2173RS: SUBCATCHMENT Runoff Area=8,515 sf 55.89% Impervious Runoff Depth=3.98"
Flow Length=126' Tc=6.5 min CN=72 Runoff=0.90 cfs 0.065 af

Subcatchment 2373S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=2.62 cfs 0.208 af

Subcatchment 2440S: SUBCATCHMENT Runoff Area=1,462 sf 42.82% Impervious Runoff Depth=3.14"
Flow Length=61' Tc=3.4 min CN=64 Runoff=0.13 cfs 0.009 af

Subcatchment 2460LS: SUBCATCHMENT Runoff Area=26,630 sf 47.56% Impervious Runoff Depth=3.45"
Flow Length=378' Tc=10.9 min CN=67 Runoff=2.09 cfs 0.176 af

Subcatchment 2460RS: SUBCATCHMENT Runoff Area=13,923 sf 51.40% Impervious Runoff Depth=3.66"
Flow Length=261' Tc=3.4 min CN=69 Runoff=1.51 cfs 0.098 af

Subcatchment 2460S: SUBCATCHMENT Runoff Area=6,810 sf 74.21% Impervious Runoff Depth=5.20"
Flow Length=138' Tc=1.6 min CN=83 Runoff=1.09 cfs 0.068 af

Subcatchment 2474S: SUBCATCHMENT Runoff Area=4,253 sf 43.00% Impervious Runoff Depth=3.14"
Flow Length=76' Tc=3.7 min CN=64 Runoff=0.39 cfs 0.026 af

Subcatchment 2619S: SUBCATCHMENT Runoff Area=15,629 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=2.62 cfs 0.208 af

Subcatchment 2723RS: SUBCATCHMENT Runoff Area=4,476 sf 61.44% Impervious Runoff Depth=4.31"
Flow Length=85' Tc=4.4 min CN=75 Runoff=0.55 cfs 0.037 af

Subcatchment 2730LS: SUBCATCHMENT Runoff Area=24,016 sf 49.95% Impervious Runoff Depth=3.56"
Flow Length=462' Tc=10.0 min CN=68 Runoff=2.00 cfs 0.163 af

Subcatchment 2730RS: SUBCATCHMENT Runoff Area=12,056 sf 52.21% Impervious Runoff Depth=3.77"
Flow Length=261' Tc=3.9 min CN=70 Runoff=1.32 cfs 0.087 af

Subcatchment 3018GS: Runoff Area=270,071 sf 12.90% Impervious Runoff Depth=1.32"
Flow Length=1,138' Tc=26.5 min CN=45 Runoff=4.52 cfs 0.683 af

Subcatchment 3020LS: SUBCATCHMENT Runoff Area=43,038 sf 52.99% Impervious Runoff Depth=3.77"
Flow Length=349' Tc=10.3 min CN=70 Runoff=3.78 cfs 0.310 af

Subcatchment 3020RS: SUBCATCHMENT Runoff Area=10,119 sf 60.96% Impervious Runoff Depth=4.64"
Flow Length=204' Tc=6.3 min CN=78 Runoff=1.24 cfs 0.090 af

Subcatchment 3200S: Flow to CB3200 Runoff Area=3,537 sf 0.00% Impervious Runoff Depth=0.83"
Tc=5.0 min CN=39 Runoff=0.04 cfs 0.006 af

Subcatchment RD1Sa: Roof drain 1a Runoff Area=5,231 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.88 cfs 0.069 af

Subcatchment RD1Sb: Roof Drain 1b Runoff Area=3,703 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.62 cfs 0.049 af

Subcatchment RD2Sa: Roof drain 2a Runoff Area=4,238 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.71 cfs 0.056 af

Subcatchment RD2Sb: Roof drain 2b Runoff Area=4,138 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.69 cfs 0.055 af

Subcatchment RD3S: ROOF DRAIN Runoff Area=18,273 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=3.06 cfs 0.243 af

Subcatchment RD4S: ROOF DRAIN Runoff Area=504 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment RD5S: ROOF DRAIN Runoff Area=18,667 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=3.13 cfs 0.248 af

Subcatchment RD6S: ROOF DRAIN Runoff Area=9,690 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=1.62 cfs 0.129 af

Subcatchment RD8S: Roof Drain Runoff Area=2,295 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.38 cfs 0.030 af

Subcatchment RD9S: Roof Drain Runoff Area=1,575 sf 100.00% Impervious Runoff Depth=6.94"
Tc=5.0 min CN=98 Runoff=0.26 cfs 0.021 af

Reach 1AR: STREAM Avg. Flow Depth=0.97' Max Vel=4.05 fps Inflow=25.53 cfs 6.616 af
n=0.050 L=370.0' S=0.0314 '/' Capacity=108.07 cfs Outflow=25.17 cfs 6.615 af

Reach 1BR: STREAM Avg. Flow Depth=0.47' Max Vel=3.00 fps Inflow=7.41 cfs 0.583 af
n=0.050 L=310.0' S=0.0384 '/' Capacity=119.58 cfs Outflow=7.26 cfs 0.583 af

Reach 1R: STREAM Avg. Flow Depth=1.28' Max Vel=3.43 fps Inflow=32.33 cfs 7.198 af
n=0.050 L=380.0' S=0.0166 '/' Capacity=78.59 cfs Outflow=31.67 cfs 7.197 af

Reach 2R: REACH 2 Avg. Flow Depth=0.48' Max Vel=2.18 fps Inflow=5.19 cfs 2.280 af
n=0.050 L=560.0' S=0.0193 '/' Capacity=42.77 cfs Outflow=5.16 cfs 2.277 af

Reach 3R: REACH 3 Avg. Flow Depth=0.28' Max Vel=1.66 fps Inflow=2.63 cfs 1.179 af
n=0.050 L=340.0' S=0.0200 '/' Capacity=24.05 cfs Outflow=2.60 cfs 1.179 af

Reach 4R: REACH 4 Avg. Flow Depth=0.21' Max Vel=0.98 fps Inflow=3.82 cfs 0.436 af
n=0.050 L=255.0' S=0.0149 '/' Capacity=468.29 cfs Outflow=3.60 cfs 0.436 af

Reach 5R: REACH 5 Avg. Flow Depth=0.08' Max Vel=0.62 fps Inflow=1.00 cfs 0.374 af
n=0.050 L=540.0' S=0.0231 '/' Capacity=409.57 cfs Outflow=0.87 cfs 0.374 af

Reach 6R: REACH 6 Avg. Flow Depth=0.24' Max Vel=0.99 fps Inflow=3.62 cfs 0.810 af
n=0.050 L=278.0' S=0.0126 '/' Capacity=131.20 cfs Outflow=3.44 cfs 0.810 af

Reach 7R: STREAM Avg. Flow Depth=0.47' Max Vel=2.62 fps Inflow=6.03 cfs 1.989 af
n=0.050 L=194.0' S=0.0284 '/' Capacity=92.22 cfs Outflow=6.02 cfs 1.989 af

Reach 8R: STREAM Avg. Flow Depth=0.54' Max Vel=2.66 fps Inflow=7.61 cfs 4.266 af
n=0.050 L=512.0' S=0.0258 '/' Capacity=98.00 cfs Outflow=7.59 cfs 4.264 af

Reach 9R: STREAM Avg. Flow Depth=1.30' Max Vel=3.69 fps Inflow=34.66 cfs 11.461 af
n=0.050 L=100.0' S=0.0190 '/' Capacity=84.13 cfs Outflow=34.63 cfs 11.460 af

Reach 16R: Existing Culvert to West Avg. Flow Depth=0.62' Max Vel=6.06 fps Inflow=3.70 cfs 0.264 af
15.0" Round Pipe n=0.012 L=45.0' S=0.0113 '/' Capacity=7.45 cfs Outflow=3.70 cfs 0.264 af

Reach 41R: REACH Avg. Flow Depth=0.15' Max Vel=1.07 fps Inflow=0.82 cfs 0.880 af
n=0.050 L=147.0' S=0.0184 '/' Capacity=23.05 cfs Outflow=0.82 cfs 0.880 af

Reach 326R: Reach 1BR Avg. Flow Depth=0.61' Max Vel=2.76 fps Inflow=14.79 cfs 5.016 af
n=0.050 L=358.0' S=0.0288 '/' Capacity=26.39 cfs Outflow=14.66 cfs 5.016 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=71.71' Inflow=67.75 cfs 17.688 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=67.75 cfs 17.688 af

Pond 11P: CB11 to CB12 Peak Elev=106.45' Inflow=2.01 cfs 0.159 af
12.0" Round Culvert n=0.010 L=19.0' S=0.0132 '/' Outflow=2.01 cfs 0.159 af

Pond 12R: From CB12 out Peak Elev=106.17' Inflow=3.67 cfs 0.291 af
12.0" Round Culvert n=0.010 L=20.0' S=0.0050 '/' Outflow=3.67 cfs 0.291 af

Pond 13P: CB13 to CB14 Peak Elev=107.49' Inflow=2.11 cfs 0.151 af
12.0" Round Culvert n=0.013 L=98.0' S=0.0101 '/' Outflow=2.11 cfs 0.151 af

Pond 14P: CB14 to CB15 Peak Elev=106.51' Inflow=2.40 cfs 0.173 af
12.0" Round Culvert n=0.013 L=25.0' S=0.0484 '/' Outflow=2.40 cfs 0.173 af

Pond 15P: CB15 out Peak Elev=105.61' Inflow=3.02 cfs 0.223 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0100 '/' Outflow=3.02 cfs 0.223 af

Pond 100AP: Outlet Structure 105 to Peak Elev=102.99' Storage=31,448 cf Inflow=16.93 cfs 5.060 af
Outflow=14.79 cfs 5.016 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=104.94' Storage=72,860 cf Inflow=49.40 cfs 4.100 af
Outflow=14.08 cfs 4.100 af

Pond 107P: CB107 TO HW106 Peak Elev=103.01' Inflow=4.92 cfs 0.377 af
15.0" Round Culvert n=0.009 L=20.0' S=0.0050 '/' Outflow=4.92 cfs 0.377 af

Pond 108P: CB108 TO CB107 Peak Elev=103.29' Inflow=3.34 cfs 0.255 af
15.0" Round Culvert n=0.009 L=106.0' S=0.0052 '/' Outflow=3.34 cfs 0.255 af

Pond 148GP: CB1+48G TO CB1+48R Peak Elev=126.96' Inflow=0.60 cfs 0.058 af
15.0" Round Culvert n=0.011 L=20.0' S=0.0050 '/' Outflow=0.60 cfs 0.058 af

Pond 148RP: CB1+48R TO CB3+04R Peak Elev=126.84' Inflow=1.14 cfs 0.099 af
15.0" Round Culvert n=0.011 L=153.0' S=0.0101 '/' Outflow=1.14 cfs 0.099 af

Pond 205P: CB205 TO HW200 Peak Elev=104.98' Inflow=13.57 cfs 1.037 af
24.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=13.57 cfs 1.037 af

Pond 206P: CB206 TO CB205 Peak Elev=104.99' Inflow=1.69 cfs 0.132 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0110 '/' Outflow=1.69 cfs 0.132 af

Pond 210P: CB210 TO CB205 Peak Elev=105.66' Inflow=8.34 cfs 0.628 af
18.0" Round Culvert n=0.013 L=65.0' S=0.0054 '/' Outflow=8.34 cfs 0.628 af

Pond 215P: DCB215 TO CB210 Peak Elev=106.30' Inflow=7.11 cfs 0.538 af
18.0" Round Culvert n=0.013 L=75.0' S=0.0053 '/' Outflow=7.11 cfs 0.538 af

Pond 220P: CB220 TO DCB215 Peak Elev=106.50' Inflow=2.50 cfs 0.193 af
15.0" Round Culvert n=0.013 L=60.0' S=0.0083 '/' Outflow=2.50 cfs 0.193 af

Pond 303GP: CB3+03G TO CB3+04R Peak Elev=126.78' Inflow=1.50 cfs 0.105 af
15.0" Round Culvert n=0.011 L=60.0' S=0.0233 '/' Outflow=1.50 cfs 0.105 af

Pond 304RP: CB3+04R TO CB4+01G Peak Elev=126.12' Inflow=3.14 cfs 0.240 af
15.0" Round Culvert n=0.011 L=94.0' S=0.0197 '/' Outflow=3.14 cfs 0.240 af

Pond 305P: CB305 TO HW300 Peak Elev=105.92' Inflow=17.49 cfs 1.734 af
24.0" Round Culvert n=0.009 L=16.0' S=0.0062 '/' Outflow=17.49 cfs 1.734 af

Pond 310P: CB310 TO CB305 Peak Elev=107.07' Inflow=16.24 cfs 1.640 af
24.0" Round Culvert n=0.013 L=28.0' S=0.0054 '/' Outflow=16.24 cfs 1.640 af

Pond 315P: CB315 TO CB310 Peak Elev=111.55' Inflow=14.26 cfs 1.223 af
18.0" Round Culvert n=0.009 L=185.0' S=0.0054 '/' Outflow=14.26 cfs 1.223 af

Pond 316P: CB316 TO CB315 Peak Elev=111.52' Inflow=0.62 cfs 0.047 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.62 cfs 0.047 af

Pond 320P: CB320 TO CB315 Peak Elev=115.39' Inflow=13.29 cfs 0.991 af
18.0" Round Culvert n=0.009 L=213.0' S=0.0110 '/' Outflow=13.29 cfs 0.991 af

Pond 320Pa: Porous Walk Peak Elev=112.45' Storage=23 cf Inflow=0.07 cfs 0.005 af
Outflow=0.03 cfs 0.005 af

Pond 321P: CB321 TO CB320 Peak Elev=117.60' Inflow=6.93 cfs 0.513 af
15.0" Round Culvert n=0.013 L=114.0' S=0.0243 '/' Outflow=6.93 cfs 0.513 af

Pond 321Pa: Porous Walk Peak Elev=117.16' Storage=23 cf Inflow=0.08 cfs 0.006 af
Outflow=0.03 cfs 0.006 af

Pond 322P: CB323 TO CB322 Peak Elev=120.27' Inflow=6.22 cfs 0.455 af
15.0" Round Culvert n=0.013 L=70.0' S=0.0800 '/' Outflow=6.22 cfs 0.455 af

Pond 323P: CB324 to CB323 Peak Elev=123.44' Inflow=6.18 cfs 0.449 af
15.0" Round Culvert n=0.013 L=37.0' S=0.0100 '/' Outflow=6.18 cfs 0.449 af

Pond 323Pa: Porous Walk Peak Elev=129.76' Storage=25 cf Inflow=0.08 cfs 0.007 af
Outflow=0.03 cfs 0.007 af

Pond 324P: CB325 to CB324 Peak Elev=124.34' Inflow=5.54 cfs 0.397 af
15.0" Round Culvert n=0.013 L=57.0' S=0.0100 '/' Outflow=5.54 cfs 0.397 af

Pond 325P: CB326 TO CB325 Peak Elev=125.57' Inflow=5.17 cfs 0.367 af
15.0" Round Culvert n=0.013 L=67.0' S=0.0115 '/' Outflow=5.17 cfs 0.367 af

Pond 326P: CB327 TO CB326 Peak Elev=126.71' Inflow=4.89 cfs 0.345 af
15.0" Round Culvert n=0.013 L=120.0' S=0.0100 '/' Outflow=4.89 cfs 0.345 af

Pond 326Pa: Porous Walk Peak Elev=128.81' Storage=68 cf Inflow=0.16 cfs 0.011 af
Outflow=0.05 cfs 0.011 af

Pond 326Pb: Porous Walk Peak Elev=129.56' Storage=3 cf Inflow=0.01 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 326Pc: Porous Walk Peak Elev=130.16' Storage=3 cf Inflow=0.01 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Pond 330P: CB330 T0 CB320 Peak Elev=116.89' Inflow=5.81 cfs 0.431 af
15.0" Round Culvert n=0.009 L=35.0' S=0.0286 '/' Outflow=5.81 cfs 0.431 af

Pond 330Pa: Porous Walk Peak Elev=114.59' Storage=6 cf Inflow=0.04 cfs 0.003 af
Outflow=0.02 cfs 0.003 af

Pond 330Pb: Porous Walk Peak Elev=113.58' Storage=8 cf Inflow=0.02 cfs 0.001 af
Outflow=0.01 cfs 0.001 af

Pond 331P: CB331 TO CB330 Peak Elev=117.09' Inflow=2.26 cfs 0.165 af
15.0" Round Culvert n=0.013 L=12.0' S=0.0100 '/' Outflow=2.26 cfs 0.165 af

Pond 331Pa: Porous Walk Peak Elev=117.08' Storage=40 cf Inflow=0.10 cfs 0.007 af
Outflow=0.03 cfs 0.007 af

Pond 332P: CB332 to CB331 Peak Elev=117.10' Inflow=0.24 cfs 0.017 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0166 '/' Outflow=0.24 cfs 0.017 af

Pond 332Pa: Porous Walk Peak Elev=117.13' Storage=74 cf Inflow=0.19 cfs 0.013 af
Outflow=0.07 cfs 0.013 af

Pond 333P: CB333 TO CB331 Peak Elev=117.13' Inflow=0.73 cfs 0.060 af
15.0" Round Culvert n=0.013 L=135.0' S=0.0193 '/' Outflow=0.73 cfs 0.060 af

Pond 333Pa: Porous Walk Peak Elev=129.61' Storage=31 cf Inflow=0.07 cfs 0.005 af
Outflow=0.02 cfs 0.005 af

Pond 335P: CB335 TO CB330 Peak Elev=117.27' Inflow=3.01 cfs 0.224 af
15.0" Round Culvert n=0.009 L=29.0' S=0.0345 '/' Outflow=3.01 cfs 0.224 af

Pond 340P: CB340TO CB335 Peak Elev=117.55' Inflow=2.48 cfs 0.188 af
15.0" Round Culvert n=0.009 L=31.0' S=0.0355 '/' Outflow=2.48 cfs 0.188 af

Pond 345P: DMH345 TO CB340 Peak Elev=117.75' Inflow=2.12 cfs 0.163 af
15.0" Round Culvert n=0.009 L=59.0' S=0.0356 '/' Outflow=2.12 cfs 0.163 af

Pond 350P: CB350 TO DMH345 Peak Elev=119.43' Inflow=2.12 cfs 0.163 af
15.0" Round Culvert n=0.009 L=64.0' S=0.0344 '/' Outflow=2.12 cfs 0.163 af

Pond 351P: CB351 TO CB350 Peak Elev=120.84' Inflow=0.43 cfs 0.032 af
15.0" Round Culvert n=0.009 L=24.0' S=0.0063 '/' Outflow=0.43 cfs 0.032 af

Pond 355P: DMH355 TO CB350 Peak Elev=124.40' Inflow=1.21 cfs 0.096 af
15.0" Round Culvert n=0.009 L=84.0' S=0.0351 '/' Outflow=1.21 cfs 0.096 af

Pond 360P: CB360 TO DMH355 Peak Elev=131.90' Inflow=1.21 cfs 0.096 af
15.0" Round Culvert n=0.009 L=95.0' S=0.0347 '/' Outflow=1.21 cfs 0.096 af

Pond 365P: CB365 TO CB360 Peak Elev=133.07' Inflow=0.62 cfs 0.049 af
15.0" Round Culvert n=0.009 L=36.0' S=0.0056 '/' Outflow=0.62 cfs 0.049 af

Pond 402GP: CB4+02G TO CB4+19R Peak Elev=125.68' Inflow=4.27 cfs 0.643 af
15.0" Round Culvert n=0.011 L=26.0' S=0.0058 '/' Outflow=4.27 cfs 0.643 af

Pond 405P: CB405 TO HW400 Peak Elev=103.00' Inflow=6.10 cfs 0.467 af
18.0" Round Culvert n=0.013 L=33.0' S=0.0061 '/' Outflow=6.10 cfs 0.467 af

Pond 410P: DCB410 TO CB405 Peak Elev=103.69' Inflow=4.84 cfs 0.370 af
15.0" Round Culvert n=0.013 L=119.0' S=0.0050 '/' Outflow=4.84 cfs 0.370 af

Pond 415P: CB415 TO CB410 Peak Elev=103.83' Inflow=2.06 cfs 0.155 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0054 '/' Outflow=2.06 cfs 0.155 af

Pond 416P: CB416 TO CB415 Peak Elev=103.91' Inflow=1.20 cfs 0.091 af
15.0" Round Culvert n=0.013 L=50.0' S=0.0052 '/' Outflow=1.20 cfs 0.091 af

Pond 419LP: CB4+19L TO DMH1001+25 Peak Elev=120.41' Inflow=18.94 cfs 1.822 af
24.0" Round Culvert n=0.011 L=114.0' S=0.0202 '/' Outflow=18.94 cfs 1.822 af

Pond 419RP: CB4+19R TO CB4+19L Peak Elev=124.97' Inflow=6.51 cfs 0.827 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=6.51 cfs 0.827 af

Pond 505P: dmh505 TO HW500 Peak Elev=105.70' Inflow=8.73 cfs 0.628 af
18.0" Round Culvert n=0.013 L=12.0' S=0.0083 '/' Outflow=8.73 cfs 0.628 af

Pond 507P: CB507 TO CB505 Peak Elev=107.39' Inflow=8.86 cfs 0.629 af
Primary=8.73 cfs 0.628 af Secondary=0.12 cfs 0.000 af Outflow=8.86 cfs 0.629 af

Pond 508P: CB508 TO CB507 Peak Elev=109.28' Inflow=8.30 cfs 0.584 af
18.0" Round Culvert n=0.009 L=77.0' S=0.0286 '/' Outflow=8.30 cfs 0.584 af

Pond 509P: CB509 to CB508 Peak Elev=110.23' Inflow=8.30 cfs 0.584 af
18.0" Round Culvert n=0.009 L=34.0' S=0.0382 '/' Outflow=8.30 cfs 0.584 af

Pond 600P: DETENTION BASIN OS605 TO Peak Elev=99.96' Storage=87,182 cf Inflow=20.92 cfs 2.828 af
Outflow=5.07 cfs 2.179 af

Pond 710P: CB710 TO HW700 Peak Elev=101.79' Inflow=9.47 cfs 0.721 af
18.0" Round Culvert n=0.009 L=109.0' S=0.0055 '/' Outflow=9.47 cfs 0.721 af

Pond 711P: CB711 TO CB710 Peak Elev=103.60' Inflow=0.72 cfs 0.055 af
15.0" Round Culvert n=0.009 L=52.0' S=0.0135 '/' Outflow=0.72 cfs 0.055 af

Pond 715P: CB715 TO CB710 Peak Elev=102.67' Inflow=8.00 cfs 0.609 af
18.0" Round Culvert n=0.009 L=65.0' S=0.0054 '/' Outflow=8.00 cfs 0.609 af

Pond 720P: DCB720 TO CB715 Peak Elev=103.91' Inflow=7.48 cfs 0.571 af
18.0" Round Culvert n=0.009 L=53.0' S=0.0066 '/' Outflow=7.48 cfs 0.571 af

Pond 725P: CB725 TO DCB720 Peak Elev=104.49' Inflow=4.55 cfs 0.347 af
15.0" Round Culvert n=0.009 L=75.0' S=0.0060 '/' Outflow=4.55 cfs 0.347 af

Pond 801P: HW801 TO HW800 Peak Elev=102.95' Storage=16,609 cf Inflow=24.50 cfs 1.784 af
15.0" Round Culvert n=0.013 L=65.0' S=0.0215 '/' Outflow=8.19 cfs 1.779 af

Pond 805P: CB805 TO HW802 Peak Elev=103.73' Inflow=10.03 cfs 0.788 af
18.0" Round Culvert n=0.009 L=68.0' S=0.0051 '/' Outflow=10.03 cfs 0.788 af

Pond 806P: CB806 TO CB805 Peak Elev=104.57' Inflow=7.73 cfs 0.606 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0175 '/' Outflow=7.73 cfs 0.606 af

Pond 807P: CB807 TO CB806 Peak Elev=106.31' Inflow=3.99 cfs 0.312 af
18.0" Round Culvert n=0.009 L=100.0' S=0.0215 '/' Outflow=3.99 cfs 0.312 af

Pond 808P: CB808 TO CB807 Peak Elev=107.17' Inflow=3.10 cfs 0.249 af
15.0" Round Culvert n=0.009 L=128.0' S=0.0051 '/' Outflow=3.10 cfs 0.249 af

Pond 857LP: CB8+57L TO CB4+19L Peak Elev=136.79' Inflow=8.75 cfs 0.736 af
15.0" Round Culvert n=0.011 L=439.0' S=0.0237 '/' Outflow=8.75 cfs 0.736 af

Pond 857RP: CB8+57R TO CB8+57L Peak Elev=136.89' Inflow=1.49 cfs 0.114 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=1.49 cfs 0.114 af

Pond 900P: POND 900 Peak Elev=101.78' Storage=131,534 cf Inflow=42.02 cfs 4.609 af
Discarded=1.52 cfs 3.275 af Primary=0.82 cfs 0.880 af Outflow=2.34 cfs 4.155 af

Pond 1000P: Sediment Forebay Peak Elev=112.14' Storage=1,002 cf Inflow=2.08 cfs 0.334 af
Outflow=7.93 cfs 0.334 af

Pond 1100P: Subsurface Detention SC-740 Peak Elev=146.53' Storage=3,966 cf Inflow=6.40 cfs 0.477 af
Discarded=0.13 cfs 0.230 af Primary=9.05 cfs 0.247 af Outflow=9.17 cfs 0.477 af

Pond 1200P: Subsurface Detention SC-740 Peak Elev=116.35' Storage=3,966 cf Inflow=4.36 cfs 0.375 af
Discarded=0.13 cfs 0.219 af Primary=4.57 cfs 0.156 af Outflow=4.70 cfs 0.375 af

Pond 1295GP: CB12+95G TO CB12+95R Peak Elev=140.96' Inflow=3.59 cfs 0.316 af
15.0" Round Culvert n=0.011 L=11.0' S=0.0091 '/' Outflow=3.59 cfs 0.316 af

Pond 1295LP: CB12+95L TO CB8+57L Peak Elev=139.48' Inflow=5.39 cfs 0.478 af
15.0" Round Culvert n=0.011 L=438.0' S=0.0083 '/' Outflow=5.39 cfs 0.478 af

Pond 1295RP: CB12+95R CB12+95L Peak Elev=140.38' Inflow=4.55 cfs 0.407 af
15.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=4.55 cfs 0.407 af

Pond 1643LP: CB16+43L TO CB16+43R Peak Elev=146.37' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.13 cfs 0.009 af

Pond 1643RP: CB16+43R TO CB17+85R Peak Elev=148.88' Inflow=0.93 cfs 0.070 af
12.0" Round Culvert n=0.011 L=143.0' S=0.0346 '/' Outflow=0.93 cfs 0.070 af

Pond 1785LP: CB17+85L TO CB17+85R Peak Elev=148.83' Inflow=0.50 cfs 0.041 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.50 cfs 0.041 af

Pond 1785RP: CB17+85R TO DMH18+69 Peak Elev=150.83' Inflow=1.98 cfs 0.152 af
12.0" Round Culvert n=0.011 L=86.0' S=0.0337 '/' Outflow=1.98 cfs 0.152 af

Pond 1869P: DMH18+69 TO CB19+28L Peak Elev=146.33' Inflow=1.98 cfs 0.152 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0345 '/' Outflow=1.98 cfs 0.152 af

Pond 1928LP: CB19+28L TO CB19+79R Peak Elev=148.12' Inflow=3.23 cfs 0.244 af
12.0" Round Culvert n=0.011 L=55.0' S=0.0282 '/' Outflow=3.23 cfs 0.244 af

Pond 1928RP: CB19+28R TO CB19+28L Peak Elev=146.10' Inflow=0.66 cfs 0.044 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0068 '/' Outflow=0.66 cfs 0.044 af

Pond 1979RP: CB19+79 TO CB21+73R Peak Elev=149.07' Inflow=3.45 cfs 0.259 af
12.0" Round Culvert n=0.011 L=190.0' S=0.0191 '/' Outflow=3.45 cfs 0.259 af

Pond 2168P: DMH 21+68R to DMH 22+41R Peak Elev=137.22' Inflow=7.71 cfs 0.463 af
12.0" Round Culvert n=0.012 L=76.0' S=0.0150 '/' Outflow=7.71 cfs 0.463 af

Pond 2173LP: CB21+73L TO CB21+73R Peak Elev=147.66' Inflow=1.50 cfs 0.109 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0114 '/' Outflow=1.50 cfs 0.109 af

Pond 2173RP: CB21+73R TO DMH21+95R Peak Elev=143.29' Inflow=5.84 cfs 0.433 af
18.0" Round Culvert n=0.011 L=30.0' S=0.0357 '/' Outflow=5.84 cfs 0.433 af

Pond 2182P: DCB 21+82R TO DMH 21+97R Peak Elev=142.43' Inflow=0.70 cfs 0.044 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=0.70 cfs 0.044 af

Pond 2195P: DMH21+95R TO Subsurface Detention Peak Elev=144.60' Inflow=5.84 cfs 0.433 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=5.84 cfs 0.433 af

Pond 2197P: DMH 21+97R TO Subsurface Detention Peak Elev=144.47' Inflow=0.70 cfs 0.044 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0000 '/' Outflow=0.70 cfs 0.044 af

Pond 2210P: DMH 22+10R to DMH22+20R Peak Elev=141.42' Inflow=9.05 cfs 0.247 af
12.0" Round Culvert n=0.011 L=5.0' S=0.0200 '/' Outflow=9.05 cfs 0.247 af

Pond 2220P: DMH22+20R TO DMH22+41R Peak Elev=142.90' Inflow=9.05 cfs 0.247 af
12.0" Round Culvert n=0.011 L=53.0' S=0.0747 '/' Outflow=9.05 cfs 0.247 af

Pond 2241: DMH 22+41R to DMH24+86R Peak Elev=144.00' Inflow=11.78 cfs 0.917 af
12.0" Round Culvert n=0.012 L=188.0' S=0.0150 '/' Outflow=11.78 cfs 0.917 af

Pond 2286P: DMH 22+86R to DMH24+78R Peak Elev=122.65' Inflow=11.78 cfs 0.917 af
12.0" Round Culvert n=0.012 L=54.0' S=0.0150 '/' Outflow=11.78 cfs 0.917 af

Pond 2440P: TD24+40R TO CB24+60R Peak Elev=116.36' Inflow=0.13 cfs 0.009 af
12.0" Round Culvert n=0.011 L=62.0' S=0.0323 '/' Outflow=0.13 cfs 0.009 af

Pond 2460LP: CB24+60L TO CB24+60R Peak Elev=116.98' Inflow=2.09 cfs 0.176 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=2.09 cfs 0.176 af

Pond 2460P: CB24+60R TO DMH24+85R Peak Elev=114.39' Inflow=1.21 cfs 0.076 af
12.0" Round Culvert n=0.011 L=28.0' S=0.0107 '/' Outflow=1.21 cfs 0.076 af

Pond 2460RP: CB24+60R TO DMH24+86R Peak Elev=114.99' Inflow=3.08 cfs 0.273 af
12.0" Round Culvert n=0.011 L=58.0' S=0.0617 '/' Outflow=3.08 cfs 0.273 af

Pond 2468P: DMH24+86R TO Subsurface Detention Peak Elev=115.68' Inflow=3.08 cfs 0.273 af
24.0" Round Culvert n=0.011 L=8.0' S=0.0000 '/' Outflow=3.08 cfs 0.273 af

Pond 2474P: DMH24+74R TO DMH24+85R Peak Elev=114.37' Inflow=0.39 cfs 0.026 af
12.0" Round Culvert n=0.011 L=12.0' S=0.0333 '/' Outflow=0.39 cfs 0.026 af

Pond 2478P: DMH24+78R to HW24+89R Peak Elev=113.40' Inflow=13.21 cfs 1.073 af
12.0" Round Culvert n=0.012 L=14.0' S=0.0150 '/' Outflow=13.21 cfs 1.073 af

Pond 2485P: DMH24+85R TO Subsurface Detention Peak Elev=115.65' Inflow=1.56 cfs 0.102 af
24.0" Round Culvert n=0.011 L=6.0' S=0.0000 '/' Outflow=1.56 cfs 0.102 af

Pond 2495P: DMH24+95R TO DMH25+00 Peak Elev=113.01' Inflow=4.57 cfs 0.156 af
12.0" Round Culvert n=0.011 L=10.0' S=0.0200 '/' Outflow=4.57 cfs 0.156 af

Pond 2505P: DMH24+82R to DMH24+78R Peak Elev=113.69' Inflow=4.57 cfs 0.156 af
12.0" Round Culvert n=0.011 L=43.0' S=0.0649 '/' Outflow=4.57 cfs 0.156 af

Pond 2625RP: DMH26+25R TO HW26+25 Peak Elev=103.86' Inflow=6.05 cfs 0.495 af
12.0" Round Culvert n=0.011 L=15.0' S=0.0200 '/' Outflow=6.05 cfs 0.495 af

Pond 2723P: DMH27+23R TO DMH26+25R Peak Elev=104.95' Inflow=3.49 cfs 0.287 af
12.0" Round Culvert n=0.011 L=93.0' S=0.0161 '/' Outflow=3.49 cfs 0.287 af

Pond 2723RP: TD27+23R TO DMH27+23R Peak Elev=105.10' Inflow=0.55 cfs 0.037 af
12.0" Round Culvert n=0.011 L=39.0' S=0.0538 '/' Outflow=0.55 cfs 0.037 af

Pond 2730LP: CB27+30L TO 27+30R Peak Elev=110.46' Inflow=2.00 cfs 0.163 af
12.0" Round Culvert n=0.011 L=22.0' S=0.0100 '/' Outflow=2.00 cfs 0.163 af

Pond 2730RP: CB27+30R TO DMH27+23R Peak Elev=110.20' Inflow=2.99 cfs 0.250 af
12.0" Round Culvert n=0.011 L=125.0' S=0.0526 '/' Outflow=2.99 cfs 0.250 af

Pond 3018GP: CB30+18G TO CB30+20L Peak Elev=111.67' Inflow=19.61 cfs 2.505 af
24.0" Round Culvert n=0.011 L=10.0' S=0.0100 '/' Outflow=19.61 cfs 2.505 af

Pond 3020LP: CB30+20L TO CB30+20R Peak Elev=108.97' Inflow=23.00 cfs 2.815 af
24.0" Round Culvert n=0.011 L=22.0' S=0.0091 '/' Outflow=23.00 cfs 2.815 af

Pond 3020RP: CB30+20R TO HW29+63 Peak Elev=105.27' Inflow=24.23 cfs 2.905 af
24.0" Round Culvert n=0.011 L=135.0' S=0.0089 '/' Outflow=24.23 cfs 2.905 af

Pond 3200P: CB3200 TO CB320 Peak Elev=115.35' Inflow=0.04 cfs 0.006 af
15.0" Round Culvert n=0.009 L=90.0' S=0.0050 '/' Outflow=0.04 cfs 0.006 af

Pond 100125P: DMH1001+25 TO DMH1003+11 Peak Elev=116.56' Inflow=18.94 cfs 1.822 af
24.0" Round Culvert n=0.011 L=194.0' S=0.0201 '/' Outflow=18.94 cfs 1.822 af

Pond 100311P: DMH1003+11C TO CB30+18G Peak Elev=114.12' Inflow=18.94 cfs 1.822 af
24.0" Round Culvert n=0.011 L=130.0' S=0.0092 '/' Outflow=18.94 cfs 1.822 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.85' Storage=4,353 cf Inflow=7.78 cfs 0.488 af
Discarded=0.01 cfs 0.060 af Primary=5.68 cfs 0.392 af Outflow=5.69 cfs 0.452 af

Pond C3P: CBC3 to CB509 Peak Elev=115.08' Inflow=6.92 cfs 0.488 af
18.0" Round Culvert n=0.009 L=183.0' S=0.0295 '/' Outflow=6.92 cfs 0.488 af

Pond C4P: CBC4 to CBC3 Peak Elev=117.26' Inflow=4.34 cfs 0.303 af
15.0" Round Culvert n=0.009 L=212.0' S=0.0092 '/' Outflow=4.34 cfs 0.303 af

Pond C5P: CBC5 to DMHC6 Peak Elev=118.63' Inflow=1.60 cfs 0.110 af
15.0" Round Culvert n=0.013 L=66.0' S=0.0091 '/' Outflow=1.60 cfs 0.110 af

Pond C6P: DMHC6 to CBC4 Peak Elev=117.77' Inflow=2.51 cfs 0.178 af
15.0" Round Culvert n=0.013 L=32.0' S=0.0219 '/' Outflow=2.51 cfs 0.178 af

Pond C7P: CBC7 to DMHC6 Peak Elev=119.04' Inflow=0.92 cfs 0.068 af
15.0" Round Culvert n=0.013 L=189.0' S=0.0082 '/' Outflow=0.92 cfs 0.068 af

Pond C8P: CBC8 to CBC7 Peak Elev=119.48' Inflow=0.92 cfs 0.068 af
15.0" Round Culvert n=0.013 L=33.0' S=0.0106 '/' Outflow=0.92 cfs 0.068 af

Pond RD1Pa: RD1a TO CB327 Peak Elev=126.79' Inflow=0.88 cfs 0.069 af
12.0" Round Culvert n=0.013 L=43.0' S=0.0200 '/' Outflow=0.88 cfs 0.069 af

Pond RD1Pb: RD1b to CB 324 Peak Elev=123.95' Inflow=0.62 cfs 0.049 af
12.0" Round Culvert n=0.013 L=10.0' S=0.0800 '/' Outflow=0.62 cfs 0.049 af

Pond RD2Pa: RD2a to CB333 Peak Elev=117.19' Inflow=0.71 cfs 0.056 af
12.0" Round Culvert n=0.013 L=23.0' S=0.0100 '/' Outflow=0.71 cfs 0.056 af

Pond RD2Pb: RD2b TO CB322 Peak Elev=117.62' Inflow=0.69 cfs 0.055 af
12.0" Round Culvert n=0.013 L=20.0' S=0.0340 '/' Outflow=0.69 cfs 0.055 af

Pond RD3P: RD3 TO CB808 Peak Elev=108.22' Inflow=3.06 cfs 0.243 af
12.0" Round Culvert n=0.009 L=7.0' S=0.0214 '/' Outflow=3.06 cfs 0.243 af

Pond RD4P: RD4 TO CB807 Peak Elev=108.16' Inflow=0.08 cfs 0.007 af
12.0" Round Culvert n=0.009 L=34.0' S=0.0441 '/' Outflow=0.08 cfs 0.007 af

Pond RD5P: RD5 TO CB806 Peak Elev=107.60' Inflow=3.13 cfs 0.248 af
12.0" Round Culvert n=0.009 L=45.0' S=0.0567 '/' Outflow=3.13 cfs 0.248 af

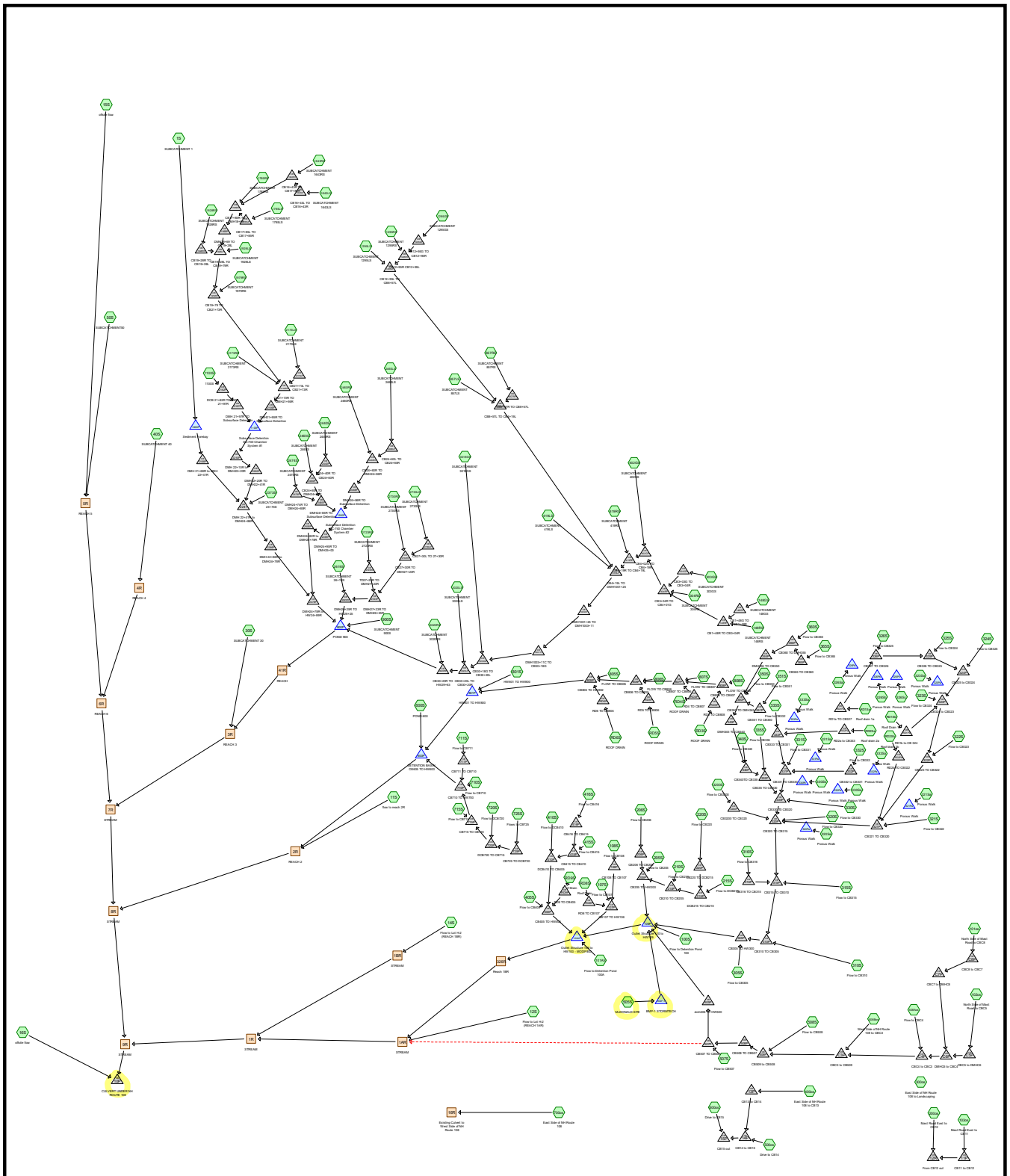
Pond RD6P: RD6 TO CB805 Peak Elev=104.02' Inflow=1.62 cfs 0.129 af
12.0" Round Culvert n=0.009 L=60.0' S=0.0233 '/' Outflow=1.62 cfs 0.129 af

Pond RD8P: RD8 TO CB107 Peak Elev=103.01' Inflow=0.38 cfs 0.030 af
8.0" Round Culvert n=0.009 L=28.0' S=0.0107 '/' Outflow=0.38 cfs 0.030 af

Pond RD9P: RD9 TO CB405 Peak Elev=103.00' Inflow=0.26 cfs 0.021 af
8.0" Round Culvert n=0.009 L=32.0' S=0.0094 '/' Outflow=0.26 cfs 0.021 af

Total Runoff Area = 121.896 ac Runoff Volume = 23.410 af Average Runoff Depth = 2.30"
80.35% Pervious = 97.941 ac 19.65% Impervious = 23.956 ac

6



Routing Diagram for 46001.33_PostDev_NoInfil

Prepared by T F Moran Inc, Printed 2/18/2025

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Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=2.20"
Tc=0.0 min CN=91 Runoff=2.96 cfs 0.176 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=68.89' Inflow=6.75 cfs 2.807 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=6.75 cfs 2.807 af

Pond 100AP: Outlet Structure 105 to Peak Elev=101.57' Storage=20,040 cf Inflow=5.85 cfs 1.449 af
Outflow=0.87 cfs 1.422 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=102.30' Storage=20,090 cf Inflow=13.22 cfs 1.081 af
Outflow=1.05 cfs 1.081 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.04' Storage=3,489 cf Inflow=2.96 cfs 0.176 af
Outflow=1.09 cfs 0.102 af

Total Runoff Area = 0.958 ac Runoff Volume = 0.176 af Average Runoff Depth = 2.20"
21.99% Pervious = 0.211 ac 78.01% Impervious = 0.747 ac

Summary for Subcatchment 505S: McDONALD SITE

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.96 cfs @ 12.00 hrs, Volume= 0.176 af, Depth= 2.20"
Routed to Pond BMP-1 : BMP-1 STORMTECH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 YR Rainfall=3.14"

	Area (sf)	CN	Description
	6,880	61	>75% Grass cover, Good, HSG B
	2,300	74	>75% Grass cover, Good, HSG C
*	25,140	98	Paved parking
*	3,726	98	Paved parking - Porous Pavement
*	3,694	98	Roofs
	41,740	91	Weighted Average
	9,180		21.99% Pervious Area
	32,560		78.01% Impervious Area

Summary for Pond 10P: CULVERT UNDER NH ROUTE 108

[62] Hint: Exceeded Reach 9R OUTLET depth by 0.45' @ 12.20 hrs

Inflow Area = 120.147 ac, 18.88% Impervious, Inflow Depth > 0.28" for 2 YR event
Inflow = 6.75 cfs @ 12.20 hrs, Volume= 2.807 af
Outflow = 6.75 cfs @ 12.20 hrs, Volume= 2.807 af, Atten= 0%, Lag= 0.0 min
Primary = 6.75 cfs @ 12.20 hrs, Volume= 2.807 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 68.89' @ 12.20 hrs
Flood Elev= 74.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	67.90'	**48.0" Round Culvert** L= 63.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 67.90' / 67.50' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 12.57 sf

Primary OutFlow Max=6.74 cfs @ 12.20 hrs HW=68.89' (Free Discharge)
1=Culvert (Barrel Controls 6.74 cfs @ 4.17 fps)

Summary for Pond 100AP: Outlet Structure 105 to HW100 - MODIFIED

[80] Warning: Exceeded Pond 107P by 0.09' @ 24.29 hrs (0.03 cfs 0.000 af)

Inflow Area = 16.904 ac, 42.99% Impervious, Inflow Depth = 1.03" for 2 YR event
Inflow = 5.85 cfs @ 12.07 hrs, Volume= 1.449 af
Outflow = 0.87 cfs @ 16.56 hrs, Volume= 1.422 af, Atten= 85%, Lag= 269.6 min
Primary = 0.87 cfs @ 16.56 hrs, Volume= 1.422 af
Routed to Reach 326R : Reach 1BR

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 101.57' @ 16.56 hrs Surf.Area= 7,314 sf Storage= 20,040 cf
Flood Elev= 104.00' Surf.Area= 10,000 sf Storage= 40,899 cf

Plug-Flow detention time= 413.0 min calculated for 1.422 af (98% of inflow)
Center-of-Mass det. time= 389.4 min (1,452.3 - 1,062.9)

Volume	Invert	Avail.Storage	Storage Description
#1	98.00'	40,899 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.00	4,135	0	0
98.50	4,349	2,121	2,121
99.00	4,780	2,282	4,403
100.00	5,858	5,319	9,722
101.00	6,746	6,302	16,024
102.00	7,741	7,244	23,268
103.00	8,761	8,251	31,519
104.00	10,000	9,381	40,899

Device	Routing	Invert	Outlet Devices
#1	Primary	98.00'	**36.0" Round Culvert** L= 20.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 98.00' / 97.90' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 7.07 sf
#2	Device 1	98.00'	**0.5" W x 43.2" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	101.60'	**12.0" W x 15.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	102.90'	**48.0" x 60.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	101.65'	**8.0" Vert. Orifices (4) X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.87 cfs @ 16.56 hrs HW=101.57' TW=98.16' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 0.87 cfs of 41.92 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 0.87 cfs @ 6.06 fps)
—**3=Orifice/Grate** (Controls 0.00 cfs)
—**4=Grate** (Controls 0.00 cfs)
—**5=Orifices (4)** (Controls 0.00 cfs)

Summary for Pond 100P: Outlet Structure 110 to HW109

Inflow Area = 15.095 ac, 39.48% Impervious, Inflow Depth = 0.86" for 2 YR event
Inflow = 13.22 cfs @ 12.08 hrs, Volume= 1.081 af
Outflow = 1.05 cfs @ 12.53 hrs, Volume= 1.081 af, Atten= 92%, Lag= 26.9 min
Primary = 1.05 cfs @ 12.53 hrs, Volume= 1.081 af
Routed to Pond 100AP : Outlet Structure 105 to HW100 - MODIFIED

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 102.30' @ 14.38 hrs Surf.Area= 10,172 sf Storage= 20,090 cf
Flood Elev= 106.00' Surf.Area= 33,480 sf Storage= 105,292 cf

Plug-Flow detention time= 342.1 min calculated for 1.081 af (100% of inflow)
Center-of-Mass det. time= 342.2 min (1,158.2 - 815.9)

Volume	Invert	Avail.Storage	Storage Description
#1	98.50'	105,292 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
98.50	0	0	0
99.00	483	121	121
100.00	5,808	3,146	3,266
101.00	6,872	6,340	9,606
102.00	8,510	7,691	17,297
103.00	14,070	11,290	28,587
104.00	24,830	19,450	48,037
105.00	28,100	26,465	74,502
106.00	33,480	30,790	105,292

Device	Routing	Invert	Outlet Devices
#1	Primary	98.50'	**30.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 98.50' / 98.30' S= 0.0050 '/' Cc= 0.900 n= 0.011, Flow Area= 4.91 sf
#2	Device 1	98.50'	**0.5" x 58.8" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	103.40'	**12.0" W x 15.6" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	104.70'	**48.0" x 60.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	105.40'	**174.0 deg x 5.0' long x 0.40' rise Sharp-Crested Vee/Trap Weir** Cv= 2.46 (C= 3.08)

Primary OutFlow Max=1.05 cfs @ 12.53 hrs HW=102.07' TW=100.83' (Dynamic Tailwater)
- **1=Culvert** (Passes 1.05 cfs of 26.30 cfs potential flow)
  - **2=Orifice/Grate** (Orifice Controls 1.05 cfs @ 5.36 fps)
  - **3=Orifice/Grate** (Controls 0.00 cfs)
  - **4=Orifice/Grate** (Controls 0.00 cfs)
- **5=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Summary for Pond BMP-1: BMP-1 STORMTECH

DESIGN BY BOHLER
Add 0.705 feet to NAVD88 to get NGVD29 elevations.

Inflow Area = 0.958 ac, 78.01% Impervious, Inflow Depth = 2.20" for 2 YR event
Inflow = 2.96 cfs @ 12.00 hrs, Volume= 0.176 af
Outflow = 1.09 cfs @ 12.16 hrs, Volume= 0.102 af, Atten= 63%, Lag= 10.0 min
Primary = 1.09 cfs @ 12.16 hrs, Volume= 0.102 af
Routed to Pond 100P : Outlet Structure 110 to HW109

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 105.04' @ 12.16 hrs Surf.Area= 2,035 sf Storage= 3,489 cf

Plug-Flow detention time= 201.2 min calculated for 0.102 af (58% of inflow)
Center-of-Mass det. time= 95.5 min (892.9 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	102.55'	1,943 cf	**30.00'W x 67.82'L x 3.75'H Field A** 7,629 cf Overall - 2,773 cf Embedded = 4,856 cf x 40.0% Voids
#2A	103.05'	2,773 cf	**ADS_StormTech SC-800 +Cap** x 54 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 54 Chambers in 6 Rows Cap Storage= 3.4 cf x 2 x 6 rows = 41.0 cf
		4,716 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	103.05'	**12.0" Round Culvert** L= 11.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.05' / 102.85' S= 0.0182 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	104.85'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.08 cfs @ 12.16 hrs HW=105.04' TW=101.35' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 1.08 cfs of 4.62 cfs potential flow)
↑—**2=Sharp-Crested Rectangular Weir** (Weir Controls 1.08 cfs @ 1.43 fps)

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=3.73"
Tc=0.0 min CN=91 Runoff=4.88 cfs 0.298 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=69.48' Inflow=15.72 cfs 7.087 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=15.72 cfs 7.087 af

Pond 100AP: Outlet Structure 105 to Peak Elev=101.94' Storage=22,813 cf Inflow=9.21 cfs 2.734 af
Outflow=2.69 cfs 2.696 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=103.82' Storage=43,758 cf Inflow=27.10 cfs 2.134 af
Outflow=2.17 cfs 2.134 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.34' Storage=3,864 cf Inflow=4.88 cfs 0.298 af
Outflow=4.42 cfs 0.224 af

Total Runoff Area = 0.958 ac Runoff Volume = 0.298 af Average Runoff Depth = 3.73"
21.99% Pervious = 0.211 ac 78.01% Impervious = 0.747 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=4.97"
Tc=0.0 min CN=91 Runoff=6.39 cfs 0.397 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=70.60' Inflow=39.39 cfs 12.043 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=39.39 cfs 12.043 af

Pond 100AP: Outlet Structure 105 to Peak Elev=102.27' Storage=25,356 cf Inflow=11.71 cfs 3.910 af
Outflow=6.39 cfs 3.869 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=104.48' Storage=60,208 cf Inflow=38.78 cfs 3.123 af
Outflow=4.99 cfs 3.123 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.51' Storage=4,042 cf Inflow=6.39 cfs 0.397 af
Outflow=5.29 cfs 0.322 af

Total Runoff Area = 0.958 ac Runoff Volume = 0.397 af Average Runoff Depth = 4.97"
21.99% Pervious = 0.211 ac 78.01% Impervious = 0.747 ac

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 505S: McDONALD SITE Runoff Area=41,740 sf 78.01% Impervious Runoff Depth=6.12"
Tc=0.0 min CN=91 Runoff=7.78 cfs 0.488 af

Pond 10P: CULVERT UNDER NH ROUTE 108 Peak Elev=71.72' Inflow=68.05 cfs 17.710 af
48.0" Round Culvert n=0.013 L=63.0' S=0.0063 '/' Outflow=68.05 cfs 17.710 af

Pond 100AP: Outlet Structure 105 to Peak Elev=103.00' Storage=31,515 cf Inflow=17.14 cfs 5.082 af
Outflow=15.05 cfs 5.038 af

Pond 100P: Outlet Structure 110 to HW109 Peak Elev=104.95' Storage=72,964 cf Inflow=49.40 cfs 4.122 af
Outflow=14.25 cfs 4.122 af

Pond BMP-1: BMP-1 STORMTECH Peak Elev=105.86' Storage=4,358 cf Inflow=7.78 cfs 0.488 af
Outflow=5.68 cfs 0.414 af

Total Runoff Area = 0.958 ac Runoff Volume = 0.488 af Average Runoff Depth = 6.12"
21.99% Pervious = 0.211 ac 78.01% Impervious = 0.747 ac

Section 6: Post Development Assuming No Infiltration @BMP-1

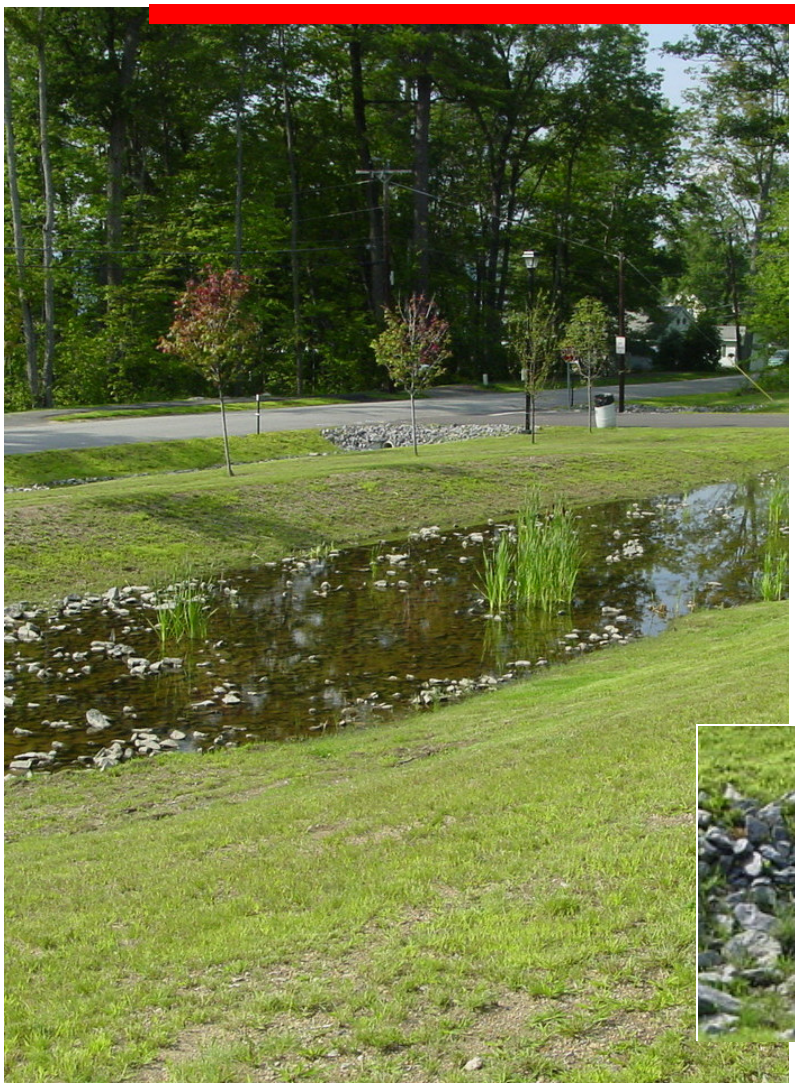
Basin Freeboard Summary (50-year):

Basin ID	Top of berm	Water Surface Elevation	**Freeboard**	Check
100P	106.0	104.95	1.05	Okay
100AP	104.0	103.00	1.00	Okay

BMP-1 Top of Stone: 106.50
BMP-1 50 Years Water Surface Elevation: 105.86 < Top of Stone OKAY

Discharge Point Summary

Discharge	**PRE-DEVELOPMENT**				**POST-DEVELOPMENT (proposed 2025)**			
Point	**2-yr**	**10-yr**	**25-yr**	**50-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
10P								
Qout (cfs)	7.0	24.8	56.6	93.3	6.8	15.7	39.4	68.1
Volume (af)	1.42	5.23	9.86	15.14	2.81	7.09	12.04	17.71



INSPECTION AND MAINTENANCE MANUAL

SUBSURFACE STORMWATER AND SURFACE STORMWATER SYSTEMS

May 25, 2006

Revised June 19, 2012 (Commercial Revised)
Revised September 13, 2012
2nd Revision October 1, 2012
3rd Revision October 4, 2012



Residential – Commercial Mixed Use Development: Senior Housing

Mast Road and Durham Road (NH Route 108)
DOVER, NH 03820

Prepared for:
Housing Initiatives of New England Corp.

Prepared by

TFMORAN INC.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Land Planners
Landscape Architects

554 Union Street, Manchester, NH 03104
(603) 647-2242 **www.tfmoran.com**

Bedford, NH | Manchester, NH | Salem, NH | Keene, NH | Portsmouth, NH

Inspection & Maintenance Manual

HOUSING INITIATIVES SENIOR HOUSING
Grapevine Drive, Dover, NH

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Responsible Party

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Stormwater Practices – Schedule of Maintenance

Stormwater Practices – Maintenance Guidelines
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Rain Garden Area
Porous Pavement

Inspection & Maintenance Log

Inspection Checklist and Inspection & Maintenance Plan

Description of Project

Housing Initiatives of New England Corp is proposing revisions to the previously permitted Dover Mixed-Use Project, Commercial Phase on tax map H lot 4-3 at the intersection of Mast Road and Route 108 in Dover, NH. The site is located within the I-4 and B-4 zoning districts in the City of Dover with a portion of the residential phase located in the General Residential and Agricultural district in the Town of Madbury.

Other areas of the site are completed or are currently under construction, including a Hannaford grocery store and the residential components on tax map H lot 4. The project described herein refers to the proposed revisions which are only applicable to the commercial phase of the project, which involve revising the previously approved 15,600 sf medical office building to be a 60-unit congregate care facility.

Approval by the NHDES Alteration of Terrain Bureau and Conditional Approval by the Dover Planning Board have been received.

The revisions proposed as part of this project provide the appropriate stormwater management systems in accordance with the intent of the original design, and the requirements of NHDES and the City of Dover.

Responsible Party

Facility Owner: Housing Initiatives of New England Corp.

Address: 36 Union Wharf, Box 12, Portland, ME 04101

Reporting Requirements

An annual report shall be submitted to the City of Dover Engineering Division in December of each year. The report should document the inspections completed and any maintenance performed on the system during the previous 12 months.

Description of Stormwater Practices

The following descriptions are provided based on information contained in Volume 2 of the New Hampshire Stormwater Manual dated December 2008.

CATCH BASINS

Catch basins consist of a manhole-type structure with an inlet grate, an outlet pipe connected to the piped drainage system, and a sump with a depth several times the diameter of the outlet pipe. The inlet grate is located at the surface, and is sometimes combined with a vertical inlet integrated with a street or parking area curb. The sump's purpose is to capture coarse sediments and debris from the runoff intercepted by the structure. The outlet pipes are fitted with a "hood" consisting of a cast metal or formed plastic fitting, designed to prevent floating materials from exiting the structure.

The site design includes catch basins in both parking lots, as well as 3 catch basins on the east side of the building and one catch basin in the rain garden off the southwest corner of the building.

RAIN GARDEN AREA

A rain garden (sometimes referred to as a "bioretention area") is a type of filtration BMP designed to collect and filter moderate amounts of stormwater runoff using conditioned planting soil beds, gravel beds and vegetation within shallow depressions. The rain garden has been designed to infiltrate the treated water directly to the subsoil. Rain gardens are capable of reducing sediment, nutrients, oil and grease, and trace metals. Rain gardens should be sited in close proximity to the origin of the stormwater runoff to be treated.

The major difference between rain gardens and other filtration systems is the use of vegetation. A typical surface sand filter is designed to be maintained with no vegetation, whereas a rain garden is planted with a variety of shrubs and perennials whose roots assist with pollutant uptake. The use of vegetation allows these systems to blend in with other landscaping features.

One rain garden has been incorporated into the site design, off the southwest corner of the building.

POROUS PAVEMENT

Porous pavement consists of a porous surface, base, and sub-base materials which allow penetration of runoff through the surface into underlying soils. The surface materials for permeable pavement can consist of paving blocks or grids, pervious asphalt, or pervious concrete. These materials are installed on a base which serves as a filter course between the pavement surface and the underlying sub-base material.

Although traffic loading capacities vary, porous pavement alternatives are generally appropriate for low traffic areas (e.g. sidewalks, parking lots, overflow parking, residential roads). Pavement

type and thickness are selected based on anticipated load (light, moderate, heavy) and maintenance requirements. Careful maintenance is essential for long term use and effectiveness.

Frequently, porous pavements filter only the runoff generated on the pavement surface itself. However, runoff from other areas can be directed to porous pavement if properly designed.

Porous asphalt is very similar to conventional asphalt except that it is mixed without particles smaller than coarse sand (less than 600 µm or No. 30 sieve). Without these smaller size particles, water is able to pass through the surface and into a crushed stone storage area. The lack of fine particles in the asphalt, however, limits the loading capacity of the asphalt relative to conventional asphalt. Because of this limitation, pervious asphalt should not be used in high-traffic areas. An advantage to the use of porous asphalt is the reduced need for stormwater conveyance systems and other additional BMPs.

The site design includes porous sidewalks.

Stormwater Practices – Schedule of Maintenance

The following practices shall be inspected twice annually; once following snow-melt (spring) and once following leaf-drop (fall):

- Catch Basins
- Rain Garden Area
- Porous Pavement*

* Concrete pavers may be installed as an alternate to porous sidewalks.

Stormwater Practices – Maintenance Guidelines

I. CATCH BASIN - MAINTENANCE PROCEDURES:

STEP 1) INSPECT CATCH BASIN SEMI-ANNUALLY FOR SEDIMENT.
STEP 2) REMOVE GRATES AND COVERS.
STEP 3) SKIM OFF OILS AND FLOATABLES.
STEP 4) USING A STADIA ROD, MEASURE THE DEPTH OF SEDIMENT.
STEP 5) IF SEDIMENT IS AT A DEPTH GREATER THAN 6" PROCEED TO STEP 6, IF NOT, PROCEED TO STEP 7.
STEP 6) VACUUM OR MANUALLY REMOVE SEDIMENT. REPLACE GRATES OR COVERS.
STEP 7) RECORD DEPTH & DATE AND SCHEDULE NEXT INSPECTION.

II. RAIN GARDEN AREA MONITORING:

STEP 1) INSPECT AND REMOVE ROUTINELY ANY ACCUMULATED DEBRIS.
STEP 2) INSPECT PLANT SPECIES SEMI-ANNUALLY AND REMOVE DEAD, SERIOUSLY DISEASED, PLANTS LACKING SUFFICIENT VIGOR, OR PLANTS EXHIBITING SIZABLE DIE-BACK. REPLACE REMOVED VEGETATION AT THE SAME SIZE AND KIND REMOVED. PRUNE OR WEED, AS NECESSARY, TO MAINTAIN APPEARANCE.
STEP 3) INSPECT SUBSTRATE MEDIUM. REPLACE WHERE EROSION EVIDENT; ADD SUBSTRATE AMENDMENTS TO MAINTAIN PROPER SOIL pH; ADJUST SOIL MOISTURE CONTENT, AS NEEDED; REPLACE MEDIUM WHEN LEVELS OF POLLUTANTS REACH TOXIC LEVELS AND PLANT GROWTH IS IMPAIRED.
STEP 4) INSPECT EMBANKMENTS FOR NUISANCE PROBLEMS (e.g. EROSION, INVASIVE SPECIES OR BURROWING ANIMALS) AND REPAIR, IF NECESSARY.
STEP 5) INSPECT EMBANKMENTS FOR STRUCTURAL INTEGRITY, ESPECIALLY FOLLOWING MAJOR STORM EVENT AND CONSULT WITH PROJECT ENGINEER FOR REPAIR.
STEP 6) INSPECT RAIN GARDEN BOTTOM AND REMOVE ANY ACCUMULATED SEDIMENTS.

III. POROUS PAVEMENT – MAINTENANCE PROCEDURES:

STEP 1) INSPECT SIDEWALKS AT LEAST TWICE A YEAR (SPRING AND FALL) AND FOLLOWING ANY LARGE RAINFALL EVENT TO ENSURE THAT THE PAVEMENT IS DRAINING PROPERLY.
STEP 2) IF DETERIORATION OR SPALLING HAS OCCURRED, THEN MEASURES SHALL BE TAKEN TO REPAIR THE PAVEMENT.
STEP3) REMOVE AND DISPOSE OF ANY ACCUMULATED DEBRIS IN A LEGAL MANNER.
STEP 4) THERE SHALL BE NO WINTER SANDING OF POROUS ASPHALT.
STEP 5) POROUS ASPHALT SHOULD BE VACUUM SWEPT WITH A COMMERCIAL UNIT (DO NOT USE BRUSH WASH OR COMPRESSED AIR UNIT) AT LEAST TWO TIMES PER YEAR, FOLLOWED BY A HIGH PRESSURE HOSING TO FREE PORES IN THE TOP LAYER FROM CLOGGING.

Inspection & Maintenance Log

Date	Inspector	BMPs checked	Maintenance Required

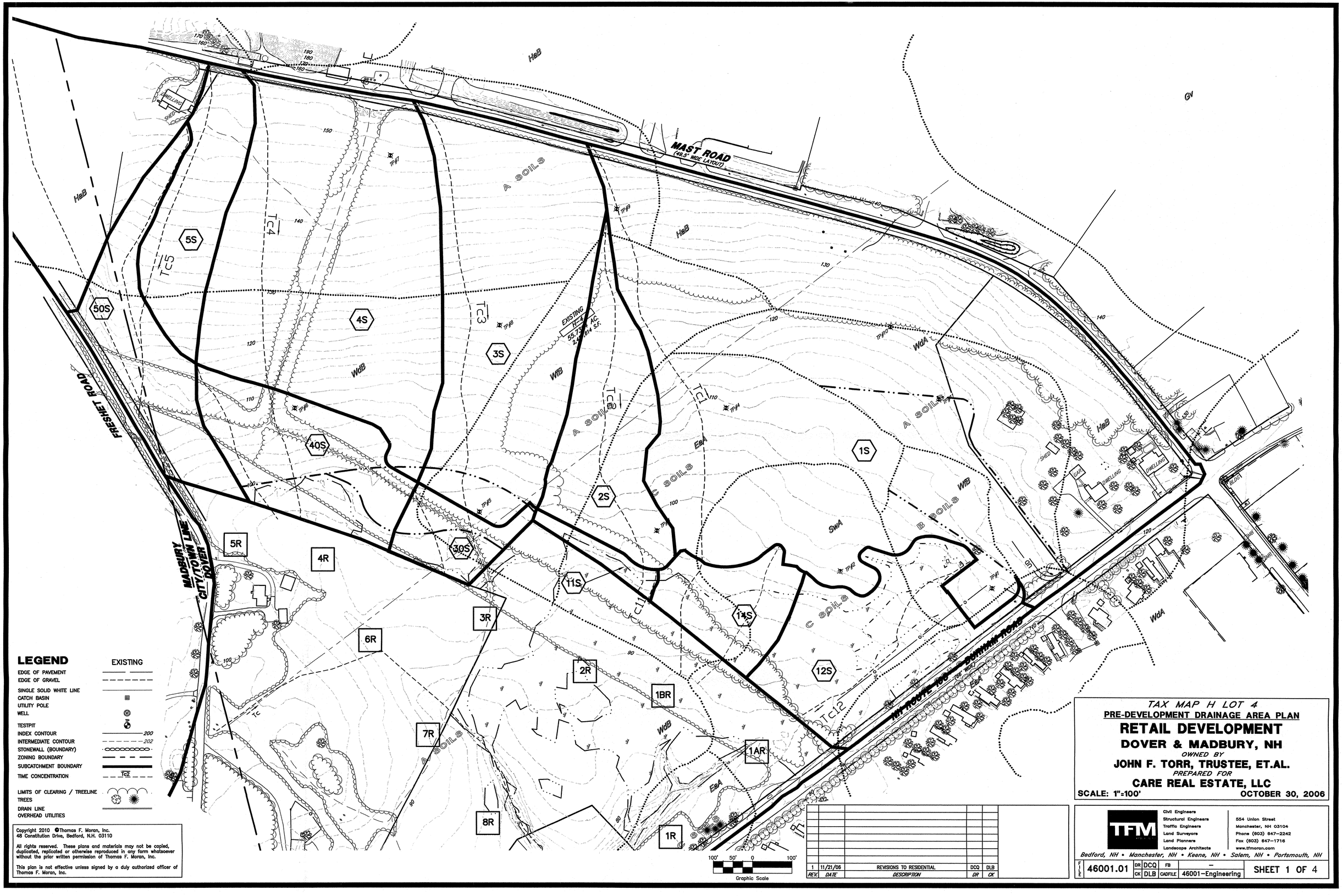
Inspection Checklist

Date:	**Project Name: Housing Initiatives Senior Housing**
Inspector's Name/Title:	
Inspector's Contact Information:	

☐ 1st Yearly Inspection	BMP's to be inspected: All
☐ 2nd Yearly Inspection	BMP's to be inspected: All

	BMP* **Refer to following Inspection & Maintenance Plan for BMP location**	Maintenance Required	Corrective Action Needed and Notes
1	Rain Garden	☐ Yes ☐ No	
2	Catch Basin DCB 331	☐ Yes ☐ No	
3	Catch Basin CB 332	☐ Yes ☐ No	
4	Catch Basin CB 333	☐ Yes ☐ No	
5	Catch Basin CB 321	☐ Yes ☐ No	
6	Catch Basin CB 322	☐ Yes ☐ No	
7	Catch Basin CB 323	☐ Yes ☐ No	
8	Catch Basin CB 324	☐ Yes ☐ No	
9	Catch Basin CB 325	☐ Yes ☐ No	
10	Catch Basin CB 326	☐ Yes ☐ No	
11	Catch Basin DCB 327	☐ Yes ☐ No	

12	Porous Sidewalk South Side of Building	☐ Yes ☐ No	
13	Porous Sidewalk Parking Lot Island	☐ Yes ☐ No	
14	Porous Sidewalk West Side of Driveway	☐ Yes ☐ No	
15	Porous Sidewalk Gazebo Area	☐ Yes ☐ No	
16	Porous Sidewalk East Side of Building	☐ Yes ☐ No	
17	Porous Sidewalk North Side of Building	☐ Yes ☐ No	
18	Porous Sidewalk West Side of Building	☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	
		☐ Yes ☐ No	



LEGEND

	EXISTING
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
SINGLE SOLID WHITE LINE	
CATCH BASIN	
UTILITY POLE	
WELL	
TESTPIT	
INDEX CONTOUR	200
INTERMEDIATE CONTOUR	202
STONEWALL (BOUNDARY)	
ZONING BOUNDARY	
SUBCATCHMENT BOUNDARY	
TIME CONCENTRATION	Tc2
LIMITS OF CLEARING / TREELINE	
TREES	
DRAIN LINE	
OVERHEAD UTILITIES	

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REV.	DATE	DESCRIPTION	DR	CK
1	11/21/06	REVISIONS TO RESIDENTIAL	DCQ	DLB

TAX MAP H LOT 4

PRE-DEVELOPMENT DRAINAGE AREA PLAN

RETAIL DEVELOPMENT

DOVER & MADBURY, NH

OWNED BY

JOHN F. TORR, TRUSTEE, ET.AL.

PREPARED FOR

CARE REAL ESTATE, LLC

SCALE: 1"=100' **OCTOBER 30, 2006**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Land Planners
Landscape Architects
554 Union Street
Manchester, NH 03104
Phone (603) 647-2242
Fax (603) 647-1716
www.tfmoran.com
Bedford, NH • Manchester, NH • Keene, NH • Salem, NH • Portsmouth, NH

FILE	DR	CK	CADFILE	
46001.01	DCQ	DLB	46001-Engineering	SHEET 1 OF 4

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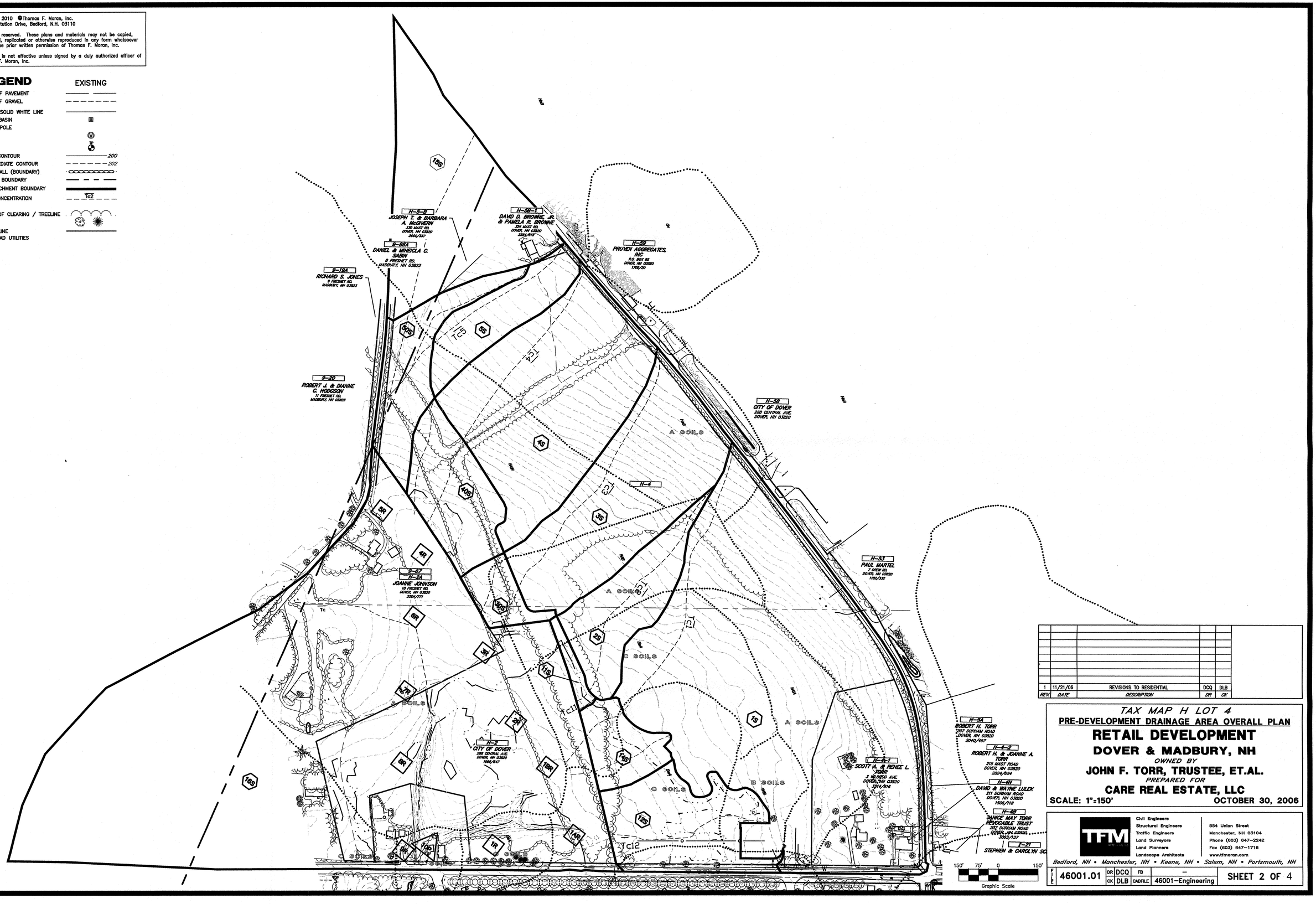
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LEGEND

EXISTING

- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- SINGLE SOLID WHITE LINE
- CATCH BASIN
- UTILITY POLE
- WELL
- TESTPIT
- INDEX CONTOUR — 200
- INTERMEDIATE CONTOUR — 202
- STONEWALL (BOUNDARY)
- ZONING BOUNDARY
- SUBCATCHMENT BOUNDARY
- TIME CONCENTRATION — Tc2
- LIMITS OF CLEARING / TREELINE
- TREES
- DRAIN LINE
- OVERHEAD UTILITIES



REV.	DATE	DESCRIPTION	DR	CK
1	11/21/06	REVISIONS TO RESIDENTIAL	DCQ	DLB

TAX MAP H LOT 4

PRE-DEVELOPMENT DRAINAGE AREA OVERALL PLAN

RETAIL DEVELOPMENT

DOVER & MADBURY, NH

OWNED BY

JOHN F. TORR, TRUSTEE, ET.AL.

PREPARED FOR

CARE REAL ESTATE, LLC

SCALE: 1"=150' OCTOBER 30, 2006

TFM
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Manchester, NH 03104
Phone (603) 647-2242
Fax (603) 647-1716
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FILE		DR	CK	FB	CADFILE	
46001.01		DCQ	DLB	–	46001-Engineering	SHEET 2 OF 4



LEGEND

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION
- (5) SUBCATCHMENT
- (1) POND
- (9) REACH
- (A) DISCHARGE POINT

TAX MAP H LOT 4-3

POST-DEVELOPMENT DRAINAGE AREA PLAN

MCDONALD'S

NH ROUTE 108 AND GRAPEVINE DRIVE
DOVER, NEW HAMPSHIRE

OWNER OF RECORD	*AND*	*APPLICANT/DEVELOPER*
n/f VC DOVER INVESTMENTS, LLC 48 CONSTITUTION DRIVE BEDFORD, NH 03110		BOHLER ENGINEERING, LLC 352 TURNPIKE RD, 3RD FLOOR SOUTHBOROUGH, MA 01772

SCALE: 1"=100' **DECEMBER 5, 2024**

REV.	DATE	DESCRIPTION	DR	CK
1	2/14/25	REVISED PER CITY COMMENTS	JMR	RED

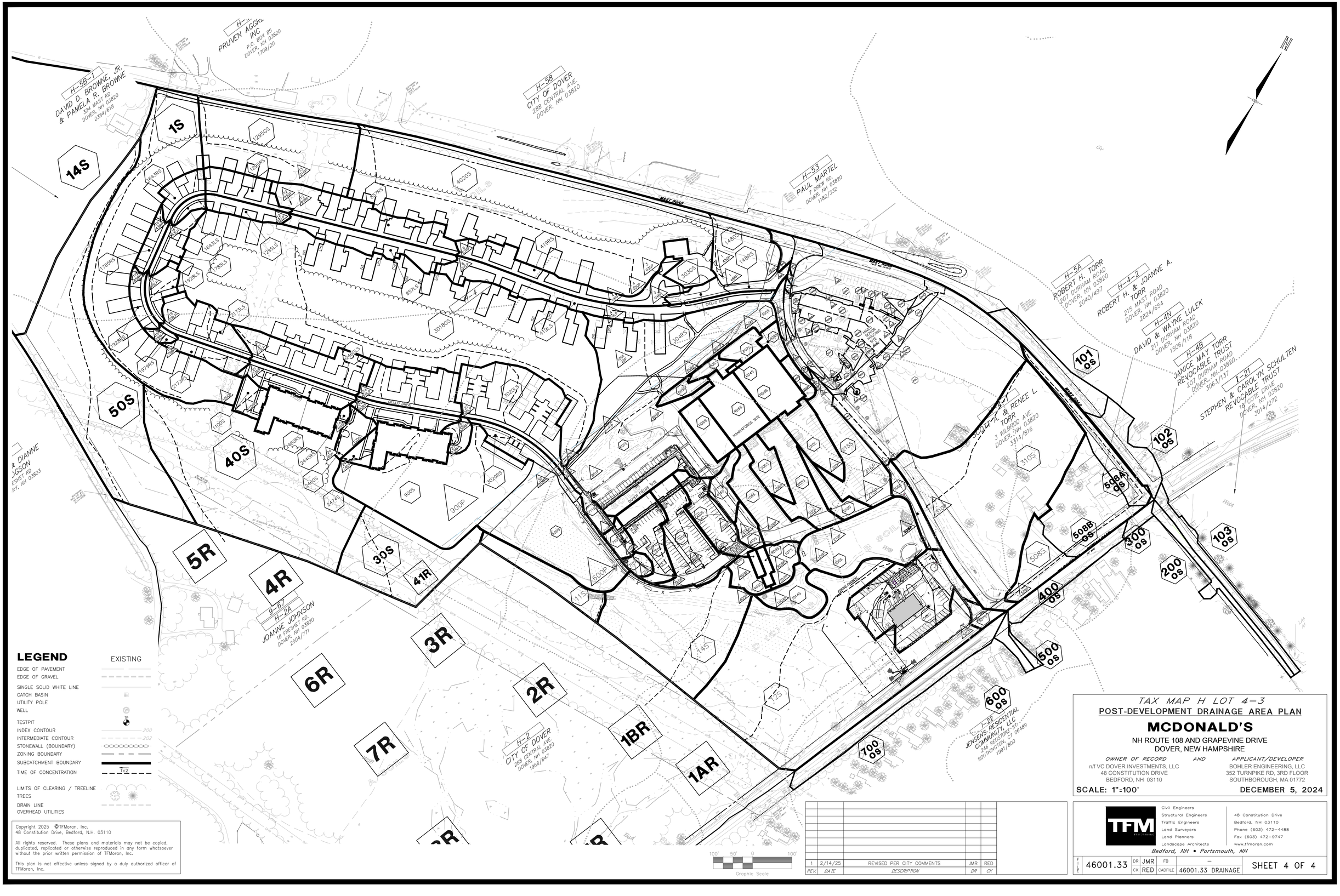
TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Land Planners, Landscape Architects
48 Constitution Drive, Bedford, NH 03110
Phone (603) 472-4488, Fax (603) 472-9747, www.tfmoran.com
Bedford, NH • Portsmouth, NH

PRT — N	46001.33	DR	JMR	FB	–	SHEET 3 OF 4
		CK	RED	CADFILE	46001.33 DRAINAGE	

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LEGEND

	EXISTING
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
SINGLE SOLID WHITE LINE	
CATCH BASIN	
UTILITY POLE	
WELL	
TESTPIT	
INDEX CONTOUR	200
INTERMEDIATE CONTOUR	202
STONEWALL (BOUNDARY)	
ZONING BOUNDARY	
SUBCATCHMENT BOUNDARY	
TIME OF CONCENTRATION	Tc2
LIMITS OF CLEARING / TREELINE	
TREES	
DRAIN LINE	
OVERHEAD UTILITIES	

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100' 50' 0 100'
Graphic Scale

REV.	DATE	DESCRIPTION	DR	CK
1	2/14/25	REVISED PER CITY COMMENTS	JMR	RED

TAX MAP H LOT 4–3

POST-DEVELOPMENT DRAINAGE AREA PLAN

MCDONALD'S

NH ROUTE 108 AND GRAPEVINE DRIVE
DOVER, NEW HAMPSHIRE

OWNER OF RECORD
n/f VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110

AND

APPLICANT/DEVELOPER
BOHLER ENGINEERING, LLC
352 TURNPIKE RD, 3RD FLOOR
SOUTHBOROUGH, MA 01772

SCALE: 1"=100' **DECEMBER 5, 2024**

TFM
Civil Engineers
Structural Engineers
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48 Constitution Drive
Bedford, NH 03110
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Fax (603) 472–9747
www.tfmoran.com
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PRT: 1	46001.33	DR	JMR	FB	–	SHEET 4 OF 4
		CK	RED	CADFILE	46001.33 DRAINAGE	

PROPOSED SITE PLAN DOCUMENTS

FOR

PROPOSED

RESTAURANT WITH DRIVE-THRU

LOCATION OF SITE

NH ROUTE 108 & GRAPEVINE DRIVE, CITY OF DOVER

STRAFFORD COUNTY, NEW HAMPSHIRE

MAP H, LOT 4-3

PERMIT REFERENCES

CITY OF DOVER PLANNING BOARD
- SITE REVIEW APPLICATION #SITE-2024-0020
- ENVIRONMENTAL CONDITIONAL USE PERMIT APPLICATION PER SECTION 170-28.G.(1)(D) #COND-2025-0005
- NON-ENVIRONMENTAL CONDITIONAL USE PERMIT APPLICATION PER SECTION 153-14.D.(5)(A) #COND-2025-0004

NHDOT
- DRIVEWAY PERMIT #IA-0000000841

REFERENCES AND CONTACTS

REFERENCES

♦ALTA/NSPS LAND TITLE SURVEY:
CONTROL POINT ASSOCIATES, INC.
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
DATED: 07/10/2024 (REVISED THROUGH 05/15/2025)
SURVEY JOB # 03-240216-00
ELEVATIONS: NAVD 1988

♦ARCHITECTURAL PLAN:
CORE STATES GROUP
135 WATER STREET, SUITE 201
NAPERVILLE, IL 60540

♦GEOTECHNICAL REPORT:
WHITESTONE ASSOCIATES, INC.
3 EXECUTIVE PARK DRIVE, SUITE 202
BEDFORD, NEW HAMPSHIRE 03110
DATED: 06/11/2024
PROJECT # GM2421922.000

GOVERNING AGENCIES

♦PLANNING DEPARTMENT
288 CENTRAL AVENUE
DOVER, NH 03820
PHONE: (603) 516-6008

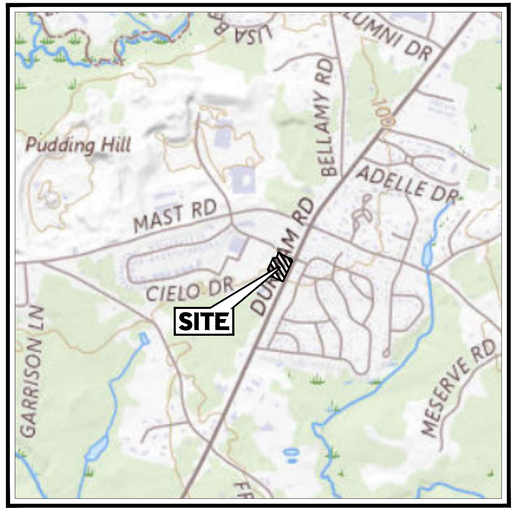
♦BUILDING DEPARTMENT
288 CENTRAL AVENUE
DOVER, NH 03820
PHONE: (603) 516-6038

♦FIRE DEPARTMENT
288 CENTRAL AVENUE
DOVER, NH 03820
PHONE: (603) 516-6038

ROW JURISDICTION

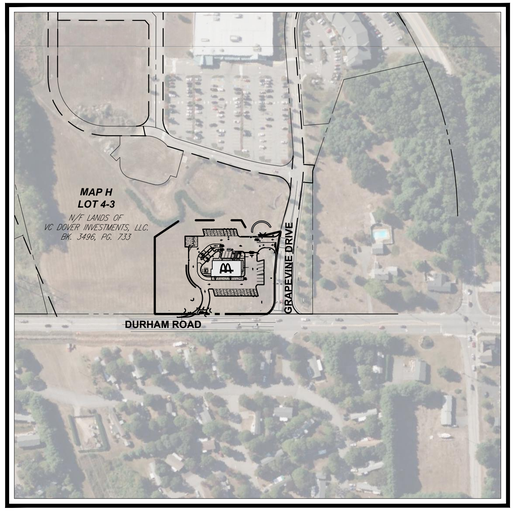
♦TRAFFIC, STORMWATER, WATER & SEWER
DOVER COMMUNITY SERVICES DEPARTMENT
271 MAST ROAD
DOVER, NH 03820
PHONE: (603) 516-6450

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USGS MAP

SCALE: 1" = 1,000'
SOURCE: USGS QUADRANGLE



SITE MAP

SCALE: 1" = 200'
SOURCE: AUTODESK CIVIL3D GEOLOCATION

OWNER

VC DOVER INVESTMENTS, LLC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110

DEVELOPER

McDONALD'S USA, LLC
110 N CARPENTER STREET
CHICAGO, IL 60607

SHEET INDEX

SHEET TITLE	SHEET NUMBER
COVER SHEET	C-101
GENERAL NOTES AND LEGEND	C-102
EXISTING CONDITIONS/DEMOLITION PLAN	C-201
SITE PLAN	C-301
NEIGHBORHOOD PLAN	C-302
GRADING AND DRAINAGE PLAN	C-401
UTILITY PLAN	C-501
EROSION AND SEDIMENT CONTROL PLAN	C-801
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	C-802
CONSTRUCTION DETAILS	C-901
CONSTRUCTION DETAILS	C-902
CONSTRUCTION DETAILS	C-903
CONSTRUCTION DETAILS	C-904
CONSTRUCTION DETAILS	C-905
CONSTRUCTION DETAILS	C-906
CONSTRUCTION DETAILS	C-907
LANDSCAPE PLAN	L-101
LANDSCAPE NOTES AND DETAILS	L-102
LIGHTING PLAN	L-201
ALTA/NSPS LAND TITLE SURVEY (BY OTHERS)	2 SHEETS

THE WETLAND DELINEATION SHOWN ON THIS PLAN WAS PERFORMED IN APRIL 2025, ACCORDING TO THE STANDARDS OF THE 1987 US ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL. THIS DELINEATION WAS PERFORMED BY ANDREW THIBAULT UNDER THE SUPERVISION OF SCOTT GODDARD, NH CWS #14

WETLAND SCIENTIST'S SIGNATURE DATE

OWNER'S SIGNATURE

OWNER'S SIGNATURE DATE

2" X 2" CITY OF DOVER APPROVAL BLOCK

PREPARED BY

BOHLER

CONTACT: ERIC DUBRULE

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

811 Know what's below. Call before you dig.
ALWAYS CALL 811
It's fast. It's free. It's the law.

ISSUED FOR ENTITLEMENTS

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	MAA240177.00-5A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVIL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
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J. KUCICH 12/17/2024
PROFESSIONAL ENGINEER
MASSACHUSETTS No. 45530
NEW HAMPSHIRE No. 15476
CONNECTICUT No. 30177
RHODE ISLAND No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

C-101

REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-5A-----LAYOUT: C-101 COVR
JDG

GENERAL NOTES

(Rev. 1/2023)

1. THESE PLANS ARE SOLELY BASED ON INFORMATION THE OWNER AND OTHERS PROVIDED TO BOHLER ENGINEERING MA, LLC (HEREIN "BOHLER") PRIOR TO THE DATE ON WHICH THE PROFESSIONAL OF RECORD AND BOHLER PREPARED THESE PLANS. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS AND IMMEDIATELY NOTIFY BOHLER, IN WRITING, IF ANY ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THESE PLANS, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER SITE FEATURES.
2. THE CONTRACTOR MUST STRICTLY COMPLY WITH THESE NOTES AND ALL SPECIFICATIONS/REPORTS CONTAINED HEREIN. THE CONTRACTOR MUST ENSURE THAT ALL SUBCONTRACTORS FIRE FULLY AND COMPLETELY CONFORM TO AND COMPLY WITH THESE REQUIREMENTS. THESE NOTES, AND THE REQUIREMENTS ARTICULATED IN THE NOTES CONTAINED IN ALL THE OTHER DRAWINGS THAT COMPRISE THE PLAN SET OF DRAWINGS. ADDITIONAL NOTES AND SPECIFIC PLAN NOTES MAY BE FOUND ON THE INDIVIDUAL PLANS. THESE GENERAL NOTES APPLY TO THIS ENTIRE DOCUMENT PACKAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONSTRUCTION CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE, PRIOR TO THE INITIATION AND COMMENCEMENT OF CONSTRUCTION.
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST CONFIRM WITH THE PROFESSIONAL OF RECORD AND BOHLER THAT THE LATEST EDITION OF THE DOCUMENTS AND/OR REPORTS REFERENCED WITHIN THE PLAN REFERENCES ARE BEING USED FOR CONSTRUCTION. THIS IS THE CONTRACTOR'S SOLE AND COMPLETE RESPONSIBILITY.
4. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION IS TO BEGIN UNTIL THIS HAS BEEN ACCOMPLISHED. THE CONTRACTOR MUST REVIEW ALL CONDITIONS OF APPROVAL TO ALL PLANS AND OTHER DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES AND HAS ALSO CONFIRMED THAT ALL NECESSARY AND REQUIRED PERMITS HAVE BEEN OBTAINED. THE CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.
5. THE CONTRACTOR MUST ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS/REPORTS AND CONDITIONS OF APPROVAL, AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTORY REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THIS PROJECT, AND ALL PROVISIONS IN AND CONDITIONS OF THE CONSTRUCTION CONTRACT WITH THE OWNER/DEVELOPER INCLUDING ALL EXHIBITS, ATTACHMENTS AND ADDENDA TO SAME.
6. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST COORDINATE THE BUILDING LAYOUT BY CAREFULLY REVIEWING THE MOST CURRENT ARCHITECTURAL, CIVIL AND STRUCTURAL CONSTRUCTION DOCUMENTS (INCLUDING, BUT NOT LIMITED TO, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLANS, WHERE APPLICABLE). THE CONTRACTOR MUST IMMEDIATELY NOTIFY OWNER, ARCHITECT AND PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, OF ANY CONFLICTS, DISCREPANCIES OR AMBIGUITIES WHICH EXIST BETWEEN THESE PLANS AND ANY OTHER PLANS THAT COMPRISE THE CONSTRUCTION DOCUMENTS.
7. CONTRACTOR MUST REFER TO AND REVIEW APPROVED ARCHITECTURAL/BUILDING PLANS OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
8. THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS SHOWN ON THESE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY NOTIFY PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, IF ANY CONFLICTS, DISCREPANCIES, OR AMBIGUITIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR WORK WHICH HAS TO BE RE-DONE OR REMOVED BECAUSE OF BOHLER AND/OR THE PROFESSIONAL OF RECORD'S USE OF THESE PLANS PRIOR TO BOTH (A) THE CONTRACTOR GIVING PROFESSIONAL OF RECORD AND BOHLER WRITTEN NOTIFICATION OF SAME AND (B) PROFESSIONAL OF RECORD AND BOHLER, THEREAFTER, PROVIDING THE CONTRACTOR WITH WRITTEN AUTHORIZATION TO PROCEED WITH SUCH ADDITIONAL WORK.
9. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND MEASUREMENTS INCLUDED ON DESIGN DOCUMENTS HEREIN AND MUST NOT SCALE OFF THE DRAWINGS DUE TO POTENTIAL PRINTING INACCURACIES. ALL DIMENSIONS AND MEASUREMENTS ARE TO BE CONFIRMED IN THE FIELD. THE GENERAL CONTRACTOR PRIOR TO PREPARATION OF SHOP DRAWINGS, FABRICATION/ORDERING OF PARTS AND MATERIALS AND COMMENCEMENT OF SITE WORK. SITE PLAN DRAWINGS ARE NOT INTENDED AS SURVEY DRAWINGS. DIMENSIONS SUPERSEDE GRAPHICAL REPRESENTATIONS. THE CONTRACTOR MUST MAKE CONTRACTOR'S OWN MEASUREMENTS FOR LAYOUT OF IMPROVEMENTS.
10. THE OWNER AND CONTRACTOR MUST BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
11. WHEN INCLUDED AS ONE OF THE REFERENCED DOCUMENTS, THE GEOTECHNICAL REPORT, SPECIFICATIONS AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND, IN CASE OF CONFLICT, DISCREPANCY OR AMBIGUITY, THE MORE STRINGENT REQUIREMENTS AND/OR RECOMMENDATIONS CONTAINED IN (A) THE PLANS; AND (B) THE GEOTECHNICAL REPORT AND RECOMMENDATIONS, MUST TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR MUST NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, OF ANY SUCH CONFLICT, DISCREPANCY OR AMBIGUITY PRIOR TO PROCEEDING WITH THE GEOTECHNICAL REPORT AND PLANS AND SPECIFICATIONS, PRIOR TO PROCEEDING WITH ANY FURTHER WORK. IF A GEOTECHNICAL REPORT WAS NOT CREATED, THEN THE CONTRACTOR MUST FOLLOW AND COMPLY WITH ALL OF THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE SPECIFICATIONS WHICH HAVE JURISDICTION OVER THIS PROJECT.
12. PROFESSIONAL OF RECORD AND BOHLER ARE NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, HAS NO LIABILITY FOR ANY HAZARDOUS MATERIALS, POLLUTANTS OR ASBESTOS ON, ABOUT OR IMPACTING THE SITE AND RELATED TO SAME.
13. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN AND WHERE SHORING IS REQUIRED AND FOR INSTALLING ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PRECAUTIONS TO BE TAKEN TO ASSURE THE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS STRUCTURES AND PROPERTIES. THIS WORK IS TO BE PERFORMED AT CONTRACTOR'S SOLE COST AND EXPENSE.
14. THE CONTRACTOR MUST EXERCISE EXTREME CAUTION WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER FOR AN INITIAL PHASE OF THE PROJECT OR AS PART OF THE FINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ALL APPROPRIATE MEASURES REQUIRED TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE WHICH ARE TO REMAIN, AND FOR THIRD PARTIES, PEDESTRIANS AND ANYONE ELSE WHO MAY BE INJURED OR INVOLVED WITH THE PROJECT.
15. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION AND CONSTRUCTION WASTES, UNSUITABLE EXCAVATED MATERIAL, EXCESS SOIL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES WHICH HAVE JURISDICTION OVER THIS PROJECT OR OVER THE CONTRACTOR.
16. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN RECORDS OF, AND TO PROPERLY DISPOSE OF, ALL CONSTRUCTION DISPOSAL ACTIVITIES, TO BE PROMPTLY PROVIDED TO THE OWNER UPON REQUEST.
17. THE CONTRACTOR SHALL REPAIR AT CONTRACTOR'S SOLE COST, ALL DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME TO INCLUDE, BUT NOT BE LIMITED TO, REDESIGN, RE-SURVEY, RE-PERMITTING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS AND ANY ASSOCIATED ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY TO A CONDITION EQUIVALENT OR BETTER THAN EXISTED PRIOR TO COMMENCEMENT OF THE CONSTRUCTION, AND IN CONFORMANCE WITH APPLICABLE CODES, LAWS, RULES, REGULATIONS, STATUTORY REQUIREMENTS AND STATUTES. THE CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE CONTRACTOR MUST, PROMPTLY, DOCUMENT ALL EXISTING DAMAGE AND NOTIFY OWNER AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
18. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR AND HAVE NO CONTRACTUAL, LEGAL OR OTHER RESPONSIBILITIES FOR JOB SITE SAFETY JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME. THE PROFESSIONAL OF RECORD AND BOHLER HAVE NOT BEEN RETAINED TO PERFORM OR TO BE RESPONSIBLE FOR JOB SITE SAFETY, SAME BEING WHOLLY OUTSIDE OF PROFESSIONAL OF RECORD'S AND BOHLER'S SERVICES AS RELATED TO THE PROJECT. THE PROFESSIONAL OF RECORD AND BOHLER DO NOT HAVE THE RIGHT TO IDENTIFY OR REPORT ANY JOB SITE SAFETY ISSUES OR ANY JOB SITE CONDITIONS, AT ANY TIME.
19. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROFESSIONAL OF RECORD AND BOHLER , ANY DISCREPANCIES THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST. IF THE CONTRACTOR PROCEEDS WITH CONSTRUCTION WITHOUT PROVIDING PROPER WRITTEN NOTIFICATION AS DESCRIBED ABOVE, IT WILL BE AT THE CONTRACTOR'S OWN RISK AND, FURTHER, THE CONTRACTOR MUST INDEMNIFY, DEFEND AND HOLD HARMLESS THE OWNER AND BOHLER FOR ANY AND ALL DAMAGES, CLAIMS, LAWSUITS, INJURIES, ATTORNEY'S FEES AND THE LIKE WHICH RESULT FROM OR ARE IN ANY WAY RELATED TO SAME INCLUDING, BUT NOT LIMITED TO, ANY THIRD PARTY AND FIRST PARTY CLAIMS.
20. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE. IF THE CONTRACTOR AND/OR OWNER AGREE TO AND MUST JOINTLY, INDEPENDENTLY, SEPARATELY, AND SEVERALLY INDEMNIFY AND HOLD THE PROFESSIONAL OF RECORD AND BOHLER HARMLESS FOR AND FROM ALL INJURIES, CLAIMS AND DAMAGES THAT PROFESSIONAL OF RECORD AND BOHLER INCUR AS RELATED TO SAME.
21. ALL CONTRACTORS MUST CARRY AT LEAST THE MINIMUM AMOUNT OF THE SPECIFIED AND COMMERCIALLY REASONABLE STATUTORY WORKER'S COMPENSATION INSURANCE, EMPLOYER'S LIABILITY INSURANCE AND COMMERCIAL LIABILITY INSURANCE (CGL) INCLUDING ALSO ALL UMBRELLA COVERAGES. ALL CONTRACTORS MUST HAVE THEIR CGL POLICIES ENDORSED TO NAME BOHLER, AND THEIR CONSULTANTS, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AS ADDITIONAL INSUREDS. THE CONTRACTOR MUST PROVIDE CONTRACTUAL LIABILITY COVERAGE SUFFICIENT TO INSURE (DEFEND, IF APPLICABLE) AND HOLD HARMLESS AND INDEMNIFY OBLIGATIONS ASSUMED AND AGREED TO BY THE CONTRACTOR HEREIN. ALL CONTRACTORS MUST FURNISH BOHLER WITH CERTIFICATIONS OF INSURANCE OR CERTIFICATES OF INSURANCE AS EVIDENCE OF THE REQUIRED INSURANCE COVERAGES PRIOR TO COMMENCING WORK AND UPON RENEWAL OF EACH POLICY DURING THE ENTIRE PERIOD OF CONSTRUCTION AND FOR TWO YEARS AFTER THE COMPLETION OF CONSTRUCTION AND AFTER ALL PERMITS ARE ISSUED. PRIOR TO BEGINNING WORK, CONTRACTORS AGREE THAT THEY WILL, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, INDEMNIFY, DEFEND AND HOLD HARMLESS BOHLER AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS, LOSSES, PENALTIES, EXPENSES, PUNITIVE DAMAGES, TORT DAMAGES, STATUTORY CLAIMS, STATUTORY CAUSES OF ACTION, LOSSES, CAUSES OF ACTION, LIABILITIES OR COSTS, INCLUDING BUT NOT LIMITED TO, REASONABLE ATTORNEYS' FEES AND DEFENSE COSTS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH OR TO THE PROJECT, INCLUDING ALL CLAIMS BY EMPLOYEES OF THE CONTRACTOR(S), ALL CLAIMS BY THIRD PARTIES AND ALL CLAIMS RELATED TO THE PROJECT. THE CONTRACTOR MUST NOTIFY PROFESSIONAL OF RECORD, IN WRITING, AT LEAST THIRTY (30) DAYS PRIOR TO ANY TERMINATION, SUSPENSION OR CHANGE OF THE CONTRACTOR'S INSURANCE COVERAGE.
22. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONTRACTOR'S CHOICE OF CONSTRUCTION METHODS, TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK DEPICTED ON THESE PLANS, AND FOR ANY CONFLICTS IN SCOPE AND REVISIONS THAT RESULT FROM SAME. THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS FOR COMPLETION OF THE WORK, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
23. NEITHER THE PROFESSIONAL OF RECORD AND BOHLER, NOR THEIR PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS (COLLECTIVELY, THE "PROFESSIONAL OF RECORD AND BOHLER PARTIES"), RELIEVES OR WILL RELIEVE THE CONTRACTOR OF AND FROM CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, OVERSEEING, SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND/OR COMPLIANCE WITH ALL HEALTH AND SAFETY PRECAUTIONS REQUIRED BY REGULATORY AGENCIES WITH JURISDICTION OVER THE PROJECT AND/OR PROPERTY. BOHLER PARTIES HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER (OR ANY RESPONSIBILITY FOR) ANY CONSTRUCTION, THE CONTRACTOR'S EMPLOYEES RELATING TO THEIR WORK AND/OR ANY HEALTH AND SAFETY PROGRAMS OR PROCEDURES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE CONTRACTOR MUST INDEMNIFY, DEFEND, PROTECT AND HOLD HARMLESS BOHLER PARTIES FOR AND FROM ANY LIABILITY TO BOHLER PARTIES RESULTING FROM THE CONTRACTOR'S WORK, SERVICES AND VIOLATIONS OF THE TERMS OF THESE NOTES IN THE PLAN SET AND, FURTHER, THE CONTRACTOR MUST NAME BOHLER AS AN ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE AS DESCRIBED ABOVE.
24. WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN BOHLER'S SCOPE OF SERVICES CONTRACT WITH THE OWNER/DEVELOPER, BOHLER WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND OTHER DATA, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE LIMITED PURPOSE OF EVALUATING CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONSTRUCTION MEANS AND METHODS AND/OR TECHNIQUES OR PROCEDURES, COORDINATION OF THE WORK WITH OTHER TRADES, AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND BOHLER HAS NO RESPONSIBILITY OR LIABILITY FOR SAME. BOHLER WILL PERFORM ITS SHOP DRAWING REVIEW WITH REASONABLE PROMPTNESS, AS CONDITIONS PERMIT. ANY DOCUMENT, DOCUMENTING BOHLER'S REVIEW OF A SPECIFIC ITEM OR LIMITED SCOPE, MUST NOT INDICATE THAT BOHLER HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. BOHLER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR MUST, IN WRITING, PROMPTLY AND IMMEDIATELY BRING ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS TO BOHLER'S ATTENTION. BOHLER IS NOT REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.
25. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE PROFESSIONAL OF RECORD AND BOHLER FOR ALL DEVIATIONS WITHIN PROFESSIONAL OF RECORD'S SCOPE, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK PERFORMED WHICH DEVIATES FROM THE PLANS, ALL FINES AND/OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL CONSEQUENTIAL AND/OR PUNITIVE DAMAGES RESULTING THEREFROM AND, FURTHER, MUST DEFEND, INDEMNIFY, PROTECT, AND HOLD HARMLESS THE PROFESSIONAL OF RECORD AND BOHLER PARTIES TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, FOR AND FROM ALL FEES, ATTORNEYS' FEES, DAMAGES, COSTS, JUDGMENTS, CLAIMS, INJURIES, PENALTIES AND THE LIKE RELATED TO SAME.
26. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS, FOR ALL WORK PERFORMED WITHIN OR ADJACENT TO THE PUBLIC RIGHT OF WAY OR ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE AND IS THE CONTRACTOR'S SOLE RESPONSIBILITY.
27. OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS IN STRICT ACCORDANCE WITH THE APPROVED PLAN(S) AND DESIGN AND, FURTHER, THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY FAILURE TO SO MAINTAIN OR PRESERVE SITE AND/OR DESIGN FEATURES. IF OWNER FAILS TO MAINTAIN AND/OR PRESERVE ALL PHYSICAL SITE FEATURES AND/OR DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS, OWNER AGREES TO INDEMNIFY AND HOLD THE PROFESSIONAL OF RECORD AND BOHLER HARMLESS FROM ALL INJURIES, DAMAGES AND COSTS THAT THE PROFESSIONAL OF RECORD AND BOHLER INCUR AS A RESULT OF SAID FAILURE OR FAILURE TO PRESERVE.
28. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES, AND ALL APPLICABLE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 ET SEQ.) AS AMENDED, AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.
29. THE CONTRACTOR MUST STRICTLY COMPLY WITH THE LATEST AND CURRENT OSHA STANDARDS AND REGULATIONS, AND/OR ANY OTHER AGENCY WITH JURISDICTION OVER EXCAVATION AND TRENCHING PROCEDURES. THE PROFESSIONAL OF RECORD AND BOHLER HAS NO RESPONSIBILITY FOR OR AS RELATED TO EXCAVATION AND TRENCHING PROCEDURES AND WORK.
30. THE CONTRACTOR AND THE OWNER MUST INSTALL ALL ELEMENTS AND COMPONENTS IN STRICT COMPLIANCE WITH AND IN ACCORDANCE WITH MANUFACTURER'S STANDARDS, RECOMMENDED INSTALLATION CRITERIA AND SPECIFICATIONS. IF THE CONTRACTOR AND/OR OWNER FAIL TO DO SO, THEY AGREE TO JOINTLY, INDEPENDENTLY, SEPARATELY, COLLECTIVELY, AND SEVERALLY INDEMNIFY, DEFEND, PROTECT AND HOLD PROFESSIONAL OF RECORD AND BOHLER PARTIES HARMLESS FROM ANY AND ALL CLAIMS, LOSSES AND DAMAGES THAT PROFESSIONAL OF RECORD SUFFERS AND COSTS THAT PROFESSIONAL OF RECORD INCURS AS A RESULT OF SAID FAILURE.
31. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AN ON-SITE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIREMENTS OR LOCAL GOVERNING AGENCY FOR SITES WHERE ONE (1) ACRE OR MORE IS DISTURBED BY CONSTRUCTION ACTIVITIES (UNLESS THE LOCAL JURISDICTION REQUIRES A DIFFERENT THRESHOLD). THE CONTRACTOR MUST ENSURE THAT ALL ACTIVITIES, INCLUDING THOSE OF ALL SUBCONTRACTORS, ARE IN COMPLIANCE WITH THE SWPPP, INCLUDING BUT NOT LIMITED TO LOGGING ACTIVITIES (MINIMUM ONCE PER WEEK AND AFTER RAINFALL EVENTS) AND CORRECTIVE MEASURES, AS APPROPRIATE AND FURTHER, THE CONTRACTOR IS SOLELY AND COMPLETELY RESPONSIBLE FOR FAILING TO DO SO.
32. AS CONTAINED IN THESE DRAWINGS AND ASSOCIATED DOCUMENTS PREPARED BY THE PROFESSIONAL OF RECORD AND BOHLER, THE USE OF THE WORDS 'CERTIFY' OR 'CERTIFICATION' CONSTITUTE(S) AN EXPRESSION ONLY OF PROFESSIONAL OPINION REGARDING THE INFORMATION WHICH IS THE SUBJECT OF THE PROFESSIONAL OF RECORD'S AND BOHLER KNOWLEDGE OR BELIEF AND IN ACCORDANCE WITH COMMON AND ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE, AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE OF ANY NATURE OR TYPE, EITHER EXPRESSED OR IMPLIED, UNDER ANY CIRCUMSTANCES.

DEMOLITION NOTES

(Rev. 1/2023)

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. THE CONTRACTOR MUST CONDUCT DEMOLITION/REMOVALS ACTIVITIES IN SUCH A MANNER AS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND ALL OTHER ADJACENT FACILITIES. THE CONTRACTOR MUST OBTAIN ALL APPLICABLE PERMITS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY(IES) PRIOR TO THE COMMENCEMENT OF ANY ROAD OPENING OR DEMOLITION ACTIVITIES IN OR ADJACENT TO THE RIGHT-OF-WAY.
3. WHEN DEMOLITION-RELATED ACTIVITIES IMPACT ROADWAYS AND/OR ROADWAY RIGHT-OF-WAY, THE CONTRACTOR MUST PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE CURRENT FEDERAL HIGHWAY ADMINISTRATION'S MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND THE FEDERAL, STATE, AND LOCAL REGULATIONS.
4. THE DEMOLITION (AND/OR REMOVALS) PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION AND TO IDENTIFY ONLY CONDITIONS REGARDING ITEMS TO BE DEMOLISHED, REMOVED, AND/OR TO REMAIN.
   A. THE CONTRACTOR MUST ALSO REVIEW ALL CONSTRUCTION DOCUMENTS AND INCLUDE WITHIN THE DEMOLITION ACTIVITIES ALL INCIDENTAL ITEMS NECESSARY FOR THE COMPLETE AND TOTAL DEMOLITION OF THE SITE.
   B. THIS PLAN IS NOT INTENDED TO AND DOES NOT PROVIDE DIRECTION REGARDING THE MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE EMPLOYED TO ACCOMPLISH THE WORK. ALL MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES MUST BE PERFORMED IN STRICT ACCORDANCE AND CONFORMANCE WITH ALL STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR MUST COMPLY WITH ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE FOR THE CONTRACTOR AND THE PUBLIC.
5. THE CONTRACTOR MUST PROVIDE ALL "METHODS AND MEANS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE CONTRACTOR, AT THE CONTRACTOR'S SOLE COST, MUST REPAIR ALL DAMAGE TO ALL ITEMS AND FEATURES THAT ARE TO REMAIN. CONTRACTOR MUST USE NEW MATERIAL FOR ALL REPAIRS. CONTRACTOR'S REPAIRS MUST INCLUDE THE RESTORATION OF ALL FEATURES REPAIRED TO THEIR PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR MUST PERFORM ALL REPAIRS AT THE CONTRACTOR'S SOLE EXPENSE.
6. THE PROFESSIONAL OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. THE CONTRACTOR MUST INDEPENDENTLY RETAIN A SYSTEMS SAFETY CONSULTANT TO ENSURE COMPLIANCE WITH ALL OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY AND SAFETY TO ALL PROPERTY ON THE SITE OR ADJACENT OR NEAR TO THE SAME.
7. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY, WHICH MUST INCLUDE, BUT IS NOT LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING, OTHER APPROPRIATE AND/OR NECESSARY SAFETY FEATURES AND ITEMS NECESSARY TO PROTECT THE PUBLIC IN THE VICINITY OF DEMOLITION AREAS OR OTHERWISE INCORRECTLY IN THE PATH OF TRAVEL. THE CONTRACTOR MUST SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME, TO OR AND FROM THE DEMOLITION AREA.
8. PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY, THE CONTRACTOR MUST, IN WRITING, RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS AND/OR SPECIFICATIONS, ALL CONCERNS OR QUESTIONS REGARDING APPLICABLE SAFETY STANDARDS, AND/OR THE SAFETY OF PERSONNEL AND/OR CONTRACTOR AND/OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT. ANY SUCH CONCERNS MUST BE CONVEYED TO THE PROFESSIONAL OF RECORD AND BOHLER, IN WRITING, AND MUST ADDRESS ALL ISSUES AND ITEMS RESPONDED TO, BY THE PROFESSIONAL OF RECORD AND BY BOHLER, IN WRITING. ALL DEMOLITION ACTIV

NAD83

MAP H
LOT 4-3

N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

APPROX. LOC. OF 50' WIDE EASEMENT TO LOT H-4-1 & ACCESS EASEMENT C

RIM=107.67
(I/I0--SEWER)

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

PROP LIMIT OF WORK LINE (TYP)

APPROX LOCATION OF PROP WETLAND PLACARDS TO BE CONFIRMED AND LOCATED IN FIELD PRIOR TO CONSTRUCTION (TYP)

172.09'
S24°08'19"W

EX OVERGROWN GRASS (TBR)

84.08'
S09°44'35"E

47.83'
S84°09'13"W

44.34'
S24°06'34"W

LIMIT OF EX SLOPED GRANITE CURB (TBR)

EX RIP RAP (TBR)

42.03'
S10°32'45"W

EX TREE (TBR)

24" RCP
INV=102.89

68.80'
N85°41'53"W

EX POSSIBLE WELL (TBR)

EX OVERGROWN GRASS (TBR)

EX HEAD WALL (TBR)

EX UG DRAIN LINE (TBR)

APPROX LOC. OF UG WATER LINE

APPROX. LOC. OF ACCESS EASEMENT "A" BK. 3496, PG. 746. (DOT HATCH)

APPROX LOC. OF UG ELECTRIC LINE

APPROX LOC. OF UG GAS LINE

APPROX LIMIT OF PAVEMENT SAWCUT (TYP)

EX STRIPED MEDIAN TO BE REMOVED AS PART OF GRAPEVINE DRIVE WIDENING OFFSITE IMPROVEMENTS BY OTHERS

EX SLOPED GRANITE CURB (TBR)

APPROX LOCATION OF EX UG SANITARY LINE (TBR)

EX LOT LINE (TBR)

52.03'
S65°46'54"E

162.91'
S65°46'54"E

N24°21'47"E
340.00'

EX STONE WALL (TBR)

EX STONE WALL (TBR)

GRT=108.58
INV(S)=103.1
INV(B)=(NP--HDD))
TOW=103.1±

LIMIT OF EX SLOPED GRANITE CURB (TBR)

N60°11'10"W
48.72'

EX CATCH BASIN (TBR)

EX ASPHALT PAVEMENT (TBR)

LIMIT OF EX SLOPED GRANITE CURB (TBR)

EX SLOPED GRANITE CURB (TBR)

LIMIT OF EX SLOPED GRANITE CURB (TBR)

EX OVERGROWN GRASS (TBR)

18" RCP

EX UG DRAIN LINE (TBR)

APPROX LOC. OF UG GAS LINE

APPROX LOC. OF UG ELECTRIC LINE

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

TBM-B

TRANSFORMER

EX STRIPING TO BE REMOVED AS PART OF GRAPEVINE DRIVE WIDENING OFFSITE IMPROVEMENTS BY OTHERS

"RELOCATE" "DIRECTIONAL"

PORTION OF EX SLOPED GRANITE CURB TO BE REMOVED AS PART OF GRAPEVINE DRIVE WIDENING OFFSITE IMPROVEMENTS BY OTHERS

N65°40'47"W
75.52'

APPROX LIMIT OF EX SLOPED GRANITE CURB TO BE REMOVED AS PART OF GRAPEVINE DRIVE WIDENING OFFSITE IMPROVEMENTS BY OTHERS

APPROX LOCATION OF EX "WAYFINDING" DIRECTORY SIGN

EX OVERGROWN GRASS (TBR)

EX CATCH BASIN (TBR)

EX UG DRAIN LINE (TBR)

LIMIT OF EX UG DRAIN LINE (TBR), PRIOR TO CONSTRUCTION, GC SHALL CONFIRM EXACT LOCATION AND ELEVATION OF EXISTING INVERT AND NOTIFY THE ENGINEER IN WRITING SHOULD CONFLICT OCCUR

EX HYDRANT

TBM-A

PROP LIMIT OF WORK LINE (TYP)

GRT=111.90
INV(H)=101.2
INV(E)=106.2
INV(C)=(NP--HDD))
TOW=106.0±

18" RCP

APPROX LOCATION OF EX "WELCOME" SIGN

APPROX LOC. OF UG DRAINAGE LINE

APPROX LOC. OF UG WATER LINE

APPROX LOCATION OF EX. WALK (TO REMAIN)

12" RCP
INV=104.4

12" RCP

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

PROP LIMIT OF WORK LINE (TYP)

APPROX LOCATION OF SOIL BORINGS (TYP OF 14) AND INFILTRATION TESTS (TYP OF 2) PERFORMED BY WHITESTONE ASSOCIATES, INC.

PROP LIMIT OF WORK LINE (TYP)

EDGE OF WETLANDS DELINEATED BY GODDARD CONSULTING ON 4/29/2025

EX OVERGROWN GRASS (TBR)

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

N24°13'06"E
313.87'

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

GC #A1 GC #A2 GC #A3 GC #A4 GC #A12 GC #A13 GC #A14 GC #A15 GC #A16 GC #A17 GC #A18 GC #A19 GC #A20 GC #A21 GC #A22 GC #A23 GC #A24 GC #A25 GC #A26 GC #A27 GC #A28

B-1 B-2 B-3 B-4 B-5 B-6 B-8 B-9 B-10 B-11 B-12 B-13 B-14 I-1 I-2

THE WETLAND DELINEATION SHOWN ON THIS PLAN WAS PERFORMED IN APRIL 2025, ACCORDING TO THE STANDARDS OF THE 1987 US ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL. THIS DELINEATION WAS PERFORMED BY ANDREW THIBAULT UNDER THE SUPERVISION OF SCOTT GODDARD, NH CWS #14

WETLAND SCIENTIST'S SIGNATURE DATE

NEW HAMPSHIRE DEMOLITION NOTES

(Rev. 1/2023)

1. THE CONTRACTOR MUST LOCATE AND CLEARLY DEFINE VERTICALLY AND HORIZONTALLY ALL ACTIVE AND INACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE TO BE REMOVED. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/RELOCATED DURING SITE ACTIVITY.
2. CONTRACTOR SHALL FIELD LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION AND IF REQUIRED, DIG EXPLORATORY TEST PITS TO CONFIRM EXACT LOCATION AND DEPTH OF UTILITIES. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER WITH ANY CONFLICTS AS NEEDED TO COORDINATE FINAL LOCATION OF ALL PROPOSED IMPROVEMENTS.
3. CONTRACTOR SHALL INSPECT ALL EXISTING UTILITY STRUCTURES THAT ARE TO REMAIN FOR THE PROJECTS RE-USE TO VERIFY SUITABILITY FOR SAME. IF STRUCTURES CAN NOT BE REUSED THEN THE CONTRACTOR SHALL PROVIDE A NEW STRUCTURE. THE CONTRACTOR SHALL COORDINATE SUCH WORK WITH THE APPLICABLE UTILITY PROVIDER.
4. CONTRACTOR TO REMOVE ANY BUILDING FOUNDATION REMAINS OR ASSOCIATED IMPROVEMENTS, DELETERIOUS MATERIALS, AND/OR DEBRIS THAT IMPEDE THE WORK SHOWN ON THESE PLANS.
5. THE CONTRACTOR SHALL REVIEW THE PLANS VERSUS THE LOCATION OF EXISTING STRUCTURES, UTILITIES AND APPURTENANCES IN THE FIELD TO CONFIRM ACCURACY OF SAME AND VERIFY ITEMS TO BE REMOVED. THE CONTRACTOR SHALL CARRY COSTS FOR REMOVAL OF ANY EXISTING STRUCTURES, APPURTENANCES, AND UNDERGROUND UTILITIES, INCLUDING BUT NOT LIMITED TO; DRAIN, WATER, SEWER, STEAM, IRRIGATION, GAS, TELECOM AND ELECTRIC.
6. THE CONTRACTOR SHALL MAINTAIN, ADJUST OR ABANDON EXISTING MONITORING WELLS IN ACCORDANCE WITH THE DIRECTION OF THE ENVIRONMENTAL CONSULTANT (TYP.)
7. WHERE THE LIMIT OF WORK COINCIDES WITH PROPERTY LINE, TREE LINE, PROPOSED SAWCUT OR COMBINATION THEREOF IT IS SHOWN ADJACENT TO THESE FEATURES FOR GRAPHICAL CLARITY.
8. EXISTING TREES TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION UNLESS CLEARLY INDICATED OTHERWISE. REASONABLE CARE AND CAUTION SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT DAMAGE AND SELECTIVE PRUNING MAY BE REQUIRED TO ENSURE THAT TREES DO NOT CONFLICT WITH THE DEVELOPMENT.
9. CONTRACTOR SHALL REPAIR/REPLACE ANY TRAFFIC LOOP DETECTORS THAT ARE DAMAGED DURING CONSTRUCTION WITHIN EXISTING OR PROPOSED RIGHTS OF WAYS. ANY SUCH WORK SHALL BE PERFORMED BY A LICENSED / DOT APPROVED SIGNAL CONTRACTOR. ANY DAMAGED LOOPS OR OTHER SIGNAL EQUIPMENT SHALL BE REPAIRED IMMEDIATELY AFTER THE WORK IS COMPLETE. THE SIGNAL CONTRACTOR SHALL BE AVAILABLE TO MAKE ANY TEMPORARY SIGNAL CHANGES IF REQUESTED BY DOT AND/OR THE MUNICIPALITY.
10. THE CONTRACTOR MUST FIELD VERIFY THE LOCATIONS WHERE PROPOSED UTILITIES CROSS EXISTING UNDERGROUND UTILITIES BY USING A TEST PIT TO DETERMINE THE EXACT SIZE, DEPTH AND LOCATION, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
11. CONTRACTOR SHALL LOCATE ANY EXISTING UTILITY SERVICES THAT ARE TO BE TERMINATED AT THE EXISTING MAIN AND/OR PROPERTY LINE. THESE SERVICES ARE TO BE TERMINATED IN ACCORDANCE WITH MUNICIPAL / STATE TRANSPORTATION DEPARTMENT REQUIREMENTS.

DEMOLITION ABBREVIATIONS

ABBREVIATION	DESCRIPTION
(TBA)	TO BE ABANDONED
(TBR)	TO BE REMOVED
(TBV)	TO BE VACATED
(RELO)	TO BE RELOCATED

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGLATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

CONTRACTOR SHALL CONFIRM ALL UTILITY & DRAINAGE LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ENGINEER IN WRITING IF ANY CONFLICTS OCCUR.

REFER TO GENERAL NOTES SHEET FOR DEMOLITION NOTES

THIS PLAN TO BE UTILIZED FOR DEMOLITION/ REMOVAL PURPOSES ONLY

20 10 5 0 20
SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN ARE PROPRIETARY AND SHALL NOT BE COPIED OR USED FOR ANY PURPOSE, WITHOUT PRIOR WRITTEN AUTHORIZATION FROM BOHLER. ONLY APPROVED, SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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It's fast. It's free. It's the law.

ISSUED FOR ENTITLEMENTS

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.: MAA240177.00-5A
DRAWN BY: JDG
CHECKED BY: CSE
DATE: 12/17/2024
CAD I.D.: P-CIVL-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J. SCOTT KUCICH
CERTIFICATE NUMBER
KUCICH
No. 15426
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 49530
NEW YORK LICENSE NO. 102476
COMMONWEALTH OF VIRGINIA 036177
RHODE ISLAND LICENSE NO. 9816
MAINE LICENSE NO. 12553

SHEET TITLE:
EXISTING CONDITIONS/ DEMOLITION PLAN

SHEET NUMBER:
C-201

REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-PROP-MAA240177.00-5A-----LAYOUT: C-201 EXISM
JG

NADB3

POTENTIAL FUTURE ACCESSIBLE EV BUILD-OUT CONDITIONS INSET

SCALE: 1" = 20'

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGULATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

NEW HAMPSHIRE SITE NOTES

(Rev. 5/2024)

1. WHEN APPLICABLE, OWNER/ OPERATOR MUST FILE THE NOI FOR NPDES PERMITS AT APPROPRIATE AND/OR REQUIRED TIME FRAMES BASED UPON THE DESIRED START OF CONSTRUCTION. LAND DISTURBING ACTIVITIES MUST NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED FROM GOVERNING AUTHORITIES (INCLUDING STORMWATER POLLUTION PREVENTION PLAN). THE CONTRACTOR MUST STRICTLY ADHERE TO THE APPROVED SWPPP PLAN DURING CONSTRUCTION OPERATIONS (IF PROVIDED).
2. ALL CONCRETE MUST BE AIR ENTRAINED AND INCLUDE THE MINIMUM COMPRESSIVE STRENGTH OF JURISDICTIONAL STANDARD PSI AT 28 DAYS (OR 4,000 PSI) UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND/OR GEOTECHNICAL REPORT. IF THERE ARE ANY DISCREPANCIES BETWEEN THE PLANS, DETAILS AND GEOTECHNICAL REPORT THEN THE GEOTECHNICAL REPORT SHALL GOVERN.
3. THE CONTRACTOR MUST FILE SITE SIGNAGE APPLICATION OR PERMIT UNDER SEPARATE APPLICATION UNLESS DONE SO AS PART OF JURISDICTIONAL PERMITTING PROCEDURES.
4. THE CONTRACTOR MUST REPAIR OR REPLACE, AT THE CONTRACTOR'S SOLE COST AND EXPENSE, ALL SIDEWALKS, CURBS, PAVEMENT MARKINGS, AND PAVEMENT DAMAGED BY CONSTRUCTION ACTIVITIES WHETHER SPECIFIED ON THIS PLAN OR NOT.
5. WORK WITHIN THE RIGHT-OF-WAY MUST BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS AND STANDARDS OF THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DEPARTMENT, HIGHWAY DIVISION, AND/OR STATE DOT HIGHWAY DEPARTMENT.
6. WHERE RETAINING WALLS ARE IDENTIFIED ON THE PLANS, TOP AND BOTTOM OF WALL WIDTHS DO NOT REPRESENT THE ACTUAL WIDTH OF THE PROPOSED WALL, RATHER THEY ARE AN ASSUMPTION BASED ON WALL TYPE AND WALL HEIGHT. WALL FOOTINGS AND /OR FOUNDATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR OR WALL DESIGNER, AND MUST BE SET BASED UPON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE CONTRACTOR MUST ENSURE THAT AN APPROPRIATELY LICENSED PROFESSIONAL DESIGNS ALL WALLS SHOWN HEREON AND PRIOR TO CONSTRUCTION. REFER TO GRADING NOTES REGARDING RETAINING WALL DESIGN.
7. CONTRACTOR IS CAUTIONED OF EXISTING UTILITY SERVICES TO REMAIN IN PROXIMITY TO PROPOSED BOLLARDS AND SIGNS. CONTRACTOR SHALL PROVIDE FIELD MODIFICATION LOCATIONS OF BOLLARDS AND BOLLARDS WITH SIGNAGE AS NEEDED TO AVOID CONFLICTS WITH EXISTING UTILITY SERVICES TO REMAIN.

PAVEMENT STRIPING LEGEND

4"/DYSL = 4" DOUBLE YELLOW SOLID LINE
6"/SYSL = 6" SINGLE YELLOW SOLID LINE
8"/SYSL = 8" SINGLE YELLOW SOLID LINE
4"/SWSL = 4" SINGLE WHITE SOLID LINE

ZONING TABLE

ZONE: COMMERCIAL (C) DISTRICT & RESIDENTIAL-COMMERCIAL MIXED USE (RCM) OVERLAY DISTRICT
USE: EATING AND DRINKING ESTABLISHMENT WITH DRIVE-THROUGH SERVICE
MAP: H LOT: 4-3

APPLICANT/ OWNER INFORMATION

APPLICANT:	McDONALD'S USA, LLC 110 N CARPENTER ST CHICAGO, IL 60607
PROPERTY OWNER:	VC DOVER INVESTMENTS LLC 48 CONSTITUTION DR BEDFORD, NH 03110

BULK REQUIREMENTS

ITEM	CODE	PERMITTED	EXISTING	PROPOSED
MIN LOT AREA	§ 170-11	20,000 SF	±54,341 SF	±83,463 SF
MIN LOT FRONTAGE	§ 170-11	125'	±483.6'	±553.2'
MIN YARD SETBACKS				
FRONT YARD	§ 170-11	30'	N/A	±90.3'
SIDE YARD	§ 170-11	12'	N/A	±75.1'
REAR YARD	§ 170-11	15'	N/A	N/A
MAX PERMITTED HEIGHT	§ 170-11	40'	N/A	±22.0'
MAX LOT COVERAGE	§ 170-11	50.0%	1.7%	42.9%
MIN PARKING SETBACKS				
FRONT	§ 170-11	25'	N/A	±30.1'
SIDE	§ 170-11	25'	N/A	±25.0'

KEY = VARIANCE REQUIRED

PARKING REQUIREMENTS

ITEM	CODE	PERMITTED	EXISTING	PROPOSED
MIN STALL SIZE	§ 153.14	9' X 19.5'	N/A	9' X 19.5'
MIN AISLE WIDTH	§ 153.14	20'	N/A	20'
MAX NUMBER OF STALLS	§ 153.14	14	N/A	37 (1)
REQUIRED PARKING: RETAIL/SERVICE USE: (1 SPACE / 275 SF) X 3,694 SF = 13.4 = 14 SPACES				

KEY = VARIANCE REQUIRED

(1) - CONDITIONAL USE PERMIT REQUIRED

CITY OF DOVER COMMON SITE PLAN NOTES

1. THE INTENT OF THIS PLAN IS TO PROVIDE PERMIT LEVEL PLANS FOR A NEW 3,694 SF McDONALD'S RESTAURANT WITH DRIVE-THRU ALONG WITH NEW PARKING AREAS, LANDSCAPING, AND UTILITIES.
2. OWNERS OF RECORD ARE: VC DOVER INVESTMENTS, LLC.
   48 CONSTITUTION DR
   BEDFORD, NH, 03110

   _____
   AUTHORIZED SIGNATURE
3. THE PARCEL IS SHOWN AS LOT NO. 4-3, MAP H OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.
4. THE SUBJECT PARCEL CONTAINS 1.92 ACRES OR 83,463 SQ. FT. AREA OF LAND.
5. TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 3496, PAGE NO. 733.
6. REFERENCE PLANS:
   - "ALTA/NSPS LAND TITLE SURVEY" PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED 07/10/2024
   - ARCHITECTURAL PLANS PREPARED BY CORE STATES GROUP, DATED 10/01/2024
   - "AMENDED CONDOMINIUM SITE PLAN" PREPARED BY TF MORAN, INC., DATED 09/05/2024
7. ALL APPLICABLE RIGHT-OF-WAY, CONSERVATION, SLOPE, CONSTRUCTION, POWER LINE, CROSS TRAVEL, OR OTHER EASEMENTS SHALL BE REFERENCED IN A NOTE. **NOT APPLICABLE**
8. REFER TO ZONING TABLE THIS SHEET FOR CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS IN EFFECT.
9. THE FOLLOWING CONDITIONAL USE PERMITS ARE BEING SOUGHT THROUGH THE PLANNING BOARD:
   - ENVIRONMENTAL CONDITIONAL USE PERMIT FOR PROPOSED RE-CONTOURING OR GRADING OF LAND WITHIN THE 50' WETLAND BUFFER WITHIN THE WETLAND PROTECTION DISTRICT [170-28.G.(1)(D)].
   - NON-ENVIRONMENTAL CONDITIONAL USE PERMIT TO INCREASE THE NUMBER OF PROPOSED PARKING SPACES PERMITTED FOR THE PROPOSED USE [153-14.D.(5)(A)].
10. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM ALTA/NSPS LAND TITLE SURVEY, PREPARED BY CONTROL POINT ASSOCIATES, INC. DATED 07/10/2024.
11. SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0320E, EFFECTIVE DATE: SEPTEMBER 30, 2015).
12. WETLANDS WERE DELINEATED BY DAMON E. BURT, CERTIFIED WETLANDS SCIENTIST, CERTIFICATION NUMBER #163, IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE, ON 9/2/2022.
13. AS-BUILT PLANS OF THE SUBDIVISION SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT IF A STREET IS PROPOSED FOR CITY ACCEPTANCE. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
14. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
15. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
16. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
17. REFER TO SHEET C-802 FOR EROSION CONTROL NOTES INCLUDING PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS; RATES OF TIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
18. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50' FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS.
19. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
20. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
21. A PRE-CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
22. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM, SATURDAY AND SUNDAY 9 AM-4 PM. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.
23. BUILDING ADDRESS SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
24. THE PROPOSED USE FOR THE SITE IS A MCDONALD'S RESTAURANT WITH DRIVE-THROUGH SERVICE.
25. THE FOLLOWING FEDERAL AND STATE PERMITS FOR THE SUBJECT PROPERTY ARE BEING SOUGHT AT THE TIME OF THIS SUBMISSION: NHDOT DRIVEWAY PERMIT #A-0000000841
26. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
27. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
28. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
29. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL https://www.unh.edu/unhsc/ptapp
30. THE OWNER OF RECORD SHALL RECORD AT THE REGISTRY OF DEEDS DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.
31. FIRE DEPARTMENT ACCESS ROADS SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
32. THE MAXIMUM PARKING SPACE CALCULATION IS (1 SPACE / 275 SF) X 3,694 SF = 13.4 = 14 SPACES AND 37 SPACES ARE PROVIDED.
33. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
34. TOPOGRAPHIC SURVEY PERFORMED BY CONTROL POINT ASSOCIATES, INC. ON 6/19/2024.
35. ELEVATIONS ARE BASED ON U.S.G.S. NVD 1988 DATUM.
36. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45-2 OF THE CODE OF THE CITY OF DOVER.
37. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
38. THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81-30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES. **NOT APPLICABLE**
39. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE. **NOT APPLICABLE**
40. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES. **NOT APPLICABLE**
41. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.

THE WETLAND DELINEATION SHOWN ON THIS PLAN WAS PERFORMED IN APRIL 2025, ACCORDING TO THE STANDARDS OF THE 1987 US ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL. THIS DELINEATION WAS PERFORMED BY ANDREW THIBAULT UNDER THE SUPERVISION OF SCOTT GODDARD, NH CWS #14

WETLAND SCIENTIST'S SIGNATURE DATE

MAINTENANCE OF A CLEAR SIGHT LINE IS THE RESPONSIBILITY OF THE PROPERTY OWNER

THIS PLAN TO BE UTILIZED FOR SITE LAYOUT PURPOSES ONLY

SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

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PROJECT NO.: MAA240177.00-SA
DRAWN BY: JDG
CHECKED BY: CSE
DATE: 12/17/2024
CAD I.D.: P-CIVL-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J. KUCICH — JOHN KUCICH — NO. 15476 — PROFESSIONAL ENGINEER
MA: 52,047 CT: PEC.0030530 NH: 15476 NY: 102,177 VT: 0177
CO: 0047476 RI: 9616 ME: 12553

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

C-301

REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-PROP-MAA240177.00-SA-----LAYOUT; C-301 SITE

NAD83

CIELO DRIVE

MAP H
LOT 4-3-0
30 GRAPEVINE DRIVE
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733

GRAPEVINE DRIVE

MAP H
LOT 4-3-0
N/F LANDS OF
VC DOVER
INVESTMENTS, LLC.
BK. 3496, PG. 733

MAP H
LOT 2-0-0
275 DURHAM ROAD
N/F LANDS OF
CITY OF DOVER
BK. 1966, PG. 647

MAP H
LOT 4-1-0
217 DURHAM ROAD
N/F LANDS OF
TORR SCOTT A &
RENEE L TRUSTEES
BK. 4928, PG. 824

COMMERCIAL (C) DISTRICT

RURAL RESIDENTIAL (R-40) DISTRICT

DURHAM ROAD

MAP I
LOT 22-0-158
14 FARMINGTON DRIVE
N/F LANDS OF
PRESCOTT ROBIN
BK. 4766, PG. 713

MAP I
LOT 22-0-11
16 FARMINGTON DRIVE
N/F LANDS OF
STEWART DARALYN A
BK. 4155, PG. 386

MAP I
LOT 22-0-159
18 FARMINGTON DRIVE
N/F LANDS OF
WALERYSZAK MICHAEL S &
WALERYSZAK LINDSAY L
BK. 3934, PG. 13

MAP I
LOT 22-0-9
20 FARMINGTON DRIVE
N/F LANDS OF
CARSON DIANNE E
BK. 5078, PG. 181

MAP I
LOT 22-0-8
22 FARMINGTON DRIVE
N/F LANDS OF
BECKER RITA MARIE
TRUSTEE
BK. 4702, PG. 25

MAP I
LOT 22-0-7
24 FARMINGTON DRIVE
N/F LANDS OF
GLIDDEN JAMES R &
GLIDDEN LYNNETTE M
BK. 3164, PG. 665

MAP I
LOT 22-0-162
26 FARMINGTON DRIVE
N/F LANDS OF
GOODMAN SUSAN A
BK. 3102, PG. 667

MAP I
LOT 22-0-5
28 FARMINGTON DRIVE
N/F LANDS OF
SIRACUSA HILLMAN
BENJAMIN T ESQ TRUSTEE
BK. 4434, PG. 422

FARMINGTON DRIVE

DEERFIELD DRIVE

MAP I
LOT 22-0-2
2 DEERFIELD DRIVE
N/F LANDS OF
SHAFFER PRESTON
& SHAFFER ANITA
BK. 4732, PG. 875

MAP I
LOT 22-0-193
4 DEERFIELD DRIVE
N/F LANDS OF
MANHA SUSAN J
BK. 4420, PG. 563

MAP I
LOT 22-0-197
6 DEERFIELD DRIVE
N/F LANDS OF
LEMIEUX MARY M TRUSTEE
BK. 5203, PG. 460

CHARTERGRANT ROAD

MAP I
LOT 22-0-127
2 CHARTERGRANT ROAD
N/F LANDS OF
STORY JOHN & CAROL TRUSTEES
BK. 4003, PG. 229

MAP I
LOT 22-0-12
17 FARMINGTON DRIVE
N/F LANDS OF
COLFORD DONALD
BK. 4796, PG. 697

MAP I
LOT 22-0-160
19 FARMINGTON DRIVE
N/F LANDS OF
GERTIG JOHN K &
MOULTON-GERTIG
SUZANNE L
BK. 4152, PG. 992

MAP I
LOT 22-0-14
21 FARMINGTON DRIVE
N/F LANDS OF
LANE DEBRA A & LANE
MICHAEL I
BK. 4390, PG. 270

MAP I
LOT 22-0-161
23 FARMINGTON DRIVE
N/F LANDS OF
WINSLOW WILLIAM
BK. 3964, PG. 128

TIMROD ROAD

MAP I
LOT 22-0-22
2 TIMROD ROAD
N/F LANDS OF
SHEARER IRENE D
BK. 4241, PG. 988

MAP I
LOT 22-0-183
29 FARMINGTON DRIVE
N/F LANDS OF
WALSH JUDITH E
TRUSTEE
BK. 4065, PG. 868

DEERFIELD DRIVE

MAP I
LOT 22-0-1
1 DEERFIELD DRIVE
N/F LANDS OF
SENNOTT ANDREA L
TRUSTEE
BK. 5096, PG. 56

MAP I
LOT 22-0-166
8 DEERFIELD DRIVE
N/F LANDS OF
TALON MICHAEL L &
TALON GINA M
BK. 3828, PG. 958

THIS PLAN TO BE UTILIZED FOR EXHIBIT PURPOSES ONLY

40 20 10 0 40
SCALE: 1" = 40'

P:\2024\MAA240177.00\CAD\DRAWINGS\EXHIBITS\EXHIBIT A*P-EXHA-PROP-MAA240177.00-0A.----LAYOUT: C-302 EXHA

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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J. A. KUCICH — 15476 — PROFESSIONAL ENGINEER — MASSACHUSETTS, NEW HAMPSHIRE, NEVADA, CONNECTICUT, RHODE ISLAND, MAINE LICENSE No. 12553

SHEET TITLE:

NEIGHBORHOOD PLAN

SHEET NUMBER:

C-302

REVISION 5 - 07/17/2025

NAD83

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

PROP STORMTECH SC-800 INFILTRATION SYSTEM (BMP-1)
54 CHAMBERS
TOP STONE=105.60
TOP CHAMBER=105.10
BOT CHAMBER=102.35
BOT STONE=101.85

A-51
PROP STM MH
RIM 107.85
INV IN 102.90 (12") A-51A
INV IN 102.90 (12") A-51B
INV IN 102.90 (6") PERVIOUS PAVERS
INV OUT 102.80 (12") A-50

A-50
PROP ICS (SEE DETAIL)
RIM 107.85
WEIR ELEV 104.15
INV IN 102.75 (12") A-51
INV IN 102.75 (12") A-60
INV OUT 102.35 (12") BMP-1

A-51A
PROP CURB INLET
GRATE 106.70
INV OUT 103.40 (12") A-51

PROP ISOLATOR ROW (TYP OF 2)

PROP 22 LF 6" PERFORATED HDPE @ 0.0% INV = 102.90

APPROX LOCATION OF PROP WETLAND PLACARDS TO BE CONFIRMED AND LOCATED IN FIELD PRIOR TO CONSTRUCTION (TYP)

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

A-20
PROP OCS (SEE DETAIL)
RIM 107.10
INV IN 102.35 (12") BMP-1
INV OUT 102.35 (12") A-11

PROP LIMIT OF WORK LINE (TYP)

APPROX LOCATION OF PROP RECONSTRUCTED FOREBAY. DESIGN AND CONSTRUCTION OF FOREBAY RESPONSIBILITY OF LANDLORD (TYP). REFER TO PLANS ENTITLED "GRAPEVINE DRIVE IMPROVEMENTS" PREPARED BY TF MORAN, INC. DATED 1/25/2025, REVISED THROUGH 4/17/2025 FOR ADDITIONAL INFORMATION

A-51B
PROP CURB INLET
GRATE 106.60
INV OUT 103.25 (12") A-51

A-10
PROP HEADWALL
INV OUT 102.10 (12") A-11
INV OUT 102.10 (18") A-70

APPROX. LOC. OF 50' WIDE EASEMENT TO LOT H-4-1 & ACCESS EASEMENT C

APPROX. LOC. OF ACCESS EASEMENT "A" BK. 5496, PG. 746. (DOT HATCH)

172.09'
S24°08'19"W

84.08'
S09°44'35"E

47.83'
S84°09'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

108.21'
S53°41'53"W

78.10'

PROP 51 LF 12" HDPE @ 1.0%

PROP 62 LF 12" HDPE @ 0.6%

PROP ACCESSIBLE PARKING AREA MAX 2.0% SLOPE IN ALL DIRECTIONS

PROP 89 LF 12" HDPE @ 0.7%

PROP 6 LF 12" HDPE @ 0.8%

PROP 10 LF 12" HDPE @ 0.5%

PROP 11 LF 12" HDPE @ 0.9%

PROP 30 LF 18" HDPE @ 1.3%

A-11
PROP STM MH
RIM 107.10
INV IN 102.25 (12") A-20
INV OUT 102.15 (12") A-10

APPROX LIMIT OF PAVEMENT SAWCUT (TYP)

A-70
PROP STM MH
RIM 107.40
INV IN 102.60 (18") EXIST
INV OUT 102.50 (18") A-10

A-60
PROP STM MH
RIM 107.75
INV IN 103.50 (12") A-62
INV IN 103.50 (12") A-61
INV OUT 103.40 (12") A-50

52.03'
S65°46'54"E

162.91'
S65°46'54"E

PROP 36 LF 12" HDPE @ 1.7%

A-61
PROP CURB INLET
GRATE 107.10
INV OUT 104.10 (12") A-60

PROP INSPECTION PORT (TYP)

PROP 85 LF 6" HDPE @ 3.3%

INV 102.95±

INV 105.65±

INV 105.75±

PROP ACCESSIBLE ROUTE (TYP)
MAX 2.0% CROSS SLOPE
MAX 5.0% RUNNING SLOPE

PROP 5 LF 3" HDPE @2.0%

INV 103.10±

PROP 65 LF 12" HDPE @ 0.5%

PROP 18 LF 12" HDPE @ 2.2%

A-30
PROP ICS (SEE DETAIL)
RIM 107.35
WEIR ELEV 104.15
INV IN 102.85 (12") A-40
INV OUT 102.35 (12") BMP-1

N60°11'10"W
48.72'

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

PROP 102 LF 12" HDPE @ 0.6%

PROPOSED 2023 SERIES
BB20-4584-WW-HB
McDONALD'S RESTAURANT
(3,694 SF.)
(38 SEATS)
FF 109.25

APPROX LOCATION OF PROP 3" DOWNSPOUT CONNECTION TO CANOPY (REFER TO ARCH PLANS)
INV 105.75

PROP 60 LF 3" HDPE @5.3%

A-41
PROP CURB INLET
GRATE 107.60
INV OUT 103.70 (12") A-40

A-40
PROP STM MH
RIM 107.95
INV IN 103.30 (12") A-41
INV IN 103.30 (12") A-42
INV OUT 103.20 (12") A-40

PROP LIMIT OF WORK LINE (TYP)

APPROX LOCATION OF SOIL BORINGS (TYP OF 14) AND INFILTRATION TESTS (TYP OF 2) PERFORMED BY WHITESTONE ASSOCIATES, INC.

PROP RETAINING WALL WITH FALL PROTECTION (DESIGN BY OTHERS) REFER TO WALL NOTE THIS SHEET

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

INV=103.60

PROP 87 LF 12" HDPE @ 0.6%

PROP 190 LF 18" HDPE @ 1.7%

PROP 33 LF 6" PERFORATED HDPE @ 0.0% INV = 103.60

PROP CONNECTION TO EX CB INV OUT 105.85± (18") A-70 PRIOR TO CONSTRUCTION, GC SHALL CONFIRM EXACT LOCATION, SIZE, AND INVERT ELEVATION OF EX CB & NOTIFY ENGINEER IN WRITING SHOULD CONFLICT OCCUR

A-62
PROP CURB INLET
GRATE 107.10
INV OUT 104.10 (12") A-60

PROP RIP-RAP (D_{50} = 6" - TYP)

B-10
PROP HEADWALL
INV OUT 100.70 (12") B-20

PROP 31 LF 12" HDPE @ 0.6%

B-20
PROP TRENCH DRAIN
GRATE 103.00
INV OUT 100.90 (12") B-20

EDGE OF WETLANDS DELINEATED BY GODDARD CONSULTING ON 4/29/2025

A-42
PROP CURB INLET
GRATE 107.35
INV OUT 103.85 (12") A-40

PROP RIP-RAP (D_{50} = 6" - TYP)

C-30
PROP HEADWALL
INV IN 101.50 (12") C-20

N24°13'06"E
313.87'

PROP 35 LF 12" RCP @ 5.4%

C-10
PROP HEADWALL
INV OUT 98.75 (12") C-20

PROP RIP-RAP (D_{50} = 6" - TYP)

PROP 34 LF 12" RCP @ 2.2%

C-20
PROP CATCH BASIN
GRATE 102.60
INV IN 99.60 (12") C-30
INV OUT 99.50 (12") C-10

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

PROP LIMIT OF WORK LINE (TYP)

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

THE WETLAND DELINEATION SHOWN ON THIS PLAN WAS PERFORMED IN APRIL 2025, ACCORDING TO THE STANDARDS OF THE 1987 US ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL. THIS DELINEATION WAS PERFORMED BY ANDREW THIBAULT UNDER THE SUPERVISION OF SCOTT GODDARD, NH CWS #14

WETLAND SCIENTIST'S SIGNATURE DATE

NEW HAMPSHIRE GRADING NOTES

(Rev. 5/2024)

1. PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 6" ABOVE PAVEMENT GRADE UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR MUST CONFIRM AND ENSURE THAT AS CONSTRUCTED IMPROVEMENTS CREATE THE FOLLOWING MINIMUM SLOPES (EXCEPT WHERE ADA REQUIREMENTS LIMIT THEM): 1.0% ON ALL CONCRETE SURFACES, 1.5% ON ASPHALT SURFACES, 1.5% IN LANDSCAPED AREAS AND 0.75% SLOPE AGAINST ALL ISLANDS, GUTTERS, AND CURBS TO PROVIDE POSITIVE DRAINAGE.
3. WHERE RETAINING WALLS ARE IDENTIFIED ON THE PLANS, TOP AND BOTTOM OF WALL ELEVATIONS (GH & GL) REPRESENT THE PROPOSED FINISHED GRADE AT THE FACE OF THE TOP AND THE BOTTOM OF THE WALL AND DO NOT REPRESENT THE OVERALL HEIGHT OF THE WALL TO ITS EXTENTS (I.E. ANY CAP UNITS OR COURSES BELOW GRADE INCLUDING FOOTINGS ARE EXCLUDED). WALL FOOTINGS/FOUNDATION ELEVATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR OR WALL DESIGNER, AND MUST BE SET BASED UPON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE CONTRACTOR MUST ENSURE THAT THERE ARE NO UTILITIES ON THE PASSIVE SIDE OF THE RETAINING WALL. NO EXCAVATION MAY BE PERFORMED ON THE PASSIVE SIDE OF THE RETAINING WALL WITHOUT APPROPRIATELY AND SAFELY SUPPORTING THE WALL IN ACCORDANCE WITH THE STANDARD OF CARE AND ALL APPLICABLE RULES, REGULATIONS, CODES, ORDINANCES, LAWS AND STATUTES.
4. MSE OR GRAVITY BLOCK WALLS SHALL BE CONSTRUCTED SUCH THAT UPON COMPLETION OF CONSTRUCTION THERE IS NO UNFINISHED SURFACE OR LIFTING RINGS VISIBLE (E.G. USE OF FINISHED TOP BLOCK OR CAP STONES)
5. STORMWATER RUNOFF WITHIN PROPERTY MUST BE COLLECTED ON-SITE WITH NO OVERLAND RUNOFF ONTO THE RIGHT-OF-WAY OR ADJACENT PROPERTIES TO THE MAXIMUM EXTENT POSSIBLE OR IN THE MANNER SHOWN ON THE CONSTRUCTION DRAWINGS. STORMWATER RUNOFF ONTO ADJACENT PROPERTIES SHALL BE CONTROLLED AS TO NOT ADVERSELY IMPACT SAID PROPERTIES.
6. BEFORE COMMENCING GRADING WORK, CONTRACTOR SHALL SUBMIT SAMPLES OF ALL NATIVE AND IMPORTED MATERIALS WITH THEIR INTENDED FOR STRUCTURAL USES TO THE GEOTECHNICAL ENGINEER OF RECORD.
7. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL ADA GUIDELINES AND REQUIREMENTS.
8. FOR ALL RETAINING WALLS 4 FEET OR GREATER IN HEIGHT:
   - 8.1. THE OWNER OR THE OWNER'S CONTRACTOR IS TO PROVIDE A SITE-SPECIFIC RETAINING WALL DESIGN PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED (E.G. STRUCTURAL ENGINEER) IN THE STATE WHERE THE CONSTRUCTION OCCURS. SOIL TYPES, WATER TABLE ELEVATION, EXISTING & PROPOSED SURROUNDING IMPROVEMENTS/CONDITIONS (INCLUDING BUT NOT LIMITED TO SLOPES, DRIVE AISLES, ROADS, FENCING, GUIDERAILS, UTILITIES, DRAINAGE FACILITIES, STRUCTURES, FOUNDATIONS), LIVE LOADS AND OTHER SITE AMENITIES THAT COULD HAVE AN INFLUENCE OR IMPACT ON THE RETAINING WALL(S) CONSTRUCTABILITY AND/OR LONGEVITY SHALL BE CONSIDERED AND INCORPORATED INTO THE RETAINING WALL DESIGN AS WELL AS THE GLOBAL STABILITY ANALYSIS.
   - 8.2. PEER REVIEW AND GLOBAL STABILITY ANALYSIS OF THE RETAINING WALL DESIGN MUST BE COMPLETED BY THE OWNER'S GEOTECHNICAL ENGINEER TO CERTIFY THE DESIGN MEETS INDUSTRY STANDARDS FOR FACTOR OF SAFETY. SOIL TYPES, WATER TABLE ELEVATION AND DESIGN PROPERTIES AS NOTED ABOVE SHALL BE FIELD CONFIRMED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO WALL CONSTRUCTION.
9. CONTRACTOR SHALL INSTALL CONCRETE CURB ALONG FACE OF BUILDING / WALL AS SHOWN TO PROVIDE CONSISTENT WIDTH ALONG LENGTH OF PROPOSED ACCESSIBLE RAMP AND RAMP LANDING TO MEET ADA/AAB REQUIREMENTS.
10. CONTRACTOR SHALL REVIEW RETAINING WALL LOCATIONS VERSUS APPLICABLE STATE AND LOCAL CODES AND PROVIDE FALL PROTECTION (E.G. FENCING OR RAILING) IN ACCORDANCE WITH SAID CODE.
11. CONTRACTOR SHALL COORDINATE WITH OWNER/OPERATOR TO REVIEW EXISTING DEPRESSIONS WITHIN EXISTING PAVEMENT AREAS TO REMAIN AND SHALL CONFIRM THAT THE SCOPE OF WORK SHALL PROVIDE POSITIVE DRAINAGE BY FIXING ANY EXISTING AREAS OF PONDING.
12. BEFORE COMMENCING GRADING WORK, CONTRACTOR SHALL SUBMIT SAMPLES OF ALL NATIVE AND IMPORTED MATERIALS WITH THEIR INTENDED FOR STRUCTURAL USES TO THE GEOTECHNICAL ENGINEER OF RECORD.

NEW HAMPSHIRE DRAINAGE NOTES

(Rev. 1/2023)

1. WHEN THESE PLANS INVOLVE MULTIPLE BUILDINGS, SOME OF WHICH MAY BE BUILT AT A LATER DATE, THE CONTRACTOR MUST EXTEND ALL UTILITY SERVICES, INCLUDING BUT NOT LIMITED TO STORM, SANITARY, UTILITIES, AND IRRIGATION LINES, TO A POINT AT LEAST FIVE (5) FEET BEYOND THE PAVED AREAS FOR WHICH THE CONTRACTOR IS RESPONSIBLE. THE CONTRACTOR MUST CAP ENDS OF INSTALLED UTILITIES AS APPROPRIATE, MARK UTILITY ENDS WITH MAGNETIC TRACER TAPE, MARK TERMINUS LOCATIONS WITH A 2X4 STAKE, AND MUST NOTE THE LOCATION OF ALL UTILITY STUBS ON A CLEAN COPY OF THE PLAN. THIS RECORD DOCUMENT MUST BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK, ALL OF WHICH IS AT THE CONTRACTOR'S SOLE COST.
2. STORM AND SANITARY PIPE LENGTHS INDICATED ARE NOMINAL AND ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS INDICATED ON THE PLANS OTHERWISE.
3. UNLESS CLEARLY INDICATED OTHERWISE, ALL STORM PIPE MUST BE REINFORCED CONCRETE PIPE (RCP) CLASS III WITH SILT/SOIL TIGHT JOINTS. WHEN HIGH-DENSITY POLYETHYLENE PIPE (HDPE) IS CALLED FOR ON THE PLANS, IT MUST CONFORM TO AASHTO M252 FOR PIPES 4" TO 10" AND TO AASHTO M294 FOR PIPES 12" TO 60" AND TYPE S (SMOOTH INTERIOR WITH ANGULAR CORRUGATIONS) WITH GASKET FOR SILT/SOIL TIGHT JOINT. PIPE FOR ROOF DRAIN CONNECTION MUST BE SDR 26 PVC OR SCHEDULE 40 UNLESS INDICATED OTHERWISE. HDPE PIPE JOINT GASKETS MUST BE PROVIDED AND CONFORM TO ASTM F477. DRAIN PIPE INSTALLED WITH OVER TEN (10) FEET OVER COVER AND/OR IN HIGH GROUNDWATER CONDITIONS SHALL BE SANITITE HP POLYPROPYLENE PIPE (PP), OR APPROVED EQUIVALENT.

RETAINING WALL NOTE #1

GENERAL CONTRACTOR TO PROVIDE A SITE SPECIFIC WALL DESIGN AND CALCULATIONS THROUGH THE GENERAL CONTRACTOR'S SELECTED WALL MANUFACTURER'S LICENSED PROFESSIONAL STRUCTURAL ENGINEER FOR ALL RETAINING WALLS AND HEADWALLS. THIS MAY INCLUDE, BUT NOT LIMITED TO, A GLOBAL STABILITY ANALYSIS. REFER TO SHEET C-102 FOR ADDITIONAL NOTES REGARDING RETAINING WALL DESIGN.

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGLATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

CONTRACTOR SHALL CONFIRM ALL UTILITY & DRAINAGE LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ENGINEER IN WRITING IF ANY CONFLICTS OCCUR.

THIS PLAN TO BE UTILIZED FOR SITE GRADING AND DRAINAGE PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL GRADING & UTILITY NOTES

SCALE: 1" = 20'

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FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
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PROFESSIONAL ENGINEER
MASSACHUSETTS, CONNECTICUT, MAINE, NEW HAMPSHIRE, RHODE ISLAND, VERMONT
CONNECTICUT LICENSE NO. PEC.0028177
RHODE ISLAND LICENSE NO. 9816
MAINE LICENSE NO. 12553

SHEET TITLE:

GRADING AND DRAINAGE PLAN

SHEET NUMBER:

C-401

REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVIL-PROP-MAA240177.00-5A.----\LAYOUT: C-401 GRDR
JG

NAD83

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

APPROX LOC. OF 50' WIDE EASEMENT TO LOT H-4-1 & ACCESS EASEMENT C

RIM=107.67 (I(R)-SERIES)

APPROX LOCATION OF PROP WETLAND PLACARDS TO BE CONFIRMED AND LOCATED IN FIELD PRIOR TO CONSTRUCTION (TYP)

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

PROP LIMIT OF WORK LINE (TYP)

172.09'
S24°08'19"W

R4.08'
S09°44'35"E

52.03'
S65°46'54"E

162.91'
S65°46'54"E

PROP 500 GALLON SCHIER (GB-500) GREASE INTERCEPTOR. GC SHALL ENSURE COVERS ARE HS-20 LOAD RATED.
RIM 108.45
INV IN 102.35
INV OUT 102.10

PROP 5 LF 6" SDR-35 @ 1.0%

47.83'
S64°09'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

PROP VENT LINE. GC SHALL COORDINATE MATERIAL, SIZE, AND LOCATION WITH MEP

PROP 25 LF 6" DUCTILE IRON @ 1.0%

PROP SMH
RIM 108.45
INV IN 102.05
INV IN 102.70
INV OUT 101.95

PROP SMH
RIM 108.30
INV IN 102.70
INV OUT 102.60

PROP 30 LF 6" DUCTILE IRON @ 2.0%

APPROX LOCATION OF PROP DOMESTIC WATER CONNECTION TO BE COORDINATED WITH ARCH PLANS

PROP 120 LF 6" SDR-35 @ 1.0%

PROP ANTI SEEP COLLAR (TYP)

N65°41'53"W
78.80'

RIM=108.59
INV=100.7

PROP 30 LF 6" DUCTILE IRON @ 2.0%

PROP ANTI SEEP COLLAR (TYP)

PROP UTILITY CROSSING SEWER CROWN 101.6± (6") DRAIN INV 102.8± (12")

PROP UTILITY CROSSING SEWER CROWN 101.8± (6") DRAIN INV 102.9± (12")

PROP WATER AND SEWER CROSSING PER CITY OF DOVER REQUIREMENTS (TYP)

INV 103.30±

PROP GATE VALVE

PROP 2" TYPE K COPPER DOMESTIC WATER SERVICE LINE

PROPOSED 2023 SERIES
BB20-4584-WW-HB
McDONALD'S RESTAURANT
(3,694 SF.)
(38 SEATS)
FF 109.25

PROP ELECTRIC CONDUIT FOR 7 ELECTRIC VEHICLE CHARGING READY PARKING SPACES

APPROX LOCATION OF PROP PAD-MOUNTED TRANSFORMER. GC TO CONFIRM FINAL LOCATION AND BOLLARD CONFIGURATION WITH UTILITY PROVIDER

APPROX LOCATION OF ELECTRIC METER AND SERVICE CONNECTION TO BE COORDINATED WITH ARCH PLANS

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

PROP GATE VALVE

APPROX LOCATION OF PROP WATER CONNECTION TO EX STUB. GC SHALL COORDINATE CONNECTION WITH CITY OF DOVER WATER DEPARTMENT

N65°40'47"W
75.52'

PROP ELECTRIC SERVICE LINE (TYP) GC SHALL COORDINATE CONDUIT SIZE AND MATERIAL WITH LOCAL UTILITY PROVIDER

PROP LIMIT OF WORK LINE (TYP)

APPROX LOC. OF UG WATER LINE

APPROX LOC. OF ACCESS EASEMENT "A" BK. 5496, PG. 746. (DOT HATCH)

APPROX LOC. OF UG ELECTRIC LINE

APPROX LOC OF UG GAS LINE

APPROX LIMIT OF PAVEMENT SAWCUT (TYP)

PROP CONNECTION TO EX SMH
INV IN 100.8±
INV OUT 100.7±
PRIOR TO CONSTRUCTION, GC SHALL CONFIRM EXACT LOCATION, SIZE, AND INVERT OF EX SMH AND NOTIFY ENGINEER IN WRITING SHOULD CONFLICT OCCUR

DO NOT BLOCK

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

APPROX LOC. OF UG ELEC. LINE

N60°11'10"W
48.72'

APPROX LOC. OF UG GAS LINE

APPROX LOC. OF UG ELECTRIC LINE

TRANSFORMER

APPROX LOCATION OF PROP ELECTRIC CONNECTION TO EX STUB. GC SHALL COORDINATE WITH LOCAL UTILITY PROVIDER

PROP LIMIT OF WORK LINE (TYP)

EDGE OF WETLANDS DELINEATED BY GODDARD CONSULTING ON 4/29/2025

EX HYDRANT

UP #1/RIG168

N24°13'06"E
313.87'

APPROX LOC OF UG WATER LINE

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

GC #A1 … GC #A28

THE WETLAND DELINEATION SHOWN ON THIS PLAN WAS PERFORMED IN APRIL 2025, ACCORDING TO THE STANDARDS OF THE 1987 US ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL. THIS DELINEATION WAS PERFORMED BY ANDREW THIBAULT UNDER THE SUPERVISION OF SCOTT GODDARD, NH CWS #14

WETLAND SCIENTIST'S SIGNATURE DATE

NEW HAMPSHIRE UTILITY NOTES

(Rev. 7/2024)

1. THE CONTRACTOR'S PRICE FOR WATER AND SEWER SERVICE INSTALLATIONS MUST INCLUDE ALL FEES, COSTS, AND APPURTENANCES REQUIRED BY THE UTILITY PROVIDER (AND OTHER AGENCIES HAVING JURISDICTION OVER THE WORK) TO PROVIDE FULL AND COMPLETE WORKING SERVICE, INCLUDING (BUT NOT LIMITED TO) NECESSARY FEES, TESTING, DISINFECTING, INSPECTIONS, ROAD OPENING & BACKFILL REQUIREMENTS, TRAFFIC CONTROL AND SURETY BONDS AS DEFINED BY THE PROVIDER (AND OTHER AGENCIES HAVING JURISDICTION OVER THE WORK).
2. ALL WORK ASSOCIATED WITH UTILITY POLES, OVERHEAD WIRES AND ANY/ALL APPURTENANCES SHALL BE COORDINATED BY THE GC WITH THE LOCAL UTILITY COMPANIES PRIOR TO THE ORDERING OF ANY MATERIALS. THIS MAY INCLUDE BUT IS NOT LIMITED TO THE REMOVAL, INSTALLATION, RELOCATION OR PROTECTION OF ANY BRACING, GUY WIRES, OVERHEAD WIRES, ETC. AS MAY BE REQUIRED TO ACCOMMODATE THE PROJECT.
3. SEWERS CONVEYING SANITARY FLOW, OR INDUSTRIAL FLOW MUST BE SEPARATED FROM WATER MAINS BY A DISTANCE OF AT LEAST 10 FEET HORIZONTALLY. IF SUCH LATERAL SEPARATION IS NOT POSSIBLE, THE PIPES MUST, AT A MINIMUM, BE IN SEPARATE TRENCHES WITH THE AT LEAST 18 INCHES OF VERTICAL SEPARATION FROM THE BOTTOM OF THE WATER MAIN TO THE TOP OF THE SEWER LINE. WHERE APPROPRIATE SEPARATION FROM A WATER MAIN IS NOT POSSIBLE, THE SEWER MUST BE ENCASED IN CONCRETE, OR CONSTRUCTED OF DUCTILE IRON PIPE USING MECHANICAL OR SLIP-ON JOINTS FOR A DISTANCE OF AT LEAST 10 FEET ON EITHER SIDE OF THE CROSSING. IN ADDITION, ONE FULL LENGTH OF SEWER PIPE SHOULD BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE. WHERE A WATER MAIN CROSSES UNDER A SANITARY SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SANITARY SEWER MUST BE PROVIDED. ALL CROSSINGS SHALL BE IN ACCORDANCE WITH JURISDICTIONAL PERMITTING/UTILITY AUTHORITIES REGULATIONS.
4. WHEN THESE PLANS INVOLVE MULTIPLE BUILDINGS, SOME OF WHICH MAY BE BUILT AT A LATER DATE, THE CONTRACTOR MUST EXTEND ALL UTILITY SERVICES, INCLUDING BUT NOT LIMITED TO STORM, SANITARY, UTILITIES, AND IRRIGATION LINES, TO A POINT AT LEAST FIVE (5) FEET BEYOND THE PAVED AREAS FOR WHICH THE CONTRACTOR IS RESPONSIBLE. THE CONTRACTOR MUST CAP ENDS OF INSTALLED UTILITIES AS APPROPRIATE, MARK UTILITY ENDS WITH MAGNETIC TRACER TAPE, MARK TERMINUS LOCATIONS WITH A 2X4 STAKE, AND MUST NOTE THE LOCATION OF ALL UTILITY STUBS ON A CLEAN COPY OF THE PLAN. THIS RECORD DOCUMENT MUST BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK, ALL OF WHICH IS AT THE CONTRACTOR'S SOLE COST.
5. UNLESS INDICATED OTHERWISE, ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC., MUST BE INSTALLED UNDERGROUND. ALL NEW UTILITY SERVICES MUST BE INSTALLED IN ACCORDANCE WITH THE UTILITY SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
6. SANITARY PIPE MUST BE POLYVINYL CHLORIDE (PVC) SDR 35 EXCEPT WHERE CLEARLY INDICATED OTHERWISE. SANITARY LATERAL(S) MUST BE PVC SDR 26 UNLESS CLEARLY INDICATED OTHERWISE.
7. UNLESS CLEARLY INDICATED OTHERWISE ALL SANITARY PIPE MUST BE:
   - 7.1. FOR PIPES LESS THAN 12 FEET DEEP: POLYVINYL CHLORIDE (PVC) SDR 35 PER ASTM D3034.
   - 7.2. FOR PIPES GREATER THAN 12 FEET DEEP: POLYVINYL CHLORIDE (PVC) SDR 26 PER ASTM D3034.
   - 7.3. UNLESS LOCAL OR STATE BUILDING / PLUMBING CODE CLEARLY SPECIFIES DIFFERENTLY, SANITARY LATERALS MUST BE PVC SDR 26.
   - 7.4. FOR ALL UTILITY PIPING (INCLUDING DRAIN) WITHIN 10 FT OF A BUILDING, PIPE MATERIAL SHALL COMPLY WITH APPLICABLE LOCAL OR STATE BUILDING AND PLUMBING CODES. CONTRACTOR SHALL REFER TO PLUMBING ENGINEERING PLANS AND VERIFY PIPE MATERIAL WITH LOCAL OFFICIAL PRIOR TO ORDERING OF MATERIALS.
   - 7.5. CONTRACTOR SHALL VERIFY THE CONNECTION OF EXTERIOR PIPING TO ANY FIXTURES (SUCH AS AN EXTERIOR GREASE INTERCEPTOR) OR OTHER DRAINAGE SYSTEMS WITH LOCAL OFFICIALS FOR COMPLIANCE WITH APPLICABLE LOCAL OR STATE BUILDING AND PLUMBING CODES PRIOR TO ORDERING OF MATERIALS.
8. WATER MAIN PIPING MUST BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL WATER COMPANY. IN THE ABSENCE OF SUCH REQUIREMENTS, WATER MAIN PIPING MUST BE CEMENT-LINED DUCTILE IRON (DIP) MINIMUM CLASS 52 THICKNESS. ALL PIPE AND APPURTENANCES MUST COMPLY WITH THE APPLICABLE AWWA STANDARDS IN EFFECT AT THE TIME OF APPLICATION.
9. GAS METERS MUST BE PROTECTED AS REQUIRED BY THE JURISDICTIONAL GAS PROVIDER.
10. TRANSFORMERS AND SWITCH GEARS: GC SHALL PROVIDE ALL APPURTENANCES IN ACCORDANCE WITH UTILITY COMPANY SPECIFICATIONS AND CARRY SAME IN BASE BID. APPURTENANCES SHALL INCLUDE, BUT NOT BE LIMITED TO, THE CONCRETE PAD, SECONDARY SPILL CONTAINMENT AREAS (IF REQUIRED), BOLLARD / VEHICULAR PROTECTION, AND OTHER ITEMS AS MAY BE REQUIRED BY THE UTILITY PROVIDER FOR INSTALLATION OF THE TRANSFORMER AND SWITCH GEAR (IF REQUIRED). GC SHALL COORDINATE ALL ASPECTS OF INSTALLATION WITH UTILITY PROVIDER PRIOR TO ORDERING OF MATERIALS AND NOTIFY DESIGN ENGINEER OF ANY CONFLICTS IN WRITING.

TRANSFORMER NOTE:

GC SHALL PROVIDE ALL APPURTENANCES IN ACCORDANCE WITH UTILITY COMPANY SPECIFICATIONS AND CARRY SAME IN BASE BID. APPURTENANCES SHALL INCLUDE, BUT NOT BE LIMITED TO, THE CONCRETE PAD, SECONDARY SPILL CONTAINMENT AREAS (IF REQUIRED), BOLLARD / VEHICULAR PROTECTION, AND OTHER ITEMS AS MAY BE REQUIRED BY THE UTILITY PROVIDER FOR INSTALLATION OF THE TRANSFORMER. GC SHALL COORDINATE ALL ASPECTS OF INSTALLATION WITH UTILITY PROVIDER PRIOR TO ORDERING OF MATERIALS AND NOTIFY DESIGN ENGINEER OF ANY CONFLICTS IN WRITING.

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGLATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

CONTRACTOR SHALL CONFIRM ALL UTILITY & DRAINAGE LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ENGINEER IN WRITING IF ANY CONFLICTS OCCUR.

THIS PLAN TO BE UTILIZED FOR UTILITIES PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL GRADING & UTILITY NOTES

20 10 5 0 20
SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABILITY CONSULTING
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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PROJECT No.:	MAA240177.00-5A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
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JOHN D. KLOCH No. 15476 PROFESSIONAL ENGINEER
MASSACHUSETTS No. 54530 NEW HAMPSHIRE No. 15476 CONNECTICUT No. PEC.0030177 RHODE ISLAND No. 9616 MAINE LICENSE No. 12553

SHEET TITLE:

UTILITY PLAN

SHEET NUMBER:

C-501

REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\C-AD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-PROP-MAA240177.00-5A.——%LAYOUT: C-501 UTIL

NAD83

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

APPROX. LOC. OF 50' WIDE EASEMENT TO LOT H-4-1 & ACCESS EASEMENT C

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

PROP LIMIT OF WORK LINE (TYP)

APPROX LOCATION OF PROP WETLAND PLACARDS TO BE CONFIRMED AND LOCATED IN FIELD PRIOR TO CONSTRUCTION (TYP)

172.09'
S24°08'19"W

84.08'
S09°44'35"E

47.83'
S84°09'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

LIMIT OF PROP SILT FENCE

APPROX. LOC. OF ACCESS EASEMENT "A" BK. 5496, PG. 746. (DOT HATCH)

APPROX LIMIT OF PAVEMENT SAWCUT (TYP)

DO NOT BLOCK

N85°41'53"W
78.07'

PERIMETER CONTROLS ARE OFFSET FROM LOW FOR CLARITY PURPOSES (TYP)

PROP STABILIZED CONSTRUCTION ENTRANCE

52.03'
S65°46'54"E

PROP SILT FENCE (TYP)

PROP LIMIT OF WORK LINE (TYP)

PROPOSED 2023 SERIES
BB20-4584-WW-HB
McDONALD'S RESTAURANT
(3,694 SF.)
(38 SEATS)

AREA OF DISTURBANCE =
±75,194 SF (1.73 AC)

PROP TREE PROTECTION FENCE

LIMIT OF PROP SILT FENCE

N60°11'10"W
48.72'

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

162.91'
S65°46'54"E

APPROX LOCATION OF PROP TEMPORARY SOIL STOCKPILE AREA SURROUNDED BY STRAW BALES AND SILT FENCE

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

PROP TREE PROTECTION FENCE

PROP SILT FENCE (TYP)

N65°40'41"W
75.52'

PROP STABILIZED CONSTRUCTION EXIT. CONSTRUCTION EXIT SHALL BE RESTRICTED TO RIGHT-OUT ONLY. MAIN ACCESS FOR ALL CONSTRUCTION VEHICLES SHALL BE VIA GRAPEVINE DRIVE.

PROP INLET PROTECTION (TYP)

PROP LIMIT OF WORK LINE (TYP)

EDGE OF WETLANDS DELINEATED BY GODDARD CONSULTING ON 4/28/2025

N24°13'06"E
313.07'

LIMIT OF PROP SILT FENCE

PROP LIMIT OF WORK LINE (TYP)

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

THE WETLAND DELINEATION SHOWN ON THIS PLAN WAS PERFORMED IN APRIL 2025, ACCORDING TO THE STANDARDS OF THE 1987 US ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL. THIS DELINEATION WAS PERFORMED BY ANDREW THIBAULT UNDER THE SUPERVISION OF SCOTT GODDARD, NH CWS #14

WETLAND SCIENTIST'S SIGNATURE DATE

MAIN ACCESS FOR ALL CONSTRUCTION VEHICLES SHALL BE VIA GRAPEVINE DRIVE. ACCESS VIA NH 108 (DURHAM ROAD) DRIVEWAY SHALL BE RESTRICTED TO RIGHT OUT ONLY.

CONTRACTOR SHALL ABIDE BY ALL STANDARDS AND REGULATIONS OUTLINED IN CHAPTER 170-33 "GROUNDWATER PROTECTION" OF THE CITY OF DOVER, NH ZONING ORDINANCE

THIS PLAN TO BE UTILIZED FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY

20 10 5 0 20
SCALE: 1" = 20'

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-PROP-MAA240177.00-SA.----LAYOUT: C-801 EROS

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
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TRANSPORTATION SERVICES

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REVISIONS

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1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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PROJECT No.:	MAA240177.00-SA
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
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J. ANDREW KUCICH
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PROFESSIONAL ENGINEER
MA, NH, CT, VT, NY, RI, ME, NJ, PA, VA, WV, NC, SC, GA, FL, OH, IN, IL, MI, WI, MN, MO, KS, NE, IA, CO, TX, AZ, OR, WA, CA, AK, HI, DC, AB, NS, ON
NEW HAMPSHIRE LICENSE No. 15476
CONFIDENTIAL LICENSE No. 0003177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

SOIL EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER:

C-801

REVISION 5 - 07/17/2025

NEW HAMPSHIRE EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE AS SET FORTH IN THE MOST CURRENT STATE SEDIMENT AND EROSION CONTROL MANUAL.
2. THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE LEFT IN AN UNTREATED OR UNVEGETATED CONDITION FOR A MINIMUM TIME. AREAS SHALL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. AT A MINIMUM, AREAS SHALL BE PERMANENTLY STABILIZED ACCORDING TO THE CURRENT EDITION OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP), OR IN THE ABSENCE OF A SWPPP, THEY SHALL BE PERMANENTLY STABILIZED WITHIN 14 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL. IF THE DISTURBANCE IS WITHIN 100 FEET OF A STREAM OR POND, THE AREA SHALL BE STABILIZED WITHIN 7 DAYS OR PRIOR TO ANY STORM EVENT (THIS WOULD INCLUDE WETLANDS).
3. SEDIMENT BARRIERS (SILT FENCE, STRAW BARRIERS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 8%.
4. INSTALL SILTATION BARRIER AT TOE OF SLOPE TO FILTER SILT FROM RUNOFF. SEE SILTATION BARRIER DETAILS FOR PROPER INSTALLATION. SILTATION BARRIER WILL REMAIN IN PLACE PER NOTE #5.
5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSITION. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED. FOR SEDIMENT CONTROL DEVICES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE DEVICES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2:1) UNLESS OTHERWISE INDICATED ON THE PLANS. SLOPE PROTECTION FOR SLOPES GREATER THAN 2:1 SHALL BE DESIGNED BY A GEOTECHNICAL ENGINEER.
7. IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST, USE TEMPORARY MULCH (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
8. TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST TO PROTECT FROM SPRING RUNOFF PROBLEMS.
9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL STANDARDS.
10. REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND PREPARED FOR FINAL SEEDING AS FOLLOWS:
    a) SIX INCHES, OR DEPTH SPECIFIED ON THE LANDSCAPE PLAN, OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
    b) APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 LB PER ACRE OR 18.4 LB PER 1,000 SF USING 10-20-20 OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB PER 1,000 SF).
    c) FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDED TO A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUE-GRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYEGRASS: SEEDING RATE IS 1.03 LBS PER 1,000 SF LAWN. QUALITY SOD MAY BE SUBSTITUTED FOR SEED WHERE SLOPES DO NOT EXCEED 2:1, SOD ON SLOPES STEEPER THAN 3:1 SHOULD BE PEGGED.
    d) STRAW MULCH AT THE RATE OF 70-90 LBS PER 1,000 SF. A HYDRO-APPLICATION OF WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE NON-TOXIC BINDER WILL BE USED ON STRAW MULCH FOR WIND CONTROL.
11. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS 70% STABILIZED. FOR EROSION CONTROL MEASURES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE MEASURES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
12. WETLANDS WILL BE PROTECTED WITH BARRIERS CONSISTING OF STRAW BALES, COMPOST TUBES, SILT FENCE OR A COMBINATION THEREOF.
13. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL HAVE AN EXPOSURE WINDOW OF NOT MORE THAN 7 DAYS.
14. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IF NOT BEING ACTIVELY WORKED:

LOCATION	MULCH	MULCH RATE (1000 SF)
PROTECTED AREA	STRAW	100 POUNDS
WINDY AREA	SHREDDED OR CHOPPED CORNSTALKS	185-275 POUNDS
	STRAW (ANCHORED)*	100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES GREATER THAN 3:1	JUTE MESH OR EXCELSIOR MAT	AS REQUIRED
GREATER THAN 3:1	(REFER TO GEOTECHNICAL REPORT FOR FINAL DESIGN REQUIREMENT)	

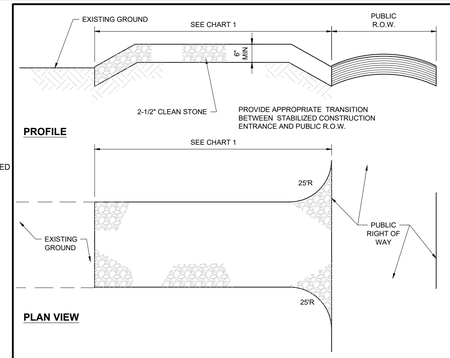
* A HYDRO-APPLICATION OF WOOD OR PAPER FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE NON-TOXIC BINDER SHALL BE USED TO ADDITIONAL WIND CONTROL.

* MULCH ANCHORING: ANCHOR MULCH WITH PEG AND TWINE (1 SQ. YD/BLOCK); MULCH NETTING (AS PER MANUFACTURER); WOOD CELLULOSE FIBER (750 LBS/ACRE); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); USE OF A SERRATED STRAIGHT DISK. WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.

15. PROPOSED LOCATIONS OF SURFACE STORMWATER MANAGEMENT BASINS CAN BE UTILIZED AS A TEMPORARY SEDIMENT TRAP DURING CONSTRUCTION.SEDIMENT TRAPS SHALL BE SIZED AND CONSTRUCTED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
    a) TEMPORARY SEDIMENT TRAPS SHALL BE SIZED PER THE CURRENT EDITION OF THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS" AND PROVIDE A MINIMUM OF 1,800 CF PER ACRE OF TRIBUTARY AREA WITH A MAXIMUM TRIBUTARY AREA OF 5 ACRES, MAINTAIN A 2:1 LENGTH TO WIDTH RATIO, AND NOT EXCEED 5 FT IN HEIGHT. UPON SITE STABILIZATION, ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE TEMPORARY SEDIMENT TRAP EXCAVATED TO 1 FOOT BELOW THE TRAP. THE AREA SHALL THEN BE SCARIFIED TO PREVENT COMPACTION AND PROMOTE INFILTRATION, AND GRADED AND STABILIZED IN ACCORDANCE WITH THE GRADING AND LANDSCAPE PLANS.
16. STOCKPILING OF MATERIALS (DIRT, WOOD, CONSTRUCTION MATERIALS, ETC.) MUST REMAIN COVERED AT ALL TIMES TO MINIMIZE ANY DUST PROBLEMS THAT MAY OCCUR WITH ADJACENT PROPERTIES AND TO PROVIDE MAXIMUM PROTECTION AGAINST EROSION RUNOFF.
17. EXISTING CATCH BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.
18. THE CONTRACTOR MUST PERFORM DEWATERING (IF REQUIRED), IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY FOR THE COSTS ASSOCIATED WITH ANY AND ALL NECESSARY DISCHARGE PERMITS ASSOCIATED WITH SAME.
19. THE CONTRACTOR MUST LOCATE CONSTRUCTION WASTE MATERIAL STORAGE AREAS TO MINIMIZE EXPOSURE TO STORMWATER. THE CONTRACTOR MUST IMMEDIATELY PLACE CONSTRUCTION WASTE IN ON-SITE STORAGE CONTAINERS UNTIL THAT CONSTRUCTION WASTE IS READY FOR OFF-SITE DISPOSAL. THE CONTRACTOR MUST MAINTAIN SPILL PREVENTION AND RESPONSE EQUIPMENT AND MAKE SAME CONTINUOUSLY AVAILABLE ON-SITE FOR USE BY THE CONTRACTOR'S EMPLOYEES WHO MUST BE PROPERLY TRAINED IN THE APPLICATION OF SPILL PREVENTION AND RESPONSE PROCEDURES.
20. EROSION CONTROL NOTES DURING WINTER CONSTRUCTION
21. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
22. WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT THE AMOUNT OF AREA OPEN AT ONE TIME IS MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE AND IN CONFORMANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN SUCH THAT ADEQUATE PROVISIONS ARE EMPLOYED TO CONTROL STORMWATER RUNOFF.
23. CONTINUATION OF EARTHWORK OPERATION ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
24. AN AREA SHALL BE CONSIDERED TO HAVE BEEN TEMPORARILY STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR STRAW AT A RATE OF 100 LB. PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE.
25. FOR AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR A PERIOD EXCEEDING 14 DAYS BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED. IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 200-300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED AS APPLICABLE. SLOPES SHALL NOT BE LEFT UNSTABILIZED OVER THE WINTER OR IN AREAS WHERE WORK HAS CEASED FOR MORE THAN 14 DAYS UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF SEDIMENT BARRIERS OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
26. MULCHING REQUIREMENTS:
    a) BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING OR WOOD CELLULOSE FIBER.
    b) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPE EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.
    c) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1ST THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
27. ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE STORMWATER PREVENTION PLAN.
28. DURING THE WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:

- INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE/EXIT (AS SHOWN)
- INSTALLATION OF EROSION CONTROL BARRIER (STRAW BALES AND SILT FENCE) (AS SHOWN)
- INSTALLATION OF INLET PROTECTION IN STREET (AS SHOWN)
- DEMOLITION OF EXISTING SITE STRUCTURES (SEE DEMOLITION PLAN)
- DEMOLITION OF EXISTING SITE PAVEMENT AND AMENITIES (SEE DEMOLITION PLAN)
- CLEARING AND GRUBBING
- EARTHWORK AND EXCAVATION/FILLING AS NECESSARY
- CONSTRUCTION OF UTILITIES
- STABILIZE PERMANENT LAWN AREAS AND SLOPES WITH TEMPORARY SEEDING
- INSTALLATION OF INLET PROTECTION OF ON-SITE UTILITIES (AS SHOWN)
- CONSTRUCTION OF BUILDINGS
- CONSTRUCTION OF ALL CURBING AND LANDSCAPE ISLANDS AS INDICATED ON THE PLANS
- SPREAD TOPSOIL ON SLOPED AREAS AND SEED AND MULCH
- FINAL GRADING OF ALL SLOPED AREAS
- PLACE 6" TOPSOIL ON SLOPES AFTER FINAL GRADING COMPLETED. FERTILIZE, SEED, AND MULCH SEED MIXTURE TO BE INSTALLED AS REQUIRED.
- PAVE PARKING LOT
- LANDSCAPING PER LANDSCAPING PLAN
- REMOVE EROSION CONTROLS AS DISTURBED AREAS BECOME STABILIZED TO 70% STABILIZATION OR GREATER



PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2% TO 5%	100 FT	200FT
>5%	ENTIRE ENTRANCE STABILIZED WITH FABC BASE COURSE (1)	

(1) AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

CHART 1

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE (NE-O020101 - 09/2023)

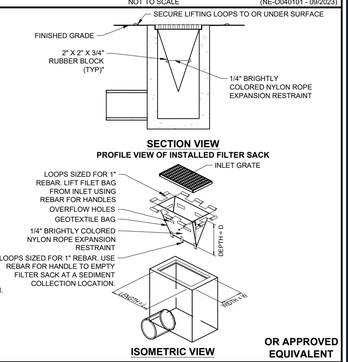
NOTES:
1. BALES SHALL BE PLACED AT THE TOP OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE PROMPTLY AS NEEDED.
5. DRAINAGE AREA NO MORE THAN ¼ AC. PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%.
6. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

SILT FENCE

NOT TO SCALE (NE-O040101 - 09/2023)

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC-1
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	130 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC-1

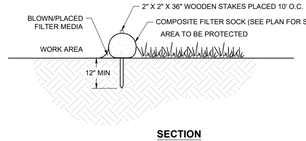
NOTES:
1. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. PLACE AN OIL ADSORBENT PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.



OR APPROVED EQUIVALENT

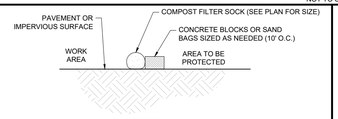
STRAW BALE BARRIER

NOT TO SCALE (NE-O030302 - 09/2023)



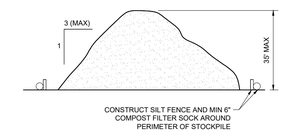
INLET PROTECTION WITH MANUFACTURED INSERT

NOT TO SCALE (NE-O050101 - 09/2023)



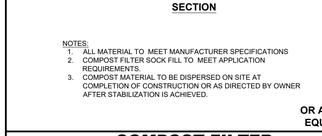
NOTES:
1. ALL MATERIAL TO MEET MANUFACTURER SPECIFICATIONS.
2. FILTER MEDIA TO MEET APPLICATION REQUIREMENTS.
3. FILTER MEDIA TO BE DISPERSED ON SITE AT COMPLETION OF CONSTRUCTION AFTER STABILIZATION IS ACHIEVED. AS DETERMINED BY ENGINEER IN OWNER

OR APPROVED EQUIVALENT



COMPOST FILTER SOCK

NOT TO SCALE (NE-O040201 - 09/2023)



NOTES:
1. ALL MATERIAL TO MEET MANUFACTURER SPECIFICATIONS
2. COMPOST FILTER SOCK FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE AT COMPLETION OF CONSTRUCTION OR AS DIRECTED BY OWNER AFTER STABILIZATION IS ACHIEVED.

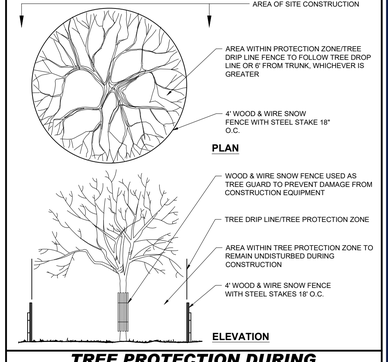
OR APPROVED EQUIVALENT

COMPOST FILTER SOCK IN PAVED CONDITION

NOT TO SCALE (NE-O040202 - 09/2023)

TEMPORARY STOCK PILE WITH SILT FENCE AND FILTER SOCK

NOT TO SCALE (NE-O060102 - 09/2023)



TREE PROTECTION DURING SITE CONSTRUCTION

NOT TO SCALE (NE-O030201 - 09/2023)

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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ISSUED FOR ENTITLEMENTS

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT NO.:	MAA240177.00-5A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J. KLOCH — PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 45530
NEW HAMPSHIRE LICENSE No. 15476
COMMONWEALTH OF VIRGINIA No. 0402060177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

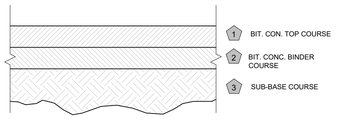
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SHEET NUMBER:

C-802

REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\C-AD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-5A-----1A LAYOUT, C-802 EROD

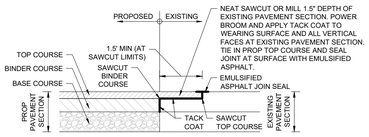


1. BIT. CON. TOP COURSE (LIGHT DUTY=1.5") (NHDOT "WEARING COURSE")
2. BIT. CONC. BINDER COURSE (LIGHT DUTY=1.5") (NHDOT "BINDER COURSE")
3. GRANULAR SUB-BASE COURSE (LIGHT DUTY=12") (NHDOT 304.3 CRUSHED GRAVEL)

NOTES:
1. PAVEMENT BASE AND SUBBASE COURSES TO CONFORM TO STATE DEPARTMENT OF TRANSPORTATION.
2. GC TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT SPECIFICATIONS.

PAVEMENT SECTION

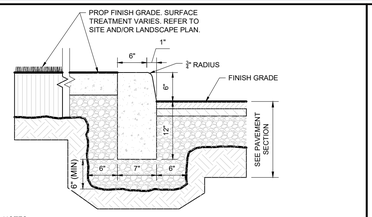
NOT TO SCALE (NE-S010101 - 09/2024) MOD



NOTES:
1. REFER TO GEOTECHNICAL REPORT PREPARED BY WHITESTONE ASSOCIATES, INC. AND DATED 06/11/2024

BITUMINOUS CONCRETE PAVEMENT TIE IN (GRAPEVINE DRIVE)

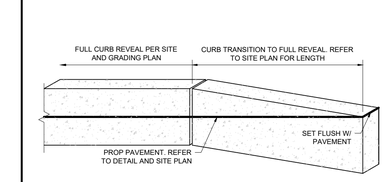
NOT TO SCALE (NE-S010501 - 08/2024)



NOTES:
1. CURB SHALL CONSIST OF 4,000 PSI AIR ENTRAINED CONCRETE, EXPOSED EDGES TO HAVE RUBBED FINISH, AND SURFACE SHALL BE TREATED WITH A CONCRETE PENETRANT/SEALER.
2. THE ENDS OF CURB SECTIONS SHALL BE CHAMFERED 1/4 INCH.
3. THE CORNERS OF CURB SECTIONS SHALL MATCH THE ADJACENT CURB IN SIZE, COLOR AND FINISH.
4. CURBS, CURB CORNERS OR EDGING SHALL BE FITTED TOGETHER AS CLOSELY AS POSSIBLE.
5. EXPANSION JOINTS SHALL BE INSTALLED AT A MAXIMUM OF TWENTY FEET (20') ON CENTER USING PREFORMED EXPANSION JOINT FILLER HAVING A THICKNESS OF ¼ INCH.
6. PAVEMENT SECTION DEPTHS, MATERIAL, AND SPECIFICATIONS PER PAVEMENT SECTION DETAIL.
7. STRAIGHT CURB SECTIONS CAN BE USED FOR RADII 25' OR LESS. OTHERWISE, CURVED CURB LENGTHS SHALL BE INSTALLED AT THE SPECIFIED RADIUS PER THE SITE PLAN.

PRECAST CONCRETE CURB

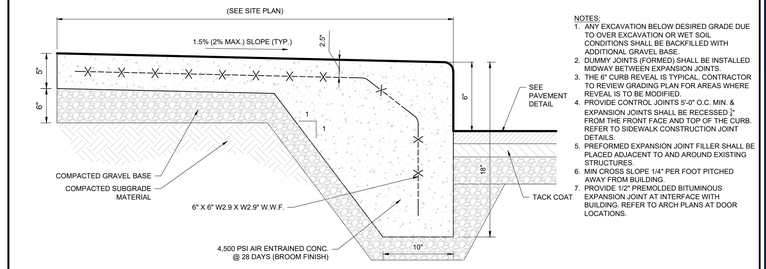
NOT TO SCALE (NE-S020201 - 06/2024)



NOTES:
1. SEE TYPICAL CURB DETAIL AND SITE PLAN FOR CURB TYPE AND TRANSITION CURB LOCATIONS
2. BOTH TOP AND FACE OF CURB TO BE PAINTED YELLOW

PRECAST CONCRETE TRANSITION CURB

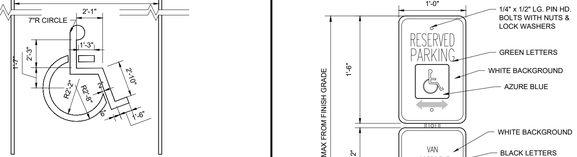
NOT TO SCALE (NE-S020206 - 09/2023) MOD



NOTES:
1. ANY EXCAVATION BELOW DESIRED GRADE DUE TO OVER EXCAVATION OR WET SOIL CONDITIONS SHALL BE BACKFILLED WITH ADDITIONAL GRAVEL BASE.
2. DUMMY JOINTS (FORMED) SHALL BE INSTALLED MIDWAY BETWEEN EXPANSION JOINTS.
3. THE 6" CURB REVEAL IS TYPICAL. CONTRACTOR TO REVIEW GRADING PLAN FOR AREAS WHERE REVEAL IS TO BE MODIFIED.
4. PROVIDE CONTROL JOINTS 5'-0" O.C. MIN. & EXPANSION JOINTS SHALL BE RECESSED ½" FROM THE FRONT FACE AND TOP OF THE CURB. REFER TO SIDEWALK CONSTRUCTION JOINT DETAILS.
5. PREFORMED EXPANSION JOINT FILLER SHALL BE PLACED ADJACENT TO AND AROUND EXISTING STRUCTURES.
6. MIN CROSS SLOPE 1/4" PER FOOT PITCHED AWAY FROM BUILDING.
7. PROVIDE 1/2" PREMOLDED BITUMINOUS EXPANSION JOINT AT INTERFACE WITH BUILDING. REFER TO ARCH PLANS AT DOOR LOCATIONS.

MONOLITHIC CURB AND SIDEWALK

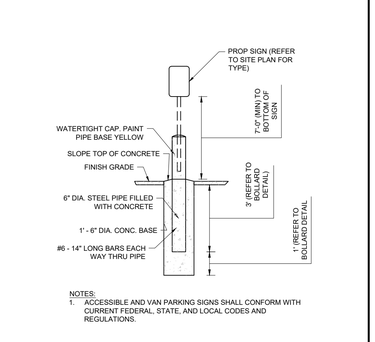
NOT TO SCALE (BE-S030201 - 06/2024)



NOTE: FINAL PAVEMENT SPECIFICATIONS TO BE COORDINATED WITH GEOTECHNICAL REPORT RECOMMENDATIONS. McDONALD'S ENGINEER RESERVES THE RIGHT TO REQUEST A COMPACTION TEST AND/OR A CORE SAMPLE. IF TESTS PROVE CORRECT, PER ABOVE SPECIFICATION, TESTS WILL BE AT THE EXPENSE OF McDONALD'S, OTHERWISE, G.C. WILL BE CHARGED.

CONCRETE & BITUMINOUS CONCRETE PAVING

NOT TO SCALE

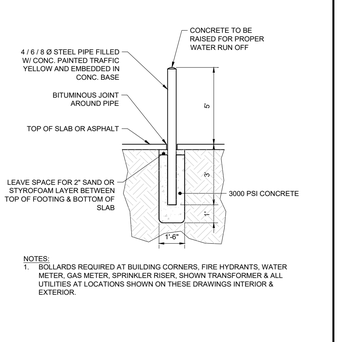


RADIUS	MAX LENGTH
< 21'	USE CURVED CURB
21' - 25'	2'
26' - 28'	3'
29' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
OVER 60'	10'

NOTES:
1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.
2. CONCRETE CURB SUPPORT SHOULD BE SET 7" BELOW THE TOP OF THE PAVEMENT BASE COURSE.

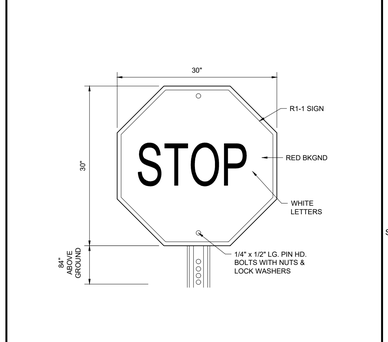
CITY OF DOVER D-8 GRANITE CURB

NOT TO SCALE



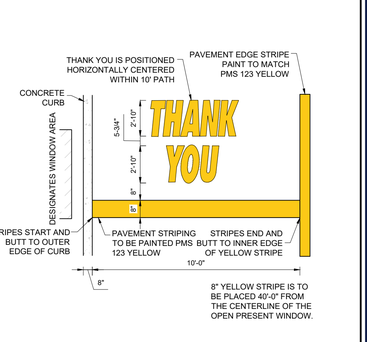
SIDEWALK CONSTRUCTION JOINTS

NOT TO SCALE (BE-S030401 - 08/2023)



ACCESSIBLE RAMP TYPE B

NOT TO SCALE (NE-S030205 - 09/2023)



STALL STRIPING

NOT TO SCALE

LOCATE AT EDGE OF PARKING SPACE UNLESS ACCOMPANIED BY "VAN" LETTERING

NOTES:
1. LOCATE AT EDGE OF PARKING SPACE UNLESS ACCOMPANIED BY "VAN" LETTERING.
2. DIMENSIONS PER FIGURE 3B-22 PER LATEST EDITION OF MUTCD.
3. ACCESSIBLE PARKING SYMBOL TO CONFORM TO THE STRIPING PAINT SPECIFIED AND SHALL BE CENTERED IN THE STALL.

ACCESSIBLE PARKING SYMBOL

NOT TO SCALE (NE-S050102 - 09/2023)

NOTE:
1. REFER TO "ACCESSIBILITY NOTES" PROVIDED HEREIN FOR ADDITIONAL REQUIREMENTS AND SPECIFICATIONS.
2. THE LAYOUT AND NUMBER OF PARKING SPACES VARIES. REFER TO PLAN FOR LOCATION AND CONFIGURATION.
3. STALL DIMENSIONS ARE MEASURED TO THE CENTERLINE OF THE PAINTED STRIPE.
4. ACCESS AISLES CAN NOT OVERLAP VEHICULAR WAYS.

ADA PARKING STALL MARKING - ANGLED LEFT

NOT TO SCALE (BE-S050101 - 05/2024) MOD

NOTES:
1. ALL PAVEMENT STRIPING AND MARKINGS SHALL CONSIST OF CHLORINATED RUBBER PAINT APPLIED, OR APPROVED EQUIVALENT, IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. PAINT SHALL BE APPLIED AT A MINIMUM OF 0.015" (.15 MIL) FILM THICKNESS.

STOP BAR

NOT TO SCALE (NE-S050301 - 09/2024)

NOTES:
1. ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE WHITE PAINT PER SPECS.

TRAFFIC FLOW ARROW

NOT TO SCALE (NE-S050302 - 09/2023)

MEETS NO STATE OR FEDERAL DESIGN STANDARDS.

SINGLE / DOUBLE HEADED ARROW

NOT TO SCALE (2024-05-01)

PAINTED TRAFFIC ARROWS AND LETTERS

NOT TO SCALE (2024-05-01)

NOTES:
1. ACCESSIBLE SYMBOL PAINT SHALL CONFORM TO THE STRIPING PAINT SPECIFIED AND SYMBOL SHALL BE CENTERED IN THE STALL
2. 12"x18", 5' TO BOTTOM OF SYMBOL
3. LOCATED SO THAT IT CANNOT BE OBSCURED BY A CAR PARKED IN THE SPACE (2' BEHIND CURB OR 2' BEHIND WALK, AS APPLICABLE)
4. CONFORM TO LOCAL CODES

ACCESSIBLE PARKING SYMBOL WITH DIMENSIONS

NOT TO SCALE (NE-S050103 - 09/2023)

ACCESSIBLE PARKING SIGNS

NOT TO SCALE (NE-S060101 - 09/2023)

NOTES:
1. ACCESSIBLE AND VAN PARKING SIGNS SHALL CONFORM WITH CURRENT FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS.

SIGN ON BOLLARD

NOT TO SCALE (NE-S060201 - 09/2023) MOD

NOTES:
1. BOLLARDS REQUIRED AT BUILDING CORNERS, FIRE HYDRANTS, WATER METER, GAS METER, SPRINKLER RISER, SHOWN TRANSFORMER & ALL UTILITIES AT LOCATIONS SHOWN ON THESE DRAWINGS INTERIOR & EXTERIOR.

BOLLARD

NOT TO SCALE (NE-S070101 - 09/2023)

STOP SIGN

NOT TO SCALE (NE-S060202 - 09/2023)

"THANK YOU" LETTERS

NOT TO SCALE (2024-05-01)

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-5A-----LAYOUT: C-901 DETL

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
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LANDSCAPE ARCHITECTURE
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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PROJECT No.:	MAA240177.00-5A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

JOHN D. KUCICH
No. 15476
PROFESSIONAL ENGINEER
MASSACHUSETTS NEW HAMPSHIRE CONNECTICUT RHODE ISLAND MAINE

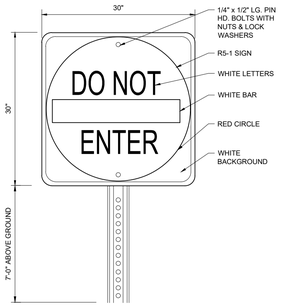
SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER:

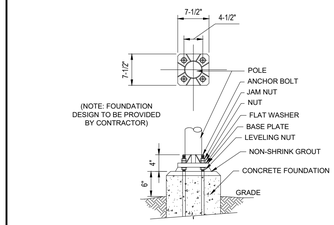
C-901

REVISION 5 - 07/17/2025



DO NOT ENTER SIGN

NOT TO SCALE (NE-S060203 - 09/2023)



FLAG POLE BASE

NOT TO SCALE



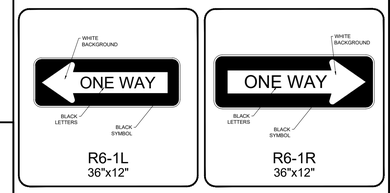
FLAG POLES

NOT TO SCALE (2024-05-01)



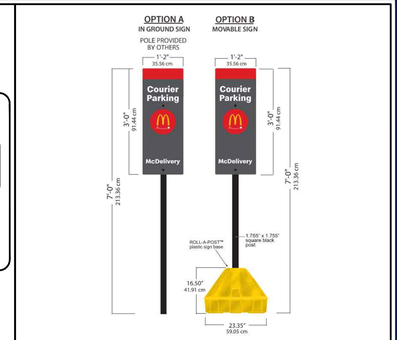
"DO NOT BLOCK ACCESSIBLE PARKING SPACES" SIGN

NOT TO SCALE



ONE WAY R6-1 SIGNS

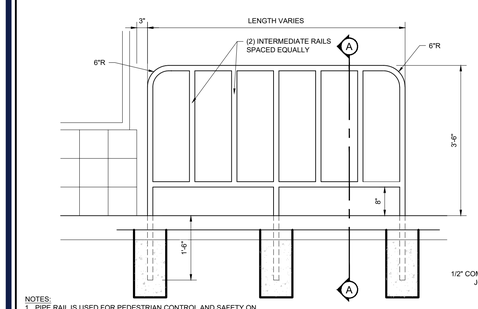
NOT TO SCALE

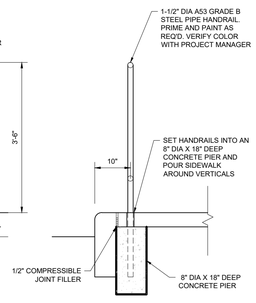


TOTAL AREA = 3.5 SF/EA

COURIER PARKING AND MCDELIVERY SIGN

NOT TO SCALE (2024-05-01)



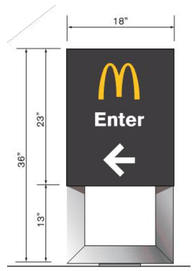


NOTES:
1. PIPE RAIL IS USED FOR PEDESTRIAN CONTROL AND SAFETY ON DRIVE-THRU SIDE OF BUILDING.
2. CONTRACTOR TO COORDINATE WITH ACM AND OWNER/OPERATOR FOR ACTUAL MATERIAL AND DESIGN PRIOR TO ORDERING

SECTION A-A

RAILING DETAIL AND SECTION

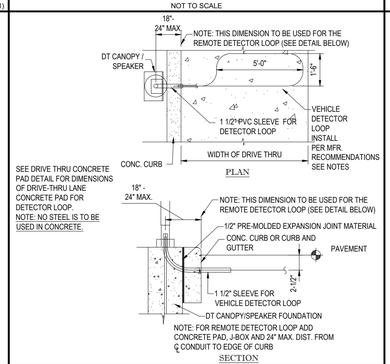
NOT TO SCALE (2024-09-27)



TOTAL AREA = 3 SF

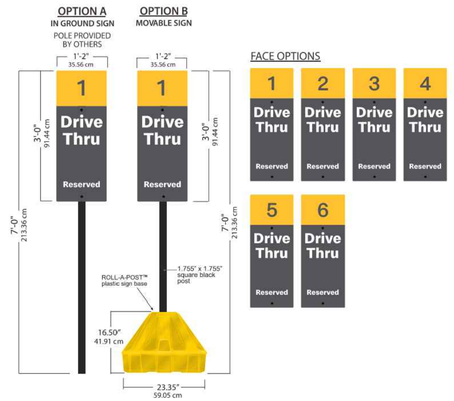
NEXT GEN 3 SF 36 IN DIRECTIONAL BRANDED

NOT TO SCALE (2024-05-01)



AUTO DETECTOR LOOP DETAIL

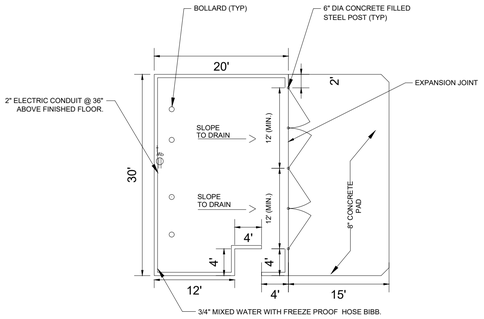
NOT TO SCALE



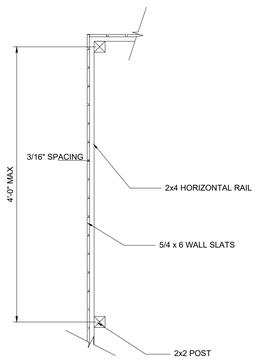
TOTAL AREA = 3.5 SF/EA

DRIVE THRU RESERVED SIGN

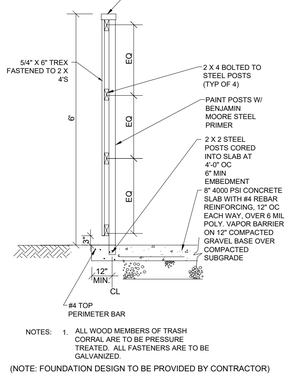
NOT TO SCALE (2024-05-01)



TRASH ENCLOSURE LAYOUT (20'x30')



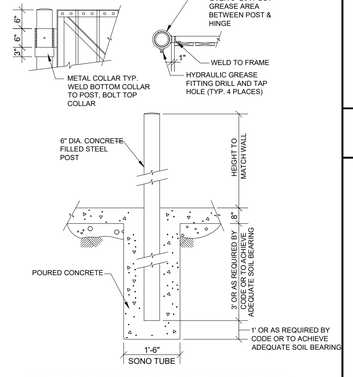
TRASH ENCLOSURE TYP PLAN ELEV



NOTES: 1. ALL WOOD MEMBERS OF TRASH CORRAL ARE TO BE PRESSURE TREATED. ALL FASTENERS ARE TO BE GALVANIZED.

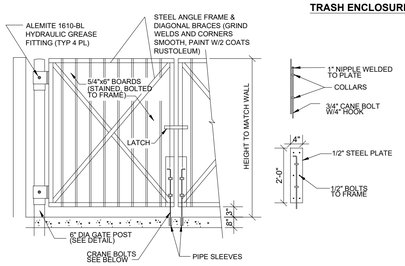
(NOTE: FOUNDATION DESIGN TO BE PROVIDED BY CONTRACTOR)

TRASH ENCLOSURE WALL SECTION

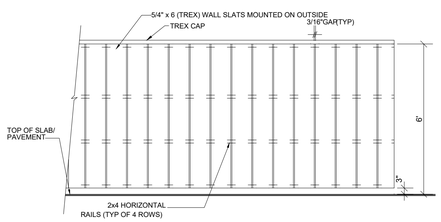


(NOTE: FOUNDATION DESIGN TO BE PROVIDED BY CONTRACTOR)

TRASH ENCLOSURE GATE POST DETAILS



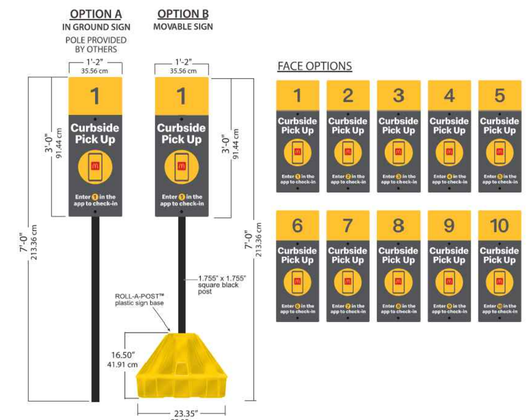
TRASH ENCLOSURE GATE & MOUNTING



TRASH ENCLOSURE TYPICAL ELEVATION

20' X 30' TREX TRASH ENCLOSURE

NOT TO SCALE (2024-09-27) (MOD)



TOTAL AREA = 3.5 SF/EA

CURBSIDE PICK UP SIGN

NOT TO SCALE (2024-05-01)

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LAND SURVEYING
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LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
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1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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PROJECT No.: MAA240177.00-5A
DRAWN BY: JDG
CHECKED BY: CSE
DATE: 12/17/2024
CAD I.D.: P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
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SHEET TITLE:

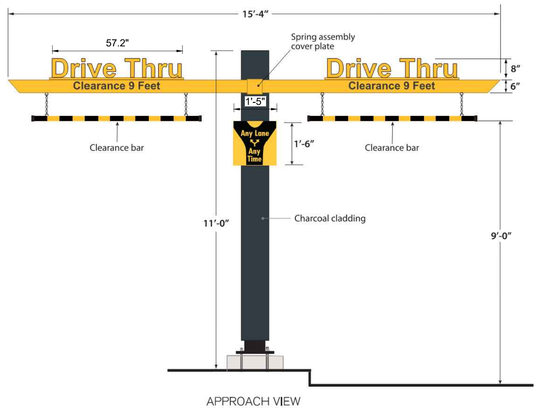
CONSTRUCTION DETAILS

SHEET NUMBER:

C-902

REVISION 5 - 07/17/2025

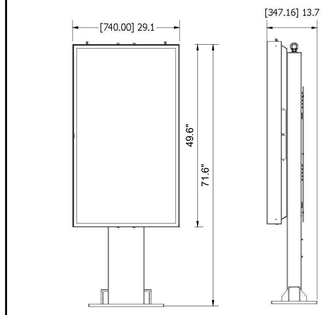
P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-5A-----1A LAYOUT, C-902 DETL



TOTAL AREA = 8.4 SF

DOUBLE WELCOME POINT GATEWAY

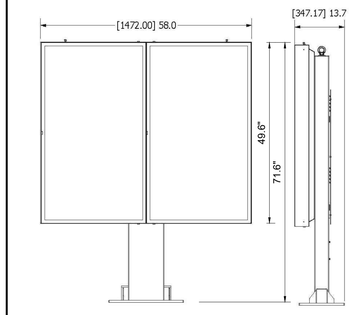
NOT TO SCALE (2024-05-01)



TOTAL AREA = 10 SF

PRE-BROWSE OUTDOOR DISPLAY MENU BOARD

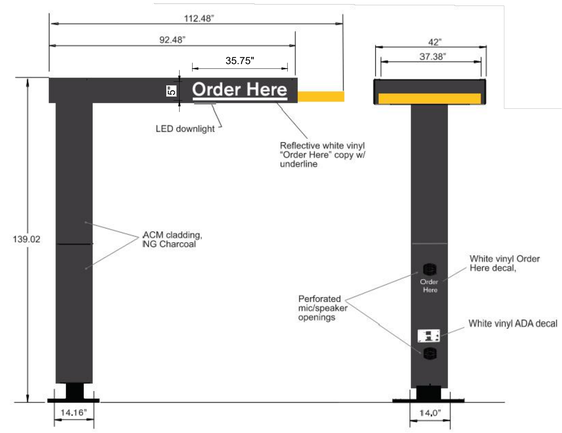
NOT TO SCALE (2024-05-01)



TOTAL AREA = 20 SF

DOUBLE OUTDOOR DISPLAY MENU BOARD

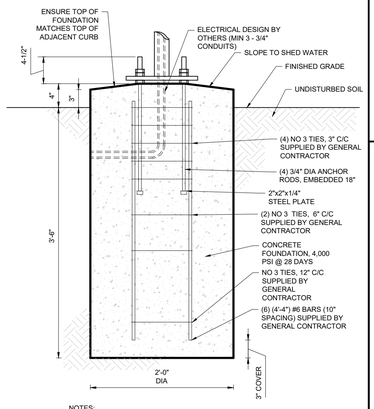
NOT TO SCALE (2024-05-01)



TOTAL AREA = 1.2 SF

SLIM SPRINGBOARD CANOPY - YELLOW

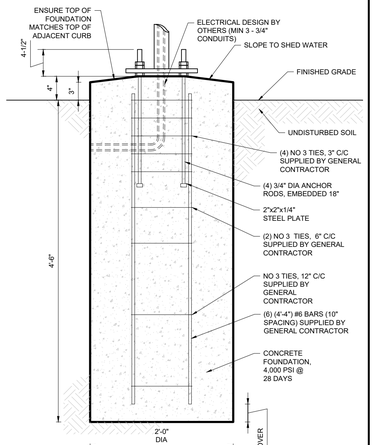
NOT TO SCALE (2024-05-01)



NOTES:
1. REINFORCING STEEL TO BE ASTM 615 GRADE 60 STEEL

PRE-BROWSE MENU BOARD FOUNDATION

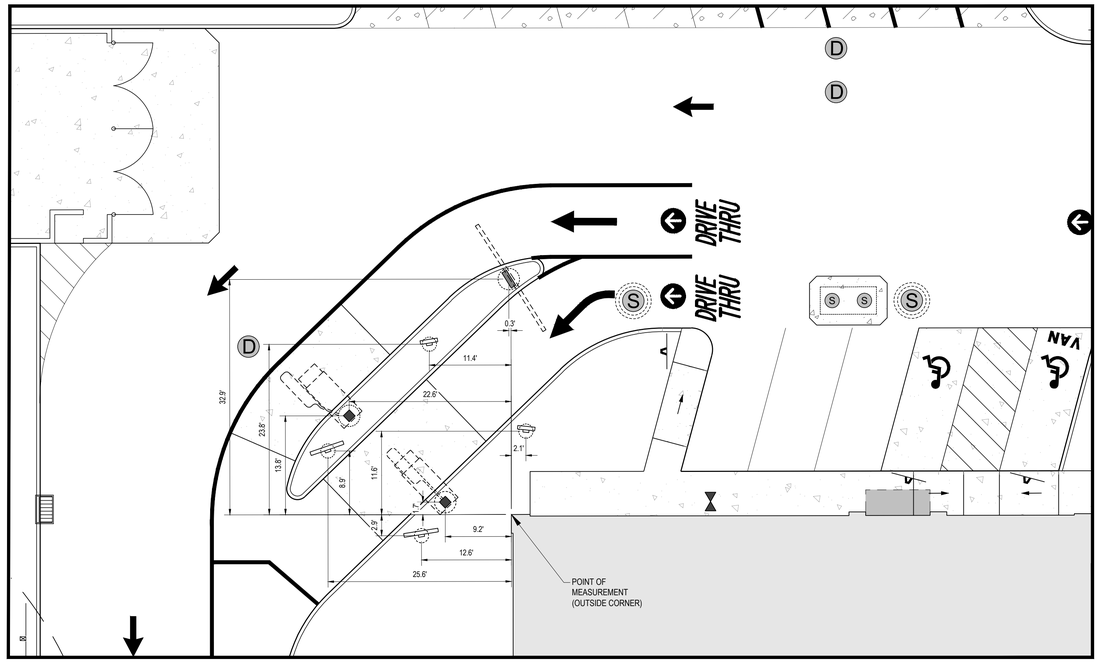
NOT TO SCALE (2024-05-01)



NOTES:
1. REINFORCING STEEL TO BE ASTM 615 GRADE 60 STEEL

OUTDOOR DISPLAY MENU BOARD FOUNDATION

NOT TO SCALE (2024-05-01)



SIDE-BY-SIDE STANDARDS & DESIGN TOLERANCES:

1) DISTANCE FROM CENTER OF OPEN PRESENT WINDOW TO CENTER OF OPEN CASH WINDOW STANDARD IN 42'-45' AND IS SPECIFIC TO EACH BUILDING CONFIGURATION. ACCEPTABLE TOLERANCE IS 40' MIN ON REMODELS ONLY.

2) DISTANCE FROM CENTER OF OPEN CASH WINDOW TO CENTER OF PRIMARY LANE DT CANOPY/SPEAKER IS 100' OPTIMUM, 80' OR 60' MIN. ACCEPTABLE TOLERANCE IS PLUS OR MINUS 5' FOR 100' OR 80' QUEUES.

3) THE CENTER OF THE DIGITAL MENU BOARD FOUNDATION IS TO BE 5'-9" (5'-6" MIN. AND 6'-0" MAX.) FROM THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION. IT SHOULD BE AT AN ANGLE OF APPROXIMATELY 25° TO 35° (35° PREFERRED) FROM A CAR POSITIONED AT THE DT CANOPY/SPEAKER AND WITH 100% VISIBILITY.

4) THE CRITICAL HOLD DISTANCE FROM CENTER OF THE PRIMARY LANE DT CANOPY/SPEAKER TO THE TIP OF THE CURBED ISLAND IS 15'-0".

5) THE CRITICAL HOLD DISTANCE FROM TIP OF ISLAND TO CENTER OF SECONDARY LANE DT CANOPY/SPEAKER IS 14'-0".

6) THE CENTER OF THE SECONDARY LANE DIGITAL MENU BOARD FOUNDATION SHALL BE 5'-9" (5'-6" MIN. AND 6'-0" MAX.) FROM THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION WITH THE END CAP OF THE SECONDARY MENU BOARD NOT BE LESS THAN 12" FROM FACE OF CURB. IT SHOULD BE AT AN ANGLE OF APPROXIMATELY 25° FROM A VEHICLE POSITIONED AT THE DT CANOPY/SPEAKER AND WITH 100% VISIBILITY.

7) THE ISLAND WIDTH IS 6'-0" STANDARD FROM FACE OF CURB TO CURB.

8) DIGITAL PRE-BROWSE BOARD IN THE PRIMARY LANE MUST BE 18'-24' FROM FACE OF CURB. THE DISTANCE BETWEEN THE PRIMARY DT CANOPY/SPEAKER AND PRE-BROWSE BOARD IS TO BE 15' AS MEASURED ALONG THE FACE OF CURB. THIS IS MEASURED FROM THE CENTER OF THE PRE-BROWSE BOARD FOUNDATION TO THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION. THE ANGLE (APPROXIMATELY 50°) OF THE PRE-BROWSE BOARD SHOULD MAXIMIZE VISIBILITY FROM THE SECOND CAR TO DT CANOPY/SPEAKER.

9) DIGITAL PRE-BROWSE BOARD IN THE SECONDARY LANE MUST BE MIN. 12" FROM FACE OF CURB. THE PRE-BROWSE BOARD IS TO BE 15' AS MEASURED ALONG THE FACE OF THE CURB. THIS IS MEASURED FROM THE POINT PERPENDICULAR TO THE CENTER OF THE PRE-BROWSE BOARD FOUNDATION TO THE POINT PERPENDICULAR TO THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION. THE ANGLE OF THE PRE-BROWSE BOARD SHOULD MAXIMIZE VISIBILITY TO THE SECOND CAR FROM THE DT CANOPY/SPEAKER (PREFERRED 35°)

10) A GATEWAY IS REQUIRED AND PLACED AT THE DRIVE-THRU LANE ENTRANCE.

11) EVERY SBS SHOULD HAVE BOTH DT CANOPY/SPEAKER IN BOTH LANES.

THE REGIONAL CONSTRUCTION MANAGER IS TO REVIEW AND APPROVE ALL DRIVE-THRU LAYOUTS. A DRIVE-THRU IS FINAL, AND CONSIDERED "RED", ONCE APPROVED. NO CHANGES ARE TO BE MADE AFTER THIS POINT.

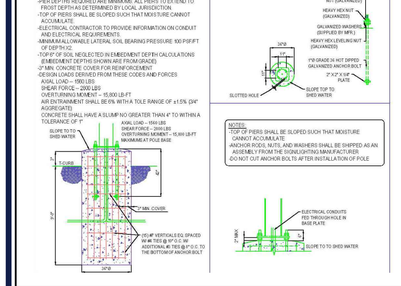
NOTE: THE PLACEMENT OF THE DT CANOPY/SPEAKER SHOULD BE SUCH THAT IT PREVENTS, OR MINIMIZES, BLOCKING THE CUSTOMER'S VIEW OF THE MENU BOARD WHILE ORDERING.

NOTE: LINEAR DIMENSIONS ARE MEASURED PERPENDICULAR TO THE BUILDING FACES SHOWN UNLESS OTHERWISE NOTED.

NOTE: ALL SIGN BOLLARDS ARE TO BE 18"-24" FROM FACE OF CURB, THIS IS MEASURED FROM THE CLOSEST POINT ON THE SIGN.

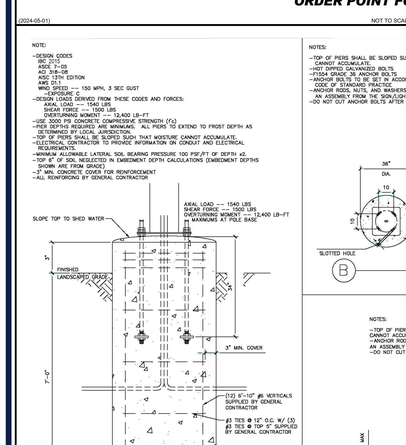
DRIVE-THRU

SCALE: 1"=10'



GATEWAY CLEARANCE FOUNDATION

(2024-05-01) NOT TO SCALE



ORDER POINT FOUNDATION

(2024-05-01) NOT TO SCALE

GATEWAY CLEARANCE FOUNDATION

(2024-05-01) NOT TO SCALE

GATEWAY CLEARANCE FOUNDATION

(2024-05-01) NOT TO SCALE

GATEWAY CLEARANCE FOUNDATION

(2024-05-01) NOT TO SCALE

P:\2024\MAA240177.000\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVIL-CNDS-MAA240177.00-5A-----LAYOUT: C-903 DETL

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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ALWAYS CALL 811
It's fast. It's free. It's the law.

ISSUED FOR ENTITLEMENTS

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PROJECT No.: MAA240177.00-5A
DRAWN BY: JDG
CHECKED BY: CSE
DATE: 12/17/2024
CAD I.D.: P-CIVIL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J. KUCICH — KUCICH — No. 15476 — PROFESSIONAL ENGINEER — MASSACHUSETTS, CONNECTICUT, NEW HAMPSHIRE, NEW YORK, CONNECTICUT, RHODE ISLAND, MAINE LICENSE NO. 12563

SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER:

C-903

REVISION 5 - 07/17/2025

ADS
Advanced Drainage Systems, Inc.

SiteAssist®
FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

SC-800 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-800.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (+1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%, THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-800 SYSTEM

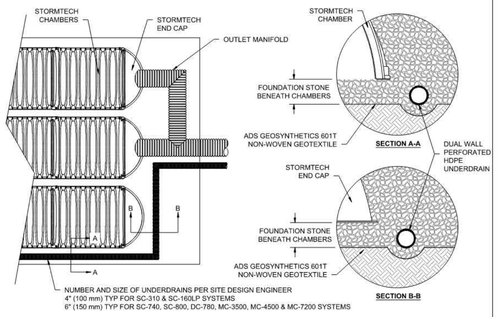
1. STORMTECH SC-800 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

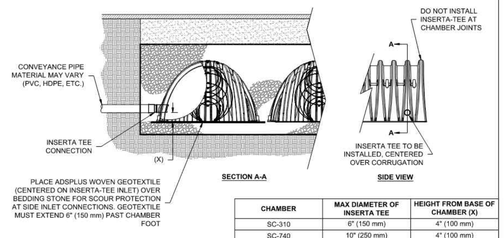
1. STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-800 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



5 UNDERDRAIN DETAIL

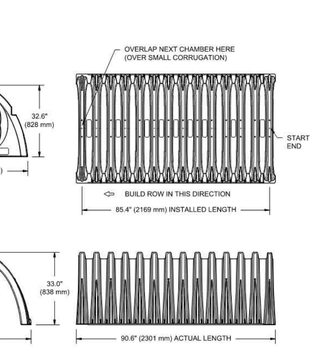


NOTES:
- PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.
- CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INLET MUST BE RAISED AS NOT ALL INVERTS ARE POSSIBLE.

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
SC-800	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
MC-7200	12" (300 mm)	8" (200 mm)

INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON

6 INSERTA-TEE SIDE INLET DETAIL



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 33.0" X 85.4"	(1295 mm X 838 mm X 2169 mm)
CHAMBER STORAGE	50.6 CUBIC FEET	(1.43 m³)
MINIMUM INSTALLED STORAGE*	81.0 CUBIC FEET	(2.29 m³)
WEIGHT	81.8 lbs.	(37.1 kg)

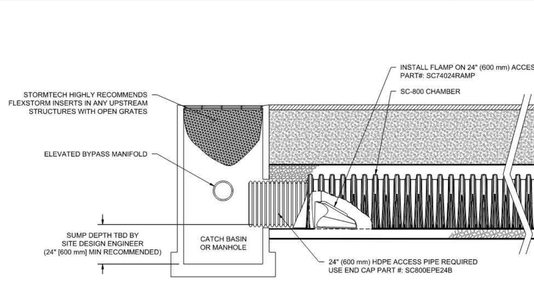
*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

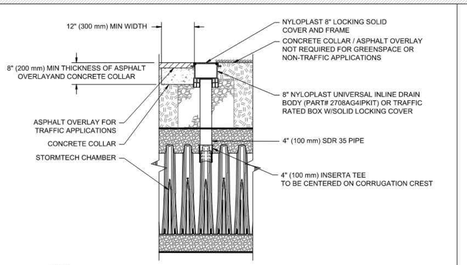
PART #	STUB	B	C
SC800EPE06T / SC800EPE06TPC	6" (150 mm)	21.4" (544 mm)	---
SC800EPE06B / SC800EPE06BPC		---	0.9" (23 mm)
SC800EPE08T / SC800EPE08TPC	8" (200 mm)	19.2" (488 mm)	---
SC800EPE08B / SC800EPE08BPC		---	1.0" (25 mm)
SC800EPE10T / SC800EPE10TPC	10" (250 mm)	17.0" (432 mm)	---
SC800EPE10B / SC800EPE10BPC		---	1.2" (30 mm)
SC800EPE12T / SC800EPE12TPC	12" (300 mm)	14.4" (366 mm)	---
SC800EPE12B / SC800EPE12BPC		---	1.6" (41 mm)
SC800EPE15T / SC800EPE15TPC	15" (375 mm)	11.3" (287 mm)	---
SC800EPE15B / SC800EPE15BPC		---	1.7" (43 mm)
SC800EPE18T / SC800EPE18TPC	18" (450 mm)	8.0" (203 mm)	---
SC800EPE18B / SC800EPE18BPC		---	2.0" (51 mm)
SC800EPE24B	24" (600 mm)	---	2.3" (58 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

2 SC-800 TECHNICAL SPECIFICATIONS



3 SC-800 ISOLATOR ROW PLUS DETAIL



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4 4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

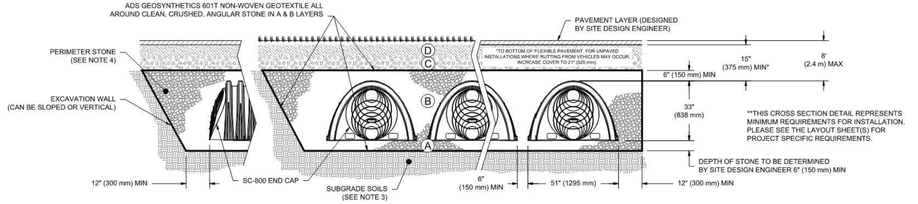
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 15" (375 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 SC-800 CROSS SECTION DETAIL

STORMTECH SC-800 SUBSURFACE DETENTION/INFILTRATION BASIN DETAILS

NOT TO SCALE

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON REFERENCED STANDARDS. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. UNLESS THE PLANS ARE SIGNED AND SEALED BY THE SITE DESIGN ENGINEER, THE SITE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION AND SEALING THE DOCUMENT. IT IS THE SITE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEET OR EXCEED THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR USE ON THIS PROJECT.

DRAWN: JLM | DATE: 01/10/24
REVIEWED: JLM | PROJECT NO:
REV: | NOT TO SCALE

SC-800
STANDARD DETAILS

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

Advanced Drainage Systems, Inc.

SHEET 1

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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PROJECT No.:	MAA240177.00-5A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVIL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

JOHN D. KUCICH
No. 15476
PROFESSIONAL ENGINEER
MASSACHUSETTS NEW HAMPSHIRE CONNECTICUT RHODE ISLAND MAINE

SHEET TITLE:

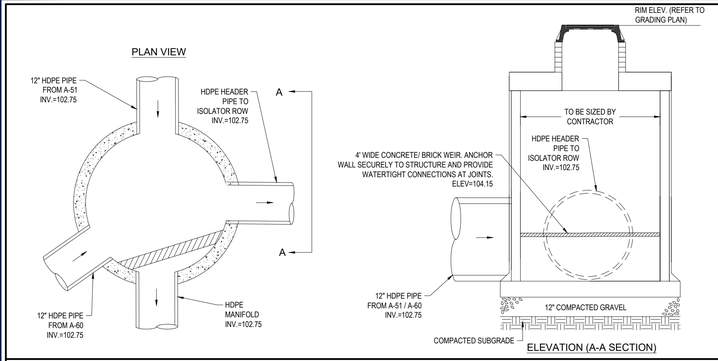
CONSTRUCTION DETAILS

SHEET NUMBER:

C-904

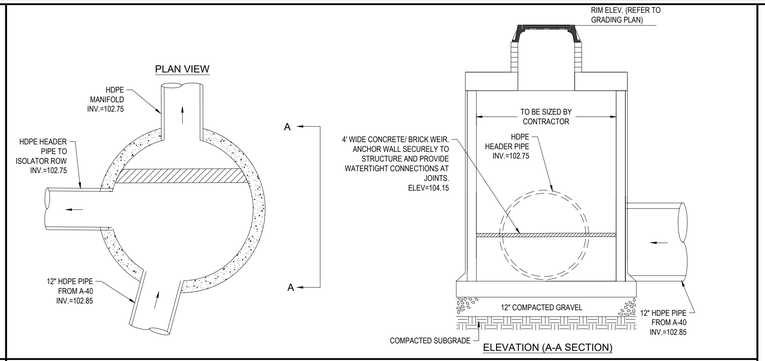
REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-5A.----=:\LAYOUT: C-904 DETL
JG



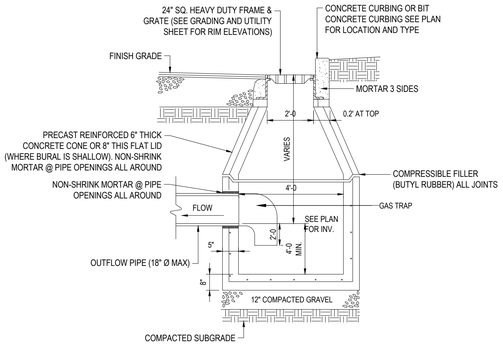
INLET CONTROL STRUCTURE (A-50)

(NE-U010103 - 09/2023) MOD NOT TO SCALE



INLET CONTROL STRUCTURE (A-30)

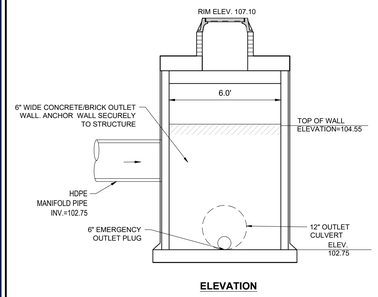
(NE-U010103 - 09/2023) MOD NOT TO SCALE



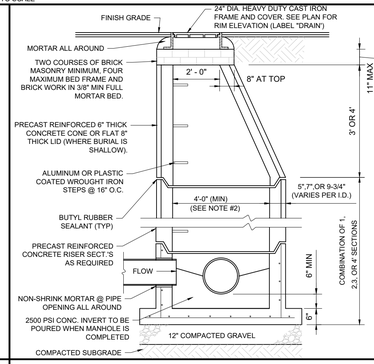
NOTES:
1. ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.
2. CONTRACTOR SHALL SIZE MANHOLE AS NECESSARY TO ACCOMMODATE THE PIPE SIZING AND ORIENTATION USING THE GEOMETRY SHOWN ON THE GRADING AND DRAINAGE PLANS.
3. CONCRETE SHALL BE 4,000 PSI AFTER 28 DAYS
4. REINFORCED STEEL CONFORMS TO ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM.
5. MANHOLE DESIGN SPECS CONFORM TO ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS"

PRECAST CONCRETE DEEP SUMP CATCH BASIN

(NE-U010201 - 07/2024) - MOD NOT TO SCALE



ELEVATION



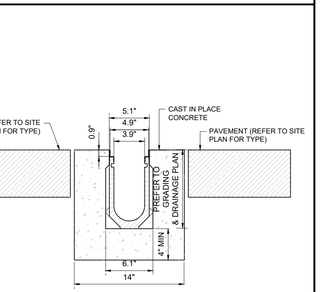
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OUTLET CONTROL STRUCTURE (A-20)

(NE-U010103 - 09/2023) MOD NOT TO SCALE

PRECAST CONCRETE STORM DRAIN MANHOLE

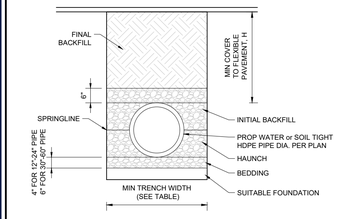
NOT TO SCALE (NE-U010101 - 05/2024)



INSTALLATION IN ASPHALT/CONCRETE

ACO TRENCH DRAIN SYSTEM

NOT TO SCALE (NE-U010208 - 09/2023)

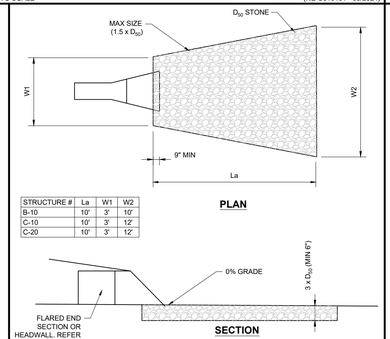


RECOMMENDED MINIMUM TRENCH WIDTH	
PIPE DIA.	MIN TRENCH WIDTH
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
48"	80"
60"	96"

HDPE STORM PIPE TRENCH

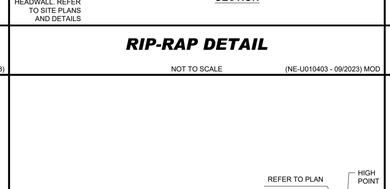
NOT TO SCALE (NE-U019812 - 09/2023)

NOTES:
1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER ,AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.



STRUCTURE #	La	W1	W2
B-10	10'	3'	10'
C-10	10'	3'	12'
C-20	10'	3'	12'

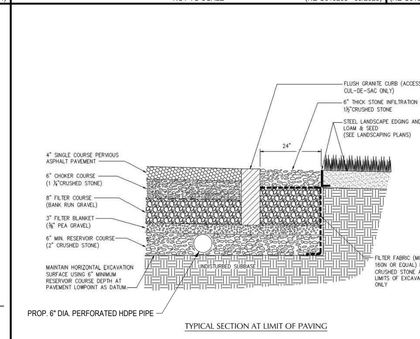
PLAN



SECTION

RIP-RAP DETAIL

NOT TO SCALE (NE-U010403 - 09/2023) MOD



TYPICAL SECTION AT LIMIT OF PAVING

POROUS ASPHALT PAVEMENT DETAIL & SPECIFICATIONS

NOT TO SCALE

Gradations and compaction of choker, filter, and reservoir course materials.

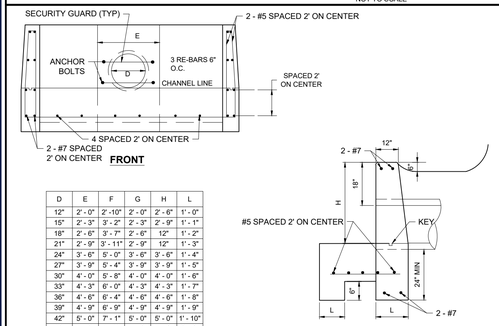
US Standard Sieve Designation	Choker Course (AASHTO No. 57)	Filter Course (AASHTO No. 8 or NJDOT #8)	Reservoir Course (AASHTO No. 3)	Reservoir Course (AASHTO No. 2)
4	100	100	-	-
3	-	-	90-100	-
2	-	-	35-70	90-100
1 ½	90-100	-	0-15	35-70
1	-	-	-	0-15
¾	20-55	90-100	0-5	-
½	-	-	-	0-5
⅜	0-15	40-70	-	-
#4	0-5	-	-	-
#8	-	0-10	-	-
#200	0-2	0-2	0-2	0-2
% Compaction (ASTM D698 / AASHTO T99	95	95	95	95

* Alternate gradation (e.g. AASHTO No. 5) may be accepted upon Engineer's approval.
** Preferably less than 5% fines

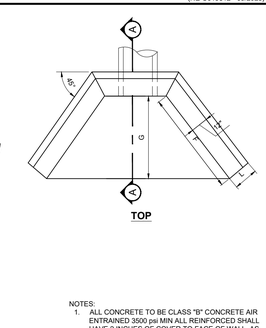
Porous Asphalt Mix Design Criteria	
Sieve Size (inch/mm)	Percent Passing (%)
½ (12.5)	100
⅜ (9.5)	85-100
No.4 (4.75)	50-70
No.8 (2.36)	25-35
No.16 (1.18)	5-10
No.200 (0.075) (D#8)	2-4
Binder Content (AASHTO T164)	6 - 6.5%
Fiber Content by Total Mixture Mass	0.3% by Cellulose or 0.4% pulverized
Stabilizing Additive Content	0.3% by TRU
Moisture Susceptibility (ASTM D4867/AASHTO T283)	80-92.0%
Thickness (ASTM D6926)*	3.5 - 11.5 %
Retained Tensile Strength (AASHTO T283)*	85 - 110 %
Cantabro abrasion test on imaged samples (ASTM D7064/64)	10 - 20%
Compliance with Section 7.3, Top and Complete Construction Requirements	2 - 3.5%

* Fiber content is a mixed fibers design and may vary from vendor to vendor datasheets.
**If the TSR (retained tensile strength) values fall below 80% when tested per NJDOT-B 131 (with a single freeze thaw cycle rather than 5), then in Step 4, the contractor shall employ an antistrip additive, such as hydrated lime (ASTM C977) on a fatty amine, to raise the TSR value above 80%.

SEE PROJECT SPECIFICATIONS FOR COMPLETE CONSTRUCTION METHODS AND MATERIAL REQUIREMENTS.



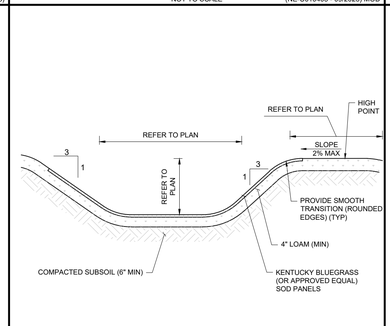
D	E	F	G	H	L
12"	2' - 0"	2' -10"	2' - 0"	2' - 6"	1' - 0"
15"	2' - 3"	3' - 2"	2' - 3"	2' - 9"	1' - 1"
18"	2' - 6"	3' - 7"	2' - 6"	12"	1' - 2"
21"	2' - 9"	3' - 11"	2' - 9"	12"	1' - 3"
24"	3' - 0"	5' - 0"	3' - 6"	3' - 6"	1' - 4"
27"	3' - 9"	5' - 4"	3' - 9"	3' - 9"	1' - 5"
30"	4' - 0"	5' - 8"	4' - 0"	4' - 0"	1' - 6"
33"	4' - 3"	6' - 0"	4' - 3"	4' - 3"	1' - 7"
36"	4' - 6"	6' - 4"	4' - 6"	4' - 6"	1' - 8"
39"	4' - 9"	6' - 9"	4' - 9"	4' - 9"	1' - 9"
42"	5' - 0"	7' - 1"	5' - 0"	5' - 0"	1' - 10"
48"	5' - 6"	7' - 9"	5' - 6"	5' - 6"	2' - 0"



NOTES:
1. ALL CONCRETE TO BE CLASS "B" CONCRETE AIR ENTRAINED 3500 psi MIN ALL REINFORCED SHALL HAVE 2 INCHES OF COVER TO FACE OF WALL. AS DIRECTED BY THE TOWN ENGINEER

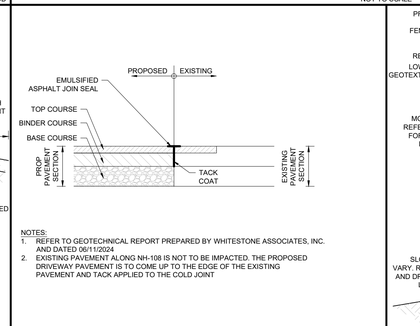
HEADWALL

NOT TO SCALE (NE-U010404 - 09/2023)



SOD SWALE SECTION

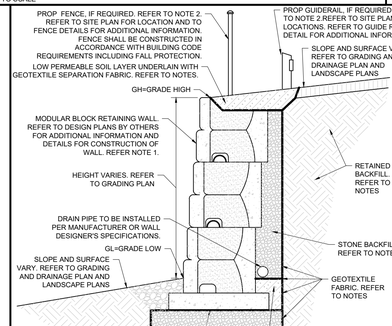
NOT TO SCALE (NE-G020201 - 10/2024)



NOTES:
1. REFER TO GEOTECHNICAL REPORT PREPARED BY WHITESTONE ASSOCIATES, INC. AND DATED 06/11/2024
2. EXISTING PAVEMENT ALONG NH-108 IS NOT TO BE IMPACTED. THE PROPOSED DRIVEWAY PAVEMENT IS TO COME UP TO THE EDGE OF THE EXISTING PAVEMENT AND TACK APPLIED TO THE COLD JOINT

BITUMINOUS CONCRETE PAVEMENT TIE IN (DURHAM ROAD / NH-108)

(NE-S010501 - 08/2024) NOT TO SCALE



NOTES:
1. THIS TYPICAL DETAIL IS NOT FOR CONSTRUCTION AND IS PRELIMINARY AND CONCEPTUAL IN NATURE. THIS DETAIL IS PROVIDED FOR GRAPHICAL REFERENCE PURPOSES ONLY. DESIGN OF THE PROPOSED RETAINING WALL(S) SHALL BE PREPARED BY THE APPROPRIATE PROFESSIONAL (E.G. STRUCTURAL ENGINEER) LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE PROFESSIONAL SHALL BE FAMILIAR WITH THE ACTUAL SITE CONDITIONS AND MATERIALS AS WELL AS APPLICABLE, LOCAL, STATE AND FEDERAL REGULATIONS.
2. RETAINING WALL & ANY ASSOCIATED REINFORCEMENT SHALL BE DESIGNED ACCOUNTING FOR SOIL TYPES, WATER TABLE ELEVATION, EXISTING & PROPOSED SURROUNDING IMPROVEMENTS/CONDITIONS (INCLUDING BUT NOT LIMITED TO SLOPES, DRIVE AISLES, ROADS, FENCING (INCLUDING WIND LOAD), GUIDERAILS (INCLUDING COLISION LOADING), UTILITIES, DRAINAGE FACILITIES, STRUCTURES, FOUNDATIONS), LIVE LOADS AND OTHER SITE AMENITIES THAT COULD HAVE AN INFLUENCE OR IMPACT ON THE RETAINING WALL(S) CONSTRUCTABILITY AND/OR LONGEVITY SHALL BE CONSIDERED AND INCORPORATED INTO THE RETAINING WALL DESIGN AS WELL AS THE GLOBAL STABILITY ANALYSIS.
3. RETAINING WALL DESIGNER SHALL ACCOUNT FOR MULTIPLE STORM STRUCTURES BEHIND WALL INCLUDING PARALLEL STORM PIPE THAT MAY INTERFERE WITH THE DESIGN OF THE WALL AND ANY ASSOCIATED REINFORCEMENT.
4. SEE GRADING AND DRAINAGE PLAN FOR PROPOSED ELEVATIONS AND SLOPES ASSOCIATED WITH SAME.
5. REFER TO GENERAL GRADING NOTES ON SHEET C-102 FOR ADDITIONAL NOTES REGARDING DESIGN AND CONSTRUCTION OF RETAINING WALLS.
6. DRAIN PIPE SHALL DISCHARGE TO CRUSHED STONE PAD AT GRADE (I.E. DAYLIGHT) OR CONNECT TO PROP DRAINAGE SYSTEM IF UNABLE TO DAYLIGHT. A RODENT SCREEN SHALL BE PROVIDED AT PIPE END WHERE PIPE DAYLIGHTS.
7. THIS DETAIL IS NOT APPLICABLE FOR WALLS UTILIZED TO RETAIN WATER.
8. MATERIALS UTILIZED IN CONSTRUCTION OF THE RETAINING WALL SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S AND WALL DESIGNER'S SPECIFICATIONS INCLUDING ANY REQUIRED COMPACTION AND TESTING.
9. WALL DESIGNER SHALL ACCOUNT FOR PROXIMITY OF DRAINAGE SYSTEMS AND ANY ASSOCIATED STORMWATER INFILTRATION INCLUDING PREPARATION OF GLOBAL STABILITY AND MOUNDING ANALYSES.

NON-REINFORCED (GRAVITY) SEGMENTAL BLOCK RETAINING WALL

NOT TO SCALE (NE-S110502 - 02/2024)

BOHLER
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PROGRAM MANAGEMENT
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WATER RESOURCE ENGINEERING
PERMITTING SERVICES
TRANSPORTATION SERVICES

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1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
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5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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ISSUED FOR ENTITLEMENTS

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PROJECT No.: MAA240177.00-5A
DRAWN BY: JDG
CHECKED BY: CSE
DATE: 12/17/2024
CAD I.D.: P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

JOHN D. KUCICH — NEW HAMPSHIRE — PROFESSIONAL ENGINEER — No. 15476 — CERTIFICATE OF AUTHORIZATION No. 9616 — MAINE LICENSE No. 12553

SHEET TITLE:

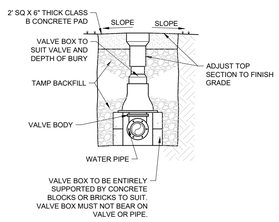
CONSTRUCTION DETAILS

SHEET NUMBER:

C-905

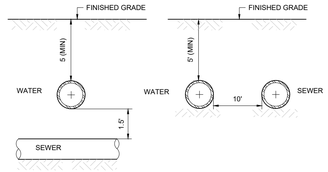
REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-5A-----LAYOUT: C-905 DETL



GATE VALVE

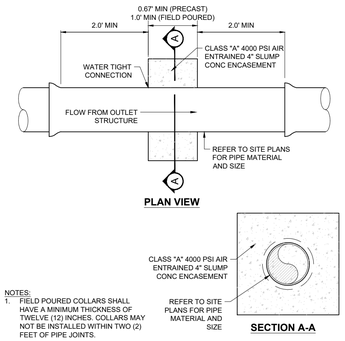
NOT TO SCALE (NE-U030201 - 09/2023)



NOTES:
1. 10' HORIZONTAL SEPARATION AND 1.5' VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN WATER AND SEWER AS DEPICTED IN THIS DETAIL OR SEWER SHALL BE ENCASED IN CONCRETE (SEE CONCRETE ENCASEMENT DETAIL) IN SECTIONS WHERE SEPARATIONS SHALL NOT BE ACHIEVED.

WATER AND SEWER UTILITY CROSSING

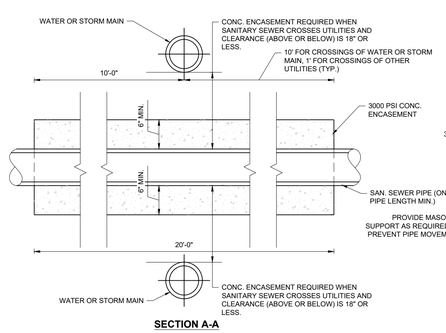
NOT TO SCALE (NE-U050101 - 09/2023)



NOTES:
1. FIELD POURED COLLARS SHALL HAVE A MINIMUM THICKNESS OF TWELVE (12) INCHES. COLLARS MAY NOT BE INSTALLED WITHIN TWO (2) FEET OF PIPE JOINTS.

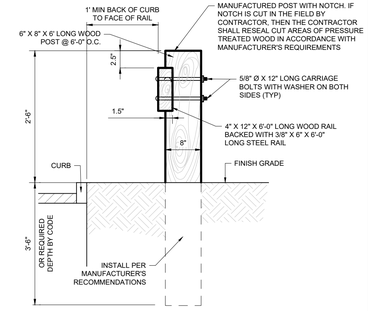
ANTI-SEEP COLLAR

NOT TO SCALE (NE-U019813 - 09/2023)



SANITARY CONCRETE ENCASEMENT

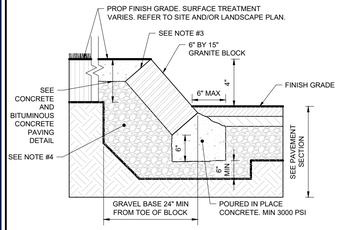
NOT TO SCALE (BE-U029901 - 04/2024)



NOTES:
1. ALL CARRIAGE BOLTS, NUTS & WASHERS TO BE GALVANIZED
2. WOOD SHALL BE SOUTHERN YELLOW PINE UNLESS OTHERWISE SPECIFIED.
3. MATERIAL SHALL BE CONSISTENT BETWEEN POST, RAIL, AND OFFSET BLOCK (IF APPLICABLE).
4. WOOD SHALL BE TREATED WITH CHROMATED COPPER ARSENATE TYPE C (CCA-C) WITH A RETENTION RANGE OF 0.4-0.6 PCF IN ACCORDANCE WITH AWPA P23.
5. WOOD GRADE SHALL HAVE A MINIMUM EXTREME FIBER BENDING OF 1,000 PSI. GRADE SHALL BE IN ACCORDANCE WITH AASHTO M168.

WOOD GUIDERAIL

NOT TO SCALE (NE-S090101 - 04/2025)



NOTES:
1. CURVED GRANITE CURB SHALL CONFORM TO THE STATE DOT SPECIFICATIONS.
2. PAVEMENT SECTION DEPTHS, MATERIAL AND SPECIFICATIONS PER PAVEMENT SECTION DETAIL.
3. PROVIDE 1/2 INCH EXPANSION JOINT USING PREFORMED EXPANSION JOINT FILLER WHERE ABUTTING CONCRETE SIDEWALK.
4. STONE MATERIAL SHALL BE CONSISTENT WITH THE CRUSHED STONE BASE COURSE REQUIRED FOR THE PAVEMENT SECTION, OR APPROVED EQUIVALENT.

MOUNTABLE CONCRETE APRON WITH SLOPED GRANITE CURBING

NOT TO SCALE (NE-S020302 - 04/2025) - MOD

TO SOUTH 108 ONLY

"TO SOUTH 108 ONLY" SIGN

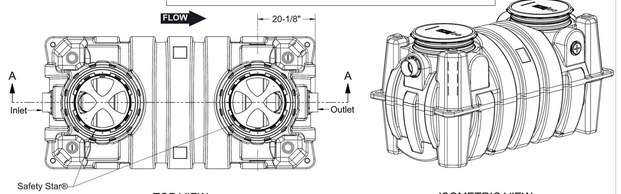
NOT TO SCALE

SPECIFICATIONS
Notes:
1. 6" plain end inlet/outlet.
2. Dual 4" pumpout port connections
3. Unit weight - w/ cast iron covers: 528 lbs. (For wet weight add 4,254 lbs.)
4. Maximum operating temperature: 150º F continuous
5. Capacities - Liquid: 510 gal.
   Grease: 3,048 lbs. (417 gal.) @100 GPM
   Solids: 128 gal.
6. Built-in flow control. For series installations, only install flow control on the first unit in the series if necessary.
7. For gravity drainage applications only.
8. Do not use for pressure applications.
9. Cover placement allows full access to tank for proper maintenance.
10. Vent not required unless per local code.
11. Engineered inlet and outlet diffusers with inspection ports are removable to inspect / clean piping.
12. Integral air relief / Anti-siphon / Sampling access.
13. Adjustable cover adapters provide up to 4" of additional height.
14. Designed for below-grade, above-grade, indoor or outdoor installations.
15. Safety Star®, access restrictor built into each cover adapter, prevents accidental entry to tanks (450 lb rating).

ENGINEER SPECIFICATION GUIDE
Schier Great Basin™ grease interceptor model # GB-500 shall be lifetime guaranteed and made in USA of seamless, rotationally-molded polyethylene with minimum 7/16" uniform wall thickness. Flow control cartridge shall be PVC. Interceptor shall be furnished for above or below-grade installation with adjustable cover adapter, Safety Star® access restrictor built into each cover adapter. Interceptor shall be certified to ASME A112.14.3 (Type C) and CSA B481.1. Interceptor flow rate shall be 100 GPM.
Interceptor grease capacity shall be 3,048 lbs. Cover shall provide water/gas-tight seal and have minimum 16,000 lbs. load capacity.

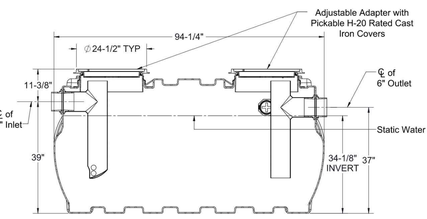
CERTIFIED PERFORMANCE
Great Basin™ hydromechanical grease interceptors are third party performance-tested and listed by IAPMO to ASME #A112.14.3 and CSA B481.1 grease interceptor standards and greatly exceed requirements for grease separation and storage. They are compliant to the Uniform Plumbing Code and the International Plumbing Code.

GC TO REFER TO MANUFACTURER INSTALLATION MANUAL

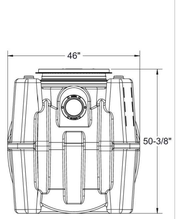


TOP VIEW
(COVERS REMOVED FOR CLARITY)

ISOMETRIC VIEW



SECTION A-A



END VIEW

SPECIFICATION SHEET

MODEL NUMBER:	PART NUMBER: 4075-003-01			
GB-500	DESCRIPTION: GREASE INTERCEPTOR 100 GPM, 6" PLAIN END INLET/OUTLET W/ PUMPOUT PORT CONNECTIONS, H-20 RATED PICKABLE CAST IRON COVERS			
	DWG BY: C. BUSENITZ	DATE: 4/14/2022	REV: -	ECO: -

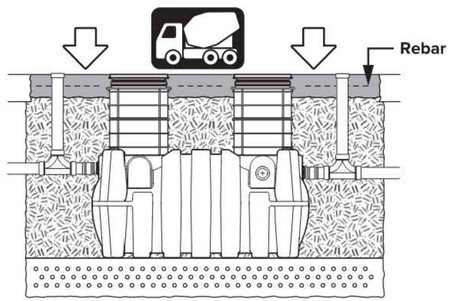
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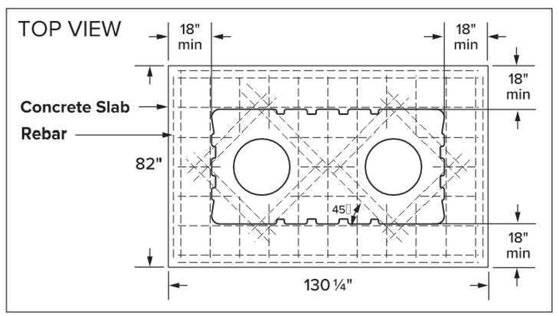
SCHIER
6455 Woodland Dr
Shawnee, KS 66218
Tel: 913-951-3300
Fax: 913-951-3399
schierproducts.com

SCHIER GB-500 DETAIL

NOT TO SCALE

GC TO REFER TO MANUFACTURER INSTALLATION MANUAL





Vehicular Traffic Areas:
Minimum 8" thick concrete slab with rebar required. Thickness of concrete around covers to be determined by specifying engineer. If traffic loading is required the concrete slab dimensions shown are for guideline purposes only. Concrete to be 28 day compressive strength to 4,000 PSI. Use No. 4 rebar (ø 1/2") grade 60 steel per ASTM A615: connected with tie wire. Rebar to be 2-1/2" from edge of concrete and spaced in a 12" grid with 4" spacing around access openings.

Pedestrian Traffic or Greenspace Areas:
Minimum 4" thick concrete slab with rebar required.

SCHIER CONCRETE SLAB DETAIL

NOT TO SCALE

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
INDUSTRIAL ENGINEERING
PERMITTING SERVICES
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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PROJECT No.:	MAA240177.00-5A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J. KUCICH
JOHN DAVID KUCICH
No. 15476
PROFESSIONAL ENGINEER
NEW HAMPSHIRE
COMMONWEALTH OF MASSACHUSETTS
RHODE ISLAND
MAINE

SHEET TITLE:

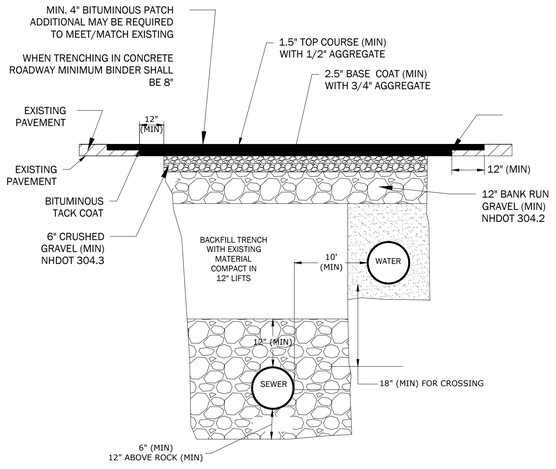
CONSTRUCTION DETAILS

SHEET NUMBER:

C-906

REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-CNDS-MAA240177.00-5A.----\LAYOUT: C-906 DETL
JG

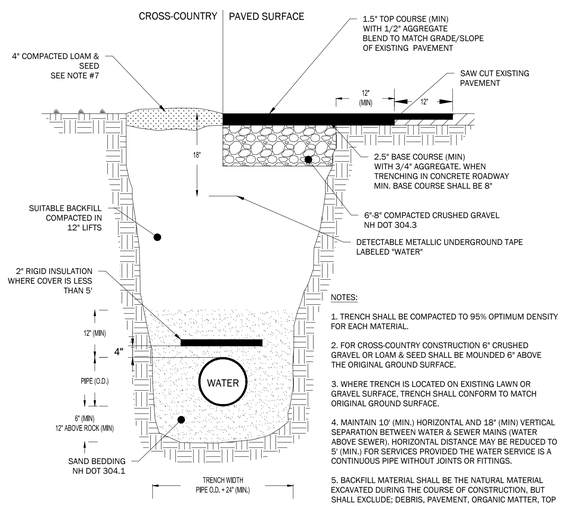


NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.

2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES

3. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

CITY OF DOVER
TYPICAL TRENCH DETAIL
NOT TO SCALE



NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.

2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.

3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.

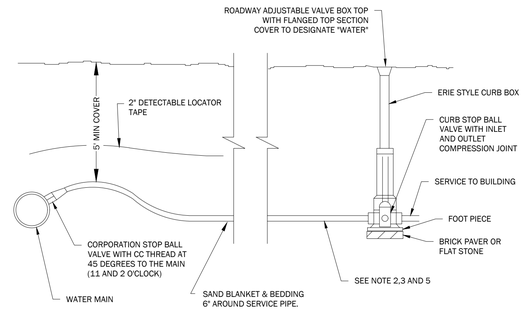
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT, AND ROCKS OVER 6" IN LARGEST DIMENSION

6. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.

7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

CITY OF DOVER
D-4 WATER TRENCH
NOT TO SCALE



NOTES:
1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP, INCLUDING TEE AND OTHER CONNECTIONS.

2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.

3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE (BLUE OR BLACK) CTS SDR 9 PLASTIC POLYETHYLENE RATED FOR 250 psi.

4. CAM-LOCK REQUIRED FOR CTS OR IPS, MJ ADAPTER REQUIRED FOR HDPE

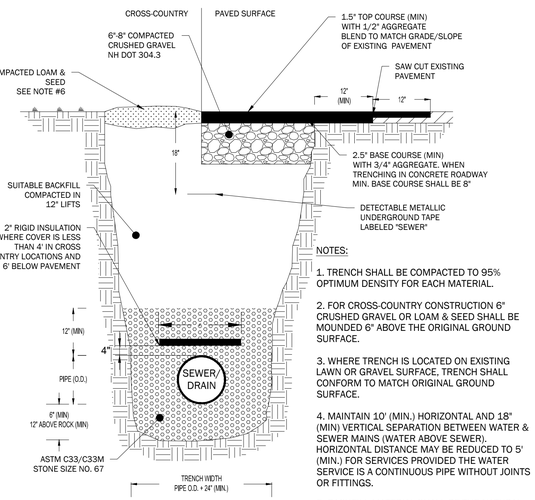
5. ALL SERVICES SHALL BE 1". PROVIDE 1" TO 3/4" REDUCER COUPLING WHERE EXISTING SERVICES ARE 3/4", SUBSIDIARY.

6. APPROVED WATER SERVICE MATERIALS INCLUDE:
   ¾"- COPPER, CTS
   1"- COPPER, CTS
   2"- CTS, HDPE, IPS

7. ALL SADDLES USED AS SPECIFIED SHALL HAVE DOUBLE STAINLESS STEEL STRAPS.

8. TAPS TO BE MADE AT APPROX. 2:00 AND 10:00.

CITY OF DOVER
D-13 WATER SERVICE CONNECTION
NOT TO SCALE



NOTES:
1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.

2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.

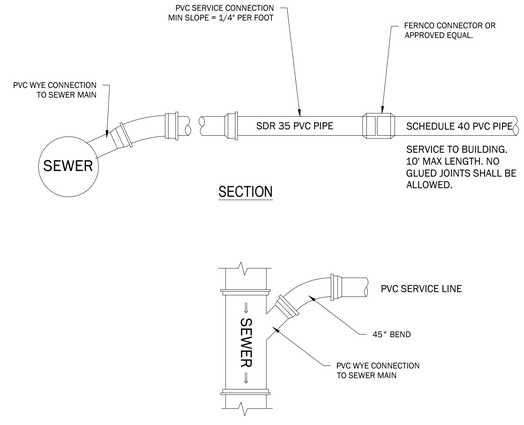
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.

4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.

5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT AND ROCKS OVER 6" IN LARGEST DIMENSION

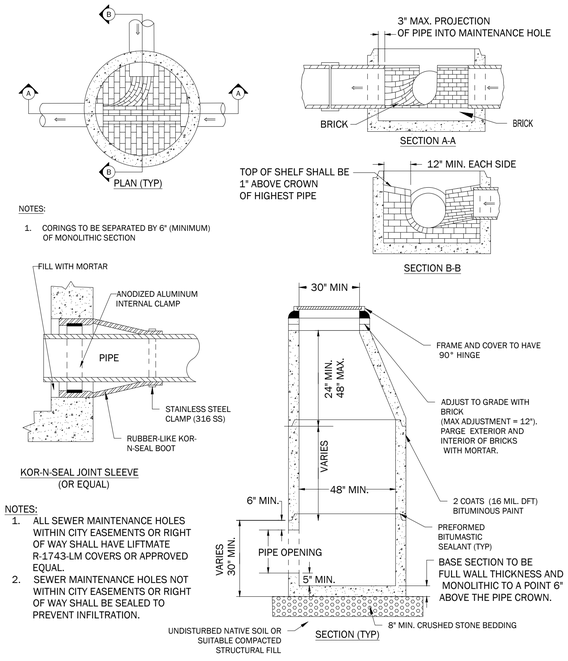
6. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

CITY OF DOVER
D-3 SEWER TRENCH
NOT TO SCALE



NOTES:
1. TRENCHING AND BEDDING REQUIREMENTS PER CITY SEWER TRENCH DETAIL (D-3).
2. SERVICE LATERAL DIAMETER VARIES PER APPLICATION. REVIEW SIZE WITH CITY ENGINEER PRIOR TO INSTALLATION.
3. SDR 35 SHALL NOT EXTEND INTO THE BUILDING
4. PIPE BEDDING AND BLANKET SHALL MEET THE STANDARD SEWER TRENCH DETAIL D-3.

CITY OF DOVER
D-17 SEWER SERVICE
NOT TO SCALE



NOTES:
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

NOTES:
1. ALL SEWER MAINTENANCE HOLES WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL HAVE LIFTMATE R-1743-LM COVERS OR APPROVED EQUAL.
2. SEWER MAINTENANCE HOLES NOT WITHIN CITY EASEMENTS OR RIGHT OF WAY SHALL BE SEALED TO PREVENT INFILTRATION.

CITY OF DOVER
D-16 SEWER MANHOLE
NOT TO SCALE

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REVISIONS

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2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
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PROJECT No.:	MAA240177.00-5A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-CNDS

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J. KUCICH 07/17/2025
JOHN KUCICH
No. 15476
PROFESSIONAL ENGINEER
MASSACHUSETTS/CONNECTICUT/NEW YORK/NEW HAMPSHIRE/RHODE ISLAND/VERMONT/MAINE LICENSE No. 12553

SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER:

C-907

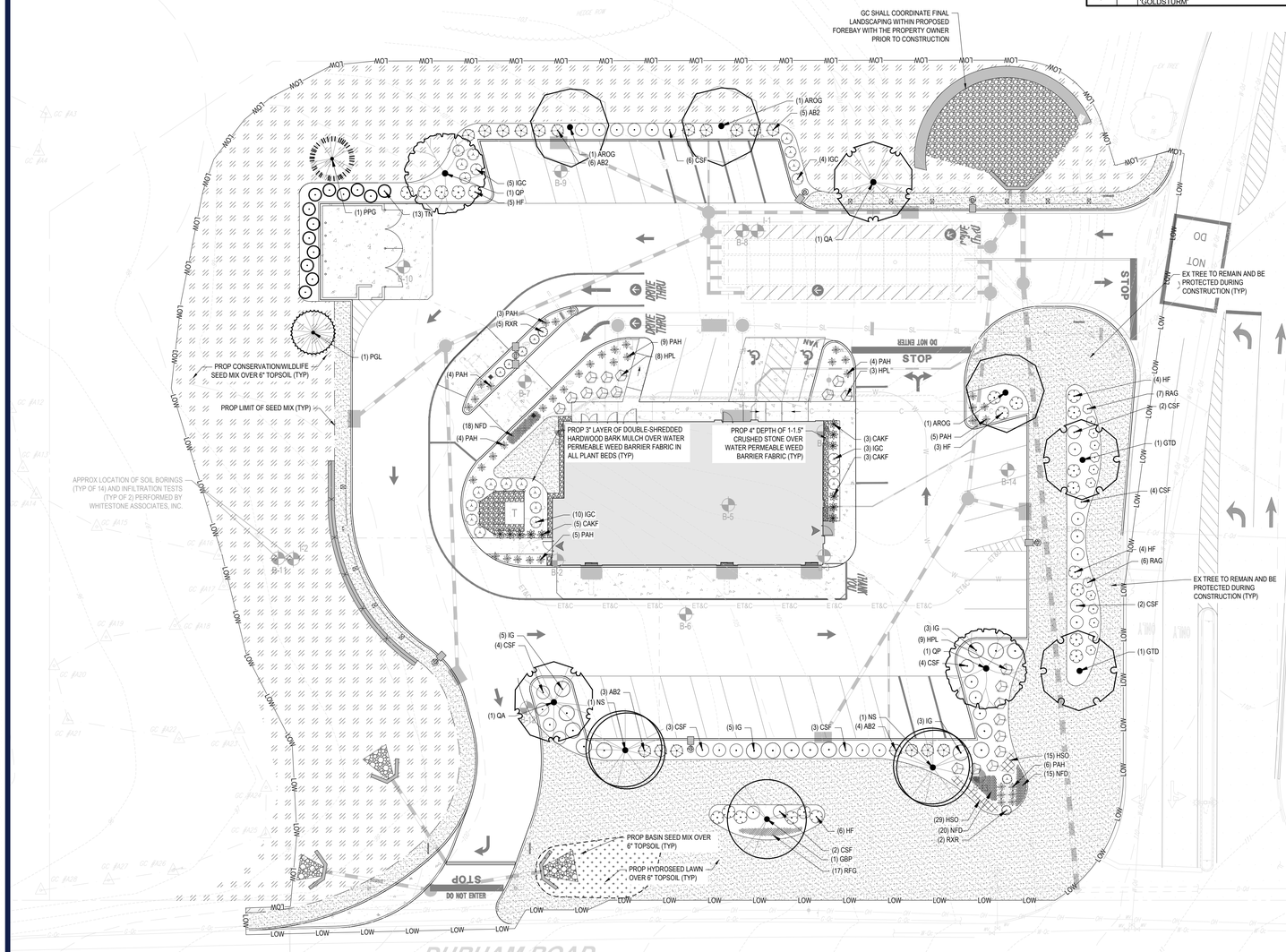
REVISION 5 - 07/17/2025

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NADB3

PLANT SCHEDULE

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CANOPY TREES					
AROG	3	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL. MIN.	B&B
GBP	1	GINKGO BILOBA 'PRINCETON SENTRY'	PRINCETON SENTRY MAIDENHAIR TREE	3" CAL. MIN.	B&B
GTD	2	GLEDITSIA TRIACANTHOS INERMIS 'DRAVES'	STREET KEEPER® HONEY LOCUST	3" CAL. MIN.	B&B
NS	2	NYSSA SYLVATICA	SOUR GUM	3" CAL. MIN.	B&B
QA	2	QUERCUS ALBA	WHITE OAK	3" CAL. MIN.	B&B
QP	2	QUERCUS PALUSTRIS	PIN OAK	3" CAL. MIN.	B&B
EVERGREEN TREES					
PGL	1	PICEA GLAUCA	WHITE SPRUCE	6-8'	B&B
PPG	1	PICEA PUNGENS `GLAUCA`	COLORADO BLUE SPRUCE	6-8'	B&B
TN	13	THUJA OCCIDENTALIS 'NIGRA'	BLACK ARBORVITAE	6-8'	B&B
SHRUBS					
AB2	18	ARONIA MELANOCARPA 'UCONNAM166'	LOW SCAPE HEDGER® BLACK CHOKEBERRY	24-30"	CONTAINER
CSF	30	CORNUS STOLONIFERA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	24-36"	CONTAINER
HF	22	HYPERICUM FRONDOSUM 'SUNBURST'	SUNBURST ST. JOHN'S WORT	24-30"	CONTAINER
HPL	20	HYDRANGEA PANICULATA 'SMHPLQF'	LITTLE QUICK FIRE PANICLE HYDRANGEA	24-30"	CONTAINER
IG	16	ILEX GLABRA	INKBERRY HOLLY	30-36"	CONTAINER
IGC	22	ILEX GLABRA `COMPACTA`	COMPACT INKBERRY	24-30"	CONTAINER
RAG	13	RHUS AROMATICA `GRO-LOW`	GRO-LOW FRAGRANT SUMAC	24-30"	CONTAINER
RXR	7	ROSA X 'RADRAZZ'	KNOCK OUT SHRUB ROSE	24-30"	CONTAINER
GRASSES					
CAKF	11	CALAMAGROSTIS X ACUTIFLORA `KARL FOERSTER`	FEATHER REED GRASS	1 GAL.	CONTAINER
PAH	43	PENNISETUM ALOPECUROIDES `HAMELN`	HAMELN FOUNTAIN GRASS	1 GAL.	CONTAINER
PERENNIALS					
HSO	44	HEMEROCALLIS X 'STELLA DE ORO'	STELLA DE ORO DAYLILY	1 GAL.	CONTAINER
NFD	53	NEPETA X FAASSENII 'DROPMORE'	DROPMORE CATMINT	1 GAL.	CONTAINER
RFG	17	RUDBECKIA FULGIDA SULLIVANTII 'GOLDSTURM'	GOLDSTURM CONEFLOWER	1 GAL.	CONTAINER



CITY OF DOVER, NEW HAMPSHIRE LANDSCAPE REQUIREMENTS

SECTION	REQUIREMENTS	CALCULATIONS/PROPOSED
§153-13	(12) THE LANDSCAPE PLAN, IN SUFFICIENT DETAIL TO INDICATE COMPLIANCE WITH THESE REGULATIONS, SHALL BE PREPARED BY A PROFESSIONAL LANDSCAPE ARCHITECT WHO IS LICENSED BY THE STATE OF NEW HAMPSHIRE. THE LICENSED LANDSCAPE ARCHITECT SHALL SIGN THE PLAN. THE LANDSCAPE PLAN SHALL BE CERTIFIED BY THE LICENSED LANDSCAPE ARCHITECT AND INCLUDE HIS/HER STATE OF NEW HAMPSHIRE LICENSE NUMBER.	PROVIDED
	G. LANDSCAPING 1.GENERAL REQUIREMENTS (a) EXISTING VEGETATION SHALL BE PRESERVED WHEREVER POSSIBLE. EXISTING NATURAL FEATURES OF SPECIAL INTEREST, SUCH AS THOSE HAVING HISTORIC RELEVANCE, SHALL BE DELINEATED AND LOCATED ON THE LANDSCAPING PLAN. A NOTE SHOULD BE ADDED TO THE SITE PLAN INDICATING THAT THE IDENTIFIED FEATURE(S) SHALL BE PROTECTED DURING SITE CLEARING AND CONSTRUCTION THROUGH THE USE OF CONSTRUCTION FENCING OR OTHER ADEQUATE PROTECTIVE BARRIERS. MAXIMUM EFFORT SHOULD BE MADE TO PRESERVE SMALL STANDS OF TREES, RATHER THAN INDIVIDUAL TREES, TO MINIMIZE THE POTENTIAL FOR SERIOUS DAMAGE DUE TO WIND, GRADE CHANGES AND SOIL COMPACTION. NO CONSTRUCTION MATERIALS, EQUIPMENT, VEHICLES, OR TEMPORARY SOIL DEPOSITS SHALL BE LOCATED WITHIN THE DRIPLINE OF EXISTING TREES. BEFORE COMMENCEMENT OF WORK, PROTECTIVE BARRIERS SHALL BE INSTALLED AND MAINTAINED AROUND EACH PLANT AND/OR GROUPS OF PLANTS THAT ARE TO REMAIN ON SITE UNTIL COMPLETION. SNOW FENCE INSTALLED AROUND THE DRIPLINE OF THE TREE CANOPY IS AN EXAMPLE OF AN ACCEPTABLE BARRIER.	EXISTING TREES TO REMAIN AND BE PROTECTED DURING CONSTRUCTION
	G.(1)(c) SHRUBS AND HEDGES SHALL BE A MINIMUM OF 24 INCHES IN HEIGHT WHEN MEASURED IMMEDIATELY AFTER PLANTING. GROUND COVERS AND PERENNIALS MAY BE LESS	PROVIDED
	G.(1)(e) PLANTS, OR A COMBINATION OF PLANTS AND A SOLID VISUAL BARRIER SUCH AS WOODEN FENCING, OR BERMS SHALL BE USED TO SCREEN LOADING, WASTE DISPOSAL, MATERIAL STORAGE AND OTHER AREAS THAT ARE LIKELY TO GENERATE NOISE, DUST, OR OTHER POTENTIALLY DISRUPTIVE CONDITIONS.	PROVIDED
	G.(1)(f) LANDSCAPING SHALL BE USED TO ESTABLISH AND/OR MAINTAIN AN ATTRACTIVE STREETSCAPE ADJACENT TO ROADWAYS. A MINIMUM OF ONE TREE PER 35 LINEAR FEET, NOT MORE THAN SIX FEET APART FOR INDIVIDUAL SHRUBS, AND NOT MORE THAN THREE FEET BETWEEN INDIVIDUAL PERENNIALS AND GROUND COVERS OR PORTION THEREOF SHALL BE PROVIDED.	REQUIRED: 9 TREES PROVIDED: 9 TREES (2 EXISTING, 7 PROPOSED) CALCULATION: 313 LF OF FRONTAGE ALONG DURHAM RD / 35 LF = 8.94 OR 9 TREES
§153-14	G.(1)(f) A MAINTENANCE PLAN SHALL BE PROVIDED WITH THE SITE PLAN APPLICATION. ALL LANDSCAPED AREAS SHALL RECEIVE REGULAR MAINTENANCE AND UPKEEP. SEVERELY INJURED, DISEASED, OR DEAD PLANT MATERIAL SHALL BE REPLACED IN KIND IN PERPETUITY (AVOID REPLACING LANDSCAPE MATERIALS IN THE PERIOD FROM NOVEMBER TO MARCH). BEST PRACTICES TO MINIMIZE ENVIRONMENTAL IMPACTS, SUCH AS THE USE OF LOW-PHOSPHORUS FERTILIZER AND SLOW-RELEASE NITROGEN, SHALL BE INCLUDED IN THE MANAGEMENT PLAN. IF OWNERSHIP OF A SITE IS CONVEYED TO A NEW PROPERTY OWNER, THE NEW OWNER SHALL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING IN ACCORDANCE WITH THE APPROVED FINAL LANDSCAPING PLAN.	MAINTENANCE PLAN TO BE PROVIDED BY OWNER REPRESENTATIVE
	G.(1)(a) 21-50 PARKING SPACES REQUIRE A MINIMUM OF 8% INTERIOR LANDSCAPING	REQUIRED: 746 SF INTERIOR LSA PROVIDED: 1,900 SF INTERIOR LSA CALCULATION: 14,900 SF PARKING AREA x 5% = 745.55 SF LSA
	G.(2)(c) THE MINIMUM SIZE FOR LANDSCAPED ISLANDS SHALL BE 250 SQUARE FEET IN TOTAL AREA AND SHOULD INCLUDE TREES WITH SHRUBS, PERENNIALS, AND GROUND COVERS PLANTED EN MASSE AMONG THE TREES.	PROVIDED
	G.(2)(d) THE INTRODUCTION OF GROUND COVERS AND/OR PERENNIALS PLANTED EN MASSE AND THE USE OF MULCH AS A SOIL COVERING IS ACCEPTABLE. NO MORE THAN 20% OF THE MINIMUM LANDSCAPED AREA MAY BE COVERED WITH NONLIVING LANDSCAPING MATERIAL, SUCH AS BARK MULCH, WOOD CHIPS, OR LEAF LITTER.	PROVIDED
	G.(3)(a) ALONG THE PERIMETER OF PARKING LOTS WITH 10 OR MORE SPACES, DECIDUOUS AND/OR EVERGREEN SHADE TREES SHALL BE PLANTED AT 35 FEET ON CENTER WITHIN THE BUFFER AREA REQUIRED BY § 153-17C. TREES SHALL BE SPECIES TOLERANT TO THE CLIMATIC CONDITIONS OF DOVER AND SHALL BE A MINIMUM CALIPER OF 3 INCHES (MEASURED AT FOUR FEET ABOVE GRADE LEVEL). WITHIN THE PERIMETER BUFFER, SHRUBS SHALL BE PLANTED BETWEEN THE TREES AT FIVE FEET ON CENTER. THE SHRUBS SHALL BE A MIX OF DECIDUOUS AND EVERGREEN SPECIES, TOLERANT TO THE CLIMATIC CONDITIONS OF DOVER AND SHALL BE A MINIMUM HEIGHT OF TWO FEET AT THE TIME OF PLANTING.	TREES: REQUIRED: 12 TREES PROVIDED: 12 TREES CALCULATION: 408 LF / 35 LF = 11.65 TREES SHRUBS: REQUIRED: 82 SHRUBS PROVIDED: 118 SHRUBS CALCULATION: 408 LF / 5 LF = 81.6 SHRUBS
	G.(3)(c) TO FOSTER BIOLOGICAL DIVERSITY, TREES PLANTED ALONG A GIVEN STREET SHALL USE THE 10-20-30 RULE (NO MORE THAN 10% OF THE TREES SHALL BE OF THE SAME SPECIES, NO MORE THAN 20% IN THE SAME GENUS, AND NO MORE THAN 30% IN THE SAME FAMILY).	PROVIDED
	G.(3)(d) TO ENSURE THAT LANDSCAPE MATERIALS DO NOT CONSTITUTE A DRIVING HAZARD, A CLEAR SIGHT TRIANGLE SHALL BE OBSERVED AT ALL STREET AND ACCESS DRIVE INTERSECTIONS. GROUND COVER AND TREES WITH AT LEAST EIGHT FEET OF LIMBLESS TRUNK SHALL BE PERMITTED WITHIN THE SIGHT DISTANCE TRIANGLE. IN THE CASE OF A CITY STREET INTERSECTION, THE SIGHT TRIANGLE SHALL CONSIST OF THE AREA BETWEEN POINTS 20 FEET ALONG BOTH INTERSECTING STREETS FROM THEIR RESPECTIVE EDGES OF PAVEMENT.	PROVIDED
	G.(5)(a) EACH EXISTING HEALTHY AND NATIVE OR NONINVASIVE TREE, WITH A CALIPER OF THREE INCHES OR GREATER, PRESERVED USING PROPER PROTECTION METHODS WITHIN THE INTERIOR PARKING LOT AREA MAY BE SUBSTITUTED FOR ONE TREE REQUIRED FOR EVERY 10 PARKING SPACES.	REQUIRED: 2.3 INTERIOR TREES PROVIDED: 9 INTERIOR TREES CALCULATION: 43 SPACES - 20 (2 EX TREES) = 23 23 / 10 = 2.3 TREES
§153-16	B.(7)LANDSCAPING AND GRADING (c) FOR THE OVERALL SITE USE A MIXTURE OF DECIDUOUS AND EVERGREEN TREES	PROVIDED
	B.(7)(d) IF RETAINING WALLS IN RETENTION BASINS ARE NECESSARY, THEY SHOULD BE LANDSCAPED TO REDUCE THEIR VISUAL SCALE	PROVIDED
	B.(7)(f) NO MORE THAN 25% OF THE TOTAL GROUND AREA OF A LANDSCAPE AREA SHALL BE COMPRISED ON NONLIVING ORNAMENTAL MATERIALS	PROVIDED
	B.(7)(g) A MINIMUM OF TWO TREES AND FOUR SHRUBS FOR EACH 1,000 SQUARE FEET OF LANDSCAPED AREA SHALL BE PROVIDED	PROVIDED
	B.(7)(h) DECIDUOUS TREES SHALL BE AT LEAST TWO-INCH CALIPER MEASURED FOUR FEET ABOVE THE GROUND, EXCEPT ORNAMENTAL AND FLOWERING TREES SHALL BE AT LEASE AND-AND-ONE-HALF-INCH CALIPER	PROVIDED
	B.(7)(i) CONIFEROUS TREES SHALL BE AT LEAST SIX FEET TALL	PROVIDED



MONUMENT SIGN PLANTING EXHIBIT

SEED MIX KEY

- PROPOSED HYDROSEED
- PROPOSED BASIN MIX
- PROPOSED CONSERVATION/ WILDLIFE SEED MIX

THIS PLAN TO BE UTILIZED FOR LANDSCAPE PURPOSES ONLY

20 10 5 0 20

SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JGD / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

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PROJECT NO.:	MAA240177.00-5A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVIL-LSCP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
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STATE OF NEW YORK No. 00
STATE OF CONNECTICUT No. 00
STATE OF NEW HAMPSHIRE No. 00
STATE OF VERMONT No. 000137
OHIO No. 250433

SHEET TITLE:

LANDSCAPE PLAN

SHEET NUMBER:

L-101

REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVIL-LSCP-MAA240177.00.SA——LAYOUT L-101 LSCP

LANDSCAPE SPECIFICATIONS

1. SCOPE OF WORK:

1.1. THE LANDSCAPE CONTRACTOR SHALL BE REQUIRED TO PERFORM ALL CLEARING, FINISHED GRADING, SOIL PREPARATION, PERMANENT SEEDING OR SODDING, PLANTING AND MULCHING INCLUDING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY FOR THE COMPLETION OF THIS PROJECT, UNLESS OTHERWISE CONTRACTED BY THE GENERAL CONTRACTOR.

2. MATERIALS

2.1. GENERAL - ALL HARDSCAPE MATERIALS SHALL MEET OR EXCEED SPECIFICATIONS AS OUTLINED IN THE STATE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.

2.2. TOPSOIL - NATURAL, FRIABLE LOAMY SILT SOIL HAVING AN ORGANIC CONTENT NOT LESS THAN 5%, A PH RANGE BETWEEN 4.5-7.0. IT SHALL BE FREE OF DEBRIS, ROCKS LARGER THAN ONE INCH (1"), WOOD, ROOTS, VEGETABLE MATTER AND CLAY CLODS.

2.3. LAWN - ALL DISTURBED AREAS ARE TO BE TREATED WITH A MINIMUM 6" THICK LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, AND SEEDED OR SODDED IN ACCORDANCE WITH THE PERMANENT STABILIZATION METHODS INDICATED ON THE LANDSCAPE PLAN

2.3.1. LAWN SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED.

2.3.2. SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE/PEST FREE WITH A UNIFORM THICKNESS. SOD INSTALLED ON SLOPES GREATER THAN 4:1 SHALL BE PEGGED TO HOLD SOD IN PLACE.

2.4. MULCH - ALL PLANTING BEDS SHALL BE MULCHED WITH A 3" THICK LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE STATED ON THE LANDSCAPE PLAN AND/OR LANDSCAPE PLAN NOTES /DETAILS.

2.5. FERTILIZER

2.5.1. FERTILIZER SHALL BE DELIVERED TO THE SITE MIXED AS SPECIFIED IN THE ORIGINAL UNOPENED STANDARD BAGS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. FERTILIZER SHALL BE STORED IN A WEATHERPROOF PLACE SO THAT IT CAN BE KEPT DRY PRIOR TO USE.

2.5.2. FOR THE PURPOSE OF BIDDING, ASSUME THAT FERTILIZER SHALL BE 10% NITROGEN, 6% PHOSPHORUS AND 4% POTASSIUM BY WEIGHT. A FERTILIZER SHOULD NOT BE SELECTED WITHOUT A SOIL TEST PERFORMED BY A CERTIFIED SOIL LABORATORY.

2.6. PLANT MATERIAL

2.6.1. ALL PLANTS SHALL IN ALL CASES CONFORM TO THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION (FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN).

2.6.2. IN ALL CASES, BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.

2.6.3. PLANTS SHALL BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE. TAGS ARE TO REMAIN ON AT LEAST ONE PLANT OF EACH SPECIES FOR VERIFICATION PURPOSES DURING THE FINAL INSPECTION.

2.6.4. TREES WITH ABRASION OF THE BARK, SUN SCALDS, DISFIGURATION OR FRESH CUTS OF LIMBS OVER 1¼", WHICH HAVE NOT BEEN COMPLETELY CALLUSED, SHALL BE REJECTED. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES.

2.6.5. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH: WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE OF DISEASE, INSECTS, PESTS, EGGS OR LARVAE.

2.6.6. CALIPER MEASUREMENTS OF NURSERY GROWN TREES SHALL BE TAKEN AT A POINT ON THE TRUNK SIX INCHES (6") ABOVE THE NATURAL GRADE FOR TREES UP TO AND INCLUDING A FOUR INCH (4") CALIPER SIZE. IF THE CALIPER AT SIX INCHES (6") ABOVE THE GROUND EXCEEDS FOUR INCHES (4") IN CALIPER, THE CALIPER SHOULD BE MEASURED AT A POINT 12" ABOVE THE NATURAL GRADE.

2.6.7. SHRUBS SHALL BE MEASURED TO THE AVERAGE HEIGHT OR SPREAD OF THE SHRUB, AND NOT TO THE LONGEST BRANCH.

2.6.8. TREES AND SHRUBS SHALL BE HANDLED WITH CARE BY THE ROOT BALL.

3. GENERAL WORK PROCEDURES

3.1. CONTRACTOR TO UTILIZE WORKMANLIKE INDUSTRY STANDARDS IN PERFORMING ALL LANDSCAPE CONSTRUCTION. THE SITE IS TO BE LEFT IN A CLEAN STATE AT THE END OF EACH WORKDAY. ALL DEBRIS, MATERIALS AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF.

3.2. WASTE MATERIALS AND DEBRIS SHALL BE COMPLETELY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. DEBRIS SHALL NOT BE BURIED, INCLUDING ORGANIC MATERIALS, BUT SHALL BE REMOVED COMPLETELY FROM THE SITE.

4. SITE PREPARATIONS

4.1. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN.

4.2. ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE BRANCH COLLAR. CONTRACTOR SHALL ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT. ANY EXPOSED ROOTS SHALL BE CUT BACK WITH CLEAN, SHARP TOOLS AND TOPSOIL SHALL BE PLACED AROUND THE REMAINDER OF THE ROOTS. EXISTING TREES SHALL BE MONITORED ON A REGULAR BASIS FOR ADDITIONAL ROOT OR BRANCH DAMAGE AS A RESULT OF CONSTRUCTION. ROOTS SHALL NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR SHALL WATER EXISTING TREES AS NEEDED TO PREVENT SHOCK OR DECLINE.

4.3. CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.

5. TREE PROTECTION

5.1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES TO REMAIN. A TREE PROTECTION ZONE SHALL BE ESTABLISHED AT THE DRIP LINE OR AT THE LIMIT OF CONSTRUCTION DISTURBANCE, WHICHEVER IS GREATER. LOCAL STANDARDS THAT MAY REQUIRE A MORE STRICT TREE PROTECTION ZONE SHALL BE HONORED.

5.2. A FORTY-EIGHT INCH (48") HIGH WOODEN SNOW FENCE OR ORANGE COLORED HIGH-DENSITY 'VISI-FENCE', OR APPROVED EQUAL, MOUNTED ON STEEL POSTS SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION ZONE. POSTS SHALL BE LOCATED AT A MAXIMUM OF EIGHT FEET (8') ON CENTER OR AS INDICATED WITHIN THE TREE PROTECTION DETAIL.

5.3. WHEN THE TREE PROTECTION FENCING HAS BEEN INSTALLED, IT SHALL BE INSPECTED BY THE APPROVING AGENCY PRIOR TO DEMOLITION, GRADING, TREE CLEARING OR ANY OTHER CONSTRUCTION. THE FENCING ALONG THE TREE PROTECTION ZONE SHALL BE REGULARLY INSPECTED BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.

5.4. AT NO TIME SHALL MACHINERY, DEBRIS, FALLEN TREES OR OTHER MATERIALS BE PLACED, STOCKPILED OR LEFT STANDING IN THE TREE PROTECTION ZONE.

6. SOIL MODIFICATIONS

6.1. CONTRACTOR SHALL ATTAIN A SOIL TEST FOR ALL AREAS OF THE SITE PRIOR TO CONDUCTING ANY PLANTING. SOIL TESTS SHALL BE PERFORMED BY A CERTIFIED SOIL LABORATORY.

6.2. LANDSCAPE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. SOIL MODIFICATIONS, AS SPECIFIED HEREIN, MAY NEED TO BE CONDUCTED BY THE LANDSCAPE CONTRACTOR DEPENDING ON SITE CONDITIONS.

6.3. THE FOLLOWING AMENDMENTS AND QUANTITIES ARE APPROXIMATE AND ARE FOR BIDDING PURPOSES ONLY. COMPOSITION OF AMENDMENTS SHOULD BE REVISED DEPENDING ON THE OUTCOME OF A TOPSOIL ANALYSIS PERFORMED BY A CERTIFIED SOIL LABORATORY.

6.3.1. TO INCREASE A SANDY SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS, THOROUGHLY TILL ORGANIC MATTER INTO THE TOP 6-12". USE COMPOSTED BARK, COMPOSTED LEAF MULCH OR PEAT MOSS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A PH HIGHER THAN 7.5.

6.3.2. TO INCREASE DRAINAGE, MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR AGRICULTURAL GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. SUBSURFACE DRAINAGE LINES MAY NEED TO BE ADDED TO INCREASE DRAINAGE.

6.3.3. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

7. FINISHED GRADING

7.1. UNLESS OTHERWISE CONTRACTED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBANCE AREA OF THE SITE.

7.2. LANDSCAPE CONTRACTOR SHALL VERIFY THAT SUBGRADE FOR INSTALLATION OF TOPSOIL HAS BEEN ESTABLISHED. THE SUBGRADE OF THE SITE MUST MEET THE FINISHED GRADE LESS THE REQUIRED TOPSOIL THICKNESS (1"±).

7.3. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THIS SET OF CONSTRUCTION PLANS, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER OR LANDSCAPE ARCHITECT.

7.4. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER IN AND AROUND THE PLANTING BEDS. STANDING WATER SHALL NOT BE PERMITTED IN PLANTING BEDS.

8. TOPSOILING

8.1. CONTRACTOR SHALL PROVIDE A 6" THICK MINIMUM LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, IN ALL PLANTING AREAS. TOPSOIL SHOULD BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS.

8.2. ON-SITE TOPSOIL MAY BE USED TO SUPPLEMENT THE TOTAL AMOUNT REQUIRED. TOPSOIL FROM THE SITE MAY BE REJECTED IF IT HAS NOT BEEN PROPERLY REMOVED, STORED AND PROTECTED PRIOR TO CONSTRUCTION.

8.3. CONTRACTOR SHALL FURNISH TO THE APPROVING AGENCY AN ANALYSIS OF BOTH IMPORTED AND ON-SITE TOPSOIL TO BE UTILIZED IN ALL PLANTING AREAS. THE PH AND NUTRIENT LEVELS MAY NEED TO BE ADJUSTED THROUGH SOIL MODIFICATIONS AS NEEDED TO ACHIEVE THE REQUIRED LEVELS AS SPECIFIED IN THE MATERIALS SECTION ABOVE.

8.4. ALL LAWN AREAS ARE TO BE CULTIVATED TO A DEPTH OF SIX INCHES (6"). ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES SECTION ABOVE. THE FOLLOWING SHALL BE TILLED INTO THE TOP FOUR INCHES (4") IN TWO DIRECTIONS (QUANTITIES BASED ON A 1,000 SQUARE FOOT AREA - FOR BID PURPOSES ONLY (SEE SPECIFICATION 8.A.)):

8.4.1. 20 POUNDS 'GRO-POWER' OR APPROVED SOIL CONDITIONER/FERTILIZER

8.4.2. 20 POUNDS NITRO-FORM (COURSE) 38-0-0 BLUE CHIP OR APPROVED NITROGEN FERTILIZER

8.5. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN CONDITIONS.

9. PLANTING

9.1. INSOFAR THAT IT IS FEASIBLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THAT THIS IS NOT POSSIBLE, LANDSCAPE CONTRACTOR SHALL PROTECT UNINSTALLED PLANT MATERIAL. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE DAY PERIOD AFTER DELIVERY. PLANTS THAT WILL NOT BE PLANTED FOR A PERIOD OF TIME GREATER THAN THREE DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH TO HELP PRESERVE ROOT MOISTURE.

9.2. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION.

9.3. ANY INJURED ROOTS OR BRANCHES SHALL BE PRUNED TO MAKE CLEAN-CUT ENDS PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY INJURED OR DISEASED BRANCHING SHALL BE REMOVED.

9.4. ALL PLANTING CONTAINERS, BASKETS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.

9.5. POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.

9.6. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, THE PROPOSED LANDSCAPE, AS SHOWN ON THE APPROVED LANDSCAPE PLAN, MUST BE INSTALLED, INSPECTED AND APPROVED BY THE APPROVING AGENCY. THE APPROVING AGENCY SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD AS FOLLOWS. THE PLANTING OF TREES, SHRUBS, VINES OR GROUND COVER SHALL OCCUR ONLY DURING THE FOLLOWING PLANTING SEASONS:

9.6.1. PLANTS: MARCH 15 TO DECEMBER 15

9.6.2. LAWN: MARCH 15 TO JUNE 15 OR SEPT. 1 TO DECEMBER 1

9.6.3. PLANTINGS REQUIRED FOR A CERTIFICATE OF OCCUPANCY SHALL BE PROVIDED DURING THE NEXT APPROPRIATE SEASON AT THE MUNICIPALITY'S DISCRETION. CONTRACTOR SHOULD CONTACT APPROVING AGENCY FOR POTENTIAL SUBSTITUTIONS.

9.7. FURTHERMORE, THE FOLLOWING TREE VARIETIES ARE UNUSUALLY SUSCEPTIBLE TO WINTER DAMAGE. WITH TRANSPLANT SHOCK AND THE SEASONAL LACK OF NITROGEN AVAILABILITY, THE RISK OF PLANT DEATH IS GREATLY INCREASED. IT IS NOT RECOMMENDED THAT THESE SPECIES BE PLANTED DURING THE FALL PLANTING SEASON:

ACER RUBRUM	PLATANUS X ACERIFOLIA
BETULA VARIETIES	POPULUS VARIETIES
CARPINUS VARIETIES	PRUNUS VARIETIES
CRATAEGUS VARIETIES	PYRUS VARIETIES
KOELREUTERIA	QUERCUS VARIETIES
LIQUIDAMBAR STYRACIFLUA	TILIA TOMENTOSA
LIRIODENDRON TULIPIFERA	ZELKOVA VARIETIES

9.8. PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS, WITH THE WIDTH TWICE THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS WITH THE FOLLOWING PREPARED SOIL MIXED THOROUGHLY:

9.8.1. 1 PART PEAT MOSS

9.8.2. 1 PART COMPOSTED COW MANURE BY VOLUME

9.8.3. 3 PARTS TOPSOIL BY VOLUME

9.8.4. 21 GRAMS 'AGRIFORM' PLANTING TABLETS (OR APPROVED EQUAL) AS FOLLOWS:

9.8.4.1. 2 TABLETS PER 1 GALLON PLANT

9.8.4.2. 3 TABLETS PER 5 GALLON PLANT

9.8.4.3. 4 TABLETS PER 15 GALLON PLANT

9.8.4.4. LARGER PLANTS: 2 TABLETS PER ½" CALIPER OF TRUNK

9.9. FILL PREPARED SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.

9.10. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL.

9.11. ALL PROPOSED TREES DIRECTLY ADJACENT TO WALKWAYS OR DRIVEWAYS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM BRANCHING HEIGHT OF 7' FROM GRADE.

9.12. GROUND COVER AREAS SHALL RECEIVE A ¼" LAYER OF HUMUS RAKED INTO THE TOP 1" OF PREPARED SOIL PRIOR TO PLANTING. ALL GROUND COVER AREAS SHALL BE WEEDED AND TREATED WITH A PRE-EMERGENT CHEMICAL AS PER MANUFACTURER'S RECOMMENDATION.

9.13. NO PLANT, EXCEPT GROUND COVERS, GRASSES OR VINES, SHALL BE PLANTED LESS THAN TWO FEET (2') FROM EXISTING STRUCTURES AND SIDEWALKS.

9.14. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED HEREIN TO FILL THE ENTIRE BED AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB.

9.15. ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE WATERING SPECIFICATIONS AS LISTED HEREIN.

10. TRANSPLANTING (WHEN REQUIRED)

10.1. ALL TRANSPLANTS SHALL BE DUG WITH INTACT ROOT BALLS CAPABLE OF SUSTAINING THE PLANT.

10.2. IF PLANTS ARE TO BE STOCKPILED BEFORE REPLANTING, THEY SHALL BE HEALED IN WITH MULCH OR SOIL, ADEQUATELY WATERED AND PROTECTED FROM EXTREME HEAT, SUN AND WIND.

10.3. PLANTS SHALL NOT BE DUG FOR TRANSPLANTING BETWEEN APRIL 10 AND JUNE 30.

10.4. UPON REPLANTING, BACKFILL SOIL SHALL BE AMENDED WITH FERTILIZER AND ROOT GROWTH HORMONE.

10.5. TRANSPLANTS SHALL BE GUARANTEED FOR THE LENGTH OF THE GUARANTEE PERIOD SPECIFIED HEREIN.

10.6. F TRANSPLANTS DIE, SHRUBS AND TREES LESS THAN SIX INCHES (6") DBH SHALL BE REPLACED IN KIND. TREES GREATER THAN SIX INCHES (6") DBH MAY BE REQUIRED TO BE REPLACED IN ACCORDANCE WITH THE MUNICIPALITY'S TREE REPLACEMENT GUIDELINES.

11. WATERING

11.1. NEW PLANTINGS OR LAWN AREAS SHALL BE ADEQUATELY IRRIGATED BEGINNING IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED. WATERING SHALL CONTINUE AT LEAST UNTIL PLANTS ARE ESTABLISHED.

11.2. SITE OWNER SHALL PROVIDE WATER IF AVAILABLE ON SITE AT TIME OF PLANTING. IF WATER IS NOT AVAILABLE ON SITE, CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER. THE USE OF WATERING BAGS IS RECOMMENDED FOR ALL NEWLY PLANTED TREES.

11.3. IF AN IRRIGATION SYSTEM HAS BEEN INSTALLED ON THE SITE, IT SHALL BE USED TO WATER PROPOSED PLANT MATERIAL, BUT ANY FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE CONTRACTOR'S RESPONSIBILITY OF MAINTAINING THE DESIRED MOISTURE LEVEL FOR VIGOROUS, HEALTHY GROWTH.

12. GUARANTEE

12.1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF 1 YEAR FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE APPROVING AGENCY. CONTRACTOR SHALL SUPPLY THE OWNER WITH A MAINTENANCE BOND FOR TEN PERCENT (10%) OF THE VALUE OF THE LANDSCAPE INSTALLATION WHICH WILL BE RELEASED AT THE CONCLUSION OF THE GUARANTEE PERIOD AND WHEN A FINAL INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

12.2. ANY DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED FOR THE LENGTH OF THE GUARANTEE PERIOD. REPLACEMENT OF PLANT MATERIAL SHALL BE CONDUCTED AT THE FIRST SUCCEEDING PLANTING SEASON. ANY DEBRIS SHALL BE DISPOSED OF OFF-SITE, WITHOUT EXCEPTION.

12.3. TREES AND SHRUBS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND THROUGHOUT THE 90 DAY MAINTENANCE PERIOD AS SPECIFIED HEREIN. CULTIVATION, WEEDING, WATERING AND THE PREVENTATIVE TREATMENTS SHALL BE PERFORMED AS NECESSARY TO KEEP PLANT MATERIAL IN GOOD CONDITION AND FREE OF INSECTS AND DISEASE.

12.4. LAWNS SHALL BE MAINTAINED THROUGH WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, REGARDING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

13. CLEANUP

13.1. UPON THE COMPLETION OF ALL LANDSCAPE INSTALLATION AND BEFORE THE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL UNUSED MATERIALS, EQUIPMENT AND DEBRIS FROM THE SITE. ALL PAVED AREAS ARE TO BE CLEANED.

13.2. THE SITE SHALL BE CLEANED AND LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

14. MAINTENANCE (ALTERNATIVE BID):

14.1. A 90 DAY MAINTENANCE PERIOD SHALL COMMENCE AT THE END OF ALL LANDSCAPE INSTALLATION OPERATIONS. THE 90 DAY MAINTENANCE PERIOD ENSURES TO THE OWNER/OPERATOR THAT THE NEWLY INSTALLED LANDSCAPING HAS BEEN MAINTAINED AS SPECIFIED ON THE APPROVED LANDSCAPE PLAN. ONCE THE INITIAL 90 DAY MAINTENANCE PERIOD HAS EXPIRED, THE OWNER/OPERATOR MAY REQUEST THAT BIDDERS SUBMIT AN ALTERNATE MAINTENANCE BID FOR A MONTHLY MAINTENANCE CONTRACT. THE ALTERNATE MAINTENANCE CONTRACT WILL ENCOMPASS ANY WORK THAT IS CONSIDERED APPROPRIATE TO ENSURE THAT PLANT AND LAWN AREAS ARE HEALTHY AND MANICURED TO THE APPROVAL OF THE OWNER/OPERATOR.

"NEW ENGLAND CONSERVATION/ WILDLIFE SEED MIX" AS PREPARED BY:

NEW ENGLAND WETLAND PLANTS, INC
820 WEST STREET, AMHERST, MA 01002
PHONE: 413-548-8000
EMAIL: INFO@NEWP.COM
WEBSITE: WWW.NEWP.COM

APPLICATION RATE: 25LBS/ACRE | 1750 SQ FT/LB
MINIMUM ORDER: 2 LBS
SPECIES: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), INDIAN GRASS (SORGHASTRUM NUTANS), BLUE VERVAIN (VERBENA HASTATA), BUTTERFLY MILKWEED (ASCLEPIAS TUBEROSA), BLACK EYED SUSAN (RUDBECKIA HIRTA), COMMON SNEEZEWEED (HELENIUM AUTUNALE), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).

NEW ENGLAND CONSERVATION/ WILDLIFE SEED MIX SPECIFICATIONS

"NATIVE DETENTION AREA MIX" AS PREPARED BY:

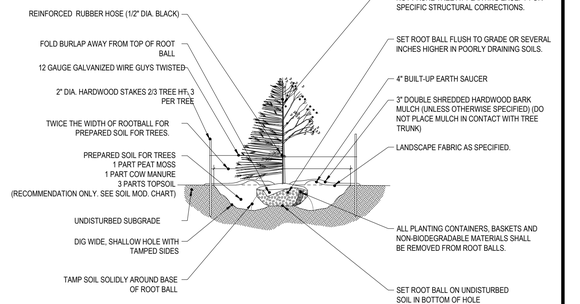
ERNST CONSERVATION SEEDS, INC.
8884 MERCER PIKE, MEADVILLE, PA 16335
PHONE: 800-873-3321 / 814-336-2404
EMAIL: SALES@ERNSTSEED.COM
WEBSITE: WWW.ERNSTSEED.COM

APPLICATION RATE: 1/2 LB. / 1000 SQ. FT. (20 LBS. / ACRE)

MIX COMPOSITION:
25.0% PANICUM VIRGATUM, 'SHELTER' (SWITCHGRASS, 'SHELTER')
24.0% PANICUM CLANDESTINUM, 'TIOGA' (DEERTONGUE, 'TIOGA')
22.0% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)
21.0% ELYMUS VIRGINICUS, PA ECOTYPE (VIRGINIA WILDRYE, PA ECOTYPE)
6.0% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE (AUTUMN BENTGRASS, ALBANY PINE BUSH-NY ECOTYPE)
1.0% JUNCUS EFFUSUS (SOFT RUSH)
1.0% PANICUM RIGIDULUM, PA ECOTYPE (REDTOP PANICGRASS, PA ECOTYPE)

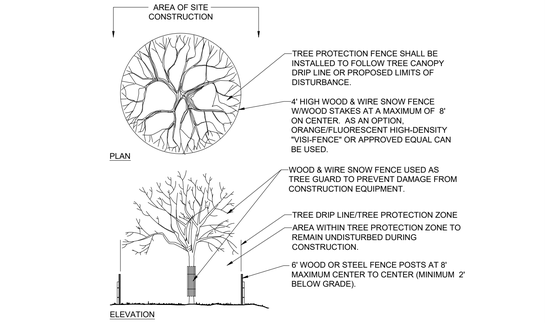
BASIN SEED MIX SPECIFICATIONS

NOTES:
1.) NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT.
2.) REMOVE ALL NON-BIODEGRADABLE MATERIAL AND ROPE FROM TRUNK & TOP OF ROOT BALL. FOLD BURLAP BACK 1/3 FROM ROOT BALL.
3.) PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.
4.) THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH
AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
5.) THE BOTTOM OF PLANTING PIT EXCAVATIONS SHOULD BE ROUGH TO AVOID MATTING OF SOIL LAYERS AS
NEW SOIL IS ADDED. IT IS PREFERABLE TO TILL THE FIRST LIFT (2 TO 3 IN.) OF PLANTING SOIL INTO THE SUBSOIL.
6.) REFER TO THE CHART "GENERAL RANGE OF SOIL MODIFICATIONS & VOLUMES FOR VARIOUS SOIL CONDITIONS" TO DETERMINE MINIMUM WIDTH OF PREPARED SOIL.
7.) SUBSTITUTE ARBORVITAE STAKING SYSTEM WHEN SPECIFIED.



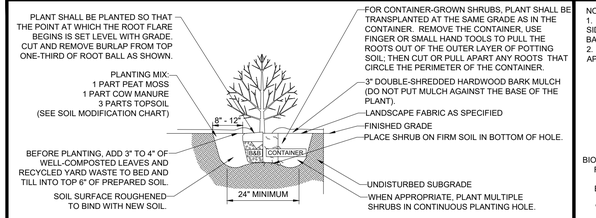
TREE PLANTING DETAIL

N.T.S.



TREE PROTECTION DURING SITE CONSTRUCTION

N.T.S.


PLANT SHALL BE PLANTED SO THAT THE POINT AT WHICH THE ROOT FLARE BEGINS IS SET LEVEL WITH GRADE. CUT AND REMOVE BURLAP FROM TOP ONE-THIRD OF ROOT BALL AS SHOWN.
PLANTING MIX
1 PART PEAT MOSS
1 PART COW MANURE
3 PARTS TOPSOIL
(SEE SOIL MODIFICATION CHART)
BEFORE PLANTING, ADD 3" TO 4" OF WELL-COMPOSTED LEAVES AND RECYCLED YARD WASTE TO BED AND TILL INTO TOP 6" OF PREPARED SOIL.
SOIL SURFACE ROUGHENED TO BIND WITH NEW SOIL.
8" - 12"
MULCH
PLANTING MIX
CONTAINER
24" MINIMUM
FOR CONTAINER-GROWN SHRUBS, PLANT SHALL BE TRANSPLANTED AT THE SAME GRADE AS IN THE CONTAINER. REMOVE THE CONTAINER. USE FINGER OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS THAT CIRCLE THE PERIMETER OF THE CONTAINER.
3" DOUBLE-SHREDDED HARDWOOD BARK MULCH (DO NOT PUT MULCH AGAIN

NAD83

MAP H
LOT 4-3

N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

PROP LIMIT OF
WORK LINE (TYP)

APPROX LOCATION OF PROP
WETLAND PLACARDS TO BE
CONFIRMED AND LOCATED IN FIELD
PRIOR TO CONSTRUCTION (TYP)

172.09'
S24°08'19"W

84.08'
S08°44'55"E

47.83'
S54°09'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

52.03'
S65°46'54"E

162.91'
S65°46'54"E

N65°41'53"W
88.01'

N60°12'10"W
48.72'

N65°40'47"W
275.52'

N24°13'06"E
313.87'

81.3'

84.6'

24.0'

65'

PROPOSED 2023 SERIES
BB20-4584-WW-HB
McDONALD'S RESTAURANT
(3,694 SF.)
(38 SEATS)

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

DRIVE THRU

DO NOT BLOCK

ONE WAY

AB

A2

GC #A1 GC #A2 GC #A3 GC #A4 GC #A5 GC #A6 GC #A7 GC #A8 GC #A9 GC #A10 GC #A11 GC #A12 GC #A13 GC #A14 GC #A15 GC #A16 GC #A17 GC #A18 GC #A19 GC #A20 GC #A21 GC #A22 GC #A23 GC #A24 GC #A25 GC #A26 GC #A27 GC #A28

EDGE OF WETLANDS
DELINEATED BY GODDARD
CONSULTING ON 4/28/2025

PROP LIMIT OF
WORK LINE (TYP)

PROP LIMIT OF
WORK LINE (TYP)

PROP LIMIT OF
WORK LINE (TYP)

APPROX. LOC. OF
ACCESS EASEMENT "A"
BK. 5496, PG. 746.
(DOT HATCH)

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY
TRAFFIC
(ASPHALT ROADWAY)

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY
TRAFFIC
(ASPHALT ROADWAY)



LIGHT FIXTURE DETAIL

N.T.S.

NEW HAMPSHIRE LIGHTING NOTES

(Rev. 6/2023)

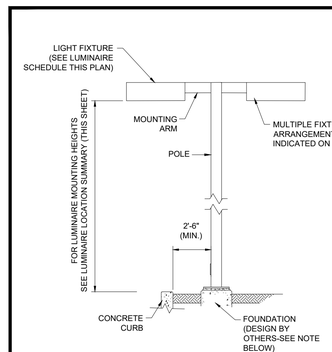
1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. THIS LIGHTING PLAN DEPICTS PROPOSED SUSTAINED ILLUMINATION LEVELS CALCULATED USING DATA PROVIDED BY THE NOTED MANUFACTURER(S). ACTUAL SUSTAINED SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, THE SERVICE LIFE OF EQUIPMENT AND LUMINAIRES AND OTHER RELATED VARIABLE FIELD CONDITIONS.
3. THE LIGHT LOSS FACTORS (LLF) DEPICTED IN THE LUMINAIRE SCHEDULE ON THIS PLAN ARE BASED ON DATA PROVIDED BY THE MANUFACTURER FOLLOWING IES LM-80-08 TESTING. THE LIGHT LEVELS DEPICTED ON THIS PLAN WERE CALCULATED BASED ON THE LLF LISTED IN THE LUMINAIRE SCHEDULE.
4. THE LIGHTING VALUES AND CALCULATION POINTS DEPICTED ON THIS PLAN ARE ALL ANALYZED ON A HORIZONTAL GEOMETRIC PLANE AT ELEVATION ZERO (GROUND LEVEL) UNLESS OTHERWISE NOTED. THE VALUES DEPICTED ON THIS PLAN ARE IN FOOTCANDLES (FC).
5. THE LUMINAIRES, LAMPS AND LENSES MUST BE REGULARLY INSPECTED/MAINTAINED TO ENSURE THAT THEY FUNCTION PROPERLY. THIS WORK SHOULD INCLUDE, BUT IS NOT LIMITED TO, VISUAL OBSERVATION, CLEANING OF LENSES, AND RE-LAMPING (IF NECESSARY) ACCORDING TO MANUFACTURER RECOMMENDATIONS. FAILURE TO FOLLOW THE ABOVE STEPS COULD RESULT IN IMPROPER LIGHT DISTRIBUTION AND FAILURE TO COMPLY WITH THE APPROVED DESIGN. UPON COMPLETION AND OWNER'S ACCEPTANCE OF THE WORK, THE ABOVE RESPONSIBILITIES BECOMES SOLELY THE OWNER'S.
6. WHERE APPLICABLE, THE EXISTING CONDITION LIGHT LEVELS ILLUSTRATED ARE REPRESENTATIVE OF AN APPROXIMATION UTILIZING LABORATORY DATA FOR SIMILAR FIXTURES, UNLESS ACTUAL FIELD MEASUREMENTS ARE TAKEN WITH A LIGHT METER AND ARE, CONSEQUENTLY, APPROXIMATIONS ONLY. DUE TO FACTORS SUCH AS FIXTURE MAINTENANCE, EQUIPMENT TOLERANCES, WEATHER CONDITIONS, ETC, ACTUAL LIGHT LEVELS MAY DIFFER. EXISTING LIGHT LEVELS DEPICTED ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE.
7. THIS LIGHTING PLAN IS INTENDED TO SHOW THE LOCATIONS AND TYPE OF LUMINAIRES, ONLY. POWER SYSTEM, CONDUITS, WIRING, VOLTAGES AND OTHER ELECTRICAL COMPONENTS ARE THE RESPONSIBILITY OF THE ARCHITECT, MEP AND/OR LIGHTING CONTRACTOR, AS INDICATED IN THE CONSTRUCTION CONTRACT DOCUMENTS. THESE ITEMS MUST BE INSTALLED AS REQUIRED BY STATE AND LOCAL REGULATIONS. LIGHT POLE BASES ARE THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER, AS INDICATED IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR INSTALLING LIGHTING FIXTURES AND APPURTENANCES IN ACCORDANCE WITH ALL APPLICABLE BUILDING AND ELECTRICAL CODES AND ALL OTHER APPLICABLE RULES, REGULATIONS, LAWS AND STATUTES.
8. CONTRACTOR MUST BRING TO DESIGNER'S ATTENTION, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ANY LIGHT LOCATIONS THAT CONFLICT WITH DRAINAGE, UTILITIES, OR OTHER STRUCTURES.
9. IT IS THE LIGHTING CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE PROJECT ARCHITECT OR OWNER REGARDING ANY AND ALL POWER SOURCE(S) , AND TIMING DEVICES NECESSARY TO MEET THE DESIGN INTENT. THESE ITEMS MUST BE INSTALLED AS REQUIRED BY STATE AND LOCAL REGULATIONS.
10. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT SHIELDING AND OR ROTATED OPTICS ARE INSTALLED AS INDICATED ON THE PLAN IN ORDER TO ACHIEVE THE LIGHTING LEVELS THE REVIEWING AGENCY APPROVED.
11. THE LIGHTING CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CONTRACTOR REQUIREMENTS INDICATED IN THE SITE PLAN, INCLUDING BUT NOT LIMITED TO, GENERAL NOTES, GRADING AND UTILITY NOTES, SITE SAFETY, AND ALL GOVERNMENTAL RULES, LAWS, ORDINANCES, REGULATIONS AND THE LIKE.
12. THE CONTRACTOR MUST VERIFY THAT INSTALLATION OF LIGHTING FIXTURES COMPLIES WITH THE REQUIREMENTS FOR SEPARATION FROM OVERHEAD ELECTRICAL WIRES PER STATE REGULATIONS.
13. WHEN A BANK ATM IS INCLUDED IN THE PLAN, THE LIGHTING DESIGN REPRESENTS BOHLER'S UNDERSTANDING AND INTERPRETATION OF THE REGULATORY LIGHTING LEVELS INTENDED BY PUBLISHED STANDARDS.
14. UPON OWNER'S ACCEPTANCE OF THE COMPLETED PROJECT, THE OWNER SHALL BE RESPONSIBLE FOR ALL MAINTENANCE, SERVICING, REPAIR AND INSPECTION OF THE LIGHTING SYSTEM AND ALL OF ITS COMPONENTS AND RELATED SYSTEMS, TO ENSURE ADEQUATE LIGHTING LEVELS ARE PRESENT AND FUNCTIONING AT ALL TIMES.

NUMERIC SUMMARY

LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
PAVED SURFACE READINGS	ILLUMINANCE	FC	2.46	5.6	0.5	6±	14.00
PROPERTY LINE READINGS	ILLUMINANCE	FC	0.08	0.9	0.0	N/A	N/A
OVERALL READINGS	ILLUMINANCE	FC	0.43	5.9	0.0	N/A	N/A

LUMINAIRE SCHEDULE

SYMBOL	QTY	ARRANGEMENT	LUM WATTS	LLF	DESCRIPTION	MOUNTING HEIGHT
AB	5	SINGLE	226.9	0.85	RAR2-480L-240-5K7-4W SES-18-40-1-TA-GL-XX (4") POLE	21'
A2	1	BACK-BACK	226.9	0.85	RAR2-480L-240-5K7-4W-BC SES-18-40-1-TA-GL-XX (4") POLE	21'



AREA LIGHT DETAIL

N.T.S.

NOTE: THIS DETAIL IS FOR BID AND BUDGETARY PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A FOUNDATION DESIGN PREPARED BY A QUALIFIED STRUCTURAL ENGINEER CONSIDERING LIGHTING MANUFACTURER REQUIREMENTS, LOCAL WIND LOADS AND SITE SPECIFIC SOIL PARAMETERS.

- SOME SITE CONDITIONS AND/OR LOCATIONS MAY REQUIRE VIBRATION DAMPENING MEASURES AS DETERMINED BY A STRUCTURAL ENGINEER.
- THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF THE INTENT TO MOUNT ANYTHING TO THE POLE, ASIDE FROM THE LIGHT FIXTURES, INCLUDING BUT NOT LIMITED TO CAMERAS, BANNERS, FLAGS, SIGNAGE, ETC. AS IT WILL IMPACT THE POLE AND FOUNDATION DESIGN.

THIS PLAN TO BE UTILIZED FOR LIGHTING PURPOSES ONLY

20 10 5 0 20
SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABILITY DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

THE INFORMATION, DESIGN AND CONTENT OF THIS PLAN ARE PROPRIETARY AND SHALL NOT BE COPIED OR USED FOR ANY PURPOSE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM BOHLER. ONLY APPROVED, SEALED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.

REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE
3	06/04/2025	REV PER NHDOT COMMENTS	JDG / CSE
4	07/02/2025	REV PER TRC COMMENTS	JDG / CSE
5	07/17/2025	REV PER CON COMM COMMENTS	JDG / CSE

811 Know what's below. Call before you dig.
ALWAYS CALL 811
It's fast. It's free. It's the law.

ISSUED FOR ENTITLEMENTS

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	MAA240177.00-5A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-CIVL-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

JOHN D. KUCICH
No. 15476
PROFESSIONAL ENGINEER
MASSACHUSETTS | CONNECTICUT | NEW HAMPSHIRE | RHODE ISLAND | MAINE

SHEET TITLE:

LIGHTING PLAN

SHEET NUMBER:

L-201

REVISION 5 - 07/17/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\P-CIVL-PROP-MAA240177.00-5A-----%LAYOUT: L-201 LGHT

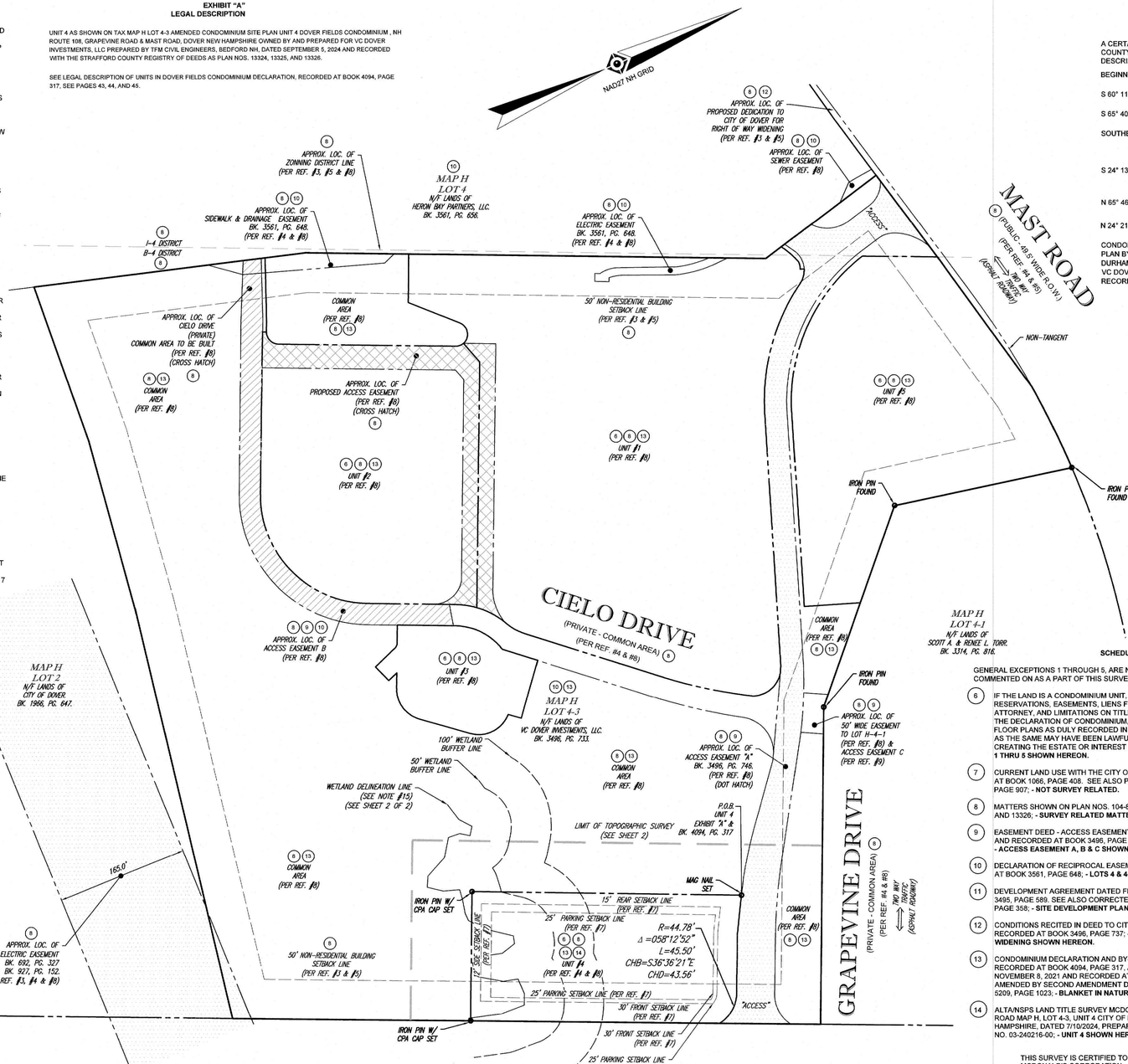
REFERENCES:

1. THE GIS MAP OF CITY OF DOVER, STRAFFORD COUNTY, MAP H.
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, STRAFFORD COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), PANEL 320 OF 405," MAP NUMBER 33017C0320E, MAP REVISED: SEPTEMBER 30, 2015.
3. MAP ENTITLED "TAX MAP H, LOT 4, SUBDIVISION PLAN (1 OF 2), MIXED USE DEVELOPMENT, NH ROUTE 108 & MAST ROAD, DOVER, NEW HAMPSHIRE," PREPARED BY TFM, DATED OCTOBER 30, 2006. SHEET 1 OF 2. RECORDED WITH STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN BOOK 89, PAGE 40.
4. MAP ENTITLED "TAX MAP H, LOT 4-3, OVERALL SITE PLAN - PHASE 4C, MIXED USE DEVELOPMENT, NH ROUTE 108 & MAST ROAD, DOVER, NEW HAMPSHIRE," PREPARED BY TFM, DATED OCTOBER 18, 2022, LAST REVISED FEBRUARY 28, 2023. SHEET 2 OF 23.
5. MAP ENTITLED "TAX MAP H, LOT 4, SUBDIVISION PLAN (2 OF 2), MIXED USE DEVELOPMENT, NH ROUTE 108 & MAST ROAD, DOVER, NEW HAMPSHIRE," PREPARED BY TFM, DATED OCTOBER 30, 2006. SHEET 2 OF 2. RECORDED WITH STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN BOOK 89, PAGE 41.
6. UNDERGROUND WATER MAPPING IN THE AREA PROVIDED BY CITY OF DOVER.
7. MAP ENTITLED "PROPOSED RESTAURANT TACO BELL - CHARTER FOODS, DURHAM ROAD (NH 108) AND GRAPEVINE DRIVE CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, EXISTING CONDITION & DEMOLITION PLAN" PREPARED BY CHRISTOPHER J. BEDNAR, DATED JULY 5, 2022, LAST REVISED OCTOBER 27, 2022. SHEET C1.0
8. MAP ENTITLED "TAX MAP H, LOT 4-3, CONDOMINIUM SITE PLAN, DOVER FIELDS CONDOMINIUM, DURHAM ROAD (NH ROUTE 108) & MAST ROAD DOVER, NEW HAMPSHIRE, OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC," PREPARED BY TFM, DATED JUNE 15, 2012. TWO SHEETS. RECORDED WITH STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN BOOK 104, PAGE 89 & 90.
9. MAP ENTITLED "TAX MAP H, LOT 4 & 4-3, SITE EASEMENT PLAN, MIXED USE DEVELOPMENT RETAIL PHASE. (NH ROUTE 108) & MAST ROAD DOVER, NEW HAMPSHIRE, OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC," PREPARED BY TFM, DATED FEBRUARY 15, 2007. RECORDED WITH STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN BOOK 91, PAGE 43.
10. UNDERGROUND GAS MAPPING IN THE AREA PROVIDED BY UNITIL.
11. MAP ENTITLED "ALTA/NSPS LAND TITLE SURVEY", PREPARED FOR McDONALD'S USA, LLC, PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED JULY 10, 2024.
12. MAP ENTITLED "TAX MAP H, LOT 4-3, AMENDED CONDOMINIUM SITE PLAN, UNIT 4 DOVER FIELD CONDOMINIUM , NH ROUTE 108, GRAPEVINE ROAD & MAST ROAD, DOVER, NEW HAMPSHIRE, OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC 48 CONSTITUTION DRIVE' BEDFORD, NEW HAMPSHIRE" PREPARED BY TFM, DATED SEPTEMBER 5, 2024. 3 SHEETS.
13. SKETCH OF WETLAND DELINEATION PREPARED BY GODDARD CONSULTING.
14. MAP ENTITLED "STATE OF NEW HAMPSHIRE, STATE HIGHWAY DEPARTMENT, PLAN & PROFILE OF PROPOSED FEDERAL AID PROJECT NO. 211-B, N.H. COLLEGE ROAD," PREPARED BY THE STATE OF NEW HAMPSHIRE HIGHWAY DEPARTMENT, FISCAL YEAR 1932. SHEETS 6 & 7 OF 22.

EXHIBIT "A"
LEGAL DESCRIPTION

UNIT 4 AS SHOWN ON TAX MAP H LOT 4-3 AMENDED CONDOMINIUM SITE PLAN UNIT 4 DOVER FIELDS CONDOMINIUM , NH ROUTE 108, GRAPEVINE ROAD & MAST ROAD, DOVER NEW HAMPSHIRE OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC PREPARED BY TFM CIVIL ENGINEERS, BEDFORD NH, DATED SEPTEMBER 5, 2024 AND RECORDED WITH THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN NOS. 13324, 13325, AND 13326.

SEE LEGAL DESCRIPTION OF UNITS IN DOVER FIELDS CONDOMINIUM DECLARATION, RECORDED AT BOOK 4094, PAGE 317, SEE PAGES 43, 44, AND 45.



SEE SHEET 2 OF 2 FOR TOPOGRAPHIC & UTILITIES

GRAPHIC SCALE
80' 0 40' 80' 160' 320'
(IN FEET)
1 inch = 80 ft.

No.	DESCRIPTION OF REVISION	FIELD CREW	DRAWN:	APPROVED:	DATE
2	REVISED PER UPDATED WETLAND DELINEATION LINE	J.D.O.	J.P.M.	J.P.L.	5-15-2025
1	REVISED PER NEW TITLE & FIELD VISIT	B.S.B.	J.P.M.	J.P.L.	3-17-2025

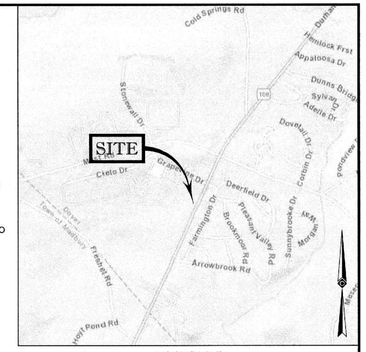
LEGAL DESCRIPTION OF CONDOMINIUM UNIT #4
DOVER FIELDS CONDOMINIUM
NEW HAMPSHIRE ROUTE 1 08, DOVER, NEW HAMPSHIRE

A CERTAIN CONDOMINIUM UNIT 4, OF THE DOVER FIELDS CONDOMINIUM, IN THE CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE, MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERLY CORNER OF CONDOMINIUM UNIT 4; THENCE

S 60° 11' 10" E	A DISTANCE OF 48.72 FEET TO A POINT; THENCE
S 65° 40' 47" E	A DISTANCE OF 75.52 FEET TO A POINT; THENCE
SOUTHEASTERLY	ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 44.78 FEET, A DISTANCE OF 45.50 FEET TO A POINT ON THE WESTERLY SIDELINE OF NH ROUTE 1 08, DURHAM ROAD; THENCE
S 24° 13' 06" W	BY THE WESTERLY SIDELINE OF DURHAM ROAD A DISTANCE OF 313.87 FEET TO A POINT; THENCE
N 65° 46' 54" W	A DISTANCE OF 162.91 FEET TO A POINT; THENCE
N 24° 21' 47" E	A DISTANCE OF 340.00 FEET TO THE POINT OF BEGINNING.

CONDOMINIUM UNIT 4 CONTAINS 54,340 S.F. +/- OR 1.2475 ACRES+/- AND BEING SHOWN ON A PLAN BY TFMORAN INC. ENTITLED "TAX MAP H LOT 4-3 CONDOMINIUM SITE PLAN PROJECT DURHAM ROAD (NH ROUTE 108) AND MAST ROAD, DOVER, NH OWNED BY AND PREPARED FOR VC DOVER INVESTMENTS, LLC, SCALE 1"=40' JUNE 15, 2012," REVISED THROUGH 12/7/2012 AND RECORDED IN THE STRAFFORD COUNTY REGISTRY OF DEEDS AS PLAN #104-089 & 104-090.



LOCUS MAP
NOT TO SCALE

NOTES:

1. PROPERTY KNOWN AS LOT 4-3, UNIT 4 AS SHOWN ON THE CITY OF DOVER, STRAFFORD COUNTY, STATE OF NEW HAMPSHIRE, MAP NO. H.
2. AREA LOT 4-3 = 923,185 SQUARE FEET OR 21.193 ACRES.
   AREA UNIT 4 = 54,340 SQUARE FEET OR 1.247 ACRES.
3. LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE. LOCATIONS AND SIZES ARE BASED ON UTILITY MARK-OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE AS-BUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES. CONTROL POINT ASSOCIATES, INC. DOES NOT GUARANTEE THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN SERVICE OR ABANDONED.
   - QUALITY LEVEL D - UTILITIES SHOWN BASED UPON REFERENCE MAPPING OR ORAL HISTORY. NOT FIELD VERIFIED.
   - QUALITY LEVEL C - LOCATION OF UTILITY SURFACE FEATURES SUPPLEMENTS REFERENCE MAPPING. INCLUDES MARKOUT BY OTHERS.
   - QUALITY LEVEL B - UTILITY LOCATION DATA IS COLLECTED THROUGH GEOPHYSICAL SENSING TECHNOLOGY TO SUPPLEMENT SURFACE FEATURES AND OR REFERENCE MAPPING. INCLUDES MARKOUT BY CONTROL POINT ASSOCIATES, INC.
   - QUALITY LEVEL A - HORIZONTAL AND VERTICAL LOCATION OF UTILITIES ARE OBTAINED USING VACUUM EQUIPMENT EXCAVATION OR OTHER METHODS TO EXPOSE THE UTILITY. LOCATION SHOWN AT SINGLE POINT WHERE EXCAVATION OCCURRED UNLESS UTILITY WAS LOCATED PRIOR TO FILLING.

   ALL FOUR TYPES MAY NOT BE PRESENT ON THIS SURVEY.
4. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
5. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF COMMITMENT FOR TITLE INSURANCE PREPARED BY CHICAGO TITLE INSURANCE COMPANY, COMMITMENT FOR TITLE INSURANCE NO. 241521- NCS (LJC: 028-0178), WITH AN EFFECTIVE DATE OF OCTOBER 10, 2024. FOR EXCEPTIONS LIST, SEE SCHEDULE B, PART II.

   THIS SURVEY DOES NOT ADDRESS OWNERSHIP AND POSSIBLE RIGHTS OF ADJOINING PROPERTIES.

   THIS SURVEY IS THE OPINION OF THE SURVEYOR AND IS NOT A LEGAL DECISION REGARDING PROPERTY BOUNDARY OR RIGHTS.
6. BY GRAPHIC PLOTTING ONLY PROPERTY IS PARTIALLY LOCATED IN FLOOD HAZARD ZONE X- UNSHADED (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), PER REF. #2
7. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON GPS OBSERVATIONS UTILIZING THE KEYSTONE VRS NETWORK (KEYNETGPS) TAKEN AT THE TIME OF THE FIELD SURVEY.

   TEMPORARY BENCH MARKS SET:

   TBM-A: X-CUT SET IN BOLT OVER MAIN OUTLET OF FIRE HYDRANT, ELEVATION= 111.24'

   TBM-B: X-CUT SET ON CORNER OF CONCRETE PAD, ELEVATION= 110.46'

   SEVEN (7) DAYS PRIOR TO CONSTRUCTION IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE BENCHMARKS ILLUSTRATED ON THIS SURVEY HAVE NOT BEEN DISTURBED AND THEIR ELEVATIONS HAVE BEEN CONFIRMED.
   ANY CONFLICTS MUST BE REPORTED PRIOR TO CONSTRUCTION. SURVEYOR IS NOT RESPONSIBLE FOR CONTRACTOR'S FAILURE TO COMPLY.
8. THE OFFSETS SHOWN ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC.
9. PARTIAL TOPOGRAPHY SHOWN HEREON PER CONTRACTUAL AGREEMENT WITH CLIENT.
10. PROPERTY HAS DIRECT ACCESS TO DURHAM ROAD & INDIRECT ACCESS TO MAST ROAD & DURHAM ROAD VIA ACCESS EASEMENT RECORDED IN BOOK 3561, PAGE 648.
11. NO PARKING STRIPES WERE OBSERVED WITHIN THE SURVEY AREA AT THE TIME OF THE FIELD WORK.
12. THERE IS NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELD WORK.
13. NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES HAVE BEEN MADE AVAILABLE TO THE SURVEYOR BY THE CONTROLLING JURISDICTION.
14. NO BUILDING OBSERVED WITHIN SURVEY AREA AT THE TIME OF FIELD WORK.
15. THE WETLANDS LIMITS SHOWN ON THIS SURVEY ARE BASED ON WETLANDS FIELD IDENTIFICATION MARKERS PLACED BY GODDARD CONSULTING ON APRIL 29, 2025 AND FIELD LOCATED BY CONTROL POINT ASSOCIATES INC. ON MAY 2, 2025. AT THE TIME OF THIS MAPPING, SAID WETLAND BOUNDARY LIMITS ARE SUBJECT TO CONFIRMATION.
16. ANY DISCREPANCIES FOUND ON THE SURVEY SHOULD BE REPORTED TO THE SURVEYOR IMMEDIATELY.
17. THIS SURVEY WAS PREPARED FOR THE CLIENT, MCDONALD'S USA, LLC & BOHLER ENGINEERING MA, LLC AND INTENDED ONLY FOR THE USE BY THE CLIENT AS CONTRACTED FOR THE PROJECT AND THE PURPOSE ORIGINALLY INTENDED. NO FURTHER PARTIES OTHER THAN THOSE CERTIFIED HEREON SHALL RELY ON IT FOR ANY PURPOSE.

SCHEDULE B, PART II

GENERAL EXCEPTIONS 1 THROUGH 5, ARE NOT SURVEY RELATED AND HAVE NOT BEEN COMMENTED ON AS A PART OF THIS SURVEY.

6. IF THE LAND IS A CONDOMINIUM UNIT, COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS, LIENS FOR ASSESSMENTS, OPTIONS, POWERS OF ATTORNEY, AND LIMITATIONS ON TITLE, CREATED BY STATE LAW OR SET FORTH IN THE DECLARATION OF CONDOMINIUM, IN THE RELATED BY-LAWS, OR SITE PLANS AND FLOOR PLANS AS DULY RECORDED IN THE APPROPRIATE LAND RECORDS OFFICE AND AS THE SAME MAY HAVE BEEN LAWFULLY AMENDED, AND IN ANY INSTRUMENTS CREATING THE ESTATE OR INTEREST INSURED BY THIS POLICY; - **CONDOMINIUM UNITS 1 THRU 5 SHOWN HEREON.**
7. CURRENT LAND USE WITH THE CITY OF DOVER DATED JUNE 8, 1981 AND RECORDED AT BOOK 1066, PAGE 408. SEE ALSO PARTIAL RELEASE RECORDED AT BOOK 3553, PAGE 907; - **NOT SURVEY RELATED.**
8. MATTERS SHOWN ON PLAN NOS. 104-89 & 90, 89-40 & 41, 91-43, AND 64-23, 13324, 13325 AND 13326; - **SURVEY RELATED MATTERS SHOWN HEREON.**
9. EASEMENT DEED - ACCESS EASEMENT DESCRIBED IN DEED DATED FEBRUARY 21, 2007 AND RECORDED AT BOOK 3496, PAGE 746. SEE ALSO EASEMENT PLAN 91-43; - **ACCESS EASEMENT A, B & C SHOWN HEREON.**
10. DECLARATION OF RECIPROCAL EASEMENTS DATED AUGUST 7, 2007 AND RECORDED AT BOOK 3561, PAGE 648; - **LOTS 4 & 4-3 & VARIOUS EASEMENTS SHOWN HEREON.**
11. DEVELOPMENT AGREEMENT DATED FEBRUARY 20, 2007 AND RECORDED AT BOOK 3495, PAGE 589. SEE ALSO CORRECTED DEVELOPMENT AGREEMENT AT BOOK 3534, PAGE 358; - **SITE DEVELOPMENT PLAN APPROVAL; NOT PLOTTABLE.**
12. CONDITIONS RECITED IN DEED TO CITY OF DOVER DATED FEBRUARY 21, 2007 AND RECORDED AT BOOK 3496, PAGE 737; - **PROPOSED DEDICATION FOR RIGHT OF WAY WIDENING SHOWN HEREON.**
13. CONDOMINIUM DECLARATION AND BY-LAWS DATED DECEMBER 14, 2012 AND RECORDED AT BOOK 4094, PAGE 317, AS AMENDED BY FIRST AMENDMENT DATED NOVEMBER 8, 2021 AND RECORDED AT BOOK 4979, PAGE 349, AND AS FURTHER AMENDED BY SECOND AMENDMENT DATED AUGUST 30, 2024 AND RECORDED AT BOOK 5209, PAGE 1023; - **BLANKET IN NATURE, COMMON AREAS & UNITS SHOWN HEREON.**
14. ALTA/NSPS LAND TITLE SURVEY MCDONALD'S USA, LLC GRAPEVINE DRIVE & 250 MAST ROAD MAP H, LOT 4-3, UNIT 4 CITY OF DOVER, STRAFFORD COUNTY, STATE OF NEW HAMPSHIRE, DATED 7/10/2024, PREPARED BY CONTROL POINT ASSOCIATES, INC., FILE NO. 03-240216-00; - **UNIT 4 SHOWN HEREON.**

THIS SURVEY IS CERTIFIED TO:
MCDONALD'S CORPORATION
MCDONALD'S USA, LLC
MCDONALD'S REAL ESTATE COMPANY
CHICAGO TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT WAS BASED WERE MADE IN ACCORDANCE WITH THE "2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 7(a), 7(b)(1), 7(c), 8, 9, 11(a), 13 & 14 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON MAY 2, 2025.

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STATE OF NEW HAMPSHIRE — No. 899 — JOHN P. LYNCH — LICENSED LAND SURVEYOR

5-15-2025
DATE

JOHN P. LYNCH
NEW HAMPSHIRE PROFESSIONAL LAND SURVEYOR #899

FIELD DATE	6-19-2024, 3-6-2025, 5-2-2025
FIELD BOOK NO.	23-03 MA, 25-01 MA, 24-14 MA
FIELD BOOK PG.	58, 63, 103
FIELD CREW	B.S.B., J.D.O.
DRAWN:	R.A.B.
REVIEWED:	R.J.K.
APPROVED:	J.P.L.
DATE	07-10-2024
SCALE	1"=80'
FILE NO.	03-240216-00
DWG. NO.	1 OF 2

ALTA/NSPS LAND TITLE SURVEY
McDONALD'S USA, LLC
GRAPEVINE DRIVE & 250 MAST ROAD
MAP H, LOT 4-3, UNIT 4
CITY OF DOVER, STRAFFORD COUNTY
LIC# 028-0178 STATE OF NEW HAMPSHIRE

CONTROL POINT ASSOCIATES, INC.
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SOUTHBOROUGH, MA 01772
508.948.3000
WWW.CPASURVEY.COM

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CRANFORD, PA 215.717.1002
MT. LAUREL, NJ 888.287.2010
MANHATTAN, NY 646.780.0411
LONG ISLAND, NY 631.580.2642
ALBANY, NY 518.217.1010
ROCHESTER, NY 585.250.3704
PRINCETON, NJ 609.375.2035
HUDSON VALLEY, NY 845.681.7359
FT. LAUDERDALE, FL 954.703.7611

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NAD27 NH GRID

LEGEND

124 / 125	EXISTING CONTOUR
× 123.45	EXISTING SPOT ELEVATION
× TC 123.45	EXISTING TOP OF CURB ELEVATION
× BC 123.45	EXISTING BOTTOM OF CURB ELEVATION
× TW 123.45	EXISTING TOP OF WALL ELEVATION
× BW 122.95	EXISTING BOTTOM OF WALL ELEVATION
HY	HYDRANT
WV	WATER VALVE
OH	OVERHEAD WIRES
G	APPROX. LOC. UNDERGROUND GAS LINE
E	APPROX. LOC. UNDERGROUND ELECTRIC LINE
D	APPROX. LOC. UNDERGROUND DRAINAGE LINE
S	APPROX. LOC. UNDERGROUND SANITARY / SEWER LINE
W	APPROX. LOC. UNDERGROUND WATER LINE
UP	UTILITY POLE
	PAINTED ARROWS
SMH	SANITARY/SEWER MANHOLE
CB	CATCH BASIN OR INLET
TREE & TRUNK SIZE	
EOC	EDGE OF CONCRETE
EOP	EDGE OF PAVEMENT
(TYP)	TYPICAL
SWL	SOLID WHITE LINE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
INV	INVERT ELEVATION
GRT	GRATE ELEVATION
SGC	SLOPE GRANITE CURB
VGC	VERTICAL GRANITE CURB
-UC-	SUBSURFACE UTILITY QUALITY LEVEL C
-UD-	SUBSURFACE UTILITY QUALITY LEVEL D
(#)	TITLE REPORT EXCEPTION
MF	DELINEATION FLAG

GRAPHIC SCALE

20' 0 10' 20' 40' 80'

(IN FEET)
1 inch = 20 ft.

THIS SURVEY IS CERTIFIED TO:
MCDONALD'S CORPORATION
MCDONALD'S USA, LLC
MCDONALD'S REAL ESTATE COMPANY
CHICAGO TITLE INSURANCE COMPANY

No.	DESCRIPTION OF REVISION	FIELD CREW	DRAWN:	APPROVED:	DATE
2	REVISED PER UPDATED WETLAND DELINEATION LINE	J.D.O.	J.P.M.	J.P.L.	5-15-2025
1	REVISED PER NEW TITLE & FIELD VISIT	B.S.B.	J.P.M.	J.P.L.	3-17-2025

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT WAS BASED WERE MADE IN ACCORDANCE WITH THE "2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 7(a), 7(b)(1), 7(c), 8, 9, 11(a), 13 & 14 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON MAY 2, 2025.

NOT A VALID ORIGINAL DOCUMENT UNLESS EMBOSSED WITH RAISED IMPRESSION OR STAMPED WITH A BLUE INK SEAL.

STATE OF NEW HAMPSHIRE — No. 09 — JOHN P. LYNCH — LICENSED LAND SURVEYOR — SIGNATURE

5-15-2025
DATE

JOHN P. LYNCH
NEW HAMPSHIRE PROFESSIONAL LAND SURVEYOR #899

FIELD DATE	5-19-2024 3-5-2025 5-5-2025
FIELD BOOK NO.	23-03 MA 23-01 MA 24-14 MA
FIELD BOOK PG.	58 63 103
FIELD CREW	B.S.B. J.D.O.
DRAWN:	R.A.B.
REVIEWED:	R.J.K.

ALTA/NSPS LAND TITLE SURVEY
McDONALD'S USA, LLC
GRAPEVINE DRIVE & 250 MAST ROAD
MAP H, LOT 4-3, UNIT 4
CITY OF DOVER, STRAFFORD COUNTY
STATE OF NEW HAMPSHIRE
L/C# 028-0178

CONTROL POINT ASSOCIATES, INC.
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ROCHESTER, NY 585.210.3764
PHILADELPHIA, PA 215.712.9690
HUDSON VALLEY, NY 845.691.7339
FT. LAUDERDALE, FL 954.703.7911

APPROVED:	DATE	SCALE	FILE NO.	DWG. NO.
J.P.L.	07-10-2024	1"=20'	03-240216-00	2 OF 2

SEE SHEET 1 OF 2 FOR EXCEPTIONS & EXHIBIT "A"
SEE SHEET 1 OF 2 FOR NOTE AND REFERENCES

NAD83

MAP H
LOT 4-3

N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

APPROX. LOC. OF 50' WIDE EASEMENT TO LOT H-4-1 & ACCESS EASEMENT C

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

172.09'
S24°08'19"W

84.08'
S09°44'35"E

52.03'
S65°46'54"E

162.91'
S65°46'54"E

47.83'
S64°09'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

N58°41'53"W
78.00'

DRIVE THRU

STOP

PROPOSED 2023 SERIES
BB20-4584-WW-HB
McDONALD'S RESTAURANT
(3,694 SF.)
(38 SEATS)

81.3'
24.0'
45.0'
84.6'
24.11'

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

STOP
DO NOT ENTER

N24°13'06"E
313.87'

APPROX. LOC. OF ACCESS EASEMENT "A" BK. 3496, PG. 746. (DOT HATCH)

BLOCK NOT DO

N60°11'10"W
46.72'

N65°40'47"W
75.52'

ONLY

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

41.67

10.92 | 16.42 | 4.62
18.73

CITY OF DOVER, NH FIRE TRUCK

Overall Length	41.670ft
Overall Width	8.330ft
Overall Body Height	11.886ft
Min Body Ground Clearance	1.171ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	44.00°

VEHICLE PROFILE

NOT TO SCALE

THIS PLAN TO BE UTILIZED FOR EXHIBIT PURPOSES ONLY.

20 10 5 0 20
SCALE: 1" = 20'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE

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ISSUED FOR ENTITLEMENTS

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PROJECT No.:	MAA240177.00-0A
DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-EXHB-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

PROPOSED DEVELOPMENT

MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

J.A. KUCICH
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 41530
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

DOVER FIRE TRUCK TURN EXHIBIT

SHEET NUMBER:

1

REVISION 2 - 05/22/2025

P:\2024\MAA240177.00\CAD\DRAWINGS\EXHIBITS\EXHIBIT B*P-EXHB-PROP-MAA240177.00-0A----\LAYOUT: C-001 VEHC
JG

NAD83

MAP H
LOT 4-3

N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.

APPROX. LOC. OF 50' WIDE EASEMENT TO LOT H-4-1 & ACCESS EASEMENT C

PROP LOT LINE
(TOTAL PARCEL: 1.92 AC
LAND TAKING: 0.67 AC)

172.09'
S24°08'19"W

84.08'
S09°44'35"E

52.03'
S65°46'54"E

162.91'
S65°46'54"E

47.83'
S64°08'13"W

44.34'
S24°06'34"W

42.03'
S10°32'45"W

N86°41'53"W
68.00'

N60°41'40"W
48.72'

N65°40'47"W
75.52'

N24°13'06"E
313.87'

APPROX. LOC. OF ACCESS EASEMENT "A" BK. 3496, PG. 746. (DOT HATCH)

BLOCK NOT DO

ONE WAY

DRIVE THRU

STOP

DO NOT ENTER

PROPOSED 2023 SERIES
BB20-4584-WW-HB
McDONALD'S RESTAURANT
(3,694 SF.)
(38 SEATS)

MAP H
LOT 4-3
N/F LANDS OF
VC DOVER INVESTMENTS, LLC.
BK. 3496, PG. 733.
VACANT-NO BUILDINGS

GRAPEVINE DRIVE
(PRIVATE - COMMON AREA)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

DURHAM ROAD
(A.K.A. N.H. ROUTE 108)
(PUBLIC - 66' WIDE R.O.W.)
(PER SURVEY)
TWO WAY TRAFFIC
(ASPHALT ROADWAY)

R=44.78'
D=058°12'5"
L=45.50'
CHB=S36°36'21"E
CHD=43.56'

THIS PLAN TO BE UTILIZED FOR EXHIBIT PURPOSES ONLY.

20 10 5 0 20
SCALE: 1" = 20'

P:\2024\MAA240177.00\CAD\DRAWINGS\EXHIBITS\EXHIBIT C1P-EXHC-PROP-MAA240177.00-0A-----LAYOUT: C-001 VEHC

BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	02/19/2025	REV PER TRC COMMENTS	JDG / CSE
2	05/22/2025	REV PER TRC COMMENTS	JDG / CSE

Know what's below. Call before you dig.
ALWAYS CALL 811
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DRAWN BY:	JDG
CHECKED BY:	CSE
DATE:	12/17/2024
CAD I.D.:	P-EXHC-PROP

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

SITE ID #: 28-0178

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MAP: H | LOT: 4-3
NH ROUTE 108 & GRAPEVINE DRIVE
STRAFFORD COUNTY
DOVER, NEW HAMPSHIRE

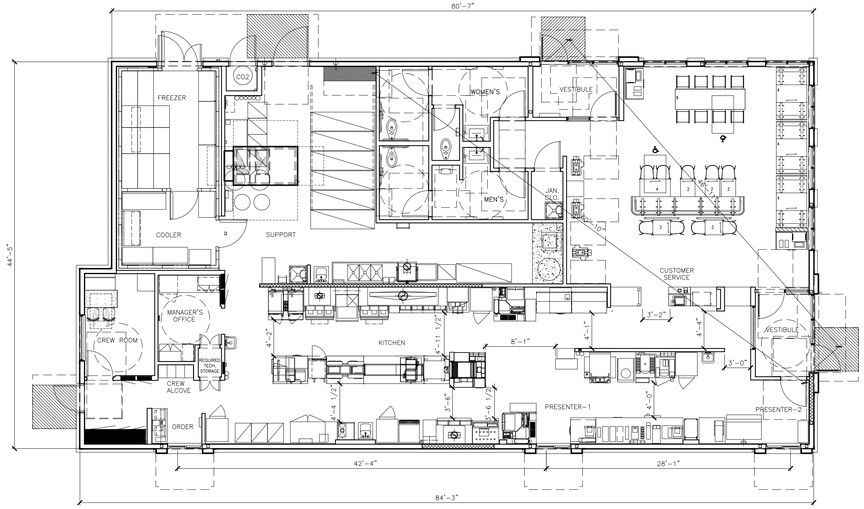
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NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:
PROPOSED DRIVE-THRU STACKING EXHIBIT

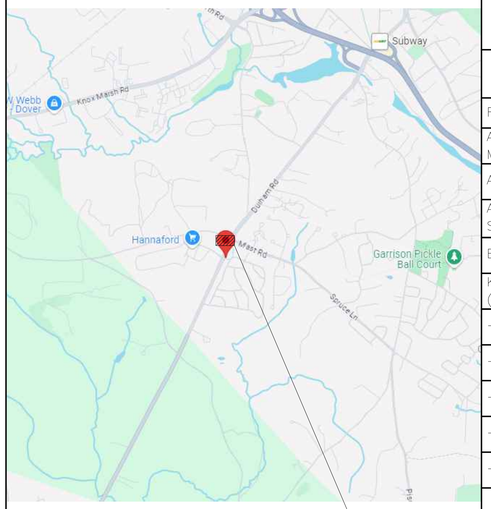
SHEET NUMBER:
1

REVISION 2 - 05/22/2025



4584-WW PLAN

34 SEATS (2 ACCESSIBLE SEATS)



VICINITY MAP:

OCCUPANCY ALLOWANCE:

INTERNATIONAL BUILDING CODE 2021

TABLE 1004.5
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	ALLOWANCE	AREA	OCCUPANTS
ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOM	300 GROSS	588 SF	2
ASSEMBLY WITH FIXED SEATS	SEE PLAN	–	34
ASSEMBLY W/OUT FIXED SEATS STANDING SPACE	5 NET	110 SF	22
BUSINESS AREAS	150 GROSS	64 SF	1
KITCHEN, COMMERCIAL (OCCUPANT LOAD FOR FULL STAFF)	200 GROSS	–	14
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–
TOTAL OCCUPANCY ALLOWANCE			73

2024 4584-WW BUILDING BB20 STAMFORD FIELD OFFICE

BUILDING INFORMATION:

ADDRESS:

STATE SITE CODE: 028-0178
STREET ADDRESS: 4 DEERFIELD DRIVE
CITY: DOVER
COUNTY: STRAFFORD
STATE: NEW HAMPSHIRE

STRUCTURE:

WOOD LOAD BEARING WALLS, WOOD ROOF FRAMING

UTILITIES:

ELECTRIC GRILLS & ELECTRIC FRYERS
ELECTRIC HVAC & ELECTRIC WATER HEATER

BUILDING CODE:

BUILDING CODE EDITION:	2021 INTERNATIONAL BUILDING CODE
MECHANICAL CODE EDITION:	2021 INTERNATIONAL MECHANICAL CODE
ELECTRICAL CODE EDITION:	2020 NATIONAL ELECTRICAL CODE
PLUMBING CODE EDITION:	2021 INTERNATIONAL PLUMBING CODE
ENERGY CODE EDITION:	2018 INTERNATIONAL ENERGY CONSERVATION CODE
HEALTH CODE EDITION:	STRAFFORD COUNTY HEALTH CODE
ACCESSIBILITY CODE EDITION:	2017 ICC A117.1

BUILDING DATA:

OCCUPANCY: USE GROUP A2
CONSTRUCTION TYPE: VB
NUMBER OF STORIES: 1
BUILDING HEIGHT: 18'-9 1/2" (MAIN BLDG. PARAPET)

GROSS BUILDING AREA:	3,694 S.F.
FLOOR AREA, GROSS:	3,521 S.F.

DESIGN LOADS:

GROUND SNOW LOAD:	60 PSF
WIND SPEED:	115 MPH (EXPOSURE B)
SEISMIC DESIGN CATEGORY:	C
SOIL BEARING CAPACITIES:	3000 PSF

LIFE SAFETY SYSTEM:

EMERGENCY LIGHTING:	X YES	___ NO
EXIT SIGNS:	X YES	___ NO
FIRE ALARM:	___ YES	X NO
DUCT SMOKE DETECTORS W/ AUDIBLE/VISIBLE DEVICE:	X YES	___ NO
FIRE SPRINKLERS:	___ YES	X NO
SPRINKLER FLOW/TAMPER SWITCH W/ AUDIBLE/VISIBLE DEVICE:	___ YES	X NO
CO2 DETECTION SYSTEM W/ AUDIBLE/VISIBLE DEVICE:	X YES	___ NO
PANIC HARDWARE:	X YES	___ NO

DESIGNER OF RECORD:

DISCIPLINE:	NAME:	ADDRESS:	LICENSE #:
ARCHITECT:	MARC PELINI	135 WATER STREET, SUITE 201, NAPERVILLE, IL 60540	05437
STRUCTURAL:	DAVID BALMA	1315 WALNUT STREET, SUITE 600, PHILADELPHIA, PA 19107	14646
MECHANICAL:	DAVID LEIFFER	212 SE 34TH STREET, SUITE 2, BENTONVILLE, AR 72712	12662
PLUMBING:	DAVID LEIFFER	212 SE 34TH STREET, SUITE 2, BENTONVILLE, AR 72712	12662
ELECTRICAL:	JOHN FERGUSON	212 SE 34TH STREET, SUITE 2, BENTONVILLE, AR 72712	14924

CONSTRUCTION PROJECT MANAGER:

	NAME:	EMAIL:	PHONE #:
MANAGER:	ERIC WAGNER	eric.wagner@us.mcd.com	(339) 216-8631

CORE STATES GROUP CONTACT:

	NAME:	ADDRESS:	EMAIL:	PHONE #:
MANAGER:	BRIANA ABDALLA	10 NORTH HIGH STREET, SUITE 310 WEST CHESTER, PA 19380	babdalla@core-states.com	(267)464.8044

ALL CORRESPONDENCE SHALL BE DIRECTED TO CORE STATES GROUP PROJECT MANAGER

REVISIONS

REV	DATE	DESCRIPTION	BY
–	–	–	–

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K2.0 Kitchen Equipment Plan
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LICENSED ARCHITECT
MARC PELINI
No:05437
10-25-24
STATE OF NEW HAMPSHIRE

PREPARED BY:
CORE STATES GROUP
135 Water Street
Suite 201
Naperville, IL 60540
312.718.3415
core-states.com

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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	N.GLUKHOMAN
STD ISSUE DATE	2024 07
REVIEWED BY	M.PELINI
DATE ISSUED	10/01/2024
C.S.G. PROJECT #	MCD.39450

TITLE:
2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN: 4.3514
L/C: 028-0178

SITE ADDRESS:
4 DEERFIELD DR. DOVER, NH

SHEET NO.
028-0178.00.0
GN1.0
COVER

GENERAL NOTES

1. ALL WORK SHALL BE IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL BUILDING CODES, REGULATIONS, ORDINANCES AND STANDARDS INCLUDING ADA AND OR OTHER HANDICAP ACCESSIBILITY CODES.
2. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE OWNER'S VENDORS REGARDING SCHEDULING ON SITE DURING CONSTRUCTION AND SEQUENCING OF THE WORK.
3. THE CONSTRUCTION NOTES AND DRAWINGS ARE SUPPLIED TO ILLUSTRATE THE DESIGN INTENT AND GENERAL TYPE OF CONSTRUCTION DESIRED AND ARE INTENDED TO IMPLY THE FINEST QUALITY OF CONSTRUCTION, MATERIAL AND WORKMANSHIP THROUGHOUT.
4. THE DRAWINGS ARE NOT TO BE SCALED. FOR INFORMATION CONCERNING EXISTING CONDITIONS, ETC., VERIFICATION MUST BE DONE IN THE FIELD. LARGE SCALE DRAWINGS HAVE PRECEDENCE OVER SMALL SCALE DRAWINGS.
5. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTENCE AND LOCATION OF ALL EXISTING ABOVE AND BELOW GRADE, UTILITIES, INCLUDING SANITARY SEWER, STORM SEWER, WATER, GAS, ELECTRICAL, TELEPHONE, ETC. ANY DISCREPANCIES IN UTILITY LOCATIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT.
6. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL BUILDING DIMENSIONS PRIOR TO BEGINNING CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY VARIANCE OR DISCREPANCY AFFECTING NEW CONSTRUCTION PRIOR TO PROCEEDING WITH WORK.
7. CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING IN WALLS FOR SUPPORT OF ALL EQUIPMENT, SHELVING, ACCESSORIES, SIGNAGE, AND OTHER DEVICES REQUIRED.
8. ALL PENETRATIONS SHALL RECEIVE CAULKING TO SEAL ANY TYPE OF ENERGY LOSS.
9. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL APPLICABLE DIMENSIONS OF FIXTURES AND EQUIPMENT SUPPLIED AND/OR INSTALLED BY OTHERS.
10. UPON COMPLETION OF PROJECT, G.C. TO OBTAIN ALL FINAL INSPECTIONS AS REQUIRED BY LOCAL JURISDICTIONS AND FURNISH OWNER WITH EVIDENCE OF ALL SUCH INSPECTIONS AND CERTIFICATES OF OCCUPANCY.
11. SIGNS, UNLESS NOTED OTHERWISE, ARE PROVIDED BY OWNER'S SIGN CONTRACTOR. OWNER'S SIGN VENDOR WILL PROVIDE MONUMENT SIGN BASE (CONCRETE, STONE, BRICK, ETC.) IF PROJECT REQUIRES DECORATIVE BASE. SEE SHEET L-1 TO VERIFY IF REQUIRED. GENERAL CONTRACTOR TO PROVIDE ROUGH-IN & FINAL CONNECTION AND BRAILLE EXIT SIGN.
12. GENERAL CONTRACTOR TO PROVIDE FOUR (4) 30 YARD DUMPSTERS DURING McDONALD RETAIL MOVE-IN.
13. GENERAL CONTRACTOR SHALL PROVIDE ONE SKILLED LABORER FOR ONE WEEK DURING McDONALD RETAIL MOVE-IN. (40 HOURS)
14. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SET-UP AND COORDINATION OF ALL THE UTILITY SERVICES FOR THE PROJECT.
15. ALL EXTERIOR FLOOR PLAN DIMENSIONS ARE TO EXTERIOR FACE OF MASONRY UNLESS OTHERWISE NOTED. ALL INTERIOR FLOOR PLAN DIMENSIONS ARE TO FACE OF INTERIOR WALL BOARD UNLESS OTHERWISE NOTED.
16. FINAL KEYING TO BE COORDINATED WITH McDONALD FACILITY MANAGER AND PAID FOR BY McDONALD.
17. REFER TO "PROJECT MANUAL" FOR ALL OTHER INSTRUCTIONS & DIRECTIVES NOT SHOWN IN DRAWINGS. IF THERE IS A CONFLICT BETWEEN THE DRAWINGS AND PROJECT MANUAL, NOTIFY THE AREA CONSTRUCTION MANAGER FOR RESOLUTION.

ABBREVIATIONS

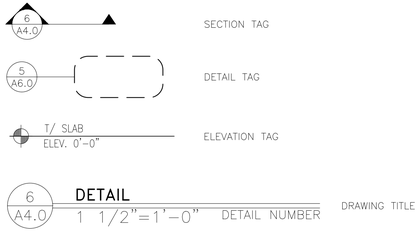
GENERAL ABBREVIATIONS

A	ANNEALED
AC	AIR CONDITIONING
ACT	ACOUSTIC CEILING TILE
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ASPH	ASPHALT
CJ	CONTROL JOINT
CLNG	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CP	CONCRETE PAD
CT	CERAMIC TILE
CL	CENTERLINE
DBL	DOUBLE
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DO	DOWNSPOUT
EA	EACH
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EXIST	EXISTING
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FR	FIRE RATED
FRP	FIBERGLASS REINFORCED PLASTIC
GALV	GALVANIZED
GYP BD	GYPSUM BOARD
HC	HANDICAP
HDW	HARDWARE
HM	HOLLOW METAL
HT	HEIGHT
HVAC	HEATING, VENTILATION, AIR CONDITIONING
INSUL	INSULATION
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MO	MASONRY OPENING
MR	MOISTURE RESISTANT
MTL	METAL
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OPP	OPPOSITE
OPT	OPTIONAL
PAR	PARTIAL
PF	PRE-FABRICATED
PSF	POUNDS PER SQUARE FOOT
PT	PRESSURE TREATED
PTD	PAINTED
QT	QUARRY TILE
R	RADIUS
REBAR	REINFORCING BAR
REF	REFERENCE
REQD.	REQUIRED
RO	ROUGH OPENING
SB	SPLASHBLOCK
SIM	SIMILAR
SPEC	SPECIFICATION
SS	STAINLESS STEEL
STL	STEEL
STOR	STORAGE
SUSP	SUSPENDED
T	TEMPERED
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
WD	WOOD
WP	WATERPROOF
WWF	WELDED WIRE FABRIC

McDONALD'S ABBREVIATIONS

AP	ALPOLIC METAL PANEL
BM	BRAKE METAL
C	ALUMINUM CANOPY
CG	CORNER GUARD
CT	WALL TILE
D# DEVICE	DECOR ELEMENT OR FINISH
DMB	DIGITAL MENU BOARD
DS	DROP SOFFIT
D/T	DRIVE-THRU
FB	FILL BOX
F/C	FREEZER/COOLER
GC	GENERAL CONTRACTOR
HP	HIGH POINT
KIOSK	
L	LIGHT FIXTURE
LAM	LAMINATE
LE	ACCENT LIGHTING
LP	LOW POINT
LL	LEVEL LANDING
MACHINE MANAGER	
MF	METAL FASCIA
MS	MOP SINK
PB	PIPE BOLLARD
PT	RMHC COIN COLLECTOR
RL	ROOF LADDER
ROOM S	McDONALD'S SIGNAGE
SCH	SCHLUTER
UN	ALUMINUM CANOPY UNDERSCORE

SYMBOL LEGEND:



REV	DATE	DESCRIPTION	BY

LICENSED ARCHITECT
MARC PELINI
No:05437
10-25-24
STATE OF NEW HAMPSHIRE

PREPARED BY:
CORE STATES GROUP
135 Wynne Street
Suite 201
Schaumburg, IL 60540
312.718.3415
core-states.com

PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	N.GLUKHOMAN
STD ISSUE DATE	2024 07
REVIEWED BY	M.PELINI
DATE ISSUED	10/01/2024
C.S.G. PROJECT #	MCD.39450

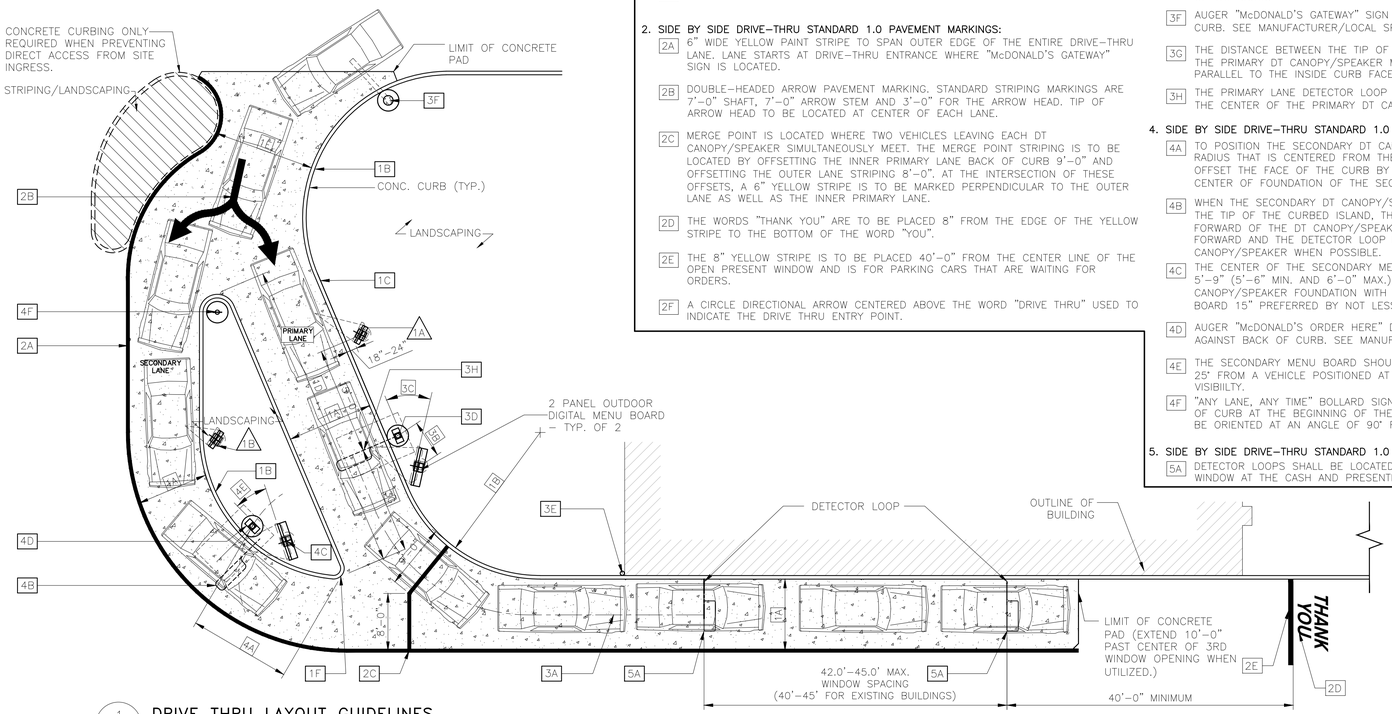
TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN: 4.23.14
SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178

SHEET NO.
028-0178.00.0
GN1.1
GENERAL NOTES

THE LAYOUT OF THE DRIVE–THRU LANES SHOWN IN THIS DETAIL ILLUSTRATES DRIVE–THRU DESIGN PRINCIPLES.



1 DT1.0 DRIVE THRU LAYOUT GUIDELINES
1" = 10'–0"

SIDE BY SIDE DRIVE–THRU STANDARD 1.0

1. SIDE BY SIDE DRIVE–THRU STANDARD 1.0 CURBING DETAILS:

1A DRIVE–THRU LANES BOUND BY CURB ON BOTH SIDES ARE TO BE 12'–0". LANES BOUND BY CURB ON ONE SIDE AND PAINTED STRIPING ON THE OTHER SIDE ARE TO BE A MIN. OF 10'–0".

1B THE MIN. RADIUS FOR ALL INSIDE/DRIVER'S SIDE DRIVE–THRU CURBING IS 20'–0".

1C PRIMARY LANE CURBING SHOULD BE AS STRAIGHT AS POSSIBLE. (LESS CURVING, THE BETTER).

1D THE OVERALL LENGTH OF THE CURBED ISLAND SHOULD BE 35'–45'. THE LENGTH OF THE ISLAND FROM THE DT CANOPY/SPEAKER ALLOWS FOR THREE CARS IN THE SECONDARY LANE, TWO IN THE PRIMARY LANE AND ONE AT THE COMMITMENT POINT.

1E ENTRANCE LANE ENTERING THE SIDE BY SIDE DRIVE–THRU IS TO BE 14'–0" MIN.

1F THE RADIUS FOR THE ISLAND TIP SHALL BE 1'–6".

2. SIDE BY SIDE DRIVE–THRU STANDARD 1.0 PAVEMENT MARKINGS:

2A 6" WIDE YELLOW PAINT STRIPE TO SPAN OUTER EDGE OF THE ENTIRE DRIVE–THRU LANE. LANE STARTS AT DRIVE–THRU ENTRANCE WHERE "McDONALD'S GATEWAY" SIGN IS LOCATED.

2B DOUBLE–HEADED ARROW PAVEMENT MARKING. STANDARD STRIPING MARKINGS ARE 7'–0" SHAFT, 7'–0" ARROW STEM AND 3'–0" FOR THE ARROW HEAD. TIP OF ARROW HEAD TO BE LOCATED AT CENTER OF EACH LANE.

2C MERGE POINT IS LOCATED WHERE TWO VEHICLES LEAVING EACH DT CANOPY/SPEAKER SIMULTANEOUSLY MEET. THE MERGE POINT STRIPING IS TO BE LOCATED BY OFFSETTING THE INNER PRIMARY LANE BACK OF CURB 9'–0" AND OFFSETTING THE OUTER LANE STRIPING 8'–0", AT THE INTERSECTION OF THESE OFFSETS, A 6" YELLOW STRIPE IS TO BE MARKED PERPENDICULAR TO THE OUTER LANE AS WELL AS THE INNER PRIMARY LANE.

2D THE WORDS "THANK YOU" ARE TO BE PLACED 8" FROM THE EDGE OF THE YELLOW STRIPE TO THE BOTTOM OF THE WORD "YOU".

2E THE 8" YELLOW STRIPE IS TO BE PLACED 40'–0" FROM THE CENTER LINE OF THE OPEN PRESENT WINDOW AND IS FOR PARKING CARS THAT ARE WAITING FOR ORDERS.

2F A CIRCLE DIRECTIONAL ARROW CENTERED ABOVE THE WORD "DRIVE THRU" USED TO INDICATE THE DRIVE THRU ENTRY POINT.

3. SIDE BY SIDE DRIVE–THRU STANDARD 1.0 EQUIPMENT POSITIONING FOR PRIMARY LANE:

3A MIN. 60'–0" (+5', 60'–65') LINEAR DISTANCE BETWEEN THE CENTER LINE OF THE DT CANOPY/SPEAKER FACE AND THE CENTER LINE OF THE OPEN ORDER BOOTH WINDOW AS MEASURED ALONG THE CENTER LINE OF THE LANE. THIS MAY ONLY BE INCREASED IN 20'–0" INCREMENTS (±5' FOR 80', 100', AND 120') TO A MAX OF 120'. 100'–0" IS OPTIMAL.

3B THE CENTER OF THE PRIMARY MENU BOARD FOUNDATION IS TO BE 5'–9" (5'–6" MIN. AND 6'–0" MAX.) FROM THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION WITH THE END CAP OF THE PRIMARY MENU BOARD 15" PREFERRED BUT NOT LESS THAN 12" FROM THE FACE OF CURB. .

3C THE PRIMARY MENU BOARD SHOULD BE AT AN ANGLE OF APPROXIMATELY 25° TO 35° ANGLE (35° PREFERRED) FROM A CAR POSITIONED AT THE DT CANOPY/SPEAKER AND WITH 100% VISIBILITY.

3D AUGER "McDONALD'S ORDER HERE CANOPY" CANOPY FOUNDATION TIGHT AGAINST BACK OF CURB. SEE MANUFACTURER/LOCAL SPECIFICATIONS FOR DETAILS.

3E A SINGLE BOLLARD SHOULD BE POSITIONED AT THE CORNER OF THE BUILDING ON THE DRIVE–THRU SIDE. IT SHOULD BE FLUSH AGAINST THE BUILDING AND FACE OF THE BOLLARD SHOULD BE TIGHT AGAINST THE BACK OF THE CURB.

3F AUGER "McDONALD'S GATEWAY" SIGN FOUNDATION TIGHT AGAINST BACK OF CURB. SEE MANUFACTURER/LOCAL SPECIFICATIONS FOR DETAILS.

3G THE DISTANCE BETWEEN THE TIP OF THE CURBED ISLAND AND THE CENTER LINE OF THE PRIMARY DT CANOPY/SPEAKER MUST BE 15'–0". THIS MEASUREMENT IS TAKEN PARALLEL TO THE INSIDE CURB FACE OF THE PRIMARY LANE.

3H THE PRIMARY LANE DETECTOR LOOP SHOULD BE PERPENDICULAR TO THE CENTER OF THE PRIMARY DT CANOPY/SPEAKER.

4. SIDE BY SIDE DRIVE–THRU STANDARD 1.0 EQUIPMENT POSITIONING FOR SECONDARY LANE:

4A TO POSITION THE SECONDARY DT CANOPY/SPEAKER, DRAW AN ARC WITH A 14' RADIUS THAT IS CENTERED FROM THE MIDPOINT OF THE ISLAND TIP. THEN OFFSET THE FACE OF THE CURB BY 24" TO DETERMINE THE LOCATION OF CENTER OF FOUNDATION OF THE SECONDARY DT CANOPY/SPEAKER.

4B WHEN THE SECONDARY DT CANOPY/SPEAKER IS LOCATED AT 14'–0" FROM THE TIP OF THE CURBED ISLAND, THE LOOP DETECTOR IS TO BE 2'–0" FORWARD OF THE DT CANOPY/SPEAKER CENTER LINE WITH THE LOOP FACING FORWARD AND THE DETECTOR LOOP PERPENDICULAR TO THE SECONDARY DT CANOPY/SPEAKER WHEN POSSIBLE.

4C THE CENTER OF THE SECONDARY MENU BOARD FOUNDATION SHALL BE 5'–9" (5'–6" MIN. AND 6'–0" MAX.) FROM CENTER OF THE DT CANOPY/SPEAKER FOUNDATION WITH THE END CAP OF THE SECONDARY MENU BOARD 15" PREFERRED BY NOT LESS THAN 12" FROM FACE OF CURB.

4D AUGER "McDONALD'S ORDER HERE" DT CANOPY/SPEAKER FOUNDATION TIGHT AGAINST BACK OF CURB. SEE MANUFACTURER/LOCAL SPECIFICATIONS FOR DETAILS.

4E THE SECONDARY MENU BOARD SHOULD BE AT AN ANGLE OF APPROXIMATELY 25° FROM A VEHICLE POSITIONED AT THE DT CANOPY/SPEAKER AND WITH 100% VISIBIILTY.

4F "ANY LANE, ANY TIME" BOLLARD SIGN MUST BE A MIN. OF 1'–6" FROM FACE OF CURB AT THE BEGINNING OF THE LANDSCAPE ISLAND. BOLLARD SIGN IS TO BE ORIENTED AT AN ANGLE OF 90° FROM THE CURB.

5. SIDE BY SIDE DRIVE–THRU STANDARD 1.0 DETECTOR LOOP:

5A DETECTOR LOOPS SHALL BE LOCATED AT THE CENTER OF THE OPENING WINDOW AT THE CASH AND PRESENTER BOOTHS.

SIDE BY SIDE DRIVE–THRU STANDARD 1.0 FEATURES:

1. SIDE BY SIDE DRIVE–THRU STANDARD 1.0 EQUIPMENT:

1A PRE–BROWSE BOARD MUST BE 18"–24" FROM FACE OF CURB. THE DISTANCE BETWEEN THE PRIMARY DT CANOPY/SPEAKER AND PRE–BROWSE BOARD IS TO BE 15' AS MEASURED ALONG THE FACE OF CURB. THIS IS MEASURED FROM THE CENTER OF THE PRE–BROWSE BOARD FOUNDATION TO THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION. THE ANGLE (APPROXIMATELY 50') OF THE PRE–BROWSE BOARD SHOULD MAXIMIZE VISIBILITY TO THE SECOND CAR FROM DT CANOPY/SPEAKER.

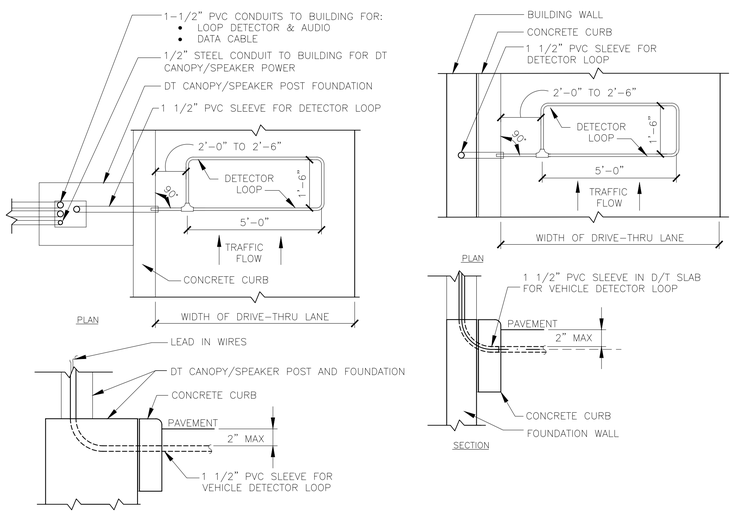
1B PRE–BROWSE BOARD MUST BE MIN. 12" FROM FACE OF CURB. THE DISTANCE BETWEEN THE SECONDARY DT CANOPY/SPEAKER AND PRE–BROWSE BOARD IS TO BE 15' AS MEASURED ALONG FACE OF THE CURB. THIS IS MEASURED FROM THE POINT PERPENDICULAR TO THE CENTER OF THE PRE–BROWSE BOARD FOUNDATION TO THE POINT PERPENDICULAR TO THE CENTER OF THE DT CANOPY/SPEAKER FOUNDATION. THE ANGLE OF THE PRE–BROWSE BOARD SHOULD MAXIMIZE VISIBILITY TO THE SECOND CAR FROM DT CANOPY/SPEAKER (PREFERRED 35').

GENERAL NOTES

1. DRIVE–THRU ELEMENTS:
DT CANOPY/SPEAKER DRIVE–THRU PYLON/CLEARANCE POLE AND BOLLARD SIGN SHALL BE CONSISTENT WITH THE STANDARD BUILDING DESIGN DRIVE–THRU ELEMENTS.
OTHER DESIGNS MAY NOT BE USED.
2. CONTRACTOR SHALL COORDINATE WITH APPLICABLE PLANS, McDONALD'S AREA CONSTRUCTION MANAGER, CONTENT SUPPLIER AND SIGNAGE SUPPLIER TO DETERMINE EXACT LOCATION, ORIENTATION, MOUNTING HEIGHTS, AND NUMBER OF BOARDS AND OTHER DRIVE–THRU ELEMENTS TO BE INSTALLED AT THIS SITE. ALL WORK TO BE COORDINATED WITH OTHER TRADES.
3. CONTACT McDONALD'S AREA CONSTRUCTION MANAGER FOR DRIVE–THRU ELEMENT FOOTING AND WIRING REQUIREMENTS NOT SHOWN. (INFORMATION ALSO AVAILABLE THROUGH VENDOR WEBSITES) SIGNAGE MANUFACTURER TO PROVIDE FOOTING ANCHORS & TEMPLATES TO G.C. PRIOR TO FOUNDATION POURING.
4. SEE DETAIL 2/DT1.0 FOR DETECTOR LOOP INFORMATION, ELECTRICAL SHEETS FOR LOW VOLTAGE CONDUIT DIAGRAM AND FOR DRIVE THRU POWER DIAGRAM; VENDOR'S SPECIFICATIONS SHALL GOVERN UPON ANY DISCREPANCIES.
5. CONTRACTOR TO COORDINATE THE RESPONSIBILITIES OF THE ELECTRICAL CONTRACTOR, CONTENT SUPPLIER AND THE SIGN SUPPLIER.
6. CONTRACTOR TO INSTALL PRE–FORMED, PRE–WIRED VEHICLE DETECTOR LOOP.
7. CONTRACTOR SHALL VERIFY CONDUIT SIZES REQUIRED BY VEHICLE LOOP DETECTOR SUPPLIER.

NOTES

1. VERIFY CONDUIT SIZES AND LAYOUT WITH DETECTOR LOOP MANUFACTURER.
2. CENTER VEHICLE DETECTOR LOOP IN DRIVE THRU LANE. INSTALL PER MFR. RECOMMENDATIONS.
3. NO STEEL (REBAR OR ELECTRICAL WIRE) SHALL BE USED WITHIN 2' OF LOOP.
4. DETECTOR LOOP MANUFACTURERS:
DETECTOR LOOPS MAY BE BY ONE OF THE FOLLOWINGS COMPANIES OR EQUAL.
3M: 1–800–328–0033
HME: 1–800–848–4468
5. DETECTOR LOOP MATERIAL:
PVC TUBING 1/2" I.D. 100 PSI LOOP MADE FROM ONE LENGTH OF THIN FOURTEEN GAUGE STRANDED WIRE. LEAD–IN IS PRE–TWISTED AT FACTORY.
6. DETECTOR LOOP CONSTRUCTION:
FORMED WITH ONE CONTINUOUS LENGTH OF PVC WITH NO SHARP CORNERS AS DETAILED. WIRE LOOPED, FORMED, & PIGTAILED AS DETAILED.



2 DT1.0 DETECTOR LOOP DETAILS
NOT TO SCALE

A – DT CANOPY/SPEAKER DETECTOR LOOP

B – DT WINDOW DETECTOR LOOP

REV	DATE	DESCRIPTION	BY

LICENSED ARCHITECT – MARC PELINI No:05437 – 10-25-24 – STATE OF NEW HAMPSHIRE

PREPARED BY:
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135 Wacker Street
Suite 201
Chicago, IL 60640
312.718.5415
core-jobs.com

PREPARED FOR:
McDonald's USA, LLC

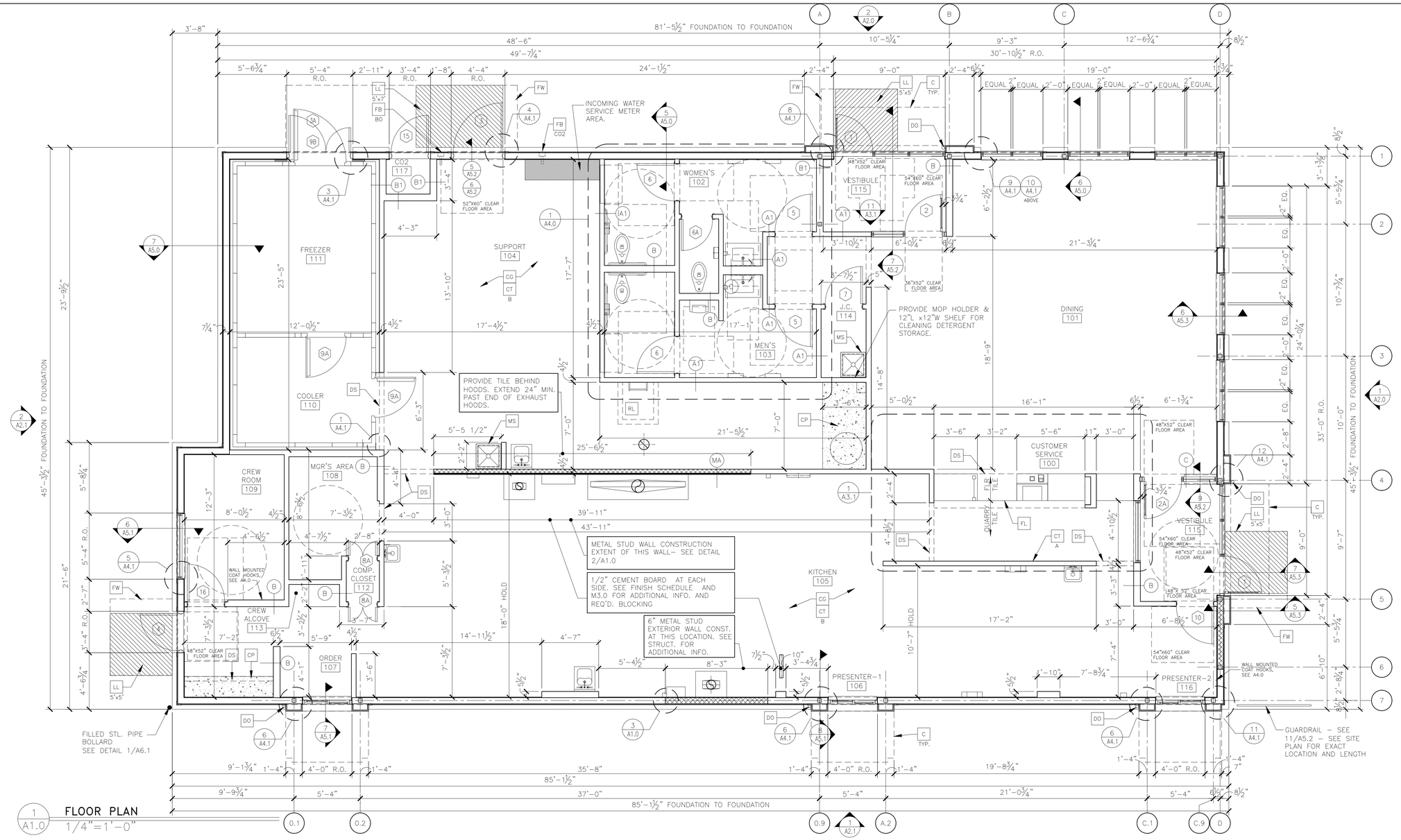
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N.GLUKHOMAN	M.PELINI	10/01/2024	MCD-39450
STD ISSUE DATE 2024 07			

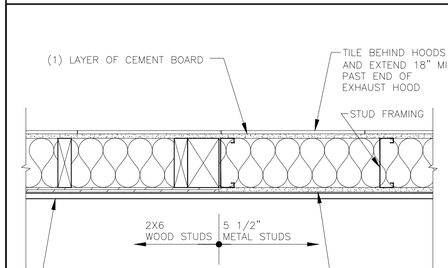
TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
MSN: 4.3514	4 DEERFIELD DR. DOVER, NH
L/C: 028–0178	

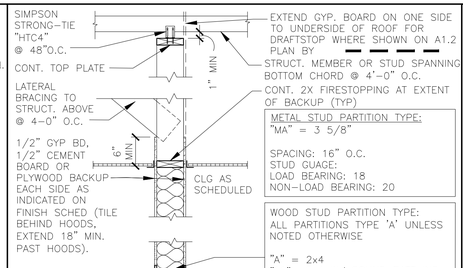
SHEET NO. 028–0178.00.0
DT1.0
DRIVE–THRU DETAILS



1 A1.0 **FLOOR PLAN**
1/4"=1'-0"



3 A1.0 **TRANSITON DETAIL**
1 1/2"=1'-0"



METAL STUD PARTITION TYPE:
"MA" = 3 5/8"

SPACING: 16" O.C.
STUD GUAGE:
LOAD BEARING: 18
NON-LOAD BEARING: 20

WOOD STUD PARTITION TYPE:
ALL PARTITIONS TYPE 'A' UNLESS NOTED OTHERWISE

"A" = 2x4
"A1"= 2x4 W/ SOUND BATT INS.
"B" = 2x6
"B1"= 2x6 W/ SOUND BATT INS.
"C" = 2x8
"C1"= 2x8 W/ SOUND BATT INS.

*EQUIVALENT LIGHT GAUGE METAL STUDS ALSO ACCEPTABLE

STUD SPACING: 16" O.C.

2 A1.0 **INTERIOR PARTITION**
3/4"=1'-0"

KEY NOTES

- C — ALUMINUM CANOPY SYSTEM ABOVE – SEE 4/A5.0 FOR NOTES – SEE ROOF PLAN FOR DIMENSIONS, SEE ELEVATION FOR COLORS
- CG — G.C. TO PROVIDE 4"x4"x5'-0" HIGH STAINLESS STEEL CORNER GUARDS AT ALL EXPOSED LOCATIONS IN KITCHEN/SUPPORT AREA. CORNER GUARDS TO START AT FINISH FLOOR. ATTACH WITH WOOD SCREWS INTO WOOD BLOCKING BULLNOSE COVE BASE WHERE TILE MEETS STAINLESS STEEL CORNER
- CP — CONCRETE EQMT PAD – SEE STRUCTURAL
- CT A — WALL TILE: PER DECOR PORTFOLIO GEOMETRY/LUNA/RAY: EUROWEST – 754–747. COLOR: NOIR, SIZE: 4"x12", PATTERN: STACKED BOND. GROUT: MAPEI 02 PEWTER – JOINT TO BE 1/16" MAX. ROUTE 66: EUROWEST – WHITE GLOSSY CHEVRON GROUT: CHARCOAL 47 – JOINT TO BE 1/16" MAX.
- CT B — WALL TILE: CROSSVILLE – COLOR BY NUMBERS COLOR: AFTERNOON SPRAY, SIZE: 4"x12", PATTERN: STACKED BOND GROUT: MAPEI 02 PEWTER – JOINT TO BE 1/16" MAX. USE THIS TILE WHEN HIGH LRV IS REQUIRED COORDINATE WITH McDONALD'S AREA CONSTRUCTION MANAGER
- DO — DOWNSPOUT CONNECTED TO CANOPY SYSTEM. SEE ELEVATIONS. COORDINATE CONNECTION WITH CIVIL.
- DS — DROPPED SOFFIT ABOVE – SEE REFLECTED CEILING PLAN
- D# — DECOR PORTFOLIO SPECIFIC ELEMENT – SEE FINISH SCHEDULE.
- FB CO2 — CO2 FILL BOX (EQUIPMENT SCHEDULE ITEM 49.00)
- FB BO — OPTIONAL BULK OIL FILL BOX (EQPM SCHEDULE ITEM 700.18) CONFIRM USE WITH MCDONALD'S AREA CONSTRUCTION MANAGER
- FL — FLOOR LINE – CHANGE IN MATERIAL – SEE FINISH SCHEDULE
- FP — FIBERGLASS REINFORCED PLASTIC (FRP) – PANOLAM, GRAY SMOOTH, CLASS A, .075. REFER TO ROOM FINISH SCHEDULE SHEET A6.1 FOR INSTALLATION LOCATIONS. FOR ORDERING, CONTACT KIMBERLY LAWSON Kimberly_Lawson@panolam.com 1–866–925–4377
- FW — LINE OF FROST WALL; SEE SECTIONS AND STRUCTURAL DRAWINGS FOR MORE INFORMATION
- LL 5'x5' — LEVEL LANDING @ EXT. DOOR W/ MAX. 2% RUNNING/CROSS SLOPE AWAY FROM BUILDING; SIZE OF LANDING
- MS — MOP SINK – SEE DETAIL 8/A6.1 AND PLUMBING DRAWINGS.
- RL — ROOF ACCESS LADDER W/HATCH ABOVE SEE STRUCTURAL FRAMING PLAN FOR LOCATING DIMENSIONS

SYMBOL LEGEND

- (A) — PARTITION TYPE TAG SEE 2/A1.0
- DRAFT STOPPING – SEE 2/A1.2
- (7) — DOOR TAG – SEE DOOR SCHEDULE ON A6.0
- (X) — KEY NOTE

GENERAL NOTES

1. EXTERIOR DIMENSIONS ARE TO COLUMN REFERENCE LINES AND EXTERIOR FACE OF MASONRY UNLESS OTHERWISE NOTED. INTERIOR DIMENSIONS ARE TO FACE OF INTERIOR WALL BOARD
2. SEE 4/A5.0 FOR EXTERIOR WALL ASSEMBLY TYPES. SEE 2/A1.0 FOR INTERIOR PARTITION TYPES. INTERIOR PARTITIONS ARE TYPE 'A' UNLESS NOTED OTHERWISE.
3. SEE EXTERIOR ELEVATIONS FOR WINDOW TYPES
4. SEE SHEET A6.0 FOR DOOR AND ROOM FINISH SCHEDULES
5. SEE SITE PLAN FOR SIDEWALKS, RAMPS, ETC.
6. GC TO PROVIDE MAXIMUM OCCUPANCY SIGN AND ADA SIGNAGE PACKAGE AND INSTALL SIGNS AT LOCATIONS AND POSITIONS INDICATED IN PACKAGE OR AS REQUIRED BY LOCAL CODES. SIGNAGE PACKAGE SUPPLIED BY: FRANKE/S2K 1–800–423–5247 www.frankesupply.com email: fs–frankesupply.us@franke.com
7. ALL HANDSINK LOCATIONS SHALL HAVE CEMENT BOARD BACKING 48" IN HEIGHT A.F.F.
8. GC TO COORDINATE ALL REQUIRED BLOCKING FOR WALL HUNG EQUIPMENT, SHELVES, ETC. FOR PROPER INSTALLATION HEIGHTS.
9. KNOX BOX TO BE INSTALLED PER LOCAL CODE AS REQUIRED. MODEL AND LOCATION TO BE COORDINATED WITH FIRE MARSHALL.

BY	DESCRIPTION
–	–
–	–
–	–
–	–
–	–

LICENSED ARCHITECT — MARC PELINI No.05437 — 10-25-24 — STATE OF NEW HAMPSHIRE

PREPARED BY: CORE STATES GROUP
133 Wylde Street Suite 201 Portsmouth, NH 03801 603.415.4540 www.corestates.com

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PREPARED FOR: McDonald's USA, LLC

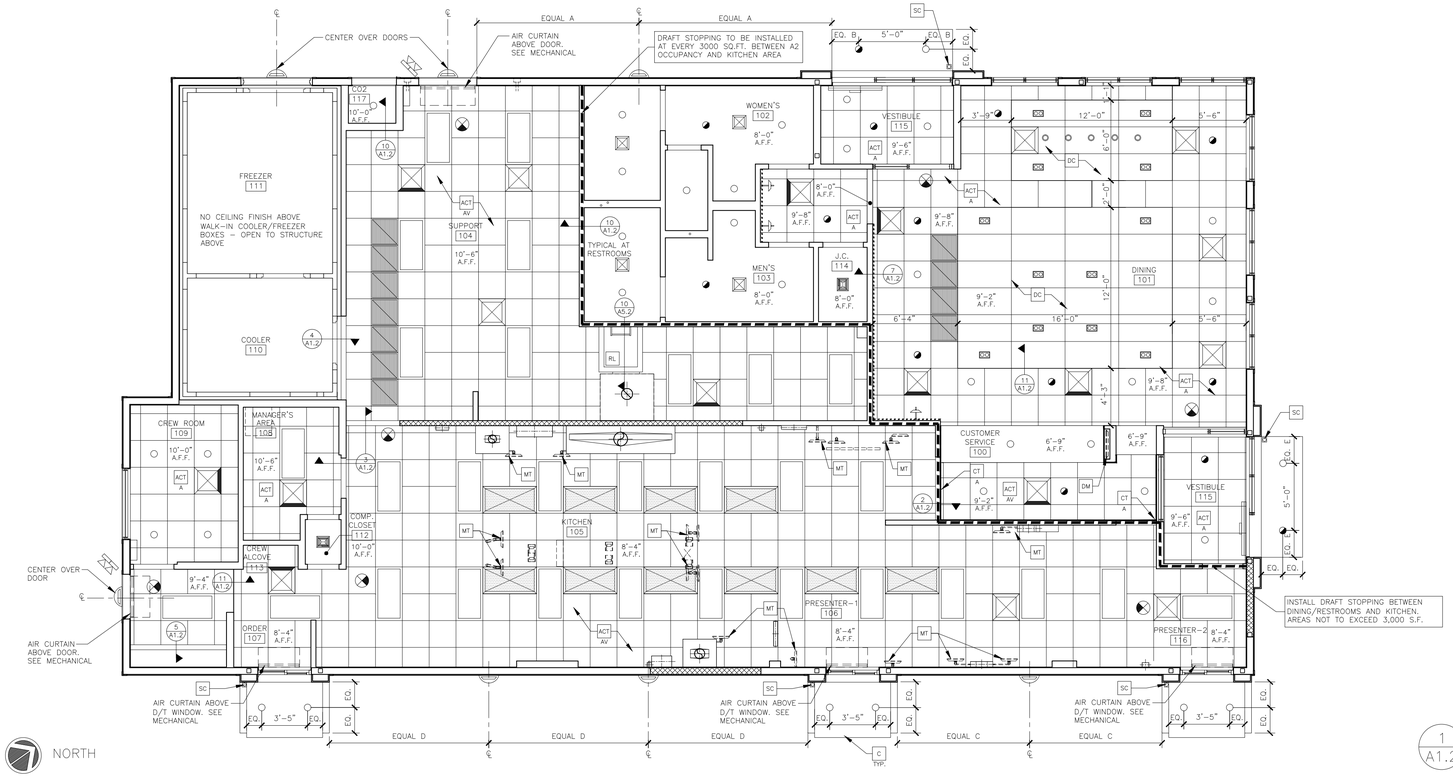
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N.GLUKHOMAN	M.PELINI	10/01/2024	MCD.39450
STD ISSUE DATE 2024 07			

TITLE: 2023 STANDARD BUILDING – BB20 4584–WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	4 DEERFIELD DR. DOVER, NH
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN: 4.5514	L/C: 028–0178

SHEET NO. 028–0178.00.0
A1.0
FLOOR PLAN



1 A1.2 REFLECTED CEILING PLAN
3/16"=1'-0"

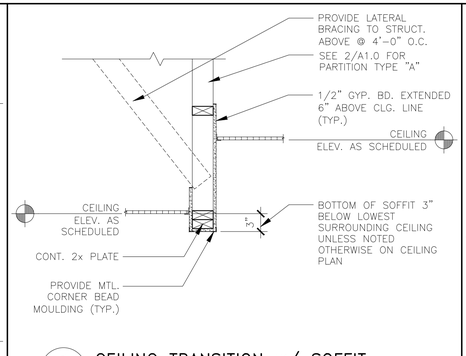
KEY NOTES

- ACT A — ACOUSTICAL CEILING TILE – 24"X48". SEE FINISH SCHEDULE
- ACT AV — ACOUSTICAL CEILING TILE: VINYL FACED USG 24"X24" CLEAN ROOM CLIMA-PLUS. UNPERFORATED. SMOOTH TEXTURE
  COLOR: WHITE
  GRID:USG 15/16" DX/DXL COLOR: WHITE
- C — ALUMINUM CANOPY WITH INTEGRAL GUTTER AND SCUPPER – SEE 4/A5.0 FOR NOTES – SEE ROOF PLAN FOR DIMENSIONS – SEE ELEVATION FOR COLOR
- CT A — WALL TILE: PER DECOR PORTFOLIO
  GEOMETRY/LUNA/RAY: EUROWEST – 754-747. COLOR: NOIR,
  SIZE: 4"x12", PATTERN: STACKED BOND.
  GROUT: MAPEI 02 PEWTER – JOINT TO BE 1/8" MAX.
  ROUTE 66: EUROWEST – WHITE GLOSSY CHEVRON
  GROUT: CHARCOAL 47 – JOINT TO BE 1/8" MAX.
- CT B — WALL TILE: CROSSVILLE – COLOR BY NUMBERS
  COLOR: AFTERNOON SPRAY, SIZE: 4"x12", PATTERN: STACKED BOND
  GROUT: MAPEI 02 PEWTER – JOINT TO BE 1/16" MAX.
  USE THIS TILE WHEN HIGH LRV IS REQUIRED
  COORDINATE WITH McDONALD'S AREA CONSTRUCTION MANAGER
- DC — SUSPENDED DECORATIVE CEILING TREATMENT – SEE FINISH SCHEDULE
- DM — DIGITAL MERCHANDISER
- DS — DROPPED SOFFIT
  DC-WH — BOTTOM TO ALIGN WITH GYP BD AT EXTERIOR WINDOW HEAD
  MAY BE REPLACED BY ELEMENT BY DECOR SUPPLIER – CONFIRM WITH AREA CONSTRUCTION MANAGER
- D# — DECOR PORTFOLIO SPECIFIC ELEMENT – SEE FINISH SCHEDULE.
- MT — CEILING MOUNTED MONITOR: A) VERIFY MONITOR LOCATIONS WITH McDONALD'S PROJECT MANAGER PRIOR TO INSTALLATION. B) SEE DETAIL 6/A1.2 FOR INSTALLATION METHOD
- RL — ROOF LADDER OPENING
- SC — INTEGRAL GUTTER SCUPPER

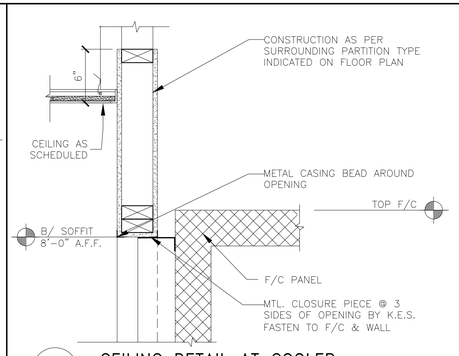
GENERAL NOTES

1. SEE SHT A6.1 FOR CEILING FINISHES.
2. SEE SHT A1.0 FOR MENU BOARD DROPPED SOFFIT LOCATION DIMENSIONS
3. GENERAL CONTRACTOR SHALL COORDINATE HVAC DIFFUSER LOCATION WITH DECOR & MECHANICAL PLANS AND REPORT ANY DISCREPANCIES TO ARCHITECT.
4. REFERENCE MECHANICAL AND ELECTRICAL DRAWINGS FOR DIFFUSER AND LIGHTING INFORMATION.
5. PROVIDE USG V15 CEILING TILE RETENTION CLIPS IN ALL VESTIBULE AREAS

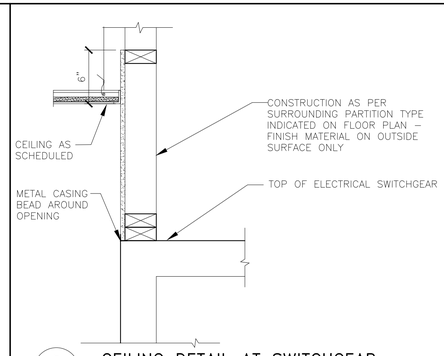
2 A1.2 VALANCE SECTION
1"=1'-0"



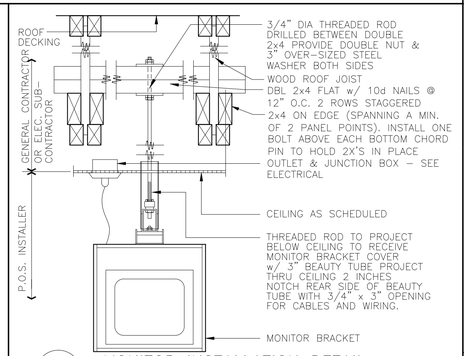
3 A1.2 CEILING TRANSITION w/ SOFFIT
1"=1'-0"



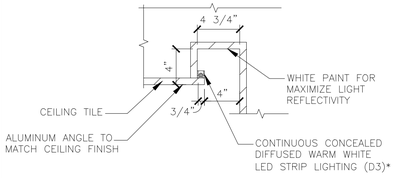
4 A1.2 CEILING DETAIL AT COOLER
1 1/2"=1'-0"



5 A1.2 CEILING DETAIL AT SWITCHGEAR
1 1/2"=1'-0"

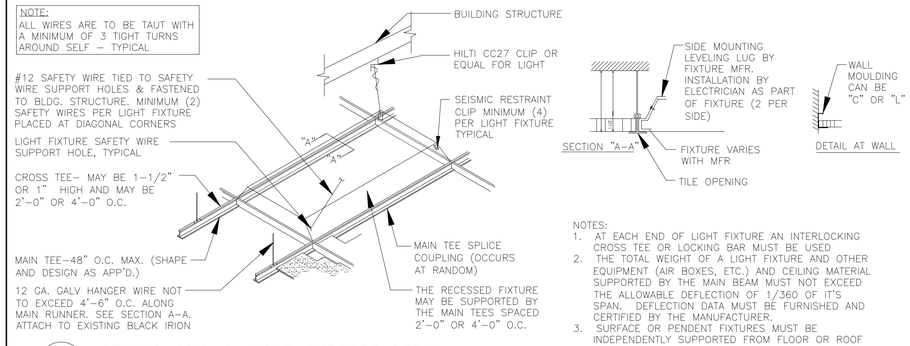


6 A1.2 MONITOR INSTALLATION DETAIL
N.T.S.

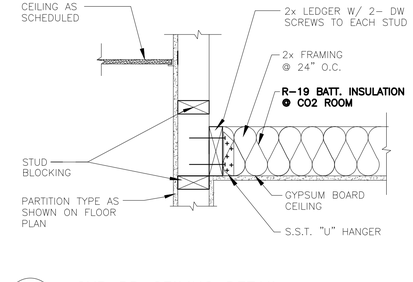


NOTES:
CONTRACTOR TO ENSURE EVEN DISTRIBUTION OF LIGHT WITH NO HOT SPOTS OR SHADOWING.

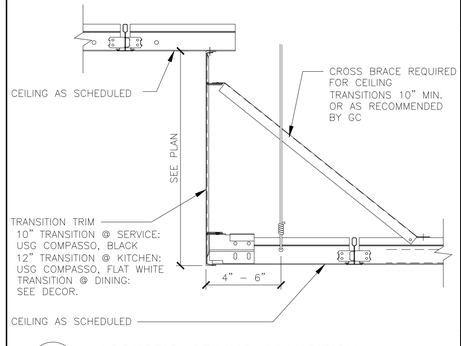
7 A1.2 COVE LIGHTING DETAIL
N.T.S.



8 A1.2 CEILING GRID & LIGHT SUPPORT DETAIL
N.T.S.



10 A1.2 GYP BD CEILING DETAIL
1 1/2"=1'-0"
A0610WB1



11 A1.2 ACOUSTIC CEILING TRANSITION
N.T.S.
COORDINATE w/ DECOR

BY	DESCRIPTION	DATE	REV

LICENSED ARCHITECT — MARC PELINI — No:05437 — 10-25-24 — STATE OF NEW HAMPSHIRE

PREPARED BY:
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Suite 201
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McDonald's USA, LLC

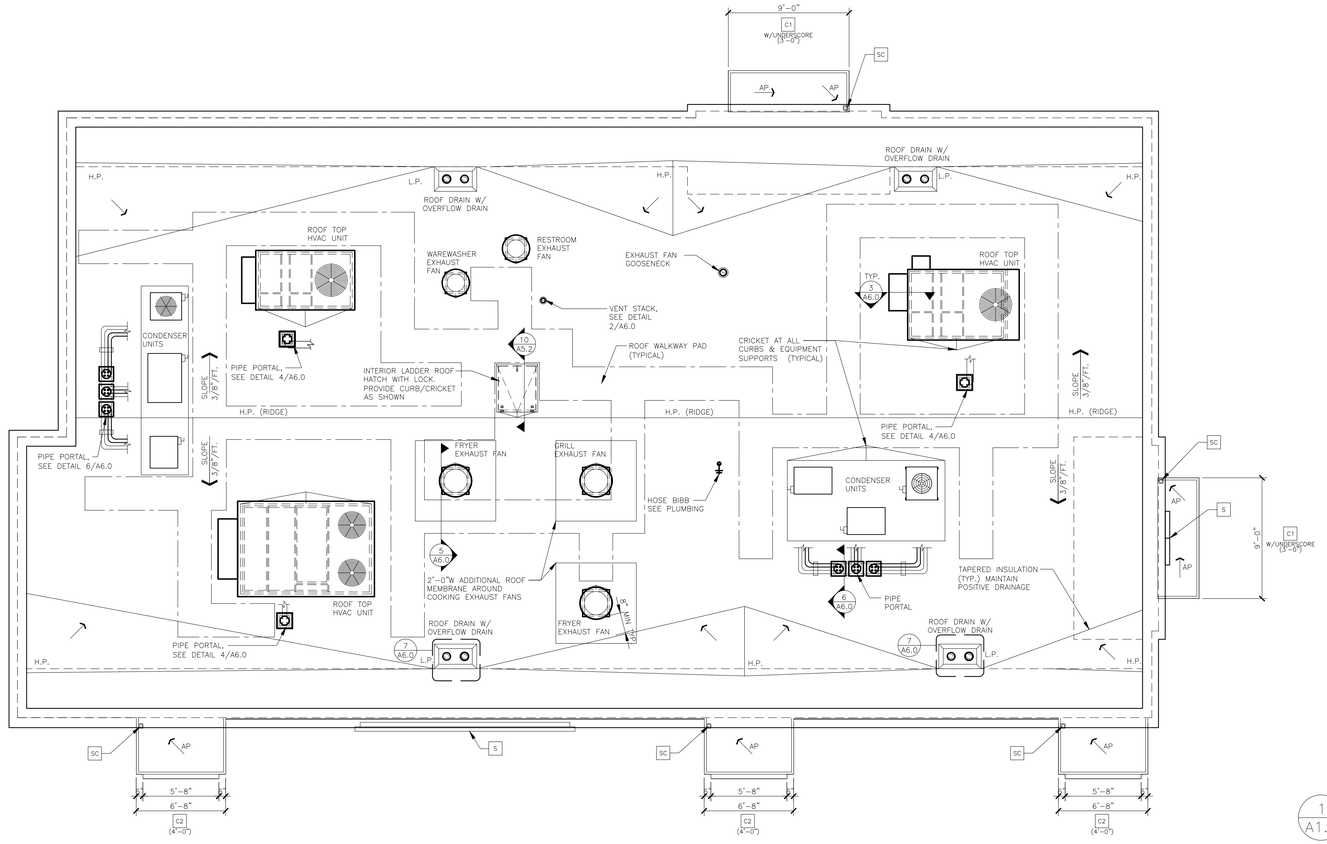
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N.GLUKHOMAN	2024 07	M.PELINI	10/01/2024	MCD.39450

TITLE: 2023 STANDARD BUILDING – BB20
4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN: A3514	4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO. 028-0178.00.0
A1.2
REFLECTED CLG. PLAN



NORTH

1 / A1.3 ROOF PLAN
3/16"=1'-0"

LEGEND

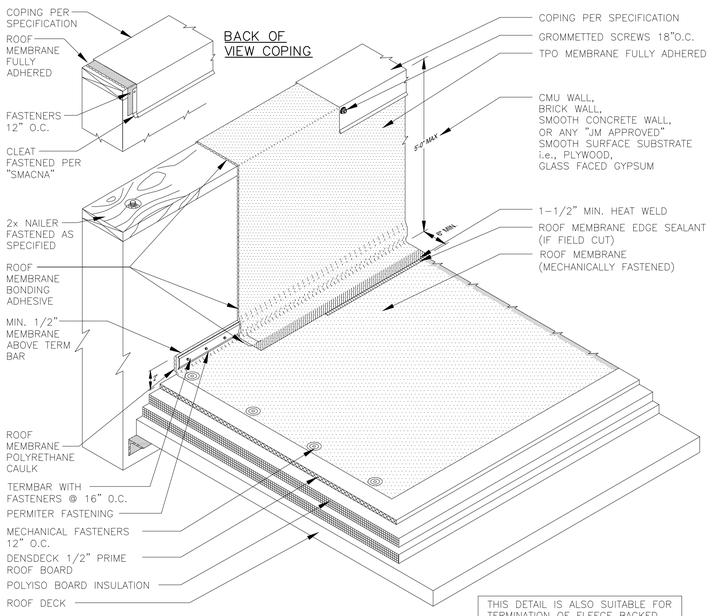
L.P.	LOW POINT
H.P.	HIGH POINT
⟵	DIRECTION OF DRAINAGE
AP ⟵	TRELLIS SYSTEM WITH ALUMINUM INFILL PANELS. SLOPE TO EDGE @1/4"PER FT.

KEY NOTES

- C1 ALUMINUM CANOPY SYSTEM (COLOR: SEE ELEVATIONS)
- C2 ALUMINUM CANOPY SYSTEM (COLOR: SEE ELEVATIONS)
- MF METAL FASCIA
  C1 COLOR:
  C1 = SEE ELEVATIONS FOR COLOR
  C2 = SEE ELEVATIONS FOR COLOR
- S McDONALD'S SIGNAGE BY OTHERS UNDER SEPARATE PERMIT (SEE ELEVATIONS)
- SC INTEGRAL GUTTER SCUPPER

ROOFING NOTES

1. SINGLE-PLY ROOFING SYSTEM WITH BASE FLASHING SHEET EXTENDING UP PARAPET AND TERMINATED UNDER COPING HOT WELDED TO SEALING STRIP SECURED TO WOOD BLOCKING
2. INSTALLATION OF ROOFING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND PER DETAIL 2 OF THIS SHEET.
3. PROVIDE PREFABRICATED METAL CURBS. COORDINATE SIZE, LOCATION AND INSTALLATION REQUIREMENTS W/ M, E, P & S SHEETS. PROVIDE SHIMS TO LEVEL CURB AREAS WHERE ROOF DECK IS PITCHED.
4. FOR EXACT LOCATION OF EXHAUST FANS, HVAC UNITS, AND ROOF HATCH. REFER TO STRUCTURAL DRAWINGS.
5. CRICKETS MUST BE INSTALLED AT ALL ROOF CURBS & EQUIPMENT PLATFORMS BY GENERALCONTRACTOR.



THIS DETAIL IS ALSO SUITABLE FOR TERMINATION OF FLEECE BACKED MEMBRANES. NON FLEECE BACK MEMBRANE IS REQUIRED FOR WALL FLASHINGS.

2 / A1.3 ROOFING SYSTEM
N.T.S.

ROOFING SYSTEM

1. MANUFACTURERS AND PRODUCTS:
   A. DURO-LAST PVC ROOFING SYSTEM
   B. JM-PVC. REFER TO JOHNS MANVILLE WEBSITE (www.jm.com) FOR MOST UP-TO-DATE INFORMATION.

   NO SUBSTITUTIONS ALLOWED
2. SPECIFIED ROOFING SYSTEMS (AS SHOWN):
   HEAT-WELDABLE SINGLE-PLY 50 MIL PVC ROOFING SYSTEM, INSTALLED OVER RIGID INSULATION ON WOOD ROOF DECK HAVING A SLOPE OF 3/8"/FT. MATERIALS SHALL BE AS FOLLOWS:
   A. SINGLE-PLY ROOFING SYSTEM AS MANUFACTURED BY MANUFACTURER LISTED ABOVE TO COMPLY WITH ASTM E 108 OR UL 790, ASTM D-6878, AND FMG I-90 FOR WIND UPLIFT.
   B. FASTENERS: METAL FASTENERS AND PLATES AS PER MANUFACTURER.
   C. ACCESSORIES: PRE-FABRICATED CURBS, FLASHING, CORNERS, TERMINATION BARS, PIPE FLASHING, VENT FLASHING ETC. AS PER MANUFACTURER.
   D. PLEASE SEE SINGLE-PLY FLASHING SPECIFICATIONS FOR A FULL DESCRIPTION OF INSTALLATION INSTRUCTIONS AND REQUIREMENTS WHICH ARE CONSIDERED A PART OF THIS DETAIL.
   E. ANY CARPENTRY OR METAL WORK SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS AND/OR PROJECT SPECIFICATIONS. THESE COMPONENTS SHOULD BE REVIEWED AND APPROVED BY A LICENSED DESIGN PROFESSIONAL. CONTACT MANUFACTURER FOR METAL OPTIONS TO BE INCLUDED WITHIN THE MANUFACTURER'S GUARANTEE.
   F. ROOF MEMBRANE EDGE SEALANT IS REQUIRED ON ALL CUT OR NON-ENCAPSULATED EDGES OF REINFORCED MEMBRANE. THIS INCLUDES FACTORY CUT MEMBRANE
3. WALKWAYS:
   A. 30" WIDE WALKWAY ROLL, HOT AIR WELDED TO MEMBRANE.
   B. PROVIDE WALKWAY FROM ROOF LADDER EXIT TO ALL ROOF TOP EQUIPMENT AS PER ROOF PLAN ABOVE.
   C. INSTALL WALKWAY ACCORDING TO WALKWAY PAD MANUFACTURER'S WRITTEN INSTRUCTION.
4. RIGID INSULATION:
   PROVIDE REQUIRED LAYERS OF POLYISOCYANURATE INSULATION W/ 1/2" "DENSDECK" COVER BOARD TO MEET A MINIMUM CONTINUOUS **R-30** VALUE - THICKNESS AS REQUIRED. PROVIDE POSITIVE SLOPE TO ALL ROOF DRAINS. SEE ROOF PLAN. PROVIDE TOP LAYER PROTECTION MATERIAL AS PER MANUFACTURERS RECOMMENDATIONS. BOTTOM LAYER OF INSULATION TO HAVE INTEGRAL THERMAL BARRIER OR APPROVED ROOFING MANUFACTURER'S THERMAL UNDERLAYMENT SHEET. ASSEMBLY SHALL COMPLY WITH UL 1256 OR FMG 4450 AND ASTM C 1289, TYPE I OR II.
5. TAPERED INSULATION:
   PROVIDE TAPERED INSULATION AS REQUIRED FOR POSITIVE DRAINAGE TO ROOF DRAINS AS INDICATED PER ROOF PLAN ABOVE. ¼" PER FOOT MIN. REQUIRED.
6. EXHAUST FANS:
   PROVIDE ADDITIONAL LAYER OF ROOF MEMBRANE AROUND EXHAUST FANS AS INDICATED PER ROOF PLAN ABOVE.

REV	DATE	DESCRIPTION	BY
-	-	-	-

LICENSED ARCHITECT
MARC PELINI
No. 05437
10-25-24
STATE OF NEW HAMPSHIRE

PREPARED BY:
CORE STATES GROUP
135 Wynter Street
Suite 201
Holbrook, IL 60340
312.718.3415
core-states.com

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PREPARED FOR:
McDonald's USA, LLC

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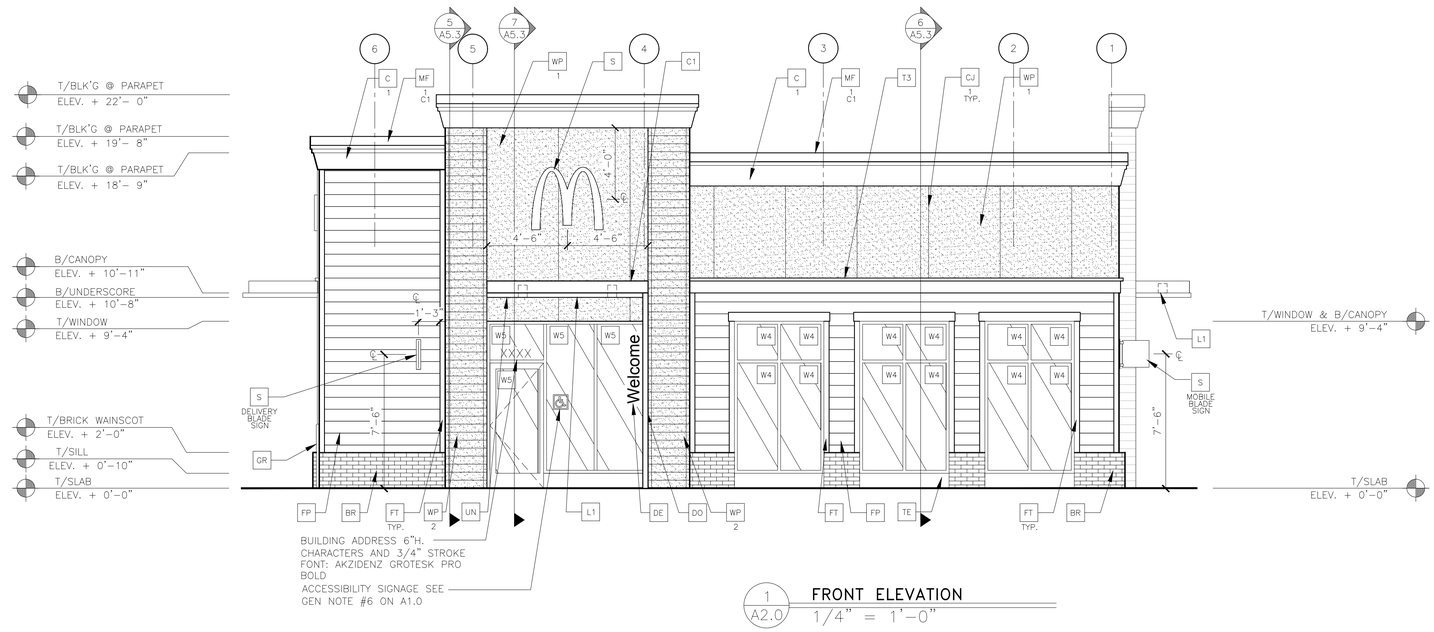
DRAWN BY	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
N.CLUKHOMAN	M.PELINI	10/01/2024	MCD.39450
STD ISSUE DATE 2024 07			

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

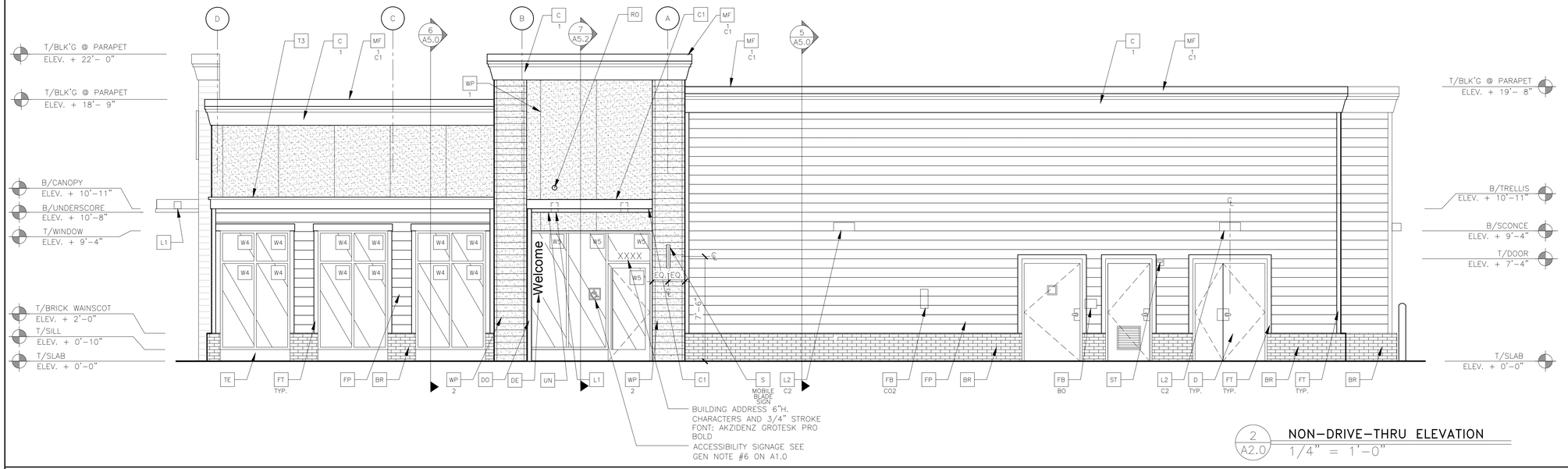
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN: 4.5514 | SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178

SHEET NO.
028-0178.00.0
A1.3
ROOF PLAN



1 A2.0 FRONT ELEVATION
1/4" = 1'-0"



2 A2.0 NON-DRIVE-THRU ELEVATION
1/4" = 1'-0"

KEY NOTES:

- C — CORNICE –EXTERIOR INSULATION FINISH SYSTEM (E.I.F.S.) PAINT: FOG
  - X — TYPE: 1= 14" CORNICE
- BR — MODULAR FACE BRICK
  - B1 — COLOR: B1 = "SILVERADO" SMOOTH BY HEBRON BRICK COMPANY
- C1 — ALUMINUM CANOPY SYSTEM W/FASCIA COLOR: WHITE
- C2 — ALUMINUM CANOPY SYSTEM COLOR: RAL 7022
- CJ — CONTROL JOINT
  - 1 — TYPE: 1 = WALL PANEL
- D — HOLLOW METAL DOOR PAINT: "FAIRVIEW TAUPE" HC–85 BY BENJAMIN MOORE
- DE — DECAL BY GRAPHICS SUPPLIER SURFACE APPLIED, FIELD INSTALLED, PRE CUT, PRE SPACED. SUPPLIERS: VOMELA (865) 330–7337, ann.bowen@vomela.com GFX INTERNATIONAL (847) 543–4600, mcdonaldsdecor@gfxi.com
- DO — DOWNSPOUT 3" DOWNSPOUT BY CANOPY SYSTEM MANUFACTURER COLOR: RAL 7022
- DS — DOWNSPOUT PAINT TO MATCH SURROUNDING MATERIAL
- FB — C02 — C02 = BULK C02 FILL BOX (EQPM SCHEDULE ITEM 49.00); BO = BULK OIL FILL BOX (EQPM SCHEDULE ITEM 700.18)
- FP — FIBER CEMENT LAP SIDING: SMOOTH HARDI–BOARD PLANK BY JAMES HARDIE, 8–1/4" WIDTH, 7" EXPOSURE, HZ5 COLOR: TIMBER BARK
- FT — FIBER CEMENT TRIM: HARDIE TRIM BOARDS 4/4 SMOOTH, 1 5/8" AND 3 1/2" WIDTH, 3/4" THICK, HZ5 COLOR: TIMBER BARK (CHECK 1 5/8" PRE–PAINT AVAILABILITY)
- GR — GUARD RAIL –SEE SITE PLAN FOR EXACT LOCATION AND LENGTH PAINT: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- L1 — RECESSED DOWN LIGHT FIXTURE – SEE ELECTRICAL COLOR: GOLD
- L2 — RADIAL SCONCE LIGHT FIXTURE – SEE ELECTRICAL
  - C1 — COLOR: C1= WHITE; C2= PLATINUM SILVER
- MF — METAL FASCIA
  - 1 — TYPE: 1 = PRE–FAB ANCHOR–TITE FASCIA; 2 = BOTTOM TRIM AT METAL REVEAL PANEL; 3 = VERTICAL TRIM AT METAL REVEAL PANEL CORNERS, CLOSURES
  - C1 — COLOR: C1= FOG
- PB — PIPE BOLLARD – PAINTED YELLOW
- PT — (RMHC) COIN COLLECTOR MODEL: #WPT STD CALL 1–888–743–7435 TO ORDER
- RO — ROOF DRAIN OVERFLOW PIPE PAINT TO MATCH SURROUNDING MATERIAL
- S — McDONALD'S SIGNAGE BY OTHERS – UNDER SEPARATE PERMIT.
  - C1 — COLOR: C1= CITYSCAPE RACEWAY
- ST — CO2 STROBE/ALARM. SEE MECHANICAL DRAWINGS FOR SPECIFICATION.
- T3 — 2X8 EXTERIOR INSULATION FINISH SYSTEM (E.I.F.S.) FASCIA BAND. SEE MANUFACTURER SHOP DRAWINGS. COLOR: CITYSCAPE
- TE — TRU EXTERIOR 1" THICK TRIM, PAINTED ON SITE COLOR: "IRON ORE" SW 7069 BY SHERWIN WILLIAMS
- UN — METAL UNDERSCORE COLOR: GOLD
- W# — EXTERIOR WINDOW ASSEMBLY – TEMPERED GLASS COLOR: DARK BRONZE
- W2 — DRIVE–THRU WINDOW BY READY ACCESS MODEL: 600 SERIES, 36" SERVICE HEIGHT WITH TRANSOM, MANUAL OPEN; ELECTRONIC RELEASE
  - XX — COLOR: DEEP BRONZE; SLIDE DIRECTION: RL = RIGHT TO LEFT, LR = LEFT TO RIGHT
- WP 1 — ARCHITECTURAL WALL PANELS BY NICHIHA ILLUMINATION SERIES, AWP–3030. COLOR: FOG. NOTE: PANEL PATTERN SHALL BEGIN W/ FULL PANELS ABOVE/BELOW OPENING HEAD ELEVATION (9'–4") VERTICAL INSTALL CONTACT: MATT STEPHENSON mstephenson@nichiha.com, (770)–805–9466 or (770)–789–8228
- WP 2 — ARCHITECTURAL WALL PANELS BY NICHIHA NOVENARY SERIES, AWP–1818. COLOR: SAND. NOTE: PANEL PATTERN SHALL BEGIN W/ FULL PANELS ABOVE/BELOW OPENING HEAD ELEVATION (9'–4") HORIZONTAL INSTALL CONTACT: MATT STEPHENSON mstephenson@nichiha.com, (770)–805–9466 or (770)–789–8228

BY	DESCRIPTION	DATE	REV

LICENSED ARCHITECT — MARC PELINI — No:05437 — 10-25-24 — STATE OF NEW HAMPSHIRE

PREPARED BY:
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Suite 201
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312.718.5415
core-sites.com

PREPARED FOR:
McDonald's USA, LLC

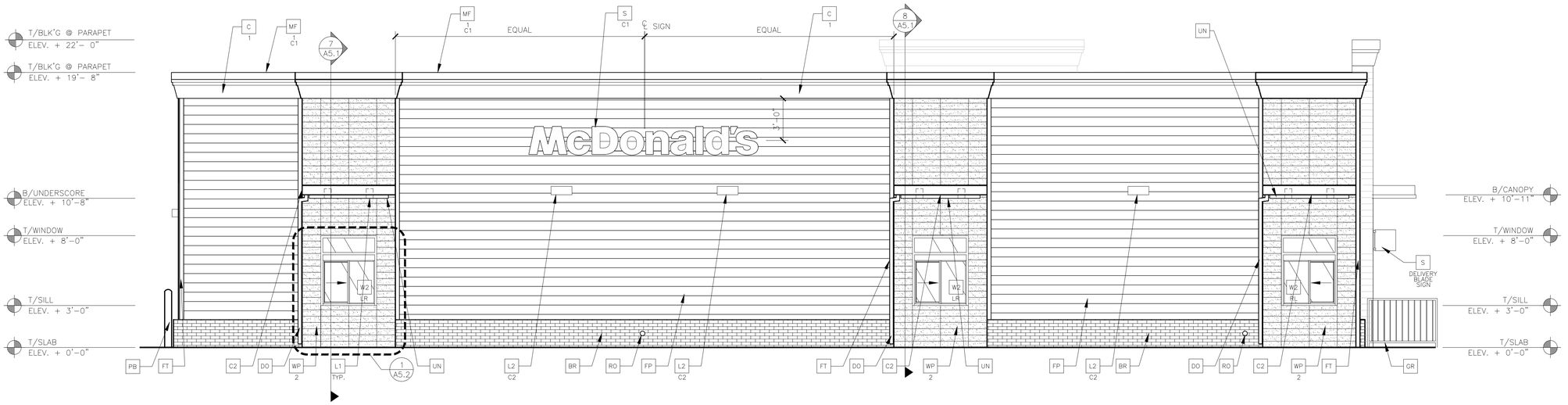
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STD ISSUE DATE 2024 07	DATE ISSUED 10/01/2024	

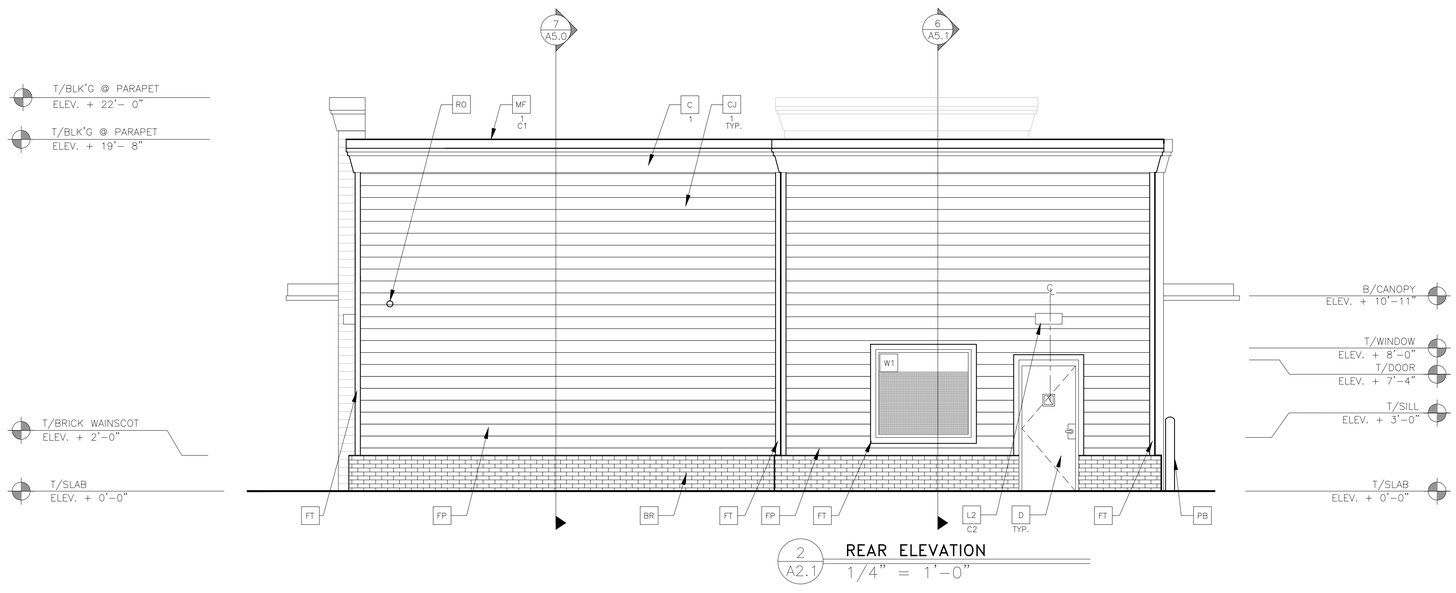
TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

DESCRIPTION	SITE ADDRESS:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	NSN: 43514
WOOD TRUSS ROOF FRAMING	L/C: 028–0178
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	4 DEERFIELD DR. DOVER, NH

SHEET NO. A2.0
028–0178.00.0
ELEVATIONS



1 A2.1 **DRIVE THRU ELEVATION**
1/4" = 1'-0"



2 A2.1 **REAR ELEVATION**
1/4" = 1'-0"

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- WP — ARCHITECTURAL WALL PANELS BY NICHIHA; 2 — NOVENARY SERIES, AWP–1818. COLOR: SAND. NOTE: PANEL PATTERN SHALL BEGIN W/ FULL PANELS ABOVE/BELOW OPENING HEAD ELEVATION (9'–4") HORIZONTAL INSTALL CONTACT: MATT STEPHENSON mstephenson@nichiha.com, (770)–805–9466 or (770)–789–8228

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LICENSED ARCHITECT — MARC PELINI No:05437 — 10-25-24 — STATE OF NEW HAMPSHIRE

PREPARED BY: CORE STATES GROUP
135 Wynter Street, Suite 201, Holbrook, IL 60540, 312.718.3415, core-states.com

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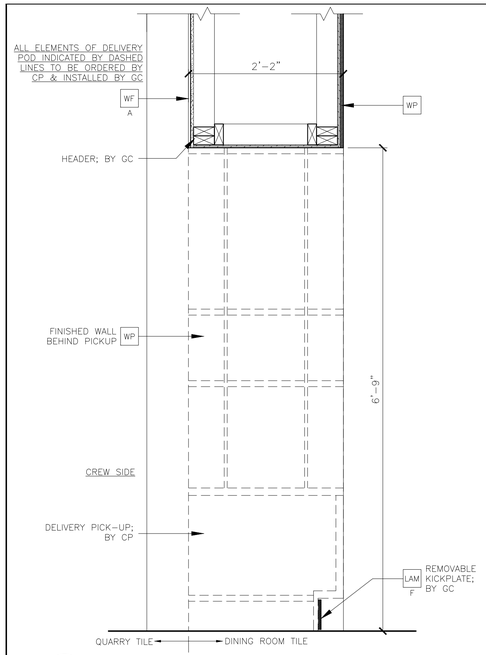
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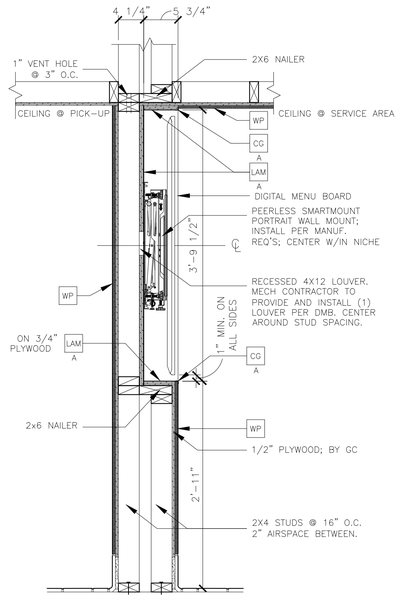
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4584–WOOD/WOOD

DESCRIPTION	SITE ADDRESS
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WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN: 4751-4	4 DEERFIELD DR. DOVER, NH
L/C: 028–0178	

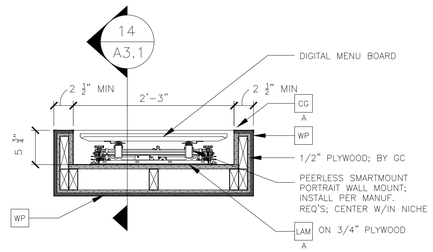
SHEET NO. 028–0178.00.0
A2.1
ELEVATIONS



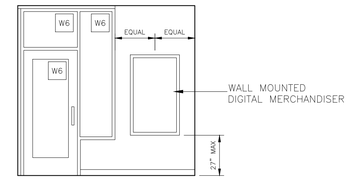
15 A3.1 SECTION @ DELIVERY POD
1" = 1'-0"



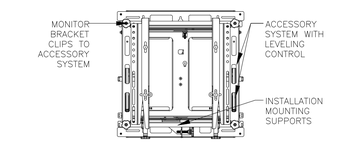
14 A3.1 SECTION @ DIGITAL MERCHANDISER
1"=1'-0"



13 A3.1 PLAN DETAIL @ DIGITAL MERCH.
1"=1'-0"



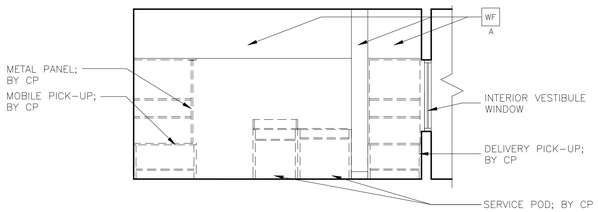
11 A3.1 NONDRIVE-THRU VESTIBULE ELEVATION
1/4" = 1'-0"



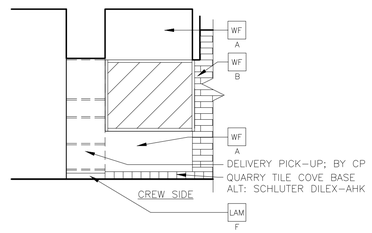
- SECURE TO STUDS OR 3/4" PLYWOOD BACKING
- FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS

10 A3.1 DIGITAL BOARD BRACKET DETAIL
1"=1'-0"

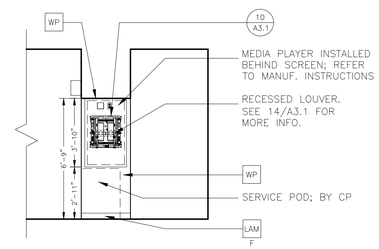
9 A3.1 NOT USED
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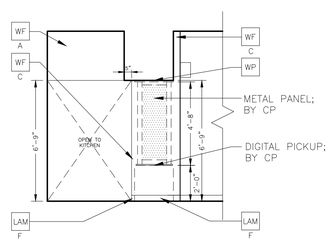
8 A3.1 SERVICE AREA ELEVATION – CREW SIDE
1/4" = 1'-0"



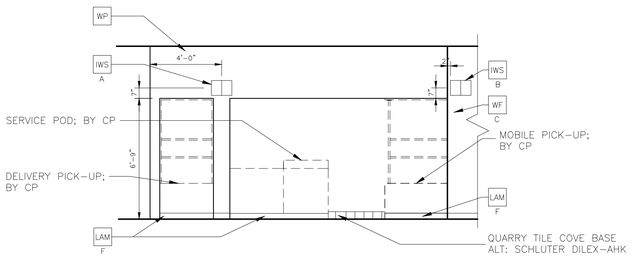
6 A3.1 VESTIBULE WINDOW – CREW SIDE
1/4" = 1'-0"



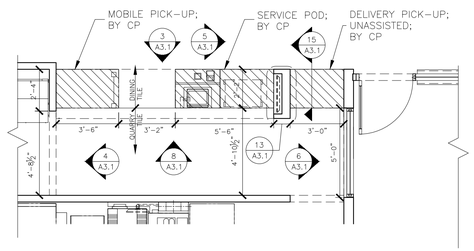
5 A3.1 SERVICE AREA ELEVATION
1/4" = 1'-0"



4 A3.1 SERVICE AREA ELEVATION
1/4" = 1'-0"



3 A3.1 SERVICE AREA ELEVATION – CUSTOMER SIDE
1/4" = 1'-0"



1 A3.1 SERVICE AREA PLAN
1/4" = 1'-0"

KEY NOTES

CG CORNER GUARD: 3/4" ANGLE BY DECOR
X—
A = BLACK

COR CORIAN:
X—
A = 1/2" CORIAN CAMEO WHITE
B = 1/2" CORIAN DEEP TITANIUM

IWS INTERIOR WAYFINDING SIGNAGE
X—
A = McDELIVERY INTERIOR TRIANGULAR SIGN
B = MOBILE ORDER INTERIOR TRIANGULAR SIGN
C = ADA ASSISTANCE SIGNAGE

LAM LAMINATE:
X—
COLOR:
A = IDMB / DIG. MERCH., SMOOTH BLACK PLASTIC LAMINATE BY GC
E = McDELIVERY UNDERSCORE, LAMITECH GOLDEN
F = BASE BOARD, FORMICA COMPACT LAMINATE MATTE BLACK BY GC

MP METAL INFILL PANEL. MATCH DARK BRONZE WINDOW ASSEMBLY

WP LAMINATE WALL PANEL
PER DECOR PORTFOLIO:
GEOMETRY = LAMITECH – 1557-PR, COLOR: SEASON ASH
LUNA = LAMITECH – 1467 MT, COLOR: LINEAL OAK
RAY = WILSONART – 7954-38A, COLOR: NATURAL RIFT
ROUTE 66 = LAMITECH – 1540 PW, COLOR: ONTARIO OAK
COORDINATE WITH McDONALD'S AREA CONSTRUCTION MANAGER

WF WALL FINISH.
TILE GROUT: MAPEI 02 PEWTER – JOINT TO BE 1/16" MAX. (UNO)
X—
A = TILE PER DECOR PORTFOLIO.
GEOMETRY/LUNA/RAY: EUROWEST – 754–747. COLOR: NOIR.
SIZE: 4"X12". PATTERN: STACKED BOND.
ROUTE 66: EUROWEST – WHITE GLOSSY CHEVRON
GROUT: CHARCOAL 47 – JOINT TO BE 1/16" MAX.
B = CROSSVILLE – COLOR BY NUMBERS. COLOR: AFTERNOON SPRAY.
SIZE: 4"X12". PATTERN: STACKED BOND.
C = WALL PANEL / TILE PER DECOR PORTFOLIO.
GEOMETRY: CROSSVILLE – KALEIDOSCOPE, 24"X24", STACKED BOND.
LUNA: CROSSVILLE – MOONLIGHT GREY, 12"X24", STACKED BOND.
RAY: LAMITECH – INDUSTRIAL CONCRETE (WITHOUT HOLES)
ROUTE 66: EUROWEST – WHITE GLOSSY CHEVRON
GROUT: CHARCOAL 47 – JOINT TO BE 1/16" MAX.

GENERAL NOTES

- ALL WALL LAMINATE PANELING MANUFACTURED BY DECOR PURCHASE AND INSTALL BY GC, UNO.
- ALL ELEMENTS 'BY CP' TO BE ORDERED BY CENTRAL PURCHASING AND INSTALLED BY GC, UNO.
- KIOSK SIGNAGE BY GC; ORDER FROM AMANDA GUSTAFSON W/ ALTRUA (agustafson@altrua.com)
'CREDIT ONLY' & 'CASH/CREDIT' KIOSK SIGNAGE

NO.	DESCRIPTION	DATE	REV	BY

LICENSED ARCHITECT – MARC PELINI – No:05437 – 10-25-24 – STATE OF NEW HAMPSHIRE

PREPARED BY:
CORE STATES GROUP
135 Water Street
Suite 201
Norwalk, IL 60540
312.718.5413
core@stategroup.com

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PREPARED FOR:
McDonald's USA, LLC

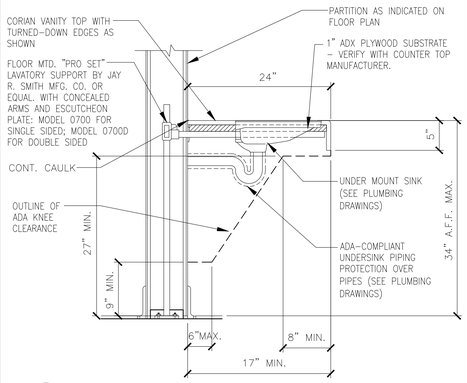
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DRAWN BY	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
N.GLUKHOMAN	M.PELINI	10/01/2024	MCD.39450
STD ISSUE DATE 2024 07			

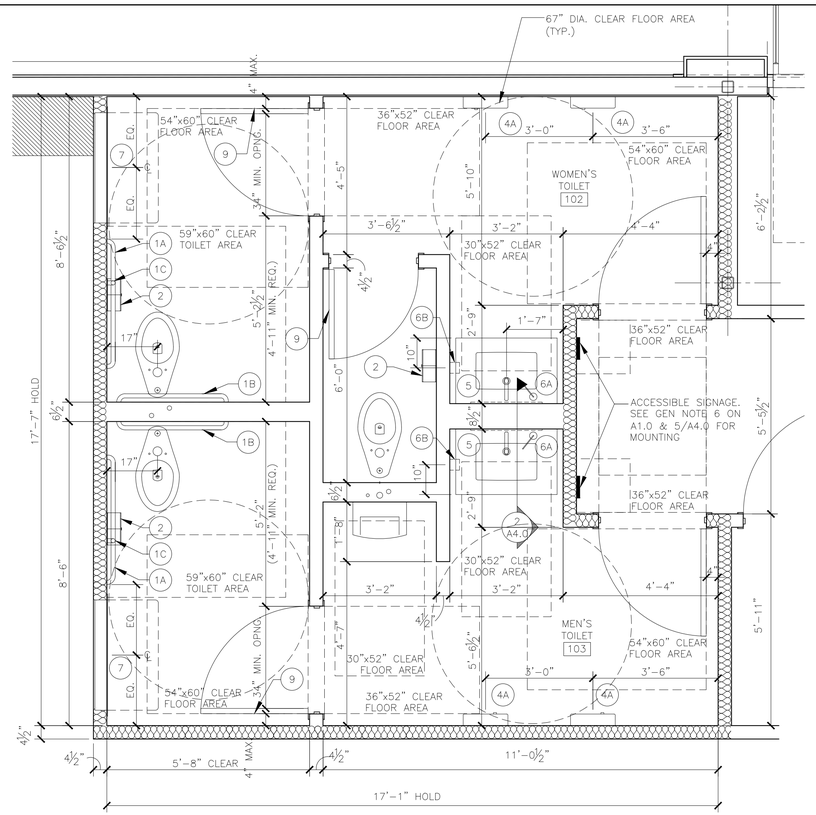
TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	NSN.43514
	L/C: 028-0178
	4 DEERFIELD DR.
	DOVER, NH

SHEET NO. 028-0178.00.0
A3.1
SERVICE AREA DETAILS

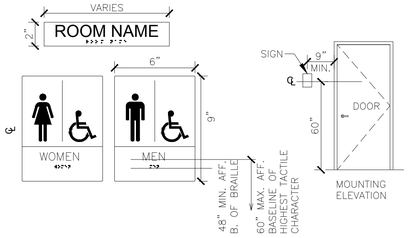


2 A4.0 SECTION @ LAVATORY 1"=1'-0"



1 A4.0 ENLARGED RESTROOM PLAN 1/2" = 1'-0"

NOTES
1. ALL DIMENSIONS SHOWN ARE TAKEN TO CEMENT BD.
2. SEE SHEET A1.0 FOR PARTITION TYPES
3. SEE SHEETS A6.0 & A6.1 FOR DOOR AND FINISH SCHEDULES.
4. SEE 4/A4.0 FOR FIXTURE MOUNTING HEIGHTS
(X) = RESTROOM ACCESSORY – SEE 3/A4.0



GRAPHICS SHOWN ARE FOR REFERENCE ONLY.

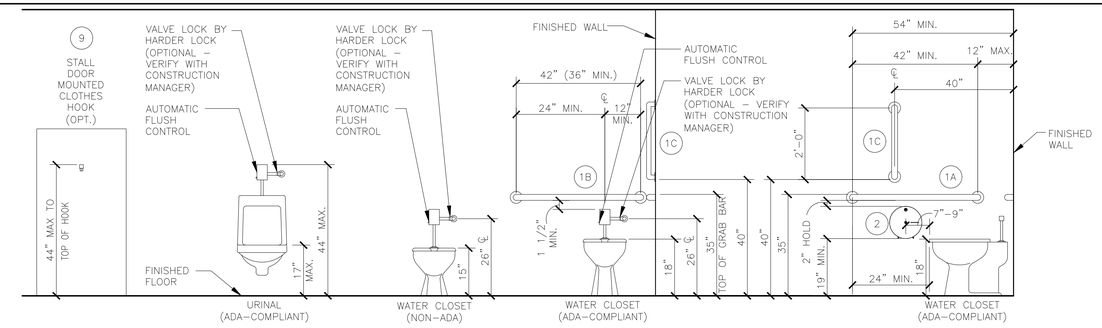
GC TO PROVIDE ADA SIGNAGE PACKAGE AND INSTALL SIGNS AT LOCATIONS AND POSITIONS INDICATED IN PACKAGE OR AS REQUIRED BY LOCAL CODES. SIGNAGE PACKAGE SUPPLIED BY:

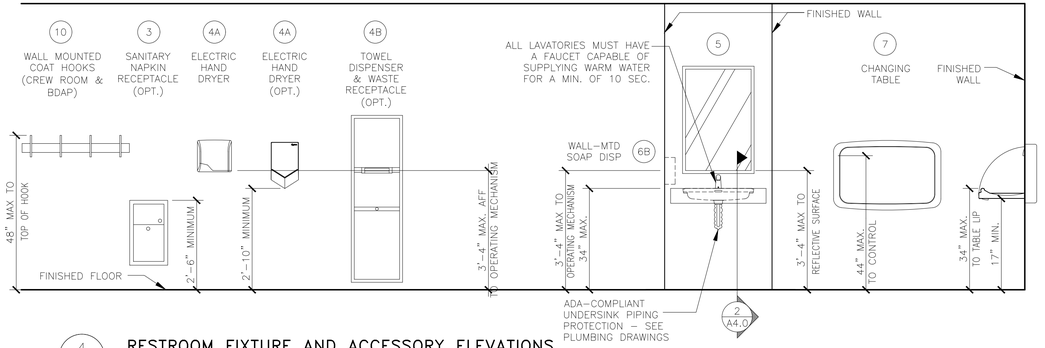
FRANKE/S2K
1-800-423-5247
www.frankesupply.com
email: fs-frankesupply.us@franke.com

SIGNAGE NOTES:

1. EACH EXIT DOOR SHALL HAVE A TACTILE SIGN, INCLUDING RAISED LETTERS AND BRAILLE, STATING 'EXIT' AND SHALL COMPLY WITH CHAPTER 7. ALL SIGNAGE SHALL CONFORM WITH ACCESSIBILITY GUIDELINES AND LOCAL GUIDELINES INCLUDING BUT NOT LIMITED TO PROPORTION, COLOR CONTRAST AND RELIEF AND GRADE 2 BRAILLE REQUIREMENTS.
2. WHEN PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, RAISED LETTERS SHALL BE PROVIDED AND SHALL BE ACCOMPANIED BY BRAILLE IN CONFORMANCE WITH CHAPTER 7. SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE ON THE LATCH SIDE, INCLUDING AT DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL, PREFERABLY ON THE RIGHT. MOUNTING HEIGHT SHALL BE 60" ABOVE THE FINISHED FLOOR TO THE CENTERLINE OF THE SIGN. MOUNTING LOCATION SHALL BE DETERMINED SO THAT A PERSON MAY APPROACH WITHIN 3" OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF A DOOR.

5 A4.0 ACCESSIBLE SIGNAGE N.T.S.





4 A4.0 RESTROOM FIXTURE AND ACCESSORY ELEVATIONS 1/2" = 1'-0"

	ITEM (SEE NOTE 2)	MFR MODEL #	SUPPLIER	BACKUP SUPPORT (SEE NOTE 3)
1A	GRAB BAR 42"	BOBRICK B-6806X42	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	(1)2x6 4'-0" LONG CENTER MOUNTED
1B	GRAB BAR 36"	B-6806X36		
1C	GRAB BAR 24"	B-6806X24		
2	TOILET TISSUE DISPENSER, JUMBO, SURFACE MOUNTED	BRADLEY 5424	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	FRAME WALL OPENING PER MANUFACTURER'S RECOMMENDATIONS
3	SANITARY NAPKIN RECEPTACLE, RECESSED (OPTIONAL)	BOBRICK B-353	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
4A	HAND DRYER, ENERGY EFFICIENT MODEL, ADA, ALUMINUM BRUSHED	WORLD DRYER Q-973A2 VerdeDri	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	FRAME WALL OPENING PER MANUFACTURER'S RECOMMENDATIONS
4A OPTION	HAND DRYER, ENERGY EFFICIENT MODEL ADA, SPRAYED NICKEL	DYSON AIRBLADE V	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
4B OPTION	TOWEL DISPENSER & WASTE RECEPTACLE, COMBINATION, RECESSED (OPTIONAL)	BOBRICK B-3974	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
5	MIRROR, CHANNEL FRAME	BOBRICK B-165 2436	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
6A	SOAP DISPENSER, COUNTER MOUNTED, 6" SPOUT (OPTIONAL)	BOBRICK B-82216	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
6B	SOAP DISPENSER, WALL-MOUNTED	BOBRICK B-2112	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
7	BABY CHANGING TABLE, HORIZONTAL, RECESSED, ADA COMPLIANT, STAINLESS STEEL	KOALA KARE KB310-SSRE	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
7 OPTION "A"	BABY CHANGING TABLE, HORIZONTAL, SURFACE MOUNT, ADA COMPLIANT, STAINLESS STEEL	KOALA KARE KB310-SSWM	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	INSTALL PER MANUFACTURER'S RECOMMENDATIONS
8	DIAPER CONTAINER (OPTIONAL)	–	BY OWNER	
9	CLOTHES HOOK	BRADLEY 917	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	
10	COAT RACK (CREW ROOM & BDAP)	BRADLEY 9944	HUGHES SUPPLY (866) 310-3576 MCDCOORD@HAJOCA.COM	

NOTES:
1) SEE 4/A4.0 FOR ACCESSORY MOUNTING HEIGHTS
2) SELECT ONE ITEM FROM ITEM GROUPS 4 & 6, VERIFY WITH AREA CONSTRUCTION MANAGER.
3) CUT BACK-UP SUPPORTS BETWEEN STUDS SO FACE OF SUPPORT IS FLUSH W/WALL STUD

3 A4.0 RESTROOM ACCESSORY SCHEDULE

REV	DATE	DESCRIPTION	BY

LICENSED ARCHITECT MARC PELINI No.05437 10-25-24 STATE OF NEW HAMPSHIRE

PREPARED BY: CORE STATES GROUP
135 Wynter Street Suite 201 Holbrook, MA 02343 312.718.5415 core-pllc.com

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PREPARED FOR: McDonald's USA, LLC

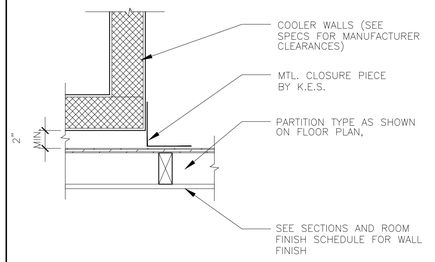
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N.GLUKHOMAN	M.PELINI	MCD.33450
STD ISSUE DATE 2024 07	DATE ISSUED 10/01/2024	

TITLE: 2023 STANDARD BUILDING – BB20
4584-WOOD/WOOD

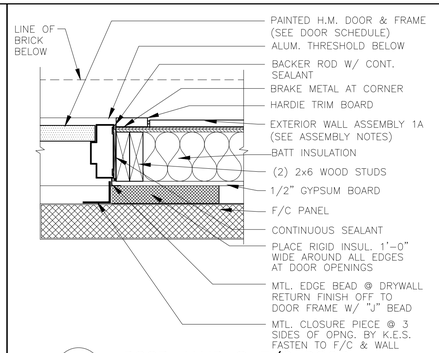
DESCRIPTION	
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN:4314	SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO. 028-0178.00.0
A4.0
RESTROOM PLAN

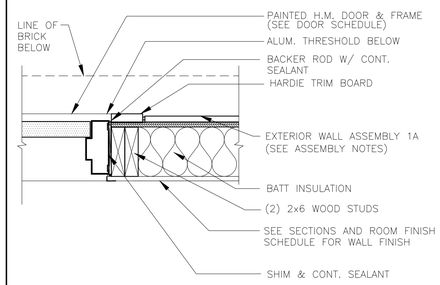


1 A4.1 CLOSURE DETAIL @ COOLER
1 1/2"=1'-0"

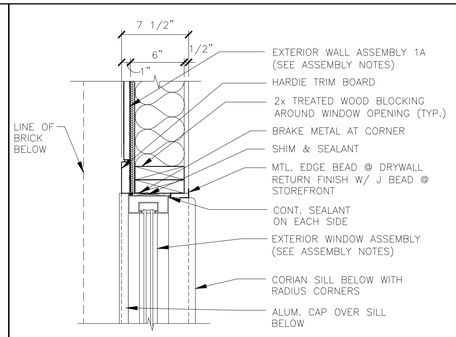
2 A4.1 –
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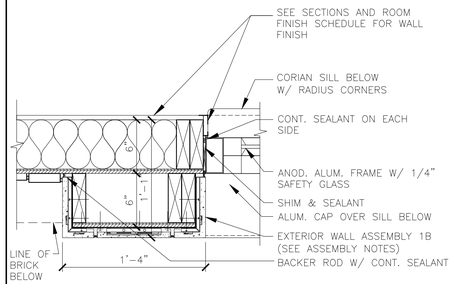
3 A4.1 DOOR JAMB @ F/C DOOR
1 1/2"=1'-0"



4 A4.1 EXT.DOOR JAMB DETAIL
1 1/2"=1'-0"

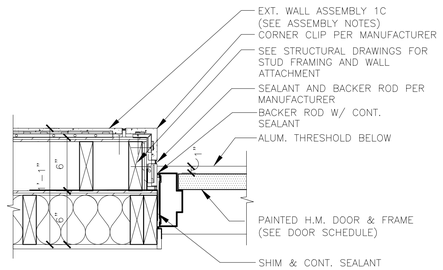


5 A4.1 CREW WINDOW JAMB DETAIL
1 1/2"=1'-0"

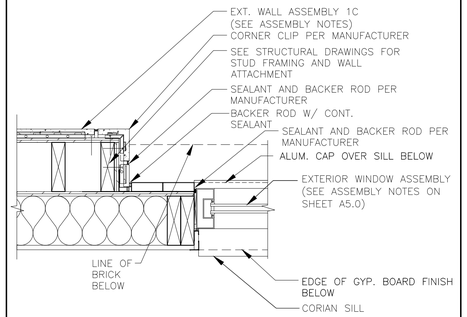


6 A4.1 ORDER WINDOW JAMB DETAIL
1 1/2"=1'-0"

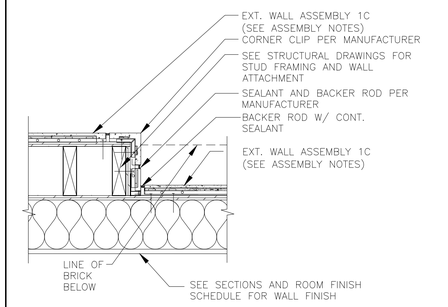
7 A4.1 –
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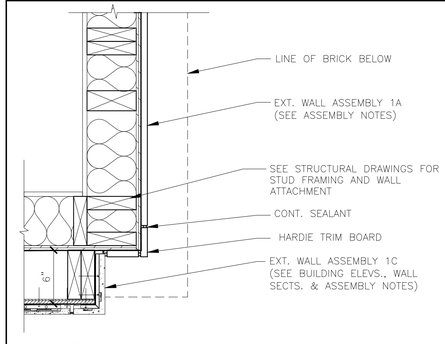
8 A4.1 WALL PANEL TO DOOR TRANSITION
1 1/2"=1'-0"



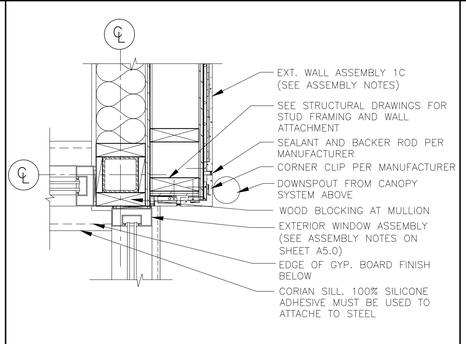
9 A4.1 WALL PANEL TO WINDOW TRANSITION
1 1/2"=1'-0"
4597 ONLY



10 A4.1 WALL PANEL TO WALL PANEL TRANSITION
1 1/2"=1'-0"



11 A4.1 CORNER DETAIL @ DT SURROUND
1 1/2"=1'-0"



12 A4.1 DETAIL @ COLUMN
1 1/2"=1'-0"

13 A4.1 –
–

14 A4.1 –
–

15 A4.1 –
–

16 A4.1 –
–

17 A4.1 –
–

18 A4.1 –
–

NO.	DESCRIPTION	DATE	BY

LICENSED ARCHITECT MARC PELINI No:05437 10-25-24 STATE OF NEW HAMPSHIRE

PREPARED BY:
CORE STATES GROUP
135 Wynter Street
Suite 201
Holbrook, IL 60540
312.718.3415
corestates.com

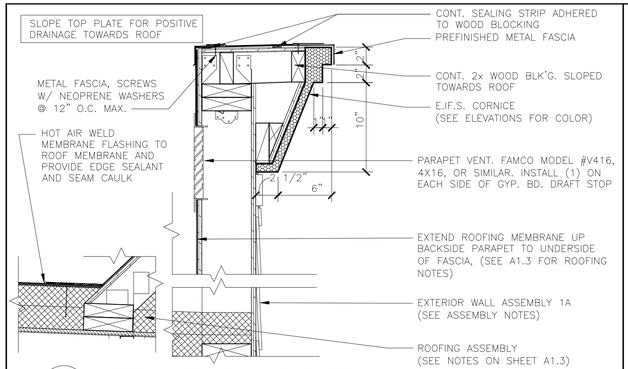
PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY: N.GLUKHOMAN	STD ISSUE DATE: 2024 07
REVIEWED BY: M.PELINI	DATE ISSUED: 10/01/2024
C.S.S. PROJECT #: MCD_39450	

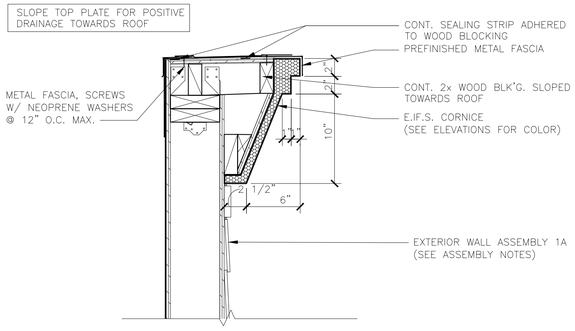
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DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH WOOD TRUSS ROOF FRAMING WALL PANEL/HARDIE BOARD EXTERIOR FINISH
NSN: 4.7514 | SITE ADDRESS: L/C: 028-0178 | 4 DEERFIELD DR. DOVER, NH

SHEET NO: 028-0178.00.0
A4.1
PLAN DETAILS



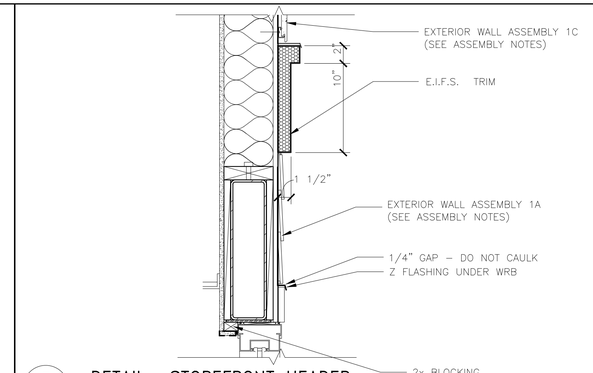
1 A5.0 DETAIL– FASCIA @ PARAPET

1 1/2" = 1'–0"



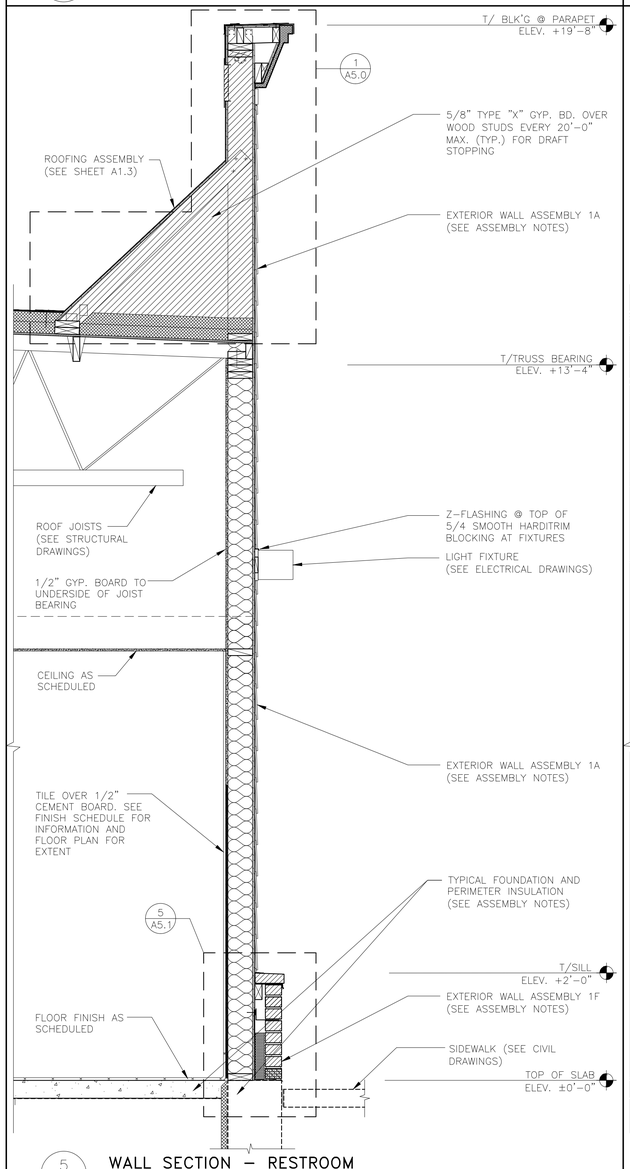
2 A5.0 DETAIL– FASCIA @ PARAPET

1 1/2" = 1'–0"



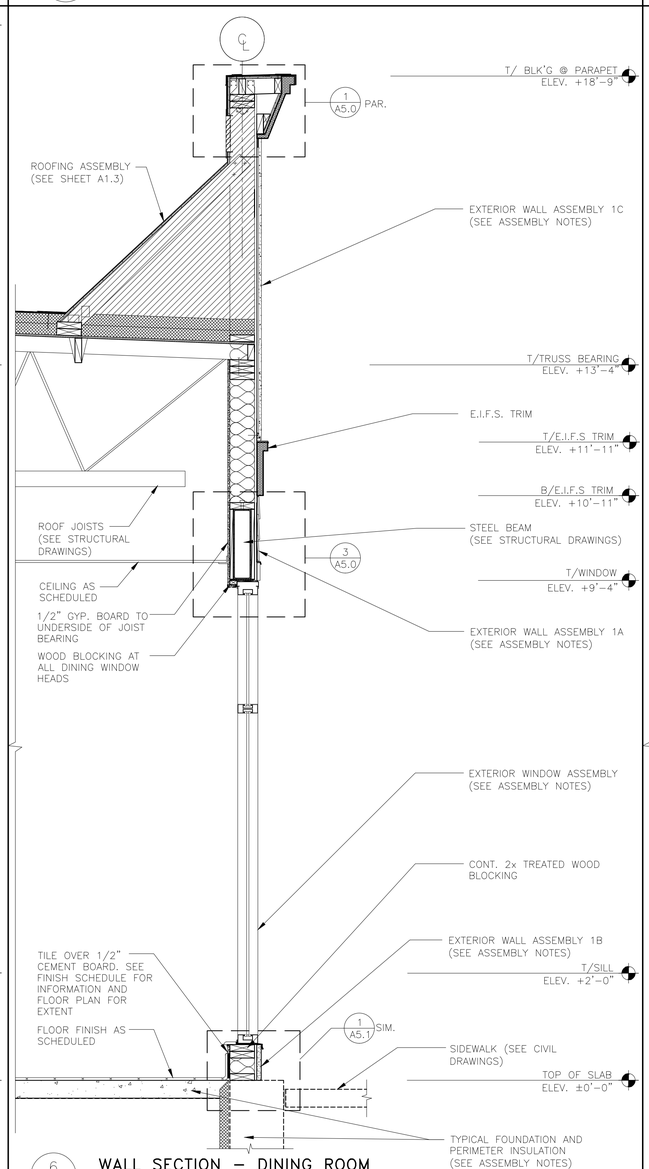
3 A5.0 DETAIL– STOREFRONT HEADER

1 1/2" = 1'–0"



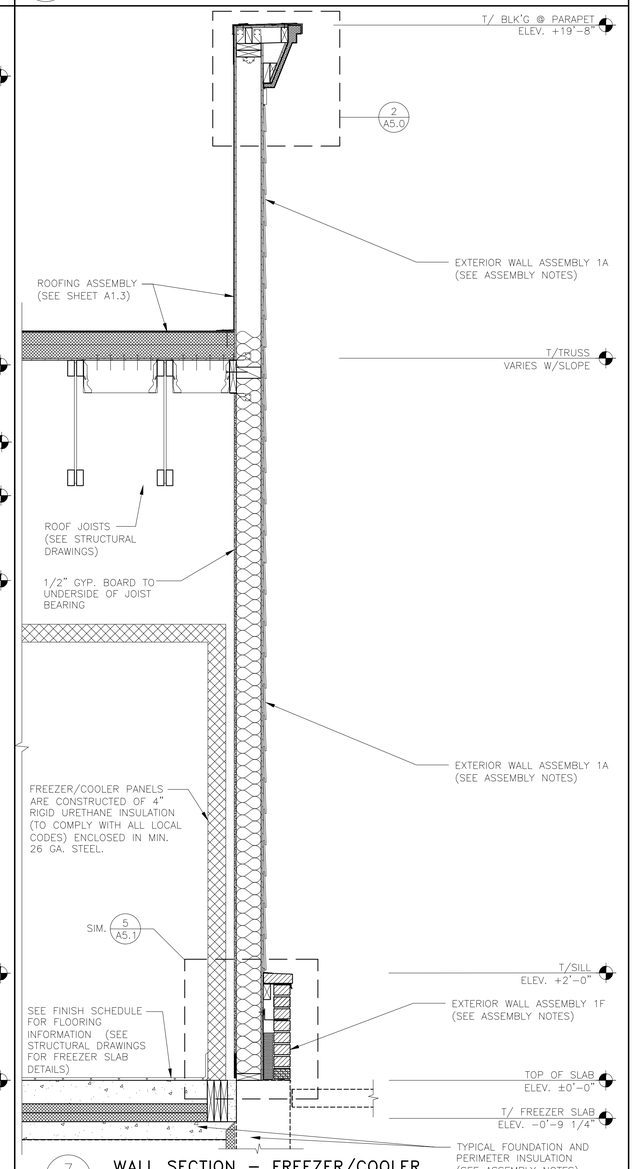
5 A5.0 WALL SECTION – RESTROOM

3/4" = 1'–0"



6 A5.0 WALL SECTION – DINING ROOM

3/4" = 1'–0"



7 A5.0 WALL SECTION – FREEZER/COOLER

3/4" = 1'–0"

EXTERIOR WALL ASSEMBLIES

FROM EXTERIOR TO INTERIOR

1A. FIBER CEMENT HORIZONTAL LAP SIDING

1. JAMES HARDIE, HARDIEPLANK LAP SIDING, SMOOTH, 8 1/4" WIDTH, 7" EXPOSURE, **HZ5**. COLOR: SEE ELEVATIONS.
   a. COORDINATE FIBER CEMENT PANELS WITH FLASHING, TRIM, PARAPET WALLS AND OTHER ADJOINING WORK TO PROVIDE A LEAKPROOF, SECURE AND NONCORROSIVE INSTALLATION. INSTALL A 2" STARTER STRIP TO ENSURE A CONSISTENT PLANK ANGLE. OVERLAP PANELS 1 1/4" MIN. PROVIDE 7" EXPOSURE. SEE EXTERIOR ELEVATIONS.
   b. USE A POLYCRYSTALLINE DIAMOND–TIPPED FIBER CEMENT BLADE FOR CIRCULAR, MITER, AND TABLE SAWS.

1B. TRU EXTERIOR

1. 1"X6" PRE–PRIMED TRIM. COLOR: SEE ELEVATIONS. NAIL TRIM PIECES IN PLACE WITHIN 2" OF THE EDGE OF THE TRIM PIECE AND EVERY 16" ALONG THE LENGTH OF THE TRIM, USING MANUFACTURER APPROVED NAILS. INSTALL PER LOCAL CODES AND MANUFACTURERS SPECIFICATIONS.

1C. WALL PANEL

1. NICHIHA ARCHITECTURAL WALL PANELS & CLIPS INSTALLED PER MANUFACTURER'S REQUIREMENTS. SEE ELEVATIONS FOR HORIZONTAL OR VERTICAL ORIENTATION AND PATTERN.

1D. NOT USED

1E. ALPOLIC ACM PANEL

1. 4MM PE CORE ALPOLIC METAL PANEL (4CASM–BJ CLIP SYSTEM). SEE ELEVATIONS FOR COLOR.
   PROVIDE MFG. SHOP DRAWINGS TO ARCHITECT FOR REVIEW.
   ALPOLIC DAVID KEARNEY 757–286–1005 dave_kearney@m–chem.com

2. NOT USED

3. PERMEABLE BUILDING WRAP OVER 1/2" EXTERIOR GRADE PLYWOOD. INSTALL PER LOCAL CODES AND MFR'S SPEC'S.
4. 2x6 WOOD STUD FRAMING @ 16" O.C. (WITH CONTINUOUS DRAFTSTOP/FIRESTOP BLOCKING AT FINISH CEILING LEVEL).
5. **5 1/2" THICK UNFACED BATT INSULATION (R VALUE = 21 MIN.).**
6. **"CERTAINTEED MEMBRAIN" SMART VAPOR RETARDER (SEMI–VAPOR PERMEABLE) BY CERTAINTEED OR EQUAL.**
7. 1/2" CEMENT BOARD SUBSTRATE FOR ALL TILE LOCATIONS. (TYP.)
   NON TILE LOCATIONS: 1/2" GYPSUM BOARD TO EXTEND TO DECK ABOVE. UNLESS NOTED OTHERWISE.
   ALL GYP. BOARD MUST SCORE 10 PER ASTM D3273. REFERENCE CURRENT PROJECT MANUAL.
8. SEE A1.0 & ROOM FINISH SCHEDULE FOR ADDITIONAL SUBSTRATE INFORMATION.

1F. BRICK VENEER

1. FULL HEIGHT MODULAR SIZE MASONRY, 4" BRICK VENEER (VISIBLE MASONRY) W/NON–CORROSIVE METAL TIES VERTICALLY & HORIZONTALLY PER STRUCTURAL. PROVIDE 10" HIGH MESH DOVETAIL CAVITY DRAINAGE SYSTEM. PROVIDE MESH WEEP VENTS 24" O.C. AT ALL FLASHING LOCATIONS. MORTAR: SM750 SILVERSTONE BY SPEC MIX OR EQ.
2. AIR SPACE – SIZE VARIES ACCORDING TO OVERALL WALL WIDTH. AT TYP. WALL (14"), AIR SPACE IS 2 3/8" WIDE.

EXTERIOR WINDOW ASSEMBLY

(STOREFRONT & ENTRANCE SYSTEM)

GLAZING REQ'S: U VALUE = 0.38 U VALUE "DOOR"= 0.77 SHGC = 0.40

1. DARK BRONZE ANODIZED ALUMINUM FRAME, THERMALLY BROKEN WITH HEAD RECEIVER CHANNEL.
2. 1" TEMPERED INSULATED GLAZING
3. PROVIDE FLASHING AT HEAD & SILL – CONTINUOUS SEALANT.
4. PROVIDE METAL SILL CAP AS SHOWN IN DETAILS
5. 1/2" CORIAN SILL AT INTERIOR

CANOPY SYSTEM

CANOPY INFORMATION SHOWN IN CONSTRUCTION DOCUMENTS IS FOR DESIGN INTENT ONLY. APPROVED MANUFACTURERS SHALL PROVIDE A COMPLETE AND CODE COMPLIANT FINAL DESIGN. REFER TO ELEVATIONS FOR COLOR OF ELEMENTS

1. CANOPY STRUCTURE/OUTRIGGERS: CONT. 2" x 8" PAINTED ALUM. TUBE. PROVIDE CLOSURE PIECE WHERE TUBE ENDS ARE EXPOSED.
2. WHERE INDICATED ON ROOF PLAN, PROVIDE PAINTED ALUM. PANEL INFILL WITH INTEGRAL SCUPPER TO MATCH OUTRIGGERS. PANEL TO PROVIDE POSITIVE SLOPE FOR DRAINAGE.
3. SYSTEM SHALL ALLOW FOR MOVEMENT AT EXPANSION JOINTS AND FOR MOVEMENT OF EXTERIOR WALL SYSTEM ON WHICH THE CANOPY IS MOUNTED.
4. STRUCTURAL ATTACHMENTS & LOAD CALCULATIONS SHALL BE FURNISHED BY CANOPY SYSTEM DESIGNER OF RECORD. SUPPLIER'S DESIGNER OF RECORD SHALL DESIGN PER PREVAILING CODES.
5. CANOPY SYSTEM SHALL BE SELECTED FROM ONE OF THE SUPPLIERS LISTED BELOW.
6. MANUFACTURER SHALL PROVIDE INSTALLER WITH INSTALLATION INSTRUCTIONS. MANUFACTURER SHALL DESIGN CANOPY IN ACCORDANCE WITH THE WALL SYSTEM AND BLOCKING AS INDICATED IN THE CONSTRUCTION DOCUMENTS.
7. INSTALLER SHALL NOTIFY CANOPY DESIGNER OF RECORD, McDONALD'S ACM, G.C. AND ARCHITECT OF ANY DEFICIENCIES THAT WOULD NOT ALLOW FOR THE PROPER INSTALLATION OF THE CANOPY. CANOPY SHALL NOT BE INSTALLED UNTIL DEFICIENCIES HAVE BEEN CORRECTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND THE CANOPY MANUFACTURER'S INSTALLATION INSTRUCTIONS.

CANOPY SYSTEM BY:

AWNEX (770) 704–7140
www.awnexinc.com

ALL–LITE (817) 509–2300
www.allilite.com

GREENHECK (715) 355–3942
www.greenheck.com

FOUNDATION AND PERIMETER INSULATION

1. SEE STRUCTURAL DRAWINGS FOR FOUNDATION AND SLAB DETAILS
2. PROVIDE RIGID UNDERSLAB INSULATION AS FOLLOWS:
   - VERTICALLY FROM TOP OF FOOTING TO TOP OF SLAB:
   - 2'–0" MIN. R–VALUE: **R–10**

4 A5.0 ASSEMBLY NOTES

NO.	DESCRIPTION	DATE	BY
REV			

LICENSED ARCHITECT – MARC PELINI – No:05437 – 10-25-24 – STATE OF NEW HAMPSHIRE

PREPARED BY: CORE STATES GROUP
135 Wynter Street, Suite 201, Holbrook, IL 60540, 312.718.3415, core-states.com

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PREPARED FOR: McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	C.S.G. PROJECT #
N.GLUKHOMAN	M.PELINI	MCD-39450
STD ISSUE DATE 2024 07	DATE ISSUED 10/01/2024	

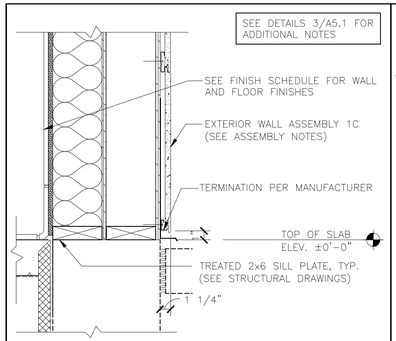
TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

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WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

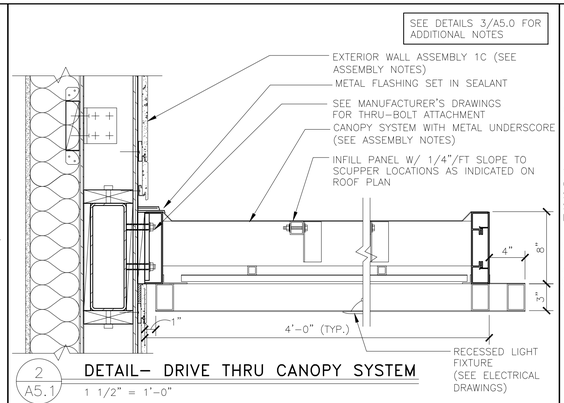
NSN: 4.35.14
L/C: 028–0178

SITE ADDRESS
4 DEERFIELD DR. DOVER, NH

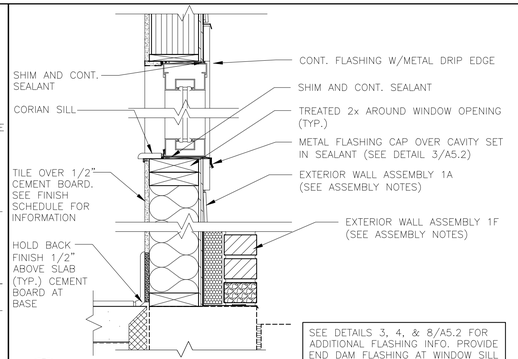
SHEET NO.
028–0178.00.0
A5.0
WALL SECTIONS



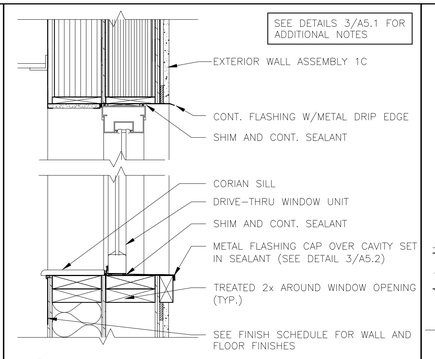
1 A5.1 **DETAIL– WALL PANEL TERMINATION**
1 1/2" = 1'-0"



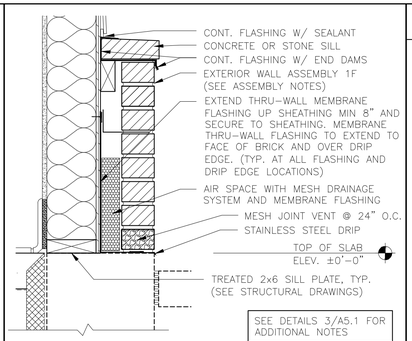
2 A5.1 **DETAIL– DRIVE THRU CANOPY SYSTEM**
1 1/2" = 1'-0"



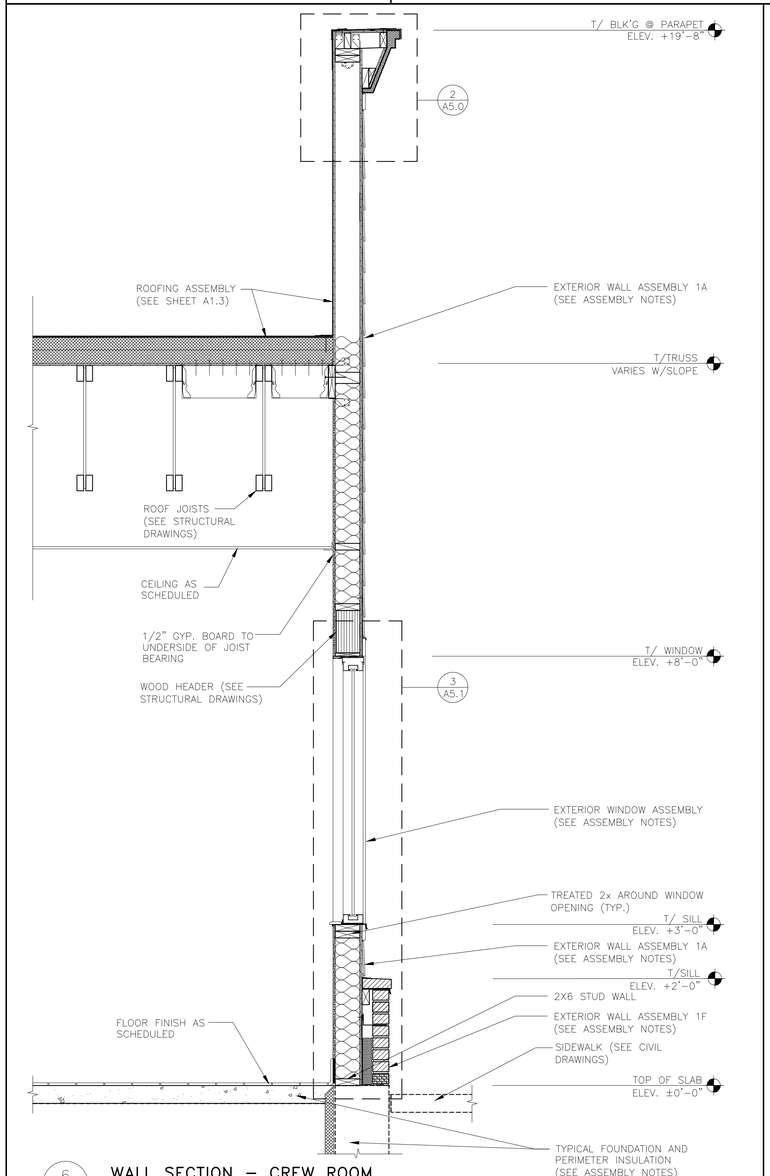
3 A5.1 **SECTION @ WINDOW**
1 1/2" = 1'-0"



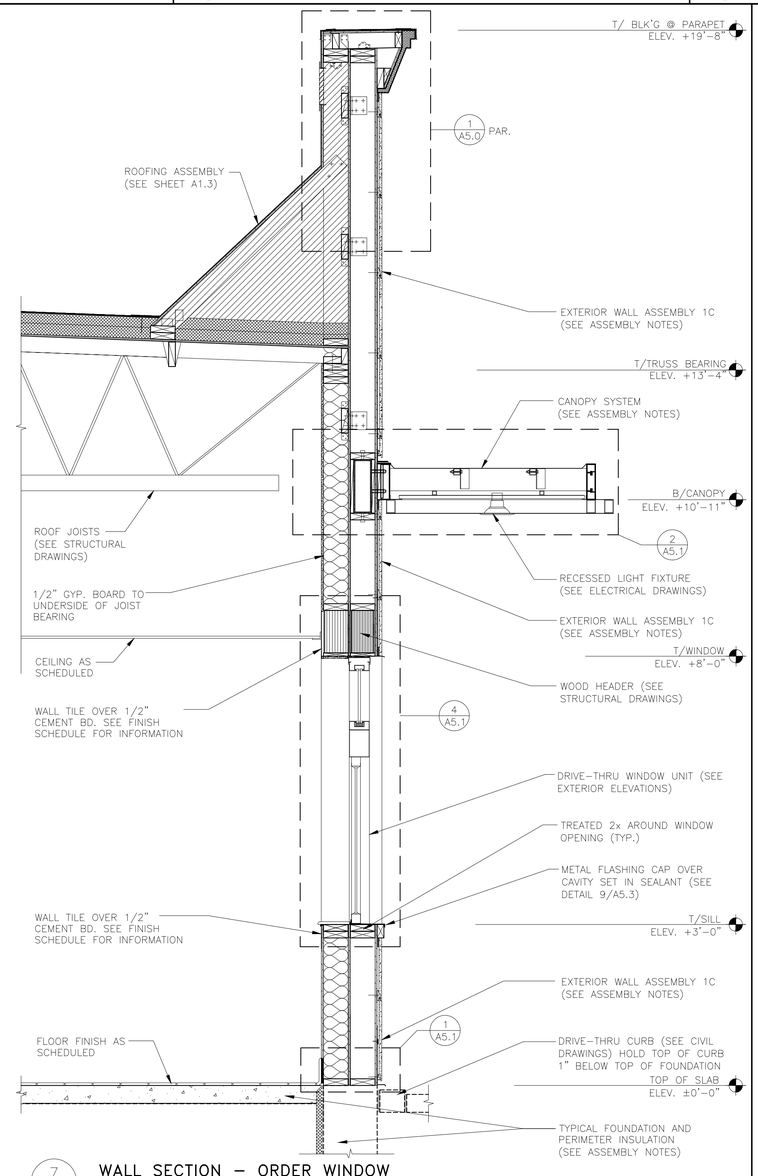
4 A5.1 **SECTION @ DRIVE-THRU WINDOW**
1 1/2" = 1'-0"



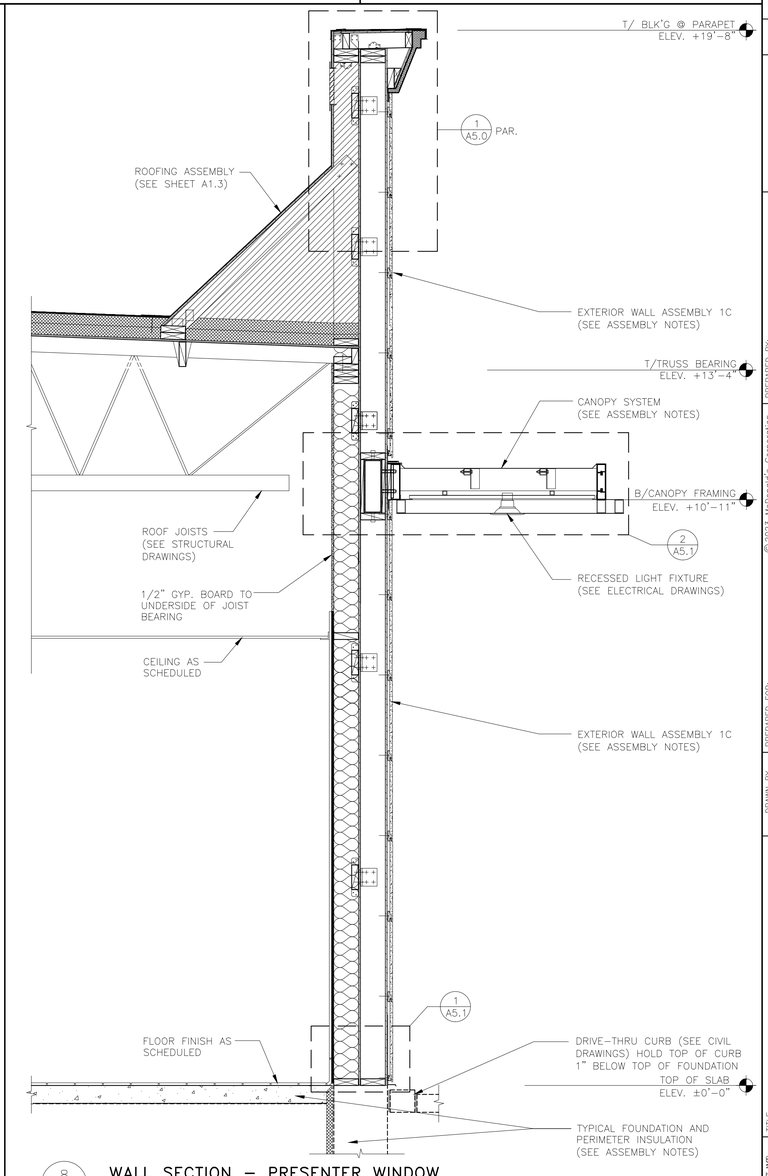
5 A5.1 **DETAIL– BRICK TERMINATION**
1 1/2" = 1'-0"



6 A5.1 **WALL SECTION – CREW ROOM**
3/4" = 1'-0"



7 A5.1 **WALL SECTION – ORDER WINDOW**
3/4" = 1'-0"



8 A5.1 **WALL SECTION – PRESENTER WINDOW**
3/4" = 1'-0"

NO.	DESCRIPTION	DATE	BY
REV			

LICENSED ARCHITECT — MARC PELINI — No:05437 — 10-25-24 — THE STATE OF NEW HAMPSHIRE

PREPARED BY:
CORE STATES GROUP
135 Wynter Street
Suite 201
Holbrook, IL 60540
312.718.3415
core-states.com

PREPARED FOR: McDonald's USA, LLC

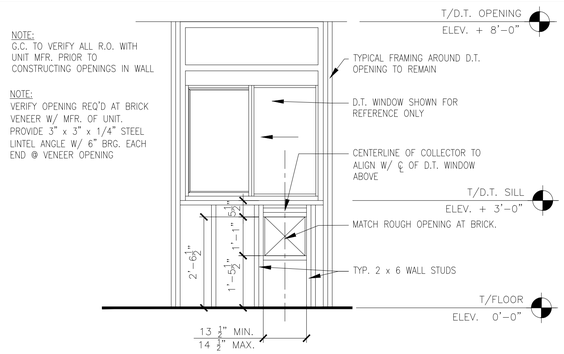
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DRAWN BY	N.GLUKHOMAN
STD ISSUE DATE	2024 07
REVIEWED BY	M.PELINI
DATE ISSUED	10/01/2024
C.S.G. PROJECT #	MCD.33450

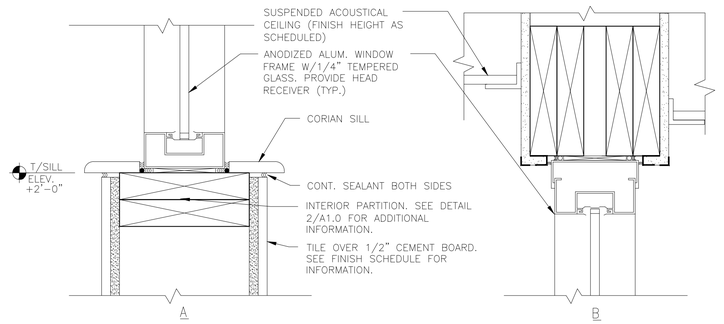
TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

MSN: 43514	SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

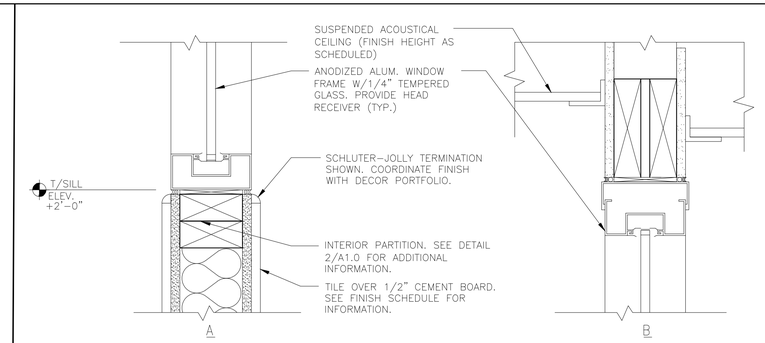
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A5.1
WALL SECTIONS



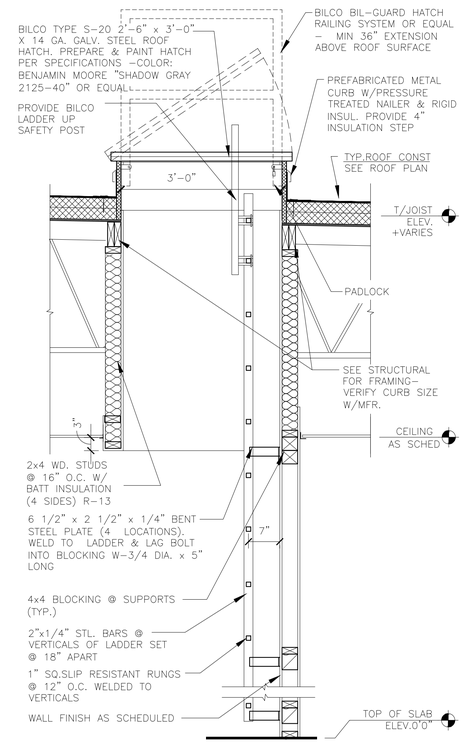
1 A5.2 (RMHC) COIN COLLECTOR @ FRAMED WALL
1/2" = 1'-0" INTERIOR ELEVATON



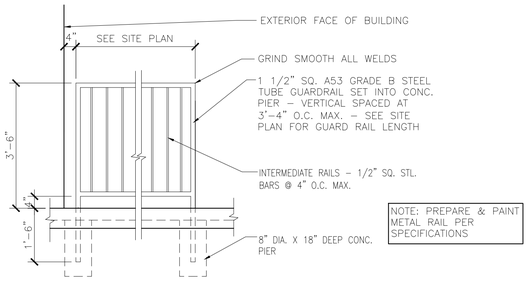
9 A5.2 HEAD & SILL INTERIOR VESTIBULE WALL
3" = 1'-0"



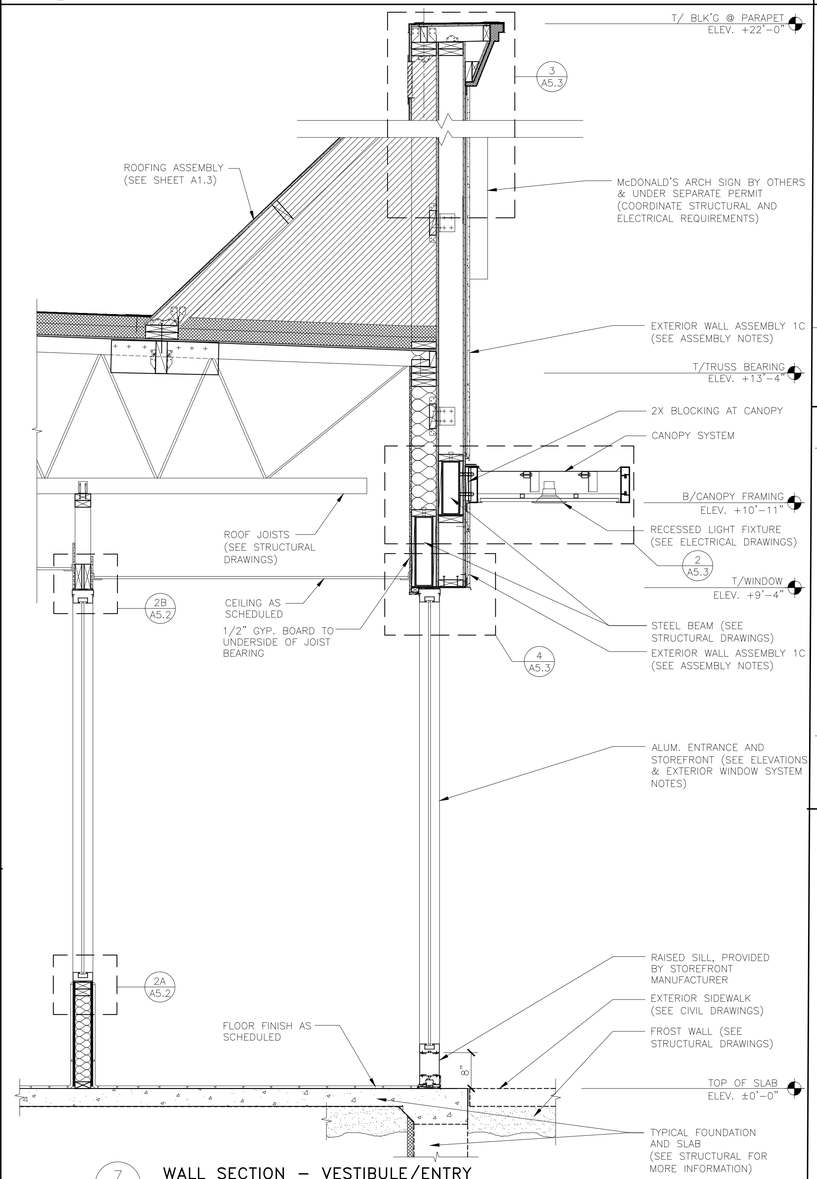
2 A5.2 HEAD & SILL INTERIOR VESTIBULE WALL
3" = 1'-0"



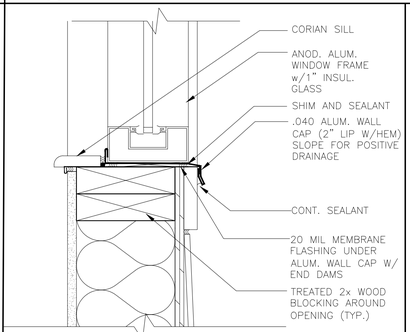
10 A5.2 SECTION @ INTERIOR LADDER
3/4" = 1'-0"



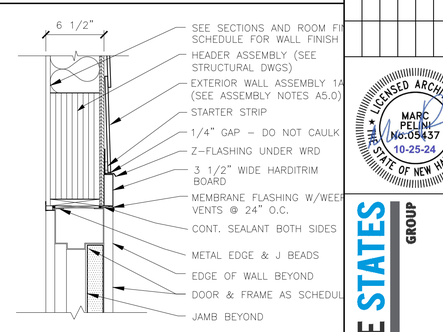
11 A5.2 GUARD RAIL DETAIL
1/2" = 1'-0"



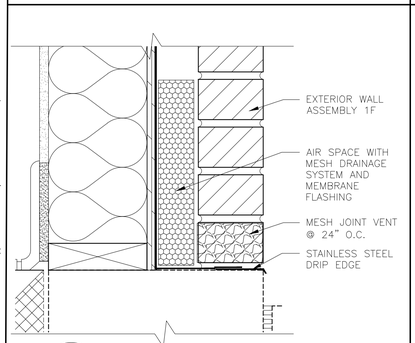
7 A5.2 WALL SECTION - VESTIBULE/ENTRY
-



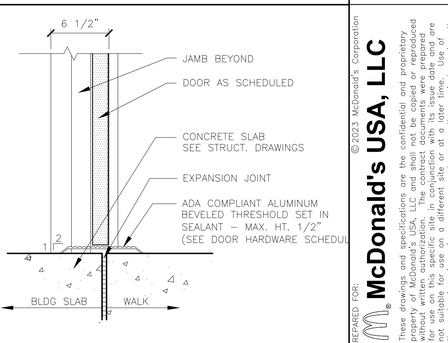
3 A5.2 WINDOW SILL FLASHING
3" = 1'-0"



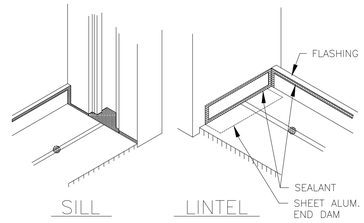
5 A5.2 SECTION @ DOOR HEAD
1 1/2" = 1'-0"



4 A5.2 FLASHING DETAIL @ FOUNDATION
3" = 1'-0"



6 A5.2 SECTION @ DOOR SILL
1 1/2" = 1'-0"



NOTE: SEAL GLASS POCKET OF WINDOW JAMB AT SILL.

NOTE: SEALANT ON BACK LEG OF FLASHING TO BE APPLIED PRIOR TO INSTALLATION OF FRAME.

NOTE: SEAL OVER HEADS OF ALL PERIMETER OPENINGS.

8 A5.2 FLASHING DETAIL @ JAMB
N.T.S.

NO.	DESCRIPTION	DATE	BY
REV			

LICENSED ARCHITECT - MARC PELINI No:05437 - STATE OF NEW HAMPSHIRE - 10-25-24

PREPARED BY: CORE STATES GROUP
135 Wynter Street, Suite 201, Holbrook, IL 60540, 312.718.5415, core-states.com

PREPARED FOR: McDonald's USA, LLC

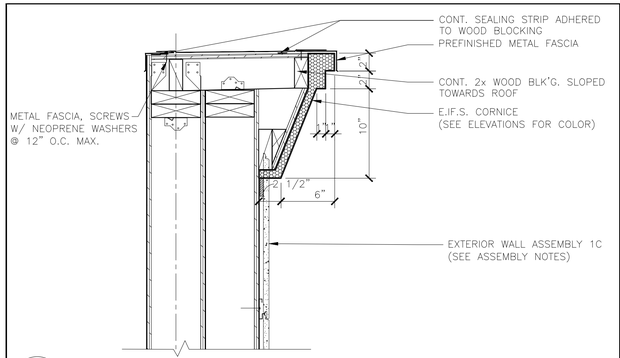
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DRAWN BY: N.GLUKHOMAN	STD ISSUE DATE 2024 07
REVIEWED BY: M.PELINI	DATE ISSUED 10/01/2024
C.S.S. PROJECT #:	MCD_39450

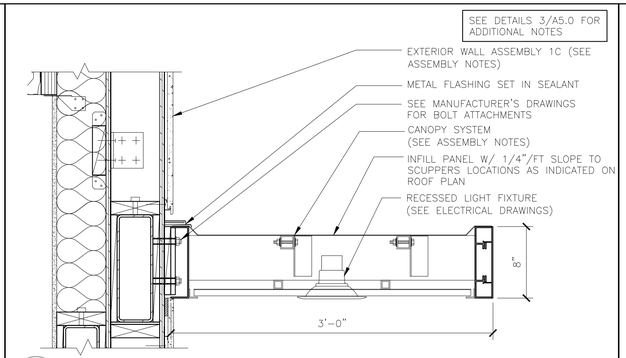
TITLE: 2023 STANDARD BUILDING - BB20 4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN: 4.7514	4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

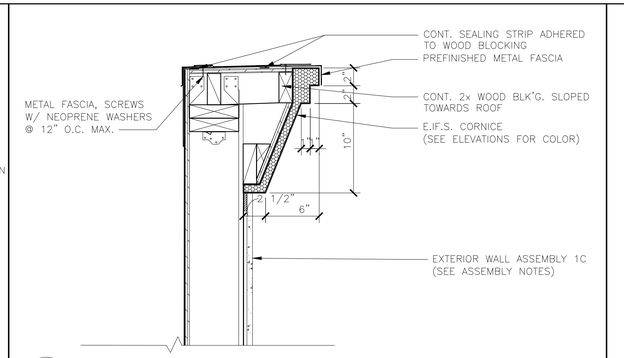
SHEET NO: 028-0178.00.0
A5.2
WALL SECTIONS



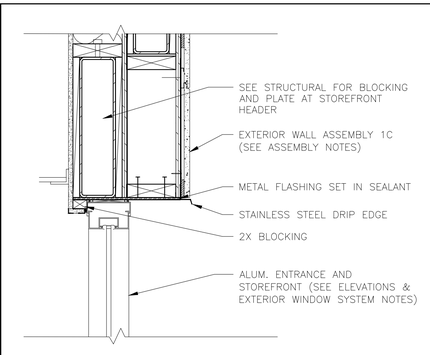
1 A5.3 DETAIL– FASCIA @ PARAPET
1 1/2" = 1'–0"



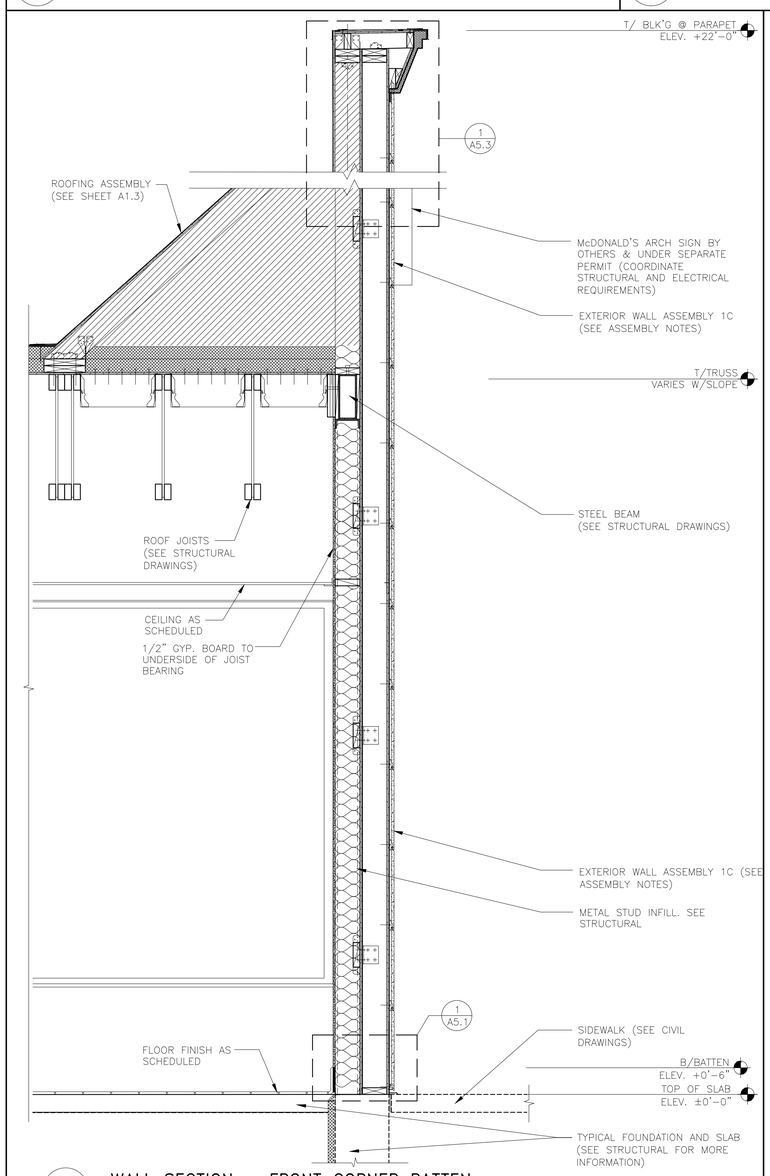
2 A5.3 DETAIL– CANOPY ABOVE ENTRY
1 1/2" = 1'–0"



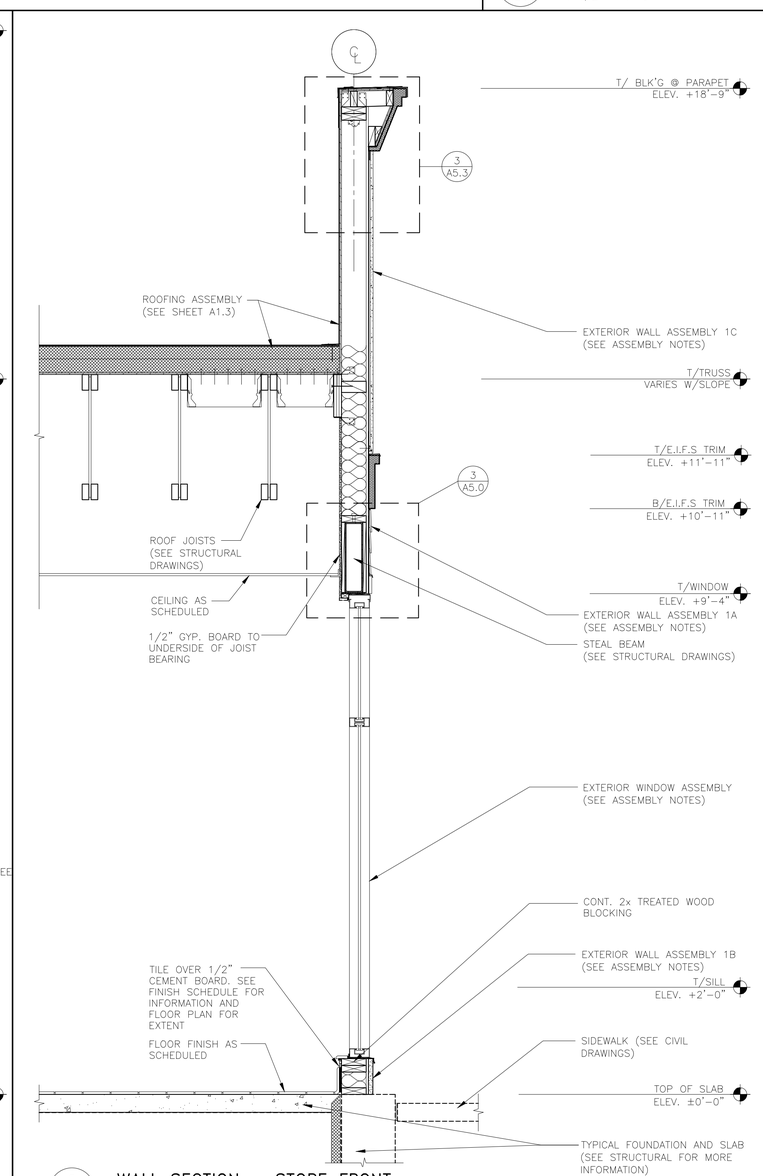
3 A5.3 DETAIL– FASCIA @ PARAPET
1 1/2" = 1'–0"



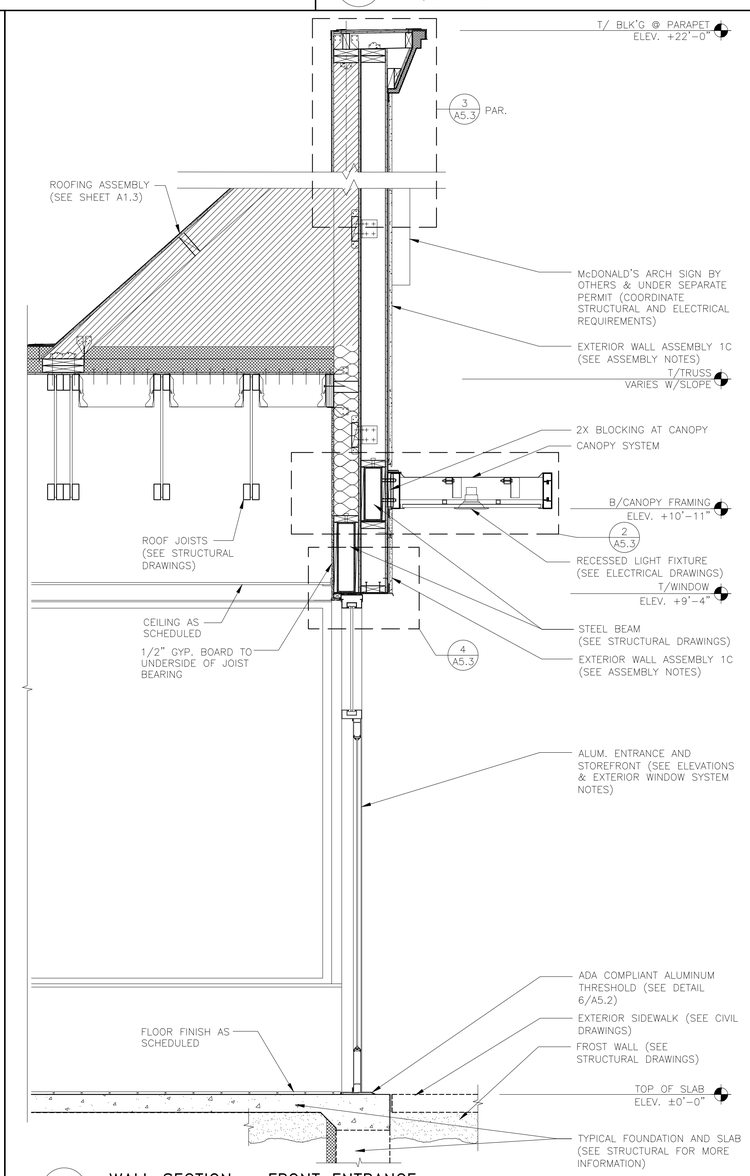
4 A5.3 DETAIL AT STOREFRONT HEADER
1 1/2" = 1'–0"



5 A5.3 WALL SECTION – FRONT CORNER BATTEN
3/4" = 1'–0"



6 A5.3 WALL SECTION – STORE FRONT
3/4" = 1'–0"



7 A5.3 WALL SECTION – FRONT ENTRANCE
3/4" = 1'–0"

BY	DESCRIPTION	DATE	REV

LICENSED ARCHITECT — MARC PELINI — No:05437 — 10-25-24 — STATE OF NEW HAMPSHIRE

PREPARED BY:
CORE STATES GROUP
135 Wynter Street
Suite 201
Holbrook, IL 60340
312.718.5415
core-states.com

PREPARED FOR:
McDonald's USA, LLC

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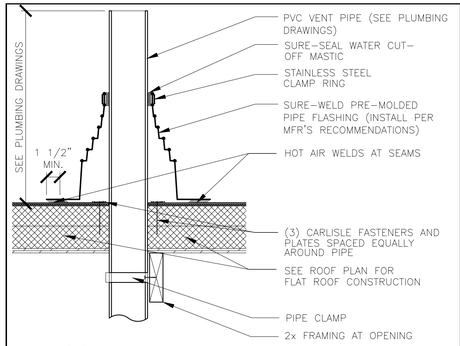
DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
N.GLUKHOMAN	2024 07	M.PELINI	10/01/2024	MCD.39450

TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

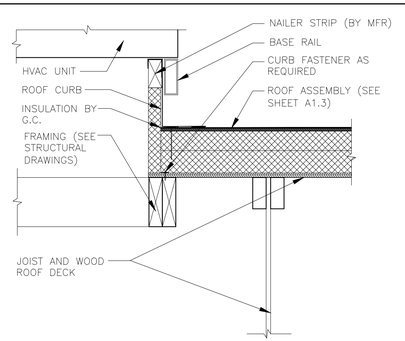
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN:4.3514	SITE ADDRESS
L/C:028–0178	4 DEERFIELD DR. DOVER, NH

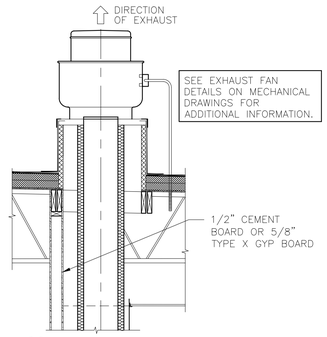
SHEET NO.
028–0178.00.0
A5.3
WALL SECTIONS



2 / A6.0 TYPICAL VENT PENETRATION
1 1/2"=1'-0"

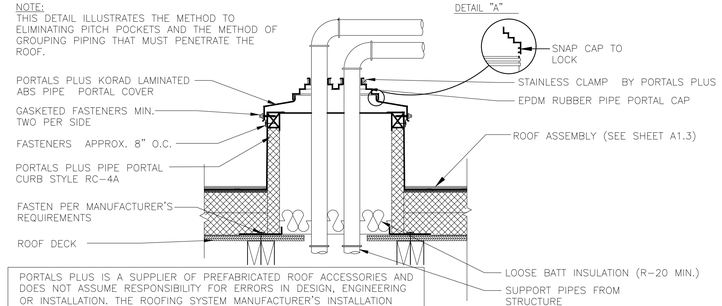


3 / A6.0 HVAC UNIT ROOF CURB DETAIL
1 1/2"=1'-0"



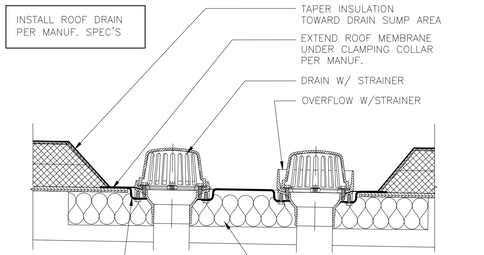
5 / A6.0 DETAIL @ EXHAUST FAN
1/2"=1'-0"

NOTE:
THIS DETAIL ILLUSTRATES THE METHOD TO ELIMINATING PITCH POCKETS AND THE METHOD OF GROUPING PIPING THAT MUST PENETRATE THE ROOF.



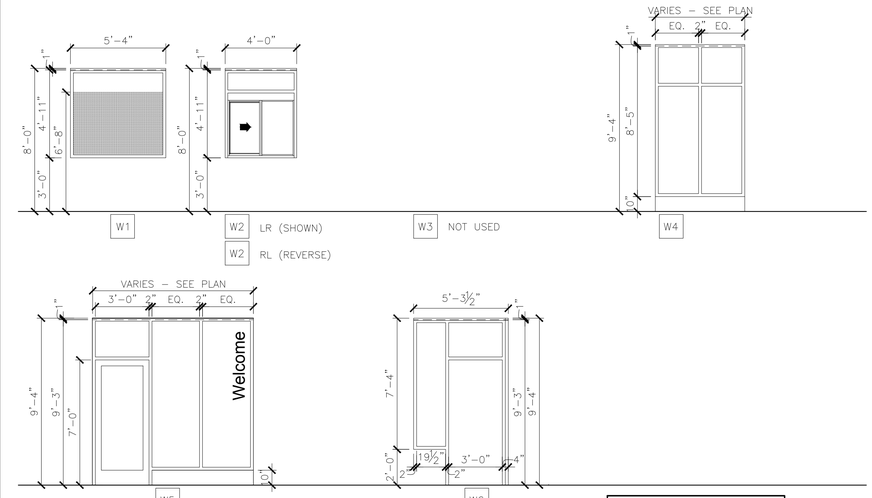
PORTALS PLUS IS A SUPPLIER OF PREFABRICATED ROOF ACCESSORIES AND DOES NOT ASSUME RESPONSIBILITY FOR ERRORS IN DESIGN, ENGINEERING OR INSTALLATION. THE ROOFING SYSTEM MANUFACTURER'S INSTALLATION REQUIREMENTS MAY SUPERSEDE THESE DETAILS FOR WARRANTED ROOF SYSTEMS. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION

6 / A6.0 PIPE PORTAL DETAIL
1 1/2"=1'-0"



7 / A6.0 SECTION @ ROOF DRAIN
1 1/2"=1'-0"

FRAME TYPES



OPPOSITE HAND PER PLAN/ELEVATION

EXTERIOR WINDOW ASSEMBLY
(STOREFRONT & ENTRANCE SYSTEM)
FOR GLAZING & FRAME REQUIREMENTS: SEE EXTERIOR WINDOW ASSEMBLY, 4/A5.0

INTERIOR WINDOW ASSEMBLY
(STOREFRONT & ENTRANCE SYSTEM)
1. EXTRA DARK BRONZE ALUMINUM FRAME.
2. 1/4" CLEAR TEMPERED GLAZING
3. 1/2" CORIAN SILL EACH SIDE

DOOR HARDWARE

GENERAL NOTES:
1. ALL EXIT DOORS SHALL BE KEYLESS IN THE DIRECTION OF EGRESS.
2. THE OPENING FORCE OF ALL EXT. PUSH/PULL DOORS SHALL NOT EXCEED 8 1/2 LBS.
3. THE OPENING FORCE OF ALL INTERIOR PUSH/PULL DOORS SHALL NOT EXCEED 5 LBS.
4. PROVIDE PANIC HARDWARE FOR ALL EXTERIOR DOORS AS NOTED ON THE DOOR SCHEDULE.
5. ALL DOOR HARDWARE SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE.

DOOR #1 – ENTRY DOOR/EMERGENCY EXIT
1. 1 EA CLOSER LCN 4021 x 18
2. 3 EA HINGES OFFSET PIVOT ANSI –A–156.4 GRADE 1; PROVIDE EXPOSED PARTS OF CAST ALUMINUM ALLOY, AS SUPPLIED BY DOOR MANUFACTURER.
3. 1 EA PULL HANDLE ROCKWOOD MFG. MODEL: RM3311. SIZE: 1–1/4" DIA. CTC: 5'–10". FINISH: TO MATCH STOREFRONT DOOR. OFFSET MOUNTING: TYPE 1XHD – THRU BOLT HEAVY DUTY
4. 1 EA PANIC HARDWARE ADAMS RITE MFG. CO. 8800 SERIES WITH OUTSIDE CYLINDER (FINISH TO MATCH STOREFRONT DOOR)
5. 1 EA THRESHOLD NATIONAL GUARD PRODUCTS, INC. SADDLE TYPE THRESHOLD 325, 36" WIDE x 1/2" RISE (ADA ACCESSIBLE).
6. 1 EA WEATHER STRIPPING: PROVIDE COMPRESSION WEATHER STRIPPING AGAINST FIXED STOPS. AT OTHER EDGES PROVIDE SLIDING WEATHER STRIPPING RETAINED IN ADJUSTABLE STRIP MORTISED INTO DOOR EDGE. PROVIDE EPDM OR VINYL GASKET WEATHER STRIPPING IN BOTTOM DOOR RAIL ADJUSTABLE FOR CONTACT W/ THRESHOLD.
7. 1 EA SIGN MOUNT ONTO DOOR, TO READ "THIS DOOR MUST REMAIN UNLOCKED WHENEVER THE BUILDING IS OCCUPIED/DURING BUSINESS HOURS."

DOOR #2 & #2A– VESTIBULE
1. 1 EA CLOSER LCN 4041 x 18
2. 3 EA HINGES OFFSET PIVOT ANSI –A–156.4 GRADE 1; BY DOOR MANUFACTURER.
3. 1 EA PUSH/PULL HANDLE HAGER PUSH/PULL SET 164D/V/B.
4. 1 EA (DOOR #2A) PANIC HARDWARE ADAMS RITE MFG. CO. 8800 SERIES WITH OUTSIDE CYLINDER (FINISH TO MATCH STOREFRONT DOOR)

DOOR #3 – STORAGE DELIVERY
1. 1 EA HINGE 780–112HD 83" ALUM HAGER
2. 1 EA CLOSER 4111 H–CUSH ALUM LCN
3. 1 EA PANIC 9975EO–LD 48" SP28 V.DUPRIN
4. 1 EA TRIM 990DT US26D V.DUPRIN
5. 1 EA ALARM LOCK PG21MSS ALARM
6. 1 EA LOCKGUARD CLP110 US32D DON–JO
7. 1 EA TREADPLATE 24 X 46 UMCO
8. 1 EA WTH/STP160V 48 X 84 N.GUARD
9. 1 EA THRESHOLD 325HD 48" N.GUARD
10. 1 EA SWEEP 101VA 48" N.GUARD
11. 1 EA VIEW FRAME LVGLFMD 9 X 9 DKB W/FLAP ON INSIDE N.GUARD
12. 1 EA MORTISE CYL HOUSING 7PIN SFIC 626
13. 1 EA 7 PIN CONSTRUCTION CORE FOR ABOVE 626
14. 1 EA CONTROL KEY FOR ABOVE

DOOR #3A – FREEZER DELIVERY (DOUBLE DOOR)
1. 2 EA CONTINUOUS HINGE A210HDC 83
2. 1 EA DEADBOLT 8661P 626 SCHLAGE
3. 1 EA LATCH PROTECTOR CLP–110 630
4. 1 EA PULL H3E US28 HAGER
5. 1 EA GASKETING 160V 1 x 60" 2 x 84" SMS–TEKS 6 x 3/4"
6. 1 EA DRIP CAP 16 A 64" SMS–TEKS 6 x 3/4"
7. 1 EA TREADPLATE DIA CUT W/ HOLES 24" x 22"
8. 1 EA TREADPLATE DIA CUT W/ HOLES 24" x 34"
9. 2 EA SURFACE BOLT 275D 8" US26D
10. 1 EA THRESHOLD 325 HD 60" N.GUARD
11. 1 EA SWEEP 101VA 24" N.GUARD
12. 1 EA SWEEP 101VA 36" N.GUARD

DOOR #4 – REAR EXIT
1. 1 EA HINGE 780–112HD 83" ALUM HAGER
2. 1 EA CLOSER 4111 H–CUSH ALUM LCN
3. 1 EA PANIC 9975EO–LD 48" SP28 V.DUPRIN
4. 1 EA TRIM 990DT US26D V.DUPRIN
5. 1 EA ALARM LOCK PG21MSS ALARM
6. 1 EA LOCKGUARD CLP110 US32D DON–JO
7. 1 EA TREADPLATE 24 X 34 UMCO
8. 1 EA WTH/STP160V 36 X 84 N.GUARD
9. 1 EA THRESHOLD 325HD 48" N.GUARD
10. 1 EA SWEEP 101VA 36" N.GUARD
11. 1 EA VIEW FRAME LVGLFMD 9 X 9 DKB W/FLAP ON INSIDE N.GUARD
12. 1 EA MORTISE CYL HOUSING 7PIN SFIC 626
13. 1 EA 7 PIN CONSTRUCTION CORE FOR ABOVE 626
14. 1 EA CONTROL KEY FOR ABOVE

DOOR #5 – RESTROOM ENTRY
1. 3 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
2. 1 EA CLOSER LDPA4031 SNB ALUM LCN
3. 1 EA PUSH PLATE 30S 4 X 32 US32D 40"AFF MOUNTED TO CENTER OF PLATE
4. 1 EA PULL PLATE LADDER PULL HANDLE WITH DECORATIVE FIXING, 32"L 1"DIA
   #S–32–1000 – UMCO 32D. 40" AFF MOUNTED CENTER OF PULL
   ALT. OPTION: 1 EA PULLPLATE SANITGRASP
   ALT. OPTION: 1 EA PULL–PUSH BUTTON CYLINDRICAL LOCK – TRILOGY DL2700 US26D CHROME
5. 2 EA KICKPLATE 190S 8 X 34 US32D HAGER
6. 1 EA DOOR STOP 236W US32D HAGER
7. 1 EA FINGER GRD MKIA PUSH SIDE BRN F.SAFE
8. 1 EA FINGER GRD MKIB PULL SIDE BRN F.SAFE
9. 1 EA STEPNPULL PULL SIDE (OPTIONAL)

DOOR #6 – ADA STALL
1. 2 EA HINGE 1250 4 ½ X 4 ½ US26D HAGER
2. 1 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
3. 1 EA DEADBOLT B571 X 10–087 214EE X 12 X 291 X 626 SCHLAGE
4. 2 EA BACK TO BACK LADDER PULL HANDLE, 16"L 1"DIA #S–16–1000 BTB–UMCO 32D MOUNTED 6" FROM EDGE OF DOOR TO CENTER OF SCREWS – 28½" MOUNTED 28½" FROM TOP OF DOOR TO C/L OF PULL
5. 1 EA ROBE HOOK 917 BRADLEY
6. 1 EA DOOR STOP 236W US32D HAGER

DOOR #6A – STANDARD STALL
1. 2 EA HINGE 1250 4 ½ X 4 ½ US26D HAGER
2. 1 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
3. 1 EA DEADBOLT B571 X 10–087 214EE X 12 X 291 X 626 SCHLAGE
4. 2 EA BACK TO BACK LADDER PULL HANDLE, 16"L 1"DIA #S–16–1000 BTB–UMCO 32D MOUNTED 6" FROM EDGE OF DOOR TO CENTER OF SCREWS – 28½" MOUNTED 28½" FROM TOP OF DOOR TO C/L OF PULL
5. 1 EA ROBE HOOK 917 BRADLEY
6. 1 EA DOOR STOP 236W US32D HAGER

DOOR #7 – DINING ROOM JANITORS CLOSET
1. 3 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
2. 1 EA LOCK ND80PD RHO 626 SCHLAGE

DOOR #8A – COMPUTER CLOSET
1. 8 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
2. 1 EA LOCK ND80PD RHO 626 SCHLAGE
3. 2 EA FLUSH BOLT 283D US26D HAGER

DOOR #9A & #9B – COOLER
1. ALL DOOR HARDWARE FOR THE REFRIGERATED COOLER / FREEZER SHALL BE PROVIDED BY THE MANUFACTURER.
   MANUFACTURER: KOLPAK @ HY 641 N. McCORKLE PARK ROAD PARSONS, TN 38363 PHONE: 800–344–4675
   HARDWARE PROVIDED:
   1. MAGNETIC PERIMETER DOOR GASKET
   2. THRESHOLD REINFORCED PLASTIC (FRP)
   3. POSI–SEAL DOOR CLOSURE
   4. STATIONARY CHROME DOOR PULL HANDLE
   5. INTERIOR SAFETY RELEASE HANDLE
   6. HINGES – BRUSHED CHROME CAST ALLOY

DOOR #10
1. 1 EA HINGE 780–112HD 83" ALUM HAGER
2. 1 EA CLOSER 1461 RW/PA ALUM LCN
3. 1 EA LOCK ND80PD RHO 626 SCHLAGE
   OPTIONAL – FOR OUTSWING DOOR REPLACE WITH 3A&B:
   3A. 1 EA PANIC 9975EO–LD 36" SP28 V.DUPRIN
   3B. 1 EA TRIM 990DT US26D V.DUPRIN
4. 1 EA ELEC STRIKE 6211 24V DC FSE US32D SCHLAGE
5. 1 EA PWR SUPPLY PS902 SCHLAGE
6. 1 EA ANNUNCIATOR BSV–24P SURFACE MOUNTED
7. 3 EA PUSH BUTTON 621–BK–DA HDP 626 SCHLAGE
8. 1 EA PUSH BUTTON 621–RD–DA HDP 626 SCHLAGE
9. 1 EA HORN WITH STROBE 1910S SCHLAGE
10. 1 EA GLASS 5 X 26 X ¼ UMCO
11. 1 EA VIEW FRAME LFRA100 6 X 27 DKB N.GUARD
12. 1 EA GLASS 5 X 26 X ¼ UMCO

DOOR #15 CO2
1. 1 EA HINGE 780–112HD 83" ALUM HAGER
2. 1 EA LOCK ND80PD RHO 626 SCHLAGE
3. 1 EA LOCK GUARD CLP110 US32D DON JO
4. 1 EA WTH/STP 160V 36 X 84 N.GUARD
5. 1 EA THRESHOLD 425E 36" N.GUARD
6. 1 EA SWEEP 101VA 36" N.GUARD
7. 1 EA SEC. LOUVER LVRSG–3 DKB 18 X 18 N.GUARD

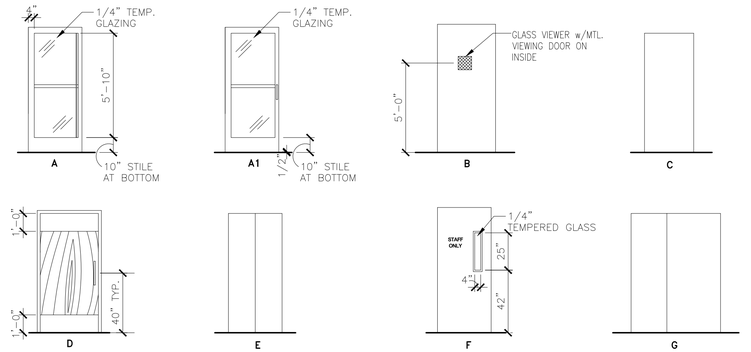
DOOR #16 CREW ROOM
1. 3 EA HINGE BB1279 4 ½ X 4 ½ US26D HAGER
2. 1 EA ND66PD RHO STORE LEVER LOCK SCHLAGE

DOOR SCHEDULE

DOOR SCHEDULE

MARK	DOOR MATERIAL	DOOR SIZE	TYPE	FRAME MATL.	FRAME SIZE
1	ALUM.	3'–0"x7'–0"x1 3/4"	A	ALUM.	(NOTE 5)
2	ALUM.	3'–0"x7'–0"x1 3/4"	A1	ALUM.	(NOTE 5)
2A	ALUM.	3'–0"x7'–0"x1 3/4"	A1	ALUM.	(NOTE 5)
3	H.M.	4'–0"x7'–0"x1 3/4"	B	H.M.	2"JAMB 4"HD
3A	H.M.	3'–0"x7'–0"x1 3/4" 2'–0"x7'–0"x1 3/4"	G	H.M.	2"JAMB 4"HD
4	H.M.	3'–0"x7'–0"x1 3/4"	B	H.M.	2"JAMB 4"HD
5	S.C. WOOD W/ LAM.	3'–0"x6'–8"x1 3/4"	C	H.M.	2"JAMB & HEAD
6	S.C. WOOD W/ LAM.	3'–0"x4'–8"x1 3/4"	D	H.M.	2"JAMB & HEAD
6A	S.C. WOOD W/ LAM.	2'–6"x4'–8"x1 3/4"	D	H.M.	2"JAMB & HEAD
7	S.C. WOOD W/ LAM.	3'–0"x6'–8"x1 3/4"	C	H.M.	2"JAMB & HEAD
8		NOT USED			
8A	S.C. WOOD W/ LAM.	(2) 1'–2"x8'–0"x1 3/4"	E	H.M.	2"JAMB & HEAD
9A	INSULATED METAL	3'–0"x6'–6"x4"	C	N/A	N/A
9B	INSULATED METAL	4'–0"x6'–6"x4"	C	N/A	N/A
10	H.M.	3'–0"x7'–0"x1 3/4"	F	H.M.	2"JAMB & HEAD
11		NOT USED			
12		NOT USED			
13		NOT USED			
14		NOT USED			
15	H.M.	3'–0"x7'–0"x1 3/4"	C	H.M.	2"JAMB 4"HD
16	S.C. WOOD W/ LAM.	3'–0"x7'–0"x1 3/4"	C	H.M.	2"JAMB & HEAD

GENERAL DOOR NOTES:
1. GC TO INSTALL ACCESSIBILITY DOOR SIGNS WHERE REQ'D BY LOCAL CODES – SEE GENERAL NOTE 6, SHEET A1.0
2. ALARM CONTACT SWITCHES SHALL BE RECESSED INTO THE TOP OF THE DOOR & HOLLOW METAL FRAME ABOVE.
3. DOORS, DOOR FRAMES, & HARDWARE FOR DOORS 3, 3A, 4, 5, 6, 6A, 7, 8, 8A, 10, 11, 12, 14, 15, 16 SUPPLIED BY: UNIVERSAL MANUFACTURING 1–800–821–1414.
4. DOOR 9 SUPPLIED BY FREEZER/COOLER MANUFACTURER
5. SEE ELEVATIONS AND WALL SECTIONS
6. ALL INTERIOR SOLID CORE WOOD DOORS TO HAVE A LAMINATED FINISH.
7. DOOR 8 & 8A – 1" UNDERCUT FOR MAKE UP AIR. LAMINATED FINISH – "WILSONART DOVE GREY" D92–60
8. **DOOR 3, 3A, 4 & 15 TO HAVE MAXIMUM U VALUE = 0.61**
9. DOOR 5 RESTROOM EXTERIOR, 7 – LAMINATED FINISH, PER DECOR PORTFOLIO:
   GEOMETRY – "LAMITECH 2315 MT DARKSTEEL"
   FRAME FINISH – BENJAMIN MOORE "GRAY 2121–10"
   LUNA – "LAMITECH 1467 MT LINEAL OAK"
   FRAME FINISH – BENJAMIN MOORE "GRAY 2121–10"
   ROUTE 66 – "WILSONART NORTH SEA D90–60"
   FRAME FINISH – BENJAMIN MOORE "WHALE GRAY 2134–40"
   RAY – "LAMITECH 2255 MT IRON"
   FRAME FINISH – BENJAMIN MOORE "MIDNIGHT OIL 1631"
10. DOOR 5 RESTROOM INTERIOR, 6, 6A – LAMINATED FINISH – "LAMITECH ONTARIO OAK 1540 PW"
    FRAME FINISH BENJAMIN MOORE "GRAY 2121–10"
11. DOOR 16 LAMINATED FINISH – "WILSONART DOVE GREY" D92–60



DOOR TYPES

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LICENSED ARCHITECT MARC PELINI No:05437 10-25-24 STATE OF NEW HAMPSHIRE

BY	DESCRIPTION	DATE	REV

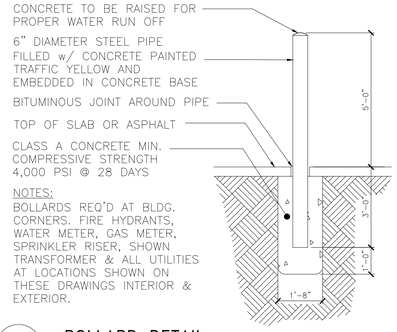
DRAWN BY: N.GLUKHOMAN
STD. ISSUE DATE: 2024 07
REVIEWED BY: M.PELINI
DATE ISSUED: 10/01/2024
C.S.G. PROJECT #: MCD.39450

TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

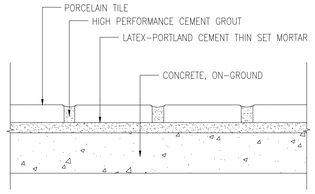
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WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

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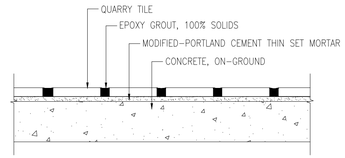
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DOOR & HARDWARE



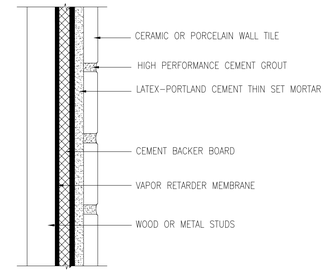
1 A6.1 **BOLLARD DETAIL**
N.T.S.



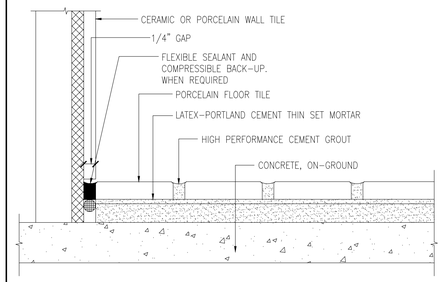
2 A6.1 **RESTROOM AND DINING ROOM FLOORS OVER CONCRETE**
N.T.S.



3 A6.1 **KITCHEN/SUPPORT FLOORS OVER CONCRETE**
N.T.S.



4 A6.1 **DINING ROOM INTERIOR WALLS OVER WOOD OR METAL STUDS**
N.T.S.



5 A6.1 **DINING ROOM PERIMETER JOINT**
N.T.S.

WALL TILE SCHEDULE – RAY

MARK	ROOM NAME	WALL		MORTAR SETTING BED	GROUT
100	CUSTOMER SERVICE	CERAMIC OR PORCELAIN WALL TILE	(NOTE 5C)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
101	DINING	SEE DINING ROOM FINISH SCHEDULE	(NOTE 5B & 5C)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
102	WOMEN'S TOILET	CERAMIC OR PORCELAIN WALL TILE	(NOTE 4)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT (NOTE 4)
103	MEN'S TOILET	CERAMIC OR PORCELAIN WALL TILE	(NOTE 4)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT (NOTE 4)
104	SUPPORT	N/A – SEE ROOM FINISH SCHEDULE		----	----
105	KITCHEN	N/A – SEE ROOM FINISH SCHEDULE		----	----
106	PRESENTER-1	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
107	ORDER	N/A – SEE ROOM FINISH SCHEDULE		----	----
108	MANAGER'S OFFICE	N/A – SEE ROOM FINISH SCHEDULE		----	----
109	CREW ROOM	SEE ROOM FINISH SCHEDULE	(NOTE 5B)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
110	COOLER	N/A – SEE ROOM FINISH SCHEDULE		----	----
111	FREEZER	N/A – SEE ROOM FINISH SCHEDULE		----	----
112	COMPUTER CLOSET	N/A – SEE ROOM FINISH SCHEDULE		----	----
113	CREW ALCOVE	N/A – SEE ROOM FINISH SCHEDULE		----	----
114	JANITOR'S CLOSET	N/A – SEE ROOM FINISH SCHEDULE		----	----
115	VESTIBULE	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
116	PRESENTER-2	CERAMIC WALL TILE		LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
117	CO2	N/A – SEE ROOM FINISH SCHEDULE		----	----

FLOOR TILE SCHEDULE – RAY

MARK	ROOM NAME	FLOOR	BASE	MORTAR SETTING BED	GROUT
100	CUSTOMER SERVICE	PORCELAIN FLOOR TILE (NOTE 3)	NONE – WALL TILE	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
101	DINING	PORCELAIN FLOOR TILE (NOTE 3)	NONE – WALL TILE	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
102	WOMEN'S TOILET	PORCELAIN FLOOR TILE (NOTE 4)	NONE – WALL TILE (NOTE 5A)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
103	MEN'S TOILET	PORCELAIN FLOOR TILE (NOTE 4)	NONE – WALL TILE (NOTE 5A)	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
104	SUPPORT	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
105	KITCHEN	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
106	PRESENTER-1	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
107	ORDER	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
108	MANAGER'S OFFICE	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
109	CREW ROOM	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
110	COOLER	QUARRY TILE (NOTE 2)	4" ALUM. COVED BASE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
111	FREEZER	QUARRY TILE (NOTE 2)	4" ALUM. COVED BASE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
112	COMPUTER CLOSET	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
113	CREW ALCOVE	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
114	JANITOR'S CLOSET	PORCELAIN FLOOR TILE	COVED QUARRY TILE	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
115	VESTIBULE	PORCELAIN FLOOR TILE	NONE – WALL TILE	LATEX-PORTLAND CEMENT THIN SET (MEDIUM BED)	HIGH PERFORMANCE CEMENT GROUT
116	PRESENTER-2	QUARRY TILE (NOTE 2)	COVED QUARRY TILE	MODIFIED-PORTLAND CEMENT THIN SET MORTAR (MEDIUM BED)	CHEMICAL RESISTANT, WATER-CLEANABLE, TILE-SETTING EPOXY – 100% SOLIDS, INDUSTRIAL-GRADE
117	CO2	N/A – SEE ROOM FINISH SCHEDULE	---	----	----

ROOM FINISH SCHEDULE – RAY

MARK	ROOM NAME	WALLS			CEILING *	REMARKS
		SUBSTRATE	FINISH			
100	CUSTOMER SERVICE	CEMENT BOARD	TILE **	TILE AS NOTED ON A1.0 AND A3.1	2'x2' VINYL-FACED LAY-IN	
101	DINING	CEM BD/GYP BD	TILE/V.W.C. **	SEE DINING ROOM FINISH SCHEDULE	SEE DINING ROOM FINISH SCHEDULE	
102	WOMEN'S TOILET	CEMENT BOARD	TILE		PAINTED GYP. BD.	BENJAMIN MOORE – "OC-17 WHITE DOVE"
103	MEN'S TOILET	CEMENT BOARD	TILE		PAINTED GYP. BD.	BENJAMIN MOORE – "OC-17 WHITE DOVE"
104	SUPPORT	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS	2'x2' VINYL-FACED LAY-IN	SEE NOTE 5 FOR WALL FINISH EXCEPTIONS
105	KITCHEN	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	SEE SHEET A1.0 FOR EXTENT OF CEMENT BOARD, SS OR CT
106	PRESENTER -1	CEMENT BOARD	TILE	TILE AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	
107	ORDER	CEMENT BOARD	TILE		2'x2' VINYL-FACED LAY-IN	
108	MANAGER'S AREA	CEMENT BOARD	TILE		2'x2' VINYL-FACED LAY-IN	
109	CREW ROOM	CEM BD/GYP BD	TILE/V.W.C. **	SEE NOTE 8	2'x2' ACOUST. LAY-IN	
110	COOLER	N/A	PRE-FAB METAL SKIN PANEL		PRE-FAB METAL SKIN PANEL	BASE SUPPLIED BY KES
111	FREEZER	N/A	PRE-FAB METAL SKIN PANEL		PRE-FAB METAL SKIN PANEL	BASE SUPPLIED BY KES
112	COMPUTER CLOSET	CEMENT BOARD	TILE		PAINTED GYP. BD.	
113	CREW ALCOVE	CEMENT BOARD	TILE	STAINLESS STEEL CORNERS, TILE OVER CEM BD AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	SEE SHEET A1.0 FOR EXTENT OF CEMENT BOARD, SS OR CT
114	JANITOR'S CLOSET	1/2" PLYWD (NOTE 4)	FRP		PAINTED GYP. BD.	EXT GRADE PLYWOOD (NOTE 4) SEE NOTE 5A
115	VESTIBULE	CEM BD/GYP BD	TILE/V.W.C.	SEE DINING ROOM FINISH SCHEDULE	SEE DINING ROOM FINISH SCHEDULE	OPTIONAL PEDIMAT. SEE DETAIL 7/A6.1. VERIFY WITH MCD CONSTRUCTION MANGER
116	PRESENTER -2	CEMENT BOARD	TILE	TILE AS NOTED ON A1.0	2'x2' VINYL-FACED LAY-IN	
117	CO2	CEMENT BOARD	TILE		PAINTED GYP. BD.	SEE NOTE 7

DINING ROOM FINISH SCHEDULE – RAY

MARK	QUANTITY	TYPE	PRODUCT, FINISH & COLOR	REMARKS
D1	N/A	WALL PANEL	48"x120"x3/8" NATURAL RIFT LAMINATE WALL PANEL SYSTEM	TRIM: SATIN ANODIZED ALUMINUM
D2	N/A	WALL PANEL	48"x120"x3/8" INDUSTRIAL CONCRETE LAMINATE WALL PANEL SYSTEM	TRIM: SATIN ANODIZED ALUMINUM
D3	N/A	WALL PANEL	48"x60"x3/8" INDUSTRIAL CONCRETE LAMINATE WALL PANEL SYSTEM	TRIM: SATIN ANODIZED ALUMINUM
D4	N/A	WALL PAINT	BENJAMIN MOORE – AF-700 STORM	
D5	N/A	SERVICE AREA TRIM	SCHLUTER – RONDEC-AE – SATIN ANODIZED ALUMINUM	
D6	N/A	WINDOW SILLS AND CASEMENT	DUPONT – CORIAN "DEEP CLOUD"	
D7	N/A	MAIN CEILING TILE	USG – FROST CLIMAPLUS 414.205 FLAT BLACK 205 – 24"x24" DROP IN CEILING W/ SQUARE EDGES	GRID: USG DX/DXL 15/16" SQUARE LAY-IN
D8	N/A	ACCENT CEILING	ACOUSTICAL SURFACES INC. – MCDONALD'S CUSTOM ACOUSTIMETAL FLAT FOLD PANEL, 24"x24" & 24"x48"	GRID: DX/DXL26 15/16" HEAVY DUTY BLACK GRID
D9	N/A	CEILING VENT PAINT	BENJAMIN MOORE – SPACE BLACK 2119-10	
D10	N/A	GLASS PARTITION	1/2" LAMINATED SAFETY GLASS WITH DOT GRADIENT PATTERN GRAPHIC, WILSONART – 7954-38 NATURAL RIFT	FRAME FINISH: BLACK ANODIZED ALUMINUM
D11	N/A	PR BOOTH HALFWALL	36"Hx44"Lx4.5", WALL FINISH: LAMITECH 2255 MT IRON, TOP CAP FINISH: DUPONT CORIAN DEEP CLOUD	BASE FINISH: LAMITECH 2255 MT IRON, COMPACT. CORNER GUARD: ALUMINUM BEAD
D12	N/A	WINDOW SHUTTER – SILL MOUNTED	7'-4"x2'-9", WILSONART 7954-38 NATURAL RIFT, ACCENT FINISH: WILSONART D12-60 REGIMENTAL RED	FRAME FINISH: FORD BLATTE MATTE POWDERCOAT
D13	SEE PLAN	COVE LIGHTING	CS ILLUMINATION – SURFACE MOUNT LINEAR LED	SEE ELECTRICAL
D14	SEE PLAN	PENDANT LIGHTING	CS ILLUMINATION – STRAW PENDANT – 36", SATIN WHITE DIFFUSER, RED CORD, CANOPY. STANDARD 96" ADJUSTABLE LENGTH	SEE ELECTRICAL
D15	SEE PLAN	SCONCE LIGHTING	CS ILLUMINATION – FRY SCONCE – 36", VERTICAL ANGLED WOOD SCONCE, 36" LONG x 1.5" SQUARE WITH LED SOURCE	SEE ELECTRICAL
D16	SEE PLAN	SCONCE LIGHTING	CS ILLUMINATION – SMALL SINGLE ARM, RED FINISH	SEE ELECTRICAL
D17				
D18				
D19				
D20				

GENERAL FINISH NOTES:

1. REFERENCE: McDONALD'S PROJECT MANUAL – SECTION 093000
2. KITCHEN FLOOR TILE:
   TILE: CROSSVILLE 6"x6" 'METROPOLITAN QUARRY BASICS ABRASIVE'
   GROUT: CHARCOAL #47 BY MAPEI
   KERAPOXY IEG BLACK #10 BY MAPEI (FOR OPTIONAL GREY TILE)
   COLOR: PURITAN GRAY EXTRA ABRASIVE 57XA (STANDARD)
   MAYFLOWER RED 31XA (OPTIONAL) – VERIFY W/ MCDONALD'S ACM
3. DINING ROOM FLOOR TILE:
   TILE: EUROWEST 24"x24" 'SILVER FLECK'
   GROUT: MAPEI ULTRACOLOR IRON 107 – JOINT 1/16" MAX.
4. RESTROOM TILE:
   MAIN WALL TILE: EUROWEST – ARCHITECT 12"x24" 'FACTORY'
   ACCENT WALL TILE: EUROWEST – SHELTER 4"x12" 'BIANCO MATTE'
   RESTROOM SINK & HAND DRYER PANEL: CORIAN. – CAMEO WHITE
   FLOOR TILE: EUROWEST – NEW GROUND 12"x24" 'ANTHRACITE'
   GROUT: MAPEI ULTRACOLOR CHARCOAL 47 – JOINT 1/8" MAX
5. TILE TRANSITION AND EDGE PROTECTION:
   A) TILE BASE (RESTROOM ONLY): SCHLUTER DILEX-AHK SERIES, BRUSHED STAINLESS STEEL.
   B) TILE EDGE PROTECTION (WALL TRANSITION): SCHLUTER-RONDEC-DB, SATIN ANODIZED ALUMINUM.
   C) TILE CORNER PROTECTION (OUTSIDE CORNER): SCHLUTER-RONDEC-AE, SATIN ANODIZED ALUMINUM.

   BEFORE FINAL INSPECTION, REMOVE PROTECTIVE COVERINGS AND PERFORM FINAL CLEANING.
6. TILE CLEANER: DETERDEK, BY FILA SURFACE CARE PRODUCTS – NO SUBSTITUTIONS ALLOWED
   CAN BE ORDERED BY EUROWEST, CROSSVILLE, OR DIRECT FROM MANUFACTURER: FILA/DETEREK
   POST INSTALLATION CLEANING REQUIRED ON ALL FLOOR TILE INSTALLTIONS PRIOR TO RESTAURANT TURN OVER.

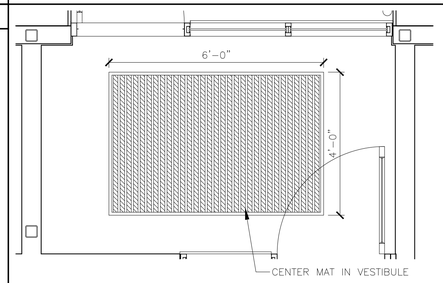
   APPLY CLEANER PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
   REFERENCE: McDONALD'S PROJECT MANUAL – SECTION 09300 TILING INTERIOR.
7. GROUT COLOR AND MANUFACTURER AS INDICATED ON SHEET A1.0 AND INTERIOR DECOR DRAWINGS.

GENERAL FINISH NOTES:

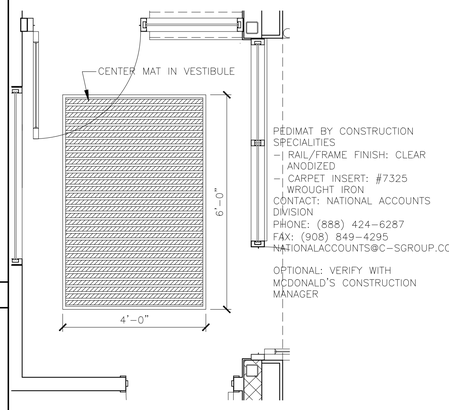
1. ALL FINISH SURFACES OF WALL AND CEILING MATERIALS SHALL BE CLASS B AND SHALL HAVE A FLAME SPREAD RATING OF 26 TO 75 AND A SMOKE DENSITY OF 450 MAX. (PER IBC TABLE 803.9).
2. DECORATIVE MATERIALS SHALL BE FLAME RETARDANT AND MEET THE CRITERIA OF NFPA 701.
3. DECORATIVE MATERIAL SHALL NOT CONCEAL EXITS, EXIT LIGHTS, ALARM STATIONS, HOSE CABINETS, AND EXTINGUISHER LOCATIONS
4. WHEN BUILDING TYPE IS A NON-COMBUSTIBLE CATEGORY, ALL PLYWOOD SHALL BE FIRE RETARDANT TREATED.
5. A. TILE WAINSCOT TO 6' A.F.F. OVER CEMENT BD. OVER EXT GRADE PLYWOOD (NOTE 4) AT MOP SINKS
6. PROVIDE CEMENT BOARD BACKER OR EQUIVALENT AT ALL TILE LOCATIONS.
7. PROVIDE VAPOR BARRIER BEHIND PLYWOOD AT WALLS AND BEHIND GYP. AT CEILING
8. CREW ROOM FINISHES:
   NORTH WALL: MOMENTUM WALL GRAPHIC – VIS705.
   EAST/WEST/SOUTH WALLS: TILE WAINSCOT TO 3' A.F.F. – EUROWEST ARCHITECT FACTORY 12"x24". TILE COVE BASE – EUROWEST ARCHITECT FACTORY 6"x12". RAY WOOD WALL COVERING – MOMENTUM NA-5C-MCP602 – P3TEC ALPINE, OAK.
   CEILING: USG – FROST CLIMAPLUS 246 MANILLA 24"x24". PAINT GRID TO MATCH TILE.

   *TILE OPTION FOR HEALTH CODE: WAINSCOT – EUROWEST MA.DE UNI GRIGIO 12"x24". TILE COVE BASE – EUROWEST UNI GRIGIO 6"x12".
9. ALL DECOR ELEMENTS MANUFACTURED BY DECOR TO BE PURCHASED AND INSTALLED BY GC, UNO.

* SEE CEILING PLAN FOR HEIGHTS & LAYOUTS
** VWC ON EXTERIOR WALL ASSEMBLIES TO BE PERFORATED

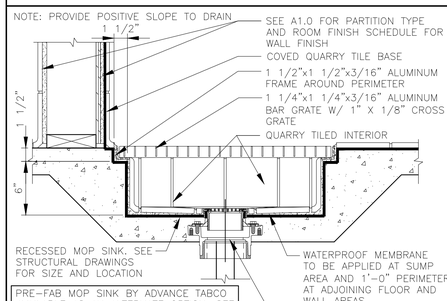


NON-DRIVE THRU – PEDI MAT



DRIVE THRU – PEDI MAT

7 A6.1 **PEDIMAT (OPTIONAL)**
1/2" =1'-0"



8 A6.1 **MOP SINK**
1 1/2"=1'-0"

REV	DATE	DESCRIPTION	BY

LICENSED ARCHITECT – MARC PELINI No:05437 – 10-25-24 – STATE OF NEW HAMPSHIRE

PREPARED BY: CORE STATES GROUP
135 Wynter Street Suite 201 Holbrook, IL 60426 312.718.3415 core-states.com

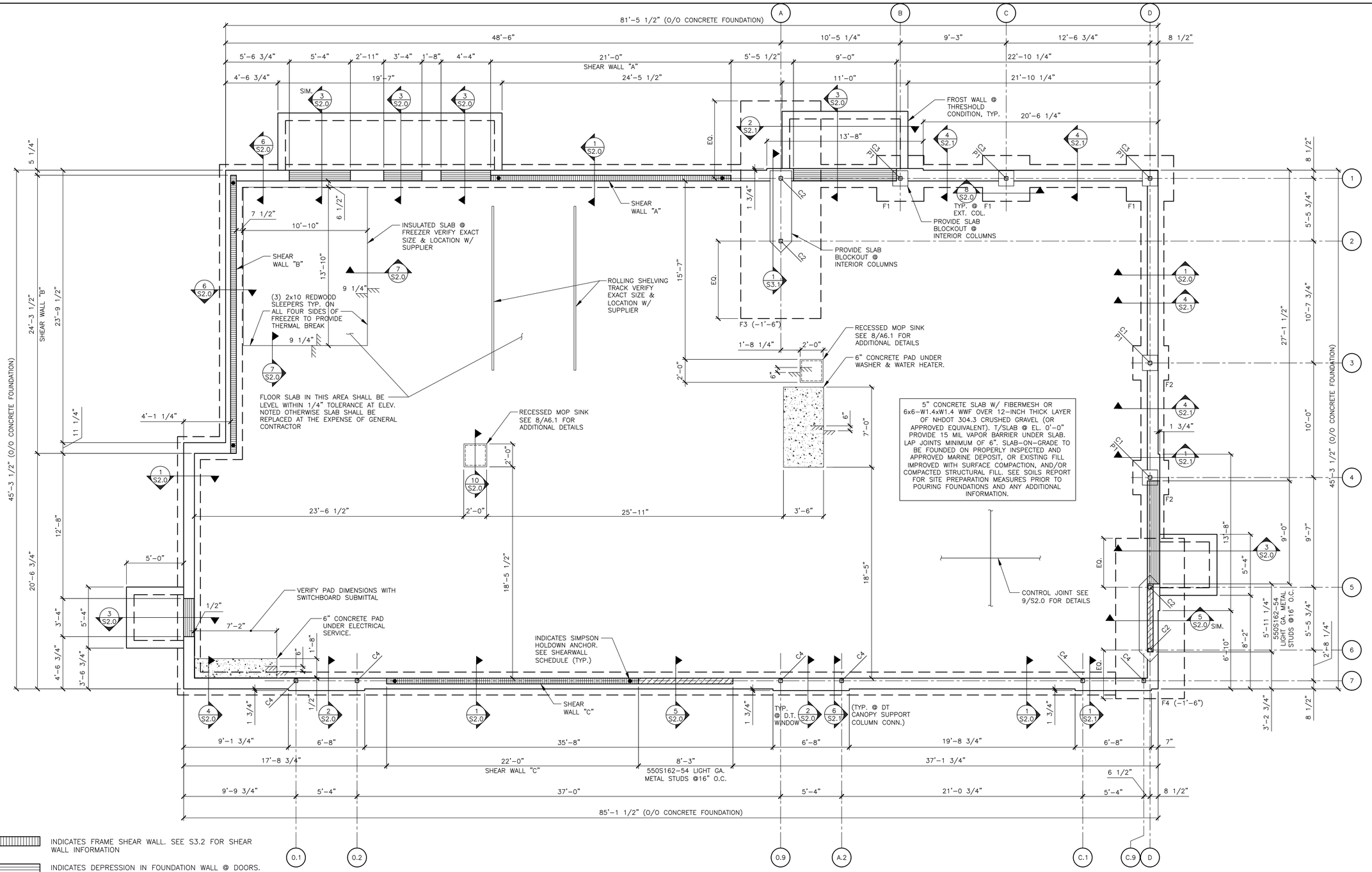
PREPARED FOR: McDonald's USA, LLC

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DRAWN BY: N.GLUKHOMAN	STD ISSUE DATE: 2024 07	REVIEWED BY: M.PELINI
	DATE ISSUED: 10/01/2024	C.S.G. PROJECT #: MCD.33450

TITLE: 2023 STANDARD BUILDING – BB20
4584-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH WOOD TRUSS ROOF FRAMING WALL PANEL/HARDIE BOARD EXTERIOR FINISH
NSN: A3514 LIC: 028-0178
SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH

SHEET NO. 028-0178.00.0
A6.1
FINISH SCHEDULES



INDICATES FRAME SHEAR WALL. SEE S3.2 FOR SHEAR WALL INFORMATION

INDICATES DEPRESSION IN FOUNDATION WALL @ DOORS. SEE 3/S2.0 FOR THRESHOLD DETAILS.

INDICATES METAL STUD FRAME WALL. SEE 5/S2.0 FOR DETAILS.

1/S1.0 FOUNDATION PLAN

1/4"=1'-0"

NOTES:
1. TOP OF FOOTING @ EL. (-3'-6") UNLESS NOTED OTHERWISE.
2. TOP OF PIER @ EL. (-0'-8") UNLESS NOTED OTHERWISE.
3. SEE SHEET S4.0 FOR GENERAL STRUCTURAL NOTES.
4. PROVIDE POSITIVE DRAINAGE TO ALL FLOOR DRAINS/SINKS (MIN 6") BEYOND DRAIN) SEE PLUMBING DRAWINGS FOR EXACT LOCATIONS
5. SEE SHEET S2.0 FOR TYPICAL CORNER BAR DETAILS.
6. MINIMUM REQUIREMENTS FOR SILL PLATE CONNECTION TO FOUNDATION:
   MINIMUM # OF BOLTS = 2 PER PIECE OF SILL
   MAXIMUM DISTANCE FROM END OF SILL TO ANCHOR = 12"
   MINIMUM DISTANCE FROM END OF SILL TO ANCHOR = 4"
7. WHERE SILL PLATES ARE NOT CONTINUOUS AT ALL LOCATIONS EXCEPT SHEAR WALLS, USE SIMPSON "RPS22Z" TIE FOR NOTCH < 5 1/2", USE SIMPSON "RPS28Z" FOR NOTCH < 12", W/ 16d NAILS INTO SILL PLATE ENDS. (MAX. SPACING BETWEEN STUDS = 16" O.C.)
8. WHERE SILL PLATES ARE NOT CONTINUOUS AT SHEAR WALLS, CONTACT ENGINEER OF RECORD FOR RESPONSE.

FOOTING SCHEDULE

MARK	SIZE	REINFORCING
F1	4'-0"x4'-0"x1'-0"	5-#5 E.W.-B.
F2	3'-0"x3'-0"x1'-0"	4-#5 E.W.-B.
F3	6'-0"x18'-0"x3'-0"	14-#7 L.W.-T&B #6 @ 12" O.C. S.W.-T&B
F4	5'-0"x14'-0"x3'-0"	11-#7 L.W.-T&B #6 @ 12" O.C. S.W.-T&B

PIER SCHEDULE

MARK	SIZE	REINFORCING	REMARKS
P1	1'-4"x1'-4"	4-#6 VERT. #4 TIES @ 12" O.C.	SEE DETAIL 8/S2.0

COLUMN & BASE PLATE SCHEDULE

MARK	MEMBER	SHAPE	BASE PLATE	REMARKS
C1	HSS4x4x5/16	⊞	A	EXTEND TO ROOF
C2	HSS4x4x5/16	⊞	B	BRACED FRAME
C3	HSS4x4x3/8	⊞	A	EXTEND TO ROOF
C4	HSS4x4x1/4	⊞	C	EXTEND TO ROOF SEE 6/S2.1

NOTE: SEE DETAIL 3/S3.1 FOR BASE PLATE AND ANCHOR ROD DETAILS

NO.	DESCRIPTION	DATE	BY
1			

STATE OF NEW HAMPSHIRE
DAVID A. BALMA
No. 14140
LICENSED PROFESSIONAL ENGINEER
10/30/2024

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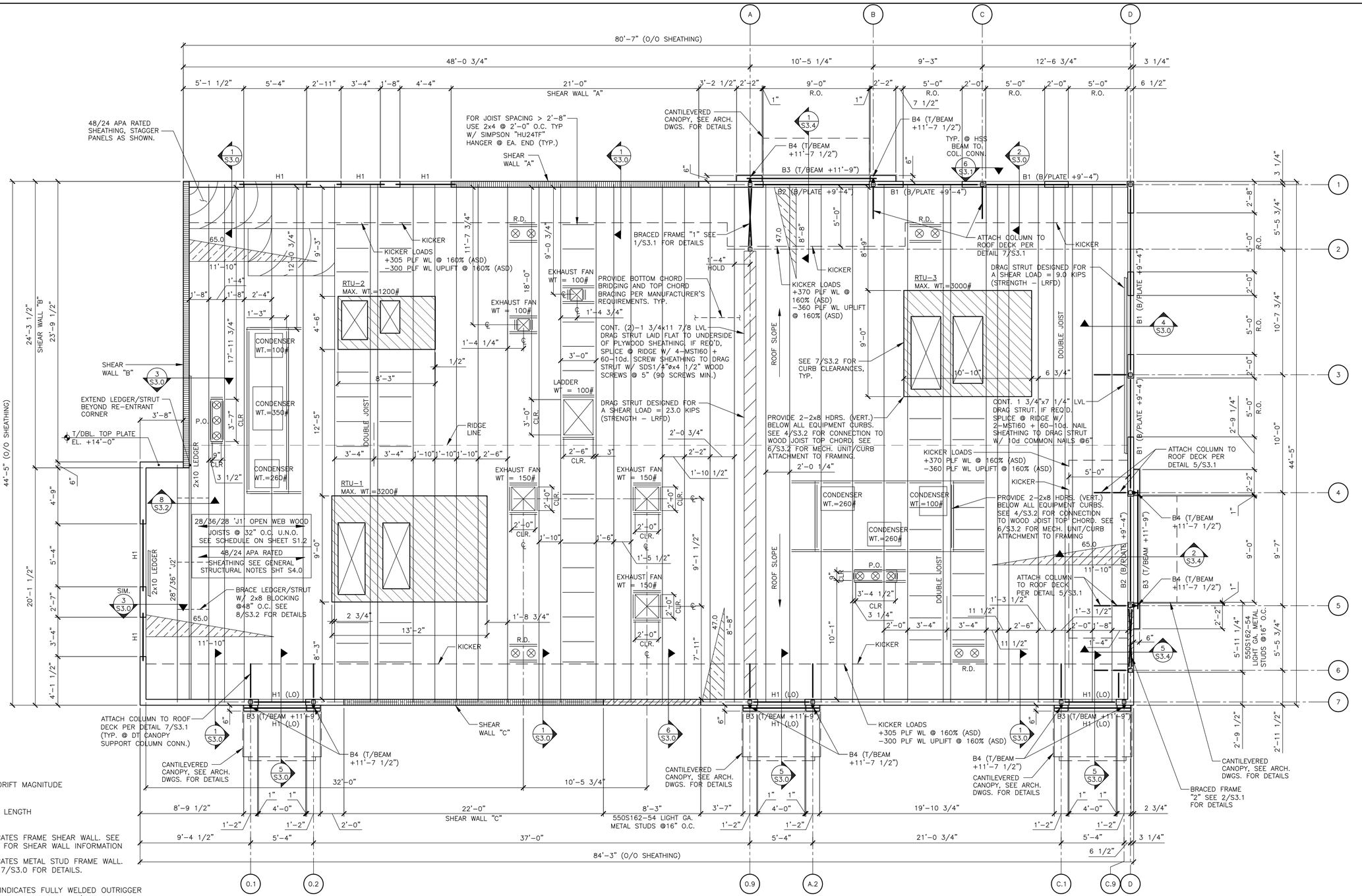
PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY: J.CARRAS
STD ISSUE DATE: 2024 07
REVIEWED BY: J.PERRY
DATE ISSUED: 10/01/2024
C.S.G. PROJECT #: MCD.39450

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH
NSN: 4.3514
SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
J/C: 028-0178

SHEET NO.: S1.0
028-0178.00.0
FOUNDATION PLAN



XX.X PSF – SNOW DRIFT MAGNITUDE

X'-X" – SNOW DRIFT LENGTH

INDICATES FRAME SHEAR WALL. SEE S3.2 FOR SHEAR WALL INFORMATION

INDICATES METAL STUD FRAME WALL. SEE 7/S3.0 FOR DETAILS.

INDICATES FULLY WELDED OUTRIGGER CONNECTION. SEE 8/S3.1 FOR DETAILS.

INDICATES ALLOWABLE RTU PLACEMENT ZONE. RTU VENDOR/SUPPLIER, MODEL AND WEIGHTS SHALL BE VERIFIED PRIOR TO INSTALLATION FOR COORDINATION AND FINAL TRUSS DESIGN VERIFICATION. G.C. TO PROVIDE (2)–2x8 HDRS. BELOW RTU CURBS PER DETAIL 4/S3.2 AND COORDINATE LOCATIONS WITH MANUFACTURER CURB SPECIFICATIONS.

INDICATES RTU SUPPLY/RETURN ROOF DECK PENETRATIONS. G.C. TO PROVIDE (2)–2x8 HDRS. AT PERIMETER OF ALL PENETRATIONS/OPENINGS PER DETAIL 4/S3.2 AND COORDINATE EXTENT WITH MANUFACTURER SPECIFICATIONS.

NOTE TO CONTRACTOR:
ANY SPRINKLER LINES GREATER THAN 3" DIAMETER SHALL BE VERIFIED BY THE SPRINKLER CONTRACTOR PRIOR TO TRUSS FABRICATION.

1/S1.2 FRAMING PLAN

1/4"=1'-0"

NOTES:
1. SEE SHEET S4.0 FOR GENERAL STRUCTURAL NOTES.
2. R.D.: ROOF DRAINS
3. P.O.: ROOF CURB PORTAL OPENING – COORDINATE WITH MECHANICAL DRAWINGS.
4. WHEN TOP PLATES ARE NOT CONTINUOUS, USE SIMPSON "RPS22" TIE FOR NOTCH < 5 1/2", USE SIMPSON "RPS28" TIES FOR NOTCH < 12", W/ 16d NAILS INTO TOP PLATE ENDS. (MAX. SPACING BETWEEN STUDS = 16" O.C.)
5. TOP PLATE SPLICE SHALL BE MINIMUM LENGTH OF 48" WITH 2 ROWS (2 1/2" APART) OF 22–16d COMMON NAILS SPACED @ 2" ON CENTER (44 TOTAL).
6. SEE 5/S3.2 FOR SNOW DRIFT DIAGRAM.
7. SEE 1/S4.0 FOR VENEER TIES REQUIREMENTS.

BEAM SCHEDULE

MARK	MEMBER	SHAPE	SUPPORT	REMARKS
B1	HSS16x4x1/4 LLV + 1/4" PLATE	▯	1/2" END PLATE	SEE DETAIL 6/S3.1
B2	HSS16x4x1/4 LLV + 1/4" PLATE	▯	1/2" END PLATE	SEE DETAIL 6/S3.1
B3	HSS12x4x1/4 (LLV)	▯	FULLY WELDED	SEE DETAIL 8/S3.1
B4	HSS9x3x1/4 (LLV)	▯	WELDED FULL MOMENT CONN.	SEE DETAIL 8/S3.1

HEADER SCHEDULE

MARK	MEMBER	SHAPE	BEARING
H1	5 1/4"x9 1/2" LVL	▯	SEE DETAIL 2/S3.2

JOIST SCHEDULE

MARK	LIVE/ROOF SNOW LOAD	DEPTH	MANUFACTURER & SERIES
J1	20/42	28"/36"/28"	REDBUILT "RED–M"
J2	20/42	28"/36"	REDBUILT "RED–M"

NOTE: SEE DETAIL 4/S3.2 FOR JOIST DETAILS AND SUPPLIER INFORMATION

NO.	REV	DATE	DESCRIPTION	BY
	-	-	-	-

STATE OF NEW HAMPSHIRE
DAVID A. BALMA
No. 14140
LICENSED PROFESSIONAL ENGINEER
10/30/2024

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PREPARED FOR:
McDonald's USA, LLC

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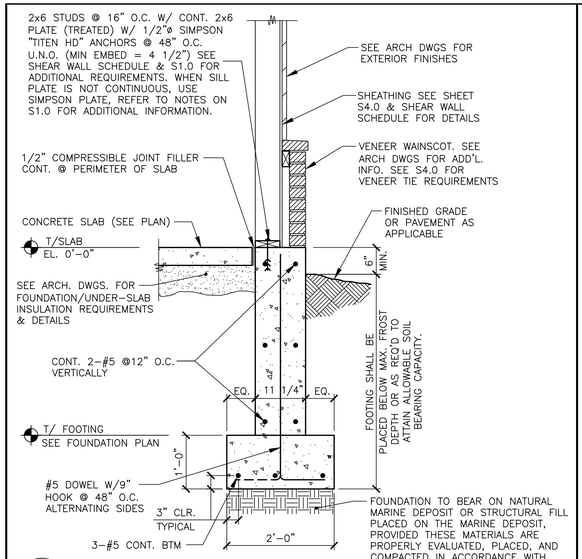
DRAWN BY	REVIEWED BY
J.CARRAS	J.PERRY
STD ISSUE DATE	DATE ISSUED
2024 Q7	10/01/2024
C.S.G. PROJECT #	
MCD.39450	

TITLE
2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

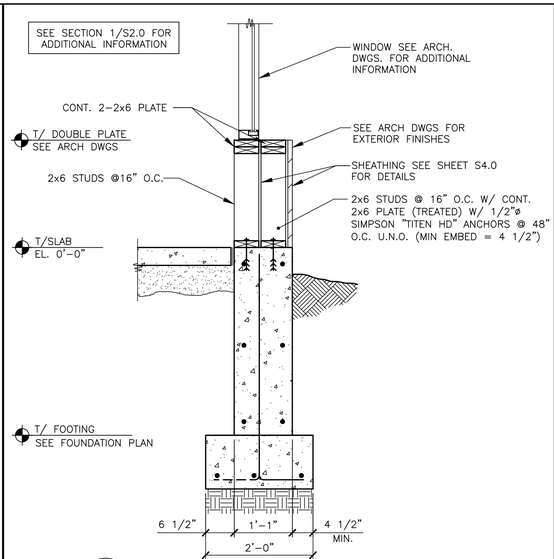
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN: 43514	SITE ADDRESS:	DOVER, NH
L/C: 028–0178	4 DEERFIELD DR.	

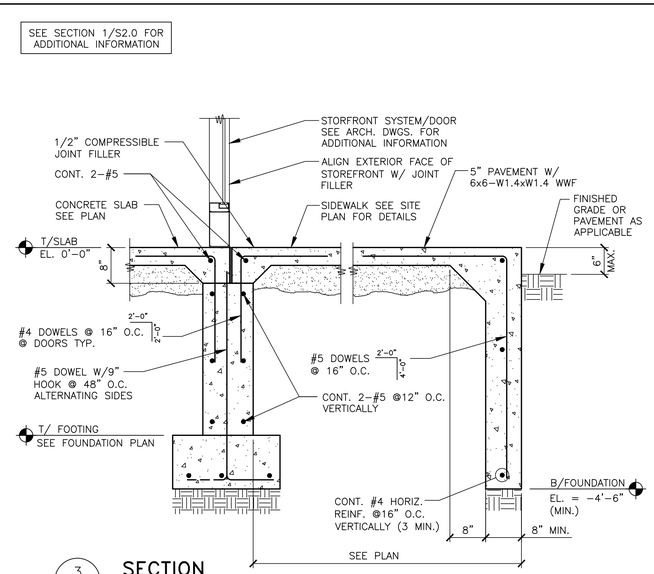
SHEET NO.
028–0178.00.0
S1.2
FRAMING PLAN



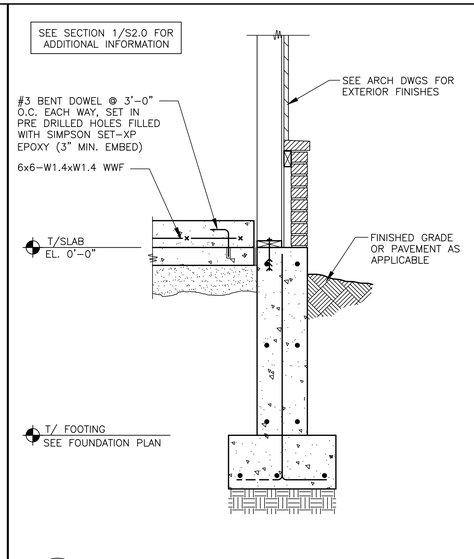
1 S2.0 **SECTION**
3/4" = 1'-0"



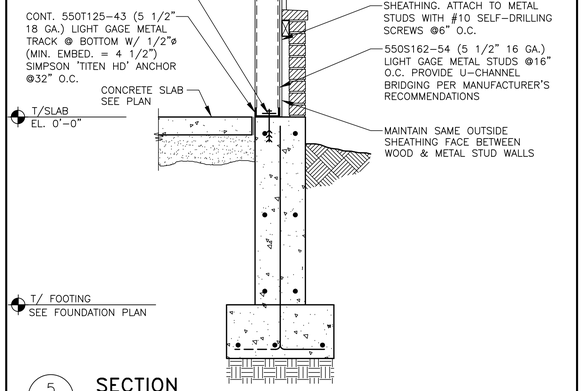
2 S2.0 **SECTION**
3/4" = 1'-0"



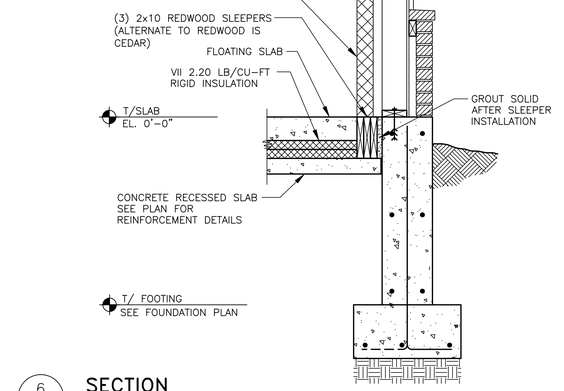
3 S2.0 **SECTION**
3/4" = 1'-0"



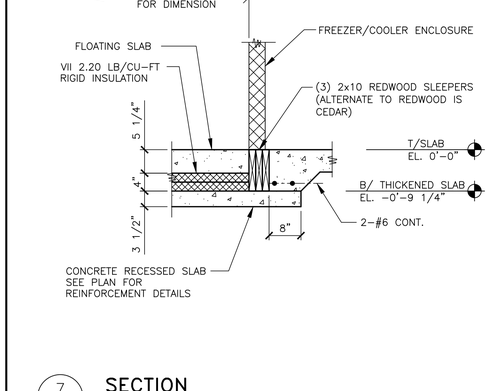
4 S2.0 **SECTION**
3/4" = 1'-0"



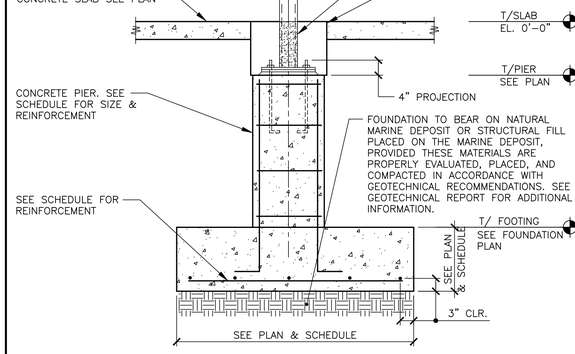
5 S2.0 **SECTION**
3/4" = 1'-0"



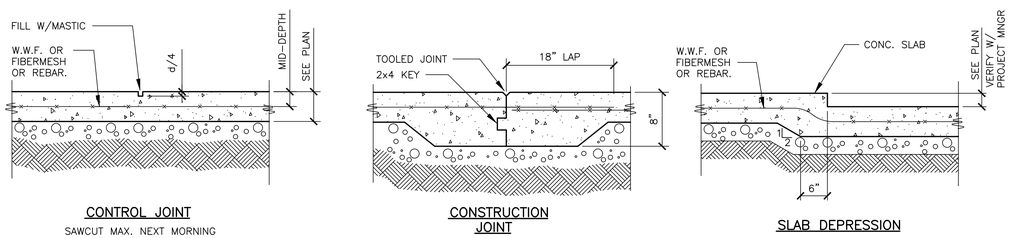
6 S2.0 **SECTION**
3/4" = 1'-0"



7 S2.0 **SECTION**
3/4" = 1'-0"



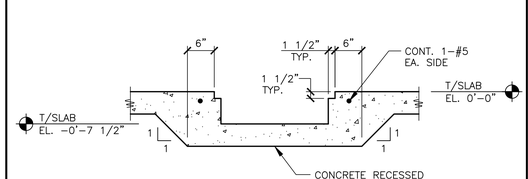
8 S2.0 **ISOLATED COLUMN FOOTING DETAIL**
3/4" = 1'-0"



CONTROL JOINTS SHALL BE IN A SQUARE PATTERN OF 400 SQ. FT. AND/OR THE LENGTH SHALL NOT BE MORE THAN 2x WIDTH. ALIGN WITH COLUMN CENTER LINES.

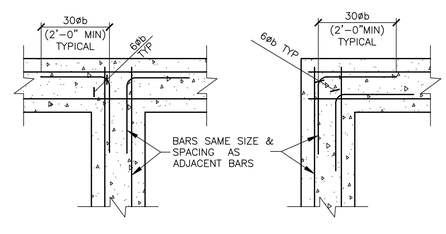
SLAB-ON-GRADE TO BEAR ON PROPERLY INSPECTED AND APPROVED MARINE DEPOSIT, OR EXISTING FILL IMPROVED WITH SURFACE COMPACTION, AND/OR COMPACTED STRUCTURAL FILL WITH SURFACE COMPACTION, AND/OR COMPACTED STRUCTURAL FILL. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

9 S2.0 **SLAB ON GRADE DETAILS**
N.T.S.



NOTE:
WHERE PREFAB MOP SINK IS USED, DEPTH TO BE 8 7/8" TO ACCOMMODATE FACTORY-BUILT MOP SINK DIMENSION

10 S2.0 **RECESSED SLAB DETAIL**
3/4" = 1'-0"



TYPICAL CORNER BAR DETAIL

11 S2.0 **CORNER BAR DETAILS**
N.T.S.

BY	DESCRIPTION	DATE	REV

DAVID A. BALMA No. 14040 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
10/30/2024

PREPARED BY:
CORE STATES GROUP
1315 Walnut St
Suite 400
Philadelphia, PA 19107
215.609.4609
www.corestategroup.com

PREPARED FOR:
McDonald's USA, LLC

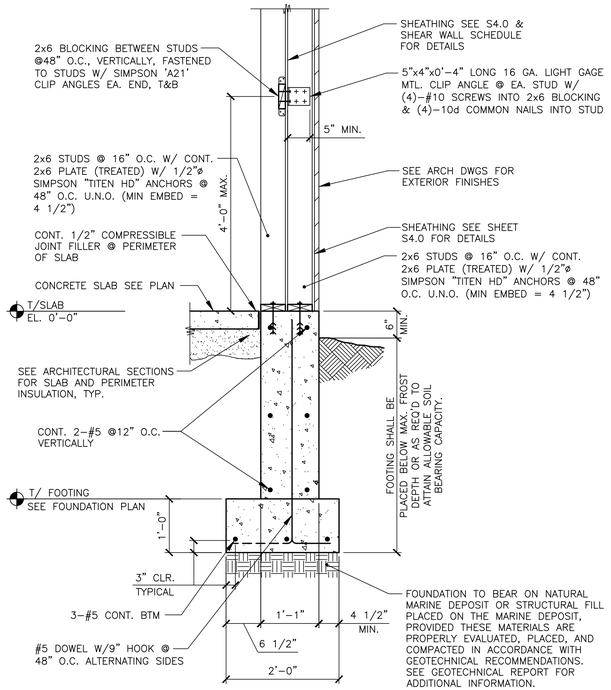
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DRAWN BY	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
J.CARRAS	J.PERRY	10/01/2024	MCD.39450
STD ISSUE DATE 2024 07			

TITLE
2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

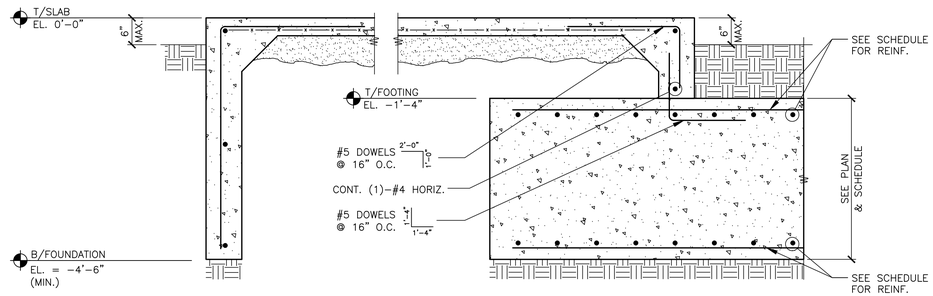
DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN: 4.35.14	4 DEERFIELD DR. DOVER, NH
J/C: 028-0178	

SHEET NO.
028-0178.00.0
S2.0
FOUNDATION SECTIONS



1 S2.1 **SECTION**
3/4" = 1'-0"

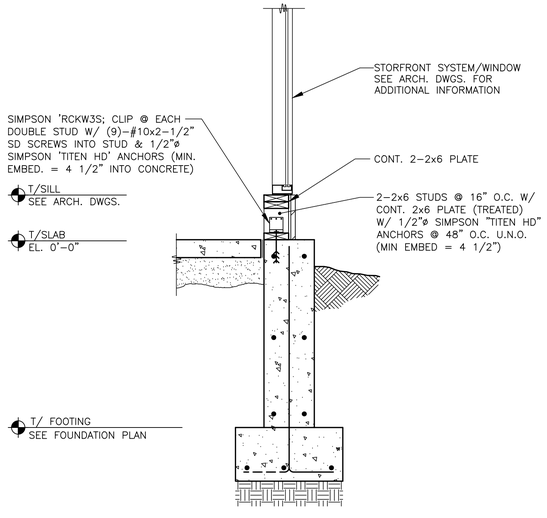
SEE SECTION 3/S2.0 FOR ADDITIONAL INFORMATION



2 S2.1 **SECTION**
3/4" = 1'-0"

3 S2.1 **NOT USED**
3/4" = 1'-0"

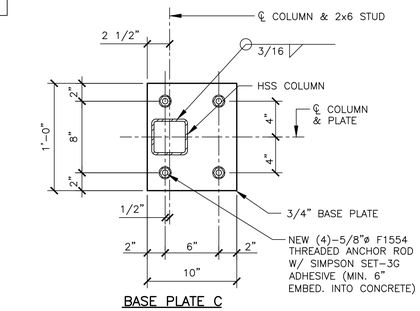
SEE SECTION 1/S2.0 FOR ADDITIONAL INFORMATION



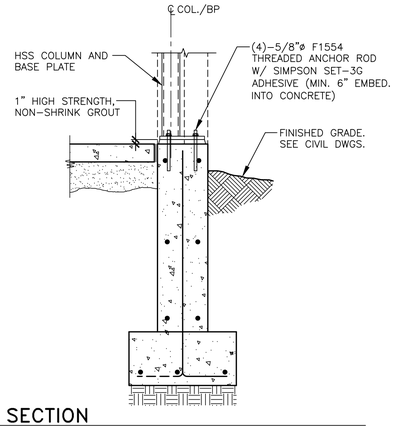
4 S2.1 **SECTION**
3/4" = 1'-0"

5 S2.1 **NOT USED**
3/4" = 1'-0"

SEE SECTION 1/S2.0 FOR ADDITIONAL INFORMATION



BASE PLATE C



6 S2.1 **SECTION**
3/4" = 1'-0"

BY	DESCRIPTION	DATE	REV

STATE OF NEW HAMPSHIRE
DAVID A. BALMA
No. 14148
LICENSED PROFESSIONAL ENGINEER
10/30/2024

PREPARED BY:
CORE STATES GROUP
1315 Walnut St
Suite 600
Philadelphia, PA 19107
215.609.4429
www.corestatesgroup.com

PREPARED FOR:
McDonald's USA, LLC

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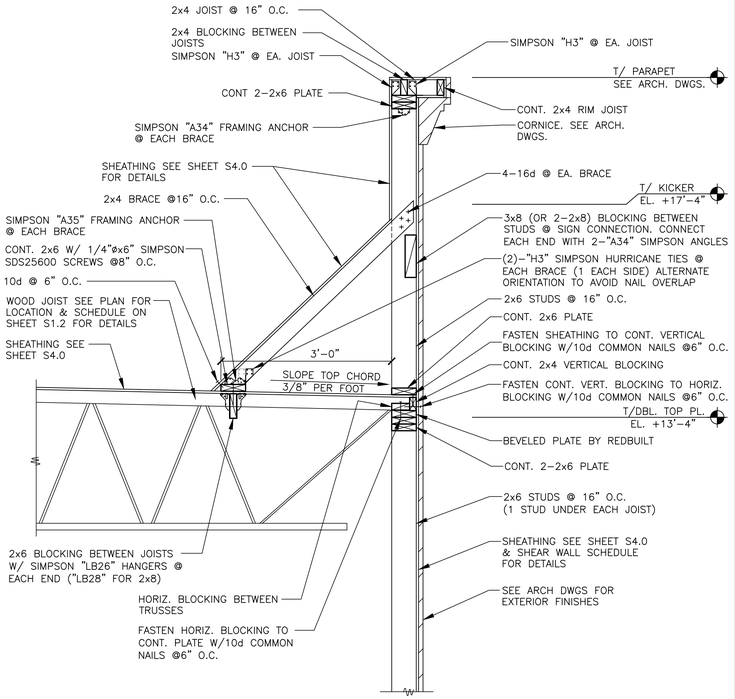
DRAWN BY: J.CARRAS	STD. ISSUE DATE: 2024 07
REVIEWED BY: J.PERRY	DATE ISSUED: 10/01/2024
C.S.G. PROJECT #: MCD.39450	

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

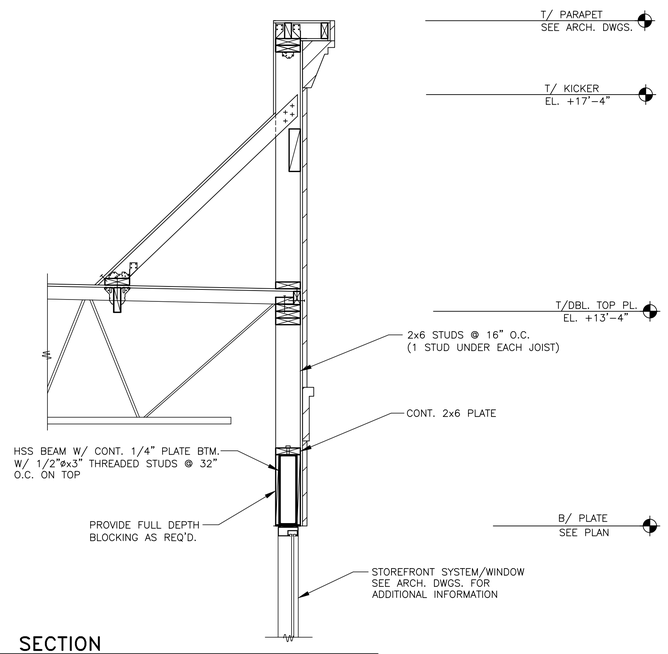
NSN: 4.35.14	SITE ADDRESS: 4 DERBFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO.: 028-0178.00.0
S2.1
FOUNDATION SECTIONS I

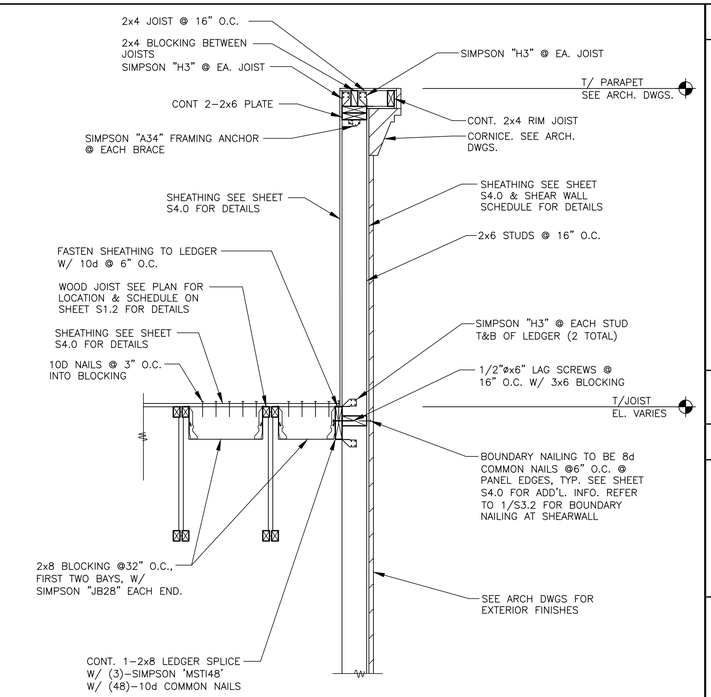


1 S3.0 **SECTION**
3/4" = 1'-0"

SEE SECTION 1/S3.0 FOR ADDITIONAL INFORMATION

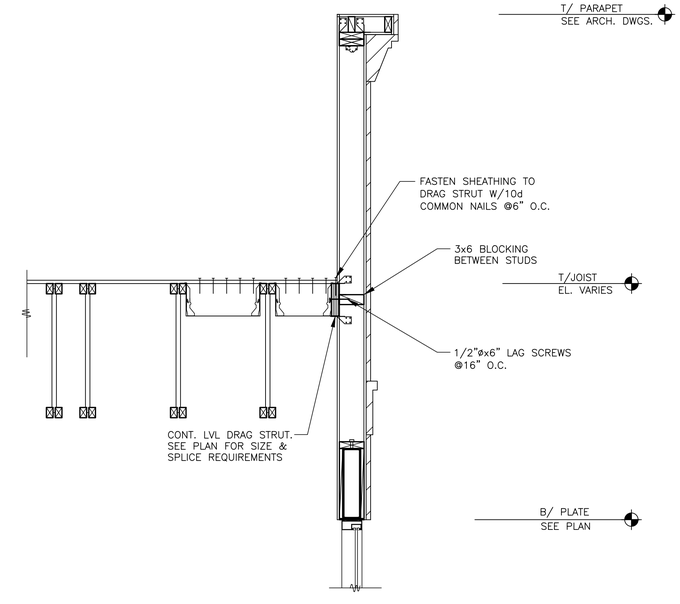


2 S3.0 **SECTION**
3/4" = 1'-0"



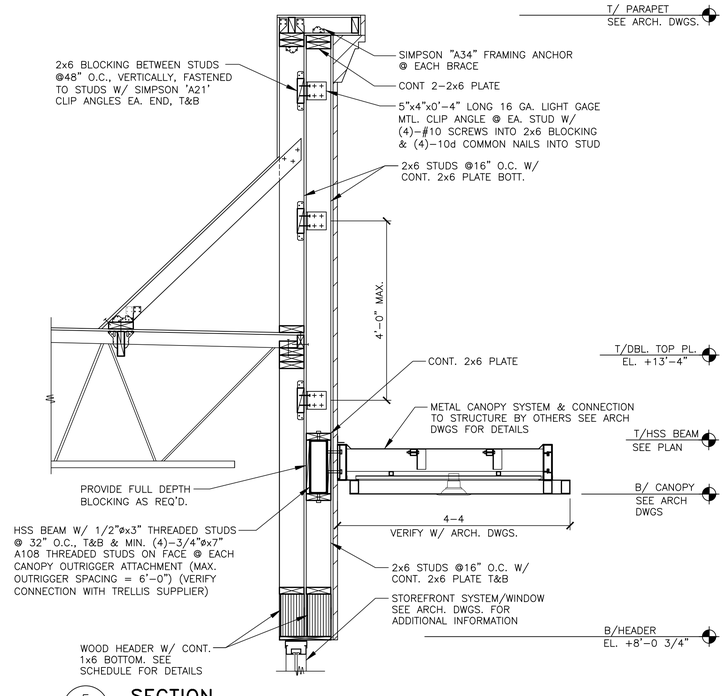
3 S3.0 **SECTION**
3/4" = 1'-0"

SEE SECTION 2/S3.0 & 3/S3.0 FOR ADDITIONAL INFORMATION



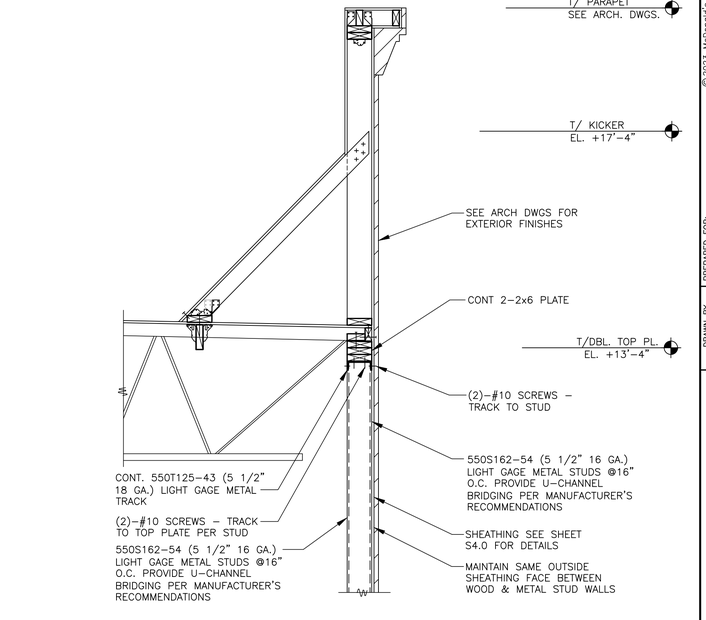
4 S3.0 **SECTION**
3/4" = 1'-0"

SEE SECTION 1/S3.0 FOR ADDITIONAL INFORMATION



5 S3.0 **SECTION**
3/4" = 1'-0"

SEE SECTION 1/S3.0 FOR ADDITIONAL INFORMATION



6 S3.0 **SECTION**
3/4" = 1'-0"

BY	DESCRIPTION	DATE	REV

STATE OF NEW HAMPSHIRE — DAVID A. BALMA — No. 14140 — LICENSED PROFESSIONAL ENGINEER — 10/30/2024

PREPARED BY:
CORE STATES GROUP
135 Wyoming Rd
Suite 400
Scranton, PA 18507
215.629.4629
www.corestategroup.com

PREPARED FOR:
McDonald's USA, LLC

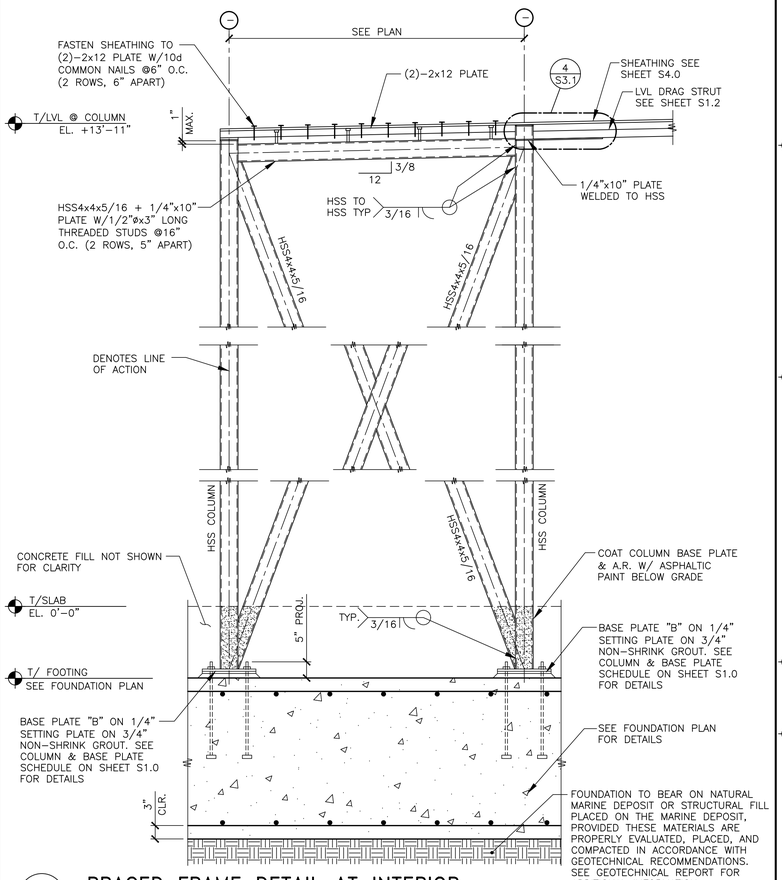
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DRAWN BY	STD ISSUE DATE
J.CARRAS	2024 07
REVIEWED BY	DATE ISSUED
J.PERRY	10/01/2024
C.S.G. PROJECT #	
MCD.39450	

TITLE
2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

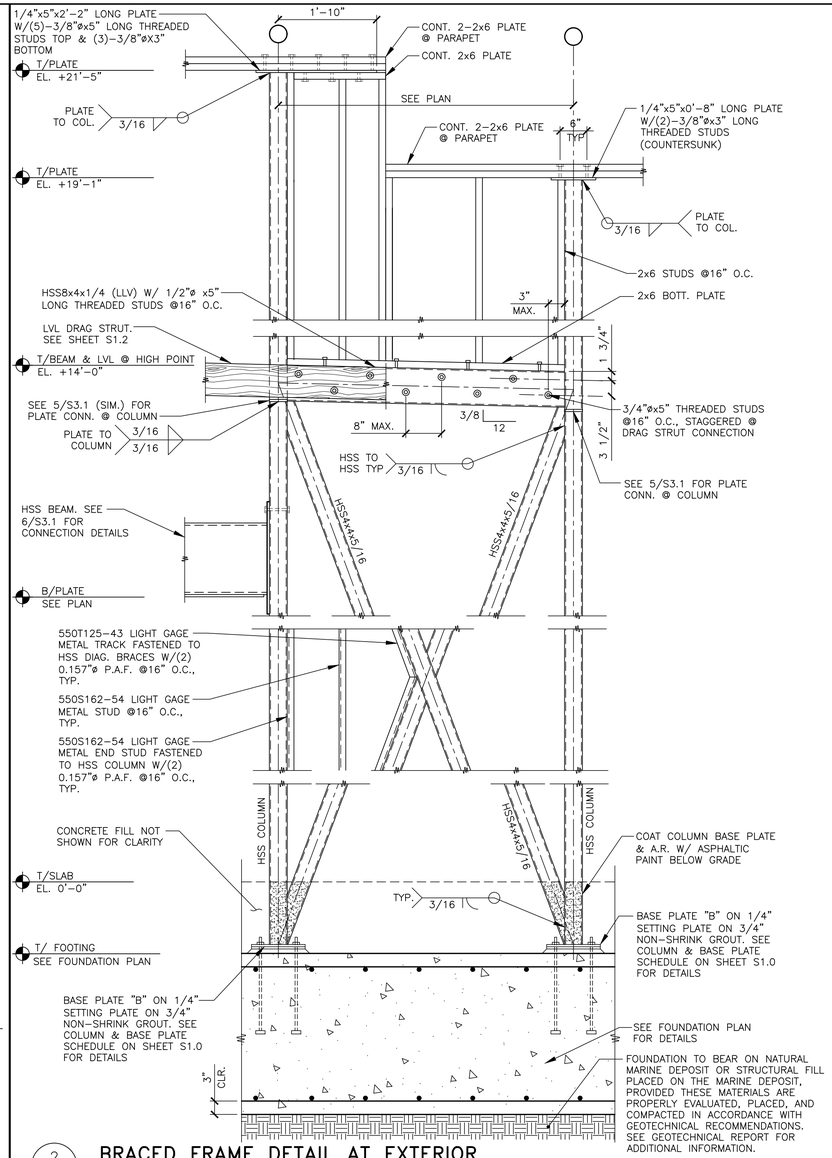
DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN: 4.35.14	4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO.
028-0178.00.0
S3.0
FRAMING SECTIONS



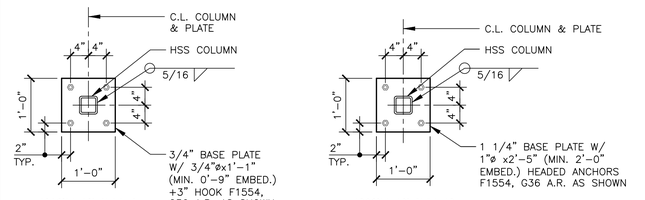
1 S3.1 **BRACED FRAME DETAIL AT INTERIOR**

3/4" = 1'–0"



2 S3.1 **BRACED FRAME DETAIL AT EXTERIOR**

3/4" = 1'–0"

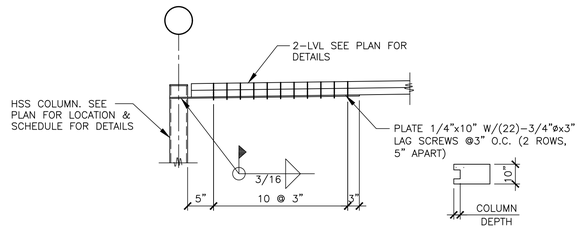


BASE PLATE A

BASE PLATE B

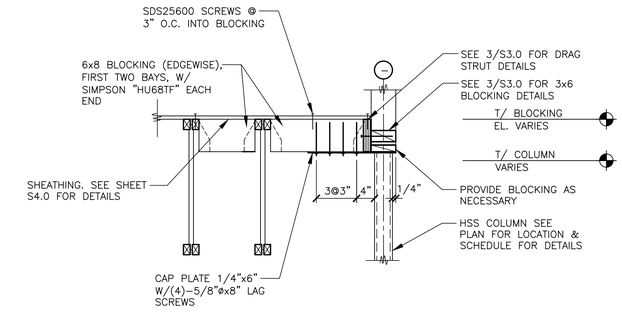
3 S3.1 **BASE PLATE DETAILS**

N.T.S.



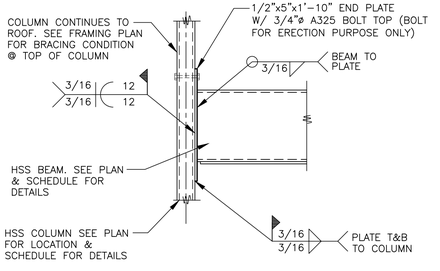
4 S3.1 **DRAG STRUT CONNECTION DETAIL**

3/4" = 1'–0"



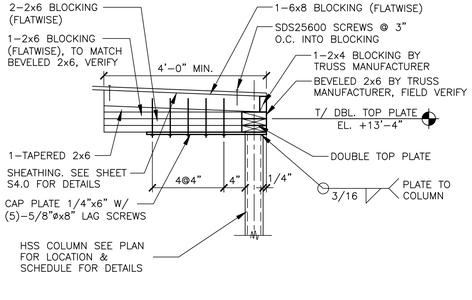
5 S3.1 **COLUMN BRACING DETAIL**

3/4" = 1'–0"



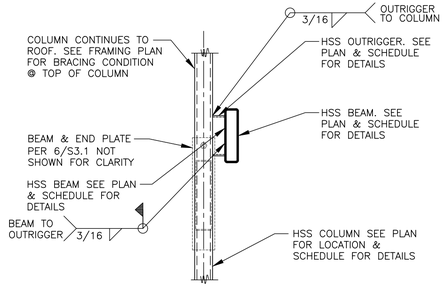
6 S3.1 **HSS BEAM CONNECTION DETAIL**

3/4" = 1'–0"



7 S3.1 **COLUMN BRACING DETAIL**

3/4" = 1'–0"



8 S3.1 **OUTRIGGER DETAIIL**

3/4" = 1'–0"

REV	DATE	DESCRIPTION	BY

STATE OF NEW HAMPSHIRE — DAVID A. BALMA — No. 14140 — LICENSED PROFESSIONAL ENGINEER — 10/30/2024

PREPARED BY: CORE STATES GROUP
135 Wilmot Rd
Suite 600
Deerfield, IL 60015
215.629.4629
www.corestatesgroup.com

PREPARED FOR: McDonald's USA, LLC

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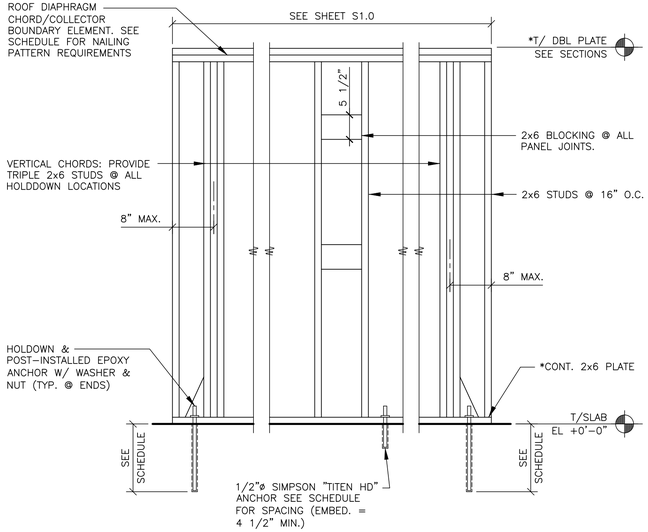
DRAWN BY	REVIEWED BY	C.S.G. PROJECT #
J.CARRAS	J.PERRY	MCD.39450
STD. ISSUE DATE	DATE ISSUED	
2024 07	10/01/2024	

TITLE: 2023 STANDARD BUILDING – B820
4584–WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN 4.5514	4 DEERFIELD DR. DOVER, NH
L/C: 028–0178	

SHEET NO. 028–0178.00.0

S3.1
STEEL DETAILS



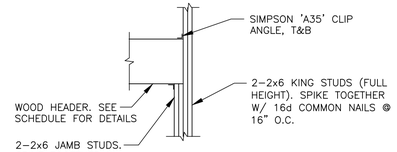
SHEAR WALL SCHEDULE

WIND: 115 MPH (EXPOSURE B) SEISMIC: Sds = 34.0%, Sd1 = 12.2%

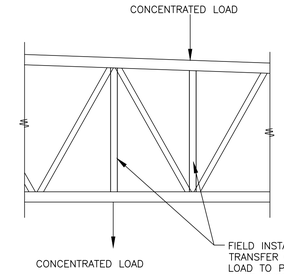
MARK	SHEATHING	SHEATHING NAIL SIZE	SHEATHING NAIL** SPACING @ PANEL EDGES	HOLDDOWN*** ANCHORS	ANCHOR BOLT SPACING	REMARKS
A	1-15/32"	8d	6"	1-HDU8-SDS2.5 7/8"ø EPOXY ANCH.	40"	15" MIN. EMBED. ON HOLDDOWN ANCHORS.
B	1-15/32"	8d	4"	1-HDU8-SDS2.5 7/8"ø EPOXY ANCH.	32"	15" MIN. EMBED. ON HOLDDOWN ANCHORS.
C	1-15/32"	8d	6"	1-HDU8-SDS2.5 7/8"ø EPOXY ANCH.	40"	15" MIN. EMBED. ON HOLDDOWN ANCHORS.

NOTES:
1. SHEATHING PANELS MAY BE LAID UP HORIZONTALLY OR VERTICALLY. NO VERTICAL PANEL EDGES ON VERTICAL CHORDS (HOLDDOWN LOCATION).
2. WIND LOADS GOVERN OVER SEISMIC LOADS UNLESS AS NOTED IN THE REMARKS COLUMN.
3. NAIL ALL SHEATHING TO INTERMEDIATE SUPPORTS @ 12" O.C.
4. SCREW HDU8 HOLDOWN ANCHORS TO VERTICAL MEMBER W/ "SDS1/4"øx2 1/2" SCREWS EACH.
* IF SILL PLATE OR TOP PLATES ARE NOT CONTINUOUS, CONTACT THE ENGINEER OF RECORD FOR SOLUTION.
** NAIL WALL SHEATHING TO ROOF DIAPHRAGM CHORD & TO EACH MEMBER/WALL VERTICAL CHORD W/ 10d COMMON NAILS @ 6" O.C., UNO.
*** AS MANUF. BY SIMPSON. USE SET-3G HIGH STRENGTH EPOXY FOR THE INSTALLATION OF END THREADED ROD POST-INSTALLED ANCHORS. HOLDDOWNS AND PRECAST HOLDDOWN ANCHOR SYSTEMS PER SIMPSON STRONG TIE & SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS.

1 S3.2 SHEAR WALL SCHEDULE
N.T.S.



2 S3.2 HEADER SUPPORT DETAIL
N.T.S.



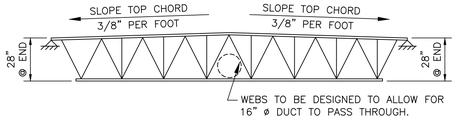
3 S3.2 JOIST DETAIL @ POINT LOADS
N.T.S.

1. FOR NATIONAL ACCOUNT PACKAGE & PRICING CONTACT REDBUILT @ 1-866-859-6757
2. JOIST MFGR. TO VERIFY SIZE AT HVAC ROOF TOP UNITS.

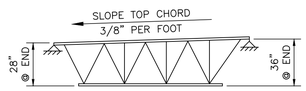
HEADER	HANGER
2x6	LUS26
2-2x6	LUS26-2
2x8	LUS28
2-2x8	LUS28-2
2x10	LUS210
2-2x10	LUS210-2

FOR OPENINGS < 1'-4" USE 1-2x6
FOR OPENINGS > 1'-4" AND < 4'-0" USE 2-2x8
FOR OPENINGS > 4'-0" AND < 6'-0" USE 2-2x10

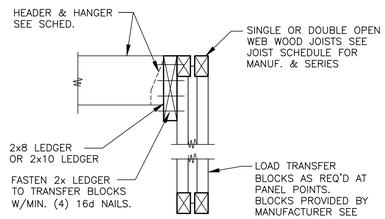
3. ALL JOISTS SHALL BE DESIGNED FOR THE FOLLOWING NET UPLIFT. 115 MPH (BASIC) - 5 PSF SERVICE (ASD: 0.6D + 0.6W)



JOIST J1 PROFILE

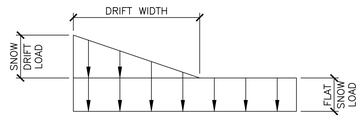


JOIST J2 PROFILE



LOAD TRANSFER BLOCKS CONCENTRATED LOADS

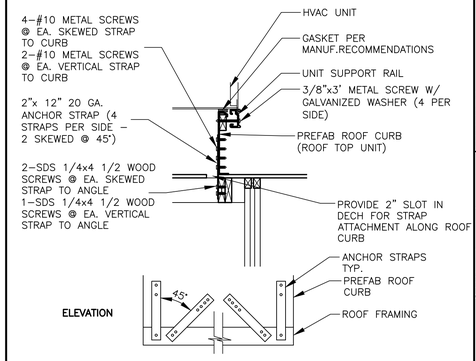
4 S3.2 JOIST NOTES
N.T.S.



DRIFT	SNOW DRIFT LOAD (PSF)	WIDTH (FT)
SHORT DIRECTION	47.0	8'-8"
LONG DIRECTION	65.0	11'-10"

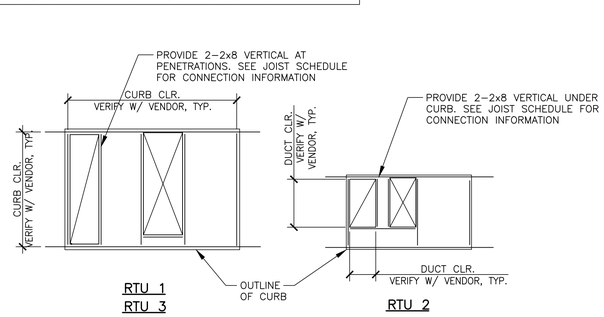
NOTE: SNOW DRIFT LOADS BASED ON NOMINAL, UNFACTORED GROUND SNOW LOADS. SEE SHEET S4.0 FOR ADDITIONAL INFORMATION.

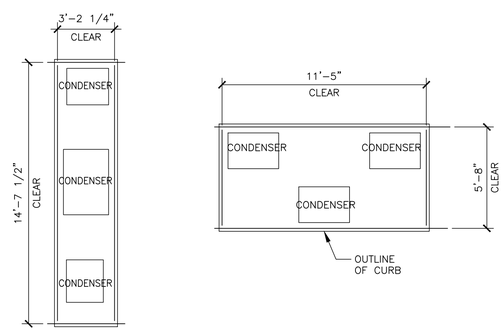
5 S3.2 SNOW DRIFT DIAGRAM/SCHEDULE
N.T.S



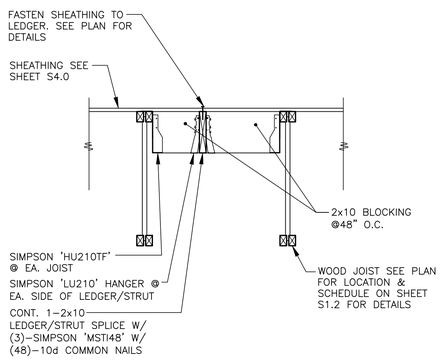
6 S3.2 SECTION
3/4" = 1'-0"

NOTE: RTU VENDOR/SUPPLIER AND MODEL SHALL BE VERIFIED PRIOR TO INSTALLATION. G.C. TO PROVIDE (2)-2x8 HDRS. BELOW RTU CURBS AND AT PERIMETER OF ALL PENETRATIONS/OPENINGS PER DETAIL 4/S3.2. COORDINATE LOCATIONS AND EXTENT WITH MANUFACTURER CURB SPECIFICATIONS.





7 S3.2 ROOF TOP UNIT CLEARANCES
1/4" = 1'-0"



8 S3.2 SECTION
3/4" = 1'-0"

9 S3.2 NOT USED
N.T.S.

NO.	BY	DESCRIPTION	DATE	REV

STATE OF NEW HAMPSHIRE DAVID A. BALMA No. 14140 LICENSED PROFESSIONAL ENGINEER 10/30/2024

PREPARED BY: CORE STATES GROUP
135 Water St Suite 600 Portsmouth, PA 31107 215.629.4629 www.corestategroup.com

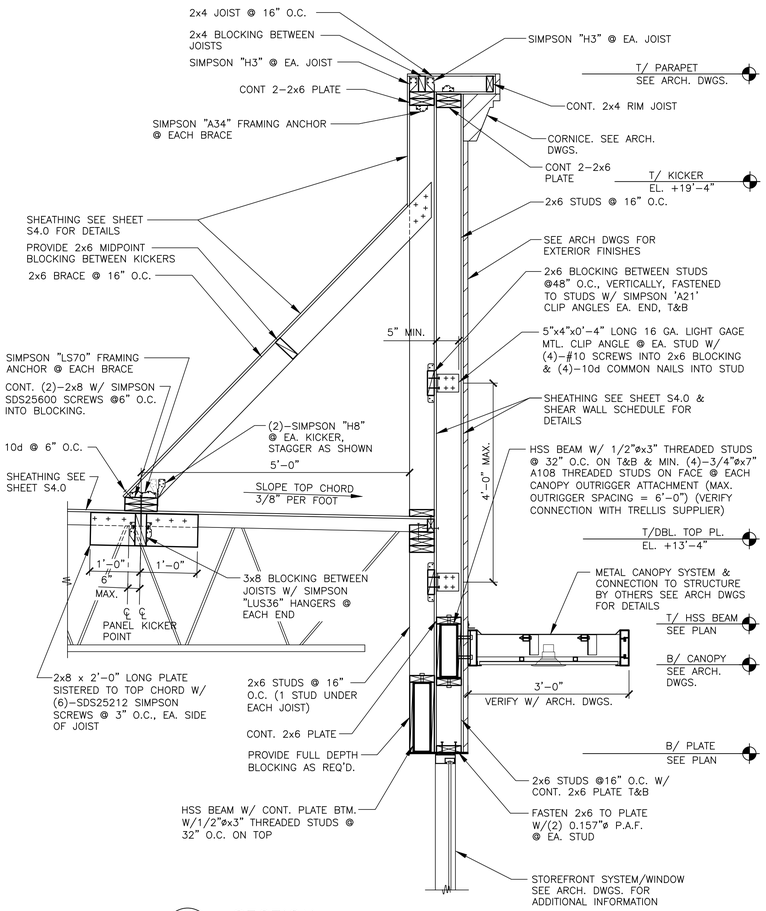
PREPARED FOR: McDonald's USA, LLC

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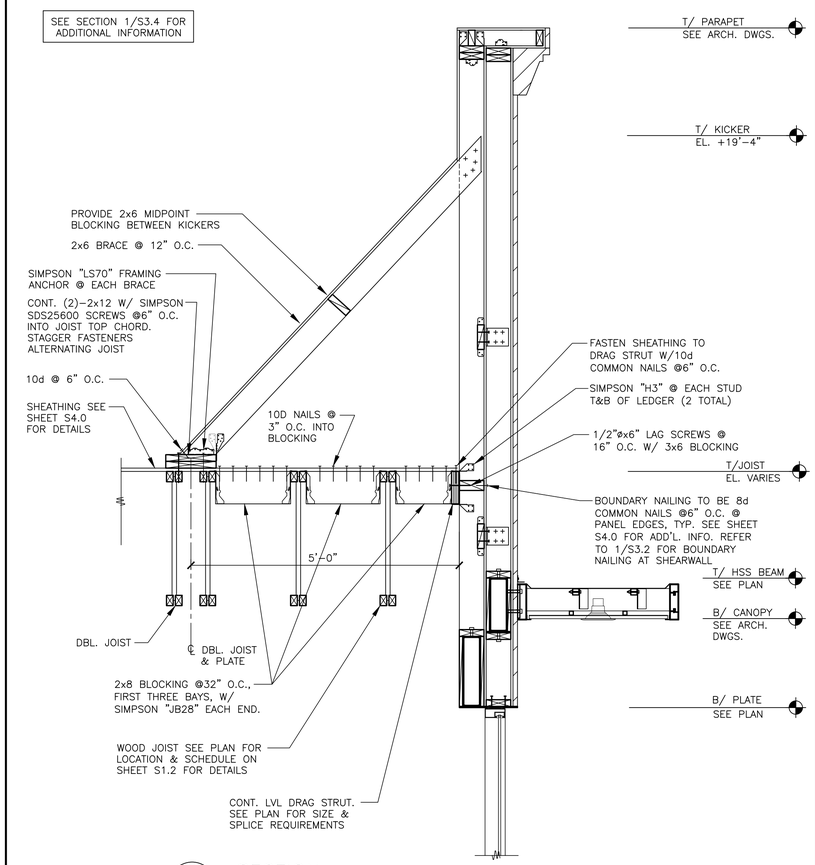
DRAWN BY	REVIEWED BY	C.S.G. PROJECT #
J.CARRAS	J.PERRY	MCD.39450
STD ISSUE DATE 2024 07	DATE ISSUED 10/01/2024	

TITLE: 2023 STANDARD BUILDING - BB20 4584-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH WOOD TRUSS ROOF FRAMING WALL PANEL/HARDIE BOARD EXTERIOR FINISH
NSN: 43514 | SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178

SHEET NO. 028-0178.00.0 S3.2 DETAILS



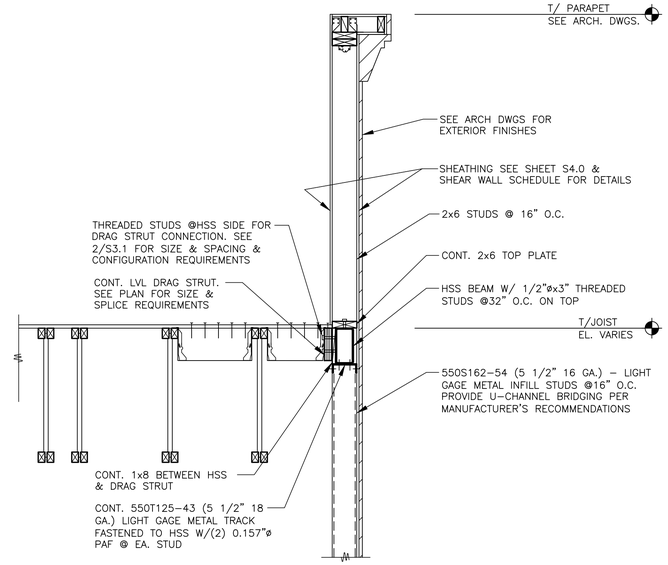
1 S3.4 **SECTION**
3/4" = 1'-0"



2 S3.4 **SECTION**
3/4" = 1'-0"

3 S3.4 **NOT USED**
3/4" = 1'-0"

4 S3.4 **NOT USED**
3/4" = 1'-0"



5 S3.4 **SECTION**
3/4" = 1'-0"

6 S3.4 **NOT USED**
3/4" = 1'-0"

BY	DESCRIPTION	DATE	REV

STATE OF NEW HAMPSHIRE
DAVID A. BALMA
No. 14170
LICENSED PROFESSIONAL ENGINEER
10/30/2024

PREPARED BY:
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PREPARED FOR: McDonald's USA, LLC

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DRAWN BY	STD ISSUE DATE
J.CARRAS	2024 07
REVIEWED BY	DATE ISSUED
J.PERRY	10/01/2024
C.S.G. PROJECT #	
MCD.39450	

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN 43514
L/C: 028-0178

SITE ADDRESS
4 DEERFIELD DR. DOVER, NH

SHEET NO.
028-0178.00.0
S3.4
FRAMING SECTIONS II

STRUCTURAL GENERAL NOTES:

DESIGN AND LOADING

1. THE STRUCTURAL DESIGN OF THIS BUILDING WAS BASED ON THE DESIGN CRITERIA:
   - A. BUILDING CODE: 2021 INTERNATIONAL BUILDING CODE
   - B. FLOOR:
     - LIVE LOAD: 100 PSF (NON-REDUCIBLE)
   - C. ROOF:
     - LIVE LOAD: 20 PSF
     - DEAD LOAD: 20 PSF
   - D. SNOW:
     - GROUND LOAD, P_g: 60 PSF
     - FLAT ROOF LOAD, P_f: 42 PSF
     - IMPORTANCE FACTOR, I_s: 1.0
     - EXPOSURE FACTOR, C_e: 1.0
     - THERMAL FACTOR, C_t: 1.0
     - SLOPE FACTOR, C_s: 1.0
   - E. WIND:
     - BASIC DESIGN WIND SPEED (3-SECOND GUST), V: 115 MPH
     - ALLOWABLE STRESS DESIGN WIND SPEED (3-SECOND GUST), V_{ASD}: 90 MPH
     - RISK CATEGORY: II
     - WIND EXPOSURE: B
     - GC_{pi} = ±0.18
     - PRESSURES PER ASCE 7-16
   - F. SEISMIC:
     - RISK CATEGORY: II
     - IMPORTANCE FACTOR: 1.00
     - SITE CLASS: D
     - SS = 0.333, S1= 0.076
     - SDS = 0.340, SD1 = 0.122
     - DESIGN CATEGORY: C
     - PLYWOOD SHEAR WALLS (R = 6.5)
     - STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE (R = 3.0)
     - Cs1: 0.341 (LONGITUDINAL DIRECTION) Cs2: 0.114 (TRANSVERSE DIRECTION)
     - DESIGN BASE SHEAR = SEE CALCULATIONS
     - ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
   - G. FLOOD LOAD: N/A
   - H. SPECIAL LOADS: N/A
   - I. RAIN LOADS: N/A

FOUNDATION NOTES

1. THE FOUNDATION DESIGN OF THIS BUILDING WAS BASED ON THE FOLLOWING CRITERIA:
   - A. MINIMUM ALLOWABLE SOIL BEARING CAPACITY = 3000 PSF.
   - B. RECOMMENDED BY WHITESTONE ASSOCIATES INC. (WHITESTONE) IN THEIR REPORT #GM2421922.000 DATED JUNE 11, 2024.
   - C. ANY FILL REQUIRED BELOW SLABS ON GRADE OR FOOTINGS SHALL BE COMPACTED AS REQUIRED BY THE SOILS REPORT NOTED IN ITEM #2.
2. ALL EXTERIOR FOOTINGS SHALL EXTEND BELOW THE MAXIMUM ANTICIPATED DEPTH OF FROST.
3. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OR ENGINEER OF RECORD IMMEDIATELY IN THE EVENT THAT THE SOILS CONDITIONS ENCOUNTERED VARY FROM THOSE SHOWN ON THE BORING LOGS.
4. ALL FOUNDATION EXCAVATIONS SHALL BE INSPECTED BY A SOILS TESTING LABORATORY PRIOR TO PLACEMENT OF CONCRETE.

CONCRETE AND REINFORCING

1. ALL CONCRETE SHALL BE IN ACCORDANCE WITH THE "AMERICAN CONCRETE INSTITUTE BUILDING CODE" (ACI 318) AND WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301) LATEST EDITIONS.
2. ALL NORMAL WEIGHT CONCRETE (145 PCF) SHALL OBTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI (3500 PSI FOR SLABS).
3. ALL CONCRETE SUBJECT TO EXTERIOR EXPOSURE SHALL BE AIR ENTRAINED AS RECOMMENDED BY ACI 318.
4. TEST CYLINDERS SHALL BE MADE AND TESTED AS OUTLINED IN CHAPTER 16 OF ACI-301.
5. REINFORCING BARS SHALL BE DEFORMED BARS OF NEW BILLET STEEL CONFORMING TO ASTM A-615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI STANDARD 315 AND 315R.
6. PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT POSITIONS SHOWN ON THE PLANS AND DETAILS. PLASTIC COATED ACCESSORIES SHALL BE USED IN ALL EXPOSED CONCRETE WORK.
7. THE GENERAL CONTRACTOR SHALL CHECK WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND THE SUB-CONTRACTORS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, INSERTS, SLAB DEPRESSIONS AND OTHER ITEMS RELATED TO THE CONCRETE WORK AND SHALL ASSUME RESPONSIBILITY FOR THEIR PROPER LOCATION.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN CONFORMANCE WITH THE AISC360 "SPECIFICATION FOR STRUCTURAL STEEL". SEISMIC DESIGN OF STRUCTURAL STEEL STRUCTURES SHALL CONFORM TO AISC 341.
2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:
   - A. ANCHOR RODS F1554, GRADE 36
   - B. HIGH STRENGTH STRUCTURAL BOLTS A325-N U.N.O.
   - C. STRUCTURAL SHAPES (W) A992
   - D. STRUCTURAL SHAPES (M, S, C, MC, PLATES) A36
   - E. STRUCTURAL SHAPES (HP) A572
   - F. STRUCTURAL TUBING (HSS) A500 GRADE B
   - G. STRUCTURAL ANGLES A36
3. ALL WELDING ELECTRODES SHALL BE E70-XX. ALL SHOP AND FIELD WELDING SHALL BE MADE IN ACCORDANCE WITH A.W.S. D1.1 "CODE FOR WELDING IN BUILDING CONSTRUCTION" AND SHALL BE MADE BY CERTIFIED WELDERS.

LAMINATED VENEER LUMBER (LVL)

1. ALL BEAMS SHALL BE MANUFACTURED WITH LAMINATED VENEER LUMBER AND WATERPROOF ADHESIVES.
2. SIZE, MANUFACTURER & SERIES OF ALL LVL MEMBERS SHALL BE AS SHOWN ON DRAWINGS.
3. ANY SUBSTITUTIONS MUST BE APPROVED IN WRITING BY ENGINEER OR ARCHITECT OF RECORD.
4. PROVIDE 3" MINIMUM BEARING OR AS SPECIFIED ON PLANS. REFER TO PLANS FOR FASTENING OF MULTIPLE PIECE BEAMS.

OPEN WEB WOOD JOISTS

1. OPEN WEB WOOD JOISTS SHALL BE MANUFACTURED WITH MACHINE STRESS RATED TOP AND BOTTOM CHORDS. WEBS SHALL BE TUBULAR STEEL MEMBERS PER MANUFACTURERS' SPECIFICATIONS.
2. SIZE, MANUFACTURER & SERIES OF ALL OPEN WEB JOISTS SHALL BE AS SHOWN ON DRAWINGS. ANY SUBSTITUTIONS MUST BE APPROVED IN WRITING BY ENGINEER OR ARCHITECT OF RECORD.
3. PROVIDE 3 1/2" MINIMUM BEARING OR AS SPECIFIED ON PLANS. SHIM AS REQUIRED TO PROVIDE FULL BEARING AND LEVEL SUPPORT.
4. DO NOT CUT TOP OR BOTTOM CHORDS.
5. ALL HANGERS AND FRAMING CONNECTORS SHOWN ARE MANUFACTURED BY SIMPSON STRONG TIE. ANY SUBSTITUTIONS MUST BE APPROVED IN WRITING BY ENGINEER OR ARCHITECT OF RECORD.
6. REFER TO PLANS FOR WEB STIFFENER AND CONCENTRATED LOAD REQUIREMENTS.
7. REFER TO MANUFACTURERS' INSTALLATION GUIDE FOR JOIST BRACING DURING ERECTION. REFER TO MANUFACTURERS' INSTALLATION GUIDE FOR JOIST BRIDGING REQUIREMENTS.

SAWN LUMBER

1. ALL GRADES OF LUMBER INDICATED ON STRUCTURAL DRAWINGS SHALL BE RATED BY THE SOUTHERN PINE INSPECTION BUREAU (SPIB), OR THE WESTERN WOOD PRODUCTS ASSOCIATION (WWPA). LUMBER GRADES SHALL BE AS FOLLOWS, WITH A MAXIMUM MOISTURE CONTENT OF 19%:
   - A. SOUTHERN PINE NO. 1.
   - B. DOUGLAS FIR-LARCH NO. 1.
2. BOLT HEADS AND NUTS BEARING ON WOOD SHALL BE PROVIDED WITH STANDARD CUT WASHERS. ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.
3. MINIMUM NAILED CONNECTIONS FOR WOOD FRAMING MEMBERS SHALL BE IN ACCORDANCE WITH THE LOCAL BUILDING CODE OR TABLE 2304.9.1 OF THE INTERNATIONAL BUILDING CODE IF NO OTHER CRITERIA IS GIVEN.
4. CONNECTORS SHOWN ON THE DETAILS ARE MANUFACTURED BY SIMPSON. WRITTEN APPROVAL BY ENGINEER REQUIRED FOR SUBSTITUTIONS.

ROOF & WALL SHEATHING

1. ALL SHEATHING SHALL CONFORM TO AMERICAN PLYWOOD ASSOCIATION (APA) DESIGN SPECIFICATIONS, LATEST EDITION. SHEATHING SHALL BE CONTINUOUS OVER THREE ADJACENT SPANS MINIMUM.
2. WALL SHEATHING SHALL BE 15/32" (1/2" NOMINAL) APA RATED SHEATHING, EXPOSURE 1, 32/16. ALL WALL SHEATHING SHALL BE FASTENED TO SUPPORTING MEMBERS W/ 8d COMMON NAILS @ 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATED SUPPORTS, U.N.O.
3. ROOF SHEATHING SHALL BE 23/32" (3/4" NOMINAL) APA RATED SHEATHING, EXPOSURE 1, 48/24. ALL ROOF SHEATHING SHALL BE FASTENED TO SUPPORTING MEMBERS W/10d COMMON NAILS @ 6" O.C. AT PANEL EDGES, AND 12" O.C. AT INTERMEDIATE SUPPORTS. U.N.O.

MASONRY

CONCRETE BLOCK DESIGN AND CONSTRUCTION SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES," TMS 402/ACI 530/ASCE 5 AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (TMS 602/ACI 530.1/ASCE 6)

1. MASONRY MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS:
   - A. HOLLOW LOAD BEARING CONCRETE BLOCK: ASTM C-90. MINIMUM COMPRESSIVE STRENGTH = 2800 PSI AT 28 DAYS.
   - B. MORTAR: ASTM C-270, TYPE S. MINIMUM COMPRESSIVE STRENGTH = 1800 PSI AT 28 DAYS.
   - C. MORTAR: ASTM C-270, TYPE M. MINIMUM COMPRESSIVE STRENGTH = 2500 PSI AT 28 DAYS. (USED FOR BELOW GRADE WORK)
   - D. GROUT: ASTM C-476. MINIMUM COMPRESSIVE STRENGTH = 2000 PSI AT 28 DAYS
   - E. MASONRY REINFORCEMENT: ASTM A-82 GALVANIZED (JOINT BEDS, TIES)
   - F. MASONRY PRISM STRENGTH: F'm = 2000 PSI
2. PRIOR TO DELIVERY OF MASONRY UNITS TO THE JOB SITE, FURNISH TO THE OWNER AFFIDAVITS FROM AN APPROVED TESTING LABORATORY CERTIFYING THAT ALL UNITS CONFORM TO THEIR RESPECTIVE ASTM REQUIREMENTS.
3. GROUT ALL CAVITIES CONTAINING REINFORCEMENT IN LIFTS NOT TO EXCEED 5'-0".
4. LABORATORY PREPARED MIXES SHALL BE PREPARED AND TESTED IN ACCORDANCE WITH ASTM C-270. FIELD MORTAR SHALL BE TESTED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH ASTM C-780 TWO SETS OF THREE MORTAR CUBES SHALL BE TAKEN DIRECTLY FROM THE MIXER FOR EACH DAY OF MASONRY WORK. TEST THE CUBES AT 28 DAYS. ACCEPTANCE OF THE MORTAR SHALL BE AT THE DISCRETION OF THE ENGINEER.
5. CALCIUM CHLORIDE AND/OR ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL NOT BE INCLUDED IN MORTAR OR GROUT MIX, EXCEPT WHEN APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. NO ANTI FREEZE COMPOUNDS SHALL BE USED TO LOWER THE MORTAR'S FREEZING POINT.
6. NO EXTERIOR MASONRY SHALL BE LAID WHEN THE OUTSIDE AIR TEMPERATURE IS LESS THAN 40 DEGREES FAHRENHEIT, UNLESS THE RECOMMENDATIONS SPECIFIED BY THE BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" TMS 402/ACI 530/ASCE 5 AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (TMS 602/ACI 530.1/ASCE 6) FOR COLD WEATHER CONSTRUCTION ARE STRICTLY FOLLOWED.
7. THE MASONRY CONTRACTOR SHALL PROVIDE BRACING TO WITHSTAND HORIZONTAL PRESSURES AS REQUIRED BY THE BUILDING CODE AND LOCAL ORDINANCE.

LIGHT GAGE METAL FRAMING

1. 16 GA. AND HEAVIER STUDS SHALL HAVE A MINIMUM YIELD STRESS OF 50,000 PSI. 18 GA. AND LIGHTER STUDS AND TRACKS SHALL HAVE A MINIMUM YIELD STRESS OF 33,000 PSI.
2. STUDS AND TRACKS SHALL BE 18 GA. MINIMUM U.N.O. THEY SHALL BE MANUFACTURED BY DIETRICH INDUSTRIES, INC. OR APPROVED EQUAL.
3. PROVIDE DOUBLE STUDS FOR FULL HEIGHT OF WALL EACH SIDE OF ALL OPENINGS UNLESS OTHERWISE NOTED. WELD STUDS TO EACH OTHER WITH 1 1/2" LONG 1/8" FILLET WELDS AT 12" O.C. EACH SIDE. PROVIDE STUD TRACK AT EACH HEAD AND SILL.
4. REFER TO PLANS AND DETAILS FOR CONNECTION OF STUD WALLS TO FOUNDATION, FLOOR OR ROOF.

SHOP DRAWINGS

1. SHOP DRAWING SUBMITTALS SHALL BE SUBMITTED ELECTRONICALLY.
2. SHOP DRAWINGS SHALL BE REVIEWED BY CONTRACTOR TO VERIFY THAT SUBMITTAL IS COMPLETE PRIOR TO SUBMITTING TO ARCHITECT/ENGINEER.
3. DRAWINGS CREATED BY THE ENGINEER OF RECORD CANNOT BE REPRODUCED AND/OR USED AS A SHOP DRAWING SUBMITTAL. SHOP DRAWING SUBMITTALS SHALL INCLUDE THE FOLLOWING:
   - A. CONCRETE MIX DESIGN
   - B. FOUNDATION REINFORCING BARS
   - C. STRUCTURAL STEEL
   - D. OPEN WEB JOISTS AND CALCULATIONS
   - E. ROOF SHEATHING
   - F. TRELLIS SYSTEM & CALCULATIONS
   - G. LAMINATED VENEER LUMBER (LVL)
   - H. SAWN LUMBER AND CONNECTORS

SPECIAL INSPECTIONS

1. SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 1705 OF IBC AND THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED UNDER SECTION 1705. THE FOLLOWING AREAS OF WORK REQUIRE SPECIAL INSPECTIONS IN ACCORDANCE WITH THE LISTED 2021 INTERNATIONAL BUILDING CODE SECTIONS/LOCATIONS:
   - A. SOILS - SECTION 1705.6 PER TABLE 1705.6
   - B. CONCRETE - SECTION 1705.3 PER TABLE 1705.3
   - C. STEEL - SECTION 1705.2 (SEE AISC 360-16)
   - D. WOOD - SECTION 1705.5

MISCELLANEOUS

1. ALL DIMENSIONS ON STRUCTURAL DRAWINGS TO BE CHECKED AGAINST ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS BY THE GENERAL CONTRACTOR AND ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT IMMEDIATELY.
2. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES, AND FOR SAFE CONDITIONS ON THE JOB SITE.
3. DO NOT SCALE THE DRAWINGS.

VENEER TIE REQUIREMENTS:

1. **FOR SEISMIC DESIGN CATEGORIES 'A' THROUGH 'C' WITH ULTIMATE WIND SPEED LESS THAN 140 MPH, USE THE FOLLOWING:**
   VENEER TIES W/ WIRE SIZE (W2.8 OR 3/16"ø) SPACED 16" O.C. VERTICALLY AND 32" HORIZONTALLY. ADDITIONAL TIES ALONG ALL OPENINGS GREATER THAN 16" ARE REQUIRED TO BE LOCATED WITHIN 12" OF OPENING AND SPACED 36" O.C. MAX. AROUND OPENING PERIMETER. (HOHMANN & BARNARD VBT-VEE-BYNA TIE WITH DW10-HS ANCHOR PLATE OR EQUAL).
2. FOR SEISMIC DESIGN CATEGORIES 'D' THROUGH 'F' WITH WIND ULTIMATE SPEED LESS THAN 140 MPH, USE THE FOLLOWING:
   MEET THE REQUIREMENTS OF '1' WITH THE FOLLOWING CHANGES: VENEER TIES TO BE SPACED 16" O.C. VERTICALLY AND 24" O.C. HORIZONTALLY. PROVIDE A CONTINUOUS WIRE SIZE (W2.8 OR 3/16"ø) SPACED 16" O.C. VERTICALLY WITHIN VENEER MORTAR JOINT TO ENGAGE VENEER TIES. (HOHMANN & BARNARD VBT - VEE-BYNA TIE AND SEISMICLIP INTERLOCK SYSTEM (S.I.S.) - SEISMIC CLIP WITH DW10-HS ANCHOR PLATE OR EQUAL)
3. FOR ULTIMATE WIND SPEED OF 140 MPH THROUGH 170 MPH, USE THE FOLLOWING SPACING IN CONJUNCTION WITH THE REQUIREMENTS OF THE SEISMIC DESIGN CATEGORY (SEE 1 AND 2):
   VENEER TIES TO BE SPACED @ 16" O.C. VERTICALLY AND HORIZONTALLY. ADDITIONAL TIES ALONG ALL OPENINGS GREATER THAN 16" ARE REQUIRED TO BE LOCATED WITHIN 12" OF THE OPENING AND SPACED 24" O.C. MAX. AROUND OPENING PERIMETER.

1 / S4.0 VENEER TIE REQUIREMENTS

BY	DESCRIPTION	DATE	REV

STATE OF NEW HAMPSHIRE - DAVID A. BALMA - No. 14140 - LICENSED PROFESSIONAL ENGINEER - 10/30/2024

PREPARED BY: CORE STATES GROUP
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PREPARED FOR: McDonald's USA, LLC

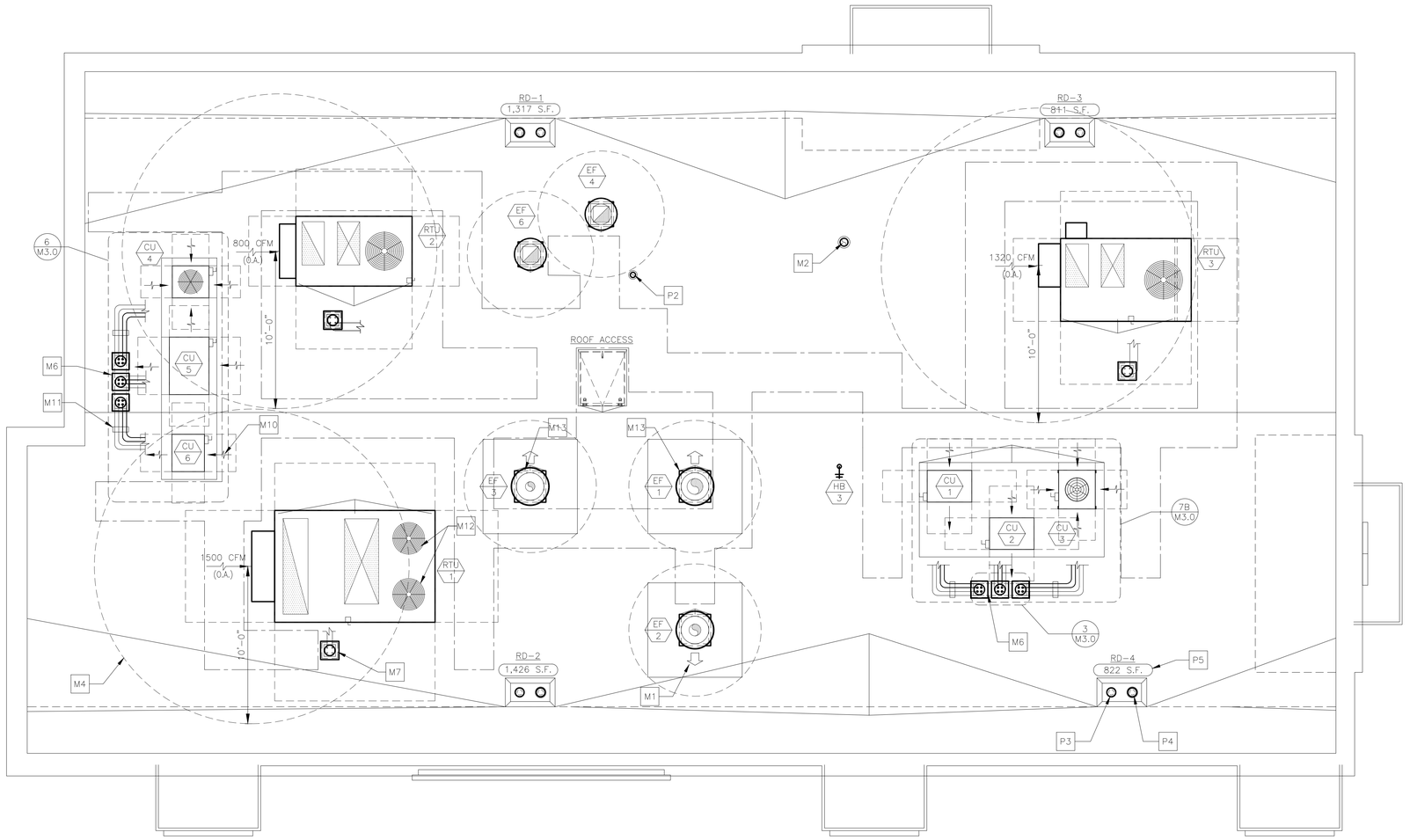
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DRAWN BY	J.CARRAS
STD ISSUE DATE	2024 07
REVIEWED BY	J.PERRY
DATE ISSUED	10/01/2024
C.S.G. PROJECT #	MCD.39450

TITLE: 2023 STANDARD BUILDING - BB20 4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN:4.3514	
L/C:028-0178	4 DEERFIELD DR. DOVER, NH

SHEET NO. 028-0178.00.0 **S4.0** STRUCTURAL NOTES



1 M1.0 ROOF PLAN
1/4"=1'-0"

CONDENSATE LINE FROM RTUs DOWN THROUGH THE ROOF ON UNITS BASE, TO BE FURNISHED AND INSTALLED BY PC. SEE PLUMBING SHEETS P1.2, P2.1 AND COORDINATION SCHEDULE ON M4.1.

DRAWING NOTES

1. ROOFTOP EQUIPMENT LOCATIONS SHOWN ARE GENERAL. ACTUAL LOCATIONS SHALL BE COORDINATED WITH THE STRUCTURAL DRAWINGS.
2. ROOF OPENINGS FOR ROOFTOP UNITS AND EXHAUST FANS SHALL BE COORDINATED WITH THE MANUFACTURER.
3. ROOF OPENINGS FOR PIPE PORTALS SHALL ONLY BE LARGE ENOUGH TO ALLOW PIPE AND CONDUIT PENETRATIONS. PIPE PORTAL CURB SHALL BE FILLED WITH AS MUCH BATT INSULATION AS POSSIBLE.
4. PRIOR TO INSTALLING THE TOP OF THE EQUIPMENT PLATFORM, INSIDE OF THE PLATFORM SHALL BE INSULATED WITH AS MUCH BATT INSULATION AS POSSIBLE.

KEYED NOTES

- M1 ARROW INDICATES DIRECTION OF EXHAUST FAN HINGE SWING (TYP.)
- M2 6"ø ALUMINUM EXHAUST DUCT FROM EXHAUST FAN (EF-5). PROVIDE PORTALS PLUS PLASTI-FLASH WITH C-126 CAP (OR EQUAL) FOR ROOF PENETRATION. TERMINATE DUCT A MIN. OF 24" ABOVE FINISHED ROOF WITH GOOSENECK.
- M3 NOT USED.
- M4 MAINTAIN A MINIMUM 10'-0" CLEARANCE FROM EDGE OF OUTLETS AND VENT TERMINALS TO FRESH AIR INTAKES (TYP.)
- M5 NOT USED
- M6 ROOF PIPE PORTAL FOR CONDENSING UNITS
- M7 ROOF PIPE PORTAL FOR ROOFTOP UNITS (TYP. 3 PLACES)
- M8 NOT USED
- M9 NOT USED
- M10 ARROW INDICATES DIRECTION OF AIRFLOW FOR CONDENSING OR ROOFTOP UNIT AIR INTAKE (TYP.)
- M11 REFRIGERANT PIPING SUPPORT AS REQUIRED. PROVIDE ROOFTOP BLOX MODEL RTB-01 (OR EQUAL) AND ALL NECESSARY ACCESSORIES FOR PROPER PIPE AND CONDUIT SUPPORT. PROVIDE GALVANIZED PIPE SHIELD TO PROTECT INSULATION AT ALL SUPPORTS.
- M12 PROVIDE HAIL GUARD FOR RTU-1 PROTECTING CONDENSER COIL FROM GREASE.
- M13 EXHAUST FANS WITH WINDBAND EXTENSION TO PREVENT DIRECT GREASE BLOW ONTO CONDENSER COIL OF UNIT RTU-1.
- P1 NOT USED.
- P2 PLUMBING VENT THROUGH ROOF (SEE PLUMBING DRAWINGS). PROVIDE PORTALS PLUS PLASTI-FLASH WITH C-126 CAP (OR EQUAL) FOR ROOF PENETRATION.
- P3 PRIMARY ROOF DRAIN WITH DOME STRAINER (TYP). (SEE PLUMBING DRAWINGS)
- P4 OVERFLOW ROOF DRAIN WITH DOME STRAINER (TYP). (SEE PLUMBING DRAWINGS)
- P5 AREA OF ROOF SERVED BY ROOF DRAIN (TYP.)

PIPE PORTAL SCHEDULE

MANUFACTURER	CURB DIMENSIONS	CURB TYPE	CAP TYPE (QTY)	SERVES
RPS	12"x12"x11"H	RC-2A	N18 (1)	RTU-1 THROUGH RTU-3
RPS	43"x12"x13"H	RC-2A	N18 (3)	CU-1 THROUGH CU-6

SEQUENCE OF OPERATION

THERMOSTAT SETTINGS			
		SETPOINTS	
MODE	FAN	COOLING	HEATING
OCCUPIED	ON	75°F	70°F
UNOCCUPIED	AUTO	90°F	55°F
HUMIDITY			
HUMIDITY SETPOINT (FOR DEHUMIDIFICATION UNITS ONLY)		60%	

RTU-1, RTU-2 & RTU-3:

1. OCCUPIED MODE SHALL BEGIN AS FOLLOWS:
   - RTU-1: 1.5 HOURS BEFORE OPEN
   - RTU-2: 1 HOUR BEFORE OPEN
   - RTU-3: 30 MINUTES BEFORE OPEN
2. ROOFTOP UNIT FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED MODE
3. ECONOMIZER SHALL BE OPEN DURING OCCUPIED MODE (OUTDOOR AIR THROUGH ROOFTOP UNITS SERVES AS MAKE-UP AIR FOR THE KITCHEN EXHAUST SYSTEM) – REFER TO E3.2 FOR HOOD/FAN INTERLOCK DETAILS.
4. UNOCCUPIED MODE SHALL BEGIN ONE (1) HOUR AFTER STORE CLOSES
5. DURING UNOCCUPIED MODE, ECONOMIZER IS CLOSED AND HEATING, COOLING AND FAN OPERATE IN AUTO MODE (ON DEMAND)
6. RTU-2 SHALL BE INTERLOCKED WITH EF-6. UPON ACTIVATION OF EF-6, RTU-2 SHALL INCREASE SUPPLY AND OUTSIDE AIR BY 600 CFM, WHILE MAINTAINING 1375 CFM RETURN AIR. COORDINATE WITH E.C. AND BAS SUPPLIER.

NO.	DESCRIPTION	DATE	BY

ENGINEER OF RECORD:
STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER No.12662 LICENSED PROFESSIONAL ENGINEER
10/30/2024

PREPARED BY:
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PREPARED FOR:
McDonald's USA, LLC

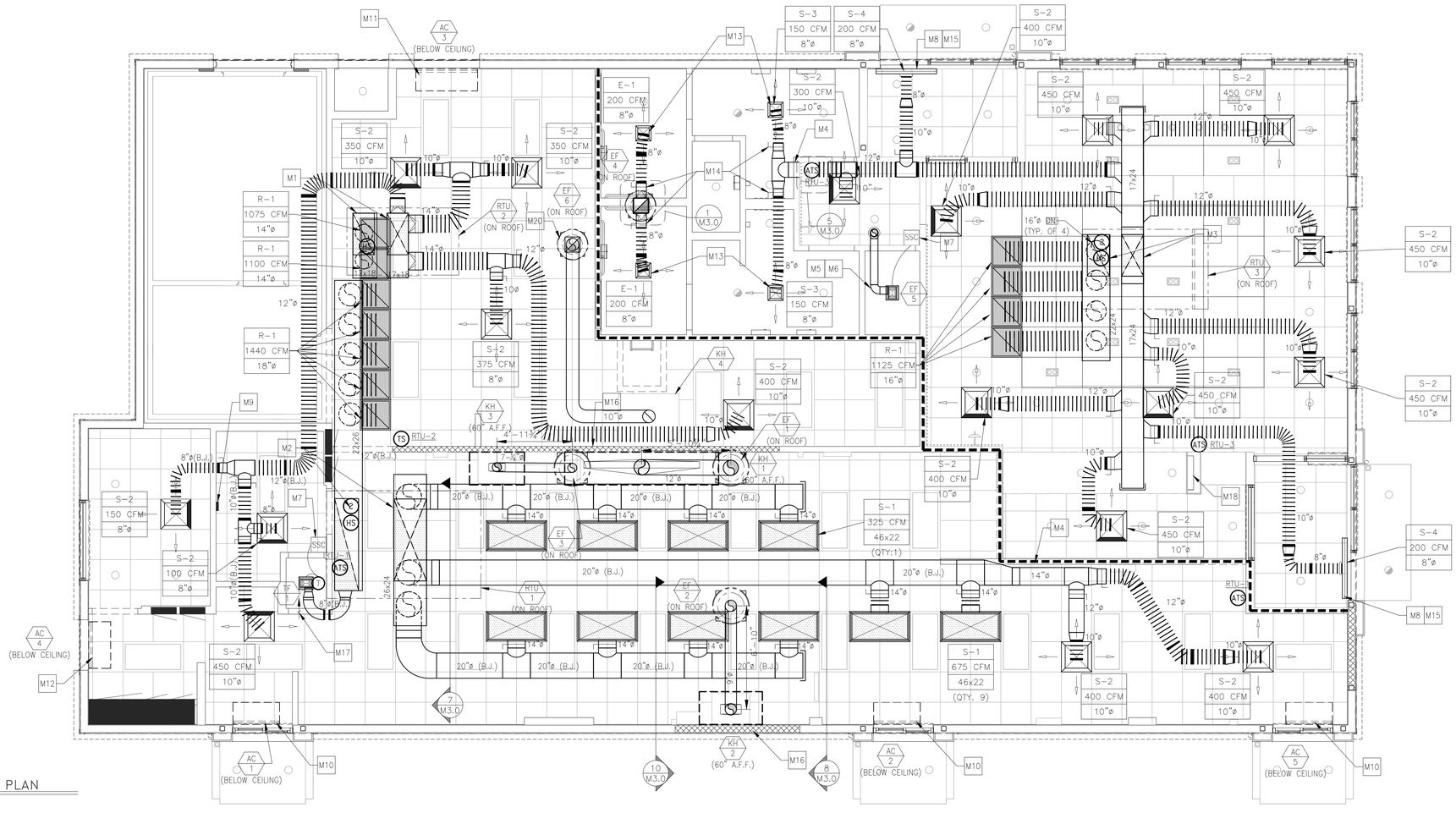
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DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
ES	2024 07	D. LEIFFER	10/01/2024	MCD.39450

TITLE: 2023 STANDARD BUILDING – BB20
4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	4 DERRFIELD DR. DOVER, NH
NSN:4514	
L/C:028-0178	

SHEET NO.
028-0178.00.0
M1.0
ROOF PLAN



1 / M1.2 DUCTWORK PLAN
1/4"=1'-0"

DRAWING NOTES

1. ALL DUCTWORK SHALL BE RUN BETWEEN OR THROUGH THE JOISTS UNLESS NOTED OTHERWISE. DUCTWORK DESIGNATED WITH (B.J.) SHALL BE RUN BELOW THE JOISTS.
2. DUCT SIZES SHOWN ARE INTERNAL FREE AREA DIMENSIONS UNLESS NOTED OTHERWISE.
3. ALL SHEET METAL DUCTWORK SHALL BE EXTERNALLY INSULATED. INSULATION IS NOT SHOWN FOR CLARITY. SEE MECHANICAL NOTES FOR INSULATION REQUIREMENTS.
4. CARBON STEEL KITCHEN EXHAUST DUCTWORK SHALL BE EXTERNALLY INSULATED. INSULATION NOT SHOWN FOR CLARITY. SEE MECHANICAL NOTES AND DETAILS FOR INSULATION REQUIREMENTS.
5. RETURN AIRFLOW VOLUME SHOWN ON PLAN IS FOR DUCTWORK SIZING PURPOSES WHEN THE UNIT IS IN RECIRCULATION (UNOCCUPIED) MODE.
6. DIFFUSERS IN DINING ROOM ARE SPECIFIC TO THE DECOR PLAN SHOWN. DIFFERENT CEILING LAYOUTS MAY REQUIRE A DIFFERENT DIFFUSER TYPES, QUANTITIES, LOCATIONS AND FINISHES/COLORS.
7. NO DIFFUSERS OR GRILLES TO BE INSTALLED ABOVE KIOSKS TO AVOID CONFLICTS WITH KIOSK'S CEILING PENETRATIONS FOR CONDUITS

KEYED NOTES

M1 17x33 SUPPLY AND 17x33 RETURN DUCT DROPS FROM ROOFTOP UNIT (RTU-2)

M2 26x63 SUPPLY AND 19x73 RETURN DUCT DROPS FROM ROOFTOP UNIT (RTU-1)

M3 17x33 SUPPLY AND 17x33 RETURN DUCT DROPS FROM ROOFTOP UNIT (RTU-3)

M4 PROVIDE SHEET METAL DUCT AT ALL DRAFTSTOP WALL PENETRATIONS (TYP.)

M5 6"ø ALUMINUM DUCT FROM EXHAUST FAN UP THROUGH ROOF

M6 EXTERNALLY INSULATE EXHAUST DUCT FROM FAN TO ROOF PENETRATION

M7 STEADY STATE SPEED CONTROLLER FOR CEILING MOUNTED EXHAUST FAN. STEADY STATE SPEED CONTROLLER SHALL BE INSTALLED OVER SUSPENDED CEILING FOR ACCESS. DO NOT INSTALL OVER AREAS WITH DRYWALL CEILINGS.

M8 SET DIFFUSER'S (S-5) OUTER SLOT FOR VERTICAL AIR THROW PATTERN AND INNER SLOT FOR HORIZONTAL THROW PATTERN (TYP.)

M9 BUILDING AUTOMATION SYSTEM LOCATION. SEE LIGHTING CONTROL DETAILS ON SHEET E4.1.

M10 MOUNT AIR CURTAIN TIGHT TO CEILING

M11 MOUNT AIR CURTAIN WITH BOTTOM OF UNIT AT TOP OF DOOR FRAME

M12 MOUNT AIR CURTAIN WITH BOTTOM OF UNIT ABOVE DOOR FRAME AND TOP OF SWITCHGEAR TO MEET 3'-0" MINIMUM SWITCHGEAR'S CLEARANCE REQUIREMENT

M13 FOR DIFFUSERS INSTALLED IN DRYWALL CEILINGS, VOLUME DAMPER IS INTEGRAL TO DIFFUSER AND ADJUSTABLE AT FACE OF DIFFUSER (SEE NOTE 18 UNDER "VENTILATION SYSTEMS" ON DRAWING M4.0 AND AIR DEVICE SCHEDULE ON DRAWING M4.1)

M14 FOR DIFFUSERS INSTALLED IN DRYWALL CEILINGS, INSTALL HIGH-EFFICIENCY TAKE-OFFS WITH VOLUME DAMPER IN FULL-OPEN POSITION TO FACILITATE BALANCING AT FACE OF DIFFUSER.

M15 GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL T-BAR FRAME TO PROPERLY LOCATE DIFFUSER AS SHOWN. AIR STREAM FROM DIFFUSER SHALL COVER ENTIRE DOOR OPENING.

M16 NONCOMBUSTIBLE WALL CONSTRUCTION BEHIND TYPE I KITCHEN HOODS. REFER TO SHEET A1.0 FOR MORE INFORMATION.

M17 ONE INCH DOOR UNDERCUT TRANSFER AIR TO CLOSET (100 CFM)

M18 MECHANICAL CONTRACTOR TO PROVIDE 4x12 LOUVERED RETURN AIR BEHIND EACH RECESSED MENU BOARD. SEE ARCHITECTURAL PLANS, DETAIL 14/A3.1. AND AIR DEVICE SCHEDULE (R-2) ON SHEET M4.1.

M19 NOT USED.

M20 10" TYPE 304 S/S DUCT FROM TYPE II EXHAUST HOOD UP THROUGH ROOF TO EXHAUST FAN. DUCTWORK SHALL BE PITCHED TOWARDS TYPE II EXHAUST HOOD. EXTERNALLY INSULATE EXHAUST DUCT FROM TYPE II EXHAUST HOOD CONNECTION TO ROOF PENETRATION.

2021 IMC SECTION 403.3 - VENTILATION SCHEDULE

UNIT	AREA SERVED	AREA FT² (Az)	CFM/PERSON (Rp)	CFM/FT² (Ra)	PEOPLE OR PEOPLE/1000 FT² (Pz)	UNCORRECTED REQUIRED O/A CFM (Vbz)	Ez*	Ev**	REQUIRED O/A CFM (Vot)***	ACTUAL O/A CFM	REQUIRED EXHAUST CFM	ACTUAL EXHAUST CFM
RTU-1	PRESENTER	287	5	0.06	4	38	0.8	0.98				
	KITCHEN	754	7.5	0.18	18	-	0.8					
						309			315	1500		
RTU-2	SUPPORT	573	0	0.12	0	69	0.8	0.84	-	-		
	MANAGER'S OFFICE	64	5	0.06	1	9	0.8		-	-		
	CREW ROOM	46	5	0.06	2	14	0.8		-	-		
	ORDER	104	5	0.06	5	32	0.8		-	-		
						124			148	800		
RTU-3	DINING	837	7.5	0.18	59	590	0.8	0.89	-	-		
	VESTIBULE 1	54	0	0.06	0	3	0.8		-	-		
	VESTIBULE 2	56	0	0.06	0	3	0.8		-	-		
	WOMEN'S	135	0	0.06	0	8	0.8		-	-		
	MEN'S	122	0	0.06	0	7	0.8		-	-		
						612			688	1330		
EF-1, 2 & 3	KITCHEN	754	-	0.7	-	-	-	-	-	-	528	2405
EF-4	WOMEN'S	135	-	-	-	-	-	-	-	-	100	200
	MEN'S	122	-	-	-	-	-		-	-	100	200
EF-5	JANITOR'S CLOSET	20	-	-	-	-	-		-	-	50	75
EF-6	WAREWASHER	-	-	-	-	-	-		-	-	350	600
										TOTAL:	1128	3480

* ZONE AIR DISTRIBUTION EFFECTIVENESS BASED ON ASHRAE 62.1 TABLE 6.2 FOR CEILING SUPPLY PF WARM AIR 15° F OR MORE ABOVE SPACE TEMPERATURE AND CEILING RETURN (IMC TABLE 403.3.1.2)
** VENTILATION SYSTEM EFFICIENCY BASED ON ASHRAE 62.1 TABLE 6.3 AND SECTION 6.2.5 (IMC SECTION 403.3.2.3 MZ)
*** CORRECTED REQUIRED O/A INTAKE REQUIRED FOR SYSTEM CALCULATED BASED ON ASHRAE 62.1 SECTION 6.2 (IMC SECTION 403.3)

AIR BALANCE SCHEDULE

UNIT	SUPPLY AIR	RETURN AIR	OUTDOOR AIR	EXHAUST AIR	PRESSURE
RTU-1	7200	5700	1500		1500
RTU-2	2175	1375	800		800
RTU-3	4500	3170	1330		1330
EF-1				1350	-1350
EF-2				575	-575
EF-3				480	-480
EF-4				400	-400
EF-5				75	-75
EF-6				600	-600
TOTALS	13875	10245	3630	3480	150

NOTES:
1. BALANCING TOLERANCES ARE AS FOLLOWS:
   HOODS: 0% TO +10%
   OUTDOOR AIR: 0% TO +10%
   SUPPLY AND RETURN AIR DIFFUSERS: -10% TO +10%
   TOILET EXHAUST AIR: -10% TO +10%
2. BALANCE ROOFTOP UNIT SUPPLY AND RETURN AIR PRIOR TO TURNING ON EXHAUST FANS.
3. EXHAUST HOODS SHALL BE BALANCED WITH A 4" VANE ANEMOMETER.
4. RTU BLOWER TO RUN CONTINUOUSLY DURING OCCUPIED HOURS. REFER TO SEQUENCE OF OPERATIONS ON M1.0 AND E3.2 FOR HOOD/FAN INTERLOCK DETAILS.
5. EF-6 DOES NOT RUN CONTINUOUSLY – VALUES SHOWN IN AIR BALANCE SCHEDULE REFLECT OPERATIONAL STATE. WHEN EF-6 IS NOT OPERATIONAL, RTU-2 SHALL BE DECREASED BY 600 CFM ACCORDINGLY. REFER TO M1.0 FOR ADDITIONAL DETAILS OF SEQUENCE OF OPERATIONS AND INTERLOCKING REQUIREMENTS.

HEATING SCHEDULE

EQUIPMENT	INPUT (kW)	OUTPUT (BTU/HR)	REQUIRED HEAT (BTU/HR)
ROOFTOP UNIT (RTU-1)	54	184,410	149,059
ROOFTOP UNIT (RTU-2)	27	92,205	88,894
ROOFTOP UNIT (RTU-3)	54	184,410	163,818
TOTALS	135	461,025	401,770

BY	DESCRIPTION	DATE	REV

ENGINEER OF RECORD:
DAVID M. LEIFFER No.12662 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
10/30/2024

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212 SE 16th Street Suite 2 Bentonville, AR 72712 479.786.4400 corestates.com

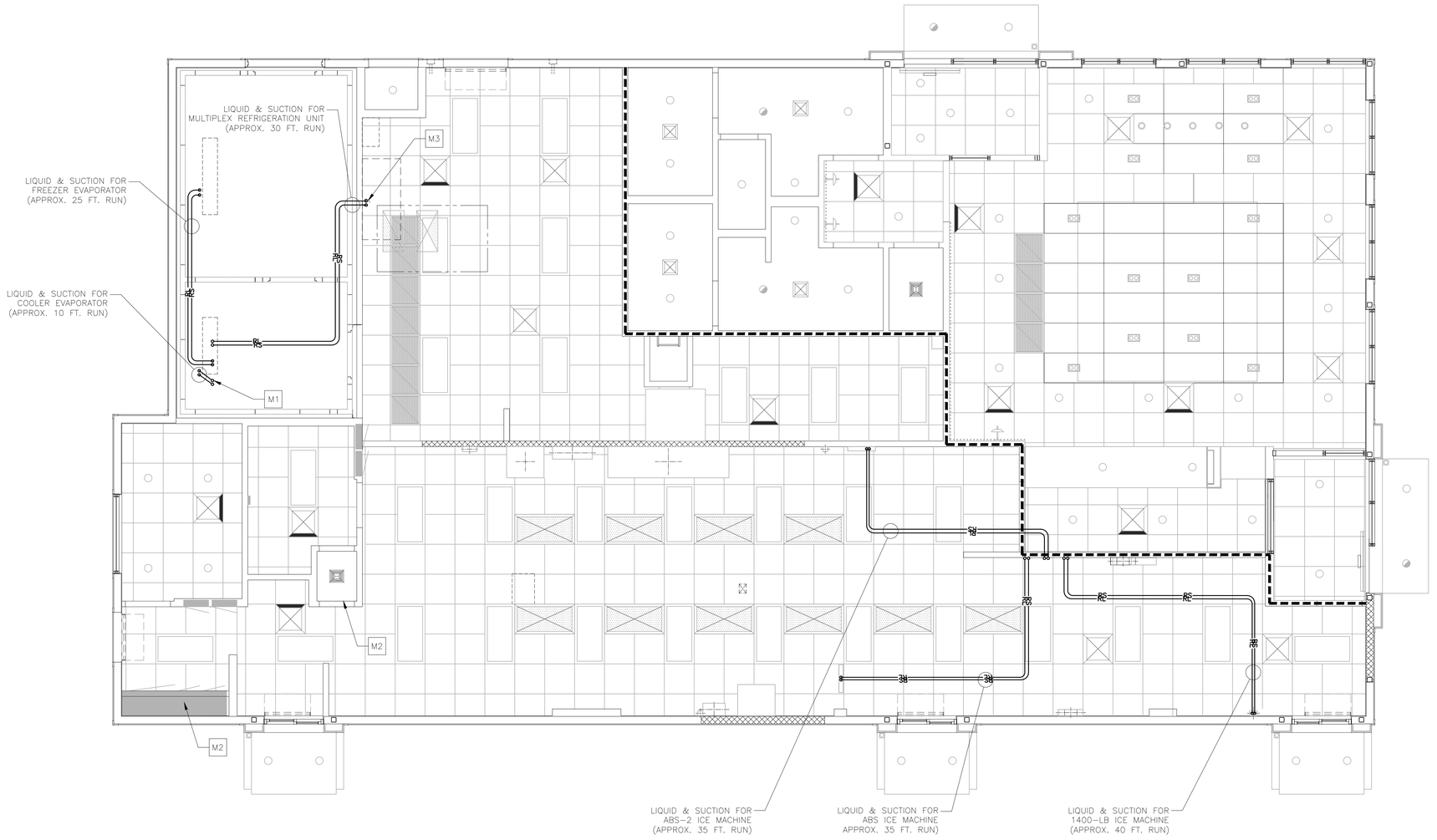
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ES	D. LEIFFER	10/01/2024	MCD.39450
STD. ISSUE DATE 2024 07			

TITLE: 2023 STANDARD BUILDING - BB20 4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	4 DERRFIELD DR. DOVER, NH
NSN 4.35:4	
L/C: 028-0178	

SHEET NO. 028-0178.00.0
M1.2
DUCTWORK PLAN



1 M1.4 MECHANICAL PIPING PLAN
1/4"=1'-0"

DRAWING NOTES

1. REFRIGERANT PIPE SIZES SHALL BE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

KEYED NOTES

M1 REFRIGERANT LIQUID AND SUCTION LINES UP THROUGH ROOF TO CONDENSING UNITS (TYP. 6 PLACES – SEE DETAIL 3 ON DRAWING M3.0)

M2 UTILITIES SHALL NOT BE ROUTED ABOVE TECH. CLOSET. OR SWITCHGEAR.

M3 REFRIGERANT LINES DOWN TO SODA SYSTEM (MULTIPLEX).

BY	DESCRIPTION	DATE	REV
-		-	-

ENGINEER OF RECORD:
STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER No.12662 LICENSED
PROFESSIONAL ENGINEER
10/30/2024

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4584-WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH
NSN: 4.5514
L/C: 028-0178

SITE ADDRESS
4 DEERFIELD DR. DOVER, NH

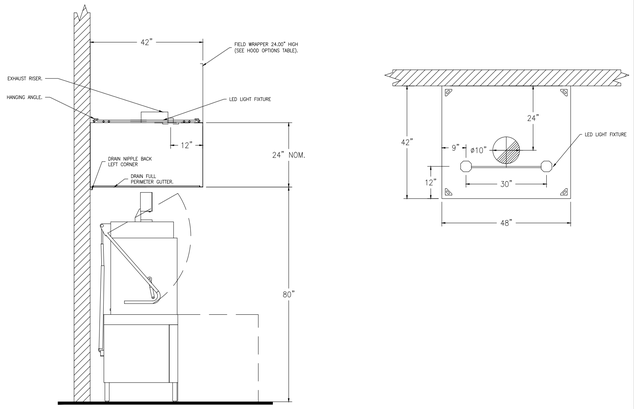
SHEET NO.
028-0178.00.0
M1.4
MECH. PIPING PLAN

HOOD INFORMATION

HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	APPLIANCE DUTY	DESIGN CFM/Ft	TOTAL EXH CFM	EXHAUST PLENUM REQUIRED						HOOD CONSTRUCTION	HOOD CONFIG.	
								WIDTH	LENG.	HEIGHT	DIA.	CFM	VEL.	S.P.	END TO END	ROW
1	DISH	CLASS 2	48"	NA	DISH	150	600			4"	10"	600	1100	-0.25"	304 SS	ALONE	ALONE

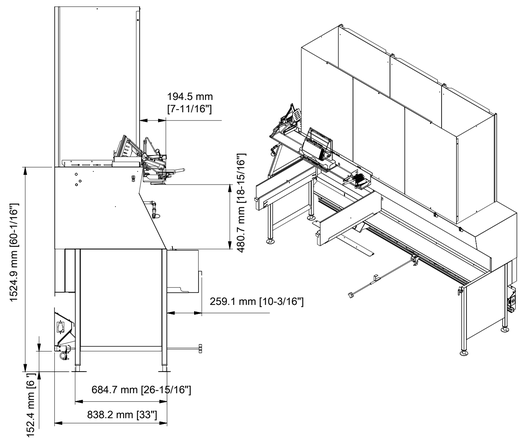
HOOD OPTIONS

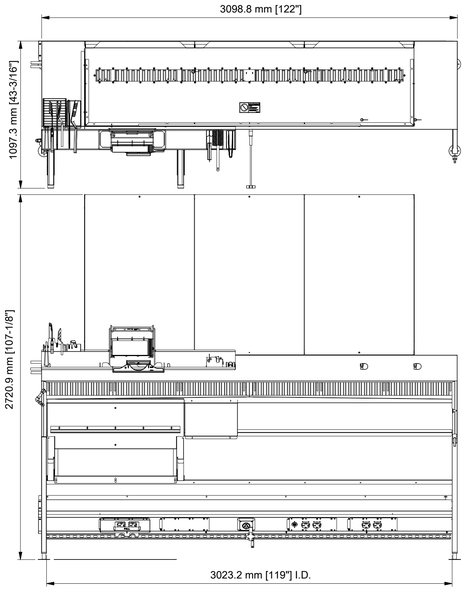
HOOD NO.	TAG	OPTION
1	DISH	FASCIA PANEL 14.00" HIGH FRONT, LEFT, RIGHT (FASCIA HEIGHT INCREASES FOR TALLER CEILING)



KITCHEN EXHAUST HOOD (TYPE II)

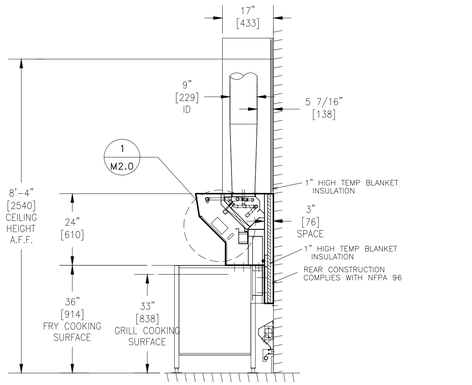
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N.T.S.

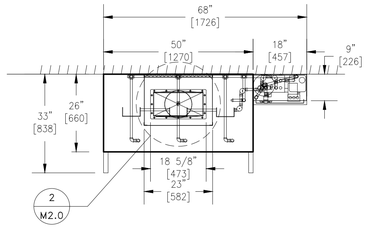


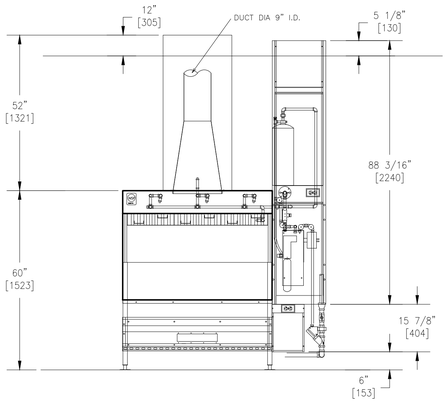


KITCHEN EXHAUST HOOD (TYPE I)

TAG: KH-1 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
SCALE: ½"=1'-0"

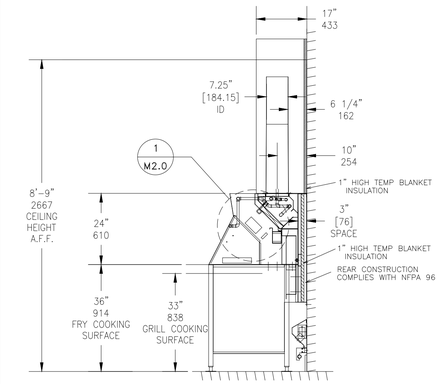


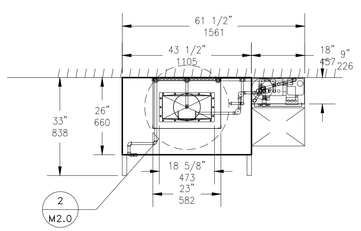


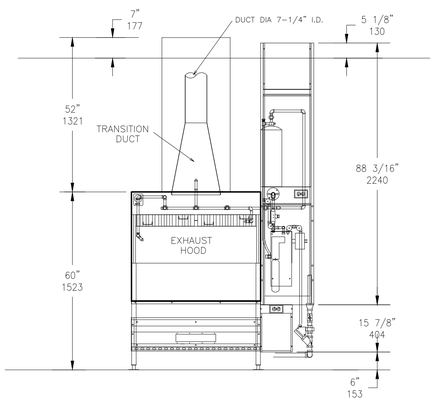


KITCHEN EXHAUST HOOD (TYPE I)

TAG: KH-2 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
SCALE: ½"=1'-0"





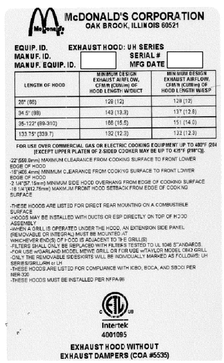


KITCHEN EXHAUST HOOD (TYPE I)

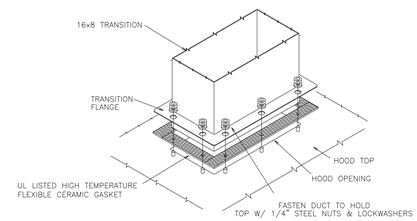
TAG: KH-3 (SEE KITCHEN EXHAUST HOOD SCHEDULE)
SCALE: ½"=1'-0"

DRAWING NOTES

1. 16 GA. STAINLESS STEEL MATERIAL USED FOR HOOD CONSTRUCTION
2. FILTER BAFFLE:
   UL FILE R14372, VOL. 1, SEC. 1
   UL CONTROL NUMBER 5L65
   MEA-446-92-M
3. EXHAUST HOOD:
   UL FILE MH12755, VOL. 4
   UL CONTROL NUMBER 78L1
4. UTILITY CHASE AND RACEWAY:
   UL FILE E163328, VOL.1, SEC.3
5. HIGH TEMP GASKET:
   UL FILE MH12755, VOL. 2, SEC. 1, ILL. 9
6. HOOD CONSTRUCTION COMPLIES WITH NSF STANDARD 2
7. HOOD PERFORMANCE TESTED IN ACCORDANCE WITH UL 710
8. UL 300 AND NFPA 17A COMPLIANT R-102 WET CHEMICAL SYSTEM INCLUDED WITH HOOD INSTALLATION
9. ANSUL CONNECTIONS AND STARTUP BY APPROVED ANSUL REPRESENTATIVE
10. REFER E3.2 FOR HOOD/FAN INTERLOCK DETAILS
11. CAPTURE JET PLENUMS ARE TO BE ATTACHED WHEN CALLED OUT PER KITCHEN SCHEDULE.



DETAIL
UL LABEL
SCALE: NONE
1 M2.0



DETAIL
HOOD CONNECTION
SCALE: NONE
2 M2.0

BY	DESCRIPTION	DATE	REV

ENGINEER OF RECORD:
STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER No.12662 LICENSED PROFESSIONAL ENGINEER
10/30/2024

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PREPARED FOR:
McDonald's USA, LLC

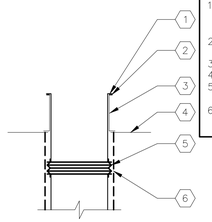
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DRAWN BY	REVIEWED BY	C.S.G. PROJECT #
ES	D. LEIFFER	MCD.39450
STD ISSUE DATE	DATE ISSUED	
2024 07	10/01/2024	

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

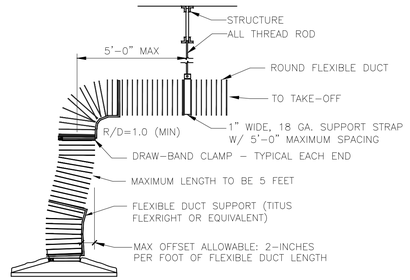
DESCRIPTION	
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
MSN: 43514	SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO. 028-0178.00.0
M2.0
EXHAUST HOODS

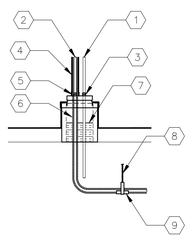


KEYED NOTES:
1. SHEET METAL DUCT DROP (SUPPLY, RETURN OR EXHAUST)
2. FOAM GASKET BETWEEN DUCT AND CURB
3. ROOF CURB
4. ROOF LINE
5. 6" FACE-TO-FACE CANVAS FLEXIBLE CONNECTION
6. 2" EXTERIOR INSULATION (SUPPLY AND RETURN)

DETAIL 1 M3.0
DUCT DROP INSTALLATION
SCALE: NONE



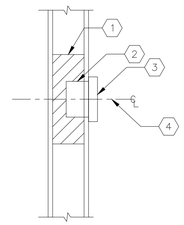
DETAIL 2 M3.0
DIFFUSER/GRILLE CONNECTION
SCALE: NONE



KEYED NOTES:
1. REFRIGERANT LIQUID LINE
2. REFRIGERANT SUCTION LINE WITH 1" THICK EXTERNAL FOAM INSULATION (ARMAFLEX BY ARMACELL OR EQUAL)
3. STAINLESS STEEL CLAMP
4. APPLY WEATHERPROOFING OVER FOAM INSULATION (ALUMAGUARD BY POLYGUARD OR EQUAL)
5. WRAP FOAM INSULATION OVER PIPE PORTAL NIPPLE AND STAINLESS STEEL CLAMP
6. RESTART FOAM INSULATION IMMEDIATELY AFTER PIPE PORTAL PENETRATION
7. INSULATE BOTTOM OF ROOF PORTAL CURB (MIN. R-19)
8. PIPE HANGER
9. LIGHT GAUGE GALVANIZED STEEL PROTECTIVE SHIELD

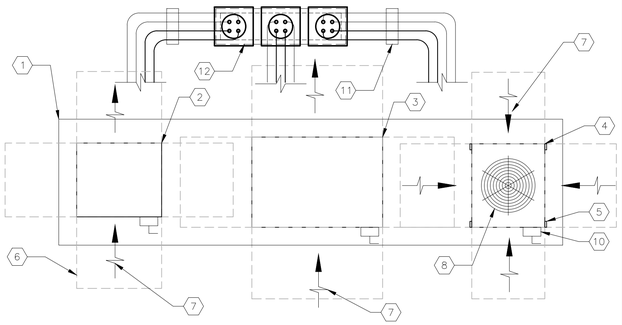
DETAIL 3 M3.0
REFRIGERANT PIPE INSTALLATION
SCALE: NONE

DETAIL 4 M3.0
NOT USED



KEYED NOTES:
1. PROVIDE BATT INSULATION FOR TEMPERATURE SENSORS INSTALLED IN HOLLOW CAVITY WALLS
2. 2x4 ELECTRICAL BOX
3. SENSOR (TEMPERATURE, HUMIDITY OR CO2)
4. MOUNT SENSOR(S) BETWEEN 4'-0" TO 4'-6" A.F.F.

DETAIL 5 M3.0
REMOTE SENSOR INSTALLATION
SCALE: NONE

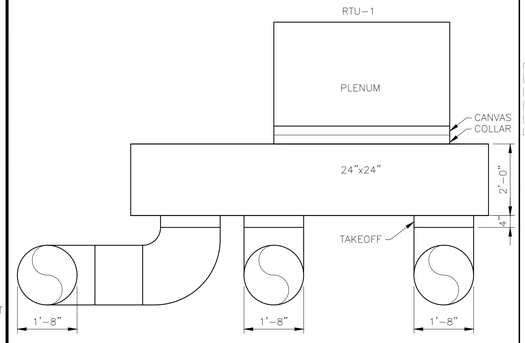


KEYED NOTES:
1. 180"Lx43"Wx14"H EQUIPMENT PLATFORM MANUFACTURED BY RPS OR EQUAL
2. 28⅛"Lx24¾"Wx19¾"H CONDENSING UNIT (COOLER).
3. 43⅞"Lx30½"Wx29¾"H CONDENSING UNIT (FREEZER).
4. 29"Lx24½"Wx34"H CONDENSING UNIT (MULTIPLEX).
5. FASTEN CONDENSING UNIT TO TOP OF PLATFORM AND SEAL FASTENER PENETRATIONS WITH UV RESISTANT SEALANT
6. OUTLINE OF SERVICE CLEARANCE EXTENDING 3'-0" FROM CONDENSING UNIT ON ALL SIDES
7. CONDENSER AIR INTAKE
8. CONDENSER FAN OUTLET ON TOP OF UNIT
9. CONDENSER FAN OUTLET ON SIDE OF UNIT
10. DISCONNECT SWITCH FURNISHED WITH UNIT
11. PROVIDE PIPE SUPPORT AS REQUIRED (TREATED LUMBER IS NOT ACCEPTABLE)
12. MULTIPLE PIPE PORTAL MANUFACTURED BY RPS OR EQUAL

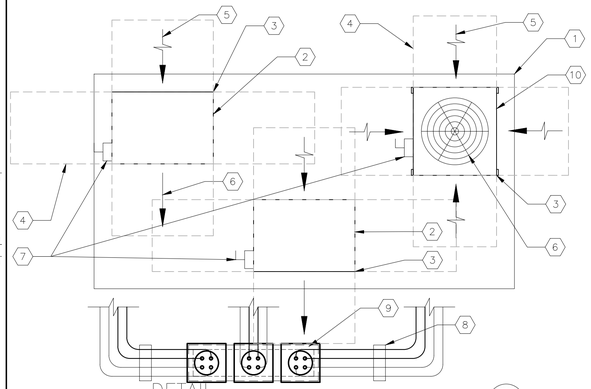
CONDUIT SIZES: (PER CONDENSING UNIT)
(1) ¾" POWER
(1) ¾" CONTROL

REFRIGERANT PIPING SIZES:
SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR RECOMMENDED REFRIGERANT PIPE SIZING

DETAIL 6 M3.0
REMOTE CONDENSER UNITS (CU-4, CU-5 & CU-6)
SCALE: ½"=1'-0"



DETAIL 7 M3.0
VIEW TOWARDS REAR OF KITCHEN AT DUCT DROPS
SCALE: ½"=1'-0"

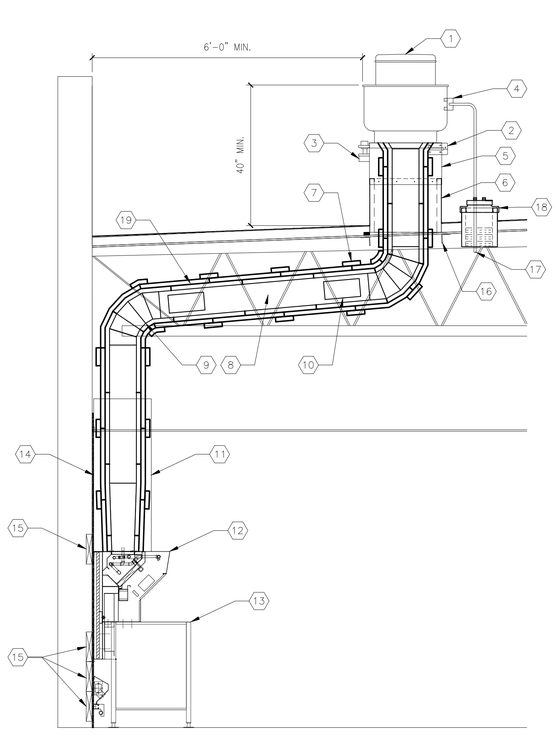


DETAIL 7B M3.0
REMOTE CONDENSER UNIT (CU-1, CU-2 & CU-3)
SCALE: ½"=1'-0"

KEYED NOTES:
1. 141"x72"x14"H EQUIPMENT PLATFORM MANUFACTURED BY RPS OR EQUAL
2. 34"x24⅛"x25¾"H CONDENSING UNIT
3. FASTEN CONDENSING UNIT TO TOP OF PLATFORM AND SEAL FASTENER PENETRATIONS WITH UV RESISTANT SEALANT
4. OUTLINE OF SERVICE CLEARANCE EXTENDING FROM CONDENSING UNIT ON ALL SIDES
5. CONDENSER AIR INTAKE
6. CONDENSER FAN OUTLET
7. DISCONNECT SWITCH PROVIDED BY ELECTRICAL CONTRACTOR
8. PROVIDE PIPE SUPPORT AS NECESSARY (TREATED LUMBER IS NOT ACCEPTABLE)
9. MULTIPLE PIPE PORTAL MANUFACTURED BY RPS OR EQUAL
10. 29½"x28"x38"H CONDENSING UNIT

CONDUIT SIZES: (PER CONDENSING UNIT)
(1) ¾" POWER
(1) ¾" CONTROL

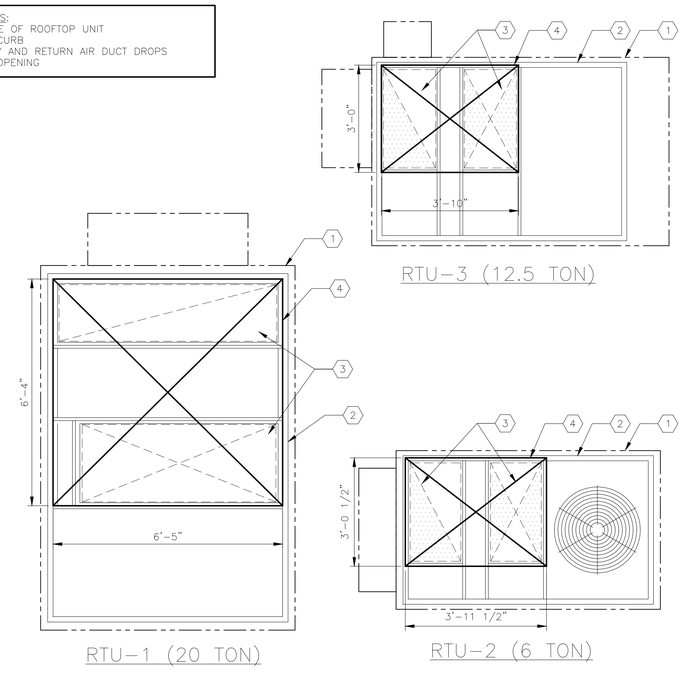
REFRIGERANT PIPING SIZES:
(PER CONDENSING UNIT)
ICE MACHINE - ½" LIQUID, ¾" SUCTION
(CU-3 CONDENSING UNIT)
ICE MACHINE - ⅜" LIQUID, ½" SUCTION



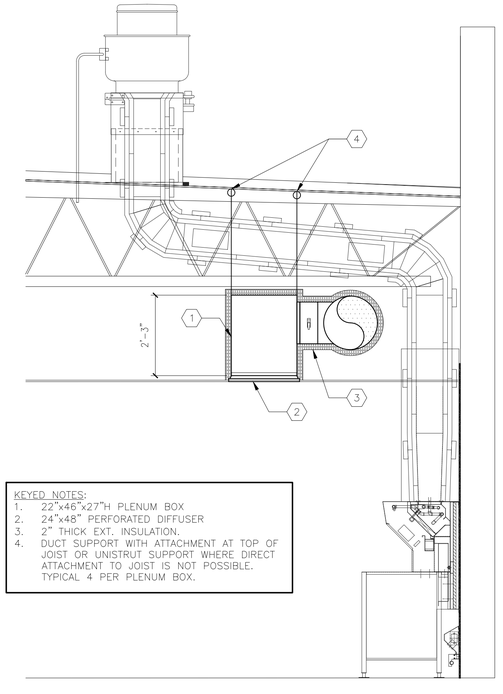
KEYED NOTES:
1. UPBLAST EXHAUST FAN (SEE EXHAUST FAN SCHEDULE)
2. HINGED CURB CAP FOR CLEANING ACCESS (FURNISHED WITH FAN)
3. GREASE TRAP (FURNISHED WITH FAN)
4. NEMA 3R DISCONNECT SWITCH (FURNISHED WITH FAN)
5. 12" HIGH CURB EXTENSION (FURNISHED WITH FAN)
6. 18" HIGH CURB (FURNISHED WITH FAN)
7. TWO (2) LAYERS OF 1½" THICK DUCT WRAP TO MEET ASTM E2336 INSTALLED PER MANUFACTURER'S INSTRUCTIONS. (SEE MECHANICAL NOTES FOR INSULATION SPECIFICATION)
8. 16 GAUGE BLACK IRON (CARBON STEEL) OR 18 GAUGE STAINLESS STEEL DUCTWORK WELDED LIQUID-TIGHT
9. 5-GORE BLACK IRON (CARBON STEEL) RADIUS ELBOW
10. 12"x6" ACCESS DOOR AT ALL CHANGES IN DIRECTION
11. STAINLESS STEEL FASCIA PANEL TO PROTECT DUCTWORK AND INSULATION
12. BACKSHELF TYPE EXHAUST HOOD (SEE KITCHEN EXHAUST HOOD SCHEDULE)
13. COOKING APPLIANCE (SEE KITCHEN DRAWINGS)
14. REAR WALL CONSTRUCTION SHALL CONSIST OF CERAMIC TILE OR MIN. 22 GAUGE STAINLESS STEEL OVER ⅝" TYPE X GYPSUM BOARD OR ½" CEMENT BOARD FROM FLOOR TO CEILING AND EXTENDING 24" TO EACH SIDE OF THE HOOD INSTALLED ON NON-COMBUSTIBLE WALL (REFER TO SHEET A1.0 FOR MORE INFORMATION.
15. 2x10 LIGHT GAUGE STEEL FOR SUPPORT BLOCKING FOR HOOD AND RACEWAY (COORDINATE INSTALLATION WITH HOOD INSTALLER)
16. STRUCTURAL FRAMING FOR ROOF OPENING (SEE STRUCTURAL DRAWINGS)
17. TRANSITION TO FLEXIBLE CONDUIT UNDER ROOF PENETRATION WHERE ALLOWED BY CODE.
18. ROOF PIPE PORTAL, RPS-N18(1) RC-2A 12x12x11H.
19. ¼" PER FOOT SLOPE PITCHED BACK TOWARDS THE HOOD.

SECTION 8 M3.0
KITCHEN EXHAUST HOOD INSTALLATION
SCALE: ½"=1'-0"

KEYED NOTES:
1. OUTLINE OF ROOFTOP UNIT
2. ROOF CURB
3. SUPPLY AND RETURN AIR DUCT DROPS
4. ROOF OPENING



DETAIL 9 M3.0
ROOF OPENINGS
SCALE: ½"=1'-0"



KEYED NOTES:
1. 22"x46"x27"H PLENUM BOX
2. 24"x48" PERFORATED DIFFUSER
3. 2" THICK EXT. INSULATION.
4. DUCT SUPPORT WITH ATTACHMENT AT TOP OF JOIST OR UNISTRUT SUPPORT WHERE DIRECT ATTACHMENT TO JOIST IS NOT POSSIBLE. TYPICAL 4 PER PLENUM BOX.

SECTION 10 M3.0
SUPPLY (S-1) PLENUM INSTALLATION
SCALE: ½"=1'-0"

NO.	DESCRIPTION	DATE	BY

ENGINEER OF RECORD:
DAVID M. LEIFFER No.12662 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
10/30/2024

PREPARED BY:
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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	DATE ISSUED	C.S.S. PROJECT #
ES	D. LEIFFER	10/01/2024	MCD_39450
STD ISSUE DATE 2024 07			

TITLE:
2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN: 47514	4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO.
028-0178.00.0
M3.0
DETAILS

MECHANICAL NOTES

GENERAL:
1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
2. ALL DIMENSIONS, CLEARANCES AND TOLERANCES SHALL BE VERIFIED PRIOR TO INSTALLATION.
3. ALL MATERIALS, FIXTURES AND EQUIPMENT USED SHALL BE IN ACCORDANCE WITH McDONALD'S SPECIFICATIONS. SPECIFICATIONS ARE CONTAINED WITHIN THESE DRAWINGS AND THE McDONALD'S PROJECT MANUAL. ANY CONTRACTOR IN NEED OF A COPY OF THE McDONALD'S PROJECT MANUAL SHALL CONTACT THE McDONALD'S AREA CONSTRUCTION MANAGER. ANY VARIANCE FROM THE McDONALD'S SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER-OF-RECORD.
4. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND/OR THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. SEE COORDINATION SCHEDULE FOR ADDITIONAL SCOPE OF WORK.
6. PRIOR TO BUILDING TURNOVER, A COMPLETE START-UP, TEST, ADJUST AND BALANCE SHALL BE PERFORMED ON ALL MECHANICAL SYSTEMS. THIS WORK SHALL BE PERFORMED BY A CERTIFIED TEST AND BALANCE CONTRACTOR. A CERTIFIED TEST AND BALANCE CONTRACTOR CAN BE FOUND BY VISITING:
   HTTP://WWW.AABCHQ.COM/DIRECTORY
   HTTP://WWW.NEBB.ORG/DIRECTORY.HTM
   HTTP://WWW.TABBCERTIFIED.ORG/SITE/CONTENT/CONTRACTORS/SEARCH
7. UPON COMPLETION OF THE PUNCHLIST, THE MECHANICAL CONTRACTOR AND TEST AND BALANCE CONTRACTOR SHALL SUBMIT REDLINED OR AS-BUILT DRAWINGS ALONG WITH THE TEST AND BALANCE REPORT AND ALL EQUIPMENT OPERATION AND MAINTENANCE MANUALS TO THE McDONALD'S AREA CONSTRUCTION MANAGER. A MINIMUM OF TWO (2) COPIES SHALL BE PROVIDED, ONE (1) FOR REGIONAL RECORDS AND ONE (1) FOR THE RESTAURANT.
8. ALL PENETRATIONS OF FIRE-RATED WALLS SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING SYSTEM.

VENTILATION SYSTEMS:
1. ALL SHEET METAL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH LOCAL CODES AND SMACNA STANDARDS.
2. ALL DUCTWORK DIMENSIONS ARE INTERNAL FREE AREA DIMENSIONS AND SIZED FOR 0.08" W.C. PER 100 FT. OF DUCT.
3. ALL SHEET METAL DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA TABLES FOR 2" W.C. AND SHALL BE SUPPORTED WITH AN APPROVED HANGER AT INTERVALS NOT EXCEEDING 10 FT.
4. ALL DUCT DROPS INTO THE BUILDING SHALL BE INSTALLED WITH FLEXIBLE CONNECTIONS TO ISOLATE THE DUCTWORK SYSTEM FROM NOISE AND VIBRATION. FLEXIBLE CONNECTIONS SHALL BE TESTED IN ACCORDANCE WITH UL 181 AND LISTED AS CLASS 0 OR CLASS 1.
5. ALL DUCT DROPS INTO THE BUILDING SHALL BE OFFSET AS NECESSARY TO ALLOW FOR THE CLEAR INSTALLATION OF THE EXTERNAL DUCTWORK INSULATION.
6. ALL DUCTWORK BRANCHES THAT SERVE A SINGLE DIFFUSER SHALL BE SUPPLIED WITH A VOLUME DAMPER FOR BALANCING. BRANCHES THAT SERVE MULTIPLE DIFFUSERS, THE BALANCING IS HANDLED VIA REMOTE DAMPER INSTALLED NEAR THE DIFFUSER. REFER TO M1.2 FOR DAMPER LOCATIONS. VOLUME DAMPER SHALL HAVE A 2" OFFSET TO ACCOMMODATE EXTERNAL INSULATION.
7. TAKE-OFFS FROM RECTANGULAR TO ROUND DUCT SHALL BE DUCTMATE STRAIGHT-SIDED OR CENTER HIGH-EFFICIENCY TAKE-OFFS WITH A 2" DAMPER STAND-OFF TO ACCOMMODATE FOR EXTERNAL INSULATION.
8. ALL DUCTWORK JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS SHALL BE SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), TAPES, ETC. ALL SEALANT MATERIALS SHALL BE LISTED IN ACCORDANCE WITH UL 181A OR 181B.
9. ALL SUPPLY AND RETURN SHEET METAL DUCTWORK LOCATED WITHIN THE CEILING SPACE SHALL BE EXTERNALLY INSULATED. INSULATION SHALL BE 2" THICK MICROLITE FSK-100 BY JOHNS MANVILLE OR EQUAL.
10. ALL SUPPLY AND RETURN SHEET METAL DUCTWORK LOCATED OUTSIDE OF THE BUILDING SHALL BE INTERNALLY LINED WITH A 1" THICK FIBERGLASS (MIN. R-4.2) AND EXTERNALLY INSULATED WITH A 2" THICK RIGID POLYSTYRENE, POLYURETHANE OR POLYISOCYANURATE BOARD (MIN. R-8 FOR CLIMATE ZONES 1 THROUGH 4), OR A 3" THICK (MIN R-12 FOR CLIMATE ZONES 5 THROUGH 8). INTERNAL FIBERGLASS INSULATION SHALL BE LINATEX BY JOHNS MANVILLE OR EQUAL. EXTERNAL RIGID BOARD INSULATION SHALL BE THERMAPINK BY OWENS CORNING OR EQUAL.
11. FOR APPLICABLE SITUATIONS OR PLAYPLACE ADDITIONS: ALL EXPOSED SPIRAL DUCTWORK SHALL BE INTERNALLY INSULATED TO PREVENT CONDENSATION (MIN. R-4.3). INTERNAL INSULATION SHALL BE 1" THICK SPIRACOUSTIC PLUS BY JOHNS MANVILLE OR EQUAL.
12. ALL DUCTWORK PENETRATIONS THROUGH FIRE-RATED WALLS, BARRIERS OR PARTITIONS SHALL BE PROTECTED WITH A FIRE DAMPER. THE PERIMETER OF THE FIRE DAMPER SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING MATERIAL.
13. ALL EXTERIOR SHEET METAL DUCTWORK SHALL BE EXTERNALLY WRAPPED WITH AN APPROVED WEATHERPROOFING MATERIAL TO PROTECT AGAINST WATER PENETRATION AND CORROSION. SIDES AND TOP OF EXTERNAL WEATHERPROOFING SHALL BE ALUMAGUARD 60 MIL UV BARRIER BY POLYGUARD OR EQUAL. BOTTOM OF EXTERNAL WEATHERPROOFING SHALL BE VAPORGUARD 5 MIL MEMBRANE BY POLYGUARD OR EQUAL.
14. ALL FLEXIBLE DUCTWORK, METALLIC AND NONMETALLIC, SHALL CONFORM TO THE FOLLOWING:
   A. 2" THICK INSULATION (R-6.0) SEE NOTE#9 AND TABLE(S) BELOW:

DUCT LOCATION: UNCONDITIONED SPACE			CLIMATE ZONES 1 THROUGH 8
DUCTWORK CLASSIFICATION	PRESSURE	SEAL CLASS	INSULATION
SUPPLY	2.00" W.C.	A	TYPE A (R-6)
RETURN	-2.00" W.C.	A	TYPE A (R-6)
EXHAUST	-2.00" W.C.	A	(*)TYPE A (R-6)
HANGER SUPPORTS	EVERY 6 FT.		1" TYPE B

DUCT LOCATION: EXTERIOR (INCLUDES ATTICS ABOVE INSULATED CEILINGS AND CRAWL SPACES.			CLIMATE ZONES 1 THROUGH 4	CLIMATE ZONES 5 THROUGH 8
DUCTWORK CLASSIFICATION	PRESSURE	SEAL CLASS	INSULATION	INSULATION
SUPPLY	2.00" W.C.	A	TYPE A (R-8)	TYPE A (R-12)
RETURN	-2.00" W.C.	A	TYPE A (R-8)	TYPE A (R-12)
EXHAUST	-2.00" W.C.	A	(*)TYPE A (R-8)	(*)TYPE A (R-12)
HANGER SUPPORTS	EVERY 6 FT.		1" TYPE B	

   (*) EXHAUST DUCTWORK IS ONLY REQUIRED TO BE INSULATED WITHIN 2-FEET OF ROOF PENETRATION. REFER TO "COMMERCIAL KITCHEN EXHAUST SYSTEMS", NOTE#4 FOR FIRE WRAPPING REQUIREMENTS ON KITCHEN GREASE DUCTWORK.

   B. INTEGRAL VAPOR BARRIER
   C. LISTED AND LABELED UL 181, CLASS 0 OR CLASS 1
   D. INSTALLED IN ACCORDANCE WITH:
      i. SMACNA STANDARDS,
      ii. AIR DIFFUSION COUNCIL INSTALLATION GUIDELINES, AND/OR
      iii. MANUFACTURER'S INSTALLATION INSTRUCTIONS
14. FLEXIBLE DUCTWORK SHALL NOT PENETRATE WALLS. SHEET METAL DUCTWORK IS REQUIRED AT ALL FIRE-RATED AND DRAFTSTOP WALL PENETRATIONS.
15. ALL COVERINGS, LININGS AND ADHESIVES (TAPES, ETC.) SHALL HAVE A FLAME-SPREAD INDEX NOT GREATER THAN 25 AND A SMOKE-DEVELOPED INDEX NOT GREATER THAN 50.
16. DUCT-MOUNTED SMOKE DETECTORS, PROVIDED BY ROOFTOP UNIT MANUFACTURER, SHALL BE INSTALLED IN SYSTEMS WITH DESIGN CAPACITY GREATER THAN 2,000 CFM. SEE MECHANICAL DRAWINGS FOR LOCATIONS OF SMOKE DETECTORS. DUCT-MOUNTED SMOKE DETECTORS ARE NOT REQUIRED WHEN THE BUILDING IS PROTECTED THROUGHOUT BY AREA SMOKE DETECTORS CONNECTED TO A FIRE ALARM SYSTEM WHERE THE FIRE ALARM SYSTEM IS DESIGNED TO SHUT DOWN THE ROOFTOP UNITS.
17. ALL SUPPLY AIR DIFFUSERS SHALL BE INSULATED TO PREVENT CONDENSATION.
18. ALL AIR DEVICES LOCATED IN DRYWALL CEILINGS SHALL BE SUPPLIED WITH AN INTEGRAL VOLUME DAMPER ACCESSIBLE FROM THE AIR DEVICE FACE TO FACILITATE BALANCING.
19. ALL OUTDOOR AIR INTAKES SHALL BE LOCATED A MINIMUM OF 10 FT. HORIZONTALLY FROM ANY SOURCE OF CONTAMINATION SUCH AS EXHAUST FANS, PLUMBING VENTS, WATER HEATER FLUES, ETC. WHERE A CONTAMINANT SOURCE IS LOCATED WITHIN 10 FT. OF AN INTAKE, THE INTAKE OPENING SHALL BE LOCATED A MINIMUM OF 2 FT. BELOW THE CONTAMINANT SOURCE.
20. ALL ROOFTOP CONDENSING UNITS THAT DISCHARGE HORIZONTALLY SHALL BE ORIENTED SUCH THAT THE DISCHARGE DOES NOT BLOW IN THE DIRECTION OF AN OUTDOOR AIR INTAKE.

COMMERCIAL KITCHEN EXHAUST SYSTEMS:
1. ALL METAL DUCTWORK USED FOR THE CONVEYANCE OF GREASE-LADEN AIR SHALL BE CONSTRUCTED OF MINIMUM 18 GAUGE STAINLESS STEEL OR 16 GAUGE CARBON STEEL (BLACK IRON).
2. ALL GREASE EXHAUST DUCTWORK JOINTS SHALL BE EITHER TELESCOPING OR BELL TYPE. BUTT-WELDED JOINTS ARE PROHIBITED.
3. ALL GREASE EXHAUST DUCTWORK SEAMS AND JOINTS SHALL BE CONTINUOUSLY WELDED WATER-TIGHT ON THE EXTERNAL SURFACE OF THE DUCT SYSTEM. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER.
4. ALL GREASE EXHAUST DUCTWORK SHALL BE EXTERNALLY INSULATED WITH A ASTM E2336 LISTED AND LABELED GREASE DUCT ENCLOSURE SYSTEM. INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. ACCESS PANELS SHALL BE PROVIDED AT ALL CHANGES IN DIRECTION OF THE GREASE EXHAUST DUCTWORK SYSTEM. ACCESS PANELS SHALL BE INSTALLED IN ACCORDANCE WITH THE INSULATION MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SHALL BE LABELED AS FOLLOWS: "ACCESS PANEL - DO NOT OBSTRUCT".
6. ALL HORIZONTAL GREASE EXHAUST DUCTWORK SHALL BE INSTALLED WITH A MINIMUM ¼" PER FOOT SLOPE AND SHALL BE PITCHED BACK TOWARD THE HOOD.
7. UPBLAST KITCHEN EXHAUST FANS SHALL BE LOCATED A MINIMUM OF 6 FT. FROM ANY PARAPET WALL OR ADJACENT STRUCTURE AND SHALL TERMINATE A MINIMUM OF 40 INCHES ABOVE THE FINISHED ROOFING MATERIAL.

REFRIGERANT PIPING:
1. ALL REFRIGERATION WORK SHALL BE PERFORMED BY A CERTIFIED REFRIGERATION CONTRACTOR.
2. ALL REFRIGERANT PIPING SHALL BE SEAMLESS COPPER TUBING OF TYPE L IN ACCORDANCE WITH ASTM B 88 AND ALL JOINTS SHALL BE SOLDERED.
3. ALL REFRIGERANT SUCTION LINES SHALL BE INSULATED WITH A MINIMUM 1" FOAM PIPE INSULATION. PIPE INSULATION INSTALLED OUTDOORS SHALL BE PROTECTED WITH AN APPROVED WEATHERPROOFING MATERIAL.
4. ALL SUSPENDED REFRIGERANT PIPING SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
COPPER TUBING ≤1¼"	6 FT.	10 FT.
COPPER TUBING ≥1½"	10 FT.	10 FT.

5. ALL REFRIGERANT PIPING SHALL BE SIZED PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
6. PRE-CHARGED LINESETS ARE NOT PERMITTED AS LINES WILL MOST LIKELY NEED TO BE CUT TO FIT THE APPLICATION AND REFRIGERANT WILL NEED TO BE RECLAIMED.
7. ALL PIPE INSULATION SHALL BE PROTECTED FROM DAMAGE FROM PIPE HANGERS. PROTECTION SHALL BE LIGHT GAUGE GALVANIZED STEEL OR EQUAL.
8. ALL REFRIGERANT PIPING SYSTEMS SHALL BE PRESSURE TESTED FOR LEAKS PRIOR TO START-UP. ALL LEAKS SHALL BE REMEDIED PRIOR TO BUILDING TURNOVER.
9. ALL PIPING SHALL MEET MINIMUM INSULATION THICKNESS PER THE TABLE BELOW:

PIPING	MINIMUM INSULATION THICKNESS (IN INCHES) PER NOMINAL PIPE OR TUBE SIZE				
NOMINAL PIPE SIZE	<1	1 TO 1.5	1.5 TO <4	4 TO <8	≥8
LIQUID (REFRIGERATION) (<40°F)	0.5	1.0	1.0	1.0	1.5
SUCTION (REFRIGERATION) (<40°F)	0.5	1.0	1.0	1.0	1.5

CO2 DETECTION EQUIPMENT:
1. THE CO2 DETECTOR SHALL BE HARD-WIRED TO PREVENT TAMPERING AND SHALL BE INSTALLED AT 12" A.F.F. WITHIN A 5 FT. RADIUS OF THE CO2 STORAGE TANKS.
2. ONE (1) AUDIBLE AND ONE (1) VISUAL ALARM SHALL BE INSTALLED A MINIMUM OF 7 FT. A.F.F., IN PLAIN SIGHT IN THE SAME ROOM AS THE CO2 STORAGE TANKS.
3. ONE (1) AUDIBLE AND ONE (1) VISUAL ALARM SHALL BE INSTALLED A MINIMUM OF 7 FT. A.F.F., AT THE BACK OF THE KITCHEN AND IN PLAIN SIGHT FROM THE MAIN SIDE OF THE PREP LINE.
4. THE CO2 EXTERIOR STROBE SHALL BE INSTALLED AS SHOWN ON SHEET A2.0, (DETAIL 2) AND ON SHEET E1.1. THE INSIDE AUDIBLE AND VISUAL ALARM SHALL BE INSTALLED INSIDE THE CO2 CLOSET, AND IN THE SUPPORT/BACK-OF-THE HOUSE LOCATION AS SHOWN ON SHEETS E1.1 AND E3.0.

CONDENSATE PIPING:
1. CONDENSATE PIPING SHALL BE GALVANIZED STEEL, COPPER OR PVC.
2. PVC PIPE SHALL BE PAINTED WITH WATER BASED LATEX PAINTING TO RESIST DEGRADATION FROM ULTRAVIOLET EXPOSURE.
3. PIPE SUPPORTS SHALL BE RPS MODEL PMP-2 OR EQUAL. QUANTITY AS REQUIRED DEPENDANT UPON PIPING MATERIAL.
4. PIPING SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
COPPER PIPE	12 FT.	10 FT.
GALVANIZED STEEL	12 FT.	15 FT.
PVC	4 FT.	15 FT.

5. CONDENSATE PIPING SHALL SLOPE A MINIMUM OF ⅛" PER FOOT.
6. CONDENSATE PIPING SHALL BE SIZED BASED ON THE FOLLOWING:

TOTAL TONS SERVED BY PIPE	MINIMUM PIPE SIZE
<20 TONS	¾"
>20 TONS, <40 TONS	1"

LEGEND

TS	TEMPERATURE SENSOR
ATS	AVERAGING TEMPERATURE SENSOR
CO2	CO2 SENSOR FOR ROOFTOP UNIT DEMAND CONTROL VENTILATION
HS	HUMIDITY SENSOR
T	THERMOSTAT
2	SMOKE DETECTOR
KH 2	EQUIPMENT TAG
R-1 / 1750 CFM / 18"ø	DIFFUSER INFORMATION LINE 1: TAG LINE 2: AIRFLOW LINE 3: NECK SIZE
	SUPPLY AIR DUCT (VERTICAL)
	RETURN OR EXHAUST AIR DUCT (VERTICAL)
	ROUND DUCT (VERTICAL)
SSC	STEADY-STATE SPEED CONTROLLER
	PLAQUE DIFFUSER (SHADED AREA DESIGNATES BLANK-OFF PANEL LOCATION)
	LINEAR SLOT DIFFUSER
	LOUVERED FACE DIFFUSER
	CEILING-MOUNTED EXHAUST FAN
	SPIN-IN COLLAR WITH VOLUME DAMPER
	VOLUME DAMPER
	FLEXIBLE DUCTWORK
12"ø	SHEET METAL DUCTWORK W/DIA. SIZE
	PERFORATED FACE DIFFUSER
	SHEET METAL TEE WITH CAP

ABBREVIATIONS

ACM	AREA CONSTRUCTION MANAGER
B.J.	BELOW JOISTS
BSI	BEVERAGE SYSTEM INSTALLER
DCV	DEMAND CONTROL VENTILATION
E.A.	EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
FAC	FIRE ALARM CONTRACTOR
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPC	FIRE PROTECTION CONTRACTOR
GC	GENERAL CONTRACTOR
I.D.	INSIDE DIMENSION
KEI	KITCHEN EQUIPMENT INSTALLER
KES	KITCHEN EQUIPMENT SUPPLIER
M.A. (S)	MIXED AIR - SUMMER
M.A. (W)	MIXED AIR - WINTER
MC	MECHANICAL CONTRACTOR
O.A.	OUTDOOR AIR
O.D.	OUTSIDE DIMENSION
O/O	OWNER/OPERATOR
PC	PLUMBING CONTRACTOR
R.A.	RETURN AIR
RC	REFRIGERATION CONTRACTOR
S.A.	SUPPLY AIR
S.P.	STATIC PRESSURE
MC	TEST AND BALANCE CONTRACTOR

BY | DESCRIPTION | DATE | REV

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10/30/2024

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C.S.G. PROJECT #: MCD.39450

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN 4.35:14	4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO.: M4.0
028-0178.00.0
GENERAL NOTES

COORDINATION SCHEDULE

GENERAL REQUIREMENTS	FURNISH	INSTALL	FINAL CONNECTION	NOTES
MECHANICAL PERMIT	MC			1–3
HOT WORK (WELDING) PERMIT (IF APPLICABLE)	MC			1–3
REFRIGERATION PERMIT (IF APPLICABLE)	KES			1–3
PLUMBING PERMIT	PC			1–3
ELECTRICAL PERMIT	EC			1–3
FIRE SPRINKLER PERMIT (IF APPLICABLE)	FPC			1–3
FIRE ALARM PERMIT (IF APPLICABLE)	FAC			1–3
CONTRACTOR COORDINATION REQUIREMENTS				
HEATING & AIR–CONDITIONING				
ROOFTOP UNITS, INTAKE AND RELIEF	MCD CP	MC		1–5, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 20, 22
GAS PIPING AND GAS PIPE KIT	PC	PC	PC	1–3, 14, 22–23
CONTROLS WIRING	MC	EC	EC	1–3, 19, 22, 24
POWER WIRING	EC	EC	EC	1–3, 19, 22, 24
CONDENSATE TRAP	MC	PC		1–3, 22–23
CONDENSATE PIPING (IF APPLICABLE)	PC	PC		1–3, 22–23
DUCT–MOUNTED SMOKE DETECTOR	MC	MC	EC	1–3, 22, 24
GENERAL EXHAUST SYSTEMS				
EXHAUST FANS	MCD CP	MC		1–3, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 22
CONTROLS (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
TEMPERATURE CONTROLS				
BUILDING AUTOMATION SYSTEM	MCD CP	MC	EC	1–3, 22, 24
REMOTE SENSORS (RH AND/OR TEMPERATURE)	MC	MC	EC	1–3, 22, 24
CONTROLS WIRING (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
DUCTWORK AND ACCESSORIES				
GALVANIZED SHEET METAL DUCTWORK	MC	MC		1–3, 22
EXTERNAL INSULATION	MC	MC		1–3, 22
INTERNAL INSULATION (IF APPLICABLE)	MC	MC		1–3, 22
WEATHERPROOFING (IF APPLICABLE)	MC	MC		1–3, 22
SPIN–IN COLLARS	MC	MC		1–3, 22
FLEXIBLE DUCTWORK	MC	MC		1–3, 22
VOLUME/BALANCING DAMPERS	MC	MC		1–3, 22
FIRE DAMPERS (IF APPLICABLE)	MC	MC		1–3, 22
FIRESTOPPING (IF APPLICABLE)	MC	MC		1–3, 22
AIR DEVICES AND ACCESSORIES	MC	MC	MC	1–3, 7, 22, 28
PLUMBING SYSTEMS				
WATER HEATERS	MCD CP	PC	PC	1–3, 11–12, 23
HOT AND COLD WATER PIPE	PC	PC	PC	1–3, 23
VENTS AND INTAKES	PC	PC	PC	1–3, 23
THERMOSTATIC MIXING VALVE	PC	PC	PC	1–3, 23
POWER AND CONTROL WIRING	EC	EC	EC	1–3, 23–24
KITCHEN EXHAUST SYSTEMS				
McDONALD'S BACKSHELF EXHAUST HOODS	KES	KEI		1–3, 6, 22, 27
CANOPY EXHAUST HOODS (IF APPLICABLE)	KES	KEI		1–3, 6, 22, 27
BLACK IRON DUCTWORK	KES	KEI		1–3, 6, 22
STAINLESS STEEL DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
ALUMINUM DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
UL LISTED DUCT WRAP	MC	MC		1–3, 6, 22
FIRE–RATED DUCT ENCLOSURE (IF APPLICABLE)	GC	GC		1–3, 6, 20, 22
EXHAUST FANS	MCD CP	MC		1–3, 6, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 6, 20, 22
CURB EXTENSIONS	MC	MC		1–3, 6, 22
CONTROLS (WHERE APPLICABLE)	EC	EC	EC	1–3, 6, 22, 24
POWER WIRING	EC	EC	EC	1–3, 6, 22, 24
FIRE SUPPRESSION SYSTEM	KES	KES	KES	1–3, 16, 22, 27
KITCHEN EQUIPMENT				
COOLER/FREEZER	KES	GC		1–3, 27
EVAPORATOR COILS	KES	MC		1–3, 27
CONDENSATE PIPING	PC	PC	PC	1–3, 23, 27
REMOTE CONDENSING UNIT (MAC)	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	EC	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
ICE MACHINES	KES	KEI		1–3, 27
WATER SUPPLY PIPING	KES	KEI	BSI	1–3, 27
REMOTE CONDENSING UNITS	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22, 27
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	KES	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
GRILLS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
CONTROL CABLE (6' CLAMSHELL ONLY)	MC	EC	EC	1–3, 23, 24, 27
FRYERS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
3–COMPARTMENT SINK	KES	KES		1–3, 12, 27
FAUCETS AND PRE–RINSE SPRAYER	KES	KES		1–3, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
HAND SINKS	MCD CP	PC		1–3, 23, 27
FAUCET	MCD CP	PC		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
VEGETABLE SINK	KES	KES		1–3, 23, 27
FAUCET	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WASHING MACHINE	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WARE WASHER	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
MISCELLANEOUS ITEMS				
FIRE SPINKLER SYSTEMS	FPC	FPC	FPC	1–3, 15, 25
HVAC EQUIPMENT START–UP	MC			1–3, 22
TEST, ADJUST AND BALANCE HVAC SYSTEMS	TAB			1–3, 22
DOOR GRILLES (IF APPLICABLE)	MC	GC		1–3, 20, 22
ROOF/WALL OPENINGS	GC			1–3, 20–24
APPLIANCE BACKFLOW PREVENTION	KES/BSI	PC	PC	1–3, 23, 27
CO2 DETECTION SYSTEM	KES/BSI	EC/BSI	EC/BSI	1–3, 22, 27

NOTES:
1. THIS SCHEDULE IS INTENDED AS A GUIDE FOR THE WORK TO BE PERFORMED. ALL WORK SHALL BE COORDINATED BETWEEN THE McDONALD'S AREA CONSTRUCTION MANAGER AND ALL GC AND O/O SUBCONTRACTORS.
2. ONE (1) COPY OF THE DECOR PACKAGE DRAWINGS SHALL BE SUPPLIED TO THE GENERAL CONTRACTOR AND EACH OF THE SUBCONTRACTORS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THE SUBCONTRACTORS TO INSURE THAT THEY HAVE RECEIVED THE DECOR PACKAGE DRAWINGS.
3. FOR ANY WORK NOT CLARIFIED IN THIS SCHEDULE OR IN THE NOTES AND SPECIFICATIONS, PLEASE CONSULT THE McDONALD'S CONSTRUCTION MANAGER FOR SCOPE OF WORK.
4. ALL ROOFTOP UNIT EQUIPMENT SUPPLIED BY THE MECHANICAL CONTRACTOR AND THE KITCHEN EQUIPMENT SUPPLIER SHALL BE ON SITE AT THE SAME TIME FOR A SINGLE CRANE LIFT. EQUIPMENT SITE ARRIVAL DATE SHALL BE COORDINATED BETWEEN THE CONSTRUCTION MANAGER, MECHANICAL CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER.
5. ALL ROOFTOP UNITS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY EQUIPMENT. THE INSTALLATION OF STANDARD EFFICIENCY ROOFTOP UNITS IS PROHIBITED. PLEASE REFER TO THE LATEST EDITION OF IECC FOR HVAC EQUIPMENT PERFORMANCE REQUIREMENTS.
6. ALL KITCHEN EQUIPMENT REQUIRING EXHAUST SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS. ANY VARIATION FROM THESE PLANS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER AND THE ENGINEER–OF–RECORD.
7. WHERE GYPSUM BOARD CEILINGS ARE INSTALLED, THE MECHANICAL CONTRACTOR SHALL SUPPLY DRYWALL MOUNTING FRAMES FOR LAY–IN TYPE DIFFUSERS.
8. ALL WORK SHOWN ON P1.6 DRAWING(S) SHALL BE COMPLETED BY THE BEVERAGE SYSTEM INSTALLER (OR K.E.S.) UNLESS OTHERWISE NOTED IN THE PLUMBING DRAWINGS.
9. ALL WORK ON P1.0 & P1.2 DRAWING(S) SHALL BE BY THE PLUMBING CONTRACTOR.
10. THE BEVERAGE SYSTEM INSTALLER FURNISHES, RUNS AND CONNECTS ALL FLEXIBLE WATER AND SYRUP LINES FOR ALL AFFECTED EQUIPMENT INCLUDING THE FOLLOWING:
    A. HOT CHOCOLATE
    B. COFFEE BREWER
    C. ICE MACHINE
    D. O.J.
    E. SODA TOWERS
11. ALL WATER HEATERS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY SEALED–COMBUSTION WATER HEATERS. THE INSTALLATION OF STANDARD EFFICIENCY GRAVITY–VENTED WATER HEATERS IS PROHIBITED. PLEASE REFER TO THE LATEST EDITION OF IECC FOR SERVICE WATER–HEATING EQUIPMENT PERFORMANCE EFFICIENCY REQUIREMENTS.
12. THE CONSTRUCTION MANAGER, PLUMBING CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER SHALL COORDINATE WHICH SOILED DISHWASHER (3–COMPARTMENT SINK) IS BEING INSTALLED IN THE RESTAURANT.
13. N/A
14. N/A
15. ALL FIRE PROTECTION DRAWINGS CONTAINED WITHIN THIS SET ARE STRICTLY FOR REFERENCE ONLY. FIRE SPRINKLER DRAWINGS SHALL BE DESIGNED AND PERMITTED BY A FIRE PROTECTION CONTRACTOR.
16. ALL R–102 WET CHEMICAL FIRE SUPPRESSION SYSTEMS FOR TYPE I HOODS SHALL BE DESIGNED AND INSTALLED BY A LOCAL ANSUL AGENT. THE USE OF DRY CHEMICAL SYSTEMS IS PROHIBITED. THE LOCAL ANSUL AGENT CONTRACT IS HANDLED THROUGH THE KITCHEN EQUIPMENT SUPPLIER.
17. ALL ROOFTOP UNITS AND EXHAUST FANS ARE SUPPLIED WITH A FACTORY–INSTALLED DISCONNECT SWITCH.
18. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES FOR REMOTE CONDENSING UNITS.
19. ALL ELECTRICAL CONDUITS FOR ROOFTOP EQUIPMENT SHALL BE BROUGHT UP THROUGH THE BASE OF THE UNIT TO MINIMIZE ROOF PENETRATIONS. WHERE THIS IS NOT POSSIBLE, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE NECESSARY PIPE PORTALS ON ROOF.
20. WALK–IN COOLER AND WALK–IN FREEZER REFRIGERATION SYSTEMS SHALL MEET THE PERFORMANCE REQUIREMENTS OUTLINED IN THE LATEST EDITION OF IECC. MINIMUM ANNUAL WALK–IN ENERGY FACTOR (AWEF) PROVIDED BY EQUIPMENT MANUFACTURER IS DETERMINED IN ACCORDANCE WITH AHRI 1250.
21. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
22. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
23. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
24. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
25. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
26. SEE FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION.
27. SEE FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.
28. SEE KITCHEN DRAWINGS FOR ADDITIONAL INFORMATION.
29. SEE DECOR DRAWINGS FOR ADDITIONAL INFORMATION.

AIR DEVICE SCHEDULE

TAG	MANUFACTURER	MODEL	BORDER	SIZE	COLOR	ACCESSORIES	NOTES
S–1	TITUS	PDR	LAY–IN	48x24	WHITE	7	1,2,8
	PRICE	PDDRE					
S–2	TITUS	OMNI	LAY–IN	24x24	VARIES	4,6,7	1,6,7,8
	PRICE	SPD					
S–3	TITUS	OMNI	LAY–IN	12x12	VARIES	1,2,7	1,3,6,8
	PRICE	SPD					
S–4	TITUS	TBDI–80	LAY–IN	48" (2) ¾" SLOTS	VARIES	7	1,5,6,8
	PRICE	TBDI4					
R–1	TITUS	PAR	LAY–IN	24x24	VARIES	7	1,6,8
	PRICE	10					
R–2	TITUS	355RL	SURFACE MOUNT	4x12	WHITE	–	8
	PRICE	530					
E–1	TITUS	355RL	LAY–IN	12x12	WHITE	1,7	1,8
	PRICE	530					

ACCESSORIES:
1. COMBINATION DAMPER AND EQUALIZING GRID
2. PLASTER FRAME FOR DRYWALL CEILING INSTALLATION
3. (NOT USED)
4. BACKPAN INSULATION
5. (NOT USED)
6. BLANK–OFF PANEL AS SHOWN ON DUCTWORK PLAN
7. PLASTER FRAME MAY BE NECESSARY – COORDINATE WITH DECOR DRAWINGS

NOTES:
1. SEE PLAN FOR NECK SIZES
2. FABRICATE 46"x22"x27"H PLENUM WITH 14"ø SIDE INLET (SEE DETAIL 10 ON DRAWING M3.0)
3. PROVIDE 1" FIBERGLASS INSULATION FOR DIFFUSER BACKPAN
4. NOT USED
5. GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL 4 FT. T–BAR FOR DIFFUSER FRAMING
6. AIR DEVICE FINISH WILL VARY:
   * KITCHEN, STORAGE, RESTROOMS – WHITE
   * DINING ROOM, VESTIBULES – WHITE, BLACK OR PAINTABLE/PRIME COAT (COORDINATE FINAL COLOR WITH DECOR PLANS).
7. ADDITIONAL ACCESSORIES AND/OR ALTERNATE DIFFUSERS MAY BE REQUIRED. REFER TO DECOR DRAWINGS TO VERIFY.
8. ACCEPTABLE ALTERNATIVE MANUFACTURERS: NAILOR & METALAIRE.

AIR CURTAIN SCHEDULE

TAG	MANUFACTURER	MODEL	SERVES	AIRFLOW	ELEC	ACCESS.	NOTES
AC 1	POWERED AIRE	MP 1–30	CASH BOOTH	VARIABLE	MCA: 5.5 MOCP: 20 ⅓ HP	2–4	1,2
AC 2	POWERED AIRE	MP 1–30	PRESENTER'S BOOTH	VARIABLE	MCA: 5.5 MOCP: 20 ⅓ HP	2–4	1,2
AC 3	POWERED AIRE	RBT 1–48	STORAGE ENTRANCE	2,559 CFM	MCA: 10 MOCP: 20 ¾ HP	1–4	1,2
AC 4	POWERED AIRE	RBT 1–36	REAR ENTRANCE	2,541 CFM	MCA: 10 MOCP: 20 ¾ HP	1–4	1,2
AC 5	POWERED AIRE	MP 1–30	FORWARD PRESENTER'S BOOTH	VARIABLE	MCA: 5.5 MOCP: 20 ⅓ HP	2–4	1,2

ACCESSORIES:
1. NSF LISTING
2. DOOR SWITCH
3. DELAY TIMER
4. 120V/1ø/60Hz

NOTES:
1. SET DELAY TIMER TO 30 SECONDS
2. MAINTAIN 7" CLEARANCE FOR MOTOR ACCESS ON SIDE OF AIR CURTAIN.

CONTROLS

SYMBOL	DESCRIPTION	MANUFACTURER	MODEL
T	24V THERMOSTAT (ROOFTOP UNITS)	–	–
	120V THERMOSTAT (COMPUTER CLOSET)	HONEYWELL	T651A3018
TS	REMOTE TEMPERATURE SENSOR	–	–
ATS	REMOTE AVERAGING TEMPERATURE SENSOR	–	–
HS	REMOTE HUMIDITY SENSOR	–	–
	BULK CO2 DETECTION SYSTEM	LOGIC02	–

NOTES:
1. FOR TSTAT, TS, HS AND ATS INFORMATION, REFER TO E4.1
2. TO ORDER HONEYWELL EQUIPMENT CALL (800)575–4841
3. SEE KITCHEN DRAWINGS FOR BULK CO2 DETECTION LOCATIONS

KITCHEN HOOD SCHEDULE

TAG	SERVED BY	MANUFACTURER	MODEL	NOTES	AIRFLOW CFM	AIRFLOW CFM/LF	FILTERS QTY/SIZE	FILTERS FPM
KH 1	EXHAUST FAN (EF–1)	FRANKE H&K	UH–122	1–4	1350	166	(5)10x20	263
KH 2	EXHAUST FAN (EF–2)	FRANKE H&K	UH–50	1–4	575	173	(3)10x16	255
KH 3	EXHAUST FAN (EF–3)	FRANKE H&K	UH–43	1–4	480	166	(2)10x20	255
KH 4	EXHAUST FAN (EF–6)	FRANKE H&K	TYPE II	1–2, 5	600	150	–	–

NOTES:
1. HOODS SHALL BE PROVIDED BY THE KES (SEE COORDINATION SCHEDULE)
2. SEE HOOD DRAWINGS FOR CONSTRUCTION DETAILS AND UL INFORMATION
3. REFER TO E3.2 FOR HOOD/FAN INTERLOCK DETAILS
4. CAPTURE JET PLENUMS TO BE INSTALLED ON HOOD, REFER TO K2.1 KITCHEN SCHEDULE.
5. PROVIDE WITH FASCIA KIT. COORDINATE CONDENSATE DRAINAGE WITH P.C.

FAN SCHEDULE

TAG	MANUFACTURER	MODEL	SERVES	ACCESSORIES	NOTES	DESIGN CFM	DESIGN S.P.	DESIGN BHP	DESIGN FRPM	ELECTRICAL VOLTS	ELECTRICAL Ø	ELECTRICAL Hz	ELECTRICAL HP	ELECTRICAL FLA AMPS
EF 1	ACCUREX	XCUE–14010VG124MCD	KITCHEN HOOD (KH–1)	1–5,13,14	1,2,6	1350	1.75	0.61	1725	115 TO 10VDC ECM	1	60	1	11.5
EF 2	ACCUREX	XCUE–14010VG124MCD	KITCHEN HOOD (KH–2)	1–5,14	1,2,6	575	1.75	0.19	1725	115 TO 10VDC ECM	1	60	1	11.5
EF 3	ACCUREX	XCUE–14010VG124MCD	KITCHEN HOOD (KH–3)	1–5,13,14	1,2,6	480	1.75	0.19	1725	115 TO 10VDC ECM	1	60	1	11.5
EF 4	ACCUREX	XRED–099–VG4X–QD	DINING RESTROOMS	6–9,14	1,2,5	400	0.50	0.07	1126	115 TO 10VDC ECM	1	60	¼	2.5
EF 5	ACCUREX	XCR–A90	DINING ROOM JANITOR'S CLOSET	9–12	1–3,5	75	0.20	–	900	115	1	60	–	0.52
EF 6	ACCUREX	XCUE–099–VG	KITCHEN HOOD (KH–4)	6–9,14	1,2,7	600	0.75	0.19	1725	115	1	60	¼	2.9
TF 1	ACCUREX	XCR–A125	COMPUTER CLOSET	9–12	1–4	100	0.20	–	1100	115	1	60	–	0.79

ACCESSORIES:
1. 2–POLE NEMA 3R DISCONNECT SWITCH FACTORY–WIRED AND MOUNTED TO FAN
2. UL 762 LISTED AND LABELED
3. ROOF CURB MODEL GPF–24–G30 WITH 1" INSULATION
4. CURB EXTENSION INTEGRAL TO MCD FAN PACKAGE
5. HINGED CURB CAP KIT WITH CABLES
6. 120VAC BACKDRAFT DAMPER
7. ROOF CURB MODEL GPI–19–G14 WITH 1" INSULATION AND DAMPER TRAY
8. NEMA 3R DISCONNECT SWITCH
9. EXTERNAL STEADY–STATE SPEED CONTROLLER
10. ROUND DUCT CONNECTOR
11. TWO (2) 10W COMPACT LED LAMPS
12. PRISMATIC LENS
13. WINDBAND EXTENSION ON FAN OUTLET
14. VARIGREEN 10VDC ELECTRONICALLY COMMUTATED MOTOR

NOTES:
1. NO SUBSTITUTIONS PERMITTED
2. TO ORDER ACCUREX EQUIPMENT CALL (888)325–6629 OR E–MAIL: MCD@ACCUREX.COM
3. ELECTRICAL CONTRACTOR SHALL PROVIDE DOOR SWITCH FOR LIGHT CONTROL
4. MECHANICAL CONTRACTOR SHALL FURNISH LINE VOLTAGE THERMOSTAT FOR FAN CONTROL. ELECTRICAL CONTRACTOR SHALL INSTALL THERMOSTAT.
5. CONNECT TO TIMECLOCK FOR FAN SHUT–OFF DURING UNOCCUPIED HOURS
6. REFER TO E3.2 FOR HOOD/FAN INTERLOCK DETAILS
7. UNIT SHALL BE INTERLOCKED WITH WAREWASHER SWITCHING CONTACT.

PACKAGED ROOFTOP UNIT SCHEDULE - DX/ELEC

TAG	AREA SERVED	NOMINAL TONNAGE	MINIMUM OA (CFM)	SUPPLY FAN: SUPPLY AIRFLOW (CFM)	SUPPLY FAN: EXT. S.P. (IN W.C.)	SUPPLY FAN: MHP	SUPPLY FAN: BHP	SUPPLY FAN: RPM	COOLING COIL (DX): ENTERING AIR DB °F	COOLING COIL (DX): ENTERING AIR WB °F	COOLING COIL (DX): LEAVING AIR DB °F	COOLING COIL (DX): LEAVING AIR WB °F	COOLING COIL (DX): COOLING CAPACITY (MBH) SENSIBLE	COOLING COIL (DX): COOLING CAPACITY (MBH) TOTAL	HEAT EXCHANGER (ELECTRICAL RESISTANCE): ENTERING AIR (DB °F)	HEAT EXCHANGER (ELECTRICAL RESISTANCE): LEAVING AIR (DB °F)	HEAT EXCHANGER (ELECTRICAL RESISTANCE): TOTAL CAPACITY (MBH) INPUT (KW)	HEAT EXCHANGER (ELECTRICAL RESISTANCE): TOTAL CAPACITY (MBH) OUTPUT	HEAT EXCHANGER (ELECTRICAL RESISTANCE): # OF STAGES	MINIMUM EFFICIENCY		WEIGHT (LBS.)*	UNIT POWER CONNECTION: VOLT.	PHASE	MCA	MOCP	MANUFACTURER	MODEL NO.	ACCESSORIES
RTU-1	KITCHEN	20	1,500	7,200	1.40	7.5	4.9	854	77.6	64.0	55.0	55.0	202.8	268.7	53.8	85	54	184	2	15.8	IEER	2,498	208	3	174	200	TRANE	T H J 240 * 3 S0 P	1,3,4,7,9,11,12,14,16,17,19,20,21
RTU-2	SUPPORT	6	800	2,175	0.80	1.0	0.9	886	79.7	65.6	55.0	55.0	56.8	72.6	42.9	85	27	92	2	16	IEER	1,175	208	3	94	100	TRANE	T H J 072 * 3 S0 K	1,3,4,7,8,9,11,12,13,14,17,19,20,21
RTU-3	DINING ROOM	12.5	1,330	4,500	1.0	3.0	2.0	793	78.8	66.1	55.0	55.0	110.0	154.1	47.8	85	54	184	2	15.3	IEER	1,507	208	3	145	175	TRANE	T H J 150 * 3 S0 P	1,3,4,7,8,9,11,12,14,17,19,20,21

ACCESSORIES:
1. DIFF. ENTHALPY ECONOMIZER
2. MOTORIZED O.A. DAMPER
3. BAROMETRIC RELIEF
4. MERV 13 FILTER
5. POWER EXHAUST
6. CO2 SENSOR FOR DCV
7. HUMIDITY CONTROL
8. SUPPLY AIR TEMPERING
9. TEMPERATURE SENSOR
10. COMBINED TEMP/HUMIDITY SENSOR
11. DISCONNECT SWITCH
12. FIELD WIRED 120V CONVENIENCE OUTLET
13. STAINLESS STEEL HEAT EXCHANGER
14. CONDENSER COIL PROTECTIVE COATING
15. EVAPORATOR COIL PROTECTIVE COATING
16. HAIL GUARD
17. RETURN AIR SMOKE DETECTOR
18. SUPPLY AIR SMOKE DETECTOR
19. 14" ROOF CURB
20. CONDENSATE DRAIN W/ P-TRAP
21. FLOAT SWITCH KIT

* NET WEIGHT ONLY - DOES NOT INCLUDE ADDITIONAL FACTORY OR FIELD INSTALLED OPTIONS / ACCESSORIES.

NOTES:
1. NO SUBSTITUTIONS PERMITTED.
2. TO ORDER TRANE EQUIPMENT, CALL (630) 400-4285 OR EMAIL: MCDONALDS@TRANE.COM
3. FACTORY INSTALLED DISCONNECT SWITCH IS NOT AVAILABLE WHEN MOCP IS 200 AMPS OR HIGHER. VERIFY WITH MANUFACTURER'S DOCUMENTATION PRIOR TO ORDERING.
4. MECHANICAL CONTRACTOR SHALL INSTALL SECONDARY ENTHALPY SENSOR IN RETURN AIR DUCT DROP & WIRE TO UNIT PER MAUFACTURERS INSTRUCTIONS.

BY / DESCRIPTION / DATE / REV

ENGINEER OF RECORD:
STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER No. 12662
LICENSED PROFESSIONAL ENGINEER
10/30/2024

PREPARED BY: CORE STATES GROUP
212 E. 36th Street, Suite 2, Bella Vista, AR 72712, 479.784.4450, core-states.com

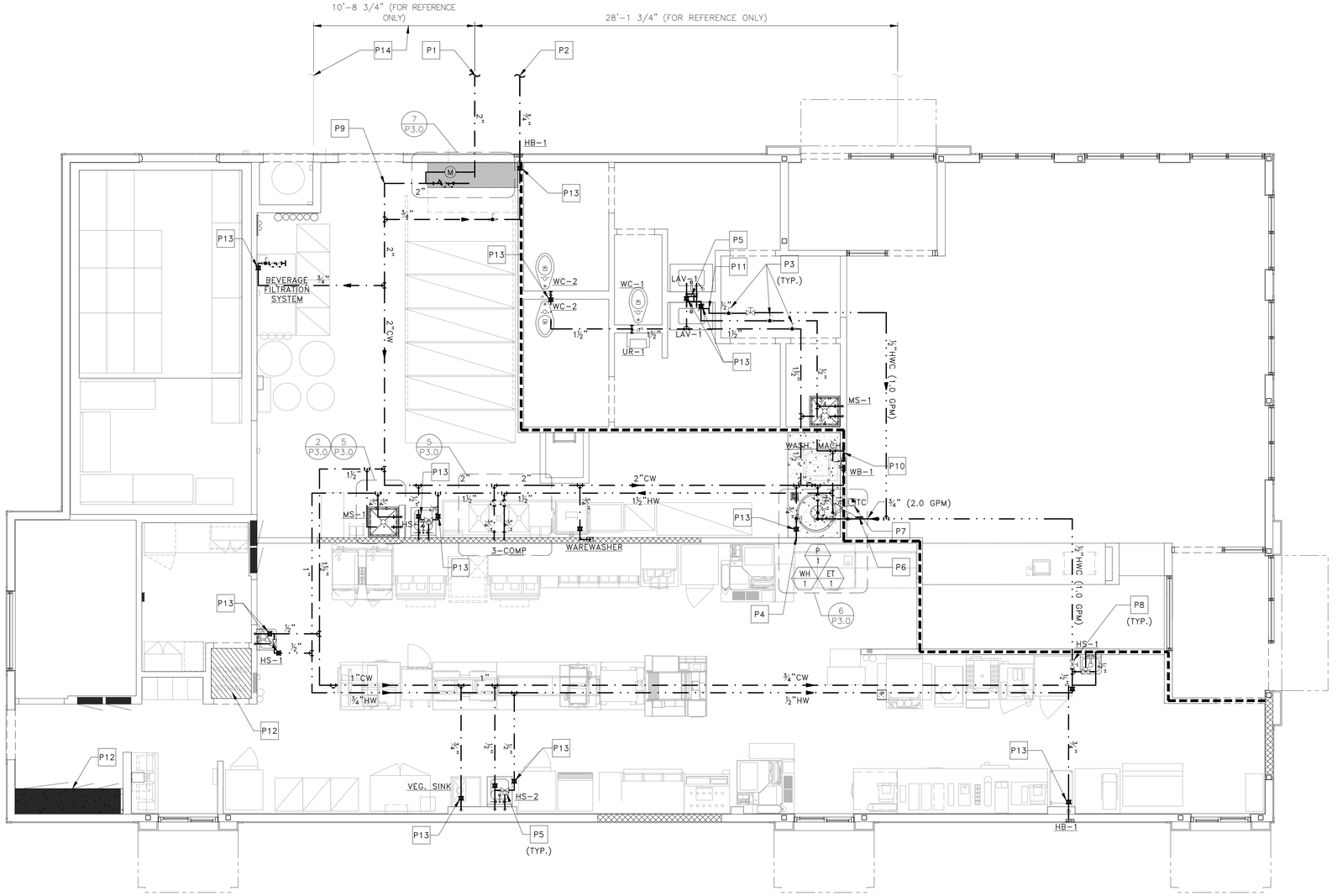
PREPARED FOR: McDonald's USA, LLC

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DRAWN BY: TP
STD ISSUE DATE: 2024 07
REVIEWED BY: D. LEIFFER
DATE ISSUED: 10/01/2024
C.S.G. PROJECT #: MCD.39450

TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH; WOOD TRUSS ROOF FRAMING; WALL PANEL/HARDIE BOARD EXTERIOR FINISH
NSN: 4.15.14
SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028–0178

SHEET NO.: 028–0178.00.0
M4.1
SCHEDULES



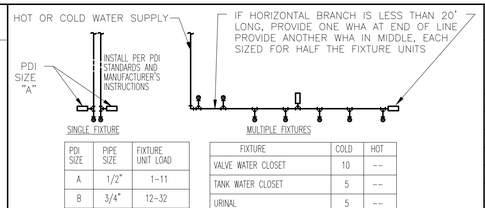
1 P1.0 DOMESTIC WATER PIPING
SCALE: 1/4" = 1'-0"

DRAWING NOTES

1. PIPING ROUTES AS SHOWN ARE GENERAL AND MAY VARY DUE TO FIELD CONDITIONS. COORDINATE ALL PIPE ROUTES WITH OTHER TRADES. MAKE SURE HOT WATER MAIN LOOP REMAINS WITHIN 10 FT OF FIXTURE FOR ENERGY CODE PURPOSE.
2. ALL WATER DISTRIBUTION PIPING SHALL BE INSULATED. INSULATION NOT SHOWN FOR CLARITY. SEE PLUMBING NOTES FOR INSULATION REQUIREMENTS, SHEET M4.0, "DOMESTIC SUPPLY SYSTEMS", NOTE 18.

KEYED NOTES

- P1 INCOMING UNDERGROUND WATER SERVICE (SEE SITE PLAN FOR CONTINUATION). WATER PIPING FROM THIS POINT TO CEILING PENETRATION INSIDE BUILDING SHALL BE COPPER.
- P2 COLD WATER UNDERGROUND TO YARD HYDRANT (HB-2) IN TRASH CORRAL. SEE SITE PLAN FOR CONTINUATION.
- P3 SHUT-OFF VALVE FOR RESTROOM ISOLATION. SEE VALVE SCHEDULE. ALL SHUT-OFF VALVES SHALL BE LOCATED OVER SUSPENDED CEILINGS FOR ACCESSIBILITY. DO NOT LOCATE IN AREAS WITH DRYWALL CEILINGS.
- P4 ¾" COLD WATER UP TO ROOF HYDRANT.
- P5 FOR MIXING VALVE LOCATIONS AND INSTALLATION DETAILS ON PUBLIC LAVATORIES, SEE DETAIL 3 ON DRAWING P3.0. FOR PRIVATE HAND SINKS OR LAVS, MIXING VALVES FOR INFORMATIONAL PURPOSES.
- P6 PIPE-MOUNTED AQUASTAT TO SHUT PUMP DOWN WHEN RECIRULATION TEMPERATURE REACHES 140°F. SEE DETAIL 6 ON DRAWING P3.0.
- P7 TIME CLOCK TO SHUT PUMP AND WATER HEATER DOWN DURING UNOCCUPIED HOURS. SEE ELECTRICAL DRAWINGS FOR WIRING DETAIL.
- P8 BALANCING VALVE FOR RECIRCULATION SYSTEM. SEE VALVE SCHEDULE. ALL BALANCING VALVES SHALL BE LOCATED OVER SUSPENDED CEILINGS FOR ACCESSIBILITY. DO NOT LOCATE IN AREAS WITH DRYWALL CEILINGS.
- P9 WATER PIPING AFTER CEILING PENETRATION CAN TRANSITION TO CPVC OR PEX WHERE PERMITTED BY CODE.
- P10 PROPERLY SEAL ALL PIPE PENETRATIONS THROUGH DRAFT STOP WALL (TYP.)
- P11 HOT WATER RECIRCULATION SHALL CONNECT WITHIN 6" OF SUPPLY STUB OUT TO FIXTURE.
- P12 UTILITIES SHALL NOT BE ROUTED ABOVE THE TECH. CLOSET AND THE SWITCHGEAR.
- P13 INSTALL WATER-HAMMER ARRESTOR WHERE QUICK-CLOSING VALVES ARE UTILIZED. WATER-HAMMER ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. WATER-HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010.
- P14 MAINTAIN A MINIMUM OF 10'-0" CLEARANCE FROM THE INCOMING DOMESTIC WATER TO THE GREASE WASTE AND SANITARY LINES.



PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32

FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3
HOSE BIBB	2	--
SODA FACTORY	10	--
WAREWASHER	4	--

PC TO PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

DETAIL 2 / P1.0
WATER-HAMMER ARRESTER (TYP.)
NOT TO SCALE

FIXTURE COUNT - IPC

NO.	FIXTURE DESCRIPTION	SUPPLY CONNECTIONS WSFU	COLD	HOT	TOTAL
1	VEGETABLE PREP SINK	4	¾"	–	4
4	HAND SINK	1	½"	½"	4
4	HOSE BIBB	3	¾"	–	12
1	SODA FACTORY	10	1"	–	10
1	KITCHEN SINK (3-COMP)	4	¾"	¾"	4
2	MOP SINK	2	¾"	¾"	4
2	LAVATORY	1	½"	½"	2
1	URINAL	5	1"	–	5
3	WATER CLOSET	5	1 ½"	–	15
1	WASHING MACHINE	4	¾"	¾"	4
1	WAREWASHER	4	¾"	–	4
				TOTAL:	68

(57 GPM)

BY	DESCRIPTION	DATE	REV

ENGINEER OF RECORD:
STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER No.12662 LICENSED PROFESSIONAL ENGINEER
10/30/2024

PREPARED BY:
CORE STATES GROUP
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Bentonville, AR 72712
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corestates.com

PREPARED FOR:
McDonald's USA, LLC

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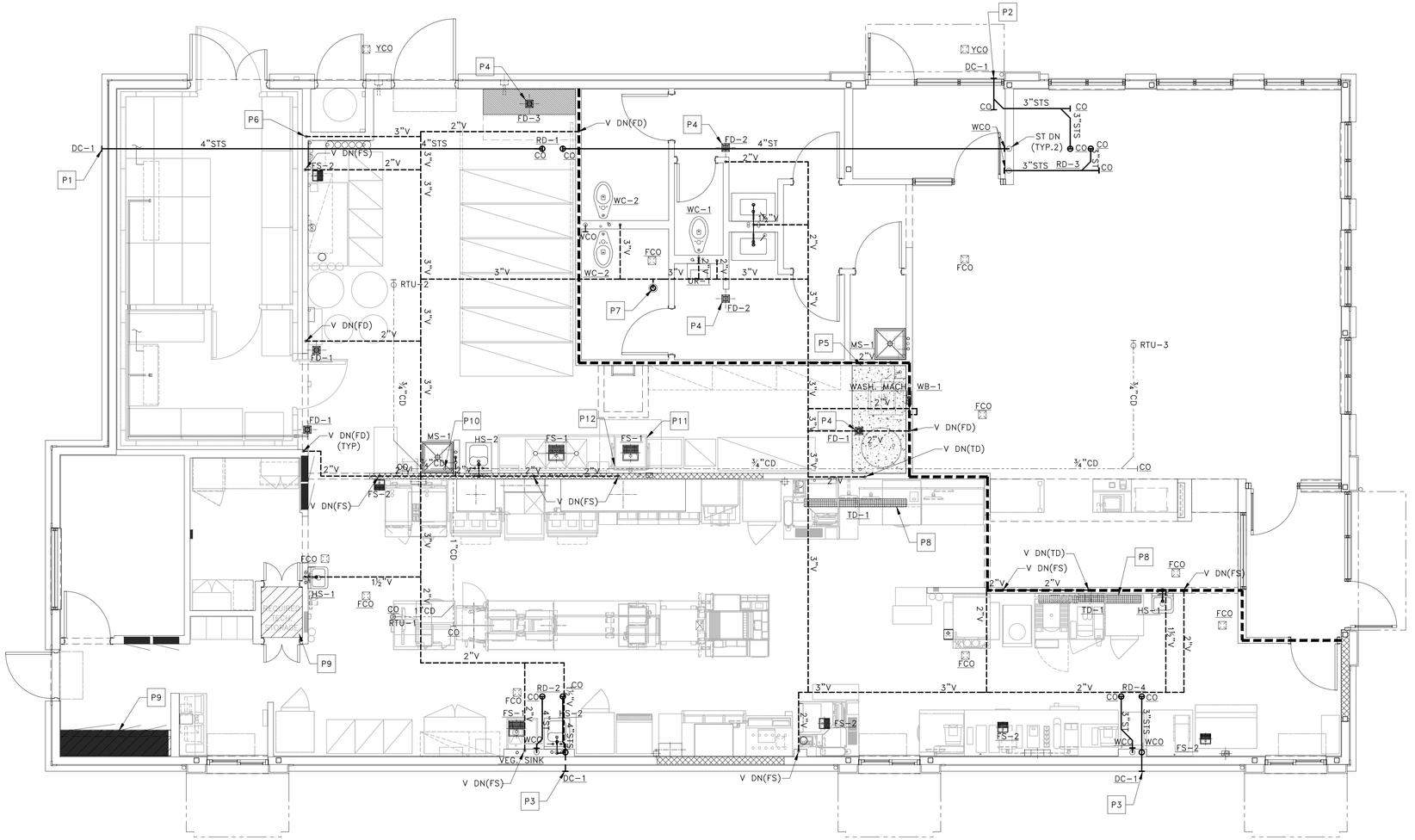
DRAWN BY	ES
STD ISSUE DATE	2024 07
REVIEWED BY	D. LEIFFER
DATE ISSUED	10/01/2024
C.S.G. PROJECT #	MCD.39450

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN 4.5%14	SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO. 028-0178.00.0
P1.0
DOMESTIC WATER PIPING



1 P1.2 VENT & STORM PIPING PLAN

SCALE: 1/4" = 1'-0"

DRAWING NOTES

1. PIPING ROUTES ARE GENERAL AND MAY VARY DUE TO FIELD CONDITIONS. COORDINATE ALL PIPE ROUTES WITH OTHER TRADES.
2. WALL CLEAN-OUTS FOR WASTE PIPING NOT SHOWN FOR CLARITY. SEE GENERAL NOTES FOR REQUIREMENTS.
3. ONLY MAIN FLOOR CLEAN-OUTS ARE SHOWN FOR CLARITY. SEE GENERAL NOTES FOR REQUIREMENTS.
4. ALL HORIZONTAL STORM DRAINAGE PIPING SHALL BE INSULATED TO PREVENT CONDENSATION. INSULATION NOT SHOWN FOR CLARITY. SEE PLUMBING NOTES FOR INSULATION REQUIREMENTS.

KEYED NOTES

- P1 TERMINATE OVERFLOW DRAIN AS HIGH AS POSSIBLE WITH DOWNSPOUT COVER.
- P2 TERMINATE OVERFLOW DRAIN ABOVE TRELLIS WITH DOWNSPOUT COVER. BOTTOM OF DOWNSPOUT OUTLET PIPE SHALL BE AT LEAST 3" BUT NOT MORE THAN 8" ABOVE TOP OF TRELLIS.
- P3 TERMINATE BOTTOM OF OVERFLOW DRAIN A MINIMUM OF 12" ABOVE GRADE WITH DOWNSPOUT COVER.
- P4 PROVIDE PROSET TRAP GUARD® FOR FLOOR DRAIN.
- P5 TOP OF CONCRETE SLAB IS 0'-6" A.F.F.
- P6 VENT FROM GREASE INTERCEPTOR. SEE SITE PLAN FOR CONTINUATION. COORDINATE PIPE ROUTING WITH LOCATION OF GREASE INTERCEPTOR.
- P7 4" VENT UP THROUGH ROOF WITH A 4"x5" VENT CAP
- P8 REFERENCE MANUFACTURER INSTALLATION GUIDE FOR LAYOUT AND SLOPING GUIDELINES PRIOR TO INSTALL AND POURING THE SLAB.
- P9 UTILITIES SHALL NOT BE ROUTED ABOVE THE TECH. CLOSET AND THE SWITCHGEAR.
- P10 CONDENSATE LINE FROM RTUs DOWN TO DRAIN AT MOP SINK INDIRECT WITH AIR GAP 2 x DIAMETER, TERMINATE PIPE ABOVE FLOOD RIM. FURNISHED AND INSTALLED BY PC. SEE COORDINATION SCHEDULE ON P4.1 & M4.1.
- P11 CONTRACTOR SHALL ROUTE ½" OD 304 S/S PIPE (PROVIDED BY OTHERS) FROM TYPE II EXHAUST HOOD TO FLOOR SINK.
- P12 CONTRACTOR SHALL INSTALL DRAIN PIPE AND AIR GAP KIT (PROVIDED BY OTHERS). CONNECT DRAIN HOSES FROM WAREWASHER TO DRAIN PIPE PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. REFER TO DETAIL 9/P3-0 FOR FURTHER DETAILS.

STORM PIPE SIZING

RAINFALL = 2.5 IN./HR

VERTICAL LEADERS

ROOF DRAIN	ROOF AREA SQ. FT.	SIZE IN.
RD-1	1,317	4
RD-2	1,426	4
RD-3	811	3
RD-4	822	3
TOTAL	4,376	

HORIZONTAL PIPING (SLOPE ⅛" PER FOOT)

ROOF DRAIN	ROOF AREA SQ. FT.	SIZE IN.
RD-2 & RD-4	2,248	4
RD-2, RD-3 & RD-4	3,059	6
RD-1, RD-2, RD-3 & RD-4	4,376	6

ENGINEER OF RECORD:
STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER No.12662 LICENSED
PROFESSIONAL ENGINEER
10/30/2024

BY	DESCRIPTION	DATE	REV

PREPARED BY: CORE STATES GROUP
212 3E Main Street Suite 2 Bellevue, WA 22312 479.784.4400 core3dm.com

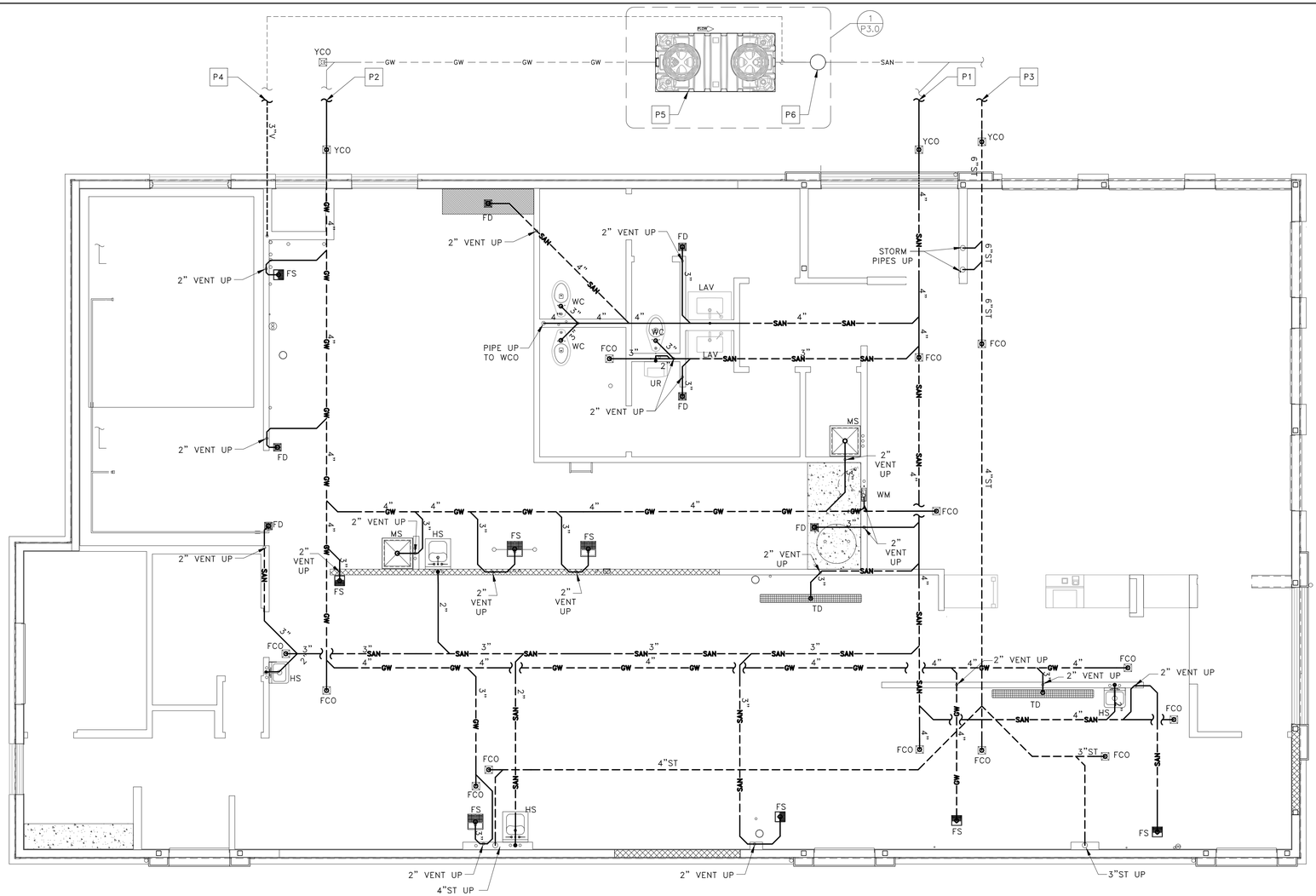
PREPARED FOR: McDonald's USA, LLC

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DRAWN BY: ES | STD ISSUE DATE: 2024 07 | REVIEWED BY: D. LEIFFER | DATE ISSUED: 10/01/2024 | C.S.G. PROJECT #: MCD.39450

TITLE: 2023 STANDARD BUILDING - BB20 4584-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH; WOOD TRUSS ROOF FRAMING; WALL PANEL/HARDIE BOARD EXTERIOR FINISH
NSN:4354 | SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C:028-0178

SHEET NO.: 028-0178.00.0 P1.2
VENT & STORM PIPING PLAN



1 P1.3 UNDERFLOOR PLUMBING PLAN

SCALE: 1/4" = 1'-0"

DRAWING NOTES

1. PIPING ROUTES ARE GENERAL AND MAY VARY DUE TO FIELD CONDITIONS. COORDINATE ALL PIPE ROUTES WITH OTHER TRADES.
2. WALL CLEAN-OUTS FOR WASTE PIPING NOT SHOWN FOR CLARITY. SEE GENERAL NOTES FOR REQUIREMENTS.
3. ONLY MAIN FLOOR CLEAN-OUTS ARE SHOWN FOR CLARITY. SEE GENERAL NOTES FOR REQUIREMENTS.

KEYED NOTES

- P1 SANITARY LINE TO SANITARY SEWER. SEE SITE PLAN FOR CONTINUATION.
- P2 GREASE LINE TO EXTERIOR GREASE INTERCEPTOR. SEE SITE PLAN FOR CONTINUATION
- P3 STORM LINE TO STORM SYSTEM. SEE SITE PLAN FOR CONTINUATION.
- P4 VENT FROM GREASE INTERCEPTOR. SEE SITE PLAN FOR CONTINUATION. COORDINATE PIPE ROUTING WITH LOCATION OF GREASE INTERCEPTOR.
- P5 GREASE INTERCEPTOR LOCATION SHOWN FOR REFERENCE ONLY. COORDINATE GREASE INTERCEPTOR LOCATION WITH CIVIL ENGINEER AND SITE CONTRACTOR.
- P6 INSTALL SAMPLING PORT SCHIER, MODEL SV10 FOR SCHIER HYDROMECHANICAL GREASE INTERCEPTOR.

WASTE PIPE SIZING - IPC

FIXTURE TYPE	TRAP SIZE	DFU	QUANTITY	TOTAL
URINAL	2 IN.	4	1	4
WATER CLOSET	3 IN.	4	3	12
LAVATORY	1¼ IN.	1	2	2
WASH SINK (HAND SINK)	1½ IN.	2	4	8
FLOOR DRAIN OR SINK	3 IN.	5	5	25
FLOOR DRAIN OR SINK	4 IN.	6	1	6
EMERGENCY FLOOR DRAIN (BATHROOMS)	3 IN.	0	2	0
			TOTAL	57

GREASE PIPE SIZING - IPC

SERVICE SINK (MOP SINK)	3 IN.	3	2	6
FLOOR DRAIN OR SINK	3 IN.	5	7	35
FLOOR DRAIN OR SINK	4 IN.	6	1	6
WASHING MACHINE	2 IN.	3	1	3
			TOTAL	50

STORM PIPE SIZING

RAINFALL = 2.5 IN./HR

VERTICAL LEADERS

ROOF DRAIN	ROOF AREA SQ. FT.	SIZE IN.
RD-1	1,317	4
RD-2	1,426	4
RD-3	811	3
RD-4	822	3
TOTAL	4,376	

HORIZONTAL PIPING (SLOPE ⅛" PER FOOT)

ROOF DRAIN	ROOF AREA SQ. FT.	SIZE IN.
RD-2 & RD-4	2,248	4
RD-2, RD-3 & RD-4	3,059	6
RD-1, RD-2, RD-3 & RD-4	4,376	6

NO.	DESCRIPTION	DATE	REV	BY

ENGINEER OF RECORD:

STATE OF NEW HAMPSHIRE · DAVID M. LEIFFER No.12662 · LICENSED PROFESSIONAL ENGINEER

10/30/2024

PREPARED BY:
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212 E. 36th Street
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Baltimore, MD 21212
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PREPARED FOR:
McDonald's USA, LLC

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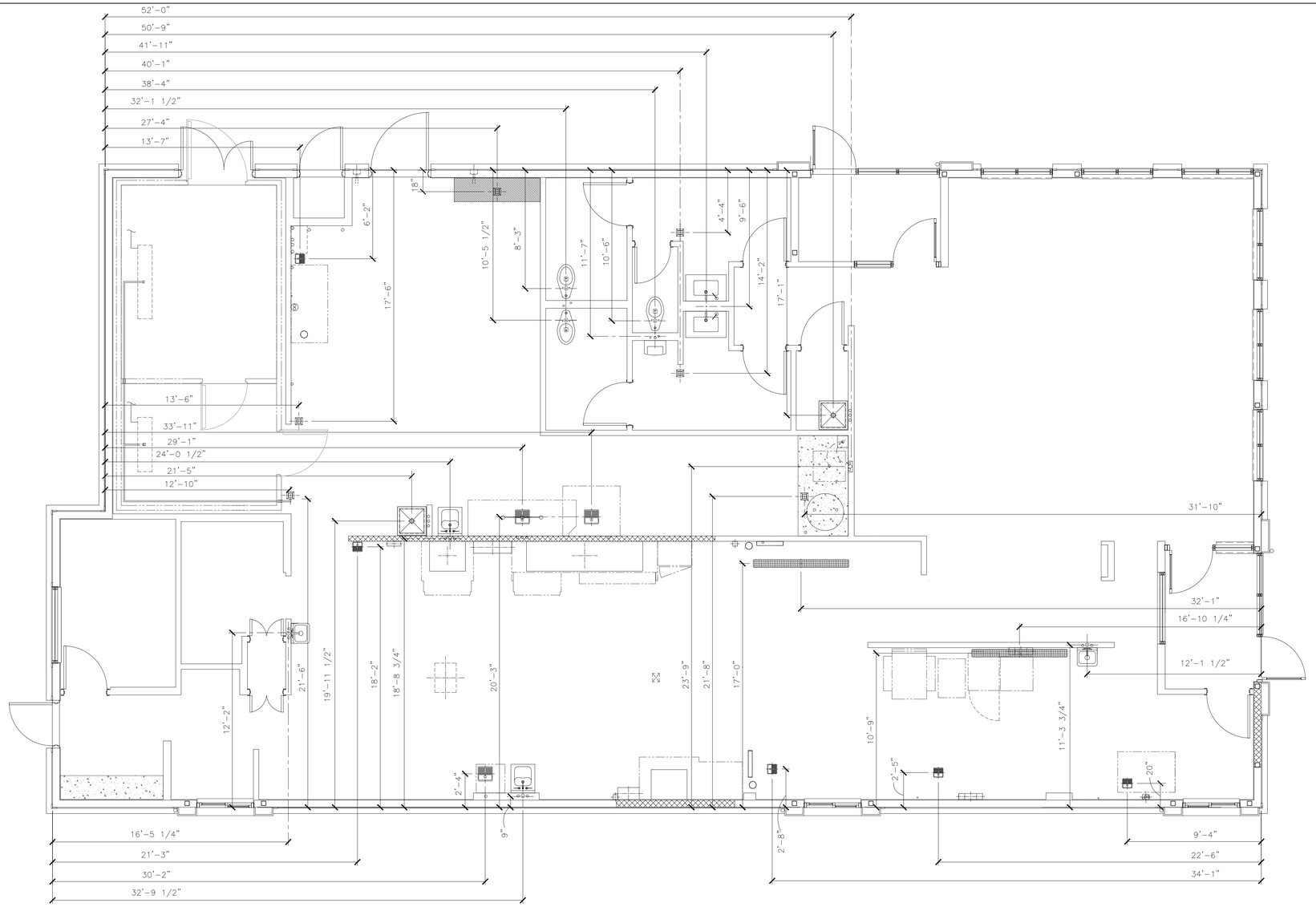
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DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
ES	2024 07	D. LEIFFER	10/01/2024	MCD.39450

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	DOVER, NH
NSN 4.35.14	4 DEERFIELD DR.
LIC-028-0178	

SHEET NO.: 028-0178.00.0
P1.3
UNDERGROUND PLUMBING



1 / P1.4 UNDERGROUND ROUGH-IN

SCALE: 1/4" = 1'-0"

DRAWING NOTES

1. THIS PLAN IS PROVIDED AS A GUIDE FOR THE PLUMBING CONTRACTOR. ALL DIMENSIONS ARE ROUNDED TO THE NEAREST ¼" AND ARE TAKEN FROM THE OUTSIDE EDGE OF THE FOUNDATION WALL TO CENTERLINE OF SLAB PENETRATION.

BY	DESCRIPTION	DATE	REV

ENGINEER OF RECORD:

STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER
No. 12662
LICENSED PROFESSIONAL ENGINEER
10/30/2024

PREPARED BY:
CORE STATES GROUP
212 SE Main Street
Suite 2
Bentonville, AR 72712
479.986.4400
corestates.com

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PREPARED FOR:
McDonald's USA, LLC

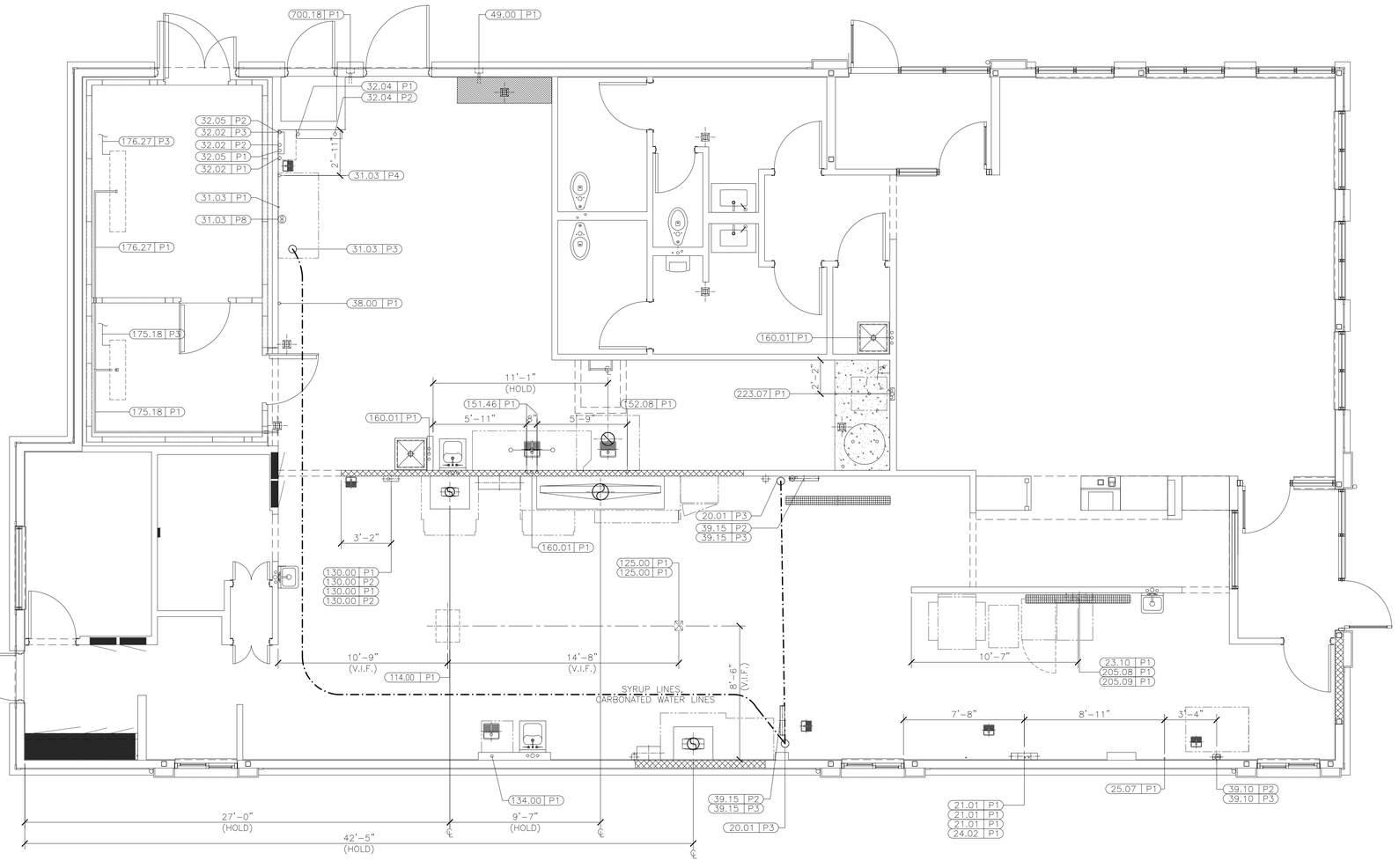
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DRAWN BY	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
ES	D. LEIFFER	10/01/2024	MCD.39450
STD ISSUE DATE 2024 07			

TITLE: 2023 STANDARD BUILDING - BB20 4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	4 DERRFIELD DR. DOVER, NH
NSN 4.35.14	
L/C 028-0178	

SHEET NO. 028-0178.00.0
P1.4
UNDERGROUND ROUGH-IN



1 P1.6 OVERHEAD ROUGH-IN

SCALE: 1/4" = 1'-0"

VIF = Verify in Field
PC = Plumbing Contractor
BSI = Beverage System Installer

PLUMBING SCHEDULE

TAG #	QTY	DESCRIPTION	GAS TYPE	GAS BTU	GAS SIZE	HW	CW	MISC PLBG	HGT AFF	DRAIN	REQUIREMENTS & REMARKS
020.01P3	2	AUTOMATED BEVERAGE SYSTEM 2.0	–	–	–	–	–	SODA BUNDLE	SEE RMKS	–	DN CHASE FROM SODA SYSTEM – "T" FROM D/T – BSI TO MAKE FINAL CONNECTIONS PER LOCAL CODES
021.01P1	3	COFFEE BREWER (GLASS DECANTERS)	–	–	–	–	1/4" TRTD	–	SEE RMKS	–	DN CHASE FROM SODA SYSTEM – IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONN CW LINE PER LOCAL CODES. 1/4" R.O. WATER OPTIONAL
023.10P1	1	ESPRESSO BREWER	–	–	–	–	3/8" R.O.	–	SEE RMKS	3/8" IND	DN CHASE FROM R.O. SYSTEM – IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONN CW LINE PER LOCAL CODES
024.02P1	1	JUICE DISPENSER	–	–	–	–	1/2" FLTR	–	SEE RMKS	–	–
025.07P1	1	INFUSION TEA BREWER – MIS	–	–	–	–	1/2" TRTD	3/8" CO2	SEE RMKS	–	DN CHASE FROM SODA SYSTEM – IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONN CW LINE PER LOCAL CODES
031.03P1	1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS)	–	–	–	–	–	3/8" OUTLET	SEE RMKS	–	FLEX LINE OVERHEAD TO VARIOUS EQUIP. BSI TO MAKE FINAL CONN PER LOCAL CODES
031.03P3	1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS)	–	–	–	–	–	SODA BUNDLE	SEE RMKS	–	OVERHEAD TO SODA TOWER CHASE(S) – BSI TO MAKE FINAL CONNECTIONS PER LOCAL CODES
031.03P4	1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS)	–	–	–	–	3/4"	–	1'–6"	3/4" IND	BSI TO MAKE CONNECTION FROM BACKFLOW PREVENTER (VERIFY HEIGHT IN FIELD)
031.03P8	1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS)	–	–	–	–	–	REFRIG LINES	SEE RMKS	–	FROM REMOTE CONDENSING UNIT
032.02P1	1	REVERSE OSMOSIS WATER FILTRATION SYSTEM – TANKLESS	–	–	–	–	3/8" FLTR	–	SEE RMKS	–	FLEX LINE OVERHEAD FROM SODA SYSTEM –BSI TO MAKE FINAL CONN PER LOCAL CODES
032.02P2	1	REVERSE OSMOSIS WATER FILTRATION SYSTEM – TANKLESS	–	–	–	–	–	3/8" OUTLET	SEE RMKS	–	FLEX LINE OVERHEAD TO RAPID STEAMER, ESPRESSO, AND COFFEE (OPT.) –BSI TO MAKE FINAL CONN PER LOCAL CODES
032.02P3	1	REVERSE OSMOSIS WATER FILTRATION SYSTEM – TANKLESS	–	–	–	–	–	–	–	1/4" WASTE	–
032.04P1	1	WATER FILTRATION SYSTEM	–	–	–	–	–	3/4" INLET	6'–0"	–	–
032.04P2	1	WATER FILTRATION SYSTEM	–	–	–	–	–	3/4" OUTLET	–	–	3/4" GHT RINSE CONN. FLEX LINE OVHD. TO RAPID STEAMER, ESPRESSO, & COFFEE (OPT.) –BSI TO MAKE FINAL CONN PER LOCAL CODE
032.05P1	1	WATER FILTRATION SYSTEM	–	–	–	–	–	3/4" INLET	SEE RMKS	–	FLEX LINE OVERHEAD FROM R.O. SYSTEM –BSI TO MAKE FINAL CONN PER LOCAL CODES
032.05P2	1	WATER FILTRATION SYSTEM	–	–	–	–	–	3/4" OUTLET	SEE RMKS	–	FLEX LINE OVERHEAD TO COMBI OVENS AND STAGING CABINET –BSI TO MAKE FINAL CONN PER LOCAL CODES
038.00P1	1	CLEAN IN PLACE PANEL	–	–	–	–	1/2" FLTR	–	6'–0"	–	FOR CLEANING BULK COKE TANKS. INSTALL HEIGHT TO BOTTOM OF UNIT
039.10P2	1	ICE MACHINE – 1400 LB.	–	–	–	–	1/2" TRTD	–	SEE RMKS	3/4" IND	WATER LINE OVERHEAD FROM SODA SYSTEM – BSI TO MAKE FINAL CONNECTIONS PER LOCAL CODES

VIF = Verify in Field
PC = Plumbing Contractor
BSI = Beverage System Installer

PLUMBING SCHEDULE

TAG #	QTY	DESCRIPTION	GAS TYPE	GAS BTU	GAS SIZE	HW	CW	MISC PLBG	HGT AFF	DRAIN	REQUIREMENTS & REMARKS
039.10P3	1	ICE MACHINE – 1400 LB.	–	–	–	–	–	REFRIG LINES	–	–	REFRIGERATION LINES OVERHEAD FROM REMOTE CONDENSING UNIT
039.15P2	2	ICE MACHINE – 1000 LB.	–	–	–	–	1/2" TRTD	–	SEE RMKS	3/4" IND	WATER LINE OVERHEAD FROM SODA SYSTEM – BSI TO MAKE FINAL CONNECTIONS PER LOCAL CODES
039.15P3	2	ICE MACHINE – 1000 LB.	–	–	–	–	–	REFRIG LINES	–	–	REFRIGERATION LINES OVERHEAD FROM REMOTE CONDENSING UNIT
049.00P1	1	CO2 FILL BOX	–	–	–	–	–	–	3'–4"	–	HEIGHT IS TO BOTTOM OF FILL BOX;SUPPLIED BY MANUFACTURER;INSTALLED BY G.C. SEE BUILDING ELEVATIONS.
114.00P1	1	HUMIDIFIED HOLDING CABINET	–	–	–	–	3/8" R.O.	–	SEE RMKS	–	BSI EXTENDS CW LINE OVERHEAD FROM R.O. SYSTEM & TERM. W/QUICK DISCONN. AND SHUTOFF
125.00P1	2	RAPID BUN STEAMER	–	–	–	–	3/8" R.O.	–	SEE RMKS	–	BSI EXTENDS CW LINE FROM R.O. SYSTEM & TERM. W/QUICK DISCONN.
130.00P1	2	COMBI OVEN	–	–	–	–	1/2" FLTR	–	SEE RMKS	1 1/2" IND	BSI EXTENDS CW LINE OVERHEAD FROM SODA SYSTEM & TERM. W/QUICK DISCONN. AND SHUTOFF
130.00P2	1	COMBI OVEN	–	–	–	–	3/8" R.O.	–	SEE RMKS	–	BSI EXTENDS CW LINE OVERHEAD FROM R.O. SYSTEM & TERM. W/QUICK DISCONN. AND SHUTOFF
134.00P1	1	VEGETABLE SINK	–	–	–	–	3/4"	–	1'–10"	1–1/2" IND	–
151.46P1	1	SOILED DISHTABLE – RIGHT HAND – 90.5" WIDE	–	–	–	3/4" 140	3/4"	–	1'–6"	–	PC MAKES FINAL CONNECTIONS PER LOCAL CODE
152.08P1	1	WAREWASHER – HIGH TEMP	–	–	–	–	3/4"	–	SEE RMKS	1" INDIRECT	PC TO PROVIDE HW, CW, INDIRECT DRAIN PIPING AND MAKE ALL FINAL CONNECTIONS. CW @ 1'–0" AFF, DRAIN @ 36"
160.01P1	3	CHEMICAL SYSTEM	–	–	–	3/4" 110	–	–	SEE RMKS	–	PC TO PROVIDE 3/4" MHT. FINAL CONNECTIONS BY EQUIPMENT INSTALLER PER LOCAL CODE, SEE SHEET P3.0 FOR INSTALLATION HEIGHT
175.18P1	1	COOLER EVAPORATOR	–	–	–	–	–	–	–	3/4" COND.	PC TO ROUTE CONDENSATE DRAIN LINE TO FLOOR DRAIN. PC TO LIQUID–TIGHT SEAL OPENING FOR LINE EXITING BOX
175.18P3	1	COOLER EVAPORATOR	–	–	–	–	–	REFRIG LINES	–	–	RUN TO REMOTE CONDENSING UNIT–INSULATE FULL RUN LENGTH –INSTALLED BY REFRIG. CONTRACTOR
176.27P1	1	FREEZER EVAPORATOR	–	–	–	–	–	–	–	3/4" COND.	PC TO ROUTE CONDENSATE DRAIN LINE TO FLOOR DRAIN. PC TO LIQUID–TIGHT SEAL OPENING FOR LINE EXITING BOX. HEAT TAPE BY REF.
176.27P3	1	FREEZER EVAPORATOR	–	–	–	–	–	REFRIG LINES	–	–	RUN TO REMOTE CONDENSING UNIT–INSULATE FULL RUN LENGTH–INSTALLED BY REFRIG. CONTRACTOR
205.08P1	1	BIC MACHINE	–	–	–	–	1/2" FLTR	–	SEE RMKS	1" IND	DN CHASE. IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONNECT LINES PER LOCAL CODES
205.09P1	1	FROZEN BEVERAGE DISPENSER	–	–	–	–	1/2" FLTR	3/8" CO2	SEE RMKS	–	DN CHASE. IF NO CHASE RUN IN 2"COND TO JB –BSI TO CONNECT LINES PER LOCAL CODES
223.07P1	1	WASHER	–	–	–	3/4" 140	3/4"	–	4'–0"	1 1/2" D	SEE PLUMBING DWGS FOR WALL BOX. INSTALL HEIGHT IS TO BOTTOM OF THE BOX
700.18P1	1	BULK OIL FILL BOX	–	–	–	–	–	–	3'–4"	–	HEIGHT IS TO BOTTOM OF FILL BOX;SUPPLIED BY MANUFACTURER;INSTALLED BY G.C. SEE BUILDING ELEVATIONS.

ENGINEER OF RECORD:

STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER No.12662 LICENSED
PROFESSIONAL ENGINEER
10/30/2024

REV	DATE	DESCRIPTION	BY

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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	ES
STD. ISSUE DATE	2024 07
REVIEWED BY	D. LEIFFER
DATE ISSUED	10/01/2024
C.S.G. PROJECT #	MCD.39450

TITLE: 2023 STANDARD BUILDING – B20
4584–WOOD/WOOD

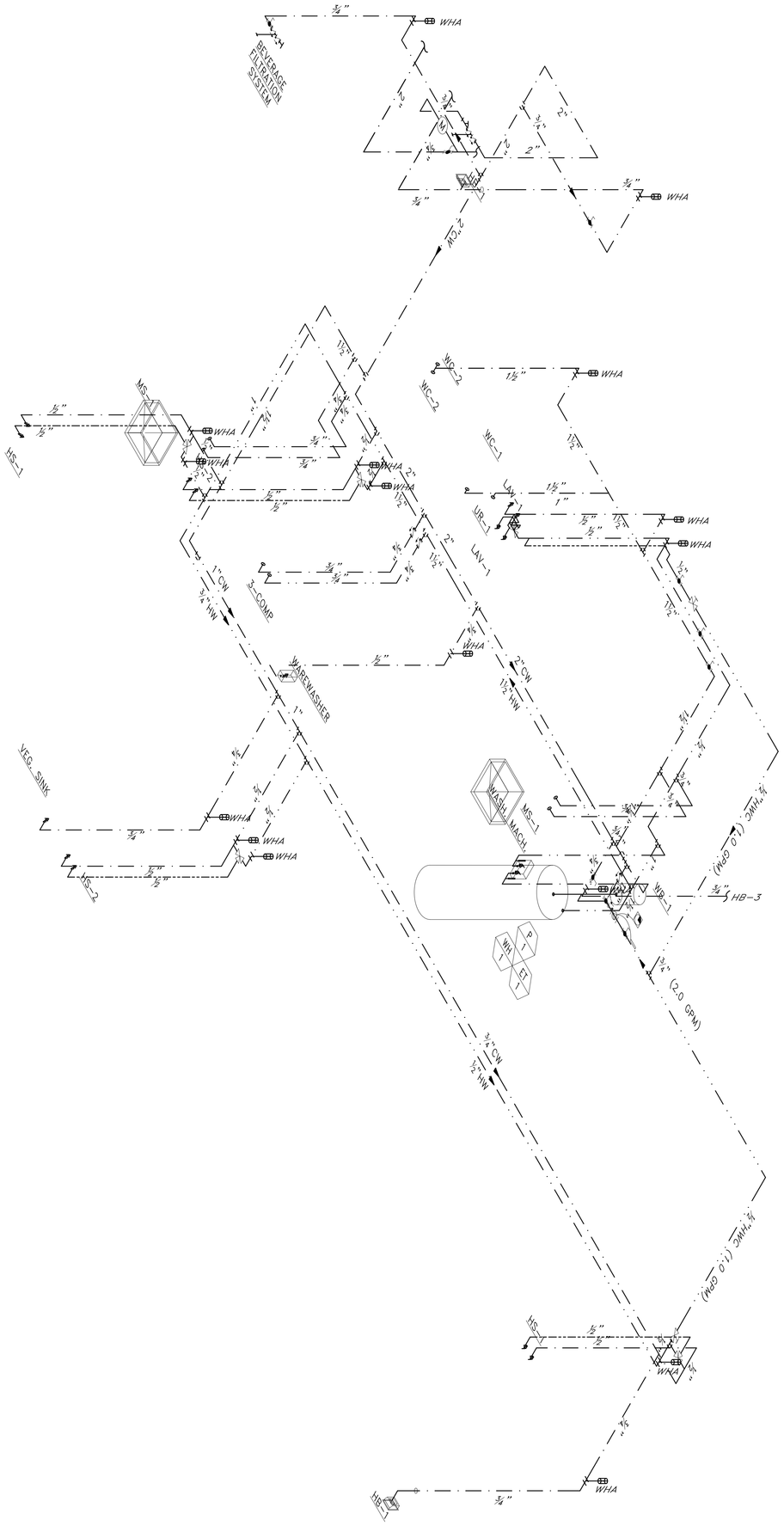
DESCRIPTION	WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
	WOOD TRUSS ROOF FRAMING
	WALL PANEL/HARDIE BOARD EXTERIOR FINISH
NSN 4.35.14	SITE ADDRESS 4 DERFIELD DR. DOVER, NH
LIC 028–0178	

SHEET NO. 028–0178.00.0
P1.6
OVERHEAD ROUGH–IN

1 P2.0

SCALE: NONE

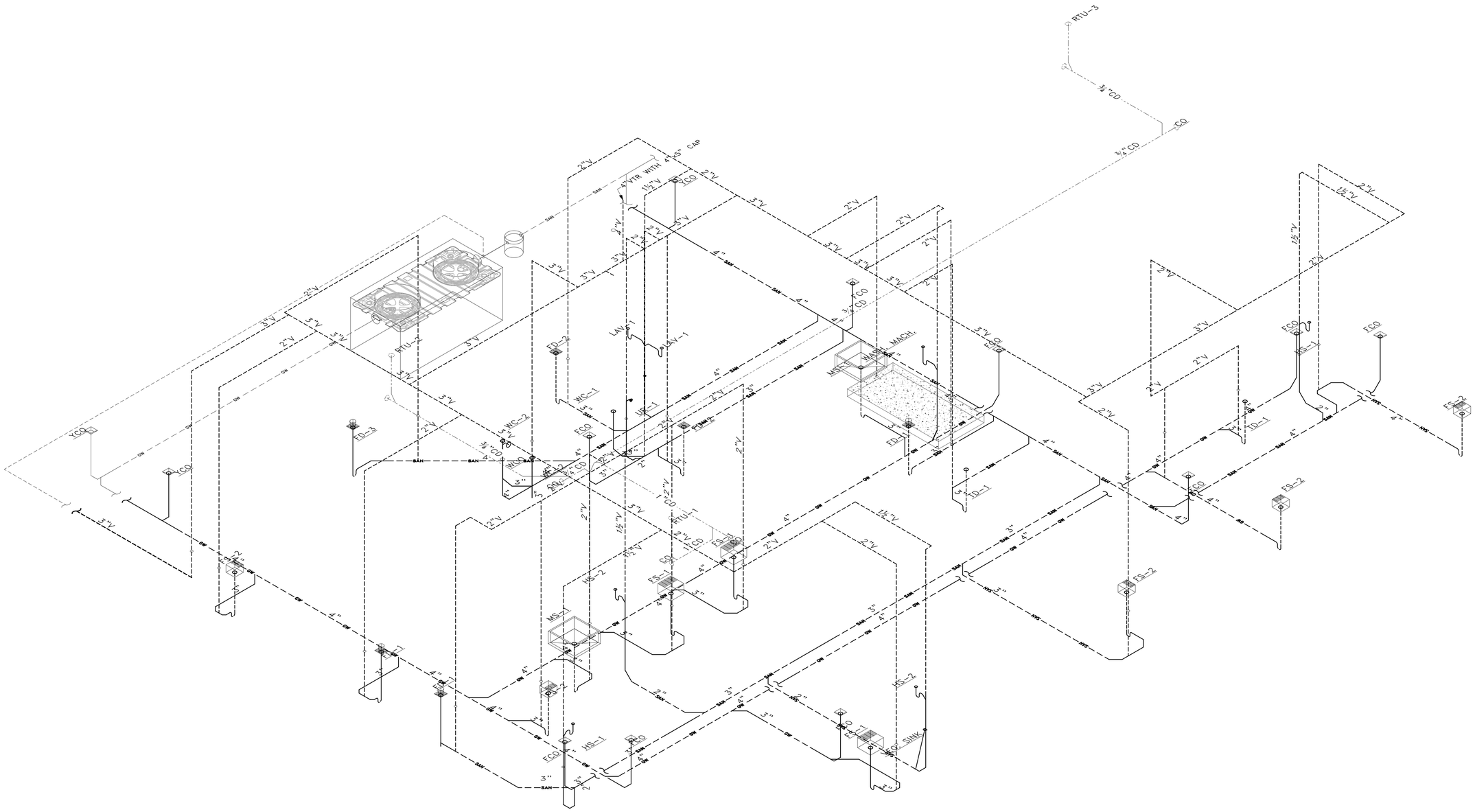
DOMESTIC WATER PIPING ISOMETRIC



SHEET NO.	TITLE	DRAWN BY	PREPARED FOR:	© 2024 McDonald's Corporation	PREPARED BY:				
DOMESTIC WATER ISOMETRIC	2023 STANDARD BUILDING – BB20 4584–WOOD/WOOD	ES	McDonald's USA, LLC	These drawings and specifications are the confidential and proprietary property of McDonald's USA, LLC and shall not be copied or reproduced without written authorization. The contract documents were prepared for use on this specific site in conjunction with its issue date and are not suitable for use on a different site or at a later time. Use of these drawings for reference or example on another project requires the services of properly licensed architects and engineers. Reproduction of the contract documents for reuse on another project is not authorized.	CORE STATES GROUP 212 SE 34th Street Suite 2 Bentonville, AR 72712 479.986.4400 core-states.com				
P2.0	DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH WOOD TRUSS ROOF FRAMING WALL PANEL/HARDIE BOARD EXTERIOR FINISH	STD ISSUE DATE 2024 07							
028-0178.00.0	NSN: 43514 L/C: 028-0178	REVIEWED BY D. LEIFFER							
	SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH	DATE ISSUED 10/01/2024							
		C.S.G. PROJECT # MCD.39450							

ENGINEER OF RECORD:

REV	DATE	DESCRIPTION	BY



1 P2.1 WASTE & VENT PIPING ISOMETRIC

SCALE: NONE

REV	DATE	DESCRIPTION	BY

ENGINEER OF RECORD:

STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER No.12662 LICENSED
PROFESSIONAL ENGINEER
10/30/2024

PREPARED BY:

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PREPARED FOR:

McDonald's USA, LLC

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DRAWN BY	ES
STD ISSUE DATE	2024 07
REVIEWED BY	D. LEIFFER
DATE ISSUED	10/01/2024
C.S.G. PROJECT #	MCD.39450

TITLE: 2023 STANDARD BUILDING - BB20 4584-WOOD/WOOD

DESCRIPTION	
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN 4.35.14	SITE ADDRESS: 4 DERRFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO.: 028-0178.00.0

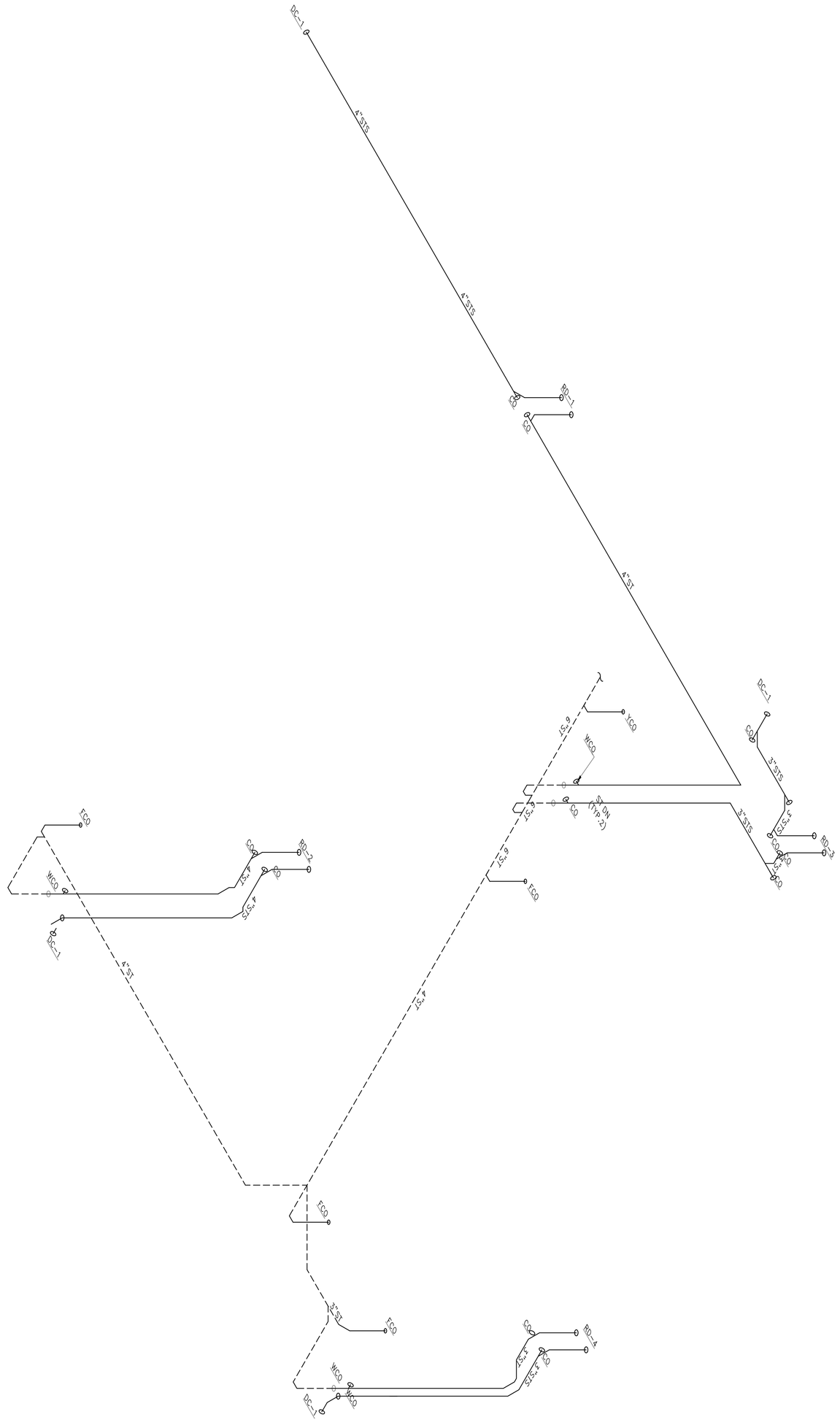
P2.1

WASTE & VENT ISOMETRIC

1
P2.2

STORM PIPING ISOMETRIC

SCALE: NONE



SHEET NO.	TITLE	DRAWN BY	PREPARED FOR:	© 2024 McDonald's Corporation	PREPARED BY:		ENGINEER OF RECORD:		
STORM ISOMETRIC	2023 STANDARD BUILDING – BB20 4584–WOOD/WOOD	ES	McDonald's USA, LLC		CORE STATES GROUP	10/30/2024	REV	DATE	DESCRIPTION
P2.2	DESCRIPTION	STD ISSUE DATE 2024 07	These drawings and specifications are the confidential and proprietary property of McDonald's USA, LLC and shall not be copied or reproduced without written authorization. The contract documents were prepared for use on this specific site in conjunction with its issue date and are not suitable for use on a different site or at a later time. Use of these drawings for reference or example on another project requires the services of properly licensed architects and engineers. Reproduction of the contract documents for reuse on another project is not authorized.		212 SE 34th Street Suite 2 Bentonville, AR 72712 479.986.4400 core-states.com				
028-0178.00.0	WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH WOOD TRUSS ROOF FRAMING WALL PANEL/HARDIE BOARD EXTERIOR FINISH	REVIEWED BY D. LEIFFER							
	NSN: 43514	DATE ISSUED 10/01/2024							
	L/C: 028-0178	SITE ADDRESS 4 DEERFIELD DR. DOVER, NH	C.S.G. PROJECT # MCD.39450						

FIXTURE INFORMATION:

NAME	TYPE	FLOW RATE	OTHER	QTY.
3-COMP. SINK	3-COMPARTMENT SINK	GPM (1-MINUTE DRAIN TIME): 46.636 GPM (2-MINUTE DRAIN TIME): 21.818	DFU: 6 CAPACITY: 58.182 GAL.	1
FLOOR SINK/DRAIN	FLOOR SINK	GPM (1-MINUTE DRAIN TIME): 5 GPM (2-MINUTE DRAIN TIME): 2.5	DFU: 2 CAPACITY: 0 GAL.	11
MOP SINK - MS-1	MOP BASIN	GPM (1-MINUTE DRAIN TIME): 22.442 GPM (2-MINUTE DRAIN TIME): 11.221	DFU: 3 CAPACITY: 29.922 GAL.	2
VEGETABLE PREP SINK	PREP SINK ONE BOWL	GPM (1-MINUTE DRAIN TIME): 4.675 GPM (2-MINUTE DRAIN TIME): 2.338	DFU: 2 CAPACITY: 6.234 GAL.	1
WAREWASHER HOBART AM16SVLT-1	DOOR TYPE	GPM (1-MINUTE DRAIN TIME): 60 GPM (2-MINUTE DRAIN TIME): 30	DFU: 2 CAPACITY: 60 GAL.	1
TOTALS:		GPM (1-MINUTE DRAIN TIME): 208.19 GPM (2-MINUTE DRAIN TIME): 104.1	DFU: 38 CAPACITY: 184.26 GAL.	

SIZING DETAILS:

PROJECT INFORMATION
CONSTRUCTIONS TYPE: NEW CONSTRUCTION
ADDITIONAL NOTES: McDONALD'S 4584 BUILDING - PROTOTYPICAL

LOCATION: OUTDOORS
BURIED: YES
HIGH WATER AREA: NO

FLOW RATE CALCULATION:
FLOW RATE TO INTERCEPTOR = (LESSER OF FLOW RATE BY PIPE SIZE AND FLOW RATE BY FIXTURES)
SIZE OF PIPE CONNECTED TO THE GREASE INTERCEPTOR: 4 IN.
DRAINAGE PERIOD: 2 MINUTES
FLOW RATE BY PIPE SIZE: 75 GPM
FLOW RATE BY FIXTURES, 2-MINUTE DRAINAGE PERIOD: 104.097 GPM
FLOW RATE BY FIXTURES, 1-MINUTE DRAINAGE PERIOD: 208.195 GPM
FLOW RATE USED TO SELECT GREASE INTERCEPTOR: 75 GPM
FIXTURE DFU: 38

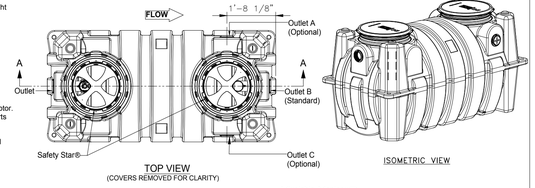
GREASE OUTPUT:
MENU TYPE: FAST FOOD - FULL PREP
FRYER IN KITCHEN: YES
FOOD WASTE DISPOSER: YES
NUMBER OF SEATS: 38 SEATS
GREASE PRODUCTION VALUE: 0.035 LBS. PER SERVING (6.02 LBS. PER DAY)

30-DAY GREASE PRODUCTION 180.6 LBS.
60-DAY GREASE PRODUCTION: 361.2 LBS.
90-DAY GREASE PRODUCTION: 541.8 LBS.

CALCULATION:
GREASE OUTPUT=(NUMBER OF SEATS)x4(AVERAGE TURNS PER SEAT PER 24 HOURS)x(GREASE PRODUCTION VALUE)x(DAYS BETWEEN PUMP-OUT).

DETAIL 1
GREASE INTERCEPTOR
SCALE: NONE
P3.0

SPECIFICATIONS
Notes:
1. 4" FPT inlet/outlet with 4" plain end adapters, single inlet and triple outlet.
2. Unit weight - w/ cast iron covers: 528 lbs. (For wet weight add 4,254 lbs.)
3. Maximum operating temperature: 150° F continuous
4. Capacities - Liquid: 510 gal.
Grease: 3,048 lbs. (417 gal.) @100 GPM
Solids: 128 gal.
5. Built-in flow control. For series installations, only install flow control on the first unit in the series if necessary.
6. For gravity drainage applications only.
7. Do not use for pressure applications.
8. Cover placement allows full access to tank for proper maintenance.
9. A Vent shall be installed downstream of grease interceptor.
10. Engineered inlet and outlet diffusers with inspection ports are removable to inspect / clean piping.
11. Integral air relief / Anti-siphon / Sampling access.
12. Adjustable cover adapters provide up to 4" of additional height.
13. Designed for below-grade, above-grade, indoor or outdoor installations.
14. Safety Star®, access restrictor built into each cover adapter, prevents accidental entry to tanks (450 lb rating).

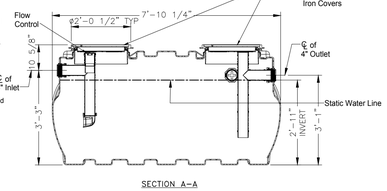


TOP VIEW
(COVERS REMOVED FOR CLARITY)

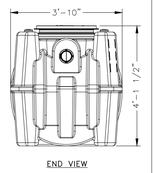
ISOMETRIC VIEW

ENGINEER SPECIFICATION GUIDE
Schier Great Basin™ grease interceptor model # GB-500 shall be lifetime guaranteed and made in USA of seamless, rotationally-molded polyethylene with minimum 7/16" uniform wall thickness. Flow control cartridge shall be PVC. Interceptor shall be furnished for above or below-grade installation with adjustable cover adapter, Safety Star® access restrictor built into each cover adapter, and three outlet options. Interceptor shall be certified to ASME A112.14.3 (Type C) and CSA B481.1. Interceptor flow rate shall be 100 GPM. Interceptor grease capacity shall be 3,048 lbs. Cover shall provide water/gas-tight seal and have minimum 16,000 lbs. load capacity.

CERTIFIED PERFORMANCE
Great Basin™ hydromechanical grease interceptors are third party performance-tested and listed by IAPMO to ASME #A112.14.3 and CSA B481.1 grease interceptor standards and greatly exceed requirements for grease separation and storage. They are compliant to the Uniform Plumbing Code and the International Plumbing Code.



SECTION A-A



END VIEW

SPECIFICATION SHEET

MODEL NUMBER: GB-500

PART NUMBER: 4075-001-01

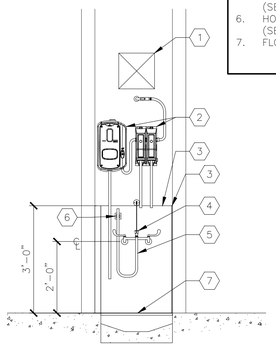
DESCRIPTION: GB-500 GREASE INTERCEPTOR 100 GPM, 4" INLET/OUTLET, H-20 RATED CAST IRON COVERS

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SCHIER PRODUCTS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SCHIER PRODUCTS IS PROHIBITED.

DWG BY: C. BUSENITZ | DATE: 4/14/2022 | REV: - | ECO: -

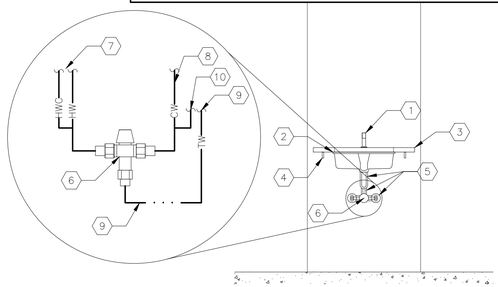
SCHIER
6455 Woodland Dr
Shawnee, KS 66218
Tel: 913-951-3300
Fax: 913-951-3399
schierproducts.com

KEYED NOTES:
1. ACCESS PANEL FOR THERMOSTATIC MIXING VALVE (SEE CHEMICAL SYSTEM INSTALLATION DETAIL)
2. ECOLAB CHEMICAL SYSTEM (SEE CHEMICAL SYSTEM INSTALLATION DETAIL)
3. 24"Wx36"H WALL GUARD (QTY. 2) FURNISHED WITH MOP SINK (SEE PLUMBING FIXTURE SCHEDULE)
4. MOP SINK FAUCET WITH INTEGRAL VACUUM BREAKER (SEE PLUMBING FIXTURE SCHEDULE)
5. HOSE FURNISHED WITH MOP SINK FAUCET (SEE PLUMBING FIXTURE SCHEDULE)
6. HOSE BRACKET FURNISHED WITH MOP FAUCET (SEE PLUMBING FIXTURE SCHEDULE)
7. FLOOR GRATE



DETAIL 2
RECESSED MOP SINK
SCALE: ½"=1'-0"
P3.0

KEYED NOTES:
1. FAUCET (SEE PLUMBING FIXTURE SCHEDULE)
2. LAVATORY OR HAND SINK (SEE PLUMBING FIXTURE SCHEDULE)
3. CORIAN COUNTERTOP - TOILET ROOMS ONLY (FURNISHED BY G.C.)
4. LAVATORY CARRIER - TOILET ROOMS ONLY (SEE ARCHITECTURAL DRAWINGS)
5. OUTLINE OF ADA COMPLIANT WRAP (SEE PLUMBING FIXTURE SCHEDULE)
6. THERMOSTATIC MIXING VALVE (SEE VALVE SCHEDULE)
7. HOT WATER AND HWC DOWN WALL (WITH BALANCING VALVE AND CHECK VALVE INSTALLED).
8. COLD WATER DOWN TO MIXING VALVE
9. TEMPERATED WATER TO FIXTURES
10. COLD WATER TO FIXTURES AS APPLICABLE.



DETAIL 3
LAVATORY (PUBLIC)
SCALE: ½"=1'-0"
P3.0

ENGINEER OF RECORD:
DAVID M. LEIFFER No.12662 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
10/30/2024

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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	DATE
ES	STD ISSUE 2024 07
REVIEWED BY	DATE ISSUED
D. LEIFFER	10/01/2024

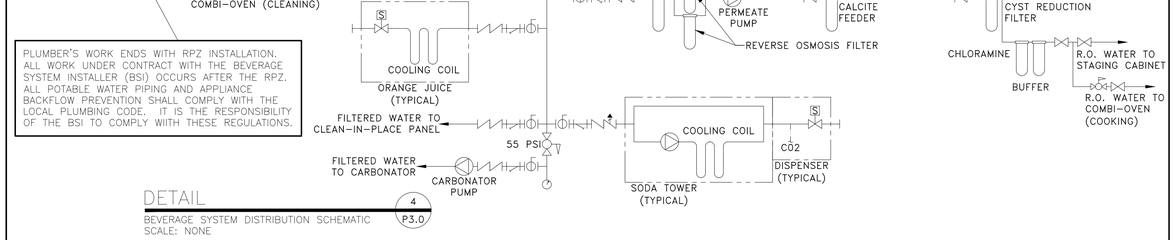
C.S.G. PROJECT # MCD.39450

TITLE
2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
MSN: 4.3514	4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

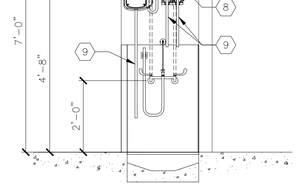
SHEET NO.
028-0178.00.0
P3.0
DETAILS

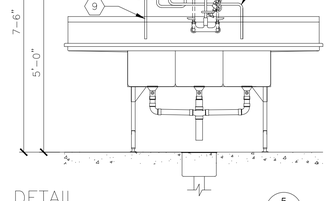
REV	DATE	DESCRIPTION	BY



PLUMBER'S WORK ENDS WITH RPZ INSTALLATION. ALL WORK UNDER CONTRACT WITH THE BEVERAGE SYSTEM INSTALLER (BSI) OCCURS AFTER THE RPZ. ALL POTABLE WATER PIPING AND APPLIANCE BACKFLOW PREVENTION SHALL COMPLY WITH THE LOCAL PLUMBING CODE. IT IS THE RESPONSIBILITY OF THE BSI TO COMPLY WITH THESE REGULATIONS.

DETAIL 4
BEVERAGE SYSTEM DISTRIBUTION SCHEMATIC
SCALE: NONE
P3.0



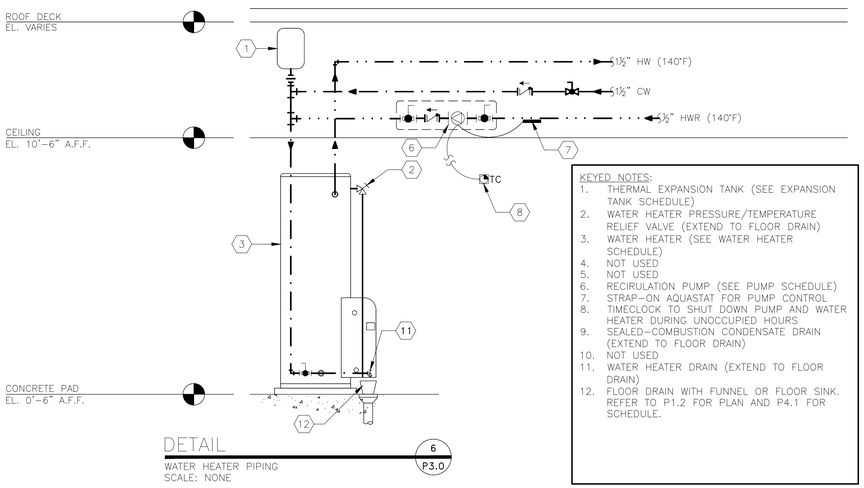


DETAIL 5
CHEMICAL SYSTEM INSTALLATION
SCALE: ½"=1'-0"
P3.0

KEYED NOTES:
1. 12"x12" ACCESS PANEL (COORDINATE INSTALLATION WITH G.C.)
2. THERMOSTATIC MIXING VALVE SET TO 110°F (SEE VALVE SCHEDULE)
3. PIPE THROUGH WALL WITH ESCUTCHEON PLATE
4. SHUT-OFF VALVE
5. ¾" MHT CONNECTION

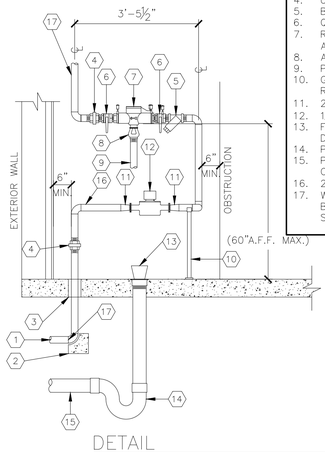
PLUMBER'S WORK ENDS AT MHT CONNECTION

6. HOSE TO CHEMICAL SYSTEM
7. ECOLAB SOLIDSENSE CHEMICAL DISPENSER
8. ECOLAB SMARTSHAPE CHEMICAL DISPENSER
9. CHEMICAL DISPENSING HOSE



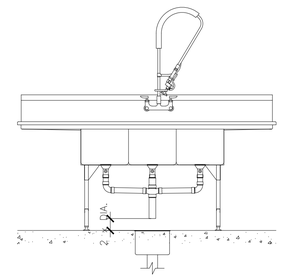
KEYED NOTES:
1. THERMAL EXPANSION TANK (SEE EXPANSION TANK SCHEDULE)
2. WATER HEATER PRESSURE/TEMPERATURE RELIEF VALVE (EXTEND TO FLOOR DRAIN)
3. WATER HEATER (SEE WATER HEATER SCHEDULE)
4. NOT USED
5. NOT USED
6. RECIRULATION PUMP (SEE PUMP SCHEDULE)
7. STRAP-ON AQUASTAT FOR PUMP CONTROL
8. TIMECLOCK TO SHUT DOWN PUMP AND WATER HEATER DURING UNOCCUPIED HOURS
9. SEALED-COMBUSTION CONDENSATE DRAIN (EXTEND TO FLOOR DRAIN)
10. NOT USED
11. WATER HEATER DRAIN (EXTEND TO FLOOR DRAIN)
12. FLOOR DRAIN WITH FUNNEL OR FLOOR SINK. REFER TO P1.2 FOR PLAN AND P4.1 FOR SCHEDULE.

DETAIL 6
WATER HEATER PIPING
SCALE: NONE
P3.0

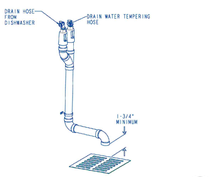


KEYED NOTES:
1. INCOMING UNDERGROUND WATER SERVICE SIZED PER DOMESTIC WATER CALCULATIONS. (MIN. 2")
2. BLOCKING AT CHANGES IN DIRECTION
3. MINIMUM ½" ANNULAR CLEARANCE
4. UNION
5. BRONZE STRAINER
6. QUARTER-TURN BALL VALVE
7. REDUCED PRESSURE ZONE (RPZ) ASSEMBLY
8. AIR GAP FOR RELIEF VALVE
9. PIPING FROM AIR GAP TO FLOOR DRAIN
10. GALVANIZED STEEL PIPE SUPPORTS AS REQUIRED
11. 2"x1½" BUSHING
12. 1½" WATER METER
13. FLOOR DRAIN-PITCH FLOOR TOWARDS DRAIN
14. P-TRAP
15. PIPE TO SEWER-PITCH AND VENT PER CODE
16. 2" PIPE FOR WATER SERVICE
17. WATER PIPING FROM 5 FT. FROM BUILDING TO CEILING PENETRATION SHALL BE COPPER.

DETAIL 7
INCOMING WATER SERVICE
SCALE: ½"=1'-0"
P3.0



DETAIL 8
INDIRECT DRAINAGE PIPING (TYP.)
SCALE: ½"=1'-0"
P3.0



DETAIL 9
WAREWASHER DRAIN AIR GAP KIT
SCALE: NTS
P3.0

GENERAL PLUMBING NOTES

GENERAL:
1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
2. ALL PLUMBING WORK SHALL BE PERFORMED BY A LICENSED PLUMBER.
3. ALL DIMENSIONS, CLEARANCES AND TOLERANCES SHALL BE VERIFIED PRIOR TO INSTALLATION. ALL ROUGH-IN LOCATIONS SHALL BE COORDINATED WITH THE MANUFACTURER'S SUBMITTAL INFORMATION.
4. ALL DIMENSIONAL INFORMATION IS AS FOLLOWS (UNLESS NOTED OTHERWISE):
   A. UNDERGROUND PIPE IS TO FOUNDATION
   B. OVERHEAD PIPE IS TO FINISHED WALL
   C. ELEVATIONS ARE TO FINISHED FLOOR
5. ALL MATERIALS, FIXTURES AND EQUIPMENT USED SHALL BE IN ACCORDANCE WITH McDONALD'S SPECIFICATIONS. SPECIFICATIONS ARE CONTAINED WITHIN THESE DRAWINGS AND THE McDONALD'S PROJECT MANUAL. ANY CONTRACTOR IN NEED OF A COPY OF THE McDONALD'S PROJECT MANUAL SHALL CONTACT THE McDONALD'S AREA CONSTRUCTION MANAGER. ANY VARIANCE FROM THE McDONALD'S SPECIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER-OF-RECORD.
6. SEE COORDINATION SCHEDULE FOR ADDITIONAL SCOPE OF WORK.
7. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND/OR THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
8. WHERE POOR SOIL CONDITIONS EXIST OR WHERE SUBSTANTIAL SETTLEMENT OF EITHER THE PIPING, THE BUILDING OR ADJACENT WALKS, PLANTERS, ETC., MAY OCCUR, THE CONTRACTOR SHALL PROVIDE ADEQUATE UNDERSLAB STAINLESS STEEL PIPE HANGERS OR APPROVED OTHER SUPPORT.
9. ALL PIPE SLEEVES SHALL BE PROPERLY SEALED AND INSULATED TO PREVENT HEAT LOSS AND SEEPAGE.
10. ALL PIPE INSULATION SHALL BE PROTECTED FROM DAMAGE FROM PIPE HANGERS. PROTECTION SHALL BE LIGHT GAUGE GALVANIZED STEEL OR EQUAL.
11. ALL PENETRATIONS OF FIRE-RATED WALLS SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING SYSTEM.

SANITARY AND VENT SYSTEMS:
1. THE BUILDING SANITARY PIPE SHALL BE LOCATED A MINIMUM OF 10 FT. FROM THE INCOMING WATER SERVICE. WHERE A 10 FT. SEPARATION IS NOT POSSIBLE, THE BOTTOM OF THE WATER SERVICE PIPE SHALL BE A MINIMUM OF 12 IN. ABOVE THE TOP OF THE HIGHEST POINT OF THE SANITARY PIPE.
2. ALL SANITARY AND VENT PIPE SHALL BE PVC TYPE DWV, ABS OR CAST-IRON WHERE REQUIRED BY CODE.
3. ALL HORIZONTAL SANITARY PIPE SHALL BE INSTALLED WITH A MINIMUM PITCH AS FOLLOWS:

PIPE SIZE	MIN. SLOPE
2½" OR LESS	¼" PER FT.
3" TO 6"	⅛" PER FT.
8" OR LARGER	⅛" PER FT. (MIN)

4. CLEANOUTS SHALL BE INSTALLED IN ALL HORIZONTAL DRAINAGE PIPE AND SHALL BE LOCATED NOT MORE THAN 100 FT. APART. (UNLESS OTHERWISE DICTATED BY LOCAL CODES).
5. CLEANOUTS SHALL BE INSTALLED AT ALL CHANGES OF DIRECTION GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A SINGLE PIPE RUN, ONLY ONE (1) CLEANOUT SHALL BE REQUIRED FOR EVERY 40 FEET OF DEVELOPED LENGTH.
6. CLEANOUTS SHALL BE INSTALLED ON PIPES PRIOR TO ANY SLAB PENETRATION.
7. WHERE PIPING IS LOCATED WITHIN WALL CAVITIES, ACCESS TO THE CLEANOUTS SHALL BE PROVIDED.
8. CLEANOUTS ON 6-IN. AND SMALLER PIPES SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 18 IN. CLEANOUTS ON 8-IN. AND LARGER PIPE SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 36 IN.
9. ALL SUSPENDED SANITARY AND VENT PIPE SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
ABS	4 FT.	10 FT.
PVC (TYPE DWV)	4 FT.	10 FT.
CAST-IRON (<10 FT. PIPE SECTIONS)	5 FT.	15 FT.
CAST-IRON (10 FT. PIPE SECTIONS)	10 FT.	15 FT.

10. ALL PLUMBING FIXTURES SHALL BE VENTED AND THE MAXIMUM DISTANCE FROM THE FIXTURE TRAP TO THE VENT SHALL BE AS FOLLOWS:

TRAP SIZE	SLOPE	DISTANCE
1¼"	¼" PER FT.	2'-6"
1½"	¼" PER FT.	3'-6"
2"	¼" PER FT.	5'-0"
3"	⅛" PER FT.	6'-0"
4" & LARGER	⅛" PER FT.	10'-0"

11. ALL PLUMBING VENTS THROUGH THE ROOF SHALL TERMINATE A MINIMUM OF 12 INCHES ABOVE THE ROOF AND SHALL BE LOCATED A MINIMUM OF 8 FT. FROM ANY PARAPET WALL. WHERE A VENT TERMINATES WITHIN 8 FT. OF A PARAPET WALL, THE VENT SHALL TERMINATE A MINIMUM OF 6 INCHES ABOVE THE PARAPET.
12. ALL PLUMBING VENTS SHALL TERMINATE A MINIMUM OF 10 FT. HORIZONTALLY FROM ANY OUTDOOR AIR INTAKE. WHERE A PLUMBING VENT IS LOCATED WITHIN 10 FT. OF AN INTAKE, THE VENT SHALL TERMINATE A MINIMUM OF 2 FT. ABOVE THE INTAKE.
13. ALL SIDE WALL VENT TERMINATIONS SHALL BE PROTECTED TO PREVENT BIRDS OR RODENTS FROM ENTERING OR BLOCKING THE VENT OPENING.
14. ALL FLOOR DRAINS THAT DO NOT SERVE EQUIPMENT SHALL BE PROTECTED AGAINST DRYING OUT EITHER THROUGH THE INSTALLATION OF A TRAP PRIMER, DEEP SEAL TRAP OR PROSET TRAP GUARD. ALL TRAPS SHALL BE FILLED WITH AN INITIAL LAYER OF COOKING OIL.
15. ALL APPLIANCES SHALL DRAIN TO AN APPROVED SANITARY WASTE RECEPTOR (FLOOR SINK OR FLOOR DRAIN WITH FUNNEL). INDIRECT DRAINAGE FROM AN APPLIANCE SHALL MAINTAIN AN AIR GAP BETWEEN THE PIPE OUTLET AND THE TOP OF THE RECEPTOR. THE MINIMUM DISTANCE BETWEEN THE PIPE OUTLET AND THE TOP OF THE RECEPTOR SHALL BE TWICE THE DIAMETER OF THE APPLIANCE DRAIN PIPE.

GREASE INTERCEPTORS:
1. SEE SITE PLAN FOR THE SIZE AND LOCATION OF THE GREASE INTERCEPTOR.
2. THE GREASE INTERCEPTOR SHALL BE INSTALLED IN A LOCATION THAT IS ACCESSIBLE FOR PUMPING.
3. THE GREASE INTERCEPTOR SHALL BE CONSTRUCTED OF FIBERGLASS OR ROTATIONALLY-MOLDED POLYETHYLENE. GREASE INTERCEPTOR CONSTRUCTION SHALL CONFORM TO ALL LOCAL CODES. CONCRETE GREASE INTERCEPTORS ARE NOT PERMITTED UNLESS REQUIRED BY THE LOCAL AHJ.
4. GREASE INTERCEPTORS SHALL BE GRAVITY OR HYDROMECHANICAL TYPE, SIZED FOR THE APPLICATION LISTED.
5. THE GREASE INTERCEPTOR SHALL BE VENTED.
6. ACCESS TO THE GREASE INTERCEPTOR SHALL BE PROVIDED WITH TWO (2) 24-IN. MANHOLES. COVER SHALL PROVIDE WATER/GAS-TIGHT SEAL AND HAVE A MINIMUM 16,000 LBS. LOAD CAPACITY. ALL SURFACE WATER MUST DRAIN AWAY FROM MANHOLES.
7. PIPING INLET AND OUTLET SIDES SHALL BE CLEARLY LABELED ON THE TOP OF THE GREASE INTERCEPTOR TO INSURE PROPER INSTALLATION.

DOMESTIC SUPPLY SYSTEMS:
1. THE INCOMING WATER SERVICE PIPE SHALL BE LOCATED A MINIMUM OF 10 FT. FROM THE EXITING SANITARY PIPE. WHERE A 10 FT. SEPARATION IS NOT POSSIBLE, THE BOTTOM OF THE WATER SERVICE PIPE SHALL BE A MINIMUM OF 12 IN. ABOVE THE TOP OF THE HIGHEST POINT OF THE SANITARY PIPE.
2. ALL UNDERGROUND SITE PLUMBING SHALL CONFORM TO NSF 61, SHALL BE TYPE K COPPER TUBING OR COPPER PIPE, POLYETHYLENE (PE), PEX OR CPVC. IF CPVC IS USED, FOAM INSULATION SHALL BE INSTALLED AT ALL CHANGES OF DIRECTION TO ACCOUNT FOR EXPANSION AND CONTRACTION.
3. INCOMING DOMESTIC WATER SIZE TO BE 2" INNER DIAMETER. FOR PROJECTS WISHING TO DOWNSIZE, A HYDRANT FLOW TEST IS REQUIRED PRIOR TO CONSTRUCTION DOCUMENTS. ENGINEER OF RECORD TO SUBMIT PRESSURE DROP CALCULATIONS AND HYDRANT FLOW TEST TO USRD FOR REVIEW AND APPROVAL OF SMALLER INCOMING DOMESTIC WATER LINE.
4. IF PEX PIPING IS USED, ALL MAINS SHALL BE UPSIZED BY 0.5" DIAMETER.
5. INCOMING WATER SERVICE PRESSURE SHOULD BE BETWEEN 50 AND 55 PSI STATIC. WHERE WATER PRESSURE SERVICE EXCEEDS 80 PSI STATIC, AN APPROVED WATER-PRESSURE REDUCING VALVE WITH STRAINER CONFORMING TO ASSE 1003 SHALL BE INSTALLED. WHERE INCOMING WATER PRESSURE IS BELOW 50 PSI STATIC, A PRESSURE BOOSTER SYSTEM SHALL BE INSTALLED.
6. IF THE RESTAURANT HAS A COMBINED WATER AND FIRE SPRINKLER SERVICE, THE INCOMING WATER SERVICE SHALL BE SIZED BASED ON THE FIRE SPRINKLER CONTRACTOR'S HYDRAULIC CALCULATIONS.
7. PROVIDE A MINIMUM ½" ANNULAR CLEARANCE AROUND ALL PIPE SLAB PENETRATIONS.
8. A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (RPZ) SHALL BE INSTALLED AT THE INCOMING SERVICE WHERE REQUIRED BY CODE. (MIN. 60" A.F.F.)
9. AN EXPANSION TANK SHALL BE INSTALLED ON THE COLD WATER LINE INLET TO THE WATER HEATER. SEE EXPANSION TANK SCHEDULE.
10. ALL WATER SUPPLY PIPE WITHIN 5 FT. OF THE BUILDING AND INSIDE THE BUILDING SHALL COMPLY WITH NSF 61 AND SHALL BE TYPE L COPPER TUBING, COPPER PIPE, PEX OR CPVC PIPE.
11. CPVC PIPE SHALL BE FLOWGUARD GOLD OR FLOWGUARD BENDABLE AS MANUFACTURED BY LUBRIZOL.
12. CPVC PIPE SHALL BE CONNECTED WITH FLOWGUARD GOLD YELLOW LOW-VOC SOLVENT CEMENT AS MANUFACTURED BY IPS WELD-ON OR OATEY.
13. ALL CPVC PIPE SHALL BE INSULATED TO PREVENT EXPOSURE TO GREASE.
14. ALL SUSPENDED PIPE SHALL BE SUPPORTED AS FOLLOWS:

MATERIAL	MAX. HORIZ. SPACING	MAX. VERT. SPACING
COPPER PIPE	12 FT.	10 FT.
COPPER TUBING ≤1¼"	6 FT.	10 FT.
COPPER TUBING >1½"	10 FT.	10 FT.
CPVC ≤1"	3 FT.	10 FT.
CPVC ≥1¼"	4 FT.	10 FT.
PEX ≤1"	3 FT.	10 FT.
PEX ≥1¼"	4 FT.	10 FT.

15. A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (RPZ) SHALL BE INSTALLED AT THE INLET TO THE WATER FILTRATION SYSTEM. ALL PIPING DOWNSTREAM OF THE RPZ SHALL BE COPPER OR CROSS-LINKED POLYETHYLENE (PEX).
16. ALL DEVICES, APPLIANCES, AND APPARATUS INTENDED TO SERVE SOME SPECIAL FUNCTION (EX.: SODA MACHINE, COFFEE MACHINE, BEVERAGE DISPENSERS, ETC.) SHALL BE PROVIDED WITH PROTECTION AGAINST BACKFLOW AND CONTAMINATION OF THE WATER SUPPLY SYSTEM. ALL BACKFLOW PREVENTION DEVICES SHALL BE ASSE LISTED AND APPROVED FOR THE DEVICE OR APPLIANCE THEY SERVE.
17. ALL WATER SUPPLY LINES SHALL BE PROVIDED WITH A QUARTER-TURN SHUT-OFF VALVE BEFORE FINAL CONNECTION TO EQUIPMENT.
18. QUARTER-TURN SHUT-OFF VALVES SHALL BE INSTALLED UPSTREAM OF ANY INLINE BACKFLOW PREVENTION DEVICE.
19. ALL VALVES AND BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED WITH FITTINGS THAT FACILITATE REMOVAL IN CASE OF FAILURE.
20. ALL OVERHEAD WATER LINES SHALL BE INSULATED PER SCHEDULE THIS SHEET WITH EXTERNAL JACKETED INSULATION AND A MINIMUM INSTALLED R-VALUE OF 3.7.
21. PRIOR TO BUILDING TURNOVER, THE DOMESTIC WATER SUPPLY SYSTEM SHALL BE PURGED OF DELETERIOUS MATERIAL AND DISINFECTED. DISINFECTION SHALL BE DONE IN ACCORDANCE WITH THE LOCAL HEALTH CODE, PLUMBING CODE OR IN ACCORDANCE WITH AWWA C651 OR AWWA C652.

STORM DRAINAGE SYSTEMS:
1. ALL ROOF DRAINS SHALL BE SIZED IN ACCORDANCE WITH LOCAL CODES AND SHALL CONFORM TO ASME A112.21.2M OR A112.3.1.
2. ALL STORM DRAINAGE PIPING SHALL BE ABS, PVC TYPE DWV OR CAST-IRON WHERE REQUIRED BY CODE.
3. ALL SUSPENDED STORM DRAINAGE PIPE SUPPORT REQUIREMENTS SHALL BE THE SAME AS THE SANITARY AND VENT REQUIREMENTS.
4. ALL HORIZONTAL STORM DRAINAGE PIPE PITCH REQUIREMENTS SHALL BE THE SAME AS THE SANITARY AND VENT REQUIREMENTS.
5. ALL HORIZONTAL STORM DRAINAGE PIPE SHALL BE INSULATED WITH 1" THICK EXTERNAL JACKETED INSULATION AND A MINIMUM INSTALLED R-VALUE OF 3.7 TO PROTECT AGAINST CONDENSATION.
6. CLEANOUTS SHALL BE INSTALLED IN ALL HORIZONTAL DRAINAGE PIPE AND SHALL BE LOCATED NOT MORE THAN 100 FT. APART.
7. CLEANOUTS SHALL BE INSTALLED AT ALL CHANGES OF DIRECTION GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A SINGLE PIPE RUN, ONLY ONE (1) CLEANOUT SHALL BE REQUIRED FOR EVERY 40 FEET OF DEVELOPED LENGTH.
8. CLEANOUTS SHALL BE INSTALLED ON PIPES PRIOR TO ANY SLAB PENETRATION.
9. WHERE PIPING IS LOCATED WITHIN WALL CAVITIES, ACCESS TO THE CLEANOUTS SHALL BE PROVIDED.
10. ROOF DRAINS AND OVERFLOW ROOF DRAINS SHALL BE PIPED INDEPENDENTLY. OVERFLOW ROOF DRAINS SHALL NOT BE CONNECTED TO THE PRIMARY ROOF DRAINAGE SYSTEM.
11. MINIMUM PIPING INSULATION THICKNESS HEATING AND HOT-WATER SYSTEMS (STEAM, STEAM CONDENSATE, HOT-WATER HEATING AND DOMESTIC WATER SYSTEMS). PLEASE REFER TO THE LATEST EDITION OF IECC FOR MINIMUM PIPE INSULATION THICKNESS (TABLE C403.12.3)

PIPING	MINIMUM INSULATION THICKNESS (IN INCHES) PER NOMINAL PIPE OR TUBE SIZE				
NOMINAL PIPE SIZE	<1	1 TO 1.5	1.5 TO <4	4 TO <8	≥8
DOMESTIC COLD WATER (40°F TO 60°F)	0.5	0.5	1.0	1.0	1.0
TEMPERATE HOT WATER (105°F TO 140°F)	1.0	1.0	1.5	1.5	1.5
HOT WATER (141°F TO 200°F)	1.5	1.5	2.0	2.0	2.0
STORM DRAIN (HORIZONTAL)	–	–	1.0	1.0	1.0

LEGEND

— · — · — · —	COLD WATER PIPING
—·-·-·-·-·-·—	TEMPERED WATER PIPING (110°F)
— · · — · · —	HOT WATER PIPING (140°F)
— · · · — · · · —	RECIRCULATED HOT WATER PIPING
- - - - - - - -	OVERHEAD LINES (BY P.C.)
— — —SAN— — —	UNDERGROUND SANITARY PIPING
— — —GW— — —	UNDERGROUND GREASE WASTE PIPING
----------	VENT PIPING
——— ST ———	PRIMARY STORM PIPING
———STS———	SECONDARY/EMERGENCY STORM PIPING
	HOSE BIBB
	CHECK VALVE
	BALL VALVE
	THERMOSTATIC MIXING VALVE
	FLOOR DRAIN
	CLEAN-OUT (FLOOR OR YARD)
	FLOOR SINK
	PRESSURE GUAGE
L	LOW PRESSURE SWITCH
H	HIGH PRESSURE SWITCH
S	SOLENOID VALVE
	THREE-WAY VALVE
	PRESSURE REGULATOR
	DUAL CHECK VALVE OR RPZ
	DUAL CHECK VALVE WITH ATMOSPHERIC VENT
	STRAINER
	RELIEF VENT
	WATER-HAMMER ARRESTER

ABBREVIATIONS

ACM	AREA CONSTRUCTION MANAGER
AVB	ATMOSPHERIC VACUUM BREAKER
BSI	BEVERAGE SYSTEM INSTALLER
CO	CLEAN-OUT
DC	DOWNSPOUT COVER
DFU	DRAINAGE FIXTURE UNIT(S)
EC	ELECTRICAL CONTRACTOR
FAC	FIRE ALARM CONTRACTOR
FCO	FLOOR CLEAN-OUT
FD	FLOOR DRAIN
FPC	FIRE PROTECTION CONTRACTOR
FS	FLOOR SINK
GC	GENERAL CONTRACTOR
GI	GREASE INTERCEPTOR
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GW	GREASE WASTE
HS	HAND SINK
I.P.S.	IRON PIPE SIZE (ALSO NPS)
KEI	KITCHEN EQUIPMENT INSTALLER
KES	KITCHEN EQUIPMENT SUPPLIER
LAV	LAVATORY
MC	MECHANICAL CONTRACTOR
MHT	MALE HOSE THREADS
MS	MOP SINK
NPS	NATIONAL PIPE THREAD STANDARD
NPT	NATIONAL PIPE THREAD TAPERED
O/O	OWNER/OPERATOR
OH	OVERHEAD
P	PUMP
PC	PLUMBING CONTRACTOR
RC	REFRIGERATION CONTRACTOR
RPZ	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
SS	SANITARY SEWER
ST STS	STORM SEWER (PRIMARY) STORM SEWER (SECONDARY)
SVB	ANTI-SIPHON, SPILL RESISTANT VACUUM BREAKER
TAB	TEST AND BALANACE CONTRACTOR
UG	UNDERGROUND
UR	URINAL
V	VENT
WC	WATER CLOSET
WCO	WALL CLEAN-OUT
WSFU	WATER SUPPLY FIXTURE UNIT(S)
YC	YARD CLEAN-OUT

BY	DESCRIPTION	DATE	REV

ENGINEER OF RECORD:
STATE OF NEW HAMPSHIRE
DAVID M. LEIFFER No.12662 LICENSED PROFESSIONAL ENGINEER
10/30/2024

PREPARED BY:
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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
–	2024 07	D. LEIFFER	10/01/2024	MCD.39450

TITLE: 2023 STANDARD BUILDING – BB20
4584-WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN: 4.53.14 | SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178

SHEET NO.: 028-0178.00.0
P4.0
GENERAL NOTES

COORDINATION SCHEDULE

GENERAL REQUIREMENTS	FURNISH	INSTALL	FINAL CONNECTION	NOTES
MECHANICAL PERMIT	MC			1–3
HOT WORK (WELDING) PERMIT (IF APPLICABLE)	MC			1–3
REFRIGERATION PERMIT (IF APPLICABLE)	KES			1–3
PLUMBING PERMIT	PC			1–3
ELECTRICAL PERMIT	EC			1–3
FIRE SPRINKLER PERMIT (IF APPLICABLE)	FPC			1–3
FIRE ALARM PERMIT (IF APPLICABLE)	FAC			1–3
CONTRACTOR COORDINATION REQUIREMENTS				
HEATING & AIR–CONDITIONING				
ROOFTOP UNITS, INTAKE AND RELIEF	MCD CP	MC		1–5, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 20, 22
GAS PIPING AND GAS PIPE KIT	PC	PC	PC	1–3, 14, 22–23
CONTROLS WIRING	MC	EC	EC	1–3, 19, 22, 24
POWER WIRING	EC	EC	EC	1–3, 19, 22, 24
CONDENSATE TRAP	MC	PC		1–3, 22–23
CONDENSATE PIPING (IF APPLICABLE)	PC	PC		1–3, 22–23
DUCT–MOUNTED SMOKE DETECTOR	MC	MC	EC	1–3, 22, 24
GENERAL EXHAUST SYSTEMS				
EXHAUST FANS	MCD CP	MC		1–3, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 22
CONTROLS (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
TEMPERATURE CONTROLS				
BUILDING AUTOMATION SYSTEM	MCD CP	MC	EC	1–3, 22, 24
REMOTE SENSORS (RH AND/OR TEMPERATURE)	MC	MC	EC	1–3, 22, 24
CONTROLS WIRING (WHERE APPLICABLE)	MC	EC	EC	1–3, 22, 24
POWER WIRING	EC	EC	EC	1–3, 22, 24
DUCTWORK AND ACCESSORIES				
GALVANIZED SHEET METAL DUCTWORK	MC	MC		1–3, 22
EXTERNAL INSULATION	MC	MC		1–3, 22
INTERNAL INSULATION (IF APPLICABLE)	MC	MC		1–3, 22
WEATHERPROOFING (IF APPLICABLE)	MC	MC		1–3, 22
SPIN–IN COLLARS	MC	MC		1–3, 22
FLEXIBLE DUCTWORK	MC	MC		1–3, 22
VOLUME/BALANCING DAMPERS	MC	MC		1–3, 22
FIRE DAMPERS (IF APPLICABLE)	MC	MC		1–3, 22
FIRESTOPPING (IF APPLICABLE)	MC	MC		1–3, 22
AIR DEVICES AND ACCESSORIES	MC	MC	MC	1–3, 7, 22, 28
PLUMBING SYSTEMS				
WATER HEATERS	MCD CP	PC	PC	1–3, 11–12, 23
HOT AND COLD WATER PIPE	PC	PC	PC	1–3, 23
VENTS AND INTAKES	PC	PC	PC	1–3, 23
THERMOSTATIC MIXING VALVE	PC	PC	PC	1–3, 23
POWER AND CONTROL WIRING	EC	EC	EC	1–3, 23–24
KITCHEN EXHAUST SYSTEMS				
McDONALD'S BACKSHELF EXHAUST HOODS	KES	KEI		1–3, 6, 22, 27
CANOPY EXHAUST HOODS (IF APPLICABLE)	KES	KEI		1–3, 6, 22, 27
BLACK IRON DUCTWORK	KES	KEI		1–3, 6, 22
STAINLESS STEEL DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
ALUMINUM DUCTWORK (IF APPLICABLE)	KES	KEI		1–3, 6, 22
UL LISTED DUCT WRAP	MC	MC		1–3, 6, 22
FIRE–RATED DUCT ENCLOSURE (IF APPLICABLE)	GC	GC		1–3, 6, 20, 22
EXHAUST FANS	MCD CP	MC		1–3, 6, 17, 22
ROOF CURBS	MCD CP	MC		1–3, 6, 20, 22
CURB EXTENSIONS	MC	MC		1–3, 6, 22
CONTROLS (WHERE APPLICABLE)	EC	EC	EC	1–3, 6, 22, 24
POWER WIRING	EC	EC	EC	1–3, 6, 22, 24
FIRE SUPPRESSION SYSTEM	KES	KES	KES	1–3, 16, 22, 27
KITCHEN EQUIPMENT				
COOLER/FREEZER	KES	GC		1–3, 27
EVAPORATOR COILS	KES	MC		1–3, 27
CONDENSATE PIPING	PC	PC	PC	1–3, 23, 27
REMOTE CONDENSING UNIT (MAC)	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	EC	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
ICE MACHINES	KES	KEI		1–3, 27
WATER SUPPLY PIPING	KES	KEI	BSI	1–3, 27
REMOTE CONDENSING UNITS	KES	MC		1–3, 22, 27
ROOF CURBS	MC	MC		1–3, 22, 27
REFRIGERANT PIPING	KES	MC	MC	1–3, 22, 27
POWER WIRING	EC	EC	EC	1–3, 22, 24, 27
CONTROL WIRING	KES	EC	EC	1–3, 24, 27
PIPE PORTALS	MC	MC		1–3, 22
GRILLS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
CONTROL CABLE (6" CLAMSHELL ONLY)	MC	EC	EC	1–3, 23, 24, 27
FRYERS	KES	KES		1–3, 27
GAS PIPING (IF APPLICABLE)	PC	PC	PC	1–3, 23, 27
POWER WIRING	EC	EC	EC	1–3, 24, 27
3–COMPARTMENT SINK	KES	KES		1–3, 12, 27
FAUCETS AND PRE–RINSE SPRAYER	KES	KES		1–3, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
HAND SINKS	MCD CP	PC		1–3, 23, 27
FAUCET	MCD CP	PC		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
VEGETABLE SINK	KES	KES		1–3, 23, 27
FAUCET	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WASHING MACHINE	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
WARE WASHER	KES	KES		1–3, 23, 27
WATER SUPPLY PIPING	PC	PC	PC	1–3, 23, 27
SANITARY DRAIN PIPING	PC	PC	PC	1–3, 23, 27
MISCELLANEOUS ITEMS				
FIRE SPINKLER SYSTEMS	FPC	FPC	FPC	1–3, 15, 25
HVAC EQUIPMENT START–UP	MC			1–3, 22
TEST, ADJUST AND BALANCE HVAC SYSTEMS	TAB			1–3, 22
DOOR GRILLES (IF APPLICABLE)	MC	GC		1–3, 20, 22
ROOF/WALL OPENINGS	GC			1–3, 20–24
APPLIANCE BACKFLOW PREVENTION	KES/BSI	PC	PC	1–3, 23, 27
CO2 DETECTION SYSTEM	KES/BSI	EC/BSI	EC/BSI	1–3, 22, 27

NOTES:
1. THIS SCHEDULE IS INTENDED AS A GUIDE FOR THE WORK TO BE PERFORMED. ALL WORK SHALL BE COORDINATED BETWEEN THE McDONALD'S AREA CONSTRUCTION MANAGER AND ALL GC AND O/O SUBCONTRACTORS.
2. ONE (1) COPY OF THE DECOR PACKAGE DRAWINGS SHALL BE SUPPLIED TO THE GENERAL CONTRACTOR AND EACH OF THE SUBCONTRACTORS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THE SUBCONTRACTORS TO INSURE THAT THEY HAVE RECEIVED THE DECOR PACKAGE DRAWINGS.
3. FOR ANY WORK NOT CLARIFIED IN THIS SCHEDULE OR IN THE NOTES AND SPECIFICATIONS, PLEASE CONSULT THE McDONALD'S CONSTRUCTION MANAGER FOR SCOPE OF WORK.
4. ALL ROOFTOP UNIT EQUIPMENT SUPPLIED BY THE MECHANICAL CONTRACTOR AND THE KITCHEN EQUIPMENT SUPPLIER SHALL BE ON SITE AT THE SAME TIME FOR A SINGLE CRANE LIFT. EQUIPMENT SITE ARRIVAL DATE SHALL BE COORDINATED BETWEEN THE CONSTRUCTION MANAGER, MECHANICAL CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER.
5. ALL ROOFTOP UNITS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY EQUIPMENT. THE INSTALLATION OF STANDARD EFFICIENCY ROOFTOP UNITS IS PROHIBITED. PLEASE REFER TO THE LATEST EDITION OF IECC FOR HVAC EQUIPMENT PERFORMANCE REQUIREMENTS.
6. ALL KITCHEN EQUIPMENT REQUIRING EXHAUST SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS. ANY VARIATION FROM THESE PLANS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER AND THE ENGINEER–OF–RECORD.
7. WHERE GYPSUM BOARD CEILINGS ARE INSTALLED, THE MECHANICAL CONTRACTOR SHALL SUPPLY DRYWALL MOUNTING FRAMES FOR LAY–IN TYPE DIFFUSERS.
8. ALL WORK SHOWN ON P1.6 DRAWING(S) SHALL BE COMPLETED BY THE BEVERAGE SYSTEM INSTALLER (OR K.E.S.) UNLESS OTHERWISE NOTED IN THE PLUMBING DRAWINGS.
9. ALL WORK ON P1.0 & P1.2 DRAWING(S) SHALL BE BY THE PLUMBING CONTRACTOR.
10. THE BEVERAGE SYSTEM INSTALLER FURNISHES, RUNS AND CONNECTS ALL FLEXIBLE WATER AND SYRUP LINES FOR ALL AFFECTED EQUIPMENT INCLUDING THE FOLLOWING:
    A. HOT CHOCOLATE
    B. COFFEE BREWER
    C. ICE MACHINE
    D. O.J.
    E. SODA TOWERS
11. ALL WATER HEATERS INSTALLED IN McDONALD'S RESTAURANTS SHALL BE HIGH EFFICIENCY SEALED–COMBUSTION WATER HEATERS. THE INSTALLATION OF STANDARD EFFICIENCY GRAVITY–VENTED WATER HEATERS IS PROHIBITED. PLEASE REFER TO THE LATEST EDITION OF IECC FOR SERVICE WATER–HEATING EQUIPMENT PERFORMANCE EFFICIENCY REQUIREMENTS.
12. THE CONSTRUCTION MANAGER, PLUMBING CONTRACTOR AND KITCHEN EQUIPMENT SUPPLIER SHALL COORDINATE WHICH SOILED DISHWASHER (3–COMPARTMENT SINK) IS BEING INSTALLED IN THE RESTAURANT.
13. N/A
14. N/A
15. ALL FIRE PROTECTION DRAWINGS CONTAINED WITHIN THIS SET ARE STRICTLY FOR REFERENCE ONLY. FIRE SPRINKLER DRAWINGS SHALL BE DESIGNED AND PERMITTED BY A FIRE PROTECTION CONTRACTOR.
16. ALL R–102 WET CHEMICAL FIRE SUPPRESSION SYSTEMS FOR TYPE I HOODS SHALL BE DESIGNED AND INSTALLED BY A LOCAL ANSUL AGENT. THE USE OF DRY CHEMICAL SYSTEMS IS PROHIBITED. THE LOCAL ANSUL AGENT CONTRACT IS HANDLED THROUGH THE KITCHEN EQUIPMENT SUPPLIER.
17. ALL ROOFTOP UNITS AND EXHAUST FANS ARE SUPPLIED WITH A FACTORY–INSTALLED DISCONNECT SWITCH.
18. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES FOR REMOTE CONDENSING UNITS.
19. ALL ELECTRICAL CONDUITS FOR ROOFTOP EQUIPMENT SHALL BE BROUGHT UP THROUGH THE BASE OF THE UNIT TO MINIMIZE ROOF PENETRATIONS. WHERE THIS IS NOT POSSIBLE, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE NECESSARY PIPE PORTALS ON ROOF.
20. WALK–IN COOLER AND WALK–IN FREEZER REFRIGERATION SYSTEMS SHALL MEET THE PERFORMANCE REQUIREMENTS OUTLINED IN THE LATEST EDITION OF IECC. MINIMUM ANNUAL WALK–IN ENERGY FACTOR (AWEF) PROVIDED BY EQUIPMENT MANUFACTURER IS DETERMINED IN ACCORDANCE WITH AHRI 1250.
21. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
22. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
23. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
24. SEE PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
25. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
26. SEE FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION.
27. SEE FIRE ALARM DRAWINGS FOR ADDITIONAL INFORMATION.
28. SEE KITCHEN DRAWINGS FOR ADDITIONAL INFORMATION.
29. SEE DECOR DRAWINGS FOR ADDITIONAL INFORMATION.

PUMP SCHEDULE

TAG	MANUFACTURER	MODEL	HP	V	Ø	Hz	ACCESSORIES
P–1	GRUNDFOS	UP 15–18 B7	1/25	120	1	60	1–3

ACCESSORIES:
1. TIMECLOCK
2. AQUASTAT
3. CHECK VALVE

NOTES:
1. SEE ELECTRICAL DRAWINGS FOR TIMECLOCK WIRING
2. DESIGN: 2 GPM, 7 FT. HEAD
3. SEE DETAIL 6 ON DRAWING P3.0

EXPANSION TANK SCHEDULE

TAG	MANUFACTURER	MODEL	TOTAL VOL.	CONNECTION	ACCESSORIES
ET–1	AMTROL	ST–12	4.4 GAL.	¾"	–

NOTES:
1. SEE DETAIL 6 ON DRAWING P3.0

BACKFLOW PREVENTER SCHEDULE

TYPE	MFR.	MODEL	ASSE LISTING	SERVES	LOCATION
AG	FURN. WITH CHEM. SYS.		1055B	CHEMICAL SYSTEM	DIN. RM.–MOP SINK
AG	FURN. WITH CHEM. SYS.		1055B	CHEMICAL SYSTEM	KITCHEN–MOP SINK
AVB	FURN. WITH CHEM. SYS.		1001	CHEMICAL SYSTEM	SUPP. RM.–3–COMP
AVB	FURN. WITH FAUCET		–	MOP SINK FAUCET	SEE DRAWINGS
VB	FURN. WITH HB		1011	WALL HYDRANT	SEE DRAWINGS
DCV	FURN. WITH HB		1052	YARD HYDRANT	TRASH CORRAL
DCV	FURN. WITH HB		1052	ROOF HYDRANT	ROOF
DCV	WATTS	SD–3	1022	SODA TOWERS AND SPEC. COFFEE	
RPZ	WILKINS	375XL–SXL–AG	1013	INCOMING WATER	SUPPORT ROOM
RPZ	WILKINS	375XL–AG	1013	FILTRATION SYSTEM	SUPPORT ROOM

WATER HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	SIZE GAL.	HEATING TYPE	HEATING KW	RECOV. 100°F ΔT GPH	ELECTRICAL VOLTS	Ø	Hz	F.L.A.
WH–1	BRADFORD–WHITE	CEHD120(A)54–3*CF	119	ELEC.	54	223	208	3	60	150

ACCESSORIES:
1. NSF INSTALLATION KIT

VALVE SCHEDULE

MANUFACTURER	MODEL	TEMP. SETTING	LISTING	SERVES
WATTS	LFMMV	110°F	ASSE 1017,1069,1070	CHEMICAL SYSTEM MIXING
WATTS	LFMMV	104°F	ASSE 1017,1069,1070	LAVS & HAND SINKS MIXING
ZURN	ZW3870XLT	104°F		
WATTS	LFUSG–B	110°F	ASSE 1016, 1070	VEGETABLE PREP. SINK MIXING
B & G	CB–1/2	–	–	RECIRC. SYSTEM BALANCING VALVE
NIBCO	585–70–HC	–	–	CHEMICAL SYSTEM SHUT–OFF
NIBCO	S–FP–600A–LF	–	–	RESTROOM SHUT–OFF
NIBCO	S–FP–600A–LF	–	–	COMBI OVEN WATER SHUT OFF
WATTS	LFFBV–PEX	–	–	COMBI OVEN RO WATER SHUT OFF

INTERCEPTOR SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	ACCESSORIES	NOTES
GI–1	EXTERIOR GREASE INTERCEPTOR	SCHIER PRODUCTS	GB–500	4" INLET, 4" OUTLET	1–3
		ZURN – GREEN TURTLE	PROCEPTOR MODEL GMC1300–UPC	4" INLET, 4" OUTLET	1–2, 4

NOTES:
1. SEE GREASE INTERCEPTOR NOTES AND ACCESSORIES ON DRAWING P4.0
2. GREASE INTERCEPTOR IS SIZED FOR CITY SEWER APPLICATIONS ONLY. DO NOT USE FOR SEPTIC FIELDS.
3. FOR SCHIER HYDROMECHANICAL GREASE INTERCEPTOR ORDERING, CONTACT: LEE FLASHER, HUGHES SUPPLY, DIRECT LINE: (407) 509–7626, OR E–MAIL: MCDCOORD@HAJOCA.COM
4. FOR ZURN PROCEPTOR ORDERING, CONTACT HUGHES SUPPLY, DIRECT LINE: (407) 244–7918, OR E–MAIL: MCDCOORD@HAJOCA.COM

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	WATER USE	ACCESSORIES/COMMENTS	
F–1	FAUCET FOR LAV–1	SLOAN	SF–2150	0.5 GPM (0.08 GAL/10 SEC CYCLE)	FAUCET OPERATION: SENSOR	
		ZURN	Z6950–XL–S–N–10S			
F–2	FAUCET FOR MS–1	ZURN	Z843M4		FAUCET OPERATION: MANUAL SEE DETAIL 2 ON DRAWING P3.0	5' VINYL HOSE WALL HOOK
FCO	6x6 FLOOR CLEAN OUT	ZURN	Z1400–SZ		SEE DRAWINGS FOR PIPE SIZES SEE NOTE 8	
		JAY R. SMITH	4040			
FD–1	6x6 FLOOR DRAIN WITH FUNNEL	ZURN	Z415–SZ1		PIPE SIZE: 3" STRAINER SIZE: 6" NICKEL BRONZE	FUNNEL: ZURN Z329 SEE NOTE 8
		JAY R. SMITH	3510–F25			
FD–2	6x6 FLOOR DRAIN	ZURN	Z415–SZ1		PIPE SIZE: 3" STRAINER SIZE: 6" NICKEL BRONZE	FUNNEL: NONE SEE NOTE 8
		JAY R. SMITH	2005			
FD–3	6x6 FLOOR DRAIN WITH FUNNEL	ZURN	Z415–SZ1		PIPE SIZE: 4" STRAINER SIZE: 6" NICKEL BRONZE	FUNNEL: ZURN Z329 SEE NOTE 8
		JAY R. SMITH	3510–F25			
FD–4	6x6 FLOOR DRAIN	ZURN	Z415–SZ1		PIPE SIZE: 4" STRAINER SIZE: 6" NICKEL BRONZE	FUNNEL: NONE SEE NOTE 8
		JAY R. SMITH	2005			
FS–1	12x12 FLOOR SINK WITH HALF–GRATE	ZURN	ZN1901		PIPE SIZE: 3" DOME STRAINER: ALUMINUM	GRATE: HALF – NICKEL–BRONZE SEE NOTE 8
		JAY R. SMITH	3435			
FS–2	8x8 FLOOR SINK WITH HALF–GRATE	ZURN	ZN1910		PIPE SIZE: 3" DOME STRAINER: ALUMINUM	GRATE: HALF – NICKEL–BRONZE SEE NOTE 8
		JAY R. SMITH	3415			
FS–3	8x8 FLOOR SINK	ZURN	ZN1910		PIPE SIZE: 3" DOME STRAINER: ALUMINUM	GRATE: FULL – NICKEL–BRONZE SEE NOTE 8
		JAY R. SMITH	3415			
HB–1	WALL HYDRANT	WOODFORD	B65		WALL CLAMP: ADJUSTABLE WALL THICKNESS: M/S = 9½" W/W = 13¾"	SEE NOTE 3
		ZURN	Z1320–EZ			
		JAY R. SMITH	5519			
HB–2	YARD HYDRANT	WOODFORD	S4H		SEE NOTES 4 & 9	
HB–3	ROOF HYDRANT	WOODFORD	RHY2–MS		(NO DRAIN REQUIRED)	
HS–1	STAINLESS STEEL HAND SINK	ADVANCE TABCO	7–PS–61		FAUCET: INCLUDED WITH SINK	SEE NOTES 6 & 10
HS–2	STAINLESS STEEL HAND SINK – ADA	ADVANCE TABCO	7–PS–26		FAUCET: INCLUDED WITH SINK	SEE NOTES 6 & 10
LAV–1	LAVATORY	KOHLER	K–2882–0		FAUCET: F–1 TRUEBRO LAVGUARD2 MODEL #102–E–Z CORIAN COUNTER BY G.C.	SEE NOTE 10 SEE DETAIL 3 ON P3.0 SEE NOTE 11
		SLOAN	SS3021			
MS–1	MOP SINK	FIELD FABRICATED	RECESSED – FLOOR (24x24x12)		FAUCET: F–2 INCLUDES HOSE, HOSE BRACKET AND TWO (2) 24"Wx36"H WALL GUARDS SEE DETAIL 2 ON P3.0	
		ADVANCE TABCO	9–OP–24FM			
TD–1	TRENCH DRAIN	ZURN	Z886–DGC		CLASS A STAINLESS STEEL MESH SCREEN GRATE. NO–HUB BOTTOM OUTLET. BOTTOM DOME STRAINER. CLOSED END CAP	
UR–1	ADA WALL–HUNG URINAL	SLOAN	SU–1009	0.125 GPF	FLUSH VALVE: SLOAN SOLIS 8186 ZURN ZTR6203–ULF–LL ¾" I.P.S., 1" TOP SPUD	FLUSH VALVE OPERATION: SENSOR SEE NOTE 2
		ZURN	Z5755			
		–	–			
WB–1	WALL BOX FOR WASHING MACHINE	SIOUX CHIEF	696–2313		HAMMER ARRESTERS INCLUDED WITH BOX MOUNTING HEIGHT: 12" A.F.F.	SEE NOTE 7
WB–2	WALL BOX FOR WAREWASHER	SIOUX CHIEF	687–3PV		MOUNTING HEIGHT: 12" A.F.F.	SEE NOTE 7
WC–1	WATER CLOSET	SLOAN	ST–2009	1.28 GPF	FLUSH VALVE: SLOAN SOLIS 8111 ZURN ZTR6200EV–LL 1" I.P.S., 1½" TOP SPUD	FLUSH VALVE OPERATION: SENSOR SEAT: BEMIS MODEL 2155CT
		ZURN	Z5655			
		–	–			
WC–2	ADA WATER CLOSET	SLOAN	ST–2029 ADA	1.28 GPF	FLUSH VALVE: SLOAN SOLIS 8111 ZURN ZTR6200EV–CC–LL 1" I.P.S., 1½" TOP SPUD	FLUSH VALVE OPERATION: SENSOR SEAT: BEMIS MODEL 2155CT
		ZURN	Z5665			
		–	–			
–	SOILED DISHTABLE (3–COMPARTMENT SINK)	–	–		ITEM: 151.46	SEE NOTE 7
–	VEGETABLE PREPARATION SINK	–	–		ITEM: 134.00	SEE NOTE 7
–	WAREWASHER	HOBART	AM16SVLT WITH DRAIN WATER ENERGY RECOVERY		ITEM: 152.08 WALL BOX: WB–2	SEE NOTE 7
–	WASHING MACHINE	–	–		ITEM: 223.07 WALL BOX: WB–1	SEE NOTE 7
WHA	WATER–HAMMER ARRESTER	SIOUX CHIEF	SERIES 650		–	SEE SHEET P1.2
ROOF DRAINS AND ACCESSORIES						
DC–1	OVERFLOW DOWNSPOUT COVER	ZURN	Z199–SS		SEE DRAWINGS FOR PIPE SIZES	SEE NOTE 8
		JAY R. SMITH	1770–BS		BIRD SCREEN	
RD–1 THRU RD–4	COMBINATION MAIN ROOF AND OVERFLOW DRAIN	ZURN	Z165		SEE DRAWINGS FOR PIPE SIZES ROOF OPENING: 30"x14"	SEE NOTE 8

NOTES:
1. SEE McDONALD'S PROJECT MANUAL FOR ADDITIONAL MANUFACTURERS
2. PLUMBING CONTRACTOR SHALL COORDINATE WITH G.C. TO PROVIDE BLOCKING FOR PROPER URINAL SUPPORT
3. PLUMBING CONTRACTOR SHALL COORDINATE WITH G.C. TO PROVIDE INTERIOR BLOCKING ON W/W BUILDING FOR WALL CLAMP
4. YARD HYDRANT IS FOR TRASH CORRAL – SEE SITE PLAN FOR LOCATION
5. PLUMBING CONTRACTOR SHALL ROUTE ⅛" DRAIN PIPE FROM HOSE BIBB TO NEAREST FLOOR DRAIN OR FLOOR SINK
6. PLUMBING CONTRACTOR SHALL COORDINATE WITH G.C. TO PROVIDE BLOCKING FOR PROPER SINK SUPPORT
7. SEE KITCHEN DRAWINGS FOR ADDITIONAL INFORMATION – PLUMBING CONTRACTOR SHALL COORDINATE INSTALLATION WITH K.E.S.
8. PLUMBING CONTRACTOR SHALL SPECIFY CONNECTION MATERIAL/TYPE WHEN ORDERING
9. PLUMBING CONTRACTOR SHALL SPECIFY BURY DEPTH WHEN ORDERING
10. PLUMBING CONTRACTOR SHALL PROVIDE GRID DRAIN, P–TRAP AND VALVE STOPS FOR ALL SINKS & LAVS
11. FOR ALTERNATIVE LAVATORY OPTIONS, SUCH AS MOLDED SINKS OR DECK MOUNTED HAND DRYER, PLEASE CONTACT USRD OR HUGHES DIRECTLY.

TO ORDER PLUMBING FIXTURES, CONTACT HUGHES SUPPLY:
E–MAIL:
MCDCOORD@HUGHESSUPPLY.COM
OR MCDCOORD@HAJOCA.COM

BY | DESCRIPTION | DATE | REV

ENGINEER OF RECORD:
STATE OF NEW HAMPSHIRE
DAVID M. LEFFER No.12662 LICENSED PROFESSIONAL ENGINEER
10/30/2024

PREPARED BY:
CORE STATES GROUP
212 SE 16th Street
Suite 2
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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	DATE ISSUED	C.S.G. PROJECT #
ES	10/01/2024	MCD.39450
STD ISSUE DATE 2024 07		
REVIEWED BY D. LEIFFER		

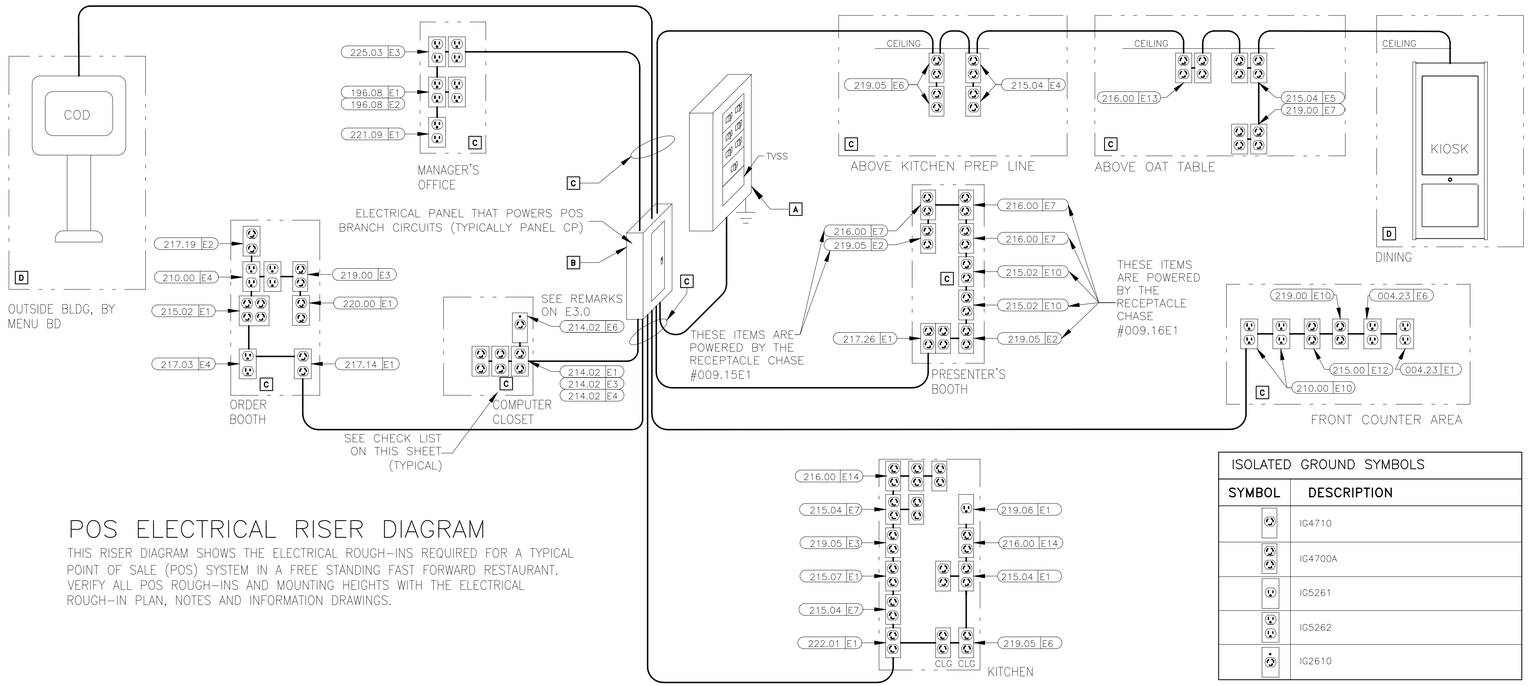
TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

DESCRIPTION	SITE ADDRESS	
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH		
WOOD TRUSS ROOF FRAMING		
WALL PANEL/HARDIE BOARD EXTERIOR FINISH		
NSN: 43514	4 DEERFIELD DR.	DOVER, NH
L/C: 028–0178		

028–0178.00.0

SHEET NO. P4.1
SCHEDULES

THE PURPOSE OF THIS SHEET IS TO PROVIDE A CHECKLIST AND VISUAL GUIDE SO THE INSTALLING EC CAN VERIFY THE WORK IS IN COMPLIANCE WITH MCDONALD'S SPECIFICATIONS THAT ARE CRITICAL TO THE PROPER FUNCTIONING OF OUR POINT OF SALE (POS) COMPUTER SYSTEMS.



POS ELECTRICAL RISER DIAGRAM

THIS RISER DIAGRAM SHOWS THE ELECTRICAL ROUGH-INS REQUIRED FOR A TYPICAL POINT OF SALE (POS) SYSTEM IN A FREE STANDING FAST FORWARD RESTAURANT. VERIFY ALL POS ROUGH-INS AND MOUNTING HEIGHTS WITH THE ELECTRICAL ROUGH-IN PLAN, NOTES AND INFORMATION DRAWINGS.

ISOLATED GROUND SYMBOLS	
SYMBOL	DESCRIPTION
	IG4710
	IG4700A
	IG5261
	IG5262
	IG2610

LOW VOLTAGE CABLE MANAGEMENT SPECIFICATION

GENERAL/MATERIALS

1. THE GC OR EC SHALL FURNISH AND INSTALL A COMPLETE LOW VOLTAGE CABLE MANAGEMENT SYSTEM UTILIZING CADDY-ERICO TYPE CAT-32 J-HOOK SUPPORTS (2-INCH DIAMETER LOOP MINIMUM). ALL J-HOOKS SHALL;
   - HAVE A MINIMUM BEARING SURFACE OF 1¾",
   - HAVE FLARED EDGES TO PREVENT DAMAGE TO HIGH PERFORMANCE CABLES,
   - HAVE AN ELECTRO-GALVANIZED FINISH,
   - HAVE 3/8" WIDE CABLE RETAINING STRAPS,
   - BE UL LISTED AND LABELED,
   - BEAR THE UL SYMBOL MARKING ON THE PART FOR IDENTIFICATION
   - BE INSTALLED PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS.
2. THE ENTIRE INSTALLATION SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), NEC SECTION 800, BICSI STANDARDS 568 & 569, ALL APPLICABLE NATIONAL, STATE, LOCAL, AND SAFETY CODES, AND McDONALD'S SPECIFICATIONS.

INSTALLATION

1. LOW VOLTAGE J-HOOK CABLE PATHWAY (FOR POS CABLING SYSTEM) SHALL BE PROVIDED FROM THE MANAGERS OFFICE (OR COMPUTER CLOSET) DATA CONDUIT STUB-UP LOCATION TO THE FOLLOWING DATA CONDUIT STUB-UP LOCATIONS (AS APPLICABLE):
   - FRONT COUNTER.
   - PRESENTERS BOOTH.
   - CASHIERS BOOTH.
   - THIRD DRIVE-THRU WINDOW(IF PRESENT).
   - CREW ROOM.
   - VALENCE WALL.
   - REMOTE ORDERING STATIONS.
   - NETPOP TELEPHONE PANEL LOCATION.
   - KIOSK
   - DIGITAL MERCHANDISER

   CABLE SUPPORTS SHALL BE PROVIDED WITHIN 24 INCHES OF THESE STUB-UP LOCATIONS. ALL STUB-UP CONDUITS SHALL BE PROVIDED WITH AN INSULATED BUSHING TO PROTECT CABLES DURING INSTALLATION.
2. THE LOCATION AND ROUTING OF THE LOW VOLTAGE CABLE MANAGEMENT SYSTEM SHALL BE COORDINATED WITH ALL OTHER CONSTRUCTION TRADES PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH THE OTHER TRADES FINAL INSTALLATIONS, BOTH BEFORE AND AFTER THE CABLE MANAGEMENT SYSTEM AND THE POS CABLING ARE INSTALLED. FINAL INSTALLATION LOCATION SHALL BE READILY ACCESSIBLE TO ALLOW FOR EASE IN INSTALLATION OF THE POS CABLING BY THE POS VENDOR'S INSTALLER.
3. LOW VOLTAGE J-HOOK CABLE SUPPORTS AND APPURTENANCES SHALL BE FASTENED TO THE BUILDING STRUCTURAL AND/OR FRAMING MEMBERS. LOW VOLTAGE J-HOOK CABLE SUPPORTS SHALL NOT BE FASTENED OR UTILIZE THE CEILING GRID SUSPENSION WIRES OR T-BAR GRID FOR INSTALLATION. CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACKETS, HANGERS, RODS, CLAMPS, FLANGES, SUPPORTS, ETC. FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM. THE INSTALLATION OF THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM SHALL BE DONE SO THAT THE ROUTING OF THE CABLES IS PARALLEL TO AND/OR PERPENDICULAR TO FRAMING AND STRUCTURAL BUILDING MEMBERS.
4. LOW VOLTAGE J-HOOK **CABLE SUPPORTS** SHALL BE INSTALLED A MAXIMUM OF 36 INCHES APART. AT TRANSITION LOCATIONS, THE CONTRACTOR SHALL PROVIDE ADDITIONAL J-HOOKS TO ALLOW FOR A MINIMUM ONE-FOOT RADIUS BEND AND FOR ADDITIONAL CABLE SUPPORT AT THESE TRANSITION POINTS.
5. TO AVOID **ELECTROMAGNETIC INTERFERENCE** (EMI), ALL PATHWAYS SHALL PROVIDE A MINIMUM CLEARANCE OF 4 FEET (1.2 METERS) FROM MOTORS AND TRANSFORMERS AND A MINIMUM CLEARANCE OF 1 FOOT (0.3 METERS) FROM CONDUIT AND CABLES UTILIZED FOR ELECTRICAL POWER DISTRIBUTION, AND OTHER NON-POS LOW VOLTAGE CONDUCTORS.
6. ANY **CEILING TILES** IN THE AREA WHERE THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM IS LOCATED SHALL NOT BE INSTALLED UNTIL THE POS VENDOR'S CONTRACTOR COMPLETES THE INSTALLATION OF ALL POS CABLING.
7. ALL NON-POS LOW VOLTAGE CABLING SHALL BE INSTALLED IN A SEPARATE CABLE MANAGEMENT SYSTEM INDEPENDENT OF THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM UTILIZED FOR THE POS CABLING.
8. THE POS INSTALLER SHALL BE RESPONSIBLE TO FURNISH AND INSTALL ALL LOW VOLTAGE CABLING REQUIRED FOR THE COMPLETE AND FULLY FUNCTIONAL OPERATION OF THE POS SYSTEM. ALL POS CABLING SHALL BE INSTALLED WITHIN THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM.
9. GENERAL CONTRACTOR TO COORDINATE WITH POS INSTALLER. POS INSTALLER TO PERFORM POS CABLE INSTALLATION PRIOR TO CLOSING OF WALLS AND CEILING.

ELECTRICAL POS CERTIFICATION

AS OF THE DATE BELOW, I HEREBY CERTIFY THAT ALL ELECTRICAL WORK, ELECTRICAL SERVICE AND ELECTRICAL SYSTEMS, MATERIALS AND LABOR RELATED TO THE POS ELECTRICAL INSTALLATION IN WHICH THE UNDERSIGNED ARE DIRECTLY OR INDIRECTLY RESPONSIBLE HAVE BEEN PROPERLY INSTALLED IN FULL COMPLIANCE WITH ALL CONSTRUCTION DOCUMENTS AND ALL NFPA, BUILDING, ELECTRICAL AND OTHER APPLICABLE CODES, ALONG WITH ALL OF THE REQUIREMENTS OUTLINED ON THIS DRAWING. I FURTHER CERTIFY THAT THE ELECTRIC SERVICE POWERING THE POS SYSTEM HAS BEEN PROPERLY INSTALLED BY A QUALIFIED ELECTRICIAN. SKILLED, KNOWLEDGEABLE AND TRAINED TO INSTALL ALL THE REQUIRED ELECTRICAL DISTRIBUTION COMPONENTS NECESSARY TO POWER THE POINT OF SALE (POS) SYSTEM.

GENERAL CONTRACTOR: _____

BY: _____

DATE: _____

ELECTRICAL CONTRACTOR: _____

BY: _____

DATE: _____

START HERE

A VISUALLY INSPECT THE MAIN ELECTRICAL PANEL (MDP)

YES	NO	N/A		
☐	☐	☐	1.	IS AN **EQUIPMENT GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **CONNECTED** TO THE PANEL?
☐	☐	☐	2.	DO ALL NEUTRAL CONDUCTORS TERMINATE ONLY TO THE NEUTRAL BAR?
☐	☐	☐	3.	DO ALL EQUIPMENT GROUND CONDUCTORS TERMINATE ONLY TO THE EQUIPMENT GROUND BAR?
☐	☐	☐	4.	DOES THE ISOLATED GROUND CONDUCTOR (GREEN W/YELLOW STRIPE) TERMINATE ON THE EQUIPMENT GROUND BAR?
☐	☐	☐	5.	IS THERE AN APPROPRIATE ELECTRICAL CONNECTION (BOND) BETWEEN THE NEUTRAL BAR AND THE EQUIPMENT GROUND BAR?
☐	☐	☐	6.	DOES THE GROUNDING SYSTEM COMPLY WITH MCDONALD'S "BUILDING ELECTRICAL GROUNDING DETAIL"?
☐	☐	☐	7.	IS A SURGE PROTECTOR INSTALLED THAT COMPLIES WITH MCDONALD'S "TVSS INSTALLATION GUIDE" OR DETAIL?
☐	☐	☐	8.	ARE ALL ELECTRICAL CONNECTIONS (WIRING & BUSING) PROPERLY TIGHTENED?
☐	☐	☐	9.	ARE ALL CIRCUIT BREAKERS CLEARLY LABELED?

B VISUALLY INSPECT THE PANEL "CP" THAT POWERS POS

YES	NO	N/A		
☐	☐	☐	1.	IS AN **EQUIPMENT GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **CONNECTED** TO THE PANEL?
☐	☐	☐	2.	IS AN **ISOLATED GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **INSULATED** FROM THE PANEL?
☐	☐	☐	3.	DO ALL NEUTRAL CONDUCTORS TERMINATE ONLY TO THE NEUTRAL BAR?
☐	☐	☐	4.	DO ALL EQUIPMENT GROUND CONDUCTORS TERMINATE ONLY TO THE EQUIPMENT GROUND BAR?
☐	☐	☐	5.	DO ALL ISOLATED GROUND CONDUCTORS (GREEN W/YELLOW STRIPE) TERMINATE ONLY TO THE ISOLATED GROUND BAR?
☐	☐	☐	6.	ARE ALL ELECTRICAL CONNECTIONS (WIRING & BUSING) PROPERLY TIGHTENED?
☐	☐	☐	7.	ARE ALL POS AND COD CIRCUIT BREAKERS ON THE SAME PANEL?
☐	☐	☐	8.	ARE ALL CIRCUIT BREAKERS CLEARLY LABELED?
☐	☐	☐	9.	DO ALL POS & COD CIRCUIT BREAKERS HAVE A LOCKING MECHANISM ON THEIR HANDLES TO PREVENT THEM FROM BEING SHUT OFF BY MISTAKE?
☐	☐	☐	10.	DOES THE FEEDER CIRCUIT FOR THIS SUBPANEL CONTAIN PHASE, NEUTRAL ONE EQUIPMENT GROUND AND ONE ISOLATED GROUND CONDUCTORS THAT ARE PROPERLY TERMINATED (SEE POS & COD ISO GND/DED CKT DETAIL)?

VISUALLY INSPECT ALL REMAINING ELECTRICAL SUBPANELS

YES	NO	N/A		
☐	☐	☐	1.	IS AN **EQUIPMENT GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **CONNECTED** TO THE PANEL?
☐	☐	☐	2.	DO ALL NEUTRAL CONDUCTORS TERMINATE ONLY TO THE NEUTRAL BAR?
☐	☐	☐	3.	DO ALL EQUIPMENT GROUND CONDUCTORS TERMINATE ONLY TO THE EQUIPMENT GROUND BAR?
☐	☐	☐	4.	ARE ALL ELECTRICAL CONNECTIONS (WIRING & BUSING) PROPERLY TIGHTENED?
☐	☐	☐	5.	ARE ALL CIRCUIT BREAKERS CLEARLY LABELED?
☐	☐	☐	6.	DOES THE FEEDER CIRCUIT FOR THIS SUBPANEL CONTAIN PHASE, NEUTRAL AND ONE EQUIPMENT GROUND CONDUCTORS THAT ARE PROPERLY TERMINATED? (SEE BUILDING ELECTRICAL GROUNDING DETAIL)

C VISUALLY INSPECT THE POS BRANCH CIRCUITS

YES	NO	N/A		
☐	☐	☐	1.	ARE THE POS BRANCH CIRCUITS ROUTED IN THEIR OWN CONDUIT BY THEMSELVES?
☐	☐	☐	2.	IF THE POS BRANCH CIRCUIT IS ROUTED ABOVE GRADE, IS IT IN A METALLIC CONDUIT?
☐	☐	☐	3.	DOES EACH POS BRANCH CIRCUIT CONTAIN: ONE PHASE (BLACK COLORED INSULATION) ONE NEUTRAL (WHITE COLORED INSULATION) ONE EQUIPMENT GROUND (GREEN COLORED INSULATION) ONE ISOLATED GROUND (GREEN W/YELLOW STRIPE COLORED INSULATION).
☐	☐	☐	4.	DO ALL POS BRANCH CIRCUITS TERMINATE AT EITHER AN IG4700, IG4710, IG5261, IG5262 RECEPTACLES OR ANY COMBINATION OF THESE?
☐	☐	☐	5.	ARE ALL ELECTRICAL TERMINATIONS TO IG RECEPTACLES MADE WITH SOLID #12 AWG WIRE CAPTURED AROUND THE SCREW BARREL AND SUITABLY TIGHTENED?
☐	☐	☐	6.	ARE ALL BRANCH CIRCUIT CONNECTIONS PROPERLY TIGHTENED?
☐	☐	☐	7.	ARE THE CORRECT AMOUNT AND TYPE OF IG RECEPTACLES PROVIDED AS SHOWN IN THE ELECTRICAL ROUGH-IN PLAN, NOTES AND INFORMATION?
☐	☐	☐	8.	DO ALL POS RECEPTACLES HAVE ORANGE "COMPUTER ONLY" COVERPLATES?
☐	☐	☐	9.	DO ALL POS BRANCH CIRCUITS COMPLY WITH THE "POS & COD ISOLATED GROUND/DEDICATED CIRCUIT DETAIL?

D VISUALLY INSPECT THE POS BRANCH CIRCUIT FOR THE COD & KIOSK

YES	NO	N/A		
☐	☐	☐	1.	ARE THE COD AND KIOSK BRANCH CIRCUITS ROUTED IN THEIR OWN CONDUIT BY THEMSELVES?
☐	☐	☐	2.	DOES EACH COD AND KIOSK BRANCH CIRCUIT CONTAIN; – ONE PHASE (BLACK COLORED INSULATION), – ONE NEUTRAL (WHITE COLORED INSULATION), – ONE EQUIPMENT GROUND (GREEN COLORED INSULATION), – ONE ISOLATED GROUND (GREEN W/YELLOW STRIPE COLORED INSULATION).
☐	☐	☐	3.	ARE THE COD(S) AND KIOSK(S) POWERED FROM THE SAME PANEL AS THE POS?
☐	☐	☐	4.	DO THE BREAKERS FOR THE COD(S) AND KIOSK(S) HAVE A LOCKING MECHANISM ON THEIR HANDLES THAT WILL PREVENT IT FROM BEING SHUT OFF?
☐	☐	☐	5.	DO THE COD BRANCH CIRCUIT(S) COMPLY WITH THE "POS & COD ISOLATED GROUND/DEDICATED CIRCUIT DETAIL?

ARE **ALL** BOXES CHECKED "YES"?

NO

REWORK ELECTRICAL SYSTEM TO BRING INTO COMPLIANCE WITH MCDONALD'S SPECIFICATIONS

YES

ALL WORK IS NOT CONSIDERED TO MEET MCDONALD'S SPECIFICATIONS UNTIL THE INSTALLED ELECTRICAL SYSTEM SUPPORTS A "YES" ANSWER FOR ALL QUESTIONS ASKED.

AS PART OF THIS PROCESS, THE EC AND THE GC WILL BE REQUIRED TO SIGN THE ELECTRICAL CERTIFICATION DOCUMENT INDICATING THAT THE INSTALLED ELECTRICAL SYSTEM MEETS MCDONALD'S SPECIFICATIONS.

FINISHED

NOTICE:

CHANGES SHALL NOT BE MADE TO THE POS ELECTRICAL SYSTEM AFTER THE POS EQUIPMENT HAS BEEN INSTALLED WITHOUT FIRST NOTIFYING THE POS VENDOR.

IF CHANGES ARE MADE TO THE POS ELECTRICAL SYSTEM **AFTER** THE CERTIFICATION PROCESS HAS BEEN COMPLETED, THEN A SYSTEM RE-CERTIFICATION SHALL BE REQUIRED.

NO.	DESCRIPTION	DATE	BY
REV			

10/9/2024

PREPARED BY: CORE STATES GROUP, 135 Wynne Street, Suite 201, Schaumburg, IL 60540, 312.718.3415, core-states.com

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PREPARED FOR: McDonald's USA, LLC

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DRAWN BY: SH | STD ISSUE DATE: 2024 07
REVIEWED BY: M.PELINI | DATE ISSUED: 10/01/2024
C.S.G. PROJECT #: MCD.39450

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD
DESCRIPTION: WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH
NSN: 43514 | SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178

SHEET NO.: 028-0178.00.0
E1.0
POS RISER DIAGRAM

TRASH CORRAL POWER:
3/4"C–4#10 & 1#10 GND TO A 30A–2P AND A 20A–1P CB IN PANEL AP–2 FOR TRASH COMPACTOR AND WP GFCI DCO. PROVIDE 30A–2P NF DISCONNECT FOR TRASH COMPACTOR. VERIFY EXACT LOCATION AND ALL REQUIREMENTS OF TRASH CORRAL IN FIELD.

COMPLETE INSTALLATION OF THE SECONDARY DETECTOR LOOPS & C.O.D. COUNDUIT FOR CURRENT & ANY FUTURE D/T EQUIPMENT. IF SECONDARY D/T IS NOT INSTALLED, EXTEND INTO LANDSCAPED AREA BEHIND BUILDING, STUB, & CAP FOR FUTURE ACCESS.

EXTEND 2" CONDUIT TO DT CAMERA MOUNTED ON LIGHT POLE OR OTHER POLE. COORDINATE STUB–UP LOCATION WITH ACM AND DT CAMERA INSTALLER

EXTEND CONDUITS TO OUTDOOR MENU BOARDS FOR DATA CONNECTIONS. REFER TO DRIVE THRU DIAGRAM ON SHEET E4.0

(2) 1–1/2" CONDUIT TO SECONDARY SPEAKER FOR DATA & LOOP DETECTOR SEE CIVIL DRAWINGS 217.10 | E1

(2) 1–1/2" CONDUIT TO PRIMARY SPEAKER FOR DATA & LOOP DETECTOR SEE CIVIL DRAWINGS 217.10 | E1

3–SECTION MODULAR SWITCHBOARD "MDP", AP–1, 2, 3, 4

PROVIDE 2" HOLE & GROMMET IN JUNCTION BOX COVER PLATE FOR POS DATA CABLES

CONDUIT TO DETECTOR LOOP. SEE SITE PLAN & DETAIL ON SHEET E4.0

TAP 1 1/2" HOLE FOR DATA LINES WITH 1 1/2" GROMMET

1/2"C–2#12 & 1#12 GND AP–2:9 GFCI BKR

UP TO EXHAUST FAN

1/2"C–2#12 & 1#12 GND AP–2:33

RECIRC PUMP

RACEWAY PROVIDED WITH COUNTER, INSTALLED BY E.C. (REFER TO DETAIL ON SHEET E3.1)

DINING ROOM CEILING DCO'S 1/2"C–2#12 & 1#12 GND. AP–5:32 (TYP. OF 4)

4 SECTION UTILITY CHASE BY K.E.S

ROUGH–INS FOR LATE NIGHT WINDOW PUSH BUTTON OPERATES WALL–MOUNTED HORN STROBE BUZZER POWER FROM ACCESS CONTROL SYSTEMS POWER SUPPLY.

4 SECTION UTILITY CHASE BY K.E.S

ROUGH–INS SHOWN ARE FOR ACCESS CONTROL SYSTEMS. VERIFY ROUGH–IN AND INSTALLATION REQUIREMENTS WITH SECURITY CONTRACTOR PRIOR TO INSTALLATION. (TYP.)

C.P. PANEL

L.P. PANEL

AP–5 PANEL

AP–6 PANEL

AP–5:14

AP–5:16

AP–5:18

11'–1" (HOLD)

27'–0" (HOLD)

9'–7" (HOLD)

42'–5" (HOLD)

32'–7"

1 / E1.1 ELECTRICAL ROUGH–IN PLAN
1/4" = 1'–0"

SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SINGLE POLE SWITCH, 3W=THREE WAY SWITCH, K=KEYED SWITCHED, VS=VACANCY SENSOR	(B)	BUZZER
T	MANUAL SWITCH (T=THERMAL OVERLOADS)	(B)	BUTTON FOR BUZZER
T	TRANSFORMER		PULLBOX
	JB WITH DUPLEX CONVENIENCE OUTLET (FLUSH WITH CEILING)		PANELBOARD
	JB WITH SINGLE CONVENIENCE OUTLET		CIRCUIT BREAKER
	JB WITH DUPLEX CONVENIENCE OUTLET	A	AMPERES
	JB WITH TWO DUPLEX CONVENIENCE OUTLETS	ACM	AREA CONSTRUCTION MANAGER
	JB WITH SPECIAL PURPOSE OUTLET	AFF	ABOVE FINISHED FLOOR
	JB WITH ISOLATED GROUND OUTLET = IG4710, =IG5261, =IG4700A, =IG5262	C	CONDUIT
		CCT	CIRCUIT
	INTERCOM STATION W/ 3/4"C– TO MAIN STATION	EC	ELECTRICAL CONTRACTOR
	TELEPHONE JACK	GC	GENERAL CONTRACTOR
J	JUNCTION BOX – WALL OR CEILING MOUNTED	GFI/GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	DISCONNECT SWITCH	GND	GROUND
S	STUB UP THRU ROOF	IG	ISOLATED GROUND
T	THERMOSTAT SENSOR W/ 1/2"C– UP TO CEILING SPACE	JB	JUNCTION BOX
M	MOTOR CONNECTION	KES	KITCHEN EQUIPMENT SUPPLIER
	CONDUIT RUN CONCEALED IN CEILING OR WALLS	MLO	MAIN LUGS ONLY
	CONDUIT RUN IN FLOOR SLAB	WP	WEATHERPROOF
X	HOT (SHORT), NEUTRAL (LONG), EQUIP GRD (LONG WITH DOT), & & 'X' DENOTES ISOLATED GRD	CO	CARBON MONOXIDE SENSOR
	J–BOX WITH FINAL EQUIPMENT CONNECTION	GB	GROUND BUS TERMINAL
OS	CEILING MOUNTED OCCUPANCY SENSOR	DS	DAYLIGHT SENSOR

ADT ROUGH–IN NOTES

1. COORDINATE EXACT INSTALLATION REQUIREMENTS WITH ADT PRIOR TO INSTALLATION TEL. 800–417–8238
2. EC SHALL PROVIDE A 2 GANG 3 25/32" X 3 25/32" X 3 1/2"D JUNCTION BOX AT DOOR FOR INSTALLATION OF DOOR ALARM UNIT. STUB 1/2"C ABOVE CEILING FROM JUNCTION BOX. PROVIDE 1/2"C FROM J–BOX TO DOOR MAGNETIC SWITCH LOCATION.
3. EC SHALL PROVIDE 4" X 4" JUNCTION BOX ABOVE CEILING FOR INSTALLATION OF LOW VOLTAGE TRANSFORMER. VERIFY EXACT LOCATION WITH ADT PRIOR TO INSTALLATION. PROVIDE 1/2"C–2#12 TO LOCKOUT TYPE CB IN PANEL LP–1.

GENERAL NOTES

1. SEE SHEET E3.0 FOR PANEL & CIRCUIT BREAKER ASSIGNMENT, VOLT/PH, FLA, BREAKER SIZE, COND/WIRE, RECEPTACLE TYPE, HEIGHT ABOVE FINISHED FLOOR, REQUIREMENTS & REMARKS FOR ALL ELECTRICAL EQUIPMENT.
2. SEE LOW VOLTAGE CABLE MANAGEMENT SPECIFICATION ON SHEET E1.0 FOR POS, DATA, AND SOUND SYSTEM REQUIREMENTS.
3. GC/EC SHALL COORDINATE LOCATION AND ALL REQUIREMENTS OF CT& METER CABINET WITH LOCAL UTILITY COMPANY. CT & METER CABINET SHALL NOT BE INSTALLED ON D/T SIDE OF BUILDING. GC SHALL PAINT TO MATCH BUILDING COLOR.

KEY NOTES

1 TAMPER RESISTANT GFCI DUPLEX RECEPTACLE IN PUBLIC AREAS. EC SHALL PROVIDE HUBBELL GFTRST* ("*": AL=ALMOND, BK=BLACK, –=BROWN, GY=GRAY, I=IVORY, LA=LIGHT ALMOND, R=RED, W=WHITE). SPECIFIED RECEPTACLE BECOMES DE–ENERGIZED UPON FAILURE OF GFCI DEVICE. NO SUBSTITUTIONS.(TYPICAL)

2 SEE POS ELECTRICAL RISER DIAGRAM ON SHEET E1.0. (TYPICAL)

KEY NOTES

3 EC TO FURNISH AND INSTALL A FLUSH MOUNTED JUNCTION BOX WITH WEATHERPROOF GASKET AND OUTDOOR WEATHERPROOF, 24 VOLT CO2 HORN/STROBE UNIT COMPATIBLE WITH CO2 ALARM SYSTEM – EDWARDS GENESIS WGAVRN OR APPROVED EQUAL. STROBE SHALL HAVE AN AMBER COVER AND MEET ALL LOCAL REGULATORY REQUIREMENTS FOR SPECIFICATIONS AND INSTALLATION. PROVIDE A 3/4" CONDUIT STUB–IN INTO BUILDING WITH THERMOPLASTIC BUSHING FROM WEATHERPROOF BACKBOX. PROVIDE FINAL WIRING TERMINATIONS AT HORN/STROBE UNIT AND THEN PROVIDE 36 INCHES OF PIGTAIL WIRING FROM HORN/STROBE INTO THE BUILDING AND NEATLY COIL FOR FINAL CONNECTION. FINAL WIRING CONNECTION FROM OUTDOOR HORN/STROBE PIGTAILS TO THE CO2 ALARM SYSTEM INSTALLATION TO BE PROVIDED BY BEVERAGE INSTALLER.

4 PER THE AMERICAN WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG), A MINIMUM OF ONE (1) ADA COMPLIANT ELECTRICAL RECEPTACLE SHALL BE INSTALLED AT AN ACCESSIBLE TABLE. GC/EC SHALL REFERENCE FINAL DECOR PLANS AND PROVIDE RECEPTACLES AS NECESSARY FOR COMPLIANCE. (TYPICAL)

5 COORDINATE LOCATION OF RECEPTACLES SO THAT RECEPTACLES ARE LOCATED ON FULL HEIGHT WALLS PER THE DECOR PLAN. STUB UP AND CIRCUIT IN HALF WALL FOR RECEPTACLES NOT ON FULL HEIGHT WALLS, CONFIRM FINAL LOCATIONS WITH DECOR DRAWINGS PRIOR TO ROUGH–IN.

6 IF MOUNTED TO A LIGHTING POLE, DT CAMERA SHALL ONLY BE INSTALLED ON A POLE WITH MAXIMUM OF (2) LIGHTING HEADS. PROVIDE ISOLATION OF DT CAMERA MOUNTING HARDWARE AND POLE TO PREVENT BI–METALLIC OR GALVANIC CORROSION.

7 E.C. TO PROVIDE AN ALLOWANCE IN BID TO PROVIDE TWO(2) FLEXIBLE POWER CONNECTIONS FOR POWER TO FURNITURE/ FAMILY EXPERIENCE ELEMENTS AS PART OF THE DECOR PACKAGE. E.C. SHALL VERIFY EXACT LOCATIONS IN FIELD AND WITH DECOR DRAWINGS. PROVIDE ALL NECESSARY MATERIALS AND LABOR FOR A COMPLETE AND FULLY NEC CODE COMPLIANT INSTALLATION. ALL COMPONENTS SHALL BE FED FROM A GFCI TYPE CIRCUIT BREAKER AND BRANCH CIRCUIT SHALL CONTAIN TWO PATHS OF GROUNDING (CONDUIT BODY AND AN INSULATED GROUNDING CONDUCTOR) TO COMPLY WITH McDONALD'S GROUNDING STANDARDS.

8 DRIVE THRU WINDOW POWER, CONFIRM REQUIREMENTS WITH MANUFACTURER DRAWINGS.

KEY NOTES

9 PROVIDE POWER FOR CONNECTION TO SELF ORDER KIOSKS. COORDINATE EXACT LOCATION OF KIOSKS WITH DECOR DRAWINGS. PROVIDE 2#12, 1#12 GRD., & 1#12 ISOLATED GROUND ON A 20A DEDICATED CIRCUIT FED FROM THE CP PANEL FOR EVERY KIOSK.

10 VERIFY DROP CORDS AND RECEPTACLES DO NOT FALL BELOW HEIGHTS LISTED ON E3.0 ELECTRICAL SCHEDULE. RECEPTACLES SHOULD BE LOCATED AT HEIGHTS TO AVOID CONTACT WITH HOT APPLIANCES.

11 PROVIDE POWER AND DATA ROUGH–INS FOR DIGITAL MERCHANDISER. EXTEND CIRCUIT TO THIS LOCATION FROM FRONT COUNTER MERCHANDISER IN SERVICE AREA. EXTEND J–HOOKS FROM SERVICE AREA FOR DATA CABLES. REFER TO 3/E3.1.

12 EC TO INSTALL DROP CORDS JUSTIFIED TO THE DRIVE THRU SIDE OF THE BUILDING.

13 PROVIDE POWER AND DATA ROUGH–INS FOR CASH HANDLERS REFER TO 4/E3.1 FOR MORE INFORMATION. COORDINATE EXACT LOCATION WITH DECOR DRAWINGS.

14 AT&T TO PROVIDE #8 GRD CONDUCTOR FROM BUILDING EXTERIOR WIRELESS ACCESS POINT TO ABOVE INTERIOR CEILING. EC TO EXEND CONDUCTOR TO BUILDING GROUNDING SYSTEM. COORDINATE EXACT LOCATION OF ACCESS POINT IN FIELD WITH AT&T.

15 CONTRACTOR TO PUNCH HOLES IN SERVICE POD FOR CABLE AND CONDUIT ROUTING. UTILIZE BUSHINGS PROVIDE WITH SERVICE POD TO PROTECT CABLES.

16 REFER TO DETAIL ON A3.1 FOR DIMENSIONS OF DIGITAL MERCHANDISER ROUGH–INS.

NO.	DESCRIPTION	DATE	REV	BY

10/9/2024

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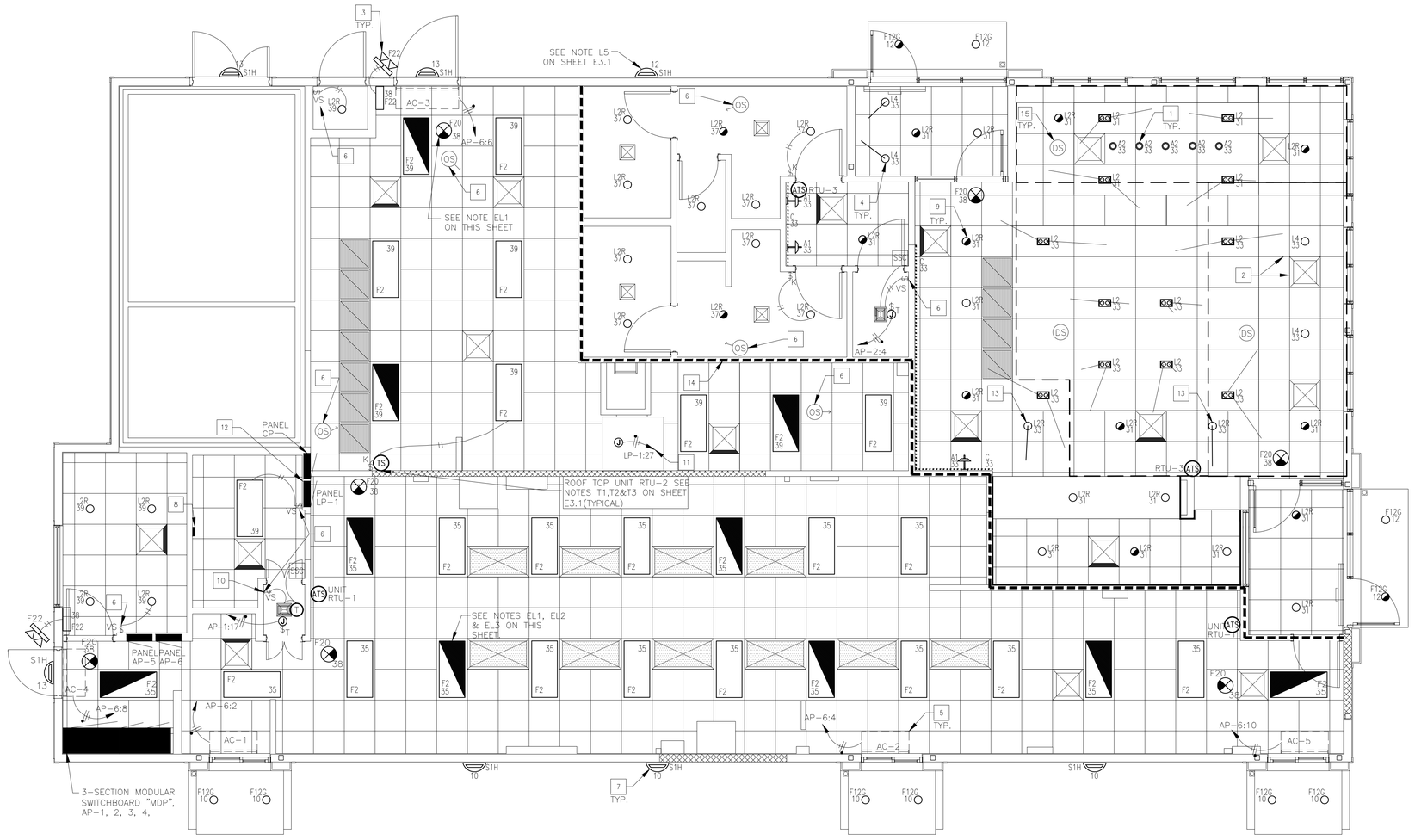
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DRAWN BY	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
SH	M.PELINI	10/01/2024	MCD.33450
STD ISSUE DATE 2024 Q1			

TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

DESCRIPTION	SITE ADDRESS:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	4 DEERFIELD DR.
NSN: 4.5514	DOVER, NH
L/C: 028–0178	

SHEET NO. 028–0178.00.0
E1.1
ROUGH–IN PLAN



KEY NOTES

1. CENTER PENDANT LIGHTS OVER TABLES (TYPICAL)
2. ALL SOFFIT LOCATIONS, LIGHTING, & SUPPLY GRILLS SHALL BE COORDINATED WITH DECOR COMPANY DRAWING PRIOR TO INSTALLATION.
3. EC SHALL INSTALL AND CONFIGURE REMOTE EMERGENCY LIGHTING AT ALL EGRESS EXTERIOR DOORS FOR MAXIMUM ILLUMINATION AT POINTS OF EGRESS. INSTALL WP J-BOX WITHIN SOFFIT TO ALLOW A FLUSH INSTALLATION OF ANY EXTERIOR EMERGENCY EGRESS LIGHTING (TYPICAL).
4. OPTIONAL ADJUSTABLE WALL WASH FIXTURE TO ILLUMINATE LOGO OR GRAPHICS. EC SHALL VERIFY EXACT LOCATION SO AS TO ADJUSTABLY ILLUMINATE McDONALD'S ARCH LOGO SIGN AND GRAPHICS.
5. AIR CURTAIN UNIT. NON HEATED VERSION TO USE 1/2"C. 2#12, 1#12GRD. HEATED VERSION TO USE 1"C. 2#6, 1#10 GRD. (TYPICAL).
6. PROVIDE DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR OR WALL MOUNTED VACANCY SENSOR AS SHOWN. ORDER ALL SENSORS FROM SECURITY LIGHTING SYSTEMS, INC.
7. RADIAL WALL SCONCE. SEE NOTE L2 ON SHEET E3.1 AND ARCHITECTURAL ELEVATIONS ON SHEETS A2.0 & A2.1. (TYPICAL)
8. BUILDING AUTOMATION SYSTEM LOCATION. SEE LIGHTING CONTROL DETAILS ON SHEET E4.1.
9. PROVIDE LIGHTING INVERTER FOR USE WITH FIXTURES SHOWN SLASHED. MODEL #LG125T SHOULD BE USED FOR L2R, L4 & FI2G WITH NOT MORE THAN SEVEN DOWNLIGHTS CONNECTED TO EACH INVERTER, AND NOT MORE THAN TWO F2 FIXTURES. IF DECOR USES ALTERNATE FIXTURES, COORDINATE INVERTER TO BE USED WITH LIGHTING SUPPLIER. E.C. SHALL VERIFY THE QUANTITY OF FIXTURES THAT CAN BE CONNECTED WITHOUT EXCEEDING OPERATING CAPACITY OF UNIT AND PROVIDE ADDITIONAL CIRCUITS AND INVERTERS AS REQUIRED. (TYPICAL)
10. CENTER VACANCY SENSOR SWITCH OPPOSITE COMPUTER RACK IN A LOCATION ACCESSIBLE FROM BOTH DOORS FOR CONTROL OF CEILING MOUNTED LIGHT, IN DATA ROOM. FAN CONTROLLED BY LOCAL THERMOSTAT.
11. PROVIDE POWER FOR LIGHT WITHIN EXHAUST HOOD. INTEGRATE INTO LOCAL LIGHTING CONTROLS.
12. LIGHTING CONTACTORS IN NEMA 1 ENCLOSURE JUST BELOW CEILING. EC SHALL PROVIDE 120 VOLT CONTROL CIRCUIT TO CONTACTOR PANEL. VERIFY EXACT LOCATION IN FIELD AND REFER TO DRAWING E4.1 FOR ADDITIONAL DETAILS.
13. ADJUST FIXTURE TO ILLUMINATE DELIVERY POD SHELVING.
14. DRAFT STOP ABOVE CEILING, SEAL ALL ELECTRICAL PENETRATIONS.
15. NEW DAYLIGHT SENSOR TO BE INSTALLED TO CONTROL DAYLIGHT AREAS IN THE DINNING AREAS. ORDER ALL DAYLIGHT SENSORS FROM; SECURITY LIGHTING SYSTEMS, INC.

EMERGENCY LIGHTING NOTES

EL1. EC SHALL VERIFY ALL REQUIREMENTS AND FINAL EMERGENCY LIGHTING LOCATIONS WITH LOCAL AUTHORITIES. INCLUDE ALL COSTS IN BASE BID.

EL2. IF NOT INSTALLED BY MANUFACTURER, EC SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION OF THE EMERGENCY INVERTER IN SWITCHED EMERGENCY FIXTURES SHOWN ON THIS SHEET.

EL3. LED FIXTURES DENOTED AS SWITCHED EMERGENCY SHALL BE CONNECTED TO AN INVERTER. INVERTER SHALL BE CAPABLE OF ILLUMINATING FIXTURE FOR 1.5 HOURS TO COMPLY WITH NEC SECTION 700 AND UL924.

EL4. EMERGENCY BATTERY LIGHTING WALL PACKS IN PLAYPLACE SHALL BE LOCATED SO AS TO PROVIDE FOR MAXIMUM ILLUMINATION OF AREA. EC SHALL VERIFY EXACT PLACEMENT IN THE FIELD WITH McDONALD'S ACM. (IF APPLICABLE)

EL5. EMERGENCY LIGHTING HAS BEEN DESIGNED PER NFPA 101 TO MAINTAIN 1 FC IN PATH OF EGRESS. IF FIELD CONDITIONS REQUIRE ANY CHANGES TO LIGHTING DESIGN, EMERGENCY LIGHTING, SHALL BE INSTALLED TO MEET THE ABOVE REQUIREMENTS.

KEY

DENOTES FIXTURE TYPE — F2
DENOTES CIRCUIT NUMBER — 41

LIGHTING FIXTURES SHOWN HALF HATCHED SHALL BE WIRED TO AN EMERGENCY INVERTER AND CIRCUITED AS SWITCHED EMERGENCY FIXTURES SO THE FIXTURE IS CONTROLLED VIA TIMECLOCK BUT TURNS ON UPON LOSS OF POWER, SEE NOTE EL3 ON THIS SHEET. COORDINATE LOCATION WITH DECOR.

LIGHTING FIXTURES SHOWN WITH ARROW DENOTES GENERAL DIRECTION TO AIM ADJUSTABLE FIXTURES. VERIFY IN FIELD.

1 / E2.0 LIGHTING FLOOR PLAN
1/4"=1'-0"

SEE SHEET E3.1 FOR GENERAL LIGHTING NOTES AND "ROOF PLAN" (SHEET E2.1) FOR ADDITIONAL ELECTRICAL ROUGH-IN & LIGHTING REQUIREMENTS.

McDONALD'S SITE SIGNAGE:

EC SHALL PROVIDE:

ELECTRICAL CONTRACTOR SHALL COORDINATE POWER REQUIRED FOR ROAD SIGN. MOST SIGNS REQUIRE (1) 20 AMP 120V CIRCUIT. IF USED A 90-200 SIGN REQUIRES (4) 20 AMP 120V CIRCUITS OR ONE 1-PHASE 60 AMP 120/208V CIRCUIT. COORDINATE WITH SUPPLIERS DRAWINGS.
(1) 20 AMP 208 VOLT CIRCUIT, EC TO WIRE 2#12 TO 208 VOLT FLAG FLOODLIGHTS.
(1) 20 AMP 120 VOLT CIRCUIT TO D.C.O. IN ROAD SIGN BASE IF REQUIRED.
(2) 20 AMP 120 VOLT CIRCUITS FOR INGRESS/EGRESS DIRECTIONAL SIGNS (IF APPLICABLE).

*VERIFY EXACT LOCATIONS/TYPES/QUANTITIES OF ALL THE ABOVE WITH SITE/CIVIL PLANS AND MCD ACM.

LIGHTING FIXTURE SCHEDULE:

MARK	SYMBOL	DESCRIPTION	DIFFUSER	LAMPS WATTS	LAMPS TYPE	BALLAST	MOUNTING	MANUFACTURER AND CATALOG NUMBER
F2		2' X 4' GRID TROFFER	PRISMATIC ACRYLIC	44W	LED	–	RECESSED	SECURITY LIGHTING: # LCAT24-35HLG-EDU-WP-GK
F7		1' X 4' GRID TROFFER	PRISMATIC ACRYLIC	44W	LED	–	RECESSED	SECURITY LIGHTING # LCAT14-35HLG-EDU-WP-GK
A1		SINGLE ARM SCONCE	–	18W	LED	–	SURFACE	CS ILLUMINATION # 12939-WGL-533-35942-A
L2		2 HEAD DOUBLE GIMBALL	–	14W	LED	–	RECESSED	SECURITY LIGHTING # GM2-120-LM-30-SBS NOT USED FOR ALL DECORS. VERIFY WITH PHOTOMETRIC
L2R		4" LED ADJUSTABLE DOWN LIGHT	–	16W	LED	–	RECESSED	SECURITY LIGHTING # RDA-136LM-30-FL-S/RDA-136-H VERIFY DOWNLIGHT TO BE USED WITH PHOTOMETRIC
L4		3" LED ADJUSTABLE DOWN LIGHT	–	7W	LED	–	RECESSED	SECURITY LIGHTING # RDA-60LM-30-NF-S/RDA-60-H VERIFY DOWNLIGHT TO BE USED WITH PHOTOMETRIC
F12G		6" LED DOWN LIGHT – GOLD TRIM	–	12.5W	LED	–	RECESSED	SECURITY LIGHTING # 8542-5CCT
C		COVE LIGHT	–	2.5W/FT	LED	–	SURFACE	SECURITY LIGHTING # SLLTRS-24-2.5-30-100/SLLD-ED-UNV96-24
A2		STRAW PENDANT – ROUND TUBE	–	15W	LED	–	SUSPENDED	CS ILLUMINATION # 16464-TL915-30H-U-XXX-R-R
A3		FRY SCONCE	–	16W	LED	–	SURFACE	CS ILLUMINATION # 3' 7562-BLE-JAR-368-49982-2
F20		EXIT SIGN WITH BATTERY BACKUP	–	1.8W	LED	–	SURFACE	SECURITY LIGHTING: EVEURWE. SEE NOTE LS2 ON THIS SHEET.
F21		2 HEADED EMERGENCY BATTERY LIGHT	–	–	LED	–	SURFACE TO WALL OR CEILING	SECURITY LTG. #EV4D
F22		EMERG BATTERY & 2 REMOTE HEADS	–	–	LED	–	SURFACE TO WALL OR SOFFIT	SECURITY LTG. #EV4D-02L-0/EVODB
F23		2 HEADED EMERG LIGHT & 2 REMOTE HEAD IF REQ'D	–	–	LED	–	SURFACE TO WALL OR SOFFIT	SECURITY LTG. #EV4D/EVODB
S1H		"DOWN ONLY" RADIAL WALL SCONCE – SILVER	TEMPERED GLASS	(1)-14W	LED	–	SURFACE TO WALL	SECURITY LIGHTING: #RWSC-36L-5K-DO-U-PS
F12W		6" LED DOWN LIGHT – WHITE TRIM	–	12.5W	LED	–	RECESSED	SECURITY LIGHTING # 8542-5CCT

LIGHTING SCHEDULE NOTES:

LS1. ORDER LED EXIT SIGNS WITH LETTER COLORS THAT COMPLY WITH LOCAL CODES.
– FOR RED LETTERS USE #EVE-U-R (UNIVERSAL),
– FOR GREEN LETTERS USE #EVE-U-G (UNIVERSAL), OR
IF THE ABOVE EXIT SIGNS DO NOT COMPLY WITH LOCAL CODES USE: LED SIGN WITH BATTERY BACKUP, LETTER SIZE, COLOR, TYPE & DIRECTIONAL ARROWS AS REQUIRED BY THE LOCAL AUTHORITIES.

LS2. ALL INTERIOR LIGHT FIXTURES SHALL BE 120 VOLT UNLESS NOTED OTHERWISE.

LS3. LIGHTING FIXTURES HAVE BEEN CHOSEN TO ACHIEVE MAXIMUM ENERGY CONSERVATION WHILE MAINTAINING ADEQUATE LEVEL OF ILLUMINATION. SPECIFICATIONS SHALL BE STRICTLY FOLLOWED. ANY DEVIATION FROM THE SPECIFICATIONS SHALL BE APPROVED IN WRITING BY McDONALD'S CORPORATION.

ORDER ALL LIGHT FIXTURES FROM:

SECURITY LIGHTING SYSTEMS, INC.
PHONE: 1-800-LIGHT-IT (800-544-4848)
EMAIL: SLORDERS@CURRENTLIGHTING.COM

CS ILLUMINATIONS
PHONE: 760-477-1244
EMAILS: MCD@CSILLUMINATIOINS.COM
WWW.CSILLUMINATIONS.COM/MCD

BY	DESCRIPTION	DATE	REV

10/9/2024

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PREPARED FOR:
McDonald's USA, LLC

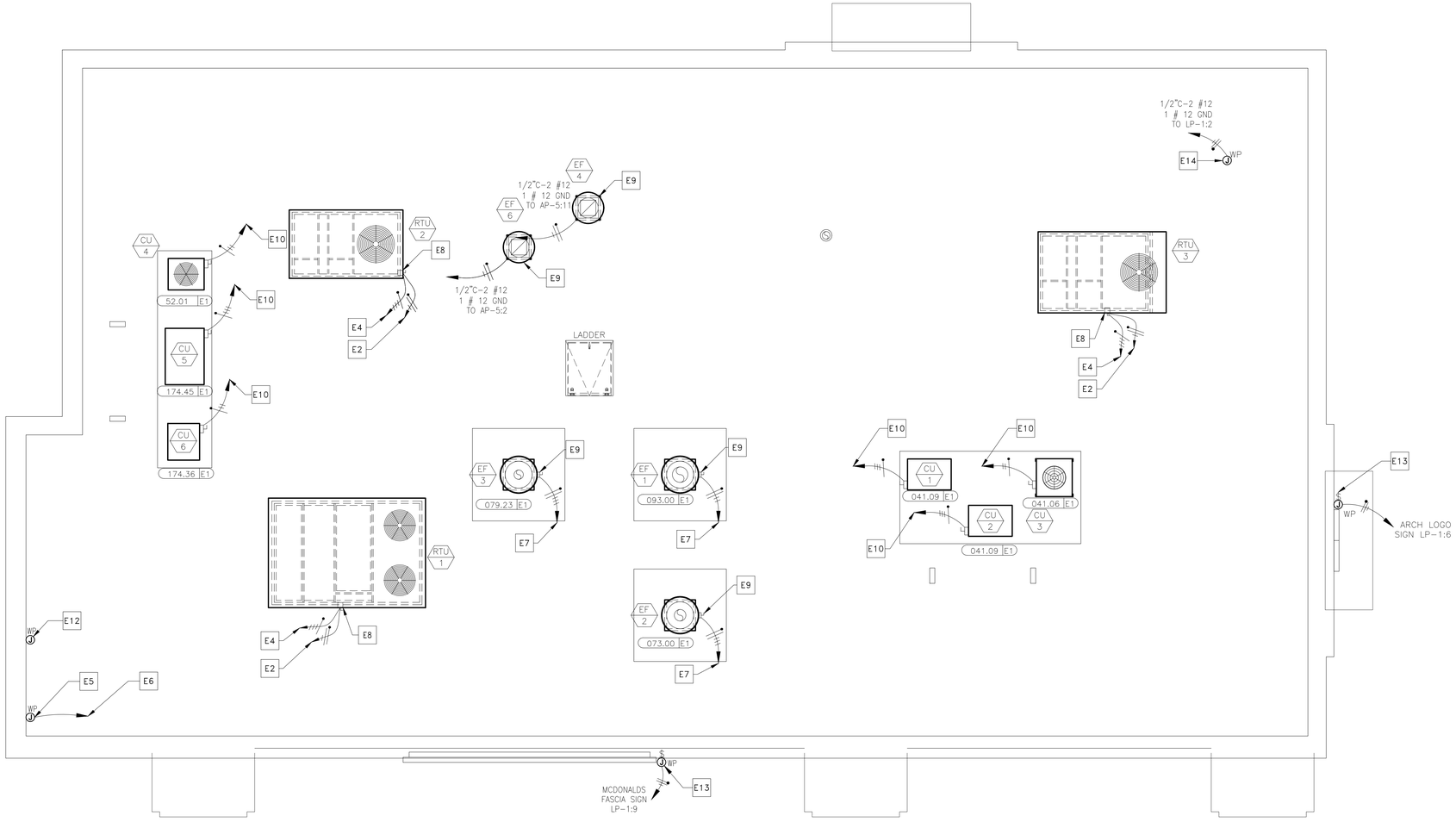
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SH	M.PELINI	MCD.33450
STD ISSUE DATE 2024 07	DATE ISSUED 10/01/2024	

TITLE: 2023 STANDARD BUILDING – BB20
4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	DOVER, NH
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
MSN: 4.5514	L/C: 028-0178

SHEET NO. E2.0
028-0178.00.0
LIGHTING PLAN



ELECTRICAL ROOF PLAN

SCALE: 1/4"=1'-0"

KEYED NOTES

- E1 NOT USED.
- E2 WEATHER PROOF RECEPTACLES WITH GFCI PROTECTION ARE PROVIDED AND MOUNTED WITHIN MOTOR HOUSING LOCATIONS PER NEC ARTICLE 210.63. CIRCUIT SHALL EMANATE FROM PANEL AP-5,CCT.#13.(TYPICAL).
- E3 NOT USED.
- E4 REFER TO SHEET E4.0 FOR CONDUIT AND WIRE SIZE.(TYPICAL)
- E5 E.C SHALL PROVIDE A WEATHER-PROOF J-BOX ON INSIDE FACE OF PARAPET, MOUNTED 6" BELOW TOP OF PARAPET FOR LIGHTING CONTROL PANEL PHOTOCELL. (PHOTOCELL FURNISHED BY OTHERS AND INSTALLED BY EC). REFER TO LIGHTING CONTROL DETAILS ON E4.1
- E6 TO LIGHTING ENCLOSURE W/ TIMER. COORDINATE WITH LIGHTING CONTROL DETAILS ON SHEET E4.1
- E7 COOKING EQUIPMENT EXHAUST FANS. SEE SHEET E3.0 FOR ELECTRICAL REQUIREMENTS. SEE SHEET E3.2 FOR EXHAUST FAN INTERLOCK WIRING DIAGRAMS. (TYPICAL)
- E8 PROVIDE NEMA 3R DISCONNECT WITH CURRENT LIMITING FUSES TO COMPLY WITH NEC 110 AND 440. ELECTRICAL CONTRACTOR SHALL STUB UP THRU RACEWAY IN CURB TO ELIMINATE CONDUIT PENETRATION OF ROOFING. (TYPICAL)
- E9 EXTERNAL NEMA 3R MOUNTED ON SIDE OF FAN BY MANUFACTURER. ELECTRICAL CONTRACTOR SHALL STUB-UP THRU ROOF AND PROVIDE FLEXIBLE WEATHERPROOF CONDUIT FROM ROOF PENETRATION TO DISCONNECT (TYPICAL).
- E10 REMOTE CONDENSING UNITS. SEE SHEET E3.0 FOR WIRING AND CIRCUITRY REQUIREMENTS.
- E11 NOT USED.
- E12 E.C. SHALL PROVIDE A WEATHER-PROOF JUNCTION BOX WITH ¾"C STUB DOWN TO CEILING SPACE WITH BUSHING FOR ROOF-TOP CAMERA OR SATELLITE. VERIFY EXACT LOCATION(S) WITH MCD AREA CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
- E13 E.C. SHALL PROVIDE A JUNCTION BOX FOR ARCH LOGO / McDONALD'S FASCIA / PLAY-PLACE SIGN. SEE NOTE L1 ON SHEET E3.1. COORDINATE EXACT LOCATION IN FIELD WITH ACM. ALL SIGNS PROVIDED WITH INTEGRAL DISCONNECT SWITCH FROM MANUFACTURER.(TYPICAL)
- E14 E.C. SHALL PROVIDE A JUNCTION BOX FOR ROOF-TOP FLAG POLE LIGHTING. VERIFY LOCATION(S) WITH MCD PROJECT MANAGER PRIOR TO INSTALLATION.
- E15 NOT USED.

DRAWING NOTES

1. SEE DRAWING M-4.0 FOR GENERAL MECHANICAL NOTES.
2. SEE DRAWINGS M-3.0 AND M-4.1 FOR MECHANICAL EQUIPMENT SCHEDULES AND DETAILS.
3. SEE DRAWING M-4.0 FOR MECHANICAL LEGEND.
4. SEE DRAWING K-2.1 FOR REMOTE CONDENSER AND MAC UNIT INFORMATION.
5. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.

LED GENERAL NOTES

1. PLACE LED FIXTURE AT DESIRED LOCATION AND ATTACH POWER SUPPLY AND MOUNTING BRACKET AS RECOMMENDED BY MANUFACTURER.
2. EC SHALL CONNECT NEW FIXTURES TO A 120V CIRCUIT AND MAKE ALL ELECTRICAL CONNECTIONS AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
3. POWER SUPPLY SHALL ALWAYS BE INSTALLED TO THE LEFT SIDE OF FIXTURE WHEN FACING BRAND WALL.

NO.	DESCRIPTION	DATE	BY

10/9/2024

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McDonald's USA, LLC

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DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
SH	2024 07	M.PELINI	10/01/2024	MCD.39450

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS	
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH		
WOOD TRUSS ROOF FRAMING		
WALL PANEL/HARDIE BOARD EXTERIOR FINISH		
NSN-4.35.14	4 DEERFIELD DR.	DOVER, NH
L/C: 028-0178		

SHEET NO. 028-0178.00.0
E2.1
ELEC. ROOF PLAN

PB = Pullbox
JB = Junction Box
EC = Electrical Contractor
VIF = Verify in Field

ELECTRICAL SCHEDULE

TAG #	QTY	DESCRIPTION	VOLT/PH	FLA	BRK SIZE	COND/WIRE	PNL/CCT	RECEP TYPE	HGT AFF	REQUIREMENTS & REMARKS
004.20E6	1	DIGITAL MERCHANDISER	120/1 ISOLATED	2.6	20A	1/2"C-2#12IG	CP:6	IG5262	6'-5"	-
004.23E1	1	DIGITAL MERCHANDISER - MEDIA PLAYER	120/1 ISOLATED	1.0	20A	1/2"C-2#12IG	CP:6	IG5262	6'-5"	USE SAME RECEPTACLE AS 4.20E6
004.23E2	1	DIGITAL MERCHANDISER - MEDIA PLAYER	DATA CABLE	-	-	-	-	JB	6'-5"	JB W/ 1" C. TO FULL HEIGHT WALL AND TO ABOVE CEILING W/BUSHINGS. FOR DATA CABLES. SUPPLY W/GROMMETED OPENING IN COVER PLATE
009.15E1	1	UTILITY CHASE - FFDT INTERIOR WALL	-	-	-	-	-	-	SEE RMKS	UTILITY CHASE AND RECEPTACLES PROVIDED BY K.E.S.
009.16E1	1	UTILITY CHASE - FFDT EXTERIOR WALL	-	-	-	-	-	-	SEE RMKS	UTILITY CHASE AND RECEPTACLES PROVIDED BY K.E.S.
020.01E1	2	AUTOMATED BEVERAGE SYSTEM 2.0	120/1	5.0	20A	1/2"C-2#12	AP-1:12, AP-2:24	5-20R	2'-0"	-
020.01E2	2	AUTOMATED BEVERAGE SYSTEM 2.0	120/1	14.9	20A	1/2"C-2#12	AP-1:6, AP-2:26	5-20R	3'-10"	FOR PRE-COOLER
021.01E3	3	COFFEE BREWER (THERMAL POTS)	120-208/1	15.5	20A	1/2"C-3#12	AP-1:(2,4)(14,16), AP-6:(17,19)	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO L14-20R RECEPTACLE IN CHASE
023.10E1	1	ESPRESSO BREWER	208/1	21.6	30A	1/2"C-2#10	AP-1:(19,21)	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO L6-30R RECEPTACLE IN CHASE
023.12E1	1	COFFEE CREAM DISPENSER	120/1	1.0	20A	1/2"C-2#12	AP-1:8	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5-20R RECEPTACLE IN CHASE
023.14E1	1	SUGAR/SWEETENER DISPENSER	120/1	1.5	20A	1/2"C-2#12	AP-1:8	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5-20R RECEPTACLE IN CHASE
024.02E1	1	JUICE DISPENSER	120/1	4.5	20A	1/2"C-2#12	AP-1:8	5-20R	SEE RMKS	EC TO EXTEND CIRCUIT TO 5-20R RECEPTACLE IN CHASE
025.07E1	1	INFUSION TEA BREWER - MIS	120-208/1	13.0	20A	1/2"C-3#12	AP-2:(32,34)	L14-20R	2'-3"	-
025.07E2	1	INFUSION TEA BREWER - MIS	-	-	-	-	-	JB	2'-3"	FOR WATER LINE TO ICED TEA BREWER IF CHASE IS NOT SPECIFIED. (SEE P1.6)
031.03E1	1	SODA SYSTEM PACKAGE - B.I.B. (RECIRCULATING- 3 TOWERS)	208/3	26.0	30A	3/4"C-3#10	AP-2:(37,39,41)	SEE RMKS	3'-0" SEE RMKS	EC SUPPLIES 30A-3P NF DISC SW MTD 9" BELOW CEILING PER NEC SECT. 404.8(A)
031.03E2	1	SODA SYSTEM PACKAGE - B.I.B. (RECIRCULATING- 3 TOWERS)	-	-	-	-	-	JB	4'-0"	FOR CONTROL WIRES FROM REMOTE CONDENSING UNIT
031.03E3	1	SODA SYSTEM PACKAGE - B.I.B. (RECIRCULATING- 3 TOWERS)	120/1	(2) 6.8	20A	1/2"C-2#12	AP-2:35	5-20R	6'-6"	FOR WATER BOOSTER SYSTEM AND OPTIONAL AIR COMPRESSOR
032.02E1	1	REVERSE OSMOSIS WATER FILTRATION SYSTEM - TANKLESS	120/1	4.0	20A	1/2"C-2#12 EA.	AP-2:23	5-20R	6'-0"	-
032.04E1	1	WATER FILTRATION SYSTEM	120/1	0.08	20A	1/2"C-2#12 EA.	AP-2:23	5-20R	6'-0"	-
037.03E1	2	CO2 SAFETY SYSTEM - DETECTOR	120/1	1.0	20A	1/2"C-2#12	AP-1:10	JB	SEE RMKS	PROVIDE LOCKOUT CB. SEE MECHANICAL DRAWINGS
037.03E2	2	CO2 SAFETY SYSTEM	-	-	-	-	-	JB	SEE RMKS	FOR LV WIRES. STUB 3/4"C. ABV. CLG. SEE MECHANICAL DRAWINGS
037.03E4	4	CO2 SAFETY SYSTEM - CO2 DETECTOR AV ALARM	-	-	-	-	-	JB	7'-0" MINIMUM	STUB 3/4"C. ABOVE CLG. FOR LV COND. TO 037.03E2. SEE MECHANICAL DRAWINGS
038.00E1	1	CLEAN IN PLACE PANEL	120/1	1.0	20A	1/2"C-2#12	AP-2:21	5-20R	5'-6"	-
039.10E1	1	ICE MACHINE - 1400 LB.	208/3	13.4	20A	1/2"C-3#12	AP-2:(1,3,5)	SEE RMKS	SEE RMKS	EC SUPPLIES 30A-3P NF DISC SW MTD9"BELOW CEILING PER NEC 404.8(A) EX.2 VERIFY W/ AHJ
039.10E2	1	ICE MACHINE - 1400 LB.	-	-	-	-	-	JB	4'-6" SEE RMKS	CONTROL WIRES TO REMOTE CONDENSER
039.15E1	2	ICE MACHINE - 1000 LB.	120/1	1.1	15A	1/2"C-2#12	AP-1:37,39	5-20R	SEE RMKS	MOUNT 9" BELOW CEILING - CIRCUIT BREAKERS SHALL BE HACR TYPE
039.15E2	2	ICE MACHINE - 1000 LB.	-	-	-	1/2"C	-	JB	SEE RMKS	MOUNT 9" BELOW CEILING - CONTROL WIRES TO REMOTE CONDENSER
041.06E1	1	ICE MACHINE REMOTE CONDENSER - 1400 LB.	208/1	1.0	20A SEE RMKS	1/2"C-3#12	AP-1:(26,28)	SEE RMKS	SEE RMKS	EC TO PROVIDE WP 30A-2P NF DISC AT UNIT ON ROOF - CIRCUIT BREAKERS SHALL BE HACR TYPE
041.09E1	2	ICE MACHINE REMOTE CONDENSER - 1000 LB.	208/3	11.1	15A SEE RMKS	1/2"C-3#12 SEE RMKS	AP-1:(32,34,36)(38,40,42)	SEE RMKS	SEE RMKS	EC TO PROVIDE WP 30A-3P NF DISC AT UNIT ON ROOF - CIRCUIT BREAKERS SHALL BE HACR TYPE
043.21E1	1	OPTIMIZED ORDER ASSEMBLY TABLE	120/1	5.4	20A	SEE RMKS	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES OUTLET CHASE FOR HLA
052.01E1	1	SODA SYSTEM PACKAGE REMOTE CONDENSER - 3-TOWER	208/1	2.5	20A SEE RMKS	SEE RMKS	SEE RMKS	SEE RMKS	SEE RMKS	EC TO PROVIDE 30A-2P DISC SW W/15A FUSE - POWERED BY 31.03 - LOCATION BY ACM
052.01E2	1	SODA SYSTEM PACKAGE REMOTE CONDENSER - 3-TOWER	-	-	-	-	-	-	SEE RMKS	CONTROL WIRES TO SODA SYSTEM - LOCATION BY ACM
061.00E1	1	FRY BAGGING STATION 36"	120/1	12.5	20A	1/2"C-2#12	AP-1:31	JB	4'-0"	-
065.30E1	1	3-VAT LOV FRYER - ELECTRIC - F/F/F	208/3	38.9 EA. VAT	(3) 50A	1"C-3#6 EA. VAT	AP-4:(13,15,17)(19,21,23)(25,27,29)	BY KES	SEE RMKS	PLUGS INTO RACEWAY RECEP WITH(1)L21-20P INTERLOCK PLUG &(3) 15-60P POWER PLUG BY KES
066.47E1	1	4-VAT LOV FRYER - ELECTRIC - S/S/S/S	208/3	38.9 EA. VAT	(4) 50A	1"C-3#6 EA. VAT	AP-3:(1,3,5)(7,9,11)(2,4,6)(8,10,12)	BY KES	SEE RMKS	PLUGS INTO RACEWAY RECEP WITH(1)L21-20P INTERLOCK PLUG &(4) 15-60P POWER PLUG BY KES
073.00E1	1	UNIVERSAL EXHAUST HOOD 3-VAT FRYER	120/1	12.5, 9.8	(2)20A-1P	1/2"C-2#12EA	AP-1:23,24	BY KES	SEE RMKS	EC TO CONN POWER TO RACEWAY FLA = 12.0 FRYER CONTROLS, 0.5 CAPTURE JET & 9.8 INDIVID. EXHAUST FAN INTERLOCK
079.23E1	1	UNIVERSAL EXHAUST HOOD FULL-CLAM/4-VAT FRYER	120/1	17.6, 13.8	(2)20A-1P	1/2"C-2#12EA	AP-1:29,41	BY KES	SEE RMKS	EC TO CONN POWER TO RACEWAY FLA=3.6 GRILL,13.0 FRYER CONTROLS, 1.0 CAPTURE JET & 13.8 INDVID EXHAUST FAN INTERLOCK
079.26E2	2	VENTLESS HOOD COMBI OVEN	120/1	8.0	15A	1/2"C-2#12	AP-4:14,16	BY KES	SEE RMKS	EC TO EXTEND DEDICATED CIRCUIT TO 5-15R RECEPTACLE IN CHASE
085.05E1	1	FROZEN FRY DISPENSER	120/1	9.0	20A	1/2"C-2#12	AP-1:27	5-20R	4'-0"	-
091.02E1	1	WALL MOUNT FREEZER UNIT-SINGLE WIDE-HIGH CAPACITY	120/1	5.0	20A	1/2"C-2#12	AP-5:23	5-20R	7'-6"	-
093.00E1	1	UNIVERSAL EXHAUST HOOD FULL-CLAM GRILL	120/1	13.9	20A	1/2"C-2#12	AP-2:17	BY KES	SEE RMKS	EC TO CONN. POWER TO RACEWAY FLA = 3.6 GRILL CONTROLS, 0.5 CAPTURE JET & 9.8 INDIVID. EXHAUST FAN INTERLOCK
096.21E1	2	36" NEXT GEN 3-PLATEN CLAMSHELL GRILL - ELECTRIC	208/3	21.7, 43.3	(2)50A	1-1/2"C- 6#4	AP-3:(14,16,18)(20,22,24) AP-4:(1,3,5)(7,9,11)	BY KES	SEE RMKS	PLUGS IN RACEWAY RECEP WITH(1)L21-20P INTERLOCK& (2) 15-50P POWER PLUG EA GRILL
097.08E1	1	MEAT FREEZER - DOUBLE WIDE - HIGH CAPACITY - RIGHT HAND	120/1	7.0	20A	1/2"C-2#12	AP-2:19	5-15R	SEE RMKS	UNIT PLUGS INTO RACEWAY RECEPTACLE
114.00E1	1	HUMIDIFIED HOLDING CABINET	208/1	9.1	20A	1/2"C-2#12	AP-5:(34,36)	SEE RMKS	5'-6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C6W(B) PROVIDED BY KES - HEIGHT TO BOTTOM OF RECEPTCLE
116.23E4	2	UNIVERSAL HOLDING CABINET - HIGH DENSITY - 2-SIDED - PIN & SLEEVE	208/1	15.2	20A	1/2"C-2#12	AP-5:(4,6)(8,10)	BY KES	5'-6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C6W(B) PROVIDED BY KES - HEIGHT TO BOTTOM OF RECEPTCLE
117.30E1	1	UHC TABLE COPL - 2 SIDED - 51"D x 34"W - PIN&SLEEVE	120/1	2.0	20A	1/2"C-2#12	AP-5:12	BY KES	5'-6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C4W(Y) PROVIDED BY KES- HEIGHT TO BOTTOM OF RECEPTACLE
118.00E1	1	Q'ING OVEN - PIN & SLEEVE	208/1	15.4	20A	1/2"C-2#12	AP-2:(38,40)	SEE RMKS	5'-6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C6W(B) PROVIDED BY KES- HEIGHT TO BOTTOM OF RECEPTACLE
118.03E1	2	Q'ING OVEN - PIN & SLEEVE	208/1	14.9	20A	1/2"C-2#12	AP-2:(18,20)(28,30)	SEE RMKS	5'-6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C6W(B) PROVIDED BY KES- HEIGHT TO BOTTOM OF RECEPTACLE
122.27E1	1	NEXT GEN. UNIVERSAL RADIANT TOASTER -PIN & SLEEVE	208/1	25.2	30A	1/2"C-2#10	AP-5:(27,29)	SEE RMKS	5'-6"	PLUGS INTO OVERHEAD RECEPTACLE # 330C6W(B) PROVIDED BY KES- HEIGHT TO BOTTOM OF RECEPTACLE
122.28E2	1	NEXT GEN. UNIVERSAL CONTACT TOASTER -PIN & SLEEVE	208/1	25.2	30A	1/2"C-2#10	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES RACEWAY RECEPTACLE
123.36E1	1	ECU TABLE - COPL	208/1	4.9	15A	SEE RMKS	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES OUTLET CHASE.
123.37E1	1	BREAKER PANEL- 125 AMP - 1 PHASE - EQUIPMENT MOUNTED	120-208/1	SEE RMKS	125A	1-1/2"C-3#1	MDP:11	-	-	EC TO EXTEND AND CONNECT ELECTRICAL SERVICE. HARDWIRE TO KES BREAKER PANEL.
123.40E1	1	PREP TABLE - HD - 2-SIDED COPL - 38"D x 83 1/2" - PIN & SLEEVE W/ REF.	120/1	10.0	20A	SEE RMKS	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES OUTLET CHASE.
125.00E2	2	RAPID BUN STEAMER	208/1	14.3	30A	1/2"C-2#10	KES BREAKER PANEL	SEE RMKS	SEE RMKS	PLUGS INTO KES RACEWAY RECEPTACLE
130.00E3	2	COMBI OVEN	208/3	15.1	30A	1/2"C-3#10	AP-4:(2,4,6)(8,10,12)	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO L430R9 RECEPTACLE IN CHASE
152.08E1	1	WAREWASHER - HIGH TEMP	208/3	26.9 EA.	(2)30A	1/2"C-3#10	AP-5:(31,33,35)(37,39,41)	SEE RMKS	SEE RMKS	EC TO SUPPLY 30A-3P NF DISC SW. HANDLE HGT. MTD @ 6'-7" AFF FOR EA. CCT PER NEC 404.8(A). LABEL "WAREWASHER (# OF 2)"
163.02E1	4	REMOTE ANSUL PULL	-	-	-	-	JB	SEE DETAILS		4" OCTAGONAL, RACO #165 OR EQUAL MUST BE USED.
171.01E1	1	WALK-IN COOLER / FREEZER FLOORLESS	120/1	10.0	20A	1/2"C-2#12	AP-2:14,16	JB	FLUSH ON CLG	JB FOR LIGHTS &]DOOR HEATER- UNSWITCHED LIGHT TO BE IN BOTH COOLER & FREEZER,EC TO CONNECT POWER
171.01E2	1	WALK-IN COOLER / FREEZER FLOORLESS	-	-	-	-	-	-	VIF	EC TO FURNISH & INSTALL CONDUIT,WIRE & LIGHT FIXTURES& OTHER DEVICES INSIDE COOLER/FREEZER BOX
174.36E1	1	REMOTE CONDENSING UNIT	208/1	15.0	20A	1/2"C-2#12	AP-5:(38,40)	JB	VIF	EC TO PROVIDE 30A-2P NF DISC AT UNIT ON ROOF. CIRCUIT BREAKERS TO BE HARC RATED.
174.36E2	1	REMOTE CONDENSING UNIT	LOW VOLT WIRES	-	-	-	-	-	VIF	-
174.45E1	1	REMOTE CONDENSING UNIT	208/3	24.7	40A	3/4"C-3#8	MDP:15	JB	VIF	EC TO PROVIDE 60A-3P NF DISC AT UNIT ON ROOF. CIRCUIT BREAKERS TO BE HARC RATED.
174.45E2	1	REMOTE CONDENSING UNIT	LOW VOLT WIRES	-	-	-	-	-	VIF	-
175.18E1	1	COOLER EVAPORATOR	208/1	1.0	20A	1/2"C-2#12	AP-6:(9,11)	JB	FLUSH ON CLG	-
175.18E2	1	COOLER EVAPORATOR	LOW VOLT WIRES	-	-	-	-	-	FLUSH ON CLG	L V WIRES CONN UNIT TO EVAPS & SHALL BE ROUTED SEPARATELY FROM POWER CONDUCTORS
176.27E1	1	FREEZER EVAPORATOR	208/1	20.3	30A SEE RMKS	1/2"C-2#10	AP-6:(13,15)	JB	FLUSH ON CLG	-
176.27E2	1	FREEZER EVAPORATOR	LOW VOLT WIRES	-	-	-	-	-	FLUSH ON CLG	L V WIRES CONN UNIT TO EVAPS & SHALL BE ROUTED SEPARATELY FROM POWER CONDUCTORS
177.03E2	1	REACH-IN REFRIGERATOR-SINGLE WIDE	120/1	2.7	20A	1/2"C-2#12	AP-2:31	SEE RMKS	SEE RMKS	EC TO EXTEND CIRCUIT TO 5-20R RECEPTACLE IN CHASE
178.05E1	3	REACH-IN FREEZER-SINGLE WIDE	120/1	11.0	20A	1/2"C-2#12	AP-1:25,30,35	5-20R	7'-6"	-
181.13E1	1	REFRIGERATOR - SPECIALTY COFFEE- 27" WIDE	120/1	3.9	20A	1/2"C-2#12	AP-2:22	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5-20R RECEPTACLE IN CHASE
181.14E1	1	REFRIGERATOR - WORK TOP -48"WIDE	120/1	5.0	20A	1/2"C-2#12	AP-2:8	5-20R	2'-0"	-
183.00E1	2	REFRIGERATOR/FREEZER - 2 DRAWER BASE - 30" W X 33" H	120/1	5.0	20A	1/2"C-2#12	AP-5:1,3	5-20R	2'-0"	-
183.02E2	2	REFRIGERATOR/FREEZER - 2 DRAWER BASE - 30" W X 30" H	120/1	5.0	20A	1/2"C-2#12	AP-5:5,7	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5-20R RECEPTACLE IN CHASE
183.02E3	1	REFRIGERATOR/FREEZER - 2 DRAWER BASE - 30" W X 30" H	120/1	5.0	20A	1/2"C-2#12	AP-5:9	BY KES	5'-6"	PLUGS INTO OVERHEAD RECEPTACLE # 320C4W(Y) PROVIDED BY KES- HEIGHT TO BOTTOM OF RECEPTACLE
196.06E1	1	SAFE - STANDARD BLDG.	120/1	1.0	20A	1/2"C-2#12	AP-1:7	5-20R	2'-0"	PROVIDE LOCKOUT TYPE CB
196.08E1	1	BOCA	120/1 ISOLATED	8.2	20A	1/2"C-2#12IG	CP:33	IG5262	2'-0"	-
196.08E2	1	BOCA	120/1 ISOLATED	1.8	20A	1/2"C-2#12IG	CP:33	IG5262	2'-0"	-
196.08E3	1	BOCA	DATA CABLE	-	-	2" C	-	4x4x4 PB	2'-0"	EXTEND 2" CONDUIT ABOVE CLG. W/ BUSHING FOR DATA CABLES

PB = Pullbox
JB = Junction Box
EC = Electrical Contractor
VIF = Verify in Field

ELECTRICAL SCHEDULE

TAG #	QTY	DESCRIPTION	VOLT/PH	FLA	BRK SIZE	COND/WIRE	PNL/CCT	RECEP TYPE	HGT AFF	REQUIREMENTS & REMARKS
197.01E1	1	HAND WASH TIMER	120/1	0.1	20A	1/2"C-2#12	AP-1:33	5-20R	4'-6"	-
203.01E1	1	HEAT TREAT COMBINATION SHAKE/SUNDAE MACHINE	208/3	13.0	30A	3/4"C-3#8	AP-1:(18,20,22)	4x4x4 PB	1'-0"	RECEP #A460R9 BY KES, IF TAYLOR C602 IS ORDERED USE A 40A BRKR & #6 CONDUCTORS -EC MAKES FINAL CONN
205.08E1	1	BIC MACHINE	120/1	8.6	20A	1/2"C-2#12	AP-2:29	BY KES	SEE RMKS	EC TO EXTEND DEDICATED CIRCUIT TO 5-20R RECEPTACLE IN CHASE
205.09E2	1	FROZEN BEVERAGE DISPENSER	208/1	20.0	30A	1/2"C-2#10	AP-5:(17,19)	SEE RMKS	SEE RMKS	RECEP L6-30R IN CHASE BY KES, EC MAKES FINAL CONN
207.01E2	1	BLENDER - MCFLURRY - RAIL MOUNT	120/1	1.2	20A	1/2"C-2#12	AP-2:7	5-20R	4'-0"	-
210.00E10	1	CASH RECYCLER	120/1 ISOLATED	4.4	20A	1/2"C-2#12IG	CP:27	(2) IG5262	SEE RMKS	PROVIDE RECEP. IN COUNTER-MOUNTED RACEWAY
210.00E4	1	CASH RECYCLER	120/1 ISOLATED	4.4	20A	1/2"C-2#12IG	CP:24	(2) IG5262	2'-10"	-
211.00E6	1	DELIVERY TABLETS	120/1	3.0	20A	1/2"C-2#12	AP-5:21	(2) 5-20R	5'-6"	-
214.02E1	1	TECHNOLOGY RACK	120/1 ISOLATED	5.0	20A	1/2"C-2#12IG	CP:11	IG4700	7'-6"	FOR SWITCHES, HUBS AND RADIUS
214.02E3	1	TECHNOLOGY RACK	120/1 ISOLATED	10.0	20A	1/2"C-2#12IG	CP:15	IG4700	3'-0"	FOR CASHLESS DEVICE UPS
214.02E4	1	TECHNOLOGY RACK	120/1 ISOLATED	12.0	20A	1/2"C-2#12IG	CP:17	IG4700	3'-0"	FOR POS SYSTEM UPS AND ORB CONTROLLER
214.02E5	1	TECHNOLOGY RACK	DATA CABLE	-	-	-	-	8x6x4 PB	7'-6"	EXTEND (2) 2 1/2" CONDUIT ABOVE CLG. W/BUSHING FOR DATA CABLES
214.02E6	1	TECHNOLOGY RACK	120/1 ISOLATED	14.0	30A	1/2"C-2#10IG	CP:12	L5-30R IG	3'-0"	FOR POS SYSTEM UPS
215.00E12	1	POS REGISTER - FRONT COUNTER	120/1 ISOLATED	3.0 EA.	20A	3/4"C-2#12IG	CP:19	IG4700	SEE RMKS	PROVIDE IG RECEP. IN COUNTER-MOUNTED RACEWAY
215.00E3	1	POS REGISTER - FRONT COUNTER	DATA CABLE	-	-	-	-	4x4x4 PB	10"	EXTEND 2" CONDUIT TO ABOVE CEILING FOR POS DATA CABLES
215.02E1	1	POS REGISTER - 2 WINDOW D/T	120/1 ISOLATED	3.0 EA.	SEE RMKS	1/2"C-2#12IG	SEE REMARKS	(2)IG4700	2'-5"	IN ORDER BOOTH, CONNECT TO CP:7 - IF INCLUDED IN PRESENTERS BOOTH, CONNECT TO CP:8
215.02E10	2	POS REGISTER - 2 WINDOW D/T	120/1 ISOLATED	3.0 EA.	20A	1/2"C-2#12IG	CP:1	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN CHASE
215.02E12	1	POS REGISTER - 2 WINDOW D/T	-	-	-	-	-	18x12x4 PB	10"	REFER TO D/T LOW VOLTAGE CONDUIT DIAGRAM FOR CONDUITS UNDER SLAB AND EXTEND (2) 2 1/2"C. TO ABOVE CLG.
215.02E13	2	POS REGISTER - 2 WINDOW D/T	-	-	-	-	-	4x4x4 PB	10"	EXTEND 1 1/2"C. UNDER SLAB TO 217.11E1 AND 2 1/2" C. TO ABOVE CEILING FOR POS DATA CABLES
215.04E1	2	POS - KVS MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C-2#12IG	CP:8	IG4700	FLUSH ON CLG	-
215.04E4	2	POS - KVS MONITOR	120/1 ISOLATED	1.5	20A	1/2"C-2#12IG	CP:26	SEE RMKS	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN OEP
215.04E5	2	POS - KVS MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C-2#12IG	CP:3	SEE RMKS	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN CHASE
215.04E7	3	POS - KVS MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C-2#12IG	CP:23	IG4700	5'-6"	-
215.04E8	1	POS - KVS MONITOR	DATA CABLE	-	-	-	-	4x4x4 PB	4'-0"	EXTEND 2" CONDUIT ABOVE CEILING. CABLE FURNISHED AND INSTALLED BY POS SYSTEM SUPPLIER
215.07E1	1	POS REGISTER - DELIVERY	120/1 ISOLATED	3.0	20A	1/2"C-2#12IG	CP:23	IG4700	3'-6"	-
215.07E3	1	POS REGISTER - DELIVERY	-	-	-	-	-	4x4x4 PB	3'-6"	EXTEND 2" CONDUIT TO ABOVE CEILING FOR POS DATA CABLES
216.00E13	2	POS - VIDEO MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C-2#12IG	CP:3	SEE RMKS	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN CHASE
216.00E14	4	POS - VIDEO MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C-2#12IG	CP:9	IG4700	SEE RMKS	EXTEND CONDUIT DOWN GRILL HOOD SHROUD AND PROVIDE IG4700 RECEPTACLE
216.00E7	3	POS - VIDEO MONITOR	120/1 ISOLATED	1.5 EA.	20A	1/2"C-2#12IG	CP:1	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO IG4700 RECEPTACLE IN CHASE
217.03E4	1	POS - COD OPTICAL ISOLATOR	120/1 ISOLATED	1.0	20A	1/2"C-2#12IG	CP:14	IG5262	7'-6"	-
217.10E1	2	REMOTE DETECTOR LOOP	-	-	-	-	-	-	-	1 1/2"CONDUIT-CONN TO PULLBOX#215.03E5,215.01E4, OR 215.02E12 PER DRIVE-THRU CONFIG-SEE SITE PLAN
217.11E1	2	DETECTOR LOOP	-	-	-	-	-	-	-	1 1/2"CONDUIT-CONN TO PULLBOX#215.02E5,215.02E13, OR 215.02E4 PER DRIVE-THRU CONFIG-SEE SITE PLAN
217.13E1	1	MERGE POINT MONITOR (DOUBLE DRIVE THRU)	120/1	2.0	20A	1/2"C-2#12	AP-1:11	5-20R	3'-6"	DO NOT POWER FROM POS CIRCUIT
217.13E2	2	MERGE POINT MONITOR (DOUBLE DRIVE THRU)	120/1	2.0	20A	1/2"C-2#12	AP-1:11	BY KES	SEE RMKS	EC TO EXTEND CIRCUIT TO 5-20R RECEPTACLE IN CHASE
217.14E1	1	POS- VIDEO MONITOR (DOUBLE DRIVE THRU)	120/1 ISOLATED	1.5	20A	1/2"C-2#12IG	CP:7	IG4700	3'-6"	-
217.18E1	3	HAND HELD ORDER TAKER AND MANAGEMENT OF SHIFT EQUIPMENT	120/1	5.0	20A	1/2"C-2#12	AP-1:15	5-20R	4'-6"	-
217.19E2	1	WIRELESS HEADSET BASE STATION	120/1 ISOLATED	1.9	20A	1/2"C-2#12IG	CP:1	IG4700	4'-6"	
217.19E3	1	WIRELESS HEADSET BASE STATION	DATA CABLE	-	-	-	-	4x4x4 PB	5'-0"	
217.24E1	1	DANGER POINT MONITOR (DOUBLE DRIVE-THRU)	120/1	2.0	20A	1/2"C-2#12	AP-1:11	5-20R	8'-0"	DO NOT POWER FROM POS CIRCUIT
217.26E1	1	ZOOM TIMER	120/1 ISOLATED	6.0	20A	1/2"C-2#12IG	CP:10	(2) IG4700	7'-6"	-
217.26E2	1	ZOOM TIMER	DATA CABLE	-	-	-	-	JB	7'-6"	JB W/ 1-1/2" C. TO TERMINATE ABOVE CEILING W/BUSHINGS. FOR DATA CABLES. SUPPLY W/ GROMMETED OPENING IN COVER PLATE
219.00E10	1	POS - RECEIPT PRINTER	120/1 ISOLATED	0.7	20A	3/4"C-2#12IG	SEE RMKS	IG4700	SEE RMKS	PROVIDE IG RECEP. IN COUNTER-MOUNTED RACEWAY, POWER FROM SAME CIRCUIT AS 215.00E12
219.00E3	1	POS - RECEIPT PRINTER/CASHLESS	120/1 ISOLATED	0.7	20A	1/2"C-2#12IG	CP:4	IG4700	2'-0"	-
219.00E7	2	POS - RECEIPT PRINTER	120/1 ISOLATED	0.7	20A	1/2"C-2#12IG	CP:3	BY KES	SEE RMKS	EC TO EXTEND IG CIRCUIT TO IG4700 RECEPTACLE IN KES OUTLET CHASE.
219.05E2	2	STICKY LABEL PRINTER	120/1 ISOLATED	0.7	20A	1/2"C-2#12IG	CP:1	BY KES	SEE RMKS	EC TO EXTEND IG CIRCUIT TO IG4700 RECEPTACLE IN CHASE
219.05E3	1	STICKY LABEL PRINTER	120/1 ISOLATED	0.7	20A	1/2"C-2#12IG	CP:3	IG4700	3'-2"	-
219.05E6	2	STICKY LABEL PRINTER	120/1 ISOLATED	0.7	20A	1/2"C-2#12IG	CP:3	IG4700	FLUSH ON CLG	-
219.06E1	1	LABELING SYSTEM	120/1 ISOLATED	2.0	20A	1/2"C-2#12IG	CP:8	IG5261	2'-0"	-
220.00E1	1	POS - COIN DISPENSER	120/1 ISOLATED	0.75	20A	1/2"C-2#12IG	CP:7	IG4700	2'-0"	-
221.09E1	1	O/O EQUIPMENT RACK	120/1 ISOLATED	4.0	20A	1/2"C-2#12IG	CP:31	IG5262	8'-0"	-
221.09E2	1	O/O EQUIPMENT RACK	DATA CABLE	-	-	2" C	-	4x4x4 PB	8'-0"	EXTEND 2" CONDUIT ABOVE CLG. W/ BUSHING FOR DATA CABLES
222.01E1	1	TIME CLOCK	120/1 ISOLATED	0.5	20A	1/2"C-2#12IG	CP:28	IG4700	4'-0"	-
222.01E2	1	TIME CLOCK	DATA CABLE	-	-	-	-	JB	4'-0"	EXTEND 1" CONDUIT ABOVE CEILING
223.07E1	1	WASHER	120/1	8.0	15A	1/2"C-2#12	AP-1:13	5-15R	3'-6"	-
225.03E3	2	OFFICE PACKAGE/DESK UNIT	120/1 ISOLATED	10.0	20A	1/2"C-2#12IG	CP:20,22	IG5262	4'-6"	FOR MONITOR, PRINTER AND THIN CLIENT
225.03E4	1	OFFICE PACKAGE/DESK UNIT	DATA CABLE	-	-	-	-	4x4x4 PB	4'-6"	EXTEND 2 1/2" CONDUIT ABOVE CLG. W

GENERAL ELECTRICAL NOTES:

INSTALLATION METHODS:

M1. ALL ELECTRICAL MATERIAL USED ON THIS PROJECT SHALL BE "UL" LISTED AND LABELED.

M2. ALL DIMENSIONS SHOWN ARE TAKEN FROM FACE OF GYP BOARD/PLYWOOD. THE EC SHALL MAKE NECESSARY DIMENSIONAL ALLOWANCES. ALL DIMENSIONS SHOWN ARE TO CENTER LINE OF OUTLET BOX AND/OR RECEPTACLE UNLESS NOTED OTHERWISE.

M3. ALL J-BOXES, DCOs, AND OTHER ELECTRICAL DEVICES SHOWN SHALL BE RECESSED INTO A WALL, FLOOR OR CEILING UNLESS SPECIFICALLY NOTED OTHERWISE.

M4. ALL RECEPTACLES (EXCEPT SPECIFIED HUBBELL PIN & SLEEVE TYPES) SHALL BE FURNISHED BY THE EC. THE RECEPTACLES INCLUDING PIN AND SLEEVE TYPE SHALL BE INSTALLED BY THE EC.

M5. EC SHALL PROVIDE STAINLESS STEEL COVER PLATES ON ALL RECEPTACLES AND J-BOXES. ADDITIONALLY, EC SHALL PROVIDE ORANGE NYLON COVER PLATES MARKED "COMPUTER ONLY" ON ALL ISOLATED GROUND/DEDICATED CIRCUIT RECEPTACLES. PURCHASE PJ8CO (ONE DUPLEX) OR PJ82CO (TWO DUPLEX) FROM HUBBELL.

M6. ROUGH-INS FOR OPTIONAL EQUIPMENT ARE SHOWN ON THESE SHEETS. EC SHALL VERIFY WITH McDONALD'S PROJECT MANAGER WHICH OPTIONAL EQUIPMENT IS TO BE INCLUDED AND INSTALL OPTIONAL ROUGH-INS AS REQUIRED. PRICING FOR OPTIONAL ROUGH-INS SHALL BE INCLUDED IN BID AND CALLED OUT AS OPTIONAL.

M7. EC SHALL COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER, MECHANICAL CONTRACTOR AND GC FOR FINAL LOCATIONS AND CONNECTION REQUIREMENTS OF ALL EQUIPMENT PRIOR TO INSTALLATION OF ANY CONDUIT AND/OR STUB-UP LOCATIONS.

M8. CEILING MOUNTED ECONOMY OEP BOX IS FURNISHED BY McDONALD'S, AND INSTALLED BY THE GC. CORD AND PLUG SET FURNISHED BY KES AND INSTALLED BY THE EC.

M9. FOR GRILLS, FRYERS, AND ANSUL SYSTEMS, EC SHALL EXTEND CONDUIT AND CONDUCTORS DOWN CHASE OR WALL TO TERMINAL BLOCK MOUNTED ON EQUIPMENT AND MAKE FINAL CONNECTIONS TO TERMINAL BLOCKS.

M10. ALL HOLES IN THE FRONT COUNTER FOR THE POS CORDS AND CABLES SHALL BE LOCATED BY OWNER AND DRILLED BY GC.

M11. ALL ELECTRICAL CONDUCTORS SHALL BE CONNECTED TO RECEPTACLES USING ONLY THE TERMINAL SCREWS. RECEPTACLE BACK WIRE/QUICK CONNECTIONS SHALL NOT BE USED. HUBBELL EDGE CONNECT IS APPROVED ALTERNATIVE.

M12. EC SHALL PROVIDE 208V HEAT TRACE ON THE FREEZER EVAPORATOR CONDENSATE DRAIN LINE. HEAT TRACE SHALL OPERATE CONTINUOUSLY. EC SHALL WIRE HEAT TRACE TO FREEZER EVAPORATOR POWER SUPPLY. A SEPARATE CIRCUIT FOR HEAT TRACE IS NOT REQUIRED. VERIFY HEAT TRACE REQUIREMENTS WITH EVAPORATOR MANUFACTURER

M13. POWER AND CONTROL CORDS ARE FURNISHED WITH KITCHEN APPLIANCES. THE EC SHALL CONNECT CORD SETS TO APPLIANCES AS REQUIRED.

M14. GC SHALL NOT INSTALL CEILING TILE IN AREAS OF THE BEVERAGE BAR REFRIGERATION LINES AND EQUIPMENT PENETRATION LOCATIONS UNTIL THE LINES HAVE BEEN INSTALLED. THE CEILING TILE INSTALLER SHALL RETURN AND INSTALL THE TILES AFTER THE REFRIGERATION LINES HAVE BEEN INSTALLED AND TESTED.

UTILITIES:

U1. INCOMING SERVICE SHALL BE 208Y/120V, 3 PHASE, 4 WIRE. ANY DEVIATIONS TO THIS SERVICE TYPE SHALL NOT BE PERMITTED UNLESS APPROVED IN WRITING BY McDONALD'S.

U2. THE EC SHALL ARRANGE WITH THE ELECTRIC, TELEPHONE, AND OTHER UTILITY COMPANIES FOR INCOMING SERVICE REQUIREMENTS AND SHALL INCLUDE ALL COSTS IN BASE BID.

U3. THE EC SHALL VERIFY EXACT METHODS AND REQUIREMENTS FOR ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANY. CURRENT TRANSFORMERS SHALL BE INSTALLED OUTSIDE RESTAURANT, LOCATE INSIDE ONLY IF REQUIRED BY UTILITY COMPANY OR LOCAL AUTHORITIES.

U4. PROVIDE CONCRETE PAD IF TRANSFORMER IS LOCATED ON GRADE AND PROVIDE SECONDARY SERVICE FEEDER AND CONDUITS TO PANEL MDP AS PER LOCAL UTILITY REQUIREMENTS.

U5. THE EC/GC/ACM SHALL OBTAIN AVAILABLE SHORT CIRCUIT CURRENT FROM THE LOCAL UTILITY COMPANY. THE EC/GC/ACM SHALL ADVISE IN WRITING (FAX SUPPLIER THE UTILITY LETTER) THE AVAILABLE AMOUNT OF FAULT CURRENT. THE PANELBOARD SUPPLIER SHALL BE RESPONSIBLE TO VERIFY THAT THE ELECTRICAL EQUIPMENT SHIPPED HAS APPROPRIATE ELECTRICAL RATINGS WHICH ARE EQUAL TO OR GREATER THAN THE AVAILABLE AMOUNT OF FAULT CURRENT AT THE SITE.

U6. EC AND ACM OR OWNER/OPERATOR AND ACM SHALL COORDINATE WITH LOCAL PHONE COMPANY TO PROVIDE A 10 PAIR (OR MORE) COPPER TELEPHONE CABLE FROM THE TELEPHONE UTILITY EASEMENT TO THE RESTAURANT TELEPHONE DEMARCATION POINT. IF THE TELEPHONE PANEL/BOX IS LOCATED INSIDE THE RESTAURANT, EC SHALL PROVIDE (2) EMPTY 3/4" CONDUITS FROM THE TELEPHONE PANEL/BOX UP TO ABOVE THE CEILING FOR FUTURE TELEPHONE CABLE INSTALLATION. ADDITIONALLY, THE EC SHALL PROVIDE AN EMPTY 3/4" CONDUIT FROM THE TELEPHONE PANEL/BOX TO THE LOCATION OF THE FUTURE INTERNET SERVER (VERIFY LOCATION WITH PM). EC SHALL CONNECT, INSTALL AND INCORPORATE ALL OTHER REQUIREMENTS NECESSARY FOR COMPLETE AND OPERATIONAL TELEPHONE SYSTEM(S) FOR THIS SITE. THE REMAINING UNUSED TELEPHONE CONDUCTOR PAIRS SHALL BE CAPPED AND LEFT IN PLACE FOR FUTURE USE. THE TELEPHONE PANEL/BOX SHALL BE GROUNDED AS SHOWN IN THE "BUILDING ELECTRICAL GROUNDING DETAIL."

U7. EC SHALL PROVIDE A 4" SCHEDULE 40/80 PVC CONDUIT THAT IS SUITABLE FOR DIRECT BURIAL FROM BUILDING TO UTILITY EASEMENT/ROW IN UTILITY CABLING/CONDUIT TRENCH PROVIDED BY GC. CONDUIT SHALL RUN FROM INCOMING TELCOM LOCATION AT BUILDING TO TELECOM PEDESTAL LOCATION IN UTILITY EASEMENT/ROW. VERIFY EXACT LOCATIONS IN FIELD WITH AREA CONSTRUCTION MANAGER AND TELECOM UTILITY PROVIDER PRIOR TO INSTALLATION.

INSTALLATION NOTES:

1. IF TELCOM CONDUIT IS TERMINATED WITHIN BUILDING, PVC SHALL TRANSITION TO HWG/RMC TYPE CONDUIT PRIOR TO RISING ABOVE FINISHED SLAB.
2. PROVIDE THERMOPLASTIC BUSHINGS AT BOTH ENDS OF CONDUIT FOR CABLING PROTECTION.
3. IF 90 DEGREE BENDS ARE REQUIRED, CONTRACTOR SHALL PROVIDE WIDE SWEEPING BENDS TO PREVENT BENDING/DAMAGE TO CABLE
4. ALL COMMUNICATIONS CABLING SHALL BE PULLED VIA THIS CONDUIT.
5. INSTALL A MINIMUM OF 6 PULL WIRES IN CONDUIT TO ALLOW FOR THE INSTALLATION OF FUTURE CABLING. USE NON-DEGRADING POLYPROPYLENE OR MONOFILAMENT PLASTIC LINE OR #12 AWGT SOLID COPPER CONDUCTORS WITH NOT LESS THAN 200 LBF TENSILE STRENGTH. PROVIDE AT LEAST 12 INCHES OF SLACK AT EACH END OF PULL WIRE.
6. AFTER INSTALLATION OF COMMUNICATIONS CABLING AND PULLSTRINGS/WIRES, CONTRACTOR SHALL SEAL BOTH ENDS OF CONDUIT TO PREVENT INTRUSION FROM WEATHER, RODENTS, DEBRIS, ETC. SEAL SHALL BE OF TYPE TO ALLOW FOR REMOVAL FOR INSTALLATION OF FUTURE CABLING

CONDUIT AND WIRE:

W1. THE FOLLOWING WIRING METHODS SHALL NOT BE USED: NON-METALLIC SHEATHED CABLE (ROMEX, NM, NMC, & NMS), ARMORED CABLE TYPE AC (BX), ELECTRICAL NON-METALLIC TUBING, TYPE ENT (SMURF-TUBE).

W2. CONDUIT RUNS MAY BE COMBINED EXCEPT WHERE ISOLATED GROUNDS ARE USED. IG CIRCUITS SHALL BE RUN IN SEPARATE CONDUITS. ALL HOME RUNS SHALL BE SIZED BASED ON DERATED CONDUCTOR AMPACITIES AND INCREASE CONDUIT AND WIRE SIZE AS REQUIRED BY NEC SECTION 310 REQUIREMENTS.

W3. CONDUIT SHALL HAVE A MAXIMUM OF 4 BENDS WITHOUT A JUNCTION BOX TO PREVENT DAMAGE TO CABLE DURING PULLING. THE EC SHALL PIGTAIL #12 PULL WIRE AT EACH END FOR INSTALLER TO PULL CABLE. ALL LOW VOLTAGE CONDUIT STUB-UPS SHALL BE PROVIDED WITH A BUSHING.

W4. MINIMUM WIRE SIZE SHALL BE #12 AWG COPPER UNLESS NOTED OTHERWISE. MINIMUM CONDUIT SIZE SHALL BE 1/2" UNLESS NOTED OTHERWISE. WIRES INSTALLED UNDERGROUND OR OUTDOORS SHALL BE THW.

W5. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID COPPER. CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER. ALUMINUM CONDUCTORS SHALL NOT BE UTILIZED FOR FEEDER OR BRANCH CIRCUIT DISTRIBUTION.

W6. RACEWAYS SHALL BE ANY OF THE FOLLOWING MATERIALS, INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES:

OUTDOORS: (FOR SPECIFIC APPLICATIONS AND APPROPRIATE FITTINGS, SEE TABLE W6)

1. EXPOSED: RMC, IMC.
2. CONCEALED: RMC, IMC.
3. BELOW GRADE, SINGLE RUN: RNC, RMC.
4. BELOW GRADE, GROUPED: RNC, RMC.
5. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): LFMC.
6. BOXES AND ENCLOSURES: NEMA 250, TYPE 3R OR 4.

INDOORS: (FOR SPECIFIC APPLICATIONS AND APPROPRIATE FITTINGS, SEE TABLE W6)

1. EXPOSED: EMT, IMC.
2. CONCEALED: EMT, IMC.

(CONTINUED ON TOP)

3. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): FMC; EXCEPT USE LFMC IN DAMP OR WET LOCATIONS.
4. DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT.
5. BOXES AND ENCLOSURES: NEMA 250, TYPE 1, EXCEPT AS FOLLOWS: A. DAMP, WET OR KITCHEN LOCATIONS: NEMA 250, TYPE 4, STAINLESS STEEL.

TABLE W6:

LOCATION	208V.	480V.	LOW ENERGY*
EXPOSED			
INDOORS	< 1" EMT COMPRESS. FTGS >1.25" IMC THREADED FTGS	IMC THREADED FTGS	EMT COMPR. FTGS
OUTDOORS	RMC OR IMC THREADED FTGS	RMC OR IMC THREADED FTGS	RMC OR IMC THREADED FTGS
CONCEALED			
WALLS	<2" EMT SET SCREW FTGS >2.5" IMC THREADED FTGS	<2" EMT SET SCREW. FTGS >2.5" IMC THREADED FTGS	EMT 1/2"- 2" SET SCREW FTGS 2.5" – 4" COMPR. FTGS
AIR HANDLING CEILING/SPACE	<2" EMT COMPR. FTGS >2.5" IMC THREADED. FTGS	2" EMT COMPR. FTGS < >2.5" IMC THREADED. FTGS	EMT COMPR. FTGS
NON AIR HANDLING CEILING/SPACE	<2" EMT SET SCREW FTGS >2.5" IMC THREADED. FTGS	<2" EMT COMPR. FTGS >2.5" IMC THREADED. FTGS	EMT 1/2" – 2" SET SCREW FTGS 2.5"– 4" COMPR. FTGS
BELOW GRADE			
INTERIOR	IMC THREADED FTGS OR SCHEDULE 40 OR 80 PVC	IMC THREADED FTGS	IMC THREADED FTGS SCHEDULE 40 OR 80 PVC
EXTERIOR	SCHEDULE 40 OR 80 PVC OR RMC THREADED FTGS	SCHEDULE 40 OR 80 PVC OR RMC THREADED FTGS	SCHEDULE 40 OR 80 PVC OR RMC THREADED FTGS

W7. ALL CONDUITS PENETRATING THE FREEZER/COOLER BOX SHALL BE SEALED IN COMPLIANCE NEC SECTION 300 AND THE FREEZER/COOLER BOX MANUFACTURERS REQUIREMENTS.

W8. PROVIDE THREE (3) 3/4" EMPTY CONDUITS FROM PANEL LP-1 UP TO THE CEILING SPACE AND CAP FOR FUTURE USE.

GROUNDING:

G1. ALL BRANCH AND FEEDER CIRCUITS SHALL BE GROUNDED BY TWO METHODS. THE FIRST METHOD SHALL INCLUDE AN INSULATED COPPER EQUIPMENT GROUNDING CONDUCTOR CONTAINED WITHIN THE SAME CONDUIT AS THE PHASE CIRCUIT CONDUCTORS AND SIZED PER NEC SECTION 250 REQUIREMENTS. THIS INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL HAVE ONE END PROPERLY TERMINATED AT THE EQUIPMENT GROUND BUS IN THE CORRESPONDING CIRCUIT BREAKER PANEL, AND THE OTHER END TERMINATED AT THE GROUNDING CONTACT OF A GROUNDING RECEPTACLE AND TO THE JUNCTION BOX OR TO AN EQUIPMENT CABINET, AS APPLICABLE. THE SECOND METHOD PROVIDES EQUIPMENT GROUNDING VIA METALLIC CONDUIT THAT IS CONNECTED AND TERMINATED IN FITTINGS LISTED FOR GROUNDING PER NEC SECTION 250 REQUIREMENTS. BOTH GROUNDING METHODS ARE REQUIRED IN A MCDONALD'S RESTAURANT: ISOLATED GROUND SHALL BE INSTALLED WHERE INDICATED ON PLAN AND AS SHOWN IN POS ISOLATED GROUND/DEDICATED CIRCUIT DETAIL ON SHEET E4.2.

G2. THE BUILDING GROUNDING SYSTEM SHALL COMPLY WITH NEC ARTICLE 250, MCDONALD'S SPECIFICATIONS, AND SHEET E4.2. CAUTION: IT IS A SAFETY HAZARD AND AN NEC VIOLATION TO HAVE ANY NEUTRAL TO GROUND CONNECTIONS BEYOND THE MAIN ELECTRICAL DISCONNECT MEANS. MCDONALD'S GROUNDING STANDARDS PURPOSELY EXCEED THOSE GIVEN BY THE NEC. THE EC SHALL PROVIDE A BUILDING GROUNDING SYSTEM MEETING NEC SECTION 250 REQUIREMENTS AS WELL AS MCDONALD'S STANDARDS.

G3. EC SHALL REFER TO "POS ISOLATED GROUND/DEDICATED CIRCUIT DETAIL, SHEET E4.2, FOR REQUIRED WIRING REQUIREMENTS OF COMPUTER PANEL CP.

G4. METAL RACEWAYS CONTAINING A GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED AT BOTH ENDS AS REQUIRED BY NEC SECTION 250 REQUIREMENTS.

TEMPERATURE CONTROLS:

T1. REMOTE TEMPERATURE SENSORS: EC SHALL PROVIDE 1/2" CONDUIT FROM JUNCTION BOX ABOVE CEILING DOWN TO SENSOR MOUNTED AT 4'-0" TO 4'-6" AFF.

T2. SEE DETAIL ON SHEET M3.0. FOR SENSOR MOUNTING DETAIL. LOCATION OF WALL MOUNTED TEMPERATURE SENSORS ARE SHOWN ON SHEET M1.2 AND E2.0.

T3. WHEN WIRING FOR PROGRAMMABLE THERMOSTATS AND REMOTE SENSORS IS NOT IN A CONDUIT, THE WIRING SHALL BE RUN TO THE UNDERSIDE OF THE ROOF DECK. NONE OF THE WIRING SHALL BE ROUTED OVER FLUORESCENT BALLASTS, POWER BOXES OR IN A CONDUIT WITH LINE VOLTAGE WIRING AS ELECTRICAL INTERFERENCE (NOISE) WILL CAUSE ERRATIC CONTROL OPERATION. ALL THERMOSTATS SHALL BE MOUNTED 4'-0" AFF.

FLAT PANEL TELEVISIONS:

TV1. EC SHALL PROVIDE A DUPLEX RECEPTACLE AND A LOW VOLTAGE BROADBAND CONNECTION FOR THE INSTALLATION OF FLAT PANEL TELEVISIONS. COORDINATE EXACT LOCATIONS WITH DECOR COMPANY. FOR BROADBAND CONNECTION, EC SHALL PROVIDE A 4 X 4 BOX WITH A 3/4" CONDUIT STUB-UP WITH A BUSHING INTO ACCESSIBLE CEILING SPACE.

ELECTRICAL PANELS:

E1. THE EC SHALL BE RESPONSIBLE FOR BALANCING THE LOADS ON ALL PANELS.

E2. THE EC SHALL PROVIDE ELECTRICAL SERVICE TO THE EQUIPMENT MOUNTED BREAKER PANEL. SEE ELECTRICAL ROUGH-IN PLAN AND SCHEDULE FOR ALL REQUIREMENTS.

E3. THE EC SHALL BE RESPONSIBLE FOR THE PROPER IDENTIFICATION AND LABELING OF ALL CIRCUIT BREAKERS. EACH PANEL SHALL BE PROVIDED WITH AN ACCURATE TYPEWRITTEN CIRCUIT DIRECTORY AT THE CONCLUSION OF THE PROJECT AND PRIOR TO RESTAURANT OPENING.

SECURITY AND DRIVE-THRU CAMERAS:

S1. EC TO PROVIDE ELECTRICAL POWER AND COMMUNICATION CONDUITS FOR BUILDING MOUNTED SECURITY AND DRIVE THRU CAMERAS. COORDINATE FINAL LOCATIONS WITH SECURITY AND DRIVE THRU CAMERA INSTALLERS.

LIGHTING:

L1. PROVIDE A WEATHERPROOF JUNCTION BOX IN PARAPET FOR FASCIA SIGN. FINAL CONNECTION BY OTHERS.

L2. COORDINATE THE LOCATION OF JUNCTION BOX (IN THE WALL) WITH THE OPENING IN TRELLIS (FOR THE LIGHT FIXTURE WIRES). THE LOCATION OF THE JUNCTION BOX AND THE OPENING IN THE TRELLIS SHALL BE ALIGNED FOR THE LIGHT FIXTURE TO BE INSTALLED PROPERLY. COORDINATE INSTALLATION OF JUNCTION BOX AND ANY NECESSARY OPENINGS IN TRELLIS WITH GC AND TRELLIS/CANOPY MANUFACTURER. SEE LIGHT FIXTURE INSTALLATION INSTRUCTIONS FOR REQUIREMENTS REGARDING MOUNTING BRACKETS FOR USE IN C-CHANNEL TRELLISES.

L3. EC SHALL FIELD VERIFY THAT LIGHT FIXTURES DO NOT OBSTRUCT OR CONFLICT WITH THE WORK OF OTHER TRADES. IF A DISCREPANCY IS FOUND, THE EC SHALL IMMEDIATELY NOTIFY THE GC BEFORE THE THE INSTALLATION OF SUCH FIXTURE(S). EC SHALL COORDINATE LOCATIONS OF ALL LIGHT FIXTURES IN DINING AREA WITH FINAL SEATING AND DECOR PLANS.

L4. IF PC-POS CASH REGISTER SYSTEM IS INSTALLED, EC SHALL RELOCATE FIXTURES ABOVE FRONT COUNTER TO AVOID GLARE ON THE CASH REGISTER SCREENS. EC SHALL INSTALL CABLE WHIP TO FIXTURES SO THAT FIXTURE MAY BE RELOCATED FOUR FEET WITHOUT DISCONNECTING CABLE WHIP.

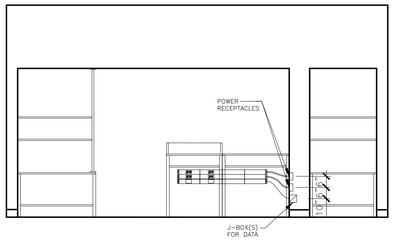
L5. EC SHALL COORDINATE LOCATION OF ALL EXTERIOR LIGHTS TO AVOID INTERFERENCE WITH ANY CORBELS, TRUSSES, BEAMS OR OTHER SPECIAL EXTERIOR TREATMENTS. INSTALL LIGHT FIXTURES WITH CORRECT ORIENTATION PER MANUFACTURER'S INSTRUCTIONS

L6. THE USE OF INTERLOCK TYPE "MC" CABLE IN LENGTHS OF 6 FEET OR LESS (WHERE PERMITTED BY LOCAL CODES) SHALL BE ALLOWED FOR WIRING TO INTERIOR LIGHTING FIXTURES. "ROMEX" OR "BX" SHALL NOT BE USED.

L7. EC SHALL VERIFY THAT NOT MORE THAN 3% VOLTAGE DROP EXISTS FROM THE LIGHTING PANEL TO ANY EXTERIOR LIGHTING FIXTURE OR SIGNAGE BALLAST.

L8. WHERE MCDONALD'S RESTAURANT HAS A PLAYPLACE, THE EC SHALL COORDINATE EXACT LOCATION OF PLAYPLACE LIGHTING WITH PLAYPLACE TOY VENDOR FOR MAXIMUM ILLUMINATION AND SAFETY PER THE FINAL LOCATION OF THE PLAYPLACE TOY. LIGHTING FIXTURES SHALL NOT BE MOUNTED TO THE TOY OR ANY PART OF THE TOY STRUCTURE.

L9. EC SHALL VERIFY ALL TAP SETTINGS FOR H.I.D. LIGHTING FIXTURES AND MAKE ANY NECESSARY CORRECTIONS PRIOR TO INSTALLATION.

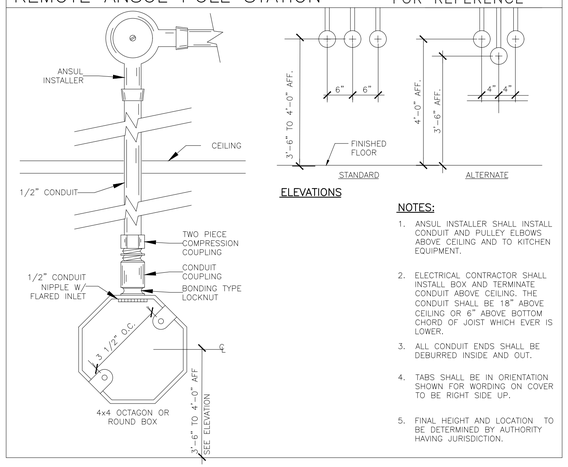


SYMBOL	CATALOG #	DESCRIPTION
	HBLAU5TOR & IG4700	RECEPTACLE COVERPLATE WITH ORANGE, TWIST LOCK, ISOLATED GROUND DUPLEX RECEPTACLE
	HBLAU5TOR & 5-20R FOR BAKED GOODS AND IG5262 FOR CASH	RECEPTACLE COVERPLATE WITH STRAIGHT BLADE RECEPTACLE
	HBLAU57LPB	COMMUNICATIONS COVERPLATE
	HBLAU7620B02M2W90	2" SECTION OF RACEWAY, INCLUDES COUPLERS
	HBLAU7620B03M2W90	3" SECTION OF RACEWAY, INCLUDES COUPLERS
	HBLAU7610B2M2	SERVICE ENTRANCE FITTING & BUSHING FOR DATA CABLES
	HBLAU7610B	BLANK END FITTING
N/A	HBLAU5701	COUPLER (INCLUDED WITH RACEWAY SECTION)
N/A	HBLAU5709	GROUND ADAPTER

NOTES:
1. REFER TO SERVICE POD MANUFACTURER INSTRUCTIONS FOR EXACT PLACEMENT OF RACEWAY
2. RACEWAY AND RECEPTACLES TO BE PROVIDED WITH SERVICE POD, INSTALLED BY CONTRACTOR.
3. DETAIL SHOWN IS A TYPICAL CONFIGURATION ONLY. SITE SPECIFICS MIGHT CAUSE DEVIATIONS.
4. PART NUMBERS SHOWN REFLECT HUBBELL, SOME SUPPLIERS MAY USE WIREMOLE EQUIVALENT.

1 E-3.1 SERVICE POD RACEWAY DETAIL
NOT TO SCALE

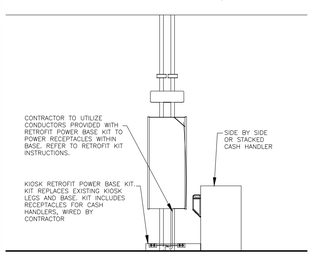
REMOTE ANSUL PULL STATION FOR REFERENCE



ELEVATIONS

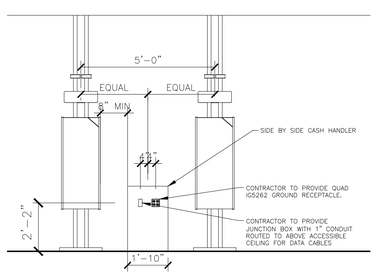
NOTES:

1. ANSUL INSTALLER SHALL INSTALL CONDUIT AND PULLEY ELBOWS ABOVE CEILING AND TO KITCHEN EQUIPMENT.
2. ELECTRICAL CONTRACTOR SHALL INSTALL BOX AND TERMINATE CONDUIT ABOVE CEILING. THE CONDUIT SHALL BE 18" ABOVE CEILING OR 6" ABOVE BOTTOM CHORD OF JOIST WHICH EVER IS LOWER.
3. ALL CONDUIT ENDS SHALL BE DEBURRED INSIDE AND OUT.
4. TABS SHALL BE IN ORIENTATION SHOWN FOR WORDING ON COVER TO BE RIGHT SIDE UP.
5. FINAL HEIGHT AND LOCATION TO BE DETERMINED BY AUTHORITY HAVING JURISDICTION.



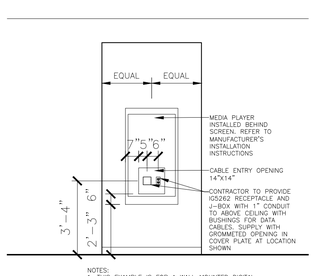
NOTES:
1. THIS EXAMPLE IS FOR A SIDE BY SIDE CASH HANDLER THAT DOES NOT HAVE A GC WALL BEHIND IT AND IS NEXT TO A KIOSK. IT IS ALSO INTENDED FOR ALL STACKED CASH HANDLERS.
2. EACH SIDE BY SIDE CASH HANDLER UTILIZES 3 PLUGS AND ADDS 4.4 AMPS OF LOAD TO THE KIOSK CIRCUIT.
3. EACH STACKED CASH HANDLER UTILIZED 2 PLUGS AND ADDS 3.6 AMPS OF LOAD TO THE KIOSK CIRCUIT.
4. ONLY 1 SIDE BY SIDE CAN BE CONNECTED TO A KIOSK, HOWEVER TWO STACKED UNITS CAN BE CONNECTED. REFER TO DECOR PLANS FOR EXACT CONFIGURATIONS.

5 E-3.1 TYP. CASH HANDLER POWER DETAIL
NOT TO SCALE



NOTES:
1. THIS EXAMPLE IS FOR A SIDE BY SIDE CASH HANDLER WITH THE REAR OF THE UNIT FACING A FULL HEIGHT GC BUILT WALL.
2. EACH SIDE BY SIDE CASH HANDLER UTILIZES 3 PLUGS AND ADDS 4.4 AMPS OF LOAD.

4 E-3.1 CASH HANDLER POWER DETAIL W/REAR TO WALL
NOT TO SCALE



NOTES:
1. THIS EXAMPLE IS FOR A WALL MOUNTED DIGITAL MERCHANDISER.

3 E-3.1 DIGITAL MERCHANDISER POWER DETAIL
NOT TO SCALE

BY	DESCRIPTION	DATE	REV

NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER

10/9/2024

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PREPARED FOR: McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	C.S.G. PROJECT #
SH	M.PELINI	MCD.39450
STD ISSUE DATE 2024 07	DATE ISSUED 10/01/2024	

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN: 4.35514
SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028-0178

SHEET NO. 028-0178.00.0
E3.1
NOTES & DETAILS

SEQUENCE OF OPERATION:

1. TURNING "ON" ANY PIECE OF COOKING EQUIPMENT UNDER A HOOD WILL TURN ON THE EXHAUST FAN AND ASSOCIATED RTU PROVIDING MAKEUP AIR FOR THAT HOOD.
2. TURNING "OFF" THE LAST PIECE OF COOKING EQUIPMENT UNDER A HOOD WILL TURN OFF THE EXHAUST FAN FOR THAT HOOD.
3. IF THE ANSUL SYSTEM SHOULD DISCHARGE WHILE THE COOKING EQUIPMENT AND EXHAUST FAN ARE OPERATING, THE COOKING EQUIPMENT WILL BE SHUT OFF, BUT THE EXHAUST FAN WILL CONTINUE TO RUN AND WILL FORCE THE ROOFTOP UNITS INTO A "SCHEDULED" MODE
4. THE ANSUL SYSTEM MUST BE RECHARGED AND MANUALLY RESET BEFORE THE COOKING EQUIPMENT WILL AGAIN BE ABLE TO OPERATE.
5. THE ON/OFF SWITCH ON THE EXHAUST FAN IS NORMALLY KEPT IN THE "ON" POSITION. IF IT IS TURNED OFF FOR SERVICE, THE COOKING EQUIPMENT WILL TURN OFF AND NOT BE ABLE TO OPERATE UNTIL THE EXHAUST FAN ON/OFF SWITCH IS AGAIN TURNED ON.

INTERLOCK DIAGRAM LEGEND

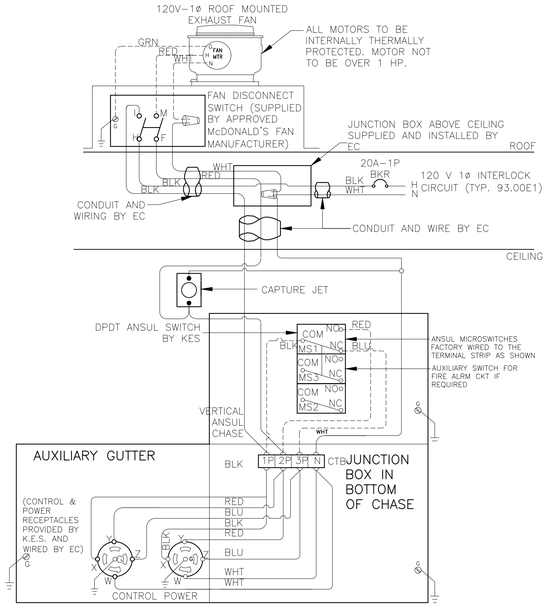
- ● TERMINAL BLOCK IN CHASE
- CTB – CHASE TERMINAL BLOCK, PROVIDED AND INSTALLED BY KITCHEN EQUIPMENT SUPPLIER
- ETB – EQUIPMENT TERMINAL BLOCK
- EFCR – EXHAUST FAN CONTROL RELAY. PROVIDED BY CONTRACTOR.
- IGR – INTERNAL GRILL RELAY PROVIDED WITHIN GARLAND GRILLS
- MS – ANSUL MICROSWITCH PROVIDED BY KITCHEN EQUIPMENT SUPPLIER
- >> CONTROL CORD PLUG & RECEPTACLE
- —— FIELD WIRING
- ——— CONTROL CORD/INTERNAL WIRING
- - - - FACTORY WIRING
- ——— EQUIPMENT OR ENCLOSURE

COOKING EQUIPMENT EXHAUST FAN	MAKE UP PROVIDED BY
EF/1	RTU–3
EF/2	RTU–1
EF/3	RTU–2

NOTE
RTU # ASSOCIATED WITH EACH EXHAUST FAN BASED ON PROTOTYPICAL VALUES ONLY. VERIFY THAT EXHAUST FAN ACTIVATES THE CORRESPONDING RTU TO PROVIDE AN ADEQUATE AMOUNT OF MAKEUP AIR.

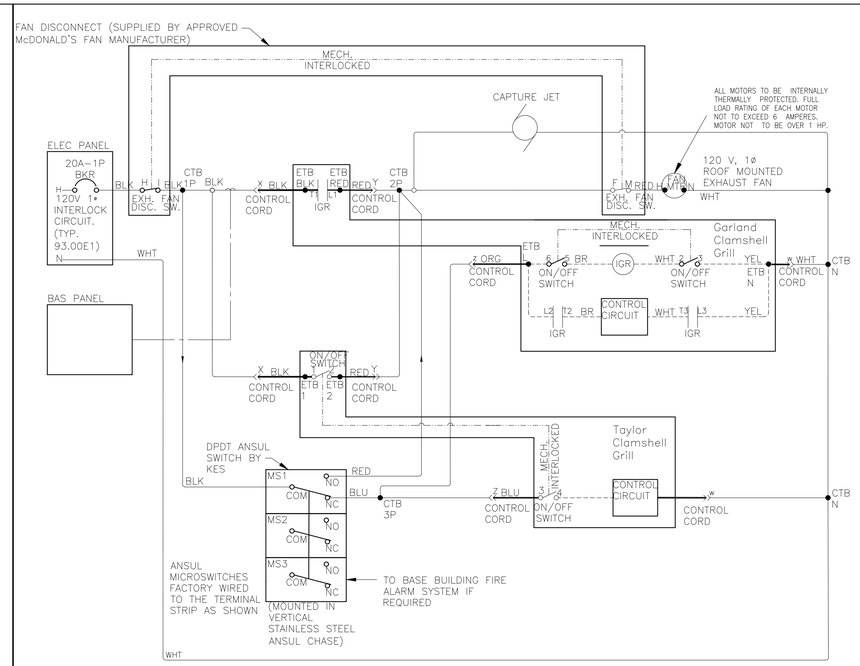
1 E-3.2 **TYPICAL MAKEUP AIR RTU EXHAUST FAN SCHEDULE**
FOR REFERENCE ONLY

REVISED: 6/18



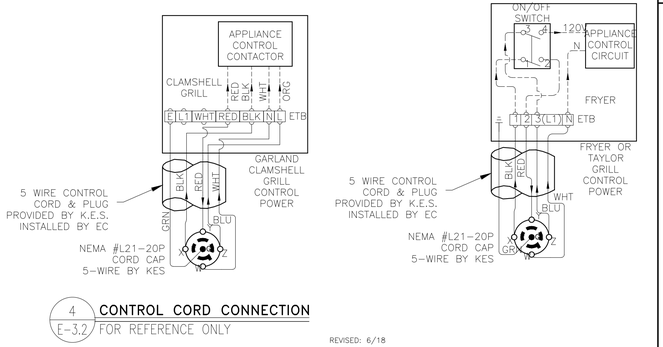
2 E-3.2 **INTERLOCK WIRING DIAGRAM FOR EXHAUST FAN AND COOKING EQUIPMENT**
FOR REFERENCE ONLY

REVISED: 6/18



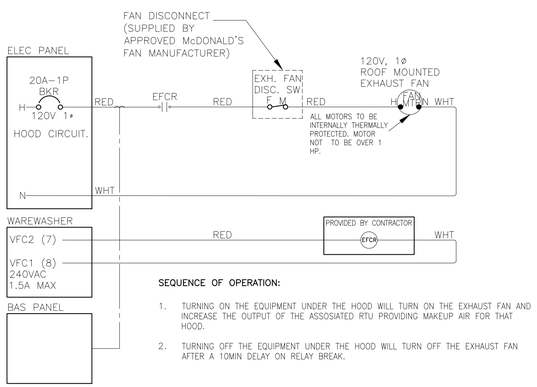
3 E-3.2 **INTERLOCK LADDER DIAGRAM**
FOR REFERENCE ONLY

REVISED: 6/18



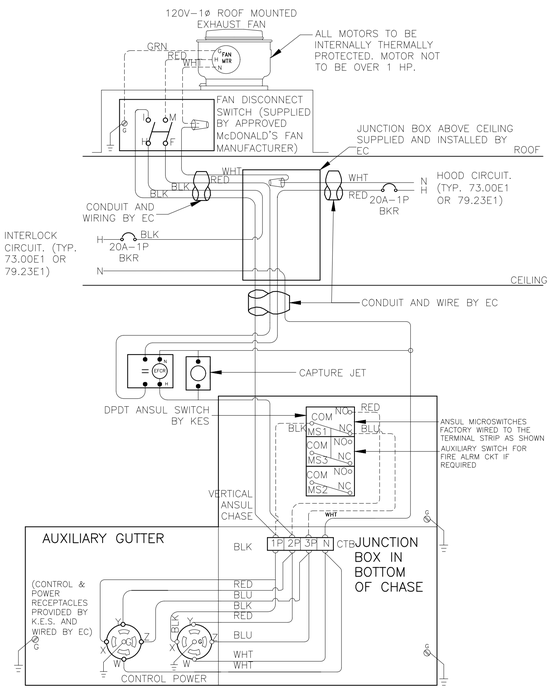
4 E-3.2 **CONTROL CORD CONNECTION**
FOR REFERENCE ONLY

REVISED: 6/18



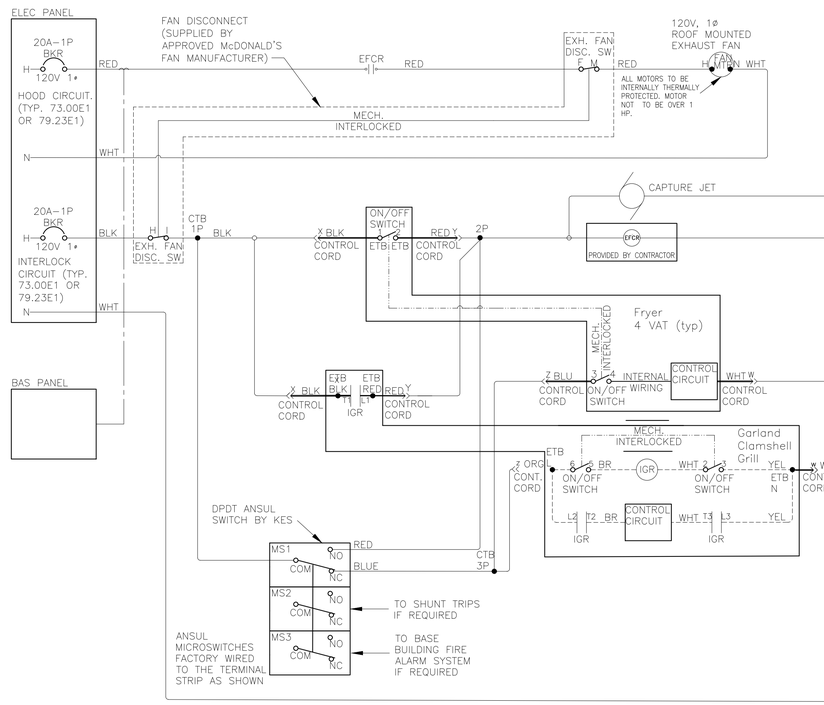
7 E-3.2 **INTERLOCK LADDER DIAGRAM FOR EXHAUST FAN AND WAREWASHER**
FOR REFERENCE ONLY

REVISED: 02/24



5 E-3.2 **INTERLOCK WIRING DIAGRAM FOR EXHAUST FAN AND COOKING EQUIPMENT**
FOR REFERENCE ONLY

REVISED: 6/18



6 E-3.2 **INTERLOCK LADDER DIAGRAM**
FOR REFERENCE ONLY

REVISED: 6/18

REV	DATE	DESCRIPTION	BY

10/9/2024

PREPARED BY:
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133 Water Street
Suite 201
Naperville, IL 60540
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PREPARED FOR: McDonald's USA, LLC

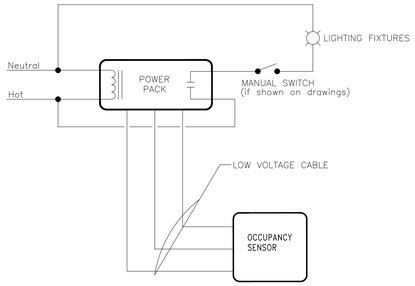
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DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
SH	2024 07	M.PELINI	10/01/2024	MCD.39450

TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD

DESCRIPTION	SITE ADDRESS
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN: 4.5514	4 DEERFIELD DR.
L/C: 028–0178	DOVER, NH

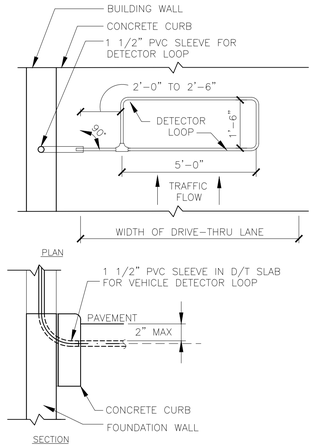
SHEET NO. 028–0178.00.0
E3.2
INTERLOCK DIAGRAMS



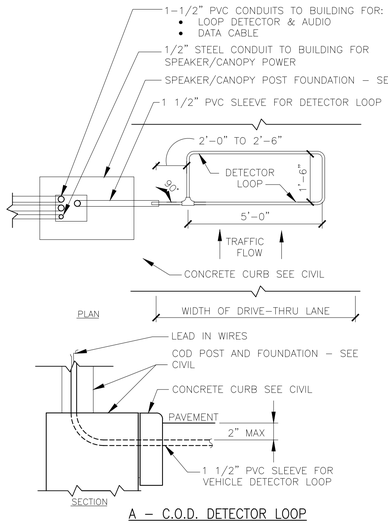
NOTES:

1. REFER TO LIGHTING PLAN FOR OCCUPANCY SENSOR LOCATIONS AND QUANTITIES.

1 E-4.0 **OCCUPANCY SENSOR CONTROL DETAIL**
NOT TO SCALE



B – DT WINDOW DETECTOR LOOP



A – C.O.D. DETECTOR LOOP

NOTES

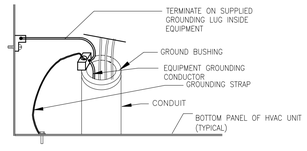
1. VERIFY CONDUIT SIZES AND LAYOUT WITH DETECTOR LOOP MANUFACTURER.
2. CENTER VEHICLE DETECTOR LOOP (ITEM # 217.11E1) IN DRIVE THRU LANE. INSTALL PER MFR. RECOMMENDATIONS.
3. SEE CIVIL FOR DIMENSIONS OF DRIVE-THRU LANE CONCRETE PAD FOR DETECTOR LOOP.
4. NO STEEL (REBAR OR ELECTRICAL WIRE) SHALL BE USED WITHIN 2' OF LOOP.
5. DETECTOR LOOP MANUFACTURERS:
   DETECTOR LOOPS MAY BE BY ONE OF THE FOLLOWINGS COMPANIES OR EQUAL.
   3M: 1-800-328-0033
   HME: 1-800-848-4468
6. DETECTOR LOOP MATERIAL:
   PVC TUBING 1/2" I.D. 100 PSI LOOP MADE FROM ONE LENGTH OF THIN FOURTEEN GAUGE STRANDED WIRE. LEAD-IN IS PRE-TWISTED AT FACTORY.
7. DETECTOR LOOP CONSTRUCTION:
   FORMED WITH ONE CONTINUOUS LENGTH OF PVC WITH NO SHARP CORNERS AS DETAILED. WIRE LOOPED, FORMED, & PIGTAILED AS DETAILED.

2 E-4.0 **DETECTOR LOOP DETAILS**
NOT TO SCALE

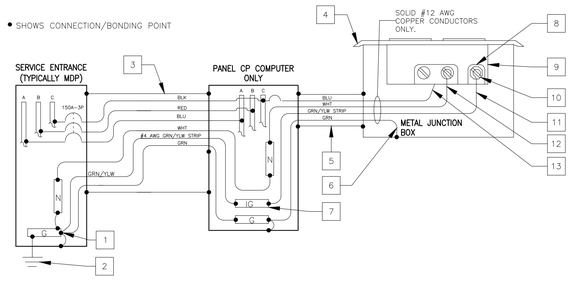
CONDUIT, WIRE SIZE AND GROUNDING FOR HVAC UNITS

HACR BRKR SIZE	CONDUIT & WIRE SIZE
40A	1"C-3#8
45A	1"C-3#6
50A	1"C-3#6
60A	1"C-3#6
70A	1-1/4"C-3#4
80A	1-1/4"C-3#3
90A	1-1/4"C-3#3
100A	1-1/4"C-3#2
125A	1-1/2"C-3#1
150A	1-1/2"C-3#1/0
175A	2"C-3#2/0
200A	2"C-3#3/0
225A	2"C-3#4/0
250A	2-1/2"C-3#250

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION OF ALL ELECTRICAL FEEDERS AND CIRCUIT BREAKERS WITH THE MANUFACTURER'S WRITTEN DATA FOR EACH MECHANICAL DEVICE PRIOR TO SUBMITTAL OF ANY ELECTRICAL EQUIPMENT FOR REVIEW. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY CHANGES TO ELECTRICAL FEEDERS OR CIRCUIT BREAKERS REQUIRED FOR ANY MECHANICAL DEVICES.



4 E-4.0 **HVAC GROUNDING DETAIL**
NOT TO SCALE



NOTES

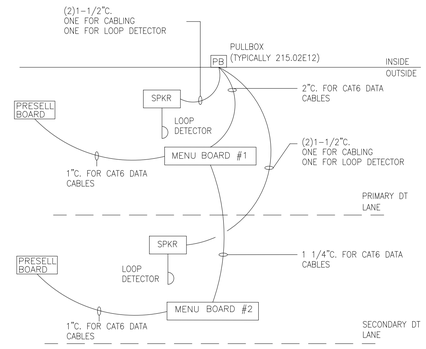
1. ALL P.O.S. EQUIPMENT (COMPUTERS,PRINTERS,MONITORS KVS, MODEM, HUB & COD) SHALL BE POWERED FROM THE COMPUTER PANEL.

   ALL OTHER COMPUTER/DIGITAL EQUIPMENT SHALL BE POWERED FROM PHASE "A" IN THE COMPUTER PANEL.
2. ISOLATED GROUND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF NEC SECTION 250 .
3. EACH 20 AMP CIRCUIT SHALL HAVE IT'S OWN ISOLATED EQUIPMENT GROUNDING CONDUCTOR.
4. ENTIRE GROUNDING SYSTEM SHALL COMPLY WITH NEC ARTICLE 250 AND MCDONALD'S BUILDING GROUNDING DETAIL.
5. EC SHALL VERIFY CORRECT POLARITY AT RECEPTACLE.
6. EC SHALL VERIFY THAT SUBPANEL CP DOES NOT CONTAIN ANY ILLEGAL NEUTRAL TO GROUND BONDS.
7. PANEL CP SHALL ONLY BE USED TO POWER SENSITIVE ELECTRONIC EQUIPMENT, AS OUTLINED IN NOTE #1. IT SHALL NOT BE USED TO POWER ANY OTHER LOADS.
8. IT IS A SAFETY HAZARD AND AN NEC VIOLATION FOR THE POS SYSTEM TO HAVE ITS OWN INDEPENDENT GROUNDING ROD. IF AN INDEPENDENT GROUND ROD IS FOUND FOR THE POS SYSTEM, IT SHALL BE BONDED TO THE BUILDING GROUNDING SYSTEM.

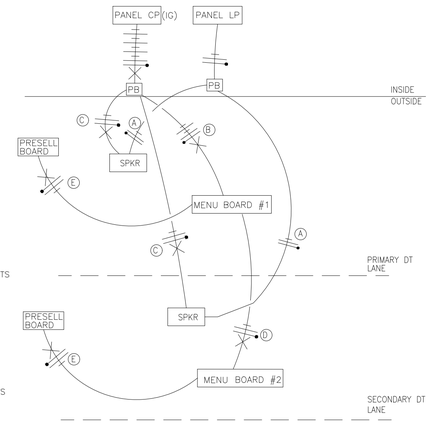
KEY NOTES

1. THIS IS THE ONLY POINT WHERE THE ISOLATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE CONNECTED TO THE BUILDING'S GROUNDING SYSTEM.
2. SEE BUILDING GROUNDING DETAIL SHEET E4.2.
3. 2" METAL CONDUIT: 4-#1/0 CU + 1-#6 CU EQUIP GND + 1-#4 CU ISOLATED GND.
4. ALL ISOLATED GROUND/ DEDICATED CIRCUIT RECEPTACLE COVER PLATES SHALL BE ORANGE HUBBELL PJ7GO (SINGLE), PJ8GO (ONE DUPLEX) OR PJ82CO (TWO DUPLEX) MARKED "COMPUTER ONLY".
5. METAL CONDUIT SHALL CONTAIN ONLY P.O.S. CIRCUIT CONDUCTORS (DEDICATED CIRCUIT). ONLY USE RIGID NON-METALLIC CONDUIT BELOW GRADE WHEN REQUIRED BY LOCAL CODE.
6. EQUIPMENT GROUNDING BONDING CONDUCTOR (TYPICAL)
7. ISOLATED GROUND BUS, ELECTRICALLY INSULATED FROM PANEL ENCLOSURE USED TO TERMINATE ONLY ISOLATED EQUIPMENT GROUNDING CONDUCTORS.
8. ALL CONDUCTORS SHALL BE SOLID COPPER AND TERMINATED TO THEIR APPROPRIATE TERMINAL SCREWS BY WRAPPING THE CONDUCTOR COMPLETELY AROUND THE SCREW BARREL AND TIGHTENING THE SCREW PER MANUFACTURER'S TORQUE SPECIFICATIONS.
9. ISOLATED GROUND RECEPTACLE HUBBELL-IG4700,IG4710,IG5262 OR IG5261. SEE ROUGH IN SCHEDULE FOR THE APPROPRIATE RECEPTACLE TO USE.
10. ISOLATED GREEN GROUND SCREW.
11. ISOLATED EQUIPMENT GROUNDING CONDUCTOR (GRN W/YLW STRIP)
12. NEUTRAL CONDUCTOR TERMINATED ON SILVER SCREW.
13. PHASE CONDUCTOR TERMINATED ON BRASS SCREW

5 E-4.0 **POS & COD ISOLATED GROUND/DEDICATED CIRCUIT**
NOT TO SCALE



DT LOW VOLTAGE CONDUIT DIAGRAM
NOT TO SCALE



NOTE:

* VERIFY EXACT CIRCUITS & QUANTITIES OF CIRCUITS WITH PANEL SCHEDULES AND MANUFACTURERS INSTALLATION INSTRUCTIONS.
* VERIFY LOW VOLTAGE CABLE COUNT WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.

Ⓐ 2#12 & 1#12 GND. TO LP-1 FOR COD CANOPY LIGHTING.

Ⓑ 4#12 & 1#12 GND & 1#12 ISOLATED GND., TO CP FOR ISOLATED GROUND POWER TO MENUBOARDS AND MEDIA PLAYERS.

Ⓒ 2#12 & 1#12 GND & 1#12 ISOLATED GND., TO CP FOR ISOLATED GROUND POWER TO SPEAKER CANOPY/STAND. EACH CANOPY/STAND SHALL BE ON ITS OWN SEPARATE CIRCUIT.

Ⓓ 2#12 & 1#12 GND & 1#12 ISOLATED GND., TO CP FOR ISOLATED GROUND POWER TO MENUBOARDS AND MEDIA PLAYERS.

Ⓔ 2#12 & 1#12 GND & 1#12 ISOLATED GND., TO CP FOR ISOLATED GROUND POWER TO FOR PRESELL BOARDS AND MEDIA PLAYER.

DRIVE THRU POWER DIAGRAM
NOT TO SCALE

NO.	REV	DATE	DESCRIPTION	BY

NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER

10/9/2024

PREPARED BY:
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Holbrook, IL 60340
312.782.5415
core-states.com

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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	STD ISSUE DATE	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
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TITLE
2023 STANDARD BUILDING – BB20
4584-WOOD/WOOD

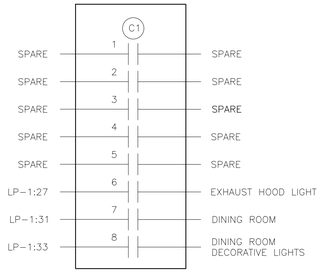
DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN: 4.75/14	SITE ADDRESS:	
L/C: 028-0178	4 DEERFIELD DR.	DOVER, NH

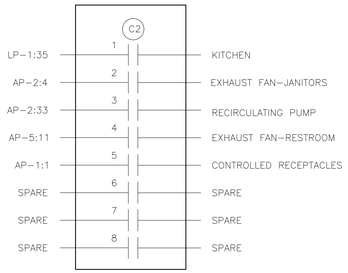
SHEET NO.
028-0178.00.0
E4.0
WIRING DETAILS

LIGHTING CONTROL SYSTEM

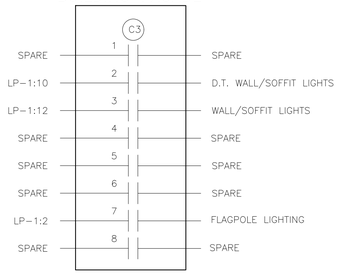
INTERIOR CUSTOMER LIGHTING



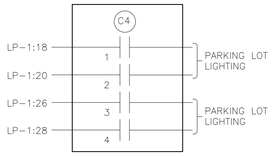
INTERIOR CREW LIGHTING



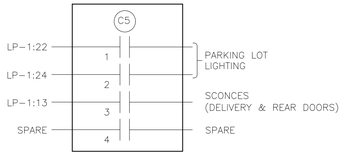
BUILDING FACADE



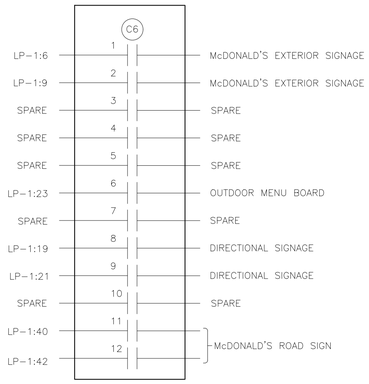
EXTERIOR LIGHTING



EXTERIOR LIGHTING



EXTERIOR SIGNAGE



INTERIOR LIGHTING CONTROL SCHEDULE							
	LOCAL CONTROL	MANUAL ON	PARTIAL ON	MULTI LEVEL	DAYLIGHTING	AUTO OFF	SCHEDULE OFF
DINING	MANAGERS OFFICE		X		X		X
KITCHEN	MANAGERS OFFICE		X				X
SUPPORT/STOCK	X					X	
CREW	X	X		X		X	
MANAGER	X	X		X		X	
BATHROOM						X	
SMALL STORAGE	X	X				X	
ENTRY VESTIBULE							X

NOTES:
1. LOCAL CONTROL: MANUAL LIGHTING CONTROL THAT PROVIDES ON AND OFF CONTROL IN SPACE. REMOTE LOCATION CONTROL DEVICE MUST BE LABELED TO IDENTIFY CONTROLLED LIGHTING.
2. MANUAL ON: NONE OF THE LIGHTING SHALL BE AUTOMATICALLY TURNED ON.
3. PARTIAL ON: 50% OF THE GENERAL LIGHTING SHALL BE AUTOMATICALLY TURNED ON.
4. MULTI LEVEL: GENERAL LIGHTING SHALL BE FITTED WITH A MANUAL CONTROLLED CONTINUOUS DIMMER.
5. DAYLIGHTING: REQUIRED WHEN PRIMARY AND SECONDARY ZONES CONTAIN 150W OF GENERAL LIGHTING. PHOTOCONTROL SHALL REDUCE LIGHTING IN RESPONSE TO AVAILABLE DAYLIGHT USING CONTINUOUS DIMMING TO 20% AND OFF.
6. AUTO OFF: ALL LIGHTING INCLUDING LIGHTING CONNECTED TO EMERGENCY CIRCUITS SHALL BE AUTOMATICALLY SHUT OFF WITHIN 20 MINUTES OF OCCUPANTS LEAVING THE SPACE.
7. SCHEDULE OFF: ALL LIGHTING, INCLUDING LIGHTING CONNECTED TO EMERGENCY CIRCUITS, SHALL BE AUTOMATICALLY SHUT OFF DURING PERIODS WHEN THE SPACE IS SCHEDULED TO BE UNOCCUPIED.
8. 0.02W PER SQUARE FT OF BUILDING ALLOWED TO BE CONTINUOUSLY LIT.

EXTERIOR LIGHTING CONTROL SCHEDULE			
	TIME CLOCK	PHOTCELL	OCCUPANCY SENSOR
POLE LIGHTING	X	X	X
BUILDING MOUNT LIGHTING	X	X	
SIGNAGE	X	X	

NOTES:
1. TIME CLOCK: LIGHTING SHALL BE AUTOMATICALLY SHUT OFF BETWEEN BUSINESS CLOSING (OR MIDNIGHT) AND BUSINESS OPENING (OR 6AM) WHICHEVER PROVIDES THE SHORTEST OFF DURATION.
2. PHOTOCELL: LIGHTING SHALL BE AUTOMATICALLY TURNED OFF WHEN SUFFICIENT DAYLIGHT IS AVAILABLE.
3. OCCUPANCY SENSOR: LIGHTING SHALL AUTOMATICALLY REDUCE THE CONNECTED LIGHTING POWER BY 50% WHEN NO ACTIVITY HAS BEEN DETECTED IN AREA IN 15 MINUTES. NO MORE THAN 1500W OF LIGHTING PER CONTROL ZONE.

LIGHTING CONTROL NOTES:

LIGHTING CONTROL NOTES

LC1. CONTACTOR DETAILS ARE DIAGRAMMATIC ONLY AND ARE SHOWN WITH TYPICAL LOADS AND CIRCUIT ASSIGNMENTS. LOADS, CIRCUIT ASSIGNMENTS AND NUMBER OF CONTACTORS MAY VARY BY RESTAURANT LOCATION AND PER BAS SUPPLIERS SYSTEMS. VERIFY EXACT REQUIREMENTS WITH BAS INSTALLATION DETAILS, SITE PLANS, ELECTRICAL PANEL SCHEDULES AND ACM. EC SHALL MAKE ALL MODIFICATIONS AS REQUIRED. FINAL INSTALLATION SHALL BE FULLY NEC AND ENERGY CODE COMPLIANT.

LC2. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL WIRING, CONNECTIONS, TERMINATIONS, ETC. THAT ARE NOT PROVIDED BY THE BAS SUPPLIER FOR A COMPLETE, FULLY OPERATIONAL AND CODE COMPLIANT LIGHTING CONTROL SYSTEM.

LC3. ALL COMPONENTS FOR THIS LIGHTING CONTROL SYSTEM SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR. SEE BOXED NOTE BELOW FOR OPTIONS.

LC4. ALL COMPONENTS SHALL BE UL LISTED AND LABELED AND THE SYSTEM SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL ENERGY CODE REQUIREMENTS.

LC5. ALL CONTACTORS SHALL BE LOCATED IN A NEMA 1 ENCLOSURE WITH SCREW TYPE COVER MOUNTED DIRECTLY ABOVE LIGHTING PANEL OR SWITCHGEAR SO AS TO BE ACCESSIBLE.

LC6. ALL CONTACTORS SHALL BE RATED FOR 30 AMP LOADS UNLESS NOTED OTHERWISE AND SHALL BE HID RATED WHERE REQUIRED.

LC7. COIL VOLTAGES FOR ALL CONTACTORS SHALL BE 120 VOLT UNLESS NOTED OTHERWISE.

LC8. CONTACTOR C5 IS INTENDED TO CONTROL PARKING LOT LIGHTS NEAR TRASH CORRAL, DELIVERY DOORS, AND EMPLOYEE PARKING, THUS ALLOWING A DIFFERENT LIGHTING SCHEDULE TO BE USED IN THOSE AREAS.

LIGHTING CONTROL INSTALLATION OPTIONS

OPTION 1 (STANDARD) CONTACTORS AND CONTACTOR ENCLOSURE FOR THIS LIGHTING CONTROL SYSTEM SHALL BE FURNISHED BY THE BAS SUPPLIER AND INSTALLED BY THE ELECTRICAL CONTRACTOR ON SITE FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

OPTION 2 (OPTIONAL) LIGHTING CONTROL CAN BE ACCOMPLISHED VIA UTILIZATION OF A SMART TYPE BREAKER PANEL REPLACING STANDARD PANEL LP-1. PANEL SHALL UTILIZE AN INTEGRAL MOTOR OPERATED CIRCUIT BREAKERS OR AN INTEGRAL CIRCUIT BREAKER/CONTACTOR TYPE COMBINATION DEVICE WITH AN INTEGRAL PROGRAMMING CONTROL MODULE AND SHALL BE ORDERED THROUGH OUR ELECTRICAL EQUIPMENT NATIONAL ACCOUNT PROGRAM (SQUARE-D) THROUGH OUR CONSTRUCTION PURCHASING TEAM.

BUILDING AUTOMATION SYSTEM NOTES

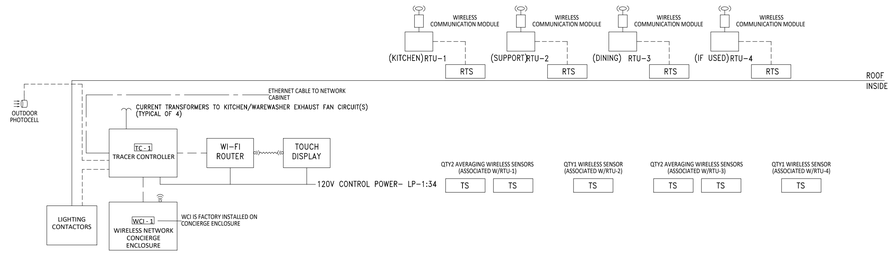
BAS1. THE DIAGRAM SHOWN ABOVE IS SCHEMATIC IN NATURE AND SHOWS THE GENERAL REQUIREMENTS FOR THE INSTALLATION OF THE BUILDING AUTOMATION SYSTEM. EXACT EQUIPMENT REQUIREMENTS AND QUANTITIES WILL VARY PER SITE. G.C., M.C., T.C.C. AND E.C. SHALL COORDINATE ALL EXACT EQUIPMENT AND INSTALLATION REQUIREMENTS WITH SUPPLIER PRIOR TO SUBMITTING BID FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

BAS2. THE BUILDING AUTOMATION SYSTEM ALSO HAS ADDITIONAL OPTIONS AVAILABLE SUCH AS MONITORING DOOR CONTACTS (RESTROOM & COOLER FREEZER), ENERGY METER, COOLER/FREEZER TEMP. ADDITIONAL OPTIONS MAY BE SELECTED ON CENTRAL PURCHASING PROJECT DETAIL FORM. G.C., M.C., T.C.C. AND E.C. SHALL COORDINATE ALL EXACT INSTALLATION REQUIREMENTS WITH SUPPLIER PRIOR TO SUBMITTING BID FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

BAS3. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL LINE AND LOW VOLTAGE WIRING AND CONNECTIONS, INCLUDING BUT NOT LIMITED TO CONTROL POWER TO ALL BAS COMPONENTS AND POWER CIRCUITRY WIRING OF ALL LIGHTING CONTACTORS. COORDINATE INSTALLATION WITH SITE SPECIFIC BAS INSTALLATION DETAILS PROVIDED BY SUPPLIER.

BUILDING AUTOMATION SYSTEM

INSTALLATION & TECHNICAL ASSISTANCE INFORMATION:
TRANE BAS: McDcontrols@Trane.com



PROVIDE AND INSTALL DATA OUTLET NEXT TO BAS PANEL. REMOTE COMMISSIONING IS NOT POSSIBLE WITHOUT DATA CONNECTION.

INSTALLATION NOTES:
1. PROVIDE, INSTALL AND SECURE ALL NECESSARY CABLE & CONDUIT PER BAS DRAWINGS AND SPECIFICATIONS.
2. MOUNT ALL BAS CONTROL ENCLOSURES.
3. PERFORM ALL LOW VOLTAGE TERMINATIONS.
4. ROUGH-IN, INSTALLATION AND WIRING FOR TEMPERATURE SENSORS AND TOUCHSCREEN PER PLAN LOCATIONS.
5. PROVIDE POWER CIRCUITS INTO CONTROL CANS PER BAS DETAILS.
6. COORDINATE WITH SUPPLIER TO SCHEDULE REMOTE COMMISSIONING.
7. CORRECT ALL PUNCH LIST ITEMS FOUND DURING REMOTE COMMISSIONING.

CONTROLS SCHEDULE

MARK	DESCRIPTION	MANUFACTURER MODEL
TS	WIRELESS SPACE TEMPERATURE SENSOR	*PROVIDED WITH BAS
RTS	RETURN TEMPERATURE SENSOR	*PROVIDED WITH BAS
HS	OUTDOOR TEMP/HUMIDITY SENSOR	FACTORY FURNISHED AND INSTALLED W/EACH RTU

NOTES:
1. FOR TS LOCATIONS, REFER TO M1.2
2. RTS TO BE MOUNTED IN RETURN AIR DUCT OF RTU

WIRE LEGEND

MARK	WIRE/CABLE TYPE
——— – ———	CAT 5E
----------	18 AWG CONDUCTORS

REV	DATE	DESCRIPTION	BY
			TPF

10/9/2024

PREPARED BY:
CORE STATES GROUP
135 Wynter Street
Suite 201
Northville, IL 60540
312.718.3415
core-states.com

PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
SH	M.PELINI	10/01/2024	MCD.39450
STD ISSUE DATE 2024 Q1			

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN: 43514
L/C: 028-0178

SITE ADDRESS:
4 DEERFIELD DR. DOVER, NH

SHEET NO. 028-0178.00.0
E4.1
LIGHTING CONTROLS

MLO, AIC: NOTES D6,D7,&D8, Mounting: flush, NEMA 1 — **PANEL LP-1** — **225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH**

WATTS A	WATTS B	WATTS C		BRKR REQ	TRIP POLES	CCT NO.	CCT NO.	TRIP POLES	BRKR REQ		WATTS A	WATTS B	WATTS C
0			Spare		20A-1	1	2	20A-1	S	Flag Pole	220		
	0		Spare		20A-1	3	4	20A-1		Spare		0	
		0	Spare		20A-1	5	6	20A-1	S	Exterior Signage			294
0			Spare		20A-1	7	8	20A-1		Spare	0		
	294		Exterior Signage	S	20A-1	9	10	20A-1	S	Exterior Wall/Soffit Lights DT		114	
		0	Spare		20A-1	11	12	20A-1	S	Exterior Wall/Soffit Lights			114
42			Back of House Sconces	S,L	20A-1	13	14	20A-1		DCO In Road Sign Base	180		
	0		Spare		20A-1	15	16	20A-1	L	Dr Alarm\CO2\Access Control panel		524	
		0	Spare		20A-1	17	18	30A-2		Lot Lights			480
96			Directional Sign	S	20A-1	19	20	I		I	480		
	96		Directional Sign	S	20A-1	21	22	30A-2		Lot Lights		240	
		120	COD lighting	S	20A-1	23	24	I		I			240
0			Spare		20A-1	25	26	30A-2		Lot Lights	480		
	30		Exhaust Hood Light	S	20A-1	27	28	I		I		480	
		0	Spare		20A-1	29	30	30A-2		Spare			0
308			Dining Area Lighting	S	20A-1	31	32	I		I	0		
	189		Pendants/cove lights	S	20A-1	33	34	20A-1	L	BAS Controller		300	
		880	Kitchen Lighting	S	20A-1	35	36	20A-1	L	Lighting Control Panel			180
176			Restroom Lighting	S	20A-1	37	38	20A-1	S,L	Exit/Egress Lighting	80		
	520		Support Area Lighting	S	20A-1	39	40	60A-2	S	Mcd'S Road Sign		2496	
		0	Spare		20A-1	41	42	I	I	I			2496

	Total Connect	Connect Amps	Demand Amps
A	2062	5283	4804
B		34	Amps
C		42	Amps

MLO, AIC: NOTES D6, D7, & D8, Mounting: MDP, NEMA 1 — **PANEL AP-1** — **225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH**

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRIP PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
1620			Dco-manager's office/crew room		20A-1	1	2	20A-2	G	Coffee brewer (presenter's booth)	1612		
	720		Dco-General Purpose	G	20A-1	3	4	I	I	I		1612	
		0	Spare		20A-1	5	6	20A-1	G	ABS (ghase c, presenter's booth)			1788
120			Safe - (mo) DCO Gen Purp	L	20A-1	7	8	20A-1	G	Juice disp/ coffee cream disp	840		
	240		Remote Order Battery		20A-1	9	10	20A-1	G	CO2 Detector		120	
		960	Merge/audio sys/drv mon/Deliv	G	20A-1	11	12	20A-1	G	Automated beverage sys			600
960			Washer		15A-1	13	14	20A-2	G	Coffee Brewer (front counter)	1612		
	1800		Hand Held Order		20A-1	15	16	I	I	I		1612	
		120	Computer Room (TF/1)		20A-1	17	18	30A-3	G	Heat treat combo shake			1560
2246			Espresso Brewer	G	30A-2	19	20	I	I	I	1560		
	2246		I	I	I	21	22	I	I	I		1560	
		1500	3-Vat fryer hood interlock		20A-1	23	24	20A-1		3-Vat fryer hood Interlock			1176
1320			Reach in Freezer-SW	G	20A-1	25	26	20A-2	H	Ice Machine Remote Cond 1400lb	104		
	1080		Frozen fry dispenser (fry wall)	G	20A-1	27	28	I	I	I		104	
		2112	4-Vat fryer hood interlock		20A-1	29	30	20A-1	G	Reach in Freezer-SW			1320
1500			Fry Bagging Station	L,G	20A-1	31	32	15A-3	H	Ice Machine Remote Cond 1000lb	1332		
	60		Hand Wash Timers	G	20A-1	33	34	I	I	I		1332	
		1320	Reach in Freezer-SW	G	20A-1	35	36	I	I	I			1332
132			Ice mach - 1000 lb (self serve)		15A-1	37	38	15A-3	H	Ice Machine Remote Cond 1000lb	1332		
	132		Ice mach - 1000 lb (self serve)		15A-1	39	40	I	I	I		1332	
		1656	4-Vat fryer hd interlock		20A-1	41	42	I	I	I			1332

	Total Connect	Connect Amps	Demand Amps
A	16290	13950	16776
B		131	Amps
C		91	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: MDP, NEMA 1 — **PANEL AP-2** — **225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH**

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRIP PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
1536			Ice machine 1400LB	H	20A-3	1	2	20A-1		Spare	0		
	1536		I	I	I	3	4	20A-1		Janitors EF		100	
		1536	I	I	I	5	6	20A-1	G	Dco-General Purpose			540
144			Blender McFlurry	G	20A-1	7	8	20A-1	G	Refrig-wt-48"	600		
	180		Janitor's closet	G	20A-1	9	10	30A-2	H	Trash Compactor		2496	
		0	Spare		20A-1	11	12	I	I	I			2496
0			Spare		20A-1	13	14	20A-1		Walk in cooler / freezer	600		
	864		Bulk oil system (sup area)	G	20A-1	15	16	20A-1		Walk in cooler / freezer		600	
		1668	Clm grll exhast hood interlock		20A-1	17	18	20A-2	G	Q'ing oven - P& S			1550
840			Meat freezer DW (grill side)	G	20A-1	19	20	I	I	I	1550		
	120		Clean in place panel	G	20A-1	21	22	20A-1	G	Specialty Coffee Refrigerator 27"		468	
		490	Reverse Osmosis, Filtration	G	20A-1	23	24	20A-1	G	Automated beverage sys			600
180			Dco in trash corrall	G	20A-1	25	26	20A-1	G	ABS (presenter's booth)	1788		
	1200		Bulk oil sys - support area (sa)	G	20A-1	27	28	20A-2	G	Q'ing oven - P& S		1550	
		1032	BIC Machine	G	20A-1	29	30	I	I	I			1550
324			Reach In SW fridge	G	20A-1	31	32	20A-2	G	Infusion Tea Brewer	1352		
	120		Recirc pump		20A-1	33	34	I	I	I		1352	
		1632	Soda syst pack (support area)		20A-1	35	36	20A-1		Spare			0
3120			Soda syst pack (support area)		30A-3	37	38	20A-2	G	Q'ing oven - P& S	1602		
	3120		I		I	39	40	I	I	I		1602	
		3120	I		I	41	42	20A-1	G	Dco-General Purpose			540

	Total Connect	Connect Amps	Demand Amps
A	13636	15308	16754
B		127	Amps
C		84	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: MDP, NEMA 1 — **PANEL AP-3** — **225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH**

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRIP- PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
4668			4-Vat-Fryer-Electric-S/S/S/S	G	50A-3	1	2	50A-3	G	4-Vat-Fryer-Electric-S/S/S/S	4668		
	4668		I	I	I	3	4	I	I	I		4668	
		4668	I	I	I	5	6	I	I	I			4668
4668			4-Vat-Fryer-Electric-S/S/S/S	G	50A-3	7	8	50A-3	G	4-Vat-Fryer-Electric-S/S/S/S	4668		
	4668		I	I	I	9	10	I	I	I		4668	
		4668	I	I	I	11	12	I	I	I			4668
0			Space			13	14	50A-3	G	Clamshell Grill	2604		
	0		Space			15	16	I	I	I		2604	
		0	Space			17	18	I	I	I			2604
0			Space			19	20	50A-3	G	Clamshell Grill	5196		
	0		Space			21	22	I	I	I		5196	
		0	Space			23	24	I	I	I			5196
0			Space			25	26			Space	0		
	0		Space			27	28			Space		0	
		0	Space			29	30			Space			0
0			Space			31	32			Space	0		
	0		Space			33	34			Space		0	
		0	Space			35	36			Space			0
0			Space			37	38			Space	0		
	0		Space			39	40			Space		0	
		0	Space			41	42			Space			0

	Total Connect	Connect Amps	Demand Amps
A	26472	26472	26472
B		220	Amps
C		143	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: MDP, NEMA 1 — **PANEL AP-4** — **225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH**

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRIP NO.	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
2604			Clamshell Grill	G	50A-3	1	2	30A-3	G	Combi Oven	1812		
	2604		I	I	I	3	4	I	I	I		1812	
		2604	I	I	I	5	6	I	I	I			1812
5196			Clamshell Grill	G	50A-3	7	8	30A-3	G	Combi Oven	1812		
	5196		I	I	I	9	10	I	I	I		1812	
		5196	I	I	I	11	12	I	I	I			1812
4668			3-Vat-Fryer-Electric-F/F/F	G	50A-3	13	14	15A-1		Combi Oven Hood	960		
	4668		I	I	I	15	16	15A-1		Combi Oven Hood		960	
		4668	I	I	I	17	18			Space			0
4668			3-Vat-Fryer-Electric-F/F/F	G	50A-3	19	20			Space	0		
	4668		I	I	I	21	22			Space		0	
		4668	I	I	I	23	24			Space			0
4668			3-Vat-Fryer-Electric-F/F/F	G	50A-3	25	26			Space	0		
	4668		I	I	I	27	28			Space		0	
		4668	I	I	I	29	30			Space			0
0			Space			31	32			Space	0		
	0		Space			33	34			Space		0	
		0	Space			35	36			Space			0
0			Space			37	38			Space	0		
	0		Space			39	40			Space		0	
		0	Space			41	42			Space			0

	Total Connect	Connect Amps	Demand Amps
A	26388	26408	25428
B		217	Amps
C		141	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: FLUSH, NEMA 1 — **PANEL AP-5** — **225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH**

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRIP PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
600			Fridge/Freezer 2Dr Base	G	20A-1	1	2	20A-1		Warewasher Exhaust Fan	864		
	600		Fridge/Freezer 2Dr Base	G	20A-1	3	4	20A-2	G	Universal Holding Cabinet P&S		1581	
		600	Fridge/Freezer 2Dr Base	G	20A-1	5	6	I	I	I			1581
600			Fridge/Freezer 2Dr Base	G	20A-1	7	8	20A-2	G	Univeral Holding Cabinet P&S	1581		
	600		Fridge/Freezer 2Dr Base	G	20A-1	9	10	I	I	I		1581	
		864	Toilet Exhaust Fan	G	20A-1	11	12	20A-1	G	Univeral Holding Cabinet Table			240
540			Roof Receptacles	G	20A-1	13	14	20A-1		DT Power Window	120		
	0		Spare		20A-1	15	16	20A-1		DT Power Window		120	
		2080	Frozen Carbonated Beverage	G	30A-2	17	18	20A-1		DT Power Window			120
2080			I	I	I	19	20	20A-1		Spare	0		
	360		Delivery Tablets	G	20A-1	21	22	20A-1		Spare		0	
		600	Wall Mount Frz Unit SW HC	G	20A-1	23	24	20A-1	G	Pie Display			564
828			Bulk Oil System	G	20A-1	25	26	20A-1	G	Pie Display	564		
	2620		Universal Radiant Toaster	G	30A-2	27	28	20A-1		Spare		0	
		2620	I	I	I	29	30	20A-1		DCO-Muzak satellite system			120
3230			Warewasher 1of2	G	30A-3	31	32	20A-1		Op. Mt window recepts	720		
	3230		I	I	I	33	34	20A-2	G	Humidified holding cabinet		947	
		3230	I	I	I	35	36	I	I	I			947
3230			Warewasher 2of2	G	30A-3	37	38	20A-2	H	Remote Condensing Unit	1560		
	3230		I	I	I	39	40	I	I	I		1560	
		3230	I	I	I	41	42	20A-1		Spare			0

	Total Connect	Connect Amps	Demand Amps
A	16517	16429	16796
B		138	Amps
C		90	Amps

MLO, AIC: NOTES D6,D7,&D8, Mounting: FLUSH, NEMA 1 — **PANEL AP-6** — **225A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH**

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRIP PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
1092			Hand Dryer	L,G	20A-1	1	2	20A-1		Unit AC-1	600		
	1092		Hand Dryer	L,G	20A-1	3	4	20A-1		Unit AC-2		600	
		1092	Hand Dryer	L,G	20A-1	5	6	20A-1		Unit AC-3			1200
1092			Hand Dryer	L,G	20A-1	7	8	20A-1		Unit AC-4	1200		
	104		Cooler Evap	H	20A-2	9	10	20A-1		Unit AC-5		600	
		104	I	I	I	11	12	20A-1		Spare			0
2111			Freezer Evap	H	30A-2	13	14	20A-1		Spare	0		
	2111		I	I	I	15	16	20A-1		Spare		0	
		1612	Coffee Brewer (Thermal Pots)	G	20A-2	17	18	20A-1		Spare			0
1612			I	I	I	19	20	20A-1		Spare	0		
	0		Space			21	22			Space		0	
		0	Space			23	24			Space			0
0			Space			25	26			Space	0		
	0		Space			27	28			Space		0	
		0	Space			29	30			Space			0
0			Space			31	32			Space	0		
	0		Space			33	34			Space		0	
		0	Space			35	36			Space			0
0			Space			37	38			Space	0		
	0		Space			39	40			Space		0	
		0	Space			41	42			Space			0

	Total Connect	Connect Amps	Demand Amps
A	7707	4507	4008
B		45	Amps
C		34	Amps

1000A MCB, NOTES D6, D7, & D8, Mounting: Free Standing, NEMA 1 — **PANEL MDP** — **208Y/120 VAC, 3PH, 4W**

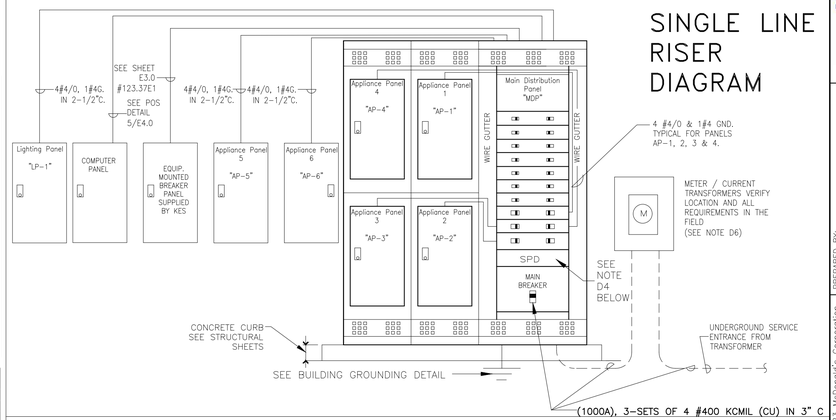
WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRP NO.	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
2062	5283	4804	Lighting Panel 1; LP-1		225A-3	1	2	225A-3		Appliance Panel; AP-1	16290	13950	16776
13636	15308	16754	Appliance Panel; AP-2		225A-3	3	4	225A-3	SHT	Appliance Panel; AP-3	26472	26472	26472
20880	20880	20880	*Roof Top Unit 1	H	200A-3	5	6	150A-3	L	CP Panel	8430	8112	9288
7707	4507	4008	Appliance Panel; AP-6		225A-3	7	8	175A-3	H	*Roof Top Unit 3	8040	8040	8040
16517	16429	16796	Appliance Panel; AP-5		225A-3	9	10	225A-3	SHT	Appliance Panel; AP-4	26388	26408	25428
6992	7304	0	KES Breaker Panel		125A-2	11	12	100A-3	H	*Roof Top Unit 2	17400	17400	17400
0	0	0	Space			13	14	200A-3	H,L	Water Heater 54KW	18000	18000	18000
2966	2966	2966	Remote Cond Unit	H	40A-3	15	16			SPD			
0	0	0	SPACE			17	18			SPD			
0	0	0	SPACE			19	20			SPD			
* SEE ELECT SHTS FOR CONDUIT AND WIRE SIZE													

	Total Connect	Connect Amps
A	191780	191059
B		1584
C		187612
		Amps

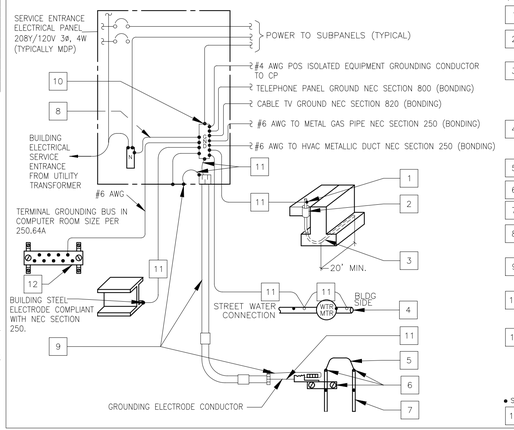
150 MLO AIC: SEE NOTES D6, D7, & D8, Mounting: Flush — **COMPUTER PANEL** — **150A, 208Y/120 VAC, 3PH, 4W, CB TYPE: BL or BLH**

WATTS A	WATTS B	WATTS C	DESCRIPTION	BRKR REQ	TRP PLS	CCT NO.	CCT NO.	TRIP- PLS	BRKR REQ	DESCRIPTION	WATTS A	WATTS B	WATTS C
1656			Pres Pos Reg/Vid Mon/HeadSet/Label	L	20A-1	1	2	20A-1		Spare	0		
	1200		Kvs Mon Cat/Vid Mon/Rec/Label	G, L	20A-1	3	4	20A-1	L	Rec		84	
		120	Cctv/Timer	L	20A-1	5	6	20A-1	L	Digital Merch/Media Player			432
630			Order Pos Reg/Vid Mon/ Coin dispenser	L	20A-1	7	8	20A-1	G,L	Kvs Mon Kit/Labeling System	600		
	720		Vid Mon	G,L	20A-1	9	10	20A-1		Zoom Timer		720	
		600	Tech Rack	L	20A-1	11	12	30A-1	L	Tech Rack UPS			1680
0			Spare		20A-1	13	14	20A-1	L	Cod Optical Isolator	120		
	1200		Tech Rack	L	20A-1	15	16	20A-1	L	Speaker Canopy #1		120	
		1440	Tech Rack	L	20A-1	17	18	20A-1	L	Speaker Canopy #2			120
444			Counter Pos Reg/ Rec	L	20A-1	19	20	20A-1	L	Office desk Unit	1200		
	0		Spare		20A-1	21	22	20A-1	L	Office desk Unit		1200	
		900	KVS Mon/Kit/Del. Pos Reg	G,L	20A-1	23	24	20A-1	L	Order Cash Recycler			528
1860			Exterior Menu Boards/Media Player	L	20A-1	25	26	20A-1	G,L	Kvs Mon Prep	360		
	528		Counter Cash Recycler	L	20A-1	27	28	20A-1	G,L	Time Clock		60	
		1860	Exterior Menu Boards/Media Player	L	20A-1	29	30	20A-1	L	Kiosk Cash Handler			528
480			DO Equipment Rack	L	20A-1	31	32	20A-1	L	Kiosks	1080		
	1200		BOCA	L	20A-1	33	34	20A-1	L	Kiosks		1080	
		0	Space			35	36	20A-1	L	Kiosks			1080
0			Space			37	38			Space	0		
	0		Space			39	40			Space		0	
		0	Space			41	42			Space			0

	Total Connect	Connect Amps	Demand Amps
A	8430	8112	9288
B		72	Amps
C		90	Amps



BUILDING ELECTRICAL GROUNDING DETAIL



KEY NOTES

1. PROVIDE ENOUGH LENGTH TO TERMINATE DIRECTLY TO GROUND BUS OR USE BOLTED–TYPE CONNECTION DEVICE OR EXOTHERMIC WELD.
2. NON–METALLIC PROTECTIVE SLEEVE. LOCATE SLEEVE DIRECTLY UNDER THE ELECTRICAL SERVICE ENTRANCE PANEL. EC TO PROVIDE PLIABLE SEALANT BETWEEN COPPER WIRE AND SLEEVE.
3. FOR NEW CONSTRUCTION WHEN A SPREAD FOOTING OR DOWN TURNED SLAB IS USED, EC SHALL INSTALL A CONCRETE ENCASED ELECTRODE, COMPLIANT WITH NEC SECTION 250, CONSISTING OF AT LEAST 20 FEET OF BARE #4 AWG COPPER ENCASED IN 2 INCHES OF CONCRETE NEAR THE BOTTOM OF THE FOOTING OR FOUNDATION (BELOW GRADE) THAT IS IN DIRECT CONTACT WITH EARTH.
4. METAL UNDERGROUND WATER PIPE ELECTRODE COMPLIANT WITH NEC SECTION 250. THE GROUNDING CONNECTION TO THE INTERIOR METAL WATER PIPE SHALL BE MADE WITHIN THE FIRST FIVE FEET OF THE WATER PIPE ENTRANCE TO THE BUILDING.
5. IF MULTIPLE GROUNDING RODS ARE BEING USED OR NEED TO BE USED, THEY SHALL ALL BE BONDED TOGETHER PER NEC SECTION 250.
6. CLAMPS SUITABLE FOR DIRECT BURIAL OR EXOTHERMIC WELD.
7. 8'–0" X 5/8" CU ROD GROUNDING ELECTRODE COMPLIANT WITH NEC SECTION 250.
8. CU BONDING JUMPER SIZED PER NEC SECTION 250 OR FACTORY PROVIDED NEUTRAL TO GROUND BAR LINK. (THIS IS THE ONLY PLACE IN THE BUILDING WHERE N–G SHALL BE BONDED TOGETHER)
9. ALL METAL RACEWAYS CONTAINING GROUNDING ELECTRODE CONDUCTORS SHALL BE BONDED AT BOTH ENDS AS REQUIRED BY NEC SECTION 250. PROVIDE GROUNDING TYPE BUSHINGS & FITTINGS.
10. MCDONALD'S GROUNDING STANDARDS PURPOSELY EXCEED THOSE GIVEN BY THE NEC. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A BUILDING GROUNDING SYSTEM MEETING NEC AND MCDONALD'S STANDARDS AS SHOWN ON THIS DRAWING.
11. CU GROUNDING ELECTRODE CONDUCTORS AND BONDING JUMPERS SHALL BE SIZED BASED UPON ELECTRICAL SERVICE SIZE PER NEC SECTION 250

800A	1000A	1200A
3/0 CU	3/0 CU	4/0 CU

• SHOWS CONNECTION/BONDING POINT

12. TERMINAL GROUNDING BUS AT 90°AFF. HARGER #GBI142120.

DISTRIBUTION EQUIPMENT NOTES:

D1. ALL ELECTRICAL MATERIAL USED ON THIS PROJECT SHALL BE "UL" LISTED AND LABELED.

D2. THE EC/GC/AREA CONSTRUCTION MANAGER WHEN ORDERING PANELBOARDS, SHALL DETERMINE THE NUMBER OF SERVICE ENTRANCE CONDUCTORS, SIZE AND MATERIAL TYPE, AND SHALL PROVIDE THIS INFORMATION TO THE PANELBOARD SUPPLIER SO THAT THE APPROPRIATE LUGS CAN BE PROVIDED FROM THE FACTORY.

D3. ALUMINUM SERVICE ENTRANCE CONDUCTORS SHALL ONLY BE USED WHEN THEY ARE TERMINATED DIRECTLY TO THE LINE LUGS ON A C/T AND METERING CABINET, THE LINE LUGS OF A FUSIBLE DISCONNECT SWITCH OR TO THE LINE LUGS OF A MAIN LUG ONLY (6 HANDLE RULE) SERVICE ENTRANCE PANEL. ALUMINUM SERVICE ENTRANCE CONDUCTORS SHALL NOT BE TERMINATED TO THE LINE LUGS OF ANY MAIN BREAKER SINCE DOING SO WILL VIOLATE IT'S 100% UL RATING. IF ALUMINUM CONDUCTORS ARE USED AS PREVIOUSLY INDICATED THEY SHALL BE TERMINATED AS FOLLOWS, AND THE WIRE SIZE INCREASED DUE TO LOWER AMPACITY OF ALUMINUM. EXPOSED ALUMINUM CONDUCTOR STRANDS SHALL BE COATED WITH AN ANTI–OXIDANT IMMEDIATELY AFTER INSULATION IS STRIPPED AWAY. A COMPRESSION LUG SHALL BE PROPERLY INSTALLED ONTO THE EXPOSED ALUMINUM CONDUCTOR STRANDS, AND THAT COMPRESSION LUG SHALL THEN BE BOLTED TO THE TRANSFORMER TAPS AND SWITCHBOARD BUSS USING PROPERLY SIZED BOLTS, NUTS AND WASHERS. MERELY INSERTING ALUMINUM STRANDS UNDER A SCREW LUG SHALL NOT BE ACCEPTABLE.

D4. THE SURGE PROTECTIVE DEVICE (SPD) UNIT SHALL BE AN INTEGRAL UNIT PROVIDED AND INSTALLED BY THE SWITCHBOARD MANUFACTURER. ORDER APPROVED UNITS AS SHOWN IN D5.

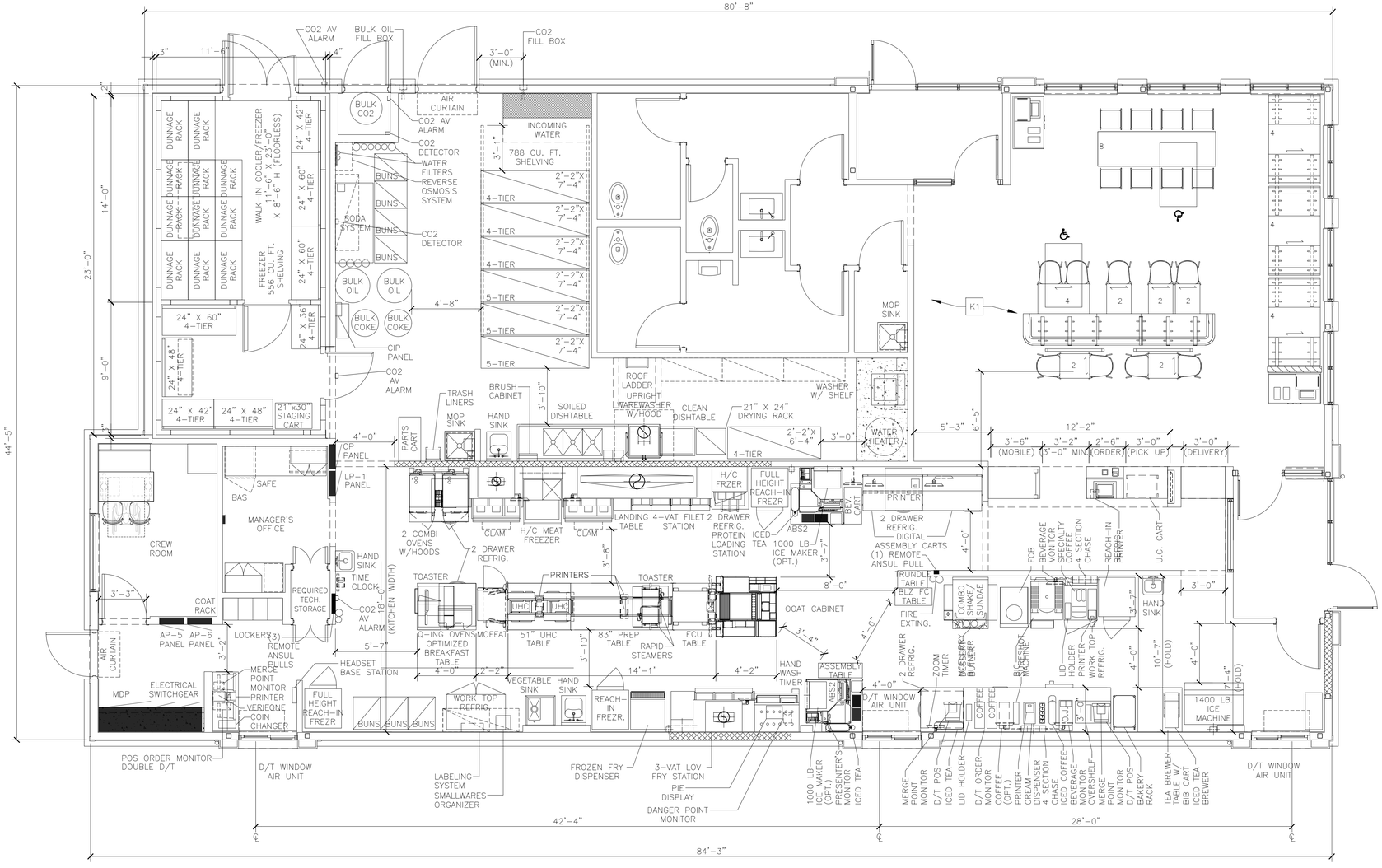
D5. APPROVED SWITCHBOARDS, PANEL, & SPD SUPPLIER (IN ADDITION TO ORDERING SWITCHBOARD & PANELS ALSO ORDER SPD) SUPPLIERS:

SQUARE D VIA GRAYBAR
900 REGENCY DRIVE
GLENDALE HEIGHTS, IL 60139
TEL: (800)784–6059 OR (630) 671.6304

SPD INTEGRAL: I–LINE SERIES,
(208Y/120V, 3Ø)

D6. MAIN INCOMING METER / CURRENT TRANSFORMER CABINET, MAIN DISTRIBUTION PANEL MDP, SERVICE CABINET AND SWITCH SHALL BE BRACED FOR THE HIGHEST AVAILABLE FAULT CURRENT BUT NOT LESS THAN NEMA SYMMETRICAL RMS OF 65,000 AMPERES. CONTACT UTILITY/PM/GC/EC AS REQUIRED.

D7. BRANCH BREAKERS IN ALL LP, AP AND (CP IF USED) PANELS SHALL HAVE A NEMA SYMMETRICAL RMS RATING OF 10,000 AMPS. ALL CIRCUIT BREAKERS IN AP, LP AND CP PANELS SHALL BE SERIES RATED WITH THE CIRCUIT BREAKERS IN PANEL MDP SO THAT ALL CIRCUIT BREAKERS IN ALL BRANCH PANELBOARDS ARE PROTECTED AGAINST THE MAXIMUM FAULT CURRENT AVAILABLE AT THE MAIN SERVICE DISCONNECT. NO DESIGN CHANGES SHALL BE MADE TO THE DISTRIBUTION SYSTEM WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL ELECTRICAL ENGINEER OF RECORD. FOR A SERIES RATED SYSTEM USING PANEL BOARDS MANUFACTURED



1 / K1.0 KITCHEN COVER SHEET

1/4" = 1'-0"

KEYED NOTES

K1 CUSTOMER KIOSK & DECOR LAYOUT FOR REFERENCE ONLY. VERIFY KIOSK PLACEMENT PER USRD APPROVED KIOSK REVIEW

NO.	REV	DATE	DESCRIPTION	BY

NEW HAMPSHIRE — CHRISTOPHER M. CRAIG — 12,811 — LICENSED PROFESSIONAL ENGINEER

10/9/2024

PREPARED BY:
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135 Wacker Street
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core-states.com

PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	STD ISSUE DATE
SH	2024 07
REVIEWED BY	DATE ISSUED
M.PELINI	10/01/2024
C.S.G. PROJECT #	
MCD.39450	

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH

NSN: 4351.4
L/C: 028-0178

SITE ADDRESS
4 DEERFIELD DR. DOVER, NH

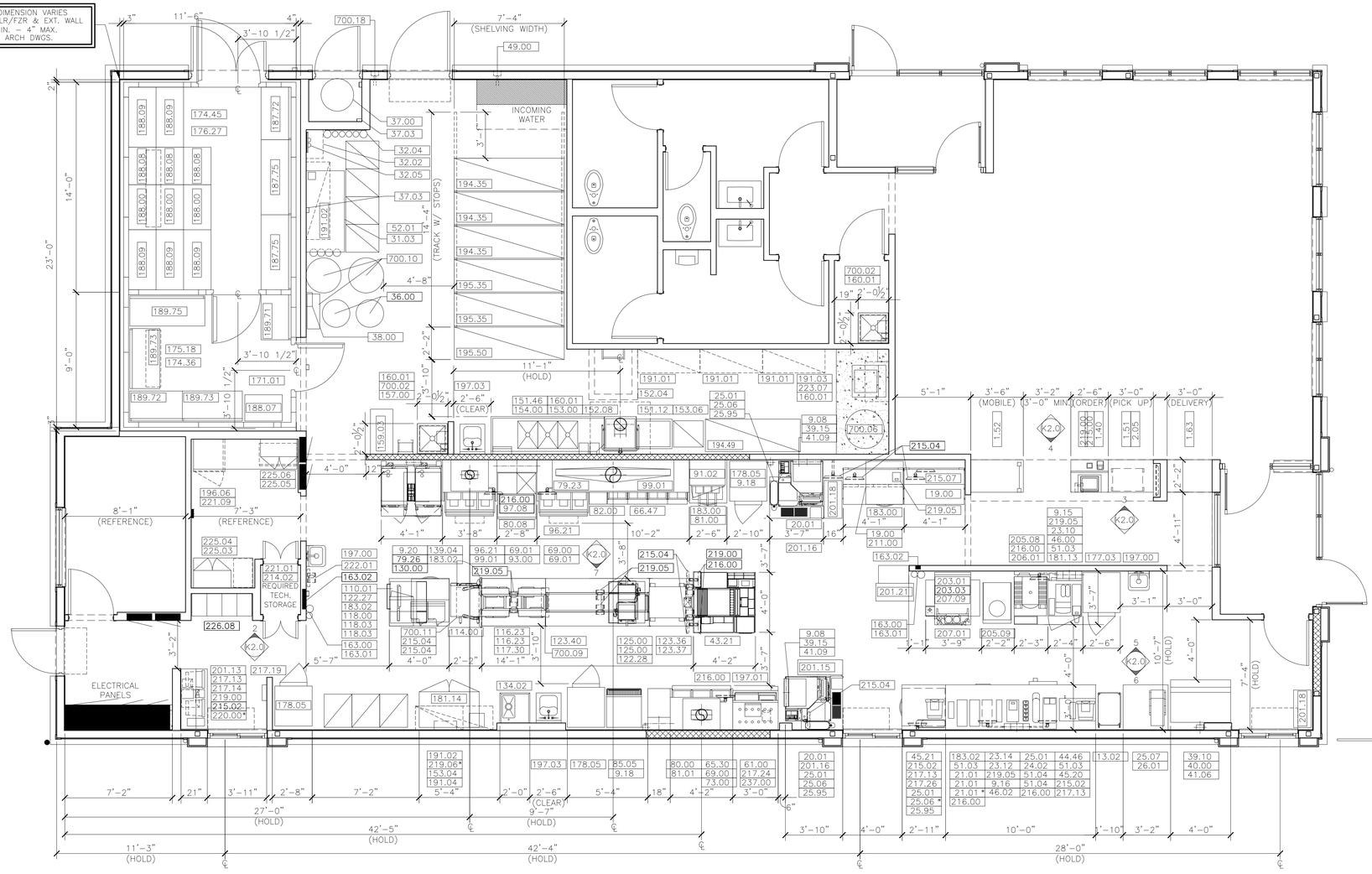
SHEET NO. 028-0178.00.0
K1.0
KITCHEN COVER SHT

NOTE: DIMENSION VARIES BETWEEN CLR/FZR & EXT. WALL 2" MIN. - 4" MAX. SEE ARCH DWGS.

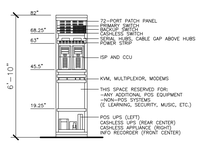
DRAWING NOTES

1. ALL DIMENSIONS SHOWN ARE TAKEN TO FACE OF WALL FINISH
2. * INDICATES OPTIONAL EQUIPMENT
3. KES TO VERIFY ALL BLOCKING FOR WALL MOUNTED EQUIPMENT AS REQUIRED BY GENERAL NOTE 9 ON A1.0 PRIOR TO INSTALLATION

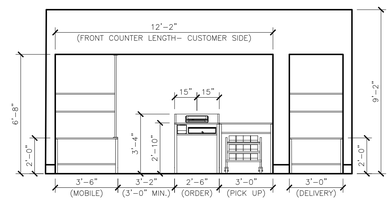
SEE SHEET K2.1 FOR EQUIPMENT SCHEDULE



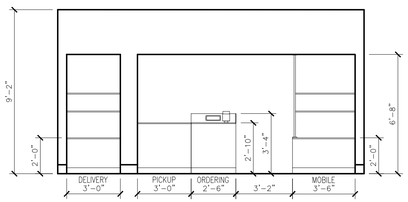
1 K2.0 KITCHEN EQUIPMENT PLAN
1/4" = 1'-0"



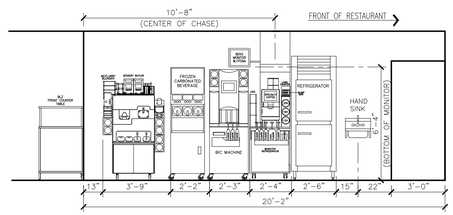
2 K2.0 COMPUTER CLOSET RACK
1/4" = 1'-0"



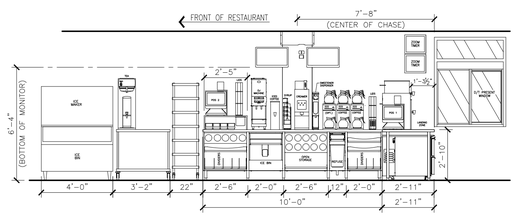
3 K2.0 FRONT COUNTER
1/4" = 1'-0"



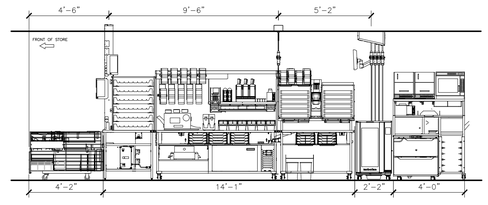
4 K2.0 FRONT COUNTER ELEVATION
1/4" = 1'-0"



5 K2.0 BEVERAGE CELL (INTERIOR WALL)
1/4" = 1'-0"



6 K2.0 BEVERAGE CELL (EXTERIOR WALL)
1/4" = 1'-0"



7 K2.0 COMPACT OPTIMIZED PREP LINE
1/4" = 1'-0"

BY	DESCRIPTION	REV	DATE

10/9/2024

PREPARED BY:
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135 Wynter Street
Suite 201
Holbrook, IL 60540
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core-states.com

PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY	REVIEWED BY	DATE ISSUED	C.S.G. PROJECT #
SH	M.PELINI	10/01/2024	MCD.39450
STD ISSUE DATE 2024 07			

TITLE: 2023 STANDARD BUILDING - BB20
4584-WOOD/WOOD

DESCRIPTION	SITE ADDRESS:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH	
WOOD TRUSS ROOF FRAMING	
WALL PANEL/HARDIE BOARD EXTERIOR FINISH	
NSN: 4.5514	4 DEERFIELD DR. DOVER, NH
L/C: 028-0178	

SHEET NO.
028-0178.00.0
K2.0
KITCHEN PLAN

x = Optional Equipment VIF = Verify in Field
GC = General Contractor
R = Relocated Equipment

EQUIPMENT SCHEDULE

ITEM	O	QTY	DESCRIPTION	MANUFACTURER	MODEL #	UL	NSF	FURNISHED	GENERAL REMARKS	SPECIAL REQUIREMENTS
1.40		1	SERVICE POD – 30"	DECOR	SEE PLAN	–	2	GC	–	
1.51		1	PICKUP POD – 36"	DECOR	SEE PLAN	–	2	GC	–	
1.52		1	PICKUP POD – 42"	DECOR	SEE PLAN	–	2	GC	–	
1.63		1	McDELIVERY PICKUP COUNTER	DECOR	SEE PLAN	–	2	GC	–	
2.05		1	UNDER COUNTER CART – 24"W x 18"D FRONT COUNTER	INTERMETRO	UC18-DMS	–	2	KES	–	
9.08		2	UTILITY CHASE – ICE MAKER ON ABS VERSION	KES	5"x8"x23"	–	2	KES	CONCEALS WATER AND CONDENSING UNIT LINES	
9.15		1	UTILITY CHASE – FFDT INTERIOR WALL	KES	20"x5"x76"	–	2	KES	4 SECTION CHASE FOR BUYOUT RECEPTACLES, POS, CO2 AND WATER	
9.16		1	UTILITY CHASE – FFDT EXTERIOR WALL	KES	20"x5"x76"	–	2	KES	4 SECTION CHASE FOR BUYOUT RECEPTACLES, POS AND WATER	
9.18		2	UTILITY CHASE – WALL VERSION	KES	4"x4"x82"	–	2	KES	CHASE FOR BULK OIL LINES, MOUNT AT 2'–0"	
9.20		1	UTILITY CHASE – COMBI CELL	KES	4"x8"x84"	–	2	KES	CHASE FOR BUYOUT RECEPTACLES AND WATER	
13.02		1	BAKERY RACK	KRISPY KREME	18"x26"x65"	–	2	SUPPLIER	–	
19.00		2	DIGITAL ASSEMBLY CART – 48"	INTERMETRO	MCDDAC-48	–	2	KES	–	
20.01		2	AUTOMATED BEVERAGE SYSTEM 2.0	IMI CORNELIUS	621058590LON	–	–	KES	INSTALLATION KIT INCLUDES STAINLESS STEEL CHASE & DATA LINE	
21.01		3	COFFEE BREWER (THERMAL POTS)	BUNN–O– MATIC	AXIOM–DV–3	E32066	4	KES	W/ELECTRONIC CONTROLLER FOR CONVERSION TO LOW OR HIGH VOLTAGE	
23.10		1	ESPRESSO BREWER	FRANKE	FM850	–	4	KES	–	
23.12		1	COFFEE CREAM DISPENSER	SURESHOT	AC110–PC–51	E217698	20	KES	–	
23.14		1	SUGAR/SWEETENER DISPENSER	SURESHOT	AC2–GP–1–G38	E217698	18	KES	–	
24.02		1	JUICE DISPENSER	BUNN–O– MATIC	JDF–2S	–	18	KES	–	
25.01		4	SLIMLINE ICED BEVERAGE DISPENSER	BUNN–O– MATIC	TDO–N	E32066	4	KES	KES TO VERIFY EXACT QUANTITY PER MARKET	
25.06		3	SLIMLINE ICED BEVERAGE DISPENSER – SHORT	BUNN–O– MATIC	TDO–N LP	E32066	4	KES	KES TO VERIFY EXACT QUANTITY PER MARKET	
25.07		1	INFUSION TEA BREWER – MIS	BUNN–O– MATIC	ITCB–DV	E32066	4	KES	PROVIDED WITH BREWER, INSTALLATION KIT AND TDO–N BOOSTER	
25.95		3	SLIMLINE ICED BEVERAGE DISPENSER – 2 TIER STAND	KES	–	–	2	KES	–	
26.01		1	TEA BREWER TABLE – 36"X36"	ISS SHELVING	WST1758C	–	2	KES	–	
31.03		1	SODA SYSTEM PACKAGE B.I.B.(RECIRCULATING– 3 TOWERS) – REMOTE	MULTIPLEX	50MR04	SA4632	18	KES	–	
32.02		1	REVERSE OSMOSIS WATER FILTRATION SYSTEM – TANKLESS	EVERPURE	MRS–600HE	–	–	KES	FOR COFFEE MAKER, ESPRESSO MACHINE, AND RAPID BUN STEAMER	
32.04		1	WATER FILTRATION SYSTEM	EVERPURE	EV9337–26	–	–	KES	–	
32.05		1	WATER FILTRATION SYSTEM	EVERPURE	EV9272–24	–	–	KES	FOR COMBI OVENS AND STAGING CABINET	
36.00		2	BULK COKE	CHART INDUSTRIES	10667511	–	18	MANU–FACTURER	SYRUP LINES BY CHART INDUSTRIES	
37.00		1	BULK CO2 – 750 LB.	CHART INDUSTRIES	CARBO–MAX 750	–	–	MANU–FACTURER	–	
37.03		2	CO2 SAFETY SYSTEM	SEE RMKS	–	–	–	KES	SEE MECHANICAL DRAWINGS	INCLUDES DETECTOR AND (4) AV ALARMS
38.00		1	CLEAN IN PLACE PANEL	CHART INDUSTRIES	10667431	–	18	MANU–FACTURER	MOUNT 6"W x 7"H, BOX @ 6'–0" AFF TO BOX CENTER LINE	
39.10		1	ICE MACHINE – 1400 LB.	MANITOWOC	IYT1500N3/ D970	SA4027	12	KES	USE HEADMASTER KIT K00221	
39.15		2	ICE MACHINE – 1000 LB.	MANITOWOC	IBT1020C–161	SA4027	12	KES	CONDENSER: CVDT1200	
40.00		1	ICE MACHINE CHASE	KES	4"x6"x48"	–	2	KES	CONCEALS WATER AND CONDENSING UNIT LINES	
41.06		1	ICE MACHINE REMOTE CONDENSER – 1400 LB.	MANITOWOC	JCT–1500	SA4027	12	KES	–	
41.09		2	ICE MACHINE REMOTE CONDENSER – 1000 LB.	MANITOWOC	CVDT1200–263A	SA4027	12	KES	–	
43.21		1	OPTIMIZED ORDER ASSEMBLY TABLE	KES	90001	E152097	2	KES	–	
44.46		1	SMALL RISER SHELF – 18" TO 30"	FRANKE	180006010	–	2	KES	–	
45.20		1	MODULAR BEVERAGE CABINET – 10'–0"	KES	–	–	2	KES	–	
45.21		1	BEVERAGE CABINET – DRIVE–THRU TABLE 35"	KES	–	–	2	KES	–	
46.00		1	CUP DISPENSER VERTICAL 3 CUP	KES	–	–	2	KES	–	
46.02		1	SYRUP BOTTLE RACK – (5) SYRUP PUMPS	PRONTO	–	–	2	KES	–	
49.00		1	CO2 FILL BOX – 6 1/2"W x 18"H	CHART INDUSTRIES	8512629	–	–	MANU–FACTURER	SEE EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT. INSTALLED BY GC	
51.03		3	CUP LID HOLDER 3 HIGH S/S	KES	–	–	2	KES	–	
51.04		2	CUP LID HOLDER SINGLE STACK 8" HIGH	KES	–	–	2	KES	–	
52.01		1	REMOTE CONDENSING UNIT – 50MR04	MULTIPLEX	TS–0895	SA2298	–	KES	ORDER PRE–CHARGE LINE #204017 – VIF LENGTH FROM UNIT TO SODA SYST.	
61.00		1	FRY BAGGING STATION 36"	KES	FB25A	E99018	2	KES	–	
65.30		1	3–VAT LOV FRYER – ELECTRIC – F/F/F	HENNY PENNY	LVE–203	E30993	4	KES	–	IDLE ENERGY RATE=0.73kW, ENERGY EFFICIENCY=87%
66.47		1	4–VAT LOV FRYER – ELECTRIC – S/S/S/S	HENNY PENNY	LVE–204	E30993	4	KES	–	IDLE ENERGY RATE=0.73kW, ENERGY EFFICIENCY=87%
69.00		2	CAPTURE JET PLENUM – FRYER	HALTON	CJP–F	MH27607	2	KES	ATTACH TO UNIVERSAL EXHAUST HOOD	
69.01		2	CAPTURE JET PLENUM – GRILL	HALTON	CJP–G	MH27607	2	KES	ATTACH TO UNIVERSAL EXHAUST HOOD	
73.00		1	UNIVERSAL EXHAUST HOOD 3–VAT FRYER	KES	UH–50	MH12755	2	KES	–	
79.23		1	UNIVERSAL EXHAUST HOOD FULL–CLAM/4–VAT FRYER	KES	UH–122	MH12755	2	KES	–	
79.26		2	VENTLESS HOOD FOR COMBI OVEN	CONVOTHERM	CONOVENT MINI 6.10	E325060	2	KES	–	
80.00		1	MECHANICAL CHASE	KES	9"x18" SGCL.	E163328	2	KES	–	
80.08		1	MECHANICAL CHASE	KES	9"x32" SGCL.	E163328	2	KES	–	
81.00		1	PROTEIN LOADING STATION KIT	KES	272436	–	2	KES	–	
81.01		1	PRODUCT LANDING SHELF – SOLID TOP	KES	–	–	2	KES	–	
82.00		1	LANDING TABLE	INTERMETRO	TLDP–S	–	2	KES	–	
85.05		1	FROZEN FRY DISPENSER	RAM	280–FP	E140753	4	KES	–	
91.02		1	WALL MOUNT FREEZER UNIT–SINGLE WIDE–HIGH CAPACITY	KES	HCWF1	SA7329	7	KES	AIR–COOLED, SELF–CONTAINED – MOUNT BOTTOM AT 51" AFF	HCWF1.99A INSTALL HARDWARE KIT REQUIRED
93.00		1	UNIVERSAL EXHAUST HOOD FULL–CLAM GRILL	KES	UH–43	MH12755	2	KES	–	
96.21		2	36" NEXT GEN 3–PLATEN CLAMSHELL GRILL – ELECTRIC	GARLAND	ME–3PX	E28898	4	KES	–	
97.08		1	MEAT FREEZER – DOUBLE WIDE – HIGH CAPACITY – RIGHT HAND	KES	HCMF30B–RH	SA6032 S	2	KES	AIR–COOLED, SELF–CONTAINED	
99.01		2	GRILL TOOL ORGANIZER – 43" HOOD	KES	–	–	2	KES	–	
110.01		1	OPTIMIZED BREAKFAST TABLE	KES	OBT	–	2	KES	–	
114.00		1	HUMIDIFIED HOLDING CABINET	MOFFAT	HP10T–LMD	197	4	KES	–	
116.23		2	UNIVERSAL HOLDING CABINET – HIGH DENSITY – 2–SIDED – PIN & SLEEVE	FRYMASTER	UHCHD6T	E44571	4	KES	–	
117.30		1	UHC TABLE COPL – 2 SIDED – 51"D x 34"W – PIN&SLEEVE	KES	91011	–	2	KES	–	
118.00		1	Q'ING OVEN – PIN & SLEEVE	AMANA	MC23MPW2	E40456	4	KES	–	
118.03		2	Q'ING OVEN – PIN & SLEEVE	ACP	MCM0C24	–	4	KES	–	
122.27		1	NEXT GEN. UNIVERSAL RADIANT TOASTER – PIN & SLEEVE	ANTUNES	HRT–5H	–	4	KES	–	
122.28		1	NEXT GEN. UNIVERSAL CONTACT TOASTER – PIN & SLEEVE	ANTUNES	HCT–5H	–	4	KES	–	
123.36		1	ECU TABLE – COPL	KES	90165	–	2	KES	–	
123.37		1	BREAKER PANEL– 125 AMP – 1 PHASE – EQUIPMENT MOUNTED	KES	–	–	–	KES	–	
123.40		1	PREP TABLE – HD – 2–SIDED COPL – 38"D x 83 1/2" – PIN & SLEEVE W/REF.	KES	91010	–	2	KES	–	
125.00		2	RAPID BUN STEAMER	PRINCE CASTLE	625–MFY	–	4	KES	–	
130.00		2	COMBI OVEN	CONVOTHERM	MS6102083LCMD1	E360598	4	KES	–	0.89kW, 69% STEAM MODE, 0.61kW, 81% CONVECTION MODE
134.02		1	VEGETABLE SINK	KES	SK04–4	–	2	KES	–	
139.04		1	COMBI OVEN STAND – DOUBLE WIDE	KES	–	–	2	KES	–	
151.12		1	CLEAN DISHTABLE – LEFT HAND – 28.23"	KES	SK–SPL	–	2	KES	–	
151.46		1	SOILED DISHTABLE – RIGHT HAND – 90.5" WIDE	KES	SK–SPL	–	2	KES	–	
152.04		1	WAREWASHER HOOD	KES	–		3		TYPE 2 HOOD FOR NON GREASE APPLICATION – REQUIRED PER CODE	
152.08		1	WAREWASHER – HIGH TEMP	HOBART	AM16SVLT–1		3	MANU–FACTURER	–	
153.00		1	SCULLERY SHELVING KIT – 3 TIER – 14" x 36"	INTERMETRO	SHSS–4	–	2	KES	–	
153.04		1	SMALLWARE WALL ORGANIZER	INTERMETRO	SW1812–MPS	–	2	KES	–	
153.06		1	REUSABLE DRYING RACK	INTERMETRO	MCD2124–DRY6	–	2	KES	–	
154.00		1	BRUSH CABINET	KES	8047	–	4	KES	–	
157.00		1	TRASH LINER DISPENSER SHELF	KES	A0053	–	2	KES	–	
159.03		1	UNIVERSAL PARTS CART – 36" W	INTERMETRO	MCD–1836UPC	–	2	KES	–	
160.01		4	CHEMICAL SYSTEM	ECOLAB	–	–	–	MANU–FACTURER	–	
163.00		2	FIRE EXTINGUISHER – 5 LB. – ABC	ANSUL	SEE RMKS	–	–	SEE RMKS	LOCAL ANSUL AGENT SPECIFIES, SUPPLIES & LOCATES PER LOCAL CODE	
163.01		2	FIRE EXTINGUISHER – 6 L. – K GUARD	ANSUL	SEE RMKS	–	–	SEE RMKS	LOCAL ANSUL AGENT SPECIFIES, SUPPLIES & LOCATES PER LOCAL CODE	
163.02		4	REMOTE ANSUL PULL	ANSUL	4835	EX3470	–	SEE RMKS	CODE MAY REQUIRE LOCAL ANSUL AGENT TO SUPPLY	
171.01		1	WALK–IN COOLER / FREEZER FLOORLESS	NORLAKE	–	E42763	7	KES	–	
174.36		1	REMOTE CONDENSING UNIT	BOHN	BCH0010MBACZC0225	SA4272	–	KES	BEACON II/INTELLIGEN SYSTEM	
174.45		1	REMOTE CONDENSING UNIT	BOHN	BCH0055LCACZC0225	SA4272	–	KES	BEACON II/INTELLIGEN SYSTEM	
175.18		1	COOLER EVAPORATOR	BOHN	BEL0095BS6AMAD0096	SA1525	–	KES	INTELLIGEN EVAPORATOR	
176.27		1	FREEZER EVAPORATOR	BOHN	BEL0170BS6EEAD0096	SA1525	–	KES	INTELLIGEN EVAPORATOR	
177.03		1	REACH–IN REFRIGERATOR–SINGLE WIDE	BEVERAGE AIR	HR1HC–1HS	SA2651	7	KES	–	
178.05		3	REACH–IN FREEZER – SINGLE WIDE	BEVERAGE AIR	HF1HC–1HS	SA2651	7	KES	–	
181.13		1	REFRIGERATOR – SPECIALTY COFFEE– 27" WIDE	TRUE	TUC–27 MCDCF1	SA33040	7	KES	RIGHT–HAND HINGED	
181.14		1	REFRIGERATOR – WORKTOP – 48" WIDE	TRUE	TWT–48 MCD1	SA4065	7	KES	–	

x = Optional Equipment VIF = Verify in Field
GC = General Contractor
R = Relocated Equipment

EQUIPMENT SCHEDULE

ITEM	O	QTY	DESCRIPTION	MANUFACTURER	MODEL #	UL	NSF	FURNISHED	GENERAL REMARKS	SPECIAL REQUIREMENTS
183.00		2	REFRIGERATOR/FREEZER – 2 DRAWER BASE – 30" W X 33" H	KES	18012498	SA4044	7	KES	–	
183.02		3	REFRIGERATOR/FREEZER – 2 DRAWER BASE – 30" W X 30" H	KES	18021304	SA4044	7	KES	–	
187.72		1	FREEZER SHELVING 24" x 42" x 74" H, – 4–TIER	ISS SHELVING	FSMS/FSMA742442E	–	2	KES	–	
187.75		2	FREEZER SHELVING 24" x 60" x 74" H, – 4–TIER	ISS SHELVING	FSMS/FSMA742460E	–	2	KES	–	
188.00		3	DUNNAGE RACK 22" x 36"	INTERMETRO	HP2236PD	–	2	KES	–	
188.07		1	UNIVERSAL STAGING CART	ISS SHELVING	WST1384Y	–	2	KES	–	
188.08		3	DUNNAGE RACK 22" x 30"	INTERMETRO	HP2230PD	–	2	KES	–	
188.09		5	DUNNAGE RACK 22" x 48"	INTERMETRO	HP2248PD	–	2	KES	–	
189.71		1	COOLER SHELVING 24" x 36" x 74" H, – 4–TIER	ISS SHELVING	FSMS/FSMA742436E	–	2	KES	–	
189.72		1	COOLER SHELVING 24" x 42" x 74" H, – 4–TIER	ISS SHELVING	FSMS/FSMA742442E	–	2	KES	–	
189.73		2	COOLER SHELVING 24" x 48" x 74" H, – 4–TIER	ISS SHELVING	FSMS/FSMA74248E	–	2	KES	–	
189.75		1	COOLER SHELVING 24" x 60" x 74" H, – 4–TIER	ISS SHELVING	FSMS/FSMA742460E	–	2	KES	–	
191.01		3	VALANCE SHELVING – 18" x 48"	INTERMETRO	M1848C–MP	–	2	KES	MOUNT AT 6'–8"AFF TO SHELF BOTTOM UNLESS OTHERWISE NOTED	
191.02		2	VALANCE SHELVING – 18" x 60"	INTERMETRO	M1860C–MP	–	2	KES	MOUNT AT 6'–8"AFF TO SHELF BOTTOM UNLESS OTHERWISE NOTED	
191.03		1	VALANCE SHELVING – 18" x 30"	INTERMETRO	M1830C–MP	–	2	KES	MOUNT AT 6'–0"AFF TO SHELF BOTTOM FOR ABOVE WASHER APPLICATION	
191.04		1	VALANCE SHELVING – 18" x 36"	INTERMETRO	M1836C–MP	–	2	KES	MOUNT AT 5'–0"AFF TO SHELF BOTTOM –W/ST STL LINER FOR SALAD EQUIP	
194.35		3	DRY SHELVING 26" x 88" x 84" H,– 4–TIER – MOBILE	DENSTOR	–	–	2	KES	–	
194.49		1	DRY SHELVING 26" x 76" x 84" H,– 4–TIER – FIXED	DENSTOR	–	–	2	KES	–	
195.35		2	DRY SHELVING 26" x 88" x 84" H,– 5–TIER – MOBILE	DENSTOR	–	–	2	KES	–	
195.50		1	DRY SHELVING 26" x 88" x 84" H,– 5–TIER – FIXED	DENSTOR	–	–	2	KES	–	
196.06		1	SAFE – STANDARD BLDG. – LEFT HINGE	NKL	BSD4125FGXL–MC	–	–	OWNER	–	
197.00		2	STAINLESS STEEL HAND SINK	ADVANCE TABCO	7–PS–61	–	2	GC	REFER TO PLUMB. DWGS. FOR DETAILS, SOAP & TOWEL DISP. BY OTHERS	PROVIDE SIDE SPLASHES (7–PS–11) WHEN REQUIRED BY LOCAL CODE
197.01		1	HAND WASH TIMER	NATIONAL CONTROLS	TMD–T1715–120	E53595	–	KES	–	
197.03		2	STAINLESS STEEL HAND SINK – ADA	ADVANCE TABCO	7–PS–26	–	2	GC	REFER TO PLUMB. DWGS. FOR DETAILS, SOAP & TOWEL DISP. BY OTHERS	PROVIDE SIDE SPLASHES (7–PS–11D) WHEN REQUIRED BY LOCAL CODE
201.13		1	DRIVE–THRU CASH STAND – 21" D x 48" W	INTERMETRO	DT48–8	–	2	KES	SOLID WORK TOP, WIRE SHELVES	
201.15		1	READY NEXT DRIVE–THRU ASSEMBLY CART – 12" D x 36" W	INTERMETRO	DTPC–36	–	2	KES	–	
201.16		2	DRIVE–THRU ABS CART	KES	–	–	2	KES	ABS DRINK STAGING CART WITH TROUGH	
201.18		2	CBB STAGING CART	INTERMETRO	MCD–CBB	–	2	KES	–	
201.21		1	BLZ FRONT COUNTER TABLE – 30" D x 14" W	INTERMETRO	MCD1430–BLZM	–	2	KES	W/ CASTERS AND OVERSHELF	
203.01		1	HEAT TREAT COMBINATION SHAKE/SUNDAE MACHINE	CARPIGIANNI	K3	SA4203	6	KES	SUPPLIED WITH CONE DISPENSER AND 7'–6" LONG CORD	
203.03		2	CUP/CONE DISPENSER	KES	–	–	2	KES	–	
205.08		1	BIC MACHINE	MULTIPLEX	MA–8–2	SA12070	6	KES	–	
205.09		1	FROZEN BEVERAGE DISPENSER	IMI CORNELIUS	VIPER 3	SA2128	6	KES	–	
206.01		1	SPECIALTY BEVERAGE STANDOFF SHELF	KES	KES	–	2	KES	MOUNT SHELF @ 2'–6" AFF	
207.01		1	BLENDER – RAIL MOUNT – MCFLURRY	VITAMIX	056385	–	8	KES	SUPPLIED MOUNTING BRACKETS	
207.09		1	DESSERT BUTLER	KES	–	–	2	KES	–	–
211.00		1	DELIVERY TABLET	APPLE	IPAD	–	–	DELIVERY PARTNER	QUANTITY DEPENDENT UPON NUMBER OF DELIVERY PARTNERS	
214.02		1	TECHNOLOGY RACK	BY OWNER	BY OWNER	OEM	–	OWNER	V.I.F. EXACT LOCATION FOR NETWORK RACK	
215.00		1	POS REGISTER – FRONT COUNTER	BY OWNER	BY OWNER	OEM	–	OWNER	INCLUDES MONITOR AND CPU	
215.02		4	POS REGISTER – 2 WINDOW D/T	BY OWNER	BY OWNER	OEM	–	OWNER	INCLUDES MONITOR AND CPU	
215.04		8	POS – KVS MONITOR	BY OWNER	BY OWNER	OEM	–	OWNER	–	
215.07		1	POS REGISTER – DELIVERY	BY OWNER	BY OWNER	OEM	–	OWNER	–	
216.00		8	POS – VIDEO MONITOR	BY OWNER	BY OWNER	E106786	–	OWNER	SUPPORTS INSTALLED BY GC IF REQUIRED – MOUNT @ 5'–8" AFF	FOR APPLICATIONS ABOVE ABS, MOUNT AT 6'–6" AFF
217.13		3	MERGE POINT MONITOR (DOUBLE DRIVE–THRU)	BY OWNER	BY OWNER	–	–	OWNER	MONITORS ARE REQUIRED FOR SIDE BY SIDE DRIVE THRU SYSTEM	–
217.14		1	POS – ORDER MONITOR (DOUBLE DRIVE THRU)	BY OWNER	BY OWNER	E106786	–	OWNER	SUPPORTS INSTALLED BY GC IF REQUIRED – MOUNT @ 5'–8" AFF	
217.19		1	WIRELESS HEADSET BASE STATION	HME	NEXEO HDX	–	–	OWNER	–	
217.24		1	DANGER POINT MONITOR (DOUBLE DRIVE–THRU)	BY OWNER	BY OWNER	–	–	OWNER	MONITORS ARE REQUIRED FOR SIDE BY SIDE DRIVE THRU SYSTEM	
217.26		1	ZOOM TIMER	HME	ZOOM NITRO	–	–	OWNER	–	
219.00		4	POS – RECEIPT PRINTER	BY OWNER	BY OWNER	OEM	–	OWNER	–	
219.05		7	STICKY LABEL PRINTER	BY OWNER	BYOWNER	OEM	–	OWNER	–	–
219.06		1	LABELING SYSTEM	TRANSACT	9700	–	–	KES	–	
220.00		1	POS – COIN DISPENSER	BY OWNER	BY OWNER	OEM	–	OWNER	–	
221.01		1	POS – OFFICE	BY OWNER	BY OWNER	OEM	–	OWNER	–	
221.09		1	O/O EQUIPMENT RACK	TRIPP–LITE	SRW12USDP	–	–	OWNER	AVAILABLE THROUGH POS SUPPLIER	
222.01		1	TIME CLOCK	BY OWNER	BY OWNER	OEM	–	OWNER	–	
223.07		1	WASHER – ELECTRIC	WHIRLPOOL	CAE2793BQ	–	–	KES	–	
225.03		1	OFFICE PACKAGE/DESK UNIT	DENSTOR	2000–0100	–	–	KES	WORK SURFACE 75", (1) DESK PEDESTAL W/ 2 DRAWERS AND (1) PEDESTAL W/ 3 DRAWERS	
225.04		1	OFFICE PACKAGE/ 2–WALL CABINETS	DENSTOR	2000–0200	–	–	KES	–	
225.05		1	OFFICE PACKAGE/HIGH WORK SURFACE	DENSTOR	2000–0300	–	–	KES	W/ (6) L–BRACKETS – WORK SURFACE IS 75" W. – CUT IN FIELD IF REQUIRED	
225.06		1	OFFICE PACKAGE W/3 DRAWER LATERAL FILE	DENSTOR	2000–0400	–	–	KES	–	
226.08		4	CREW LOCKERS –12" x 12" x 18" (6 HIGH)	DENSTOR	3–121278	–	2	KES	–	
237.00		1	PIE DISPLAY	PRINCE CASTLE	524–MCDC	E341354	4	KES	PROVIDE WITH S/S PANEL	
700.02		2	MOP SINK	GC	–	–	2	GC	–	
700.06		1	WATER HEATER – ELECTRIC – 54KW	GC	SEE RMKS	–	2	GC	REFER TO PLUMB. DWGS. FOR DETAILS	
700.09		1	ECONOMY OEP BOX W/MOUNTING HARDWARE	ACS	OEP–6	E71309	–	KES	6" W. x 24" D.	
700.10	X	1	BULK OIL SYSTEM	RTI	BI–3F	SEE RMKS	4	MANU–FACTURER	IF AVAILABLE IN MARKET – ETL ELECTRICAL RATING: 9900762	
700.11		1	OEP UTILITY PANEL W/ MOUNTING HARDWARE – STATIC BOX	H&K DALLAS	–	–	–	H&K DALLAS	2"–4"x2'–4" x4" HIGH BOX	
700.18	X	1	BULK OIL FILL BOX – 8"Wx10"H	RTI	–	–	–	MANU–FACTURER	SEE EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT, INSTALLED BY GC	

SEE SHEET K2.0 FOR EQUIPMENT LAYOUT AND TAG IDENTIFICATION

1 / K2.1 KITCHEN SCHEDULE

BY	DESCRIPTION	DATE	REV

NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER

10/9/2024

PREPARED BY:
CORE STATES GROUP
135 Water Street
Suite 201
Norwood, IL 60540
312.782.3415
corestates.com

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PREPARED FOR:
McDonald's USA, LLC

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DRAWN BY: SH
STD ISSUE DATE: 2024 07
REVIEWED BY: M.PELINI
DATE ISSUED: 10/01/2024
C.S.G. PROJECT #: MCD.39450

TITLE: 2023 STANDARD BUILDING – BB20
4584–WOOD/WOOD
DESCRIPTION:
WOOD BEARING WALLS W/HARDIE BOARD EXTERIOR FINISH
WOOD TRUSS ROOF FRAMING
WALL PANEL/HARDIE BOARD EXTERIOR FINISH
MSN: 43514
SITE ADDRESS: 4 DEERFIELD DR. DOVER, NH
L/C: 028–0178

SHEET NO. 028–0178.00.0
K2.1
KITCHEN SCHEDULE



Front Elevation



Rear Elevation



Non-Drive-Thru Side Elevation



Drive-Thru Side Elevation

Materials Legend

- *Fiber Cement Lap Siding*
  Hardie - Board Plank
  "Monterey Taupe" by James Hardie
- *Architectural Wall Panels by Nichiha*
  "Light Mist"
- *Architectural Wall Panels by Nichiha*
  "Sand"
- Brick by Hebron Brick Company
  "Silverado"
- Aluminum Canopy (Prefinished Metal)
  "White"
- Aluminum Underscore (Prefinished)
  "Gold"
- Aluminum Trellis (Prefinished)
  "RAL 7022"
- Glazing (Windows & Storefront)
  1" Insulated Clear Glass
- Storefront Mullions
  "Deep Bronze"
- Metal Coping
  "Light Mist"
- Fascia Band
  "Cityscape"
- Service Doors & Frames
  "Fairview Taupe" by Benjamin Moore

CORE STATES GROUP

Proposed McDonald's Restaurant #028-0178
NH Route 108 & Grapevine Drive
Dover, NH
April 2, 2025




1
2
Drive-Thru


WELCOME

Bassegio, Erin

From: Renee <rstorr@comcast.net>
Sent: Tuesday, August 12, 2025 8:55 PM
To: Planning Board - All
Subject: Grapevine Drive project

Security Notice: External sender. Use caution with hyperlinks or attachments.

Boards members,
As you may know, the proposed Grapevine Drive proposal will come before the board on August 26th. Needless to say I am very disappointed, hoping that McDonald's would now notice that the Old Burger King site is up for lease.
I have written several letters and even attended planning board meetings to speak during citizens forum of my opinions on this project.

As I have mentioned in many of my communications, I do not have a problem with the developer building a restaurant at that location, as long as it didn't have a drive thru.
Many years ago, the developer planned this whole development and he tried to get a drive thru in during his original proposal and the planning board denied his request due to RCM Overlay District 170-28-2 guidelines where it specifically states a "restaurant can be constructed on this site but without a drive thru".

I do not recall receiving any certified letter announcements from the city stating this RCM overly district requirements were to change or I would have been present to speak against it?

Respectfully request that the following questions be asked to the staff prior to the 26th meeting:
1. Please provide planning board approval meeting date as to when this RCM sites codes changed to allow a drive thru for restaurants?

2. The announcement states that there will be 3 items(I, J, K) regarding this project before the board. None of them specifically references the previous requested waiver put forth at the TRC to extend the drive thru operating hours.
—-Did the applicant drop this request, does applicant know that drive thru hours will be strictly enforced?
—-In laymen's terms, explain what the applicant is asking for in each item?

Very Respectfully
Scott Torr
217 Durham rd
Dover, NH 03820
603-749-7925

Bassegio, Erin

From: Warren Kadden <warrenkadden@portsidereg.com>
Sent: Wednesday, August 13, 2025 6:29 AM
To: Planning Board - All
Subject: Grapevine Drive Project Concern

Security Notice: External sender. Use caution with hyperlinks or attachments.

Good Morning,

Back in March of this year, I sent an email to the Planning Board outlining my concerns regarding the proposed development on Grapevine Drive. In that email, I raised several specific points, most notably:

- How and why the zoning for this parcel changed from B-4 (no drive-in service) in 2018 to Commercial by 2022.
- Concerns over the negative impact this project could have on surrounding property values.
- The potential for continuous foul odors and other environmental impacts.
- Public safety implications, referencing Dover Police Department's 2024 call volume to similar establishments.

To date, I have not received definitive answers to these questions or clarification on the zoning change. This zoning issue is of particular concern, as it directly impacts the nature of what can be developed on this site and the long-term effects on the surrounding neighborhood.

I remain fully supportive of responsible residential and commercial development that benefits Dover and its residents, but the available evidence continues to indicate this specific project would have a detrimental effect on the South End.

I am requesting a meeting with the Planning Board or an appropriate representative to discuss these matters in person. Please let me know your availability in the coming week so we can move this conversation forward.

Thank you for your time and attention. I look forward to your response.

Sincerely,
Warren Kadden

--

Warren Kadden
Realtor, Senior Real Estate Specialist

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Please leave Portside a Google Review!