



CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

Meeting Type: Regular Meeting
Meeting Location: 1st Floor Conference Room – City Hall, Dover NH
Meeting Date: **Thursday, March 5, 2020**
Meeting Time: **10:30 AM**

1. 10:30 AM - 11:00 AM: Site Review for Mary Paola/dba: Little Lamb Nursery, LLC., (Owners: Mary Paola and Stephen Slingerland), Assessor's Map 21, Lot 76, zoned R-12, and located at 31 Tennyson Avenue. (Proposal is to allow a residence with an existing daycare to increase the capacity by 6 children. TRC review is a condition of ZBA case Z20-02). (P20-19)
2. 11:00 AM - 11:45 AM: Amendment to a previously approved Site Review for V.M.D. Companies, LLC, (Owners: VMD Equities DVR LLC, c/o V.M.D. Companies, LLC), Assessor's Map 11, Lot 2, zoned B-3, and located at 181 Silver Street. (Proposal is for a 14,927 s.f. retail store to replace the previously approved 2,930 s.f bank as well as decreasing the medical office building from 66,000 s.f. to 40,176 s.f. and 382 parking spaces to 334). (P15-56A)



City of Dover, New Hampshire SITE REVIEW APPLICATION

[Revision Date: June 4, 2019]

Office Use Only

Project #: _____

Date Received: _____

Amount Paid: _____

Time Received: _____

APPLICANT AND OWNER INFORMATION

Name of Applicant: Mary Paola Telephone # 603-743-3102

Address of Applicant: 31 Tennyson Avenue, Dover, NH 03820

E-Mail Address: littlelambnursery@yahoo.com

Name of Property Owner (if different from applicant): Mary and her husband, Stephen Slingerland, own the Property as Joint Tenants Telephone # _____

Address of Property Owner: 31 Tennyson Avenue, Dover, NH 03820

PROPERTY INFORMATION

Address of Property: 31 Tennyson Avenue

Assessor's Map # 21 Lot(s) # 76

Zoning District(s) R-12 Overlay District(s) _____

Size of Parcel: 10,019 sq. ft. 0.23 ac. Property Deed: Book 4533 Page: 549

Existing Use of Property: Single Family Dwelling and Child Care Home

SITE PLAN INFORMATION

Describe Proposed Use: residence/expand daycare capacity by 6

Area of Parcel to be Developed: room within house sq. ft.

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

Number of Parking Spaces: Existing 7 Proposed N/A

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

Number of Employees Total: 4 In Maximum Shift: _____

Disposition of Parcel:

Building Setbacks:

Building Footprint see plan sq. ft.

Front Yard _____ ft.

Total Building Area _____ sq. ft.

Rear Yard _____ ft.

Paved Area _____ sq. ft.

Side Yard: Right _____ ft. Left _____ ft.

City Water? ☒ Yes ☐ No How far is city water from the property? _____City Sewer? ☒ Yes ☐ No How far is city sewer from the property? _____**BUILDING INFORMATION**Type of Building to be Built: N/A

Height of Building: _____ Finished Floor Elevation: _____

Number of Seats (where applicable) _____

Estimated value of construction: _____ Refuse removal: Public/Private (circle one)

WAIVER REQUESTSSite Review Regulations section(s) to be waived: N/AJustification for waiver request(s) (*attach additional sheets as needed*):this case referred for TRC review by ZBA's conditionally approved Variance
allowing daycare capacity increase from 24 (now) to 30.See Attorney Christopher Wyskiel's attached letter and exhibits.

_____**SURVEYOR INFORMATION**Name of Surveyor and Company (Licensed in N.H.) Kevin McEneaney
McEneaney Survey Associates, Inc.Address P.O. Box 681, 24 Chestnut St., Dover, NH 03820 Telephone #: 603-742-0911Professional License #: NH #681 E-mail address: kevin@surveynh.com**ENGINEER INFORMATION**Name of Engineer and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

ARCHITECT INFORMATIONName of Architect and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) _____ N/A _____

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

SOIL SCIENTIST INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: _____ Telephone # _____

Address Easement Holder: _____

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: Mary Paola Steph Sgull Date: 2/20/20

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: Anthony Christopher Wyck Date: 2/20/2020

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: Mary Paola Steph Sgull Date: 2/20/20

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: M Date: _____

Signature of Applicant (if different from owner): _____ Date: _____

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: _____ Date: _____

Signature of Applicant (if different from owner): _____ Date: _____

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	09°22'32"	550.00	90.00	89.90	N43°05'36"E
C2	90°00'00"	25.00	39.27	35.36	N83°24'20"E

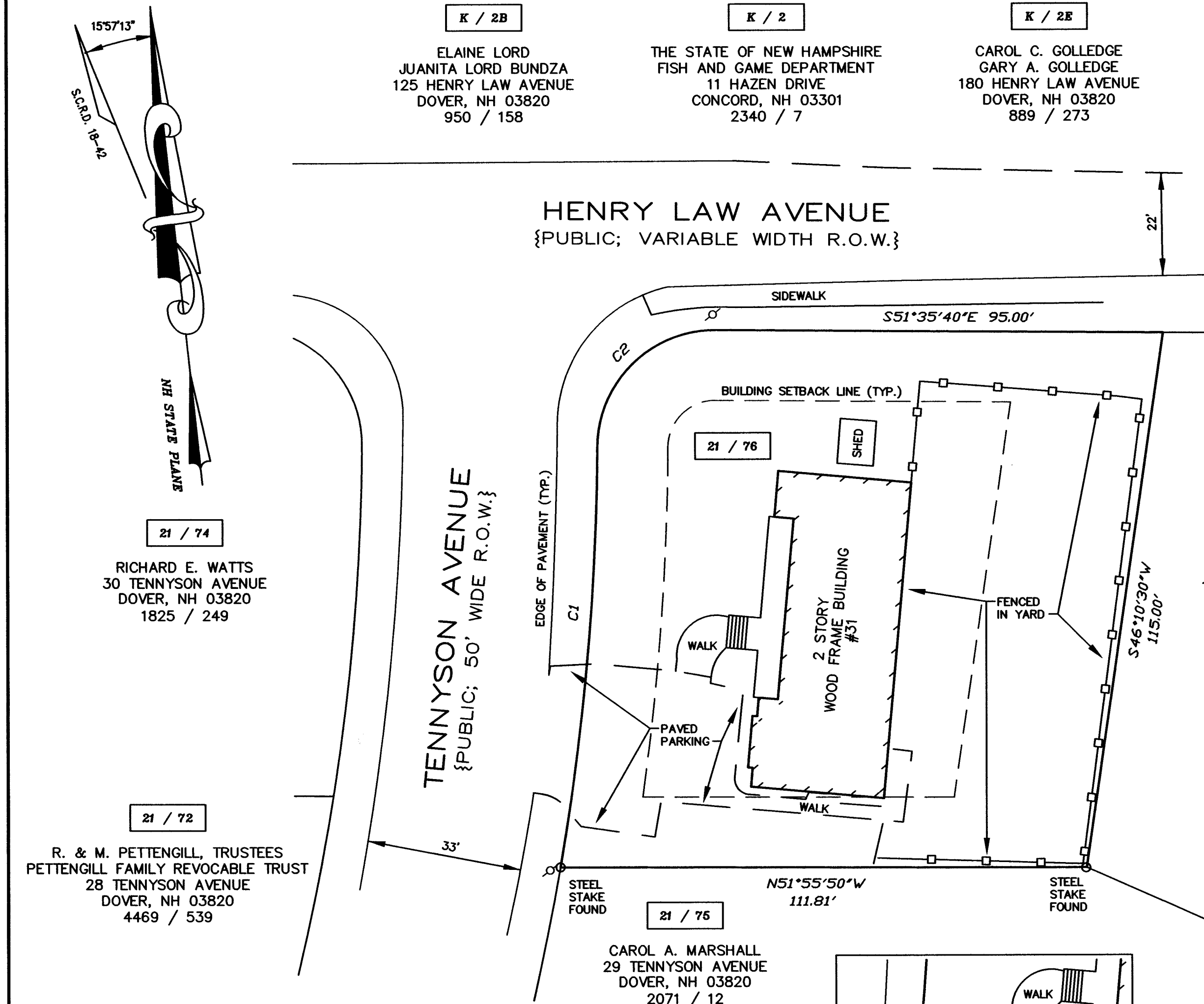
REFERENCE PLANS:

- EMILE A. CHAGNON JR. & FREDERICK SHAW – FINAL PLAN OXFORD HEIGHTS LOTS 1 THRU 34,, DOVER, NEW HAMPSHIRE. SCALE: 1" = 50'; DATED: JUNE 1977; BY: G.L. DAVIS & ASSOCIATES. RECORDED S.C.R.D. PLAN 18-42.

NOTES:

- OWNER OF RECORD:

STEPHEN D. SLINGERLAND
MARY ELLEN PAOLA
31 TENNYSON AVENUE
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOLUME 4533, PAGE 549
- 21 / 76 – DENOTES TAX MAP AND PARCEL NUMBER.
- THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF THE PROPERTY AS OF 01/28/2020
- A VARIANCE WAS GRANTED BY THE ZONING BOARD OF ADJUSTMENT ON JANUARY 16, 2020, CASE #Z20-02 FROM SECTION 170-6 OF THE ZONING ORDINANCE TO ALLOW THE EXISTING "CHILDCARE HOME" TO EXPAND FROM 24 CHILDREN TO 30 CHILDREN.



EXISTING CONDITIONS SITE PLAN
OF
LITTLE LAMB NURSERY, LLC
TAX MAP 21, LOT No. 76
31 TENNYSON AVENUE
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DRAWN BY: **RJM**
SCALE: 1" = 20'
FILE: 2261\DWGS\20-2261
DATE: FEBRUARY 5, 2020

McEneaney
Survey
Associates
of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911
SURVEYING – PLANNING – CONSULTING

NO.	DATE	DESCRIPTION	BY	CHK
REVISIONS				
20-2261	EC SKETCH	20-01	24-25	
PROJECT NO	TYPE	FIELDBOOK & PAGES		



Wyskiel,
Boc,
Tillinghast
& Bolduc, P.A.
Attorneys at Law

William E. Boc
*Michael J. Bolduc
Thomas G. Ferrini
Abigail Sykas Karoutas
*William R. Phipps
**D. Lance Tillinghast
*Christopher A. Wyskiel

* also admitted in Maine
**also admitted in MA, ME & VT

February 20, 2020

Dover Technical Committee Members
c/o Donna Benton, City Planner and
Elena Piekut, Assistant City Planner
Dover Planning Department
288 Central Avenue
Dover, NH 03820

RE: ZBA Case No. 20-02
Mary Paola and Steve Slingerland
31 Tennyson Avenue, Tax Map 21, Lot 76
d/b/a Little Lamb Nursery, LLC

Dear TRC Members:

This office represents Mary Paola and her husband, Steve Slingerland, owners of the above referenced property. Mary and Steve live there. Mary conducts a child care/nursery business on site as Little Lamb Nursery, LLC. Mary has provided child care in her home since 1987. She is currently permitted by the State and City for 24 children.

Mary intends to convert another room in her home for child care services, providing sufficient space to be permitted to take care of 30 children under State regulations. She needed relief from Dover's ZBA to increase her City permitted capacity from 24 to 30 children.

On January 16, the ZBA unanimously granted Mary's request for a variance to permit a "child care home" exceeding the maximum 12 children capacity per ordinance definition, allowing her pre-existing, legally non-conforming business to expand from 24 children to 30 upon the condition that:

The application shall be reviewed by the Technical Review Committee to specifically address pick-up and drop-off procedures and timing and the traffic on Tennyson Avenue. The familial relationships of the children shouldn't have any bearing on the application.

Upon recommendation of the City Planning Department, Mary files a Site Review Application with this letter, fulfilling an abbreviated submission checklist as recommended by Assistant City Manager and Planning Director Chris Parker, and Assistant City Planner Elena Piekut. As this comes before Dover's TRC as a condition of ZBA approval, it is not a preliminary step to the Planning Board Site Review process.

To inform TRC members of facts relevant to child care pick-up and drop-off procedures, timing and traffic on Tennyson Avenue, this letter/application is submitted together with the following:

1. Staff Memo to ZBA January 16, 2020 (2 pages)
2. ZBA January 28, 202 Notice of Decision
3. ZBA January 18, 2020 Findings of Fact/Conclusions
4. Existing Conditions Site Plan drawn by McEneaney Survey Associates
February 5, 2020
5. Child sign in/out logs for a typical week (1/6-1/10/2020) per State
required recordkeeping (children's names redacted)
6. One-page summary of 1/6–10/2020 child sign in/out logs
7. Bar graphs for children (not cars) arriving/departing at noted 5 minute
increments (same 1/6-10/2020 week)
8. Bar graphs for number of children (not cars) drop-off/pick-up for
1/21/2020
9. Pictures of 1/21/2020 cars
10. Bar graphs for children (not cars) drop-off/pick-up for 1/23/2020
11. Pictures of 1/23/2020 cars
12. Bar graphs for children (not cars) drop-off/pick-up for 2/11/2020
13. Pictures of 2/11/2020 cars
14. Nursery Employee Handbook excerpts
15. Highlighted paragraphs of parent contract with Nursery
16. June and December Nursery newsletter excerpts

The ZBA's conditioning its unanimous variance approval upon TRC review is consistent with other zoning defined child care permitted uses requiring "home occupation" criteria or TRC review. The ZBA's scope of TRC review is limited.

Mr. and Mrs. Marshall, immediate abutters of Mary's, were the only members of the public who spoke at the public hearing. Their exaggerated characterizations of parking and dangerous traffic concerns were not substantiated beyond their own comments. Mary could have asked parents, both past and present clients, to testify before the ZBA concerning the workability and safety of drop-off/ pick-up procedures and timing had she known this concern was going to an issue of focus. The information submitted with this letter substantiates conditions Mary and her counsel generally described to the ZBA.

Bar graph representations of the arrival and departure of children are typical. They were prepared using the child sign in/out logs, and summaries noted in submissions #5 and #6 above. Additional bar graphs (prepared from those days' child sign in/out logs) were prepared for days photos were taken by Mary's husband of cars coming/leaving for drop-offs/pick-ups.

Mary, and her counsel, explained to the ZBA how the on-site paved driveway accommodated seven cars (three behind three, plus an additional space to the side, typically accommodating a resident's vehicle). Dimensions are shown on the plan. The included pictures show the workability of this parking area.

Mary, and her counsel, explained to the ZBA that Mary is the Nursery's Director and Lead Teacher. She did not explain her credentials to the ZBA. Mary has a BS with a double major in Early Childhood Development and Early Childhood Education. Mary has four full-time employees. No additional staff is needed to accommodate the increase in capacity by 6 children.

Mary had not explained to the ZBA how the four full-time employees don't arrive and park at the same time. One typically arrives at 7:00 a.m., another at 7:30 a.m., another at 8:00 a.m., and another at 8:30 a.m. The first three park in the driveway in spaces the parents prefer not to use. The last arriving employee parks on the street in front of Mary's house. That leaves three spaces free in the driveway, and two or three directly in front of her house for parent use.

The first employee leaves at 4:00 p.m., the next at 4:30 p.m., the third varies between 5:00 p.m. and 5:30 p.m., and the last leaves at 5:30 p.m. Their departure does not impact parents arriving to pick up their children. The early teacher departures actually free up two additional parking spaces in the driveway, should parents choose to use them.

The paved width of Tennyson Avenue is 33 feet (one the widest in Dover . . . compare the 22 foot paved width of Henry Law Avenue – see plan). Public parking is allowed on both sides of Tennyson Avenue (so long as site lines to the intersection with Henry Law Avenue are not impacted).

Mary explained to the ZBA how there is adequate parking for drop-off and pick-up. Not all children arrive or leave at once. She explained State required check in/out logs demonstrated that, but copies of the logs, bar graphs and pictures (submitted herewith) were not presented to the ZBA. These submissions (which Mary and her husband will further explain) demonstrate that there are no parking/traffic problems or congestion. The 6 child increased capacity will hardly change the practice demonstrated by the logs, bar graphs and pictures submitted. Most of the additional children added by the allowed increased capacity will be siblings of children now using the daycare. Few, if any, additional cars are expected.

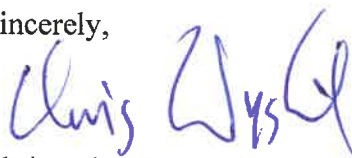
To counter her immediate neighbors' characterization of dangerous traffic on the street, Mary's husband, Steve, contacted Diana Wingren, Records Bureau Commander, Dover Police Department, for statistics relative to the number of accidents in the vicinity of the Nursery. Diana did a 20 year search and was unable to find any on Tennyson Avenue. She did find two on Henry Law Avenue (specific location unknown).

The Employee Handbook, parent contract and newsletter highlighted excerpts demonstrate Mary's efforts to educate her employees and parent clients of a workable child drop-off/pick-up procedure. Lingering parents are discouraged. Parents dropping off their children are typically there for five minutes or less. Conferencing with teachers is discouraged at drop-off/pick-up. Conferences are scheduled during the middle portions of the day when plenty of parking is available for the one or two extra cars that may be there for a longer period when a parent(s) meets with the Director or teacher.

The evidence submitted demonstrates safe, reasonable and available parking to accommodate the capacity authorized by the unanimously granted variance. The evidence demonstrates a workable, periodic drop-off and pick-up procedure, which avoids parking/traffic problems and congestion. The evidence also demonstrates Mary's willingness to educate employees and client parents of workable drop-off/pick-up procedures. She will continue to do so.

TRC approval is requested.

Sincerely,



Christopher A. Wyskiel

CAW/njl
Enclosures

cc: Mary Paola and Steve Slingerland



Wyskiel,
Boc,
Tillinghast
& Bolduc, P.A.
Attorneys at Law

William E. Boc
*Michael J. Bolduc
Thomas G. Ferrini
Abigail Sykas Karoutas
*William R. Phipps
**D. Lance Tillinghast
*Christopher A. Wyskiel

* also admitted in Maine
**also admitted in MA, ME & VT

February 20, 2020

Dover Technical Committee
c/o Donna Benton, City Planner and
Elena Piekut, Assistant City Planner
Dover Planning Department
288 Central Avenue
Dover, NH 03820

RE: ZBA Case No. 20-02
Mary Paola and Steve Slingerland
31 Tennyson Avenue, Tax Map 21, Lot 76
d/b/a Little Lamb Nursery, LLC

Dear Donna & Elena:

As you know, the ZBA January 16 approval of Mary Paola's variance was conditioned upon TRC review "to specifically address pick up and drop off procedures and time and the traffic on Tennyson Avenue."

In a previous phone call, Chris Parker explained his expectation to put this on the TRC agenda sooner than your typical three week wait time. My clients and I are available Thursday February 27 and Thursday, March 5. Hopefully we can be placed on the agenda either of those days. I am out of town March 12.

Delivered with this letter is:

- (1) Site Review Application
- (2) \$150.00 minimum application fee
- (3) My February 20 letter supplementing application
- (4) All exhibits referenced in my supplement letter
- (5) Eight full sized existing conditions plan

I am sending this and my supplemental letters, referenced exhibits, and a pdf of the site plan to both of you, and to Chris Parker, by email as well, making it easier to distribute electronically. Please contact me if you have any questions.

Sincerely,



Christopher A. Wyskiel

CAW/lew

Enclosure/Attachments

cc: Mary Paola/Steve Slingerland
Chris Parker



CITY OF DOVER

ZONING BOARD OF ADJUSTMENT – STAFF MEMO

Meeting Type:	Regular Meeting
Meeting Location:	Council Chambers – City Hall 288 Central Avenue, Dover, NH
Meeting Date:	Thursday, January 16, 2020
Meeting Time:	7:00 pm

INTENT: The Applicant requests a variance to permit the expansion of a home child care.

UNITS PROPOSED: N/A

AGENDA ITEM #: 4-B

ZONING DISTRICT: R-12

FILE: Z20-02

APPLICANT/OWNER: Mary Paola

LOCATION: 31 Tennyson Avenue (Tax Map 21, Lot 76)

ACREAGE: 0.23 ac. (10,019 sq. ft.)

EXISTING LAND USE: Single-family dwelling and child care home

PROPOSED LAND USE: Same

SURROUNDING LAND USE: Single-family dwellings

PREVIOUS ZBA ACTION: None

PLANNING BOARD APPROVAL REQUIRED: No

ATTACHMENTS: Application

STAFF RECOMMENDATION:
Staff supports the variance request.

SUMMARY OF APPEAL AND BACKGROUND

The property is located on the southeast corner of the intersection of Tennyson Avenue and Henry Law Avenue. Since 1987, the owner/applicant has been licensed to provide child care in the home. However, until 2010 the Zoning Ordinance did not contemplate types of child care. Today, the Ordinance permits both commercial child care facilities and in-home child care, but a "child care home" is capped at 12 children.

Where the business constitutes a legally nonconforming use, a variance is required to increase the nonconformity. The applicant wishes to obtain state approval to care for 30 children rather than 24 children, and must first obtain City approval to obtain the expanded state license.

REASON FOR STAFF RECOMMENDATION

The proposed use represents the growth of an existing, legally nonconforming use to accommodate new siblings. As such, an increase in drop-off/pick-ups is not expected. The applicant has also represented that the increase does not require additional staff. Additional space within the home has been converted to accommodate the additional children, but external changes are not required. The home will continue to be a single-family home.

A non-residential child-care facility, as defined by **Section 170-6** of the Zoning Ordinance, is permitted in the R-12 Zoning District but would require the owner to live elsewhere. Allowing the expanded use allows the property to remain residential in nature.

RECOMMENDATION

Staff recommends that the Zoning Board hold a public hearing, make findings of fact, and vote on the variance request. Staff supports granting the variance request with the following condition:

1. The use shall be subject to the requirements of the Customary Home Occupation regulations, 170-18.

Z 20-02



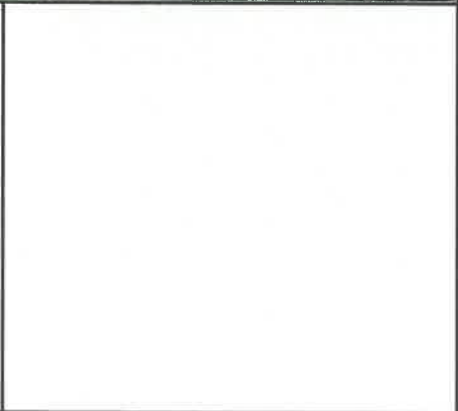
Property Information	
Property ID	21076-000000
Location	31 TENNYSON AV
Owner	SLINGERLAND STEPHEN D &
Land Use	101



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 10/18/2019
Data updated Daily



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



288 Central Avenue
Dover, New Hampshire 03820-4169
(603) 516-6008
Fax: (603) 516-6049
www.dover.nh.gov

City of Dover, New Hampshire

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

Zoning Board of Adjustment NOTICE OF DECISION

January 28, 2020

Mary Paola
31 Tennyson Avenue
Dover, NH 03820

Re: Z20-02 – 31 Tennyson Avenue (Tax Map 21, Lot 76)

Dear Ms. Paola:

Please be advised that on January 16, 2020, the Zoning Board of Adjustment voted 5-0 to **GRANT** your request for a variance from Section 170-6 of the Zoning Ordinance to permit a “childcare home” to exceed the maximum of 12 children by allowing the existing, legally nonconforming business to expand from 24 children to 30 children. The Board imposed the following condition:

1. The application shall be reviewed by the Technical Review Committee to specifically address pick-up and drop-off procedures and timing and the traffic on Tennyson Avenue. The familial relationships of the children shouldn't have any bearing on the application.

Please note that per Section 170-52.C.4(d) of the City of Dover Zoning Ordinance, if the variance is not acted upon within four (4) years of the date of approval, it shall be considered null and void.

Please find enclosed the Zoning Board's findings of fact.

If you have any questions, please do not hesitate the office at (603) 516-6008.

Sincerely,

Elena C. Piekut
Assistant City Planner, Zoning Administrator

Enclosure

EC: James Maxfield, Building Official
Michelle Dube, Inspections Secretary
Donna Langley, City Assessor
Sgt. Marn Speidel, Police Department

Case # Z20-02

**ORDER GRANTING OR DENYING A VARIANCE BY
THE ZONING BOARD OF ADJUSTMENT
CITY OF DOVER, NEW HAMPSHIRE**

The Zoning Board of Adjustment for the City of Dover, New Hampshire, having held a public hearing on January 16, 2020 to consider an application for a Variance submitted by Mary Paola for the property located at 31 Tennyson Avenue (Tax Map 21, Lot 76) and having heard all the arguments presented at the hearing, makes the following **FINDINGS OF FACT**, and draws the following **CONCLUSIONS** to each of the required criteria:

1. Did the Applicant provide proof that demonstrates the variance will not be contrary to the public interest? Yes X No

This **CONCLUSION** is based on the following **FINDINGS OF FACT**:

As presented in the application and presentation. The variance would not constitute a fundamental change in the neighborhood since the existing Child Care Home has existed in the same location since 1987.

2. Did the Applicant provide proof that demonstrates how a variance observes the spirit of the ordinance? Yes X No

The **CONCLUSION** is based on the following **FINDINGS OF FACT**:

As presented in the application and presentation. The zone allows for Child Care Facilities and Child Care Homes.

3. Did the Applicant provide proof that demonstrates how a variance will result in substantial Justice? Yes X No

This **CONCLUSION** is based on the following **FINDINGS OF FACT**:

As presented in the application and presentation. The applicant indicated that the variance is needed to account for the increase in demand and it appears that denying the variance would not confer a benefit to the general public that would outweigh the injustice to the applicant.

4. Did the Applicant provide proof that demonstrates the variance will not diminish the values of surrounding properties? Yes X No

This **CONCLUSION** is based on the following **FINDINGS OF FACT**:

As presented in the application and presentation. The existing Child Care Home has existed since 1987. The increase of 6 children is unlikely to have a recognizable difference on the surrounding properties.

- 5A. The Applicant was to provide proof that literal enforcement of the provisions of the ordinance would result in an unnecessary hardship. Yes X No

- i. Did the Applicant demonstrate that special conditions of the property exist that distinguish it from other properties in the area? Yes X No

This **CONCLUSION** is based on the following **FINDINGS OF FACT**:

The property has existed as a Child Care Home since 1987.

- ii. Did the Applicant demonstrate that no fair and substantial relationship exists between the general public purposes of the ordinance provision and the specific application of that provision to the property? Yes X No

This **CONCLUSION** is based on the following **FINDINGS OF FACT**:

Granting the variance would allow the property to continue to be used as a Child Care Home which is right within the zone.

- iii. Did the Applicant demonstrate that the proposed use is a reasonable one? Yes X No

This **CONCLUSION** is based on the following **FINDINGS OF FACT**:

The proposed use is reasonable because it will allow the owner to satisfy a demand within the community and it is consistent with the current use of the home.

THEREFORE, based upon the foregoing, **IT IS ORDERED** that the application for the variance be **(GRANTED / DENIED)**. If granted, it is subject to the following conditions:

1. The applicant must complete the Technical Review Committee (TRC) process. The Zoning Board requests that TRC pay particular attention to the pick-up and drop-off times and procedures. TRC must approve the application for this variance to be granted.
2. The variance is not subject to the familial status of the children that attend the Child Care Home (which was presented in the application).

Ordered this 18th day of January, 2020



Zoning Board of Adjustment
Chairperson

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	09°22'32"	550.00	90.00	89.90	N43°03'36"E
C2	90°00'00"	25.00	39.27	33.36	N83°24'20"E

E / 38

ELANE LORO
QUANTA LODG BUNDA
125 HENRY LAW AVENUE
DOVER, NH 03820
850 / 158

E / 2

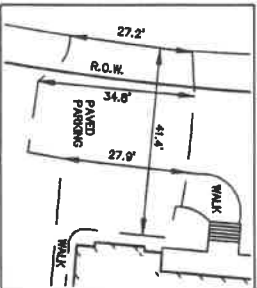
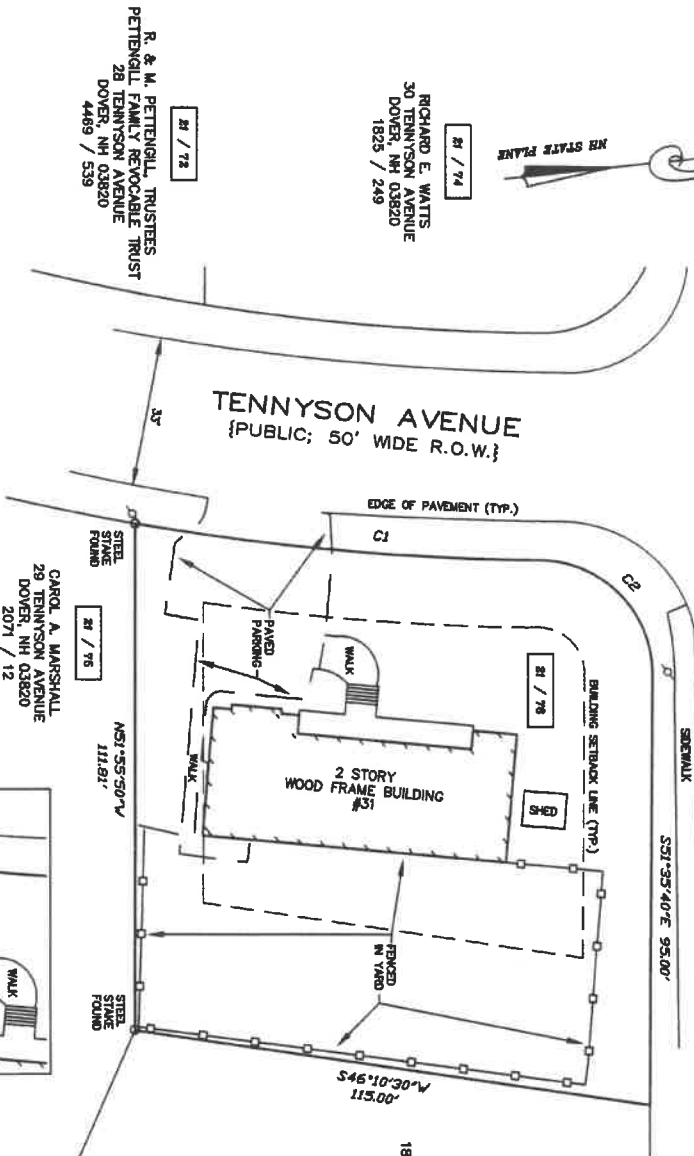
THE STATE OF NEW HAMPSHIRE
FISH AND GAME DEPARTMENT
11 HAZEL DRIVE
CONCORD, NH 03301
2340 / 7

E / 22

CAROL C. GONLEGE
GARY A. GONLEGE
180 HENRY LAW AVENUE
DOVER, NH 03820
889 / 273

HENRY LAW AVENUE

{PUBLIC; VARIABLE WIDTH R.O.W.}



1" = 20'

NO.	DATE	DESCRIPTION	BY	CHK
20-2261	20-01	EC SKETCH	24-25	
PROJECT NO	TYPE	FIELDBOOK & PAGES		

REFERENCE PLANS:

- 1.) EMILE A. CHARNON, JR. & FREDERICK SHAW - FINAL PLAN
OXFORD HEIGHTS LOTS 1 THRU 34, DOVER, NEW HAMPSHIRE.
SCALE: 1" = 50'; DATED: JUNE 1977; BY: G.L. DAVIS &
ASSOCIATES, RECORDED S.C.R.D. PLAN 18-42.

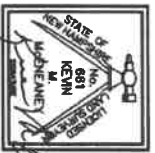
NOTES:

- 1.) OWNER OF RECORD:
STEPHEN D. SLINGERLAND
MARY ELLEN PAOLA
31 TENNYSON AVENUE
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOLUME 4533, PAGE 549
- 2.) #1 / 76 - DENOTES TAX MAP AND PARCEL NUMBER.
- 3.) THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING
CONDITIONS OF THE PROPERTY AS OF 01/28/2020
- 4.) A VARIANCE WAS GRANTED BY THE ZONING BOARD OF
ADJUSTMENT ON JANUARY 16, 2020, CASE #20-02 FROM
SECTION 170-6 OF THE ZONING ORDINANCE TO ALLOW THE
EXISTING "CHILDRENS HOME" TO EXPAND FROM 24 CHILDREN
TO 30 CHILDREN.

EXISTING CONDITIONS SITE PLAN

LITTLE LAMB NURSERY, LLC
TAX MAP 21, LOT NO. 76
31 TENNYSON AVENUE
CITY OF DOVER
COUNTY OF STRAFORD
STATE OF NEW HAMPSHIRE

DRAWN BY: RJM	FILE: 2261.DWG	20-2261
SCALE: 1" = 20'	DATE: FEBRUARY 5, 2020	



McNamee
Survey
Associates
of NEW ENGLAND

P.O. Box 681 - 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911

SURVEYING - PLANNING - CONSULTING

Child Attendance Week Of January 6-10, 2020

[illegible]

Child Attendance Week Of January 6-10, 2020

[illegible]

Little Lamb Nursery, LLC.												
Child Attendance Week Of January 6-10, 2020												
Tutor												
D.O.B.	Child's Name	Age	6-Jan		7-Jan		8-Jan		9-Jan		10-Jan	
			In	Out	In	Out	In	Out	In	Out	In	Out
10/15/2019	NAMES REDACTED	2mo	7:45	5:15	7:45	4:50	7:45	5:10	7:45	5:00	7:40	12:00
5/23/2019		7mo	7:55	5:30	7:45	4:50	8:00	5:10	7:45	5:05	8:45	12:00
5/15/2019		7mo	7:40	4:15	7:30	3:35	7:30	3:25	7:30	3:30	7:30	3:30
4/8/2019		9mo	—	—	8:45	5:15	—	—	8:45	5:15	8:35	4:50
2/28/2019		10mo	7:30	5:20	—	—	8:05	5:10	—	—	—	—
11/17/2018		13mo	—	—	—	—	—	—	—	—	—	—
			6-Jan		7-Jan		8-Jan		9-Jan		10-Jan	
			Monday		Tuesday		Wednesday		Thursday		Friday	
			In	Out	In	Out	In	Out	In	Out	In	Out
			7:30	12:00	7:30	12:00	7:30	12:00	7:30	12:00	7:30	12:00
			10:00	4:30	10:00	4:00	10:00	4:30	10:00	4:30	10:00	4:30
			4:30	5:30	—	—	4:30	5:30	4:30	5:30	4:30	5:30
Schedule			Staff Person & Position		7-Jan		8-Jan		9-Jan		10-Jan	
					Tuesday		Wednesday		Thursday		Friday	
			In	Out	In	Out	In	Out	In	Out	In	Out
			7:30-5:15	Alison Brown	7:30	12:00	7:30	12:00	7:30	12:00	7:30	12:00
			Associate Teacher		10:00	4:00	10:00	4:30	10:00	4:30	10:00	4:30
			Sara Pearson		4:30	5:30	4:30	5:30	4:30	5:30	4:30	5:30

Child Attendance **Week Of January 6-10, 2020**

[illegible]

Cassidy	1700	100	1200	1200	2000	200	830
D'Dwyer						100	300

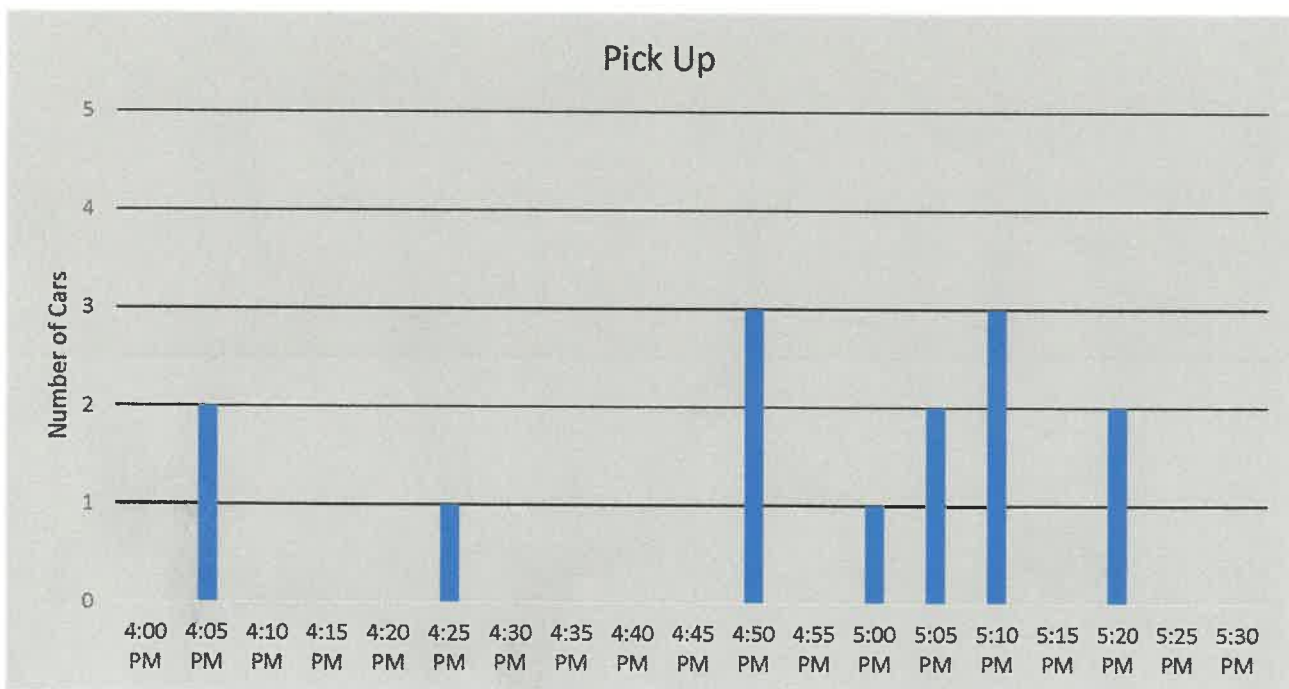
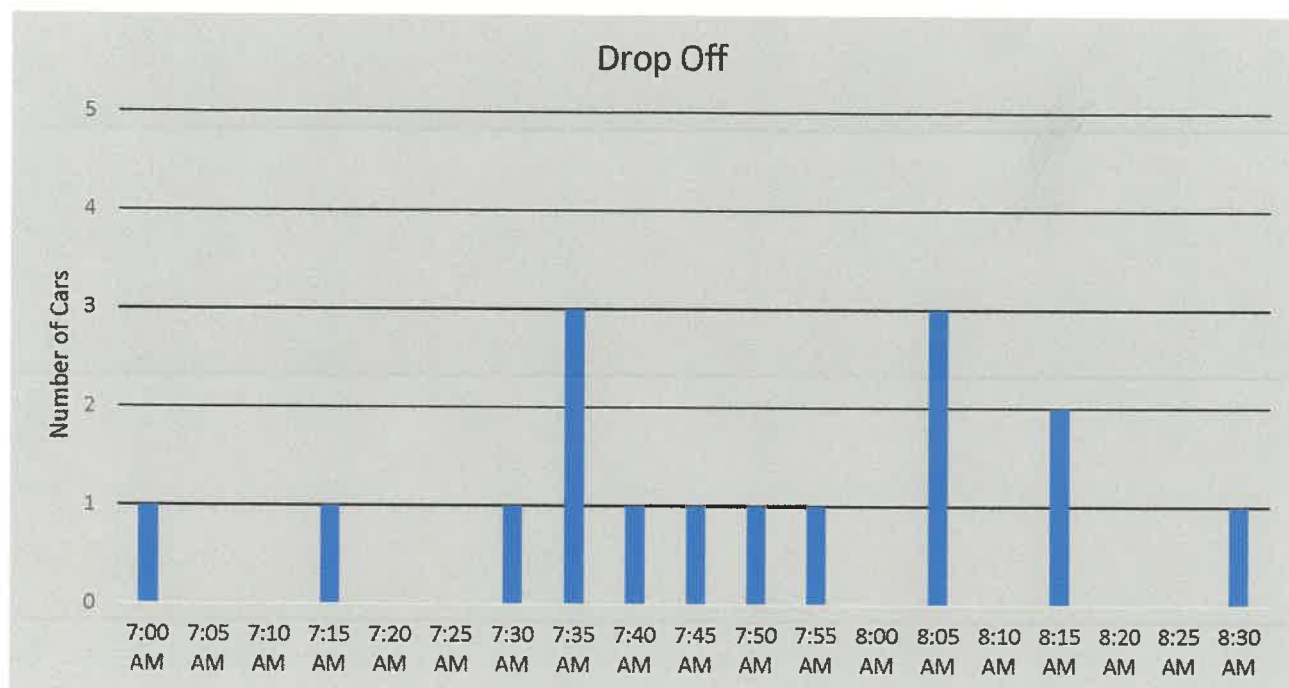
Week of January 6 - 10, 2020

and when children arrive (AM), then leave (PM) - log required by State NH

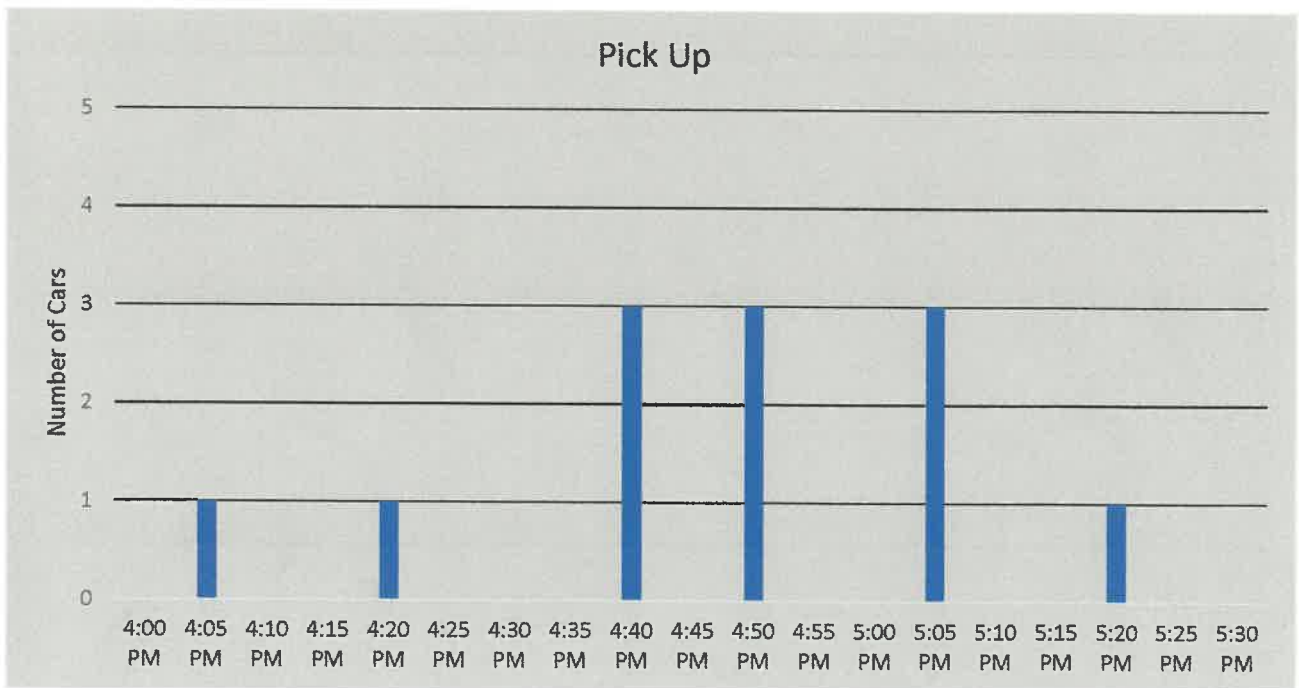
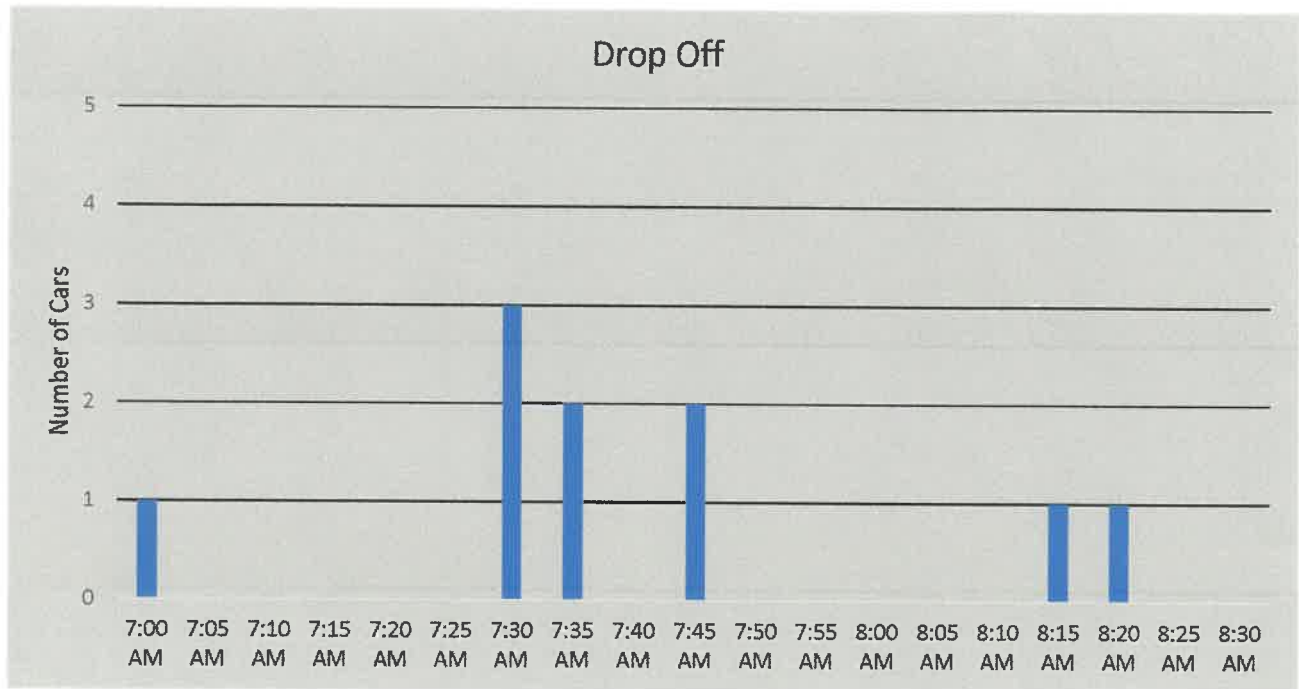
Time	Monday	Tuesday	Wednesday	Thursday	Friday
7:00 AM	1	1	1	1	2
7:05 AM					
7:10 AM					
7:15 AM	1				
7:20 AM					
7:25 AM					
7:30 AM	1	3	3	1	2
7:35 AM	3	2		1	1
7:40 AM	1		1		3
7:45 AM	1	2	2	2	
7:50 AM	1		1	1	
7:55 AM	1				1
8:00 AM			3	1	
8:05 AM	3		1		1
8:10 AM			1		1
8:15 AM	2	1	1	3	1
8:20 AM		1	2		
8:25 AM				1	
8:30 AM	1		1	2	2
8:35 AM				1	
8:40 AM		1		1	
8:45 AM		1		1	1
8:50 AM		1			
8:55 AM					
9:00 AM		1	2	1	
9:05 AM					
9:10 AM					1
9:15 AM	1			1	
9:20 AM					
9:25 AM					
9:30 AM				1	1
9:35 AM					
9:40 AM					
9:45 AM					
9:50 AM			1		
9:55 AM					
10:00 AM		1			
10:05 AM					
10:10 AM					
10:15 AM					1
10:20 AM					
10:25 AM					
10:30 AM	1		1	1	1
10:35 AM					

Time	Monday	Tuesday	Wednesday	Thursday	Friday
10:40 AM					
10:45 AM					
10:50 AM					
10:55 AM					
11:00 AM	1				
NO PICK UP OR DROP OFF OCCURRED BETWEEN 11:05 AM AND 2:15 PM					
2:20 PM					1
2:25 PM					
2:30 PM	1				
2:35 PM					
2:40 PM					
2:45 PM					
2:50 PM					
2:55 PM					
3:00 PM			2	1	
3:05 PM	1			1	
3:10 PM	1	1			
3:15 PM	1				
3:20 PM					
3:25 PM			1		
3:30 PM	1	1		2	2
3:35 PM		1			1
3:40 PM			1	1	
3:45 PM	1		1	2	1
3:50 PM					
3:55 PM					
4:00 PM			1		1
4:05 PM	2	1			
4:10 PM			1		
4:15 PM					1
4:20 PM		1			
4:25 PM	1				1
4:30 PM			1		
4:35 PM			1		
4:40 PM		3			
4:45 PM					2
4:50 PM	3	3		1	1
4:55 PM			1	1	
5:00 PM	1		4	1	
5:05 PM	2	3	1	1	
5:10 PM	3		2	1	
5:15 PM			1	2	2
5:20 PM	2	1	1	1	
5:25 PM					
5:30 PM				2	3

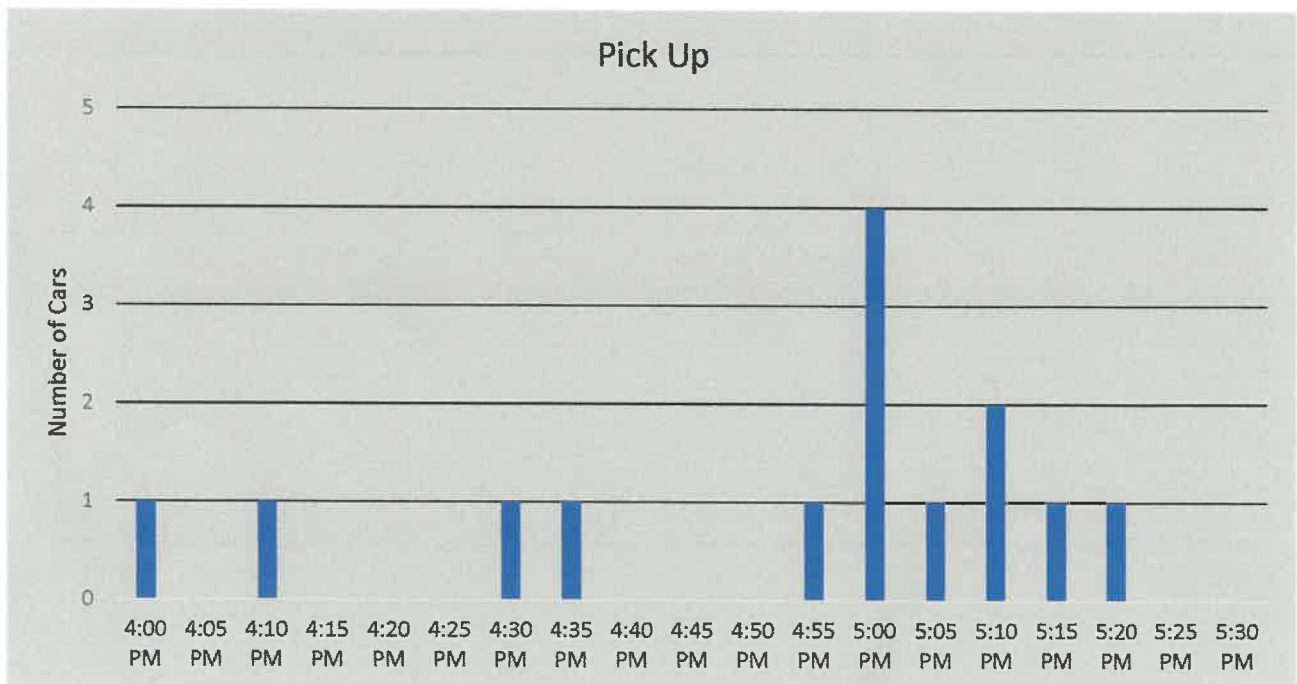
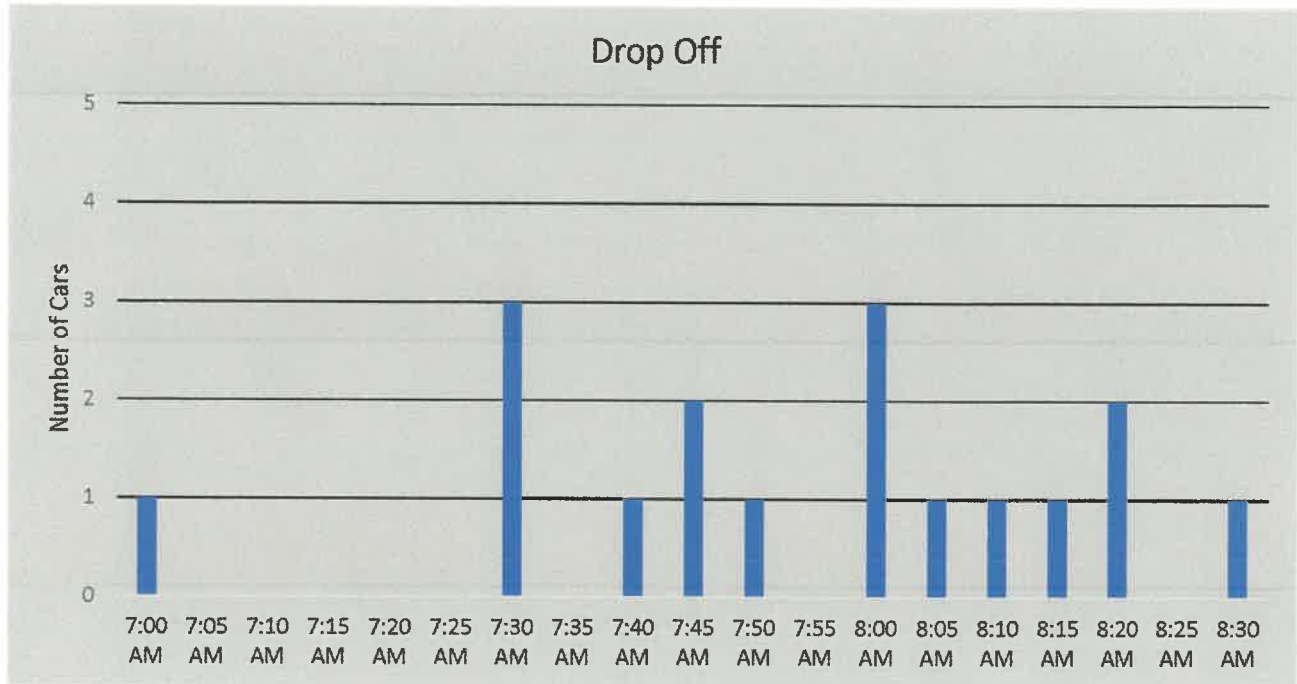
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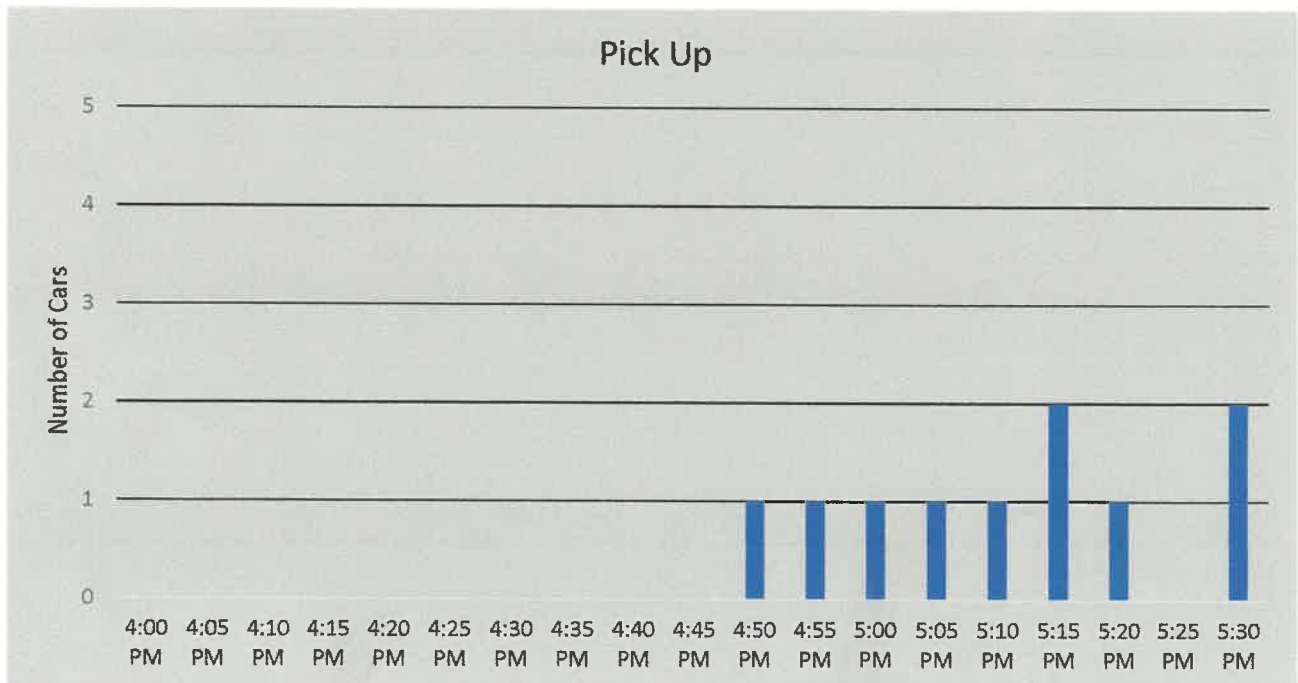
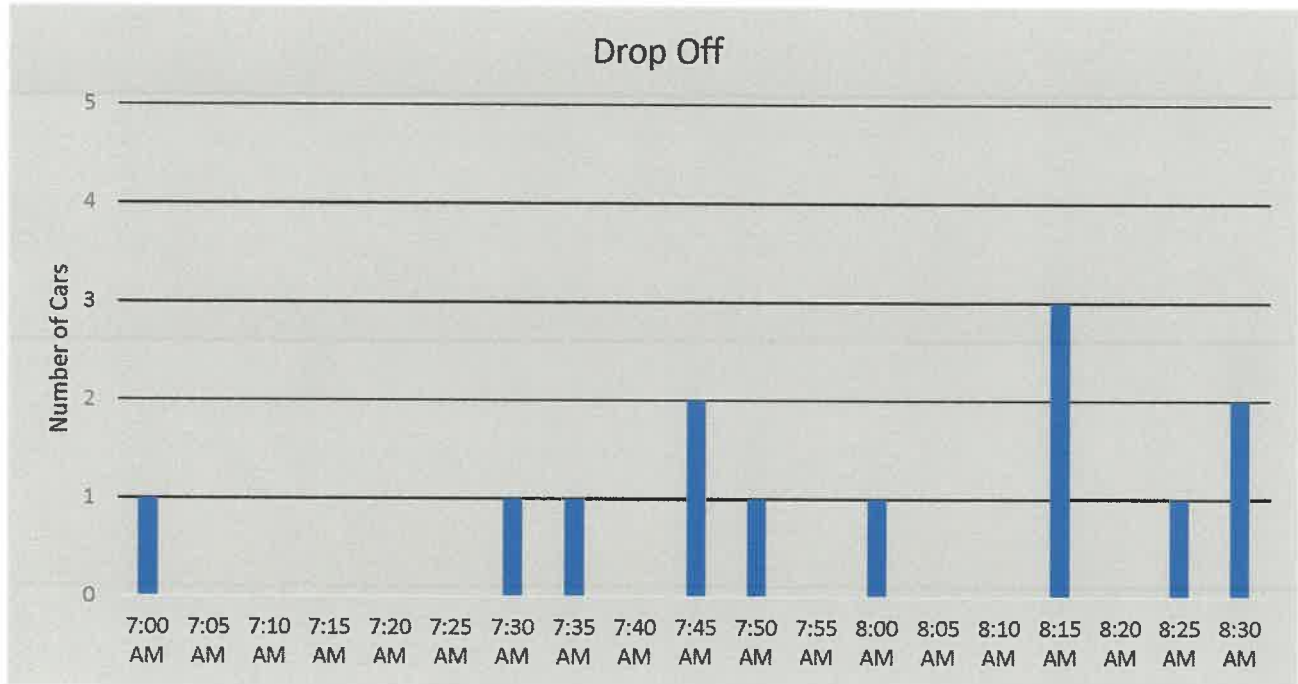
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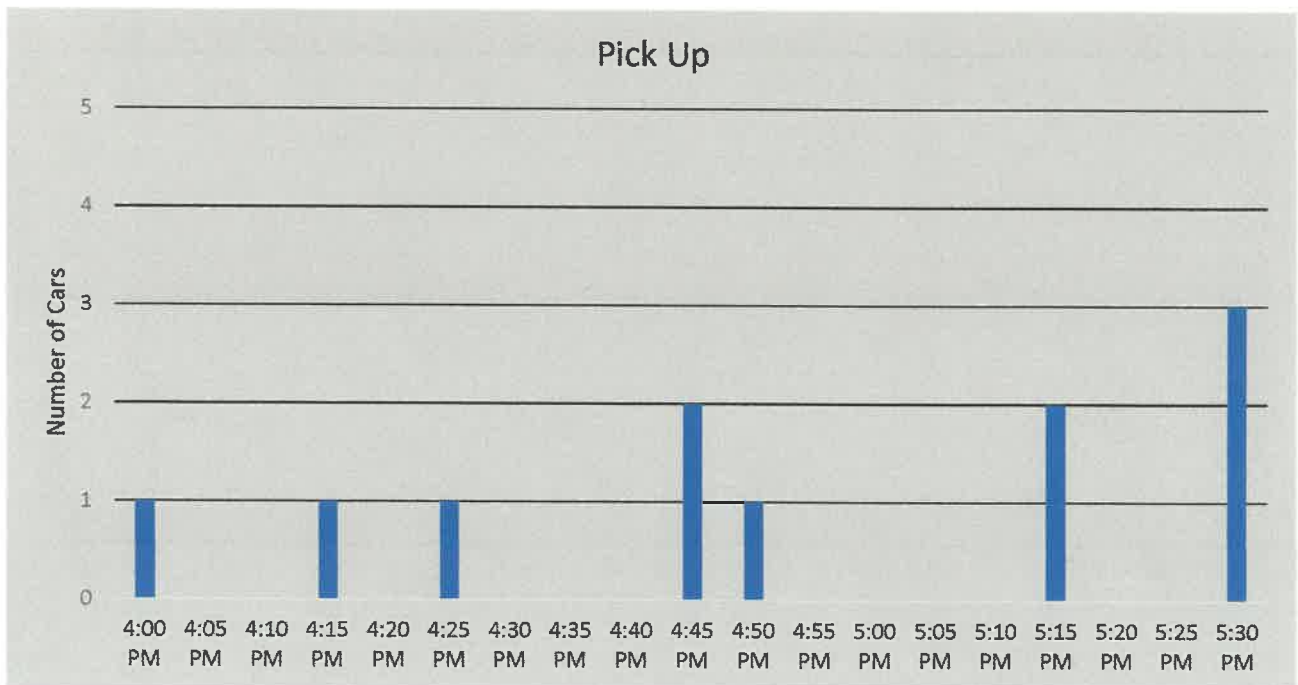
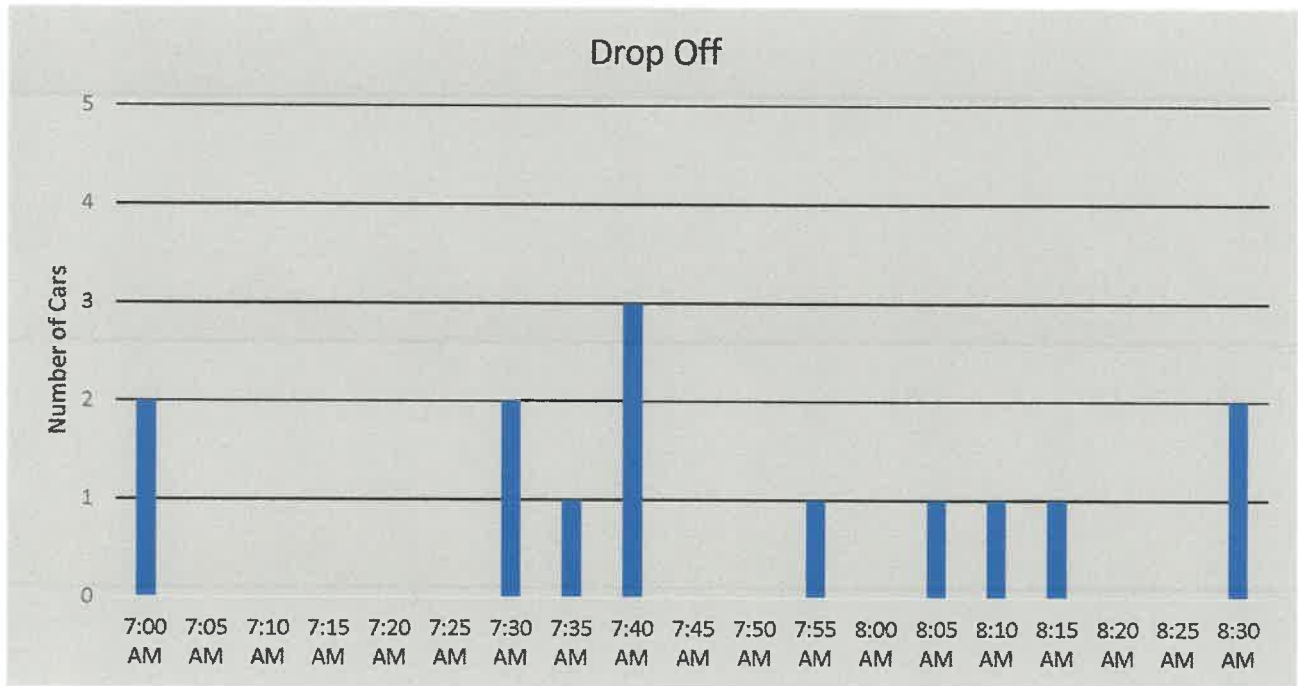
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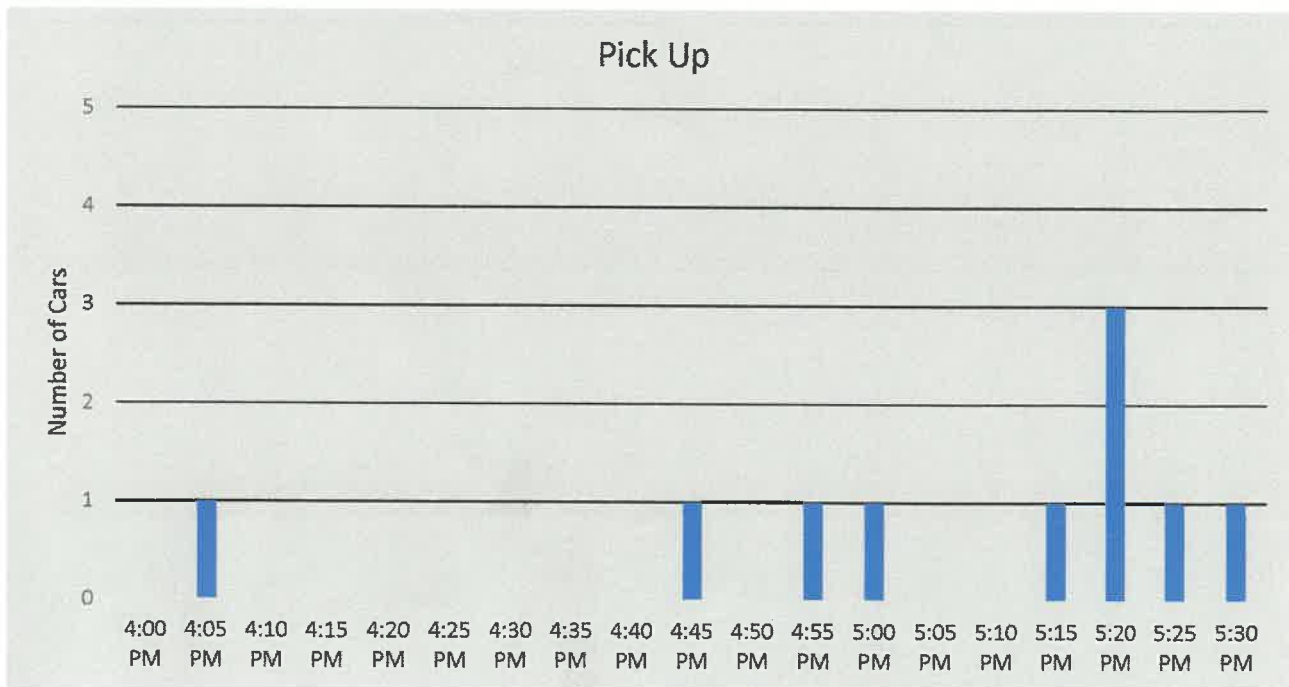
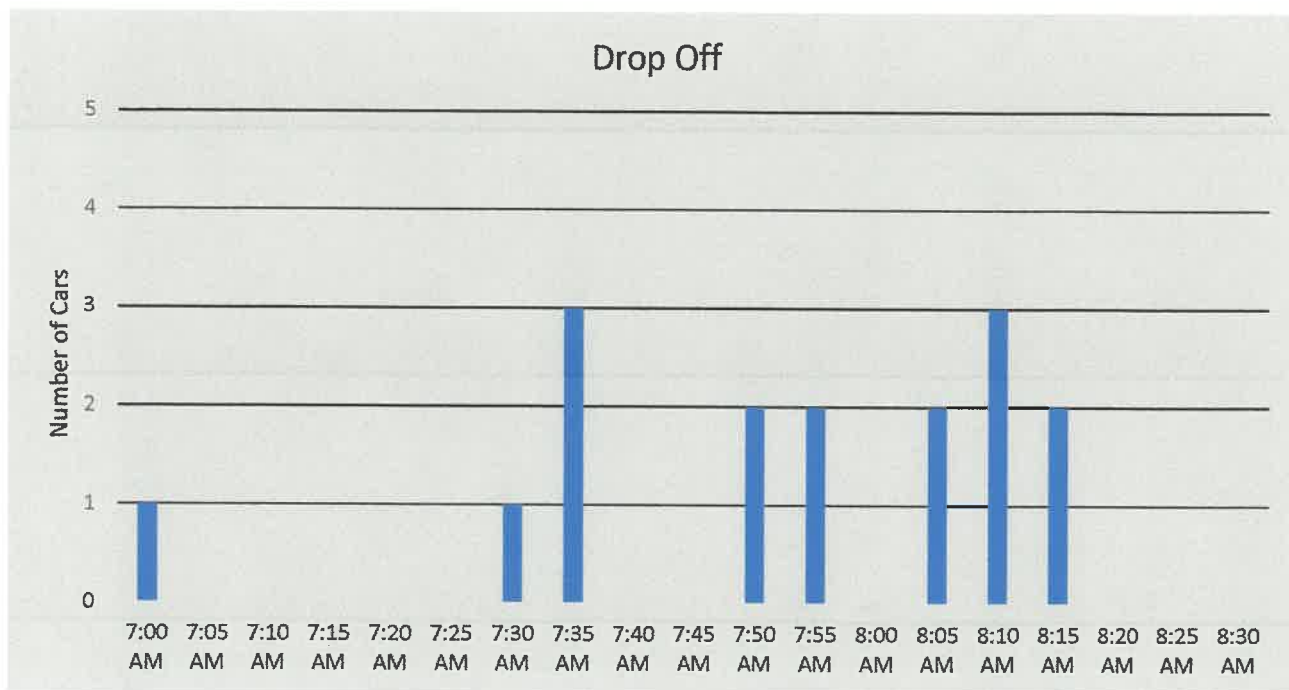
Thursday, January 9, 2020



Friday, January 10, 2020



Tuesday, January 21, 2020

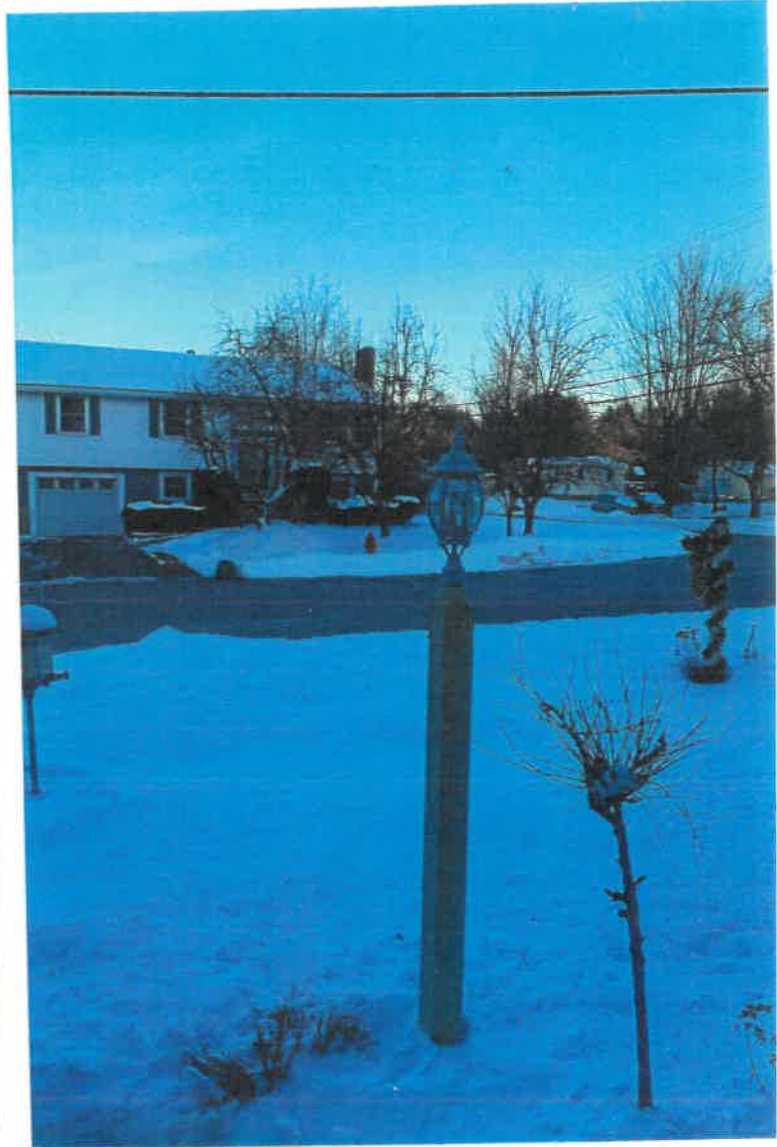


TUESDAY, JANUARY 21, 2020

7:43 a.m.



7:43 a.m.



7:44 a.m.



TUESDAY, JANUARY 21, 2020

7:52 a.m.



8:03 a.m.



8:03 a.m.



8:07 a.m.



TUESDAY, JANUARY 21, 2020

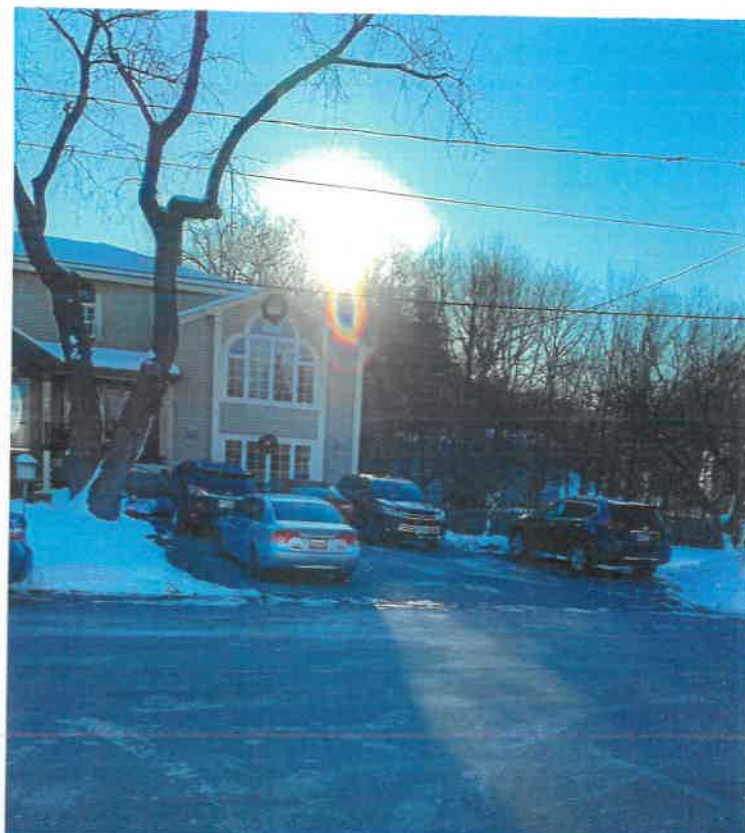
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8:15 a.m.



8:47 a.m.



TUESDAY, JANUARY 21, 2020

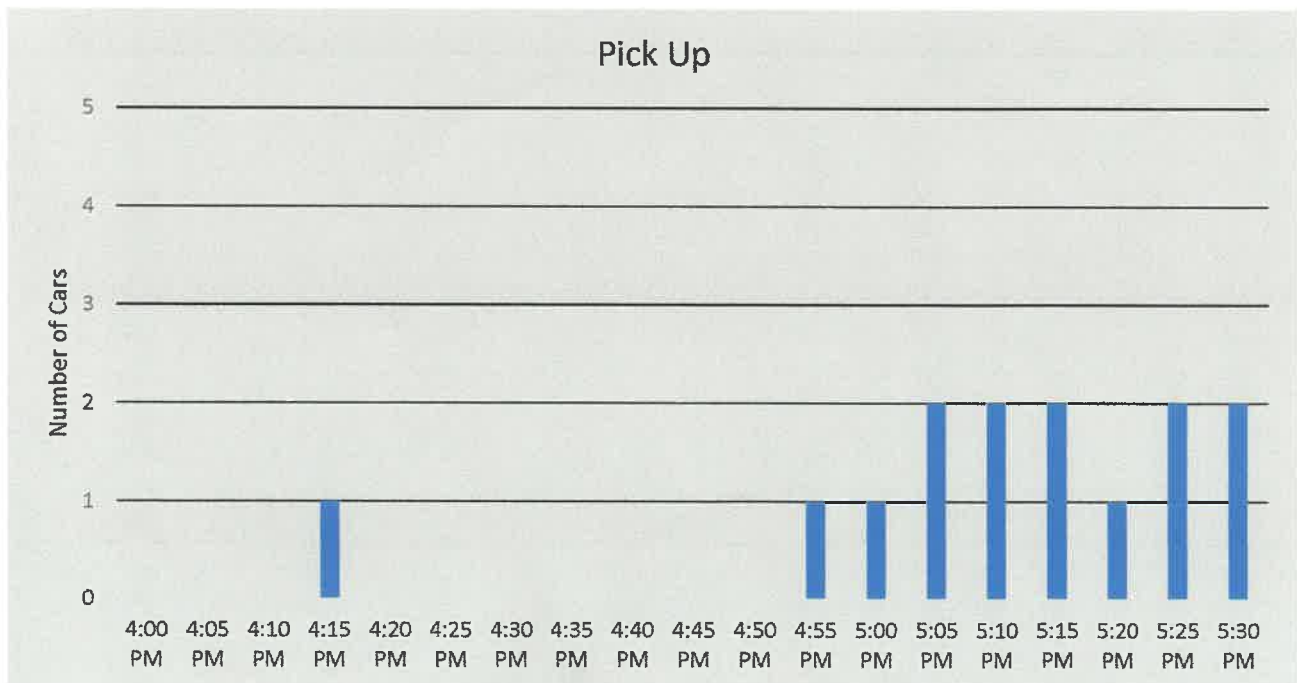
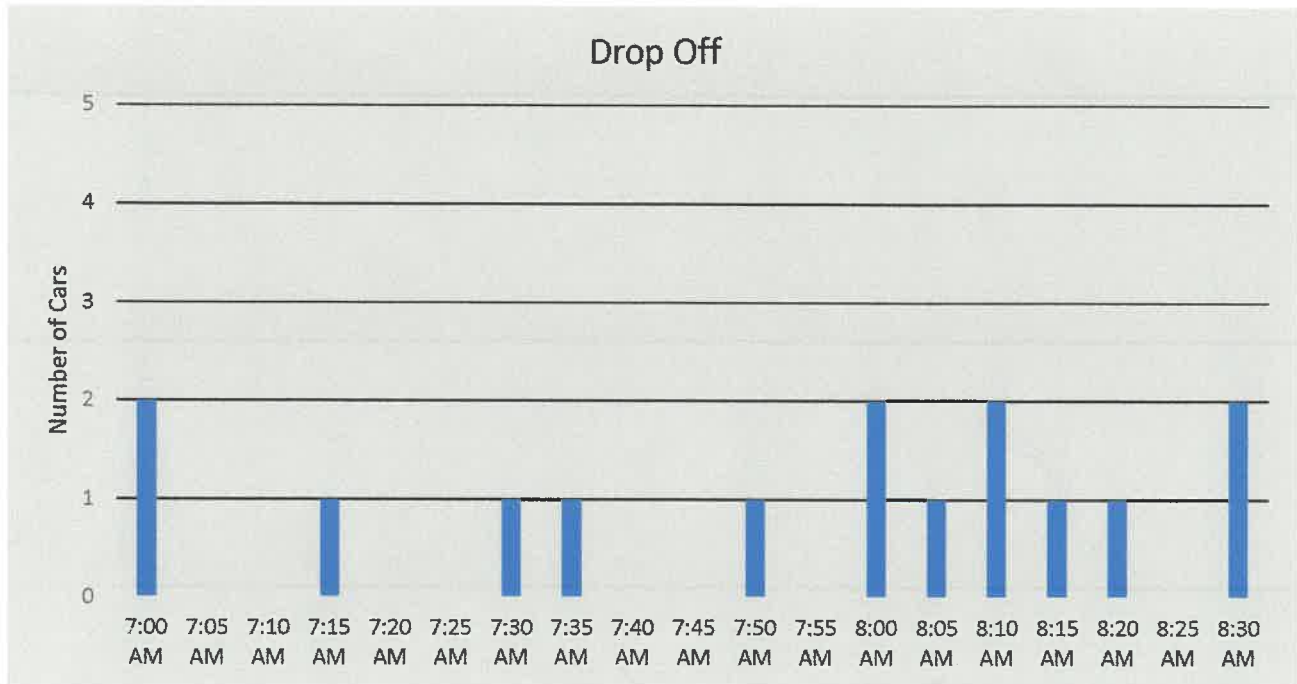
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8:47 a.m.



Thursday, January 23, 2020



THURSDAY, JANUARY 23, 2020

7:23 a.m.



7:33 a.m.

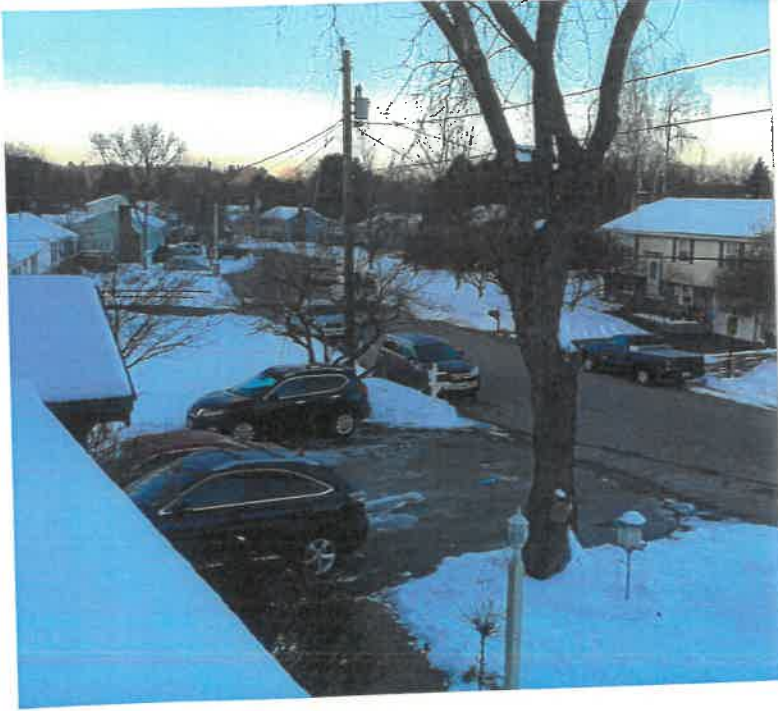


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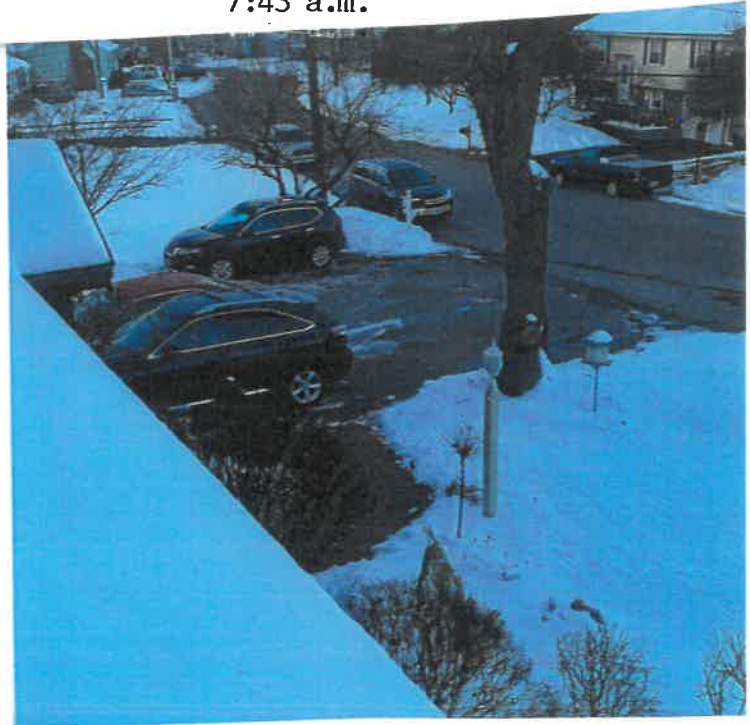


THURSDAY, JANUARY 23, 2020

7:35 a.m.



7:43 a.m.



7:45 a.m.



7:50 a.m.



THURSDAY, JANUARY 23, 2020

7:57 a.m.



7:55 a.m.



7:55 a.m.



THURSDAY, JANUARY 23, 2020

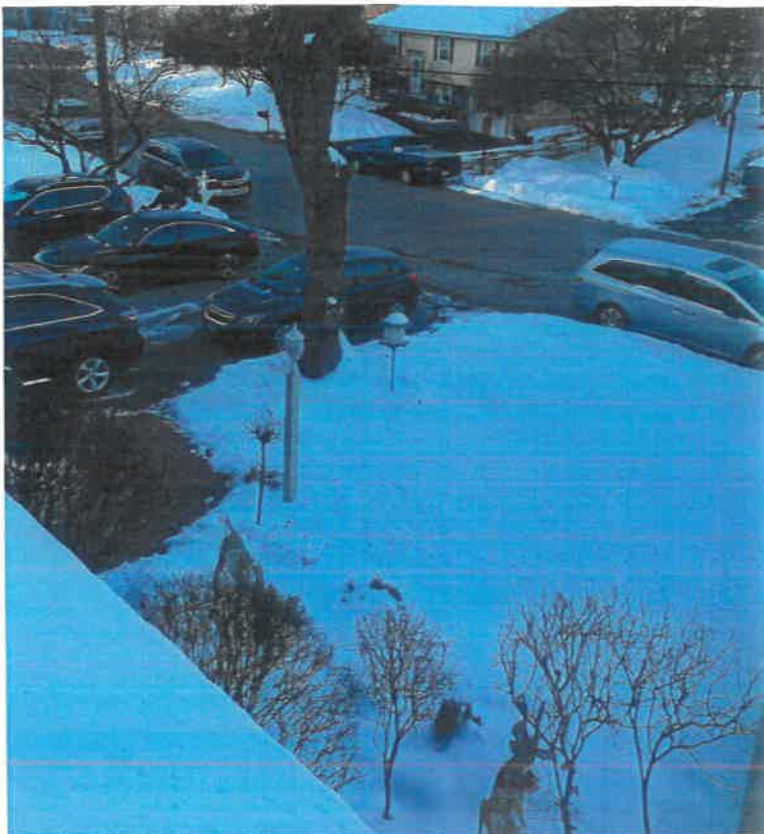
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8:04 a.m.



8:08 a.m.



8:11 a.m.

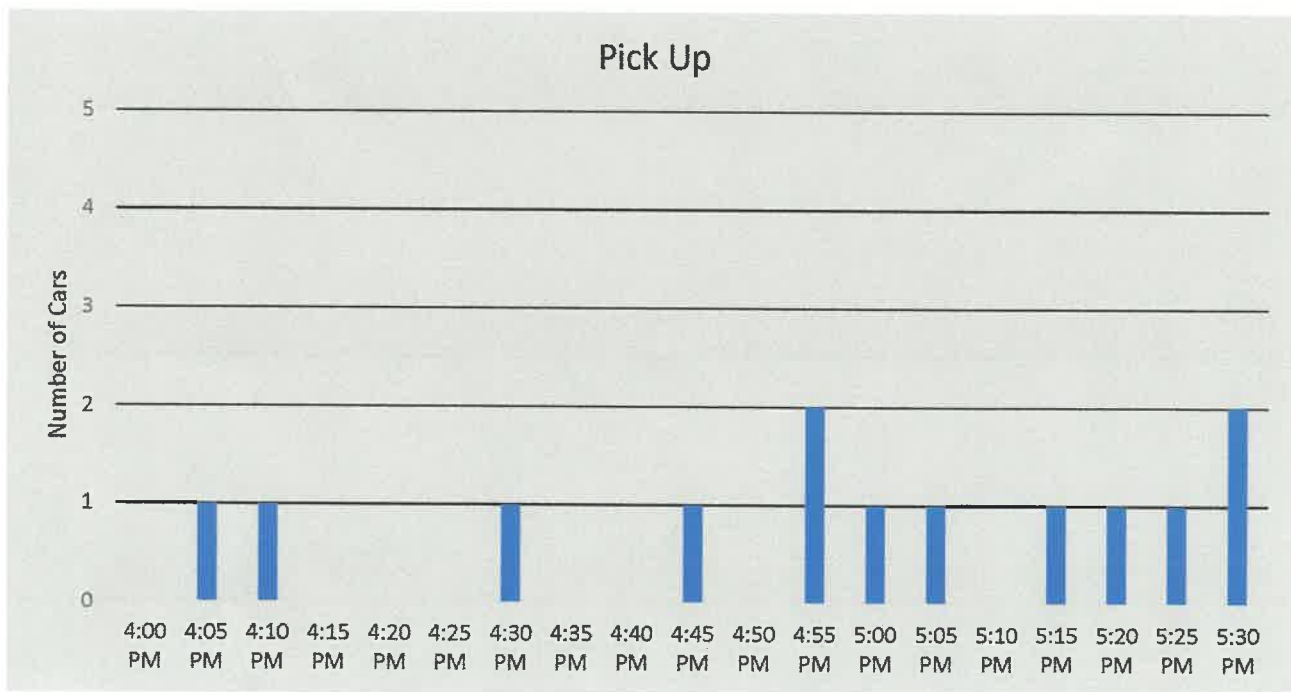
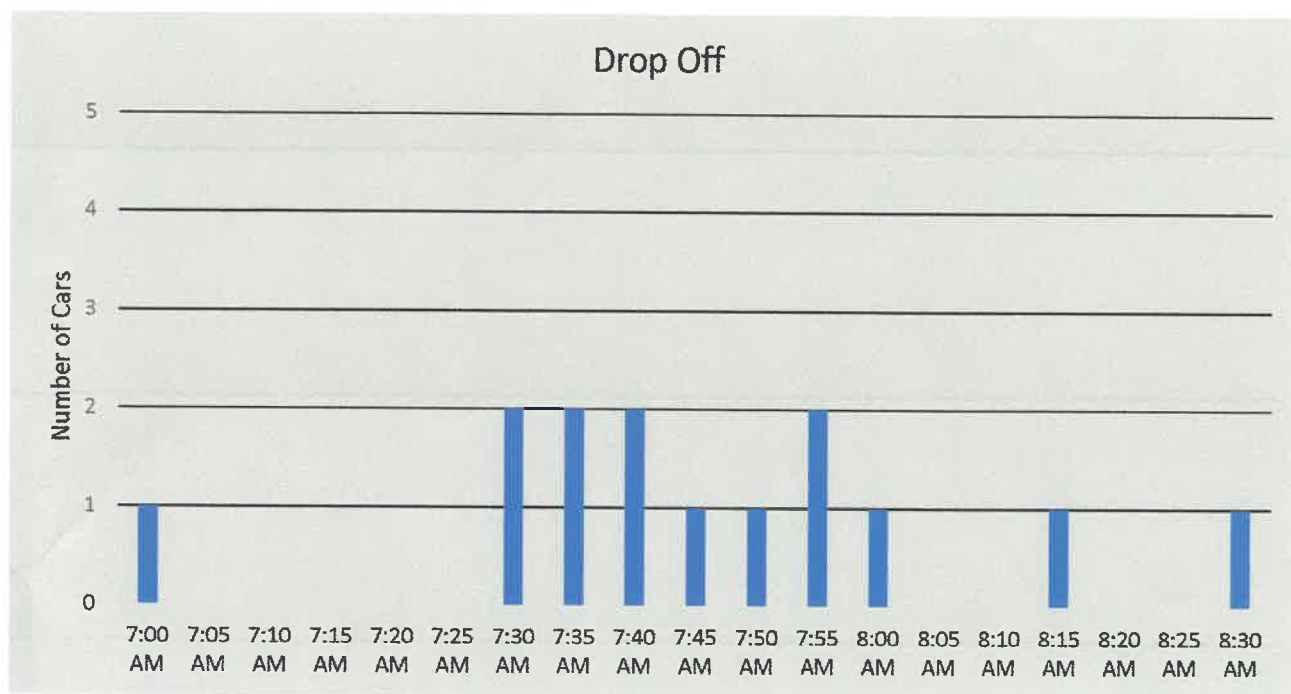


THURSDAY, JANUARY 23, 2020

8:14 a.m.



Tuesday, February 11, 2020



FEBRUARY 11, 2020

4:04 p.m.



4:09 p.m.



4:19 p.m.



4:32 p.m.



FEBRUARY 11, 2020

4:45 p.m.



4:53 p.m.



4:55 p.m.



5:00 p.m.



FEBRUARY 11, 2020

5:10 p.m.



5:21 p.m.



5:23 p.m.



5:29 p.m.



Little Lamb Employee Handbook

Page 11

Arrival:

The child and the family member should be greeted upon arrival to the center. The time the child arrives must be entered onto the attendance log immediately. Allowing proper time for the child to say good-bye and transition into freeplay should be allowed. An awareness of the differences in time and approach each family may require is essential to a smooth drop-off experience and transition for the child. Please be aware of any cues the parent may send your way seeking assistance in this area. Taking the child to the window to wave goodbye often helps both the parent and the child separate on a happy note. Placing open-ended materials out on the floor and table areas, before the children arrive, will also engage the child in play and allow for an easier transition.

Page 12

Outside Safety:

Teachers are reminded to always bring their clip boards with attendance records, the first aid kit, tissues, paper towels etc. with them anytime they leave the building. Staff members are responsible for securing both pool gates, and checking the yard for trash, standing water, and animal droppings, prior to allowing the children access to the walkway. Children are not to open or close the gates. One staff member in front of the group and one staff member at the end of the group will help ensure all children remain together. The last staff member to enter the playground must be sure the gate is closed and locked—all of the children must then be counted by staff members to ensure that everyone is present.

The class attendance log must accompany the group outside. The child must be signed in or out when he/she enters/exits from this area. A walkie-talkie or cell phone must also be available when the children are outside, so that communication between the inside and outside staff is always possible. All outside areas, including the walkway to the playground must be supervised.

Little Lamb Nursery, LLC Contract Addendum

The staff at Little Lamb Nursery, LLC takes the responsibility of ensuring the safety of our enrolled children very seriously. To this end, we offer the following as a way of clarifying our responsibilities.

1. The staff takes responsibility for your child as soon as you exit the building or playground. When you are still in the building, we would ask that your attention be focused on your child thereby assuring his/her safety. If you have special concerns surrounding these transitions, we encourage you to share them with us. If you would like to discuss your specific needs we would ask that you please call, send a note, or schedule a conference.
2. The staff turns responsibility of the supervision of your child back over to you once you have greeted your child upon entering the building or playground. We would ask that you personally open any gates for your child ensuring that no other children exit with your child. Please do not allow them to run ahead of you or enter the building without supervision. Please take your child by the hand to your vehicle to protect him/her from cars in either the street or the driveway. If you need a minute or two to converse with another parent, please keep your child with you by holding his/her hand.
3. Parents and other family members are always welcome. Feel free to stop in to visit us anytime. It is not necessary for you to call first, however if you wish to enter the sleep areas, please understand for the safety of our children, we must insist that a staff member escort you. Unsupervised access to sleeping children, by a parent or other family member, is not permitted.
4. In the event a Little Lamb child is joined by a sibling at drop-off or pick-up, we will not be held responsible for the safety of these other children. Please understand that staffing ratios do not allow for the supervision of these children; siblings should not be allowed to play unsupervised on the playground or roam the property unattended.
5. All vehicles, at either drop-off or pick-up, must have the **engines turned off and the keys removed from the ignition**. . Cars left running in the driveway pose a threat to your family and to others. Please do not allow siblings to play in the driveway or climb the trees on the property. We ask that you **do not** leave infants or young children alone in your car while you are inside our building. When exiting our driveway, please do not use the neighbor's private driveways as turn a rounds. We are located in a residential area and we ask that you treat our neighbors with courtesy and respect.

Infant Nursery
Toddler Educare

Developmentally Appropriate
Early Learning Center

Preschool
Program

6. Little Lamb Nursery, LLC staff may not provide childcare for your family at any time outside the center. They have signed a contract with Little Lamb Nursery, which prevents them from private contracting with any of our clients. Please do not ask them as this violates the terms of their employment!

It is the intention of the parties to this Agreement, that the Agreement be construed in accord with the laws of the State of New Hampshire. In the event that Little Lamb Nursery, LLC has to enforce the terms and conditions of this Agreement, Little Lamb Nursery, LLC in any suit and /or proceeding shall be entitled to reasonable attorney's fees and costs.

By signing below, I affirm that I understand and agree to adhere to the above policies. I have noted the holiday and vacation schedule and I have a copy of the Little Lamb Nursery, LLC Sick Child Policy. I understand that this agreement may be modified with written notification.

Parent or Legal Guardian Date _____

Parent or Legal Guardian Date _____

Infant Nursery
Toddler Educare

Developmentally Appropriate
Early Learning Center

Preschool
Program

June

Parking

I would like to mention the parking, specifically in terms of at least attempting to park three cars across the driveway. I understand that this is not always possible for those that arrive or depart in large SUVs but please try and be considerate and not park in the middle of two spaces as this makes it impossible for anyone else to drive in and park at the same time.

Please remember to take your small children by the hand when leaving and caution older children of the need to be by your side and not run ahead to the car. Please close all three of the gates behind you when leaving the playground. This extra step will help ensure that no child will be allowed into the parking area without a parent.

December Newsletter

Parking

Parking always become more of an issue in the winter because of the snow and ice. The darkness at pick up also plays into the need to park as many cars in the drive way as possible. Please remember to leave room to park three cars across and keep in mind that peak pick up traffic is at 5 pm, adjusting your schedule by just a few minutes either way may help with this congestion.

We would also suggest that you please take small children by the hand so they are unable to run ahead into the driveway. This is always an important safety precaution but even more so at this time of year, when it is dark and cold, and everyone is in a hurry! Please help us keep your child safe.



City of Dover, New Hampshire
APPLICATION FOR EXTENSIONS OF/ AMENDMENTS
TO/ WAIVERS FOR AN APPROVED PLAN

[Revised June 30, 2014]

Office Use Only Amount Paid: _____ Date/Time Received: _____

APPLICANT INFORMATION

Name of Applicant: V.M.D. Companies, LLC. Telephone # 978.703.4234
Address of Applicant: 733 Turnpike Street, Rte 114, North Andover, MA 01845 E-Mail jvitas@vmdcompanies.com
Project Name: Retail Store with associated drive-thru Project Location: Sterling Way
Planning File Number: P15-56 Date of Original Approval March 22, 2016
File Type: Conditional Use _____ Site Plan Review X Subdivision _____

EXTENSION INFORMATION (Note: notification of abutters required for first time extensions under Sec. 149-9.B and Sec. 155-24.B only)

Extension type requested (check one): Sec. 149-8.A Sec. 149-9.B Sec. 155-14.A Sec. 155-24.B
Current deadline date: _____ Number of Extensions Previously granted by Board _____
Reason(s) for extension/comments (attach additional sheets as needed): N/A

AMENDMENT INFORMATION

Condition(s) or portion of plan to be amended: 14,927 s.f. Retail pad in place of 2,930 s.f. Bank.
Medical Office Building reduced from 66,000 s.f. to 40,176 s.f.
Net decrease 13,827 s.f. building area
Parking spaces reduced from 382 to 334
Reason(s) for amendment/comments (attach additional sheets as needed): Proposed retail building with associated drive-thru was added to the scope which replaced the bank. The medical office building and parking count were reduced to accommodate the retail building amendment.

WAIVER INFORMATION

Site Review/Subdivision Regulations section(s) to be waived: N/A
Justification for waiver request(s) (attach additional sheets as needed): _____

SIGNATURES

I/We hereby submit this application to the 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: _____ Date: 2/12/20
Signature of Applicant (if different from owner): _____ Date: _____
Signature of Agent: A.B. _____ Date: 2/12/20
Ari B. Pollack, Gallagher, Callahan & Gartrell, P.C.

EXTENSIONS OF/ AMENDMENTS TO/ WAIVERS FOR AN APPROVED PLAN 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
11	2	VMD Equities DVR LLC, c/o V.M.D. Companies, LLC.	733 Turnpike Street, Rte 114, North Andover, MA 01845

Applicant (if different from owner):

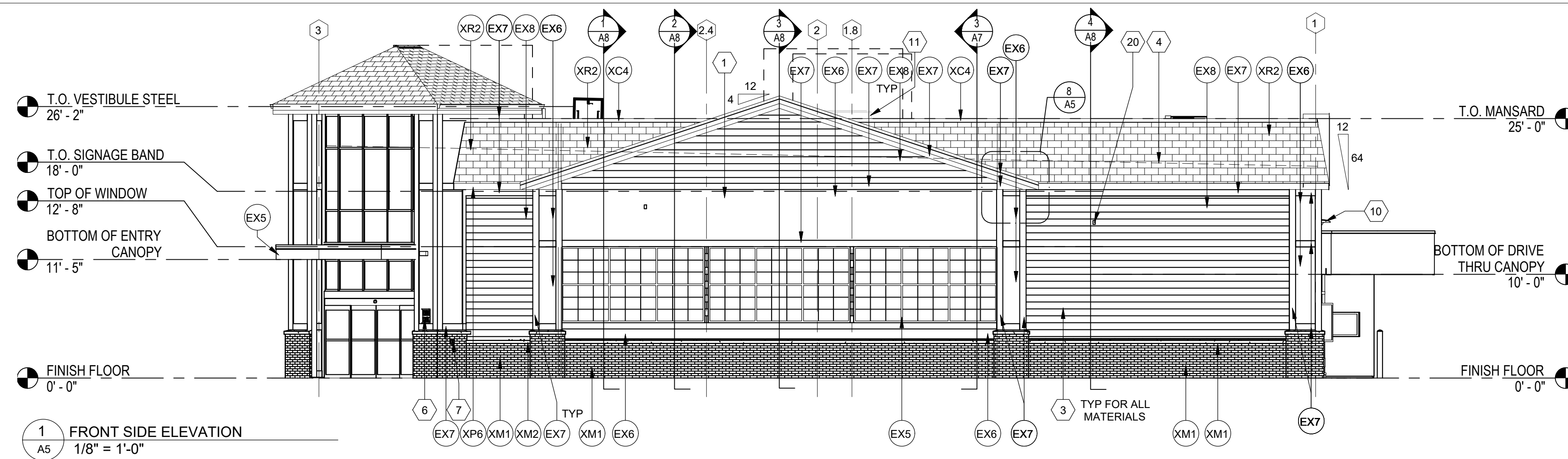
APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Michael A. Malynowski, PE	Allen & Major Associates, Inc.	400 Harvey Road, Manchester, NH 03103
James P. Gove, CWS	Gove Environmental Services	8 Continental Drive, BLDG 2 Unit H, Exeter, NH 03833
Samuel W. Gregorio, PE	TEC Inc.	169 Ocean Boulevard/PO Box 249, Hampton, NH 03842

Conservation Easement Holder:

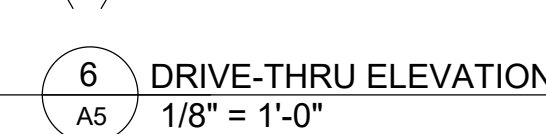
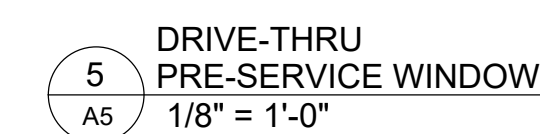
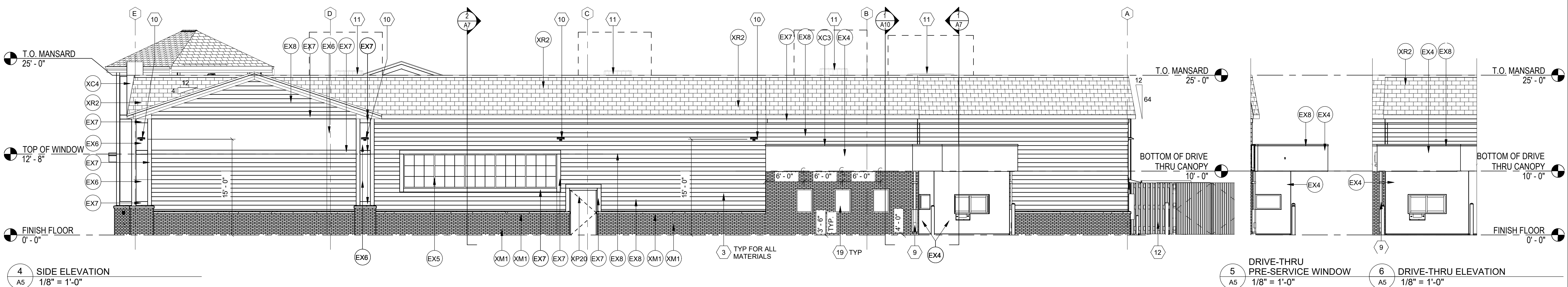
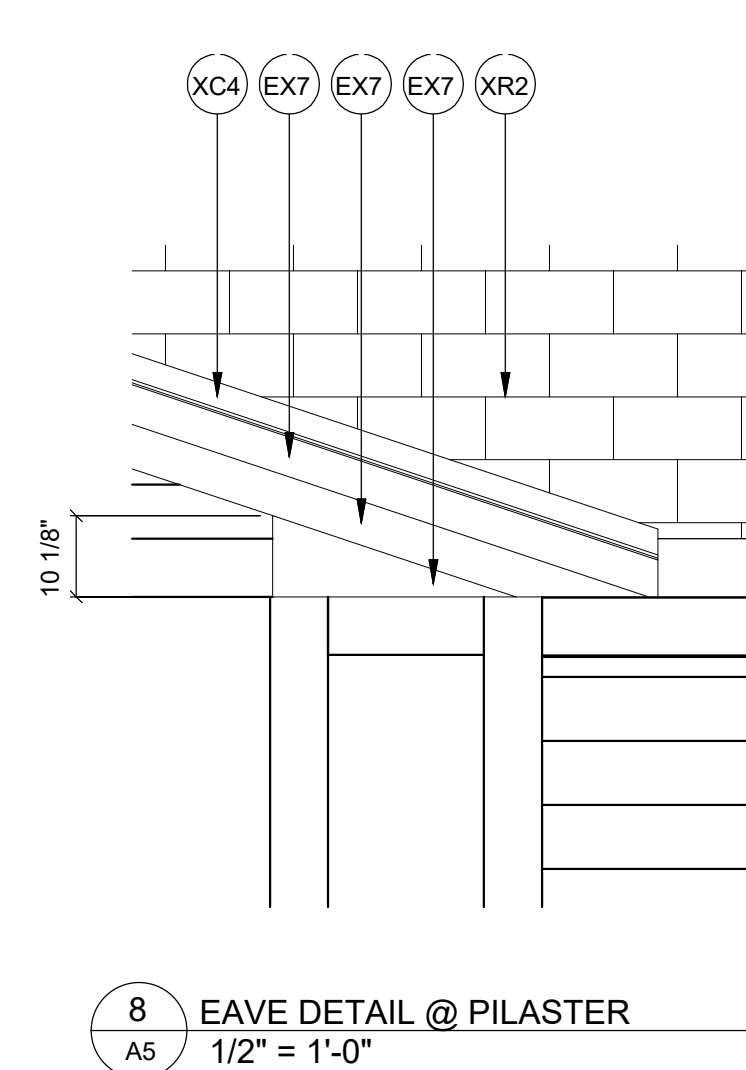
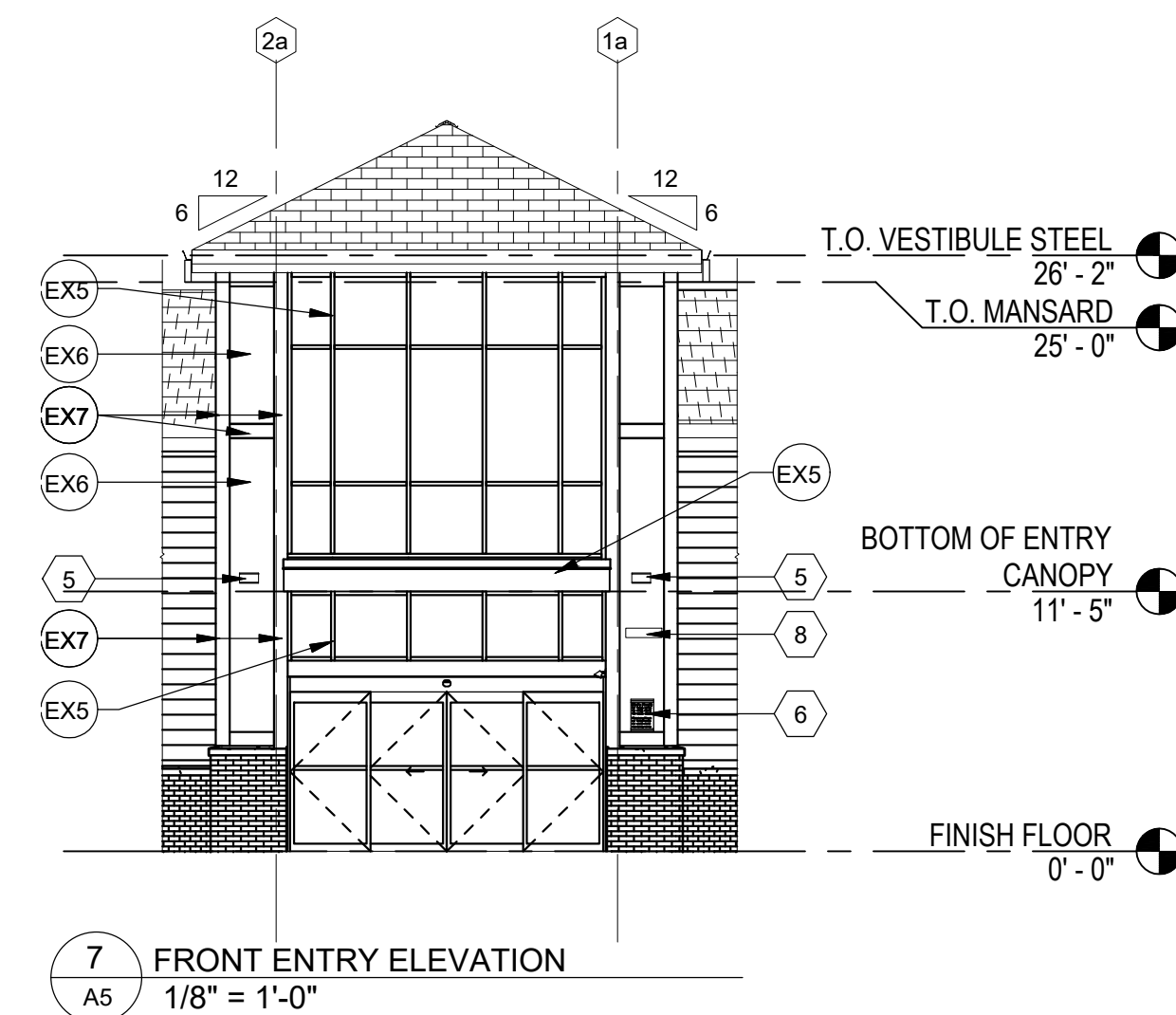
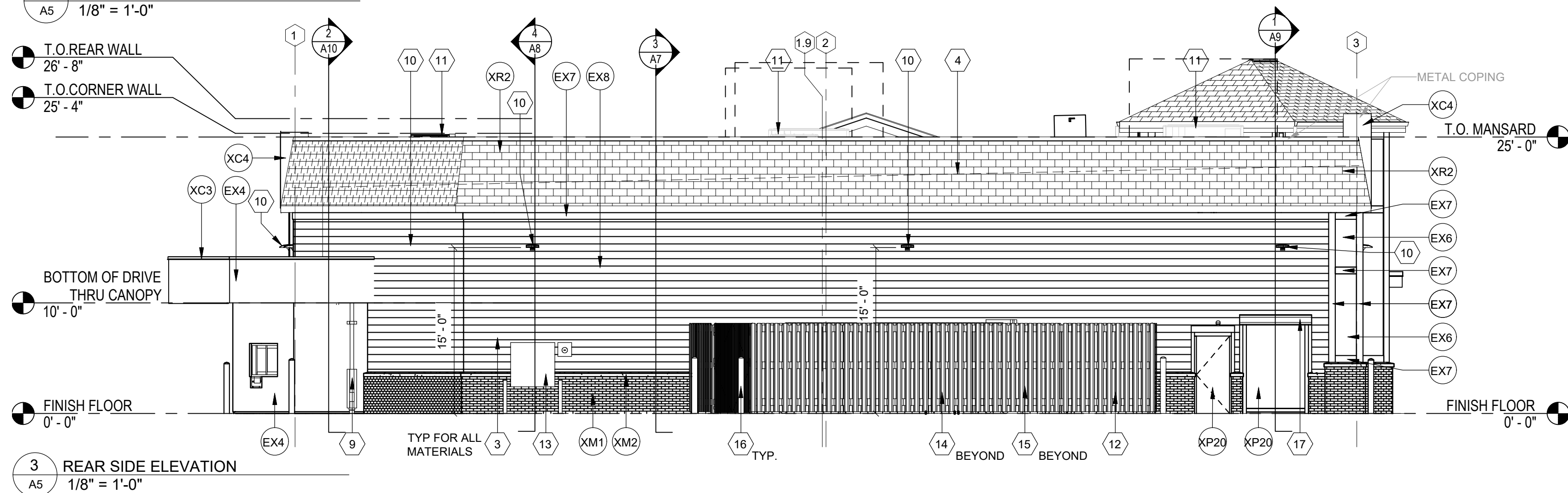
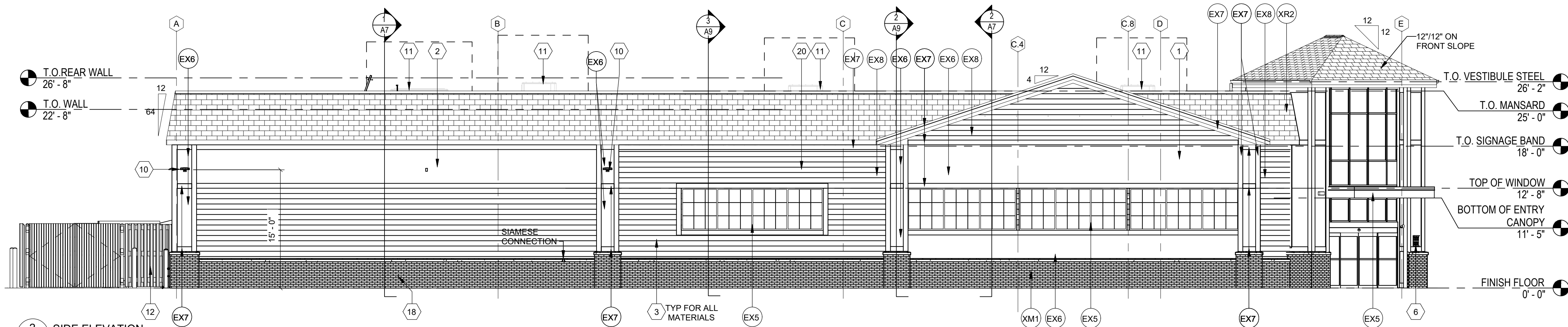
TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS



EXTERIOR MATERIAL SCHEDULE			
Material Mark	Material Manufacturer	Material Description	Material Comments
EX4	STO	STO LOTUSAN SYSTEM, 191 STOLIT, LOUTUSAN 1.5, COLOR, 9433 80 STO WHITE	CEMENTITIOUS PANEL
EX5			
EX6	ALLURA	ALLURA PANEL, COLOR: SNOW, FINISH: SMOOTH	
EX7	ALLURA	PLYCEM TRIM 5/4", COLOR: SNOW, FINISH: SMOOTH	THICKNESS: 3/4"(ACC PROFILES: 3.5", 4.5", 5.5", 7.25", 11.25" LENTH: 12'-0" WEIGHT 6.17LBS/SF
EX8	ALLURA / BENJAMIN MOORE	ALLURA LAP SIDING, SHOP PAINTED: PEWTER	
XC3	PAC-CLAD	PREFINISHED ALUMINUM COPING COLOR: BONE WHITE	
XC4	PAC-CLAD	PREFINISHED ALUMINUM COPING COLOR: CHARCOAL	
XM1	PINEHALL BRICK	PINEHALL BRICK	MORTAR: LAFARGE IVORY BUFF
XM2	CORDOVA	PRECAST CONCRETE SILL, COLOR: LIMESTONE,FINISH: GROUND & SEALED	MORTAR: LAFARGE IVORY BUFF
XP3	BENJAMIN MOORE	PAINT, BM AC-40 GLACIER WHITE, FINISH: SATIN	
XP6	BENJAMIN MOORE	PAINT, CC-150 BRILLIANT WHITE, FINISH: SATIN	
XP10	BENJAMIN MOORE	PAINT, RED ROCK 2005-10, FINISH: SATIN	
XP12	BENJAMIN MOORE	PAINT, HC-190 BLACK, FINISH: SATIN	
XP20	BENJAMIN MOORE	PAINT, DELRAY GRAY 1614 FINISH: SATIN	
XR2	CERTAINTEEED	CERTAINTEEED LANDMARK COLOR: PEWTER	INSTALL PER SPEC'S 5/8" EXPOSURE

NOTE: PAINT ALL EXPOSED CMU BLOCK AT GRADE UNDER NICHIIHA XP12.
PAINT UNDERSIDE OF BUMPOUT, CANOPIES AND ALL SIGN BANDS XP3.

EXTERIOR KEYED NOTES	
#	Notes
1	ILLUMINATED SIGNAGE CENTERED VERTICALLY IN SIGN BAND
2	ILLUMINATED ANCILLARY SIGN
3	SMOOTH "GREY" CMU BLOCK TO BE USED BEHIND EXTERIOR FINISH MATERIALS, TYP.
4	ROOF LINE BEYOND
5	LIGHT FIXTURE, RE: ELECTRICAL
6	STORE HOURS PLAQUE
7	KNOX BOX - WHERE REQUIRED BY JURISDICTION, PURCHASED FROM LOCAL FIRE DEPARTMENT. MOUNT PER FIRE DEPARTMENT REQUIREMENTS ON WALL ADJACENT TO ENTRANCE
8	MIN. 6" HIGH ADDRESS SIGN ON CONTRASTING BACKGROUND (CONFORM HEIGHTS, LOCATION AND QUANTITY WITH LOCAL FIRE MARSHAL)
9	DRIVE THRU DOWNPOUT
10	EXTERIOR WALL PACK LIGHTS, RE: ELECTRICAL
11	LINE OF RTU BEYOND
12	COMPACTOR ENCLOSURE
13	ELECTRICAL METERING CABINET, RE: ELECTRICAL
14	SEWER METER LOCATION, RE: PLUMBING
15	CONTRACTOR CLOSET DOOR - COORDINATE WITH COMPACTOR MANUFACTURER
16	BOLLARD, PLASTIC TO MATCH OSHA YELLOW RE: SPECIFICATIONS
17	RAIN HOOD
18	HOSE BIB
19	PHARMACY ADVERTISING DISPLAY BOARD, GC TO PURCHASE AND INSTALL, RE: ELECTRICAL
20	PAINT J-BOX TO MATCH FINISH

[illegible]

SPM:	KPM
DRAWING BY:	Author
DATE:	XX-XX-XXXX
JOB NUMBER:	XXXXXX
TITLE:	

SHEET NUMBER:

COMMENTS:

NOT FOR CONSTRUCTION

A5



February 14, 2020

To:	Christopher G. Parker Assistant City Manager Director of Planning and Strategic Initiatives 288 Central Avenue Dover, NH 03820	A&M Project #:	2734-01
		Re:	Sterling Way Amendment to an Approved Site Plan Drainage Revisions
Copy:			

Dear Mr. Parker

On behalf of the applicant, V.M.D. Companies, LLC., we are pleased to submit this letter summarizing the proposed revisions to the stormwater management at the above referenced property. This letter is intended to support the attached application for an Amendment to an Approved Plan, which seeks to amend the plans that were approved on March 22, 2016 under Planning Department file number P15-56.

The proposed retail store has a building footprint of 14,927 square feet and takes the place of the 2,930 square foot bank shown on the approved site plans. The medical office building was approved to be 66,000 gross square feet. This has been reduced to 40,176 square feet on the proposed site plans in order to accommodate the proposed retail store and associated parking and drive-thru. The proposed changes result in a net decrease in total floor area of approximately 13,827 square feet.

The proposed revisions to stormwater management are minor in nature and were designed to accommodate the proposed retail store shown on the attached Site Development Plans. Primarily the changes include relocation of stormwater piping and inlet structures and adjustments to the proposed rain gardens. The Proposed Watershed Plan has been updated to reflect the proposed amendment and is attached to this letter. Sub catchments that were affected by the proposed amendment are outlined with a bold black line on the Proposed Watershed Plan while sub catchments that were unaffected by the amendment are outlined with a dashed gray line. During the revised analysis it was realized that sub catchment 2.3 would be absorbed by surrounding sub catchments and was therefore removed from the new analysis.

HydroCAD 10.00 software was used to analyze stormwater flows and ensure that the proposed revisions would maintain or reduce the rate of runoff, when compared with the approved drainage analysis. Two analysis points were chosen, existing structures AD3 and CB114 (nomenclature from approved site plans). These were chosen because they marked the farthest downstream structures that would see a change in flow resulting from the proposed amendment. Table 1 below illustrates that rate of runoff to these structures will either remain unchanged or decrease as a result of the proposed amendment.

Also using HydroCAD software we analyzed the effect that the amendment may have on the existing stormwater detention basins. Table 2 below illustrates that the amendment will have negligible effects on the two existing detention basins.

Table 1

ANALYSIS POINT #1 (AD3)			
	2-Year	10-Year	50-Year
Existing Flow (CFS)	1.50	2.40	3.70
Proposed Flow (CFS)	1.10	2.20	3.70
Change (CFS)	-0.40	-0.20	0.00

ANALYSIS POINT #2 (CB114)			
	2-Year	10-Year	50-Year
Existing Flow (CFS)	16.70	29.20	48.70
Proposed Flow (CFS)	16.30	28.30	47.10
Change (CFS)	-0.40	-0.90	-1.60

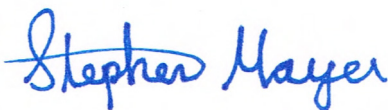
Table 2

50-Year Maximum Elevation				
	Approved	Amended	Change	Freeboard
Detention Basin 1	94.16	94.17	0.01'	1.83'
Detention Basin 2	91.92	91.85	-0.07'	1.15'

We trust that the information provided is sufficient to explain the minor revisions to stormwater management as proposed on the amended site plan. If you have any additional concerns please do not hesitate to contact our office.

Very Truly Yours,

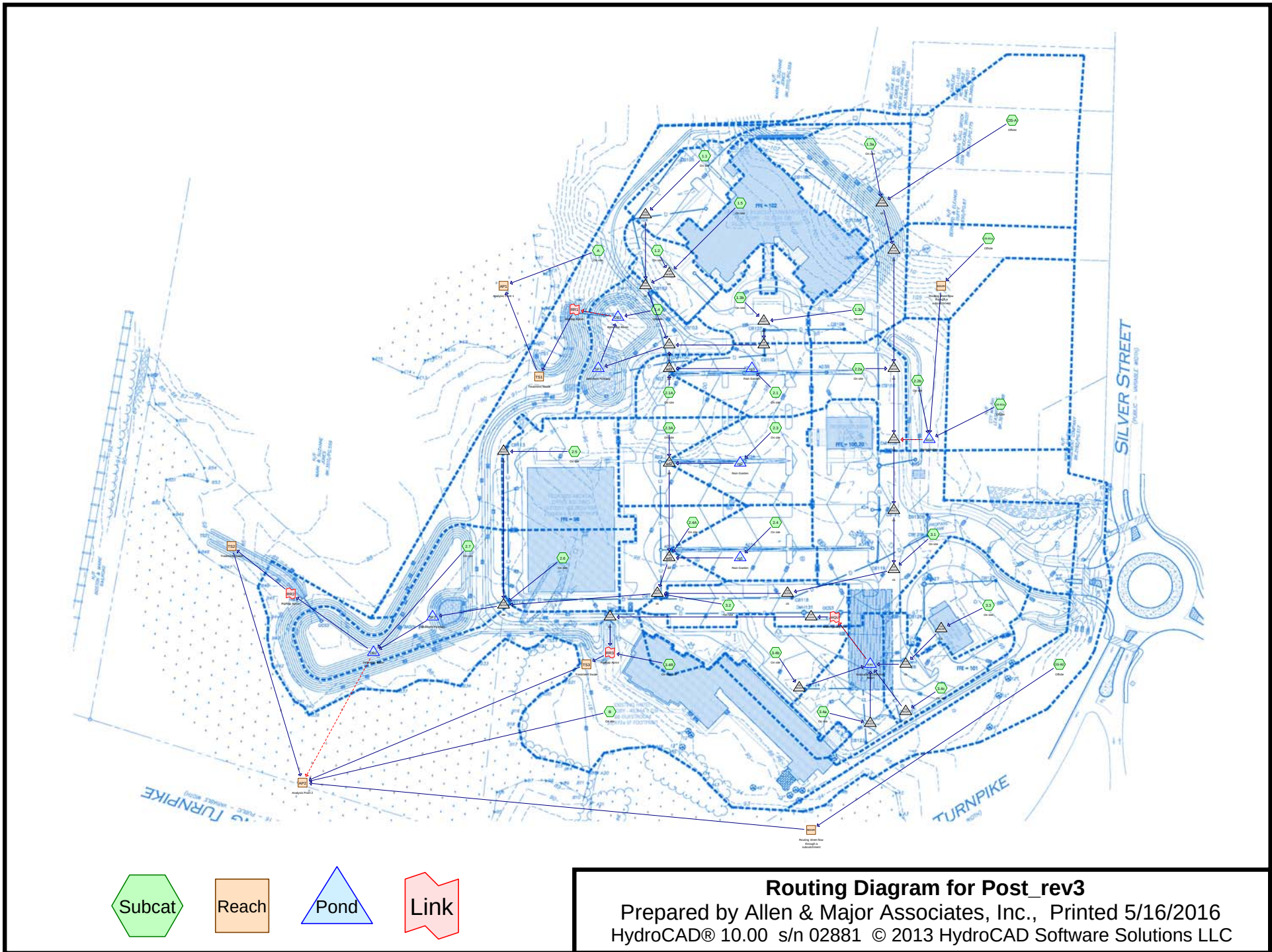
ALLEN & MAJOR ASSOCIATES, INC.



Stephen Mayer, PE
Project Engineer

Attachments:

Approved HydroCAD worksheets
Amended HydroCAD worksheets
Proposed Watershed Plan, PWS-1



Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
167,422	80	1/2 acre lots, 25% imp, HSG C (OS-A, OS-B1a, OS-B1b, OS-B2)
263,385	74	>75% Grass cover, Good, HSG C (1.1, 1.2, 1.3a, 1.3b, 1.3c, 1.4, 2.1, 2.1A, 2.2a, 2.2b, 2.3, 2.3A, 2.4, 2.4A, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3, 3.4a, 3.4b, 3.4c, A, B)
205,134	98	Paved parking, HSG C (1.1, 1.2, 1.3b, 1.3c, 2.1, 2.1A, 2.2a, 2.3, 2.3A, 2.4, 2.4A, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4a, 3.4b, 3.4c)
81,437	98	Roofs, HSG C (1.5, 2.5, 2.6, 3.1, 3.3, 3.4R, B)
11,729	98	Walkway, HSG C (2.2a, 2.3A, 2.4A, 2.5, 2.6, 3.1, 3.3, 3.4a, 3.4b, 3.4c, B)
5,873	98	Walkways, HSG C (1.1, 1.2, 1.3a, 1.3b, 1.3c)
58,384	70	Woods, Good, HSG C (1.1, 1.3a, 1.3c, 2.2b, 3.1, A, B)
793,364	84	TOTAL AREA

Subcatchment3.4a: On site	Runoff Area=16,118 sf 53.16% Impervious Runoff Depth=1.87" Tc=8.0 min CN=87 Runoff=0.7 cfs 2,513 cf
Subcatchment3.4b: On site	Runoff Area=16,118 sf 53.16% Impervious Runoff Depth=1.87" Tc=8.0 min CN=87 Runoff=0.7 cfs 2,513 cf
Subcatchment3.4c: On site	Runoff Area=16,119 sf 53.15% Impervious Runoff Depth=1.87" Tc=8.0 min CN=87 Runoff=0.7 cfs 2,513 cf
Subcatchment3.4R: On site roof	Runoff Area=8,997 sf 100.00% Impervious Runoff Depth=2.92" Tc=5.0 min CN=98 Runoff=0.6 cfs 2,188 cf
SubcatchmentA: On site	Runoff Area=44,531 sf 0.00% Impervious Runoff Depth=0.90" Flow Length=120' Slope=0.010 ' Tc=7.4 min CN=72 Runoff=0.9 cfs 3,335 cf
SubcatchmentB: On site	Runoff Area=101,653 sf 14.22% Impervious Runoff Depth=1.18" Flow Length=135' Slope=0.017 ' Tc=5.4 min CN=77 Runoff=3.1 cfs 9,964 cf
SubcatchmentOS-A: Offsite	Runoff Area=54,783 sf 25.00% Impervious Runoff Depth=1.36" Flow Length=236' Slope=0.050 ' Tc=5.0 min CN=80 Runoff=2.0 cfs 6,225 cf
SubcatchmentOS-B1a: Offsite	Runoff Area=20,223 sf 25.00% Impervious Runoff Depth=1.36" Flow Length=236' Slope=0.050 ' Tc=5.0 min CN=80 Runoff=0.7 cfs 2,298 cf
SubcatchmentOS-B1b: Offsite	Runoff Area=45,050 sf 25.00% Impervious Runoff Depth=1.36" Flow Length=236' Slope=0.050 ' Tc=5.0 min CN=80 Runoff=1.6 cfs 5,119 cf
SubcatchmentOS-B2: Offsite	Runoff Area=47,366 sf 25.00% Impervious Runoff Depth=1.36" Flow Length=236' Slope=0.050 ' Tc=5.0 min CN=80 Runoff=1.7 cfs 5,382 cf
Reach 9002R: Routing sheet flow through a subcatchment	Avg. Flow Depth=0.02' Max Vel=0.27 fps Inflow=0.7 cfs 2,298 cf n=0.150 L=100.0' S=0.120 ' Capacity=523.8 cfs Outflow=0.6 cfs 2,298 cf
Reach 9003R: Routing sheet flow through a subcatchment	Avg. Flow Depth=0.03' Max Vel=0.11 fps Inflow=1.7 cfs 5,382 cf n=0.150 L=781.0' S=0.015 ' Capacity=187.4 cfs Outflow=0.3 cfs 5,382 cf
Reach AP1: Analysis Point 1	Inflow=0.9 cfs 16,446 cf Outflow=0.9 cfs 16,446 cf
Reach AP2: Analysis Point 2	Inflow=3.4 cfs 69,730 cf Outflow=3.4 cfs 69,730 cf
Reach TS1: Treatment Swale	Avg. Flow Depth=0.42' Max Vel=0.33 fps Inflow=0.6 cfs 13,111 cf n=0.150 L=130.0' S=0.005 ' Capacity=17.2 cfs Outflow=0.6 cfs 13,111 cf
Reach TS2: Treatment Swale	Avg. Flow Depth=0.53' Max Vel=0.42 fps Inflow=2.2 cfs 41,313 cf n=0.150 L=130.0' S=0.005 ' Capacity=24.9 cfs Outflow=2.1 cfs 41,308 cf
Reach TS3: Treatment Swale	Avg. Flow Depth=0.27' Max Vel=0.27 fps Inflow=0.8 cfs 13,076 cf n=0.150 L=160.0' S=0.005 ' Capacity=26.8 cfs Outflow=0.6 cfs 13,076 cf
Pond ad1: ad	Peak Elev=93.41' Inflow=4.2 cfs 12,681 cf 24.0" Round Culvert n=0.013 L=66.0' S=0.006 ' Outflow=4.2 cfs 12,681 cf
Pond ad2: ad	Peak Elev=93.95' Inflow=2.2 cfs 6,681 cf 15.0" Round Culvert n=0.013 L=121.0' S=0.005 ' Outflow=2.2 cfs 6,681 cf
Pond ad3: ad	Peak Elev=93.94' Inflow=1.5 cfs 4,489 cf 15.0" Round Culvert n=0.013 L=11.0' S=0.010 ' Outflow=1.5 cfs 4,489 cf
Pond cb102: cb	Peak Elev=95.14' Inflow=2.5 cfs 8,953 cf 15.0" Round Culvert n=0.013 L=4.0' S=0.020 ' Outflow=2.5 cfs 8,953 cf
Pond cb104: cb	Peak Elev=95.41' Inflow=0.8 cfs 2,424 cf 15.0" Round Culvert n=0.013 L=105.0' S=0.011 ' Outflow=0.8 cfs 2,424 cf

Pond cb106: cb	Peak Elev=94.09' Inflow=1.4 cfs 4,237 cf 24.0" Round Culvert n=0.013 L=132.0' S=0.005 ' /' Outflow=1.4 cfs 4,237 cf
Pond cb107: cb	Peak Elev=94.73' Inflow=1.4 cfs 4,237 cf 18.0" Round Culvert n=0.013 L=32.0' S=0.017 ' /' Outflow=1.4 cfs 4,237 cf
Pond cb108b: cb	Peak Elev=97.84' Inflow=2.6 cfs 8,355 cf 24.0" Round Culvert n=0.013 L=63.0' S=0.005 ' /' Outflow=2.6 cfs 8,355 cf
Pond cb110: cb	Peak Elev=96.58' Inflow=3.5 cfs 11,073 cf 24.0" Round Culvert n=0.013 L=109.0' S=0.005 ' /' Outflow=3.5 cfs 11,073 cf
Pond cb113: cb	Peak Elev=93.87' Inflow=1.6 cfs 5,829 cf 15.0" Round Culvert n=0.013 L=216.0' S=0.006 ' /' Outflow=1.6 cfs 5,829 cf
Pond cb114: cb	Peak Elev=91.76' Inflow=16.7 cfs 55,616 cf 36.0" Round Culvert n=0.013 L=64.0' S=0.005 ' /' Outflow=16.7 cfs 55,616 cf
Pond cb117: cb	Peak Elev=93.09' Inflow=13.9 cfs 45,549 cf 30.0" Round Culvert n=0.013 L=214.0' S=0.007 ' /' Outflow=13.9 cfs 45,549 cf
Pond cb118: cb	Peak Elev=94.22' Inflow=8.7 cfs 29,092 cf 30.0" Round Culvert n=0.013 L=183.0' S=0.005 ' /' Outflow=8.7 cfs 29,092 cf
Pond cb119: cb	Peak Elev=95.00' Inflow=8.7 cfs 29,092 cf 30.0" Round Culvert n=0.013 L=128.0' S=0.005 ' /' Outflow=8.7 cfs 29,092 cf
Pond cb121: cb	Peak Elev=95.66' Inflow=5.4 cfs 18,482 cf 24.0" Round Culvert n=0.013 L=70.0' S=0.005 ' /' Outflow=5.4 cfs 18,482 cf
Pond cb123: cb	Peak Elev=93.37' Inflow=0.7 cfs 2,513 cf 12.0" Round Culvert n=0.013 L=71.0' S=0.005 ' /' Outflow=0.7 cfs 2,513 cf
Pond cb124: cb	Peak Elev=95.14' Inflow=0.7 cfs 2,513 cf 12.0" Round Culvert n=0.013 L=62.0' S=0.010 ' /' Outflow=0.7 cfs 2,513 cf
Pond cb125: cb	Peak Elev=94.65' Inflow=0.7 cfs 2,513 cf 12.0" Round Culvert n=0.013 L=47.0' S=0.010 ' /' Outflow=0.7 cfs 2,513 cf
Pond cb126: cb	Peak Elev=96.44' Inflow=1.1 cfs 3,350 cf 12.0" Round Culvert n=0.013 L=61.0' S=0.010 ' /' Outflow=1.1 cfs 3,350 cf
Pond DB1: Detention Basin	Peak Elev=92.95' Storage=10,535 cf Inflow=6.5 cfs 19,715 cf Primary=0.6 cfs 13,111 cf Secondary=0.0 cfs 0 cf Outflow=0.6 cfs 13,111 cf
Pond DB2: Detention Basin	Peak Elev=90.06' Storage=28,105 cf Inflow=18.3 cfs 53,622 cf Primary=2.2 cfs 41,313 cf Secondary=0.0 cfs 0 cf Outflow=2.2 cfs 41,313 cf
Pond dmh100: cb	Peak Elev=93.88' Inflow=6.1 cfs 20,103 cf 24.0" Round Culvert n=0.013 L=77.0' S=0.010 ' /' Outflow=6.1 cfs 20,103 cf
Pond dmh101: cb	Peak Elev=94.49' Inflow=3.2 cfs 11,377 cf 18.0" Round Culvert n=0.013 L=96.0' S=0.007 ' /' Outflow=3.2 cfs 11,377 cf
Pond dmh108a: cb	Peak Elev=97.40' Inflow=2.6 cfs 8,355 cf 24.0" Round Culvert n=0.013 L=170.0' S=0.005 ' /' Outflow=2.6 cfs 8,355 cf
Pond dmh109: cb	Peak Elev=96.06' Inflow=5.4 cfs 18,482 cf 24.0" Round Culvert n=0.013 L=58.0' S=0.005 ' /' Outflow=5.4 cfs 18,482 cf
Pond dmh126: cb	Peak Elev=95.59' Inflow=1.1 cfs 3,350 cf 15.0" Round Culvert n=0.013 L=14.0' S=0.010 ' /' Outflow=1.1 cfs 3,350 cf
Pond dmh131: cb	Peak Elev=92.29' Inflow=0.4 cfs 10,888 cf 15.0" Round Culvert n=0.013 L=277.0' S=0.006 ' /' Outflow=0.4 cfs 10,888 cf

Subcatchment3.4a: On site	Runoff Area=16,118 sf 53.16% Impervious Runoff Depth=3.33" Tc=8.0 min CN=87 Runoff=1.3 cfs 4,476 cf
Subcatchment3.4b: On site	Runoff Area=16,118 sf 53.16% Impervious Runoff Depth=3.33" Tc=8.0 min CN=87 Runoff=1.3 cfs 4,476 cf
Subcatchment3.4c: On site	Runoff Area=16,119 sf 53.15% Impervious Runoff Depth=3.33" Tc=8.0 min CN=87 Runoff=1.3 cfs 4,476 cf
Subcatchment3.4R: On site roof	Runoff Area=8,997 sf 100.00% Impervious Runoff Depth=4.51" Tc=5.0 min CN=98 Runoff=1.0 cfs 3,384 cf
SubcatchmentA: On site	Runoff Area=44,531 sf 0.00% Impervious Runoff Depth=2.01" Flow Length=120' Slope=0.010 '/' Tc=7.4 min CN=72 Runoff=2.2 cfs 7,448 cf
SubcatchmentB: On site	Runoff Area=101,653 sf 14.22% Impervious Runoff Depth=2.42" Flow Length=135' Slope=0.017 '/' Tc=5.4 min CN=77 Runoff=6.6 cfs 20,460 cf
SubcatchmentOS-A: Offsite	Runoff Area=54,783 sf 25.00% Impervious Runoff Depth=2.68" Flow Length=236' Slope=0.050 '/' Tc=5.0 min CN=80 Runoff=3.9 cfs 12,216 cf
SubcatchmentOS-B1a: Offsite	Runoff Area=20,223 sf 25.00% Impervious Runoff Depth=2.68" Flow Length=236' Slope=0.050 '/' Tc=5.0 min CN=80 Runoff=1.5 cfs 4,510 cf
SubcatchmentOS-B1b: Offsite	Runoff Area=45,050 sf 25.00% Impervious Runoff Depth=2.68" Flow Length=236' Slope=0.050 '/' Tc=5.0 min CN=80 Runoff=3.2 cfs 10,046 cf
SubcatchmentOS-B2: Offsite	Runoff Area=47,366 sf 25.00% Impervious Runoff Depth=2.68" Flow Length=236' Slope=0.050 '/' Tc=5.0 min CN=80 Runoff=3.4 cfs 10,562 cf
Reach 9002R: Routing sheet flow through a subcatchment	Avg. Flow Depth=0.03' Max Vel=0.36 fps Inflow=1.5 cfs 4,510 cf n=0.150 L=100.0' S=0.120 '/' Capacity=523.8 cfs Outflow=1.3 cfs 4,510 cf
Reach 9003R: Routing sheet flow through a subcatchment	Avg. Flow Depth=0.05' Max Vel=0.16 fps Inflow=3.4 cfs 10,562 cf n=0.150 L=781.0' S=0.015 '/' Capacity=187.4 cfs Outflow=0.9 cfs 10,562 cf
Reach AP1: Analysis Point 1	Inflow=4.4 cfs 36,266 cf Outflow=4.4 cfs 36,266 cf
Reach AP2: Analysis Point 2	Inflow=20.2 cfs 141,035 cf Outflow=20.2 cfs 141,035 cf
Reach TS1: Treatment Swale	Avg. Flow Depth=1.02' Max Vel=0.53 fps Inflow=4.0 cfs 28,818 cf n=0.150 L=130.0' S=0.005 '/' Capacity=17.2 cfs Outflow=3.8 cfs 28,818 cf
Reach TS2: Treatment Swale	Avg. Flow Depth=1.60' Max Vel=0.79 fps Inflow=16.4 cfs 87,315 cf n=0.150 L=130.0' S=0.005 '/' Capacity=24.9 cfs Outflow=16.1 cfs 87,310 cf
Reach TS3: Treatment Swale	Avg. Flow Depth=0.53' Max Vel=0.40 fps Inflow=2.2 cfs 22,702 cf n=0.150 L=160.0' S=0.005 '/' Capacity=26.8 cfs Outflow=2.1 cfs 22,702 cf
Pond ad1: ad	Peak Elev=93.72' Inflow=6.7 cfs 21,404 cf 24.0" Round Culvert n=0.013 L=66.0' S=0.006 '/' Outflow=6.7 cfs 21,404 cf
Pond ad2: ad	Peak Elev=94.25' Inflow=3.5 cfs 11,223 cf 15.0" Round Culvert n=0.013 L=121.0' S=0.005 '/' Outflow=3.5 cfs 11,223 cf
Pond ad3: ad	Peak Elev=94.16' Inflow=2.4 cfs 7,604 cf 15.0" Round Culvert n=0.013 L=11.0' S=0.010 '/' Outflow=2.4 cfs 7,604 cf
Pond cb102: cb	Peak Elev=95.43' Inflow=3.8 cfs 14,114 cf 15.0" Round Culvert n=0.013 L=4.0' S=0.020 '/' Outflow=3.8 cfs 14,114 cf
Pond cb104: cb	Peak Elev=95.56' Inflow=1.4 cfs 4,376 cf 15.0" Round Culvert n=0.013 L=105.0' S=0.011 '/' Outflow=1.4 cfs 4,376 cf

Pond cb106: cb	Peak Elev=94.28' Inflow=2.4 cfs 7,577 cf 24.0" Round Culvert n=0.013 L=132.0' S=0.005 ' /' Outflow=2.4 cfs 7,577 cf
Pond cb107: cb	Peak Elev=94.92' Inflow=2.4 cfs 7,577 cf 18.0" Round Culvert n=0.013 L=32.0' S=0.017 ' /' Outflow=2.4 cfs 7,577 cf
Pond cb108b: cb	Peak Elev=98.23' Inflow=5.4 cfs 16,809 cf 24.0" Round Culvert n=0.013 L=63.0' S=0.005 ' /' Outflow=5.4 cfs 16,809 cf
Pond cb110: cb	Peak Elev=96.99' Inflow=6.7 cfs 21,346 cf 24.0" Round Culvert n=0.013 L=109.0' S=0.005 ' /' Outflow=6.7 cfs 21,346 cf
Pond cb113: cb	Peak Elev=94.06' Inflow=2.5 cfs 9,249 cf 15.0" Round Culvert n=0.013 L=216.0' S=0.006 ' /' Outflow=2.5 cfs 9,249 cf
Pond cb114: cb	Peak Elev=92.54' Inflow=29.2 cfs 98,745 cf 36.0" Round Culvert n=0.013 L=64.0' S=0.005 ' /' Outflow=29.2 cfs 98,745 cf
Pond cb117: cb	Peak Elev=93.85' Inflow=24.9 cfs 82,683 cf 30.0" Round Culvert n=0.013 L=214.0' S=0.007 ' /' Outflow=24.9 cfs 82,683 cf
Pond cb118: cb	Peak Elev=94.86' Inflow=16.7 cfs 55,365 cf 30.0" Round Culvert n=0.013 L=183.0' S=0.005 ' /' Outflow=16.7 cfs 55,365 cf
Pond cb119: cb	Peak Elev=95.65' Inflow=16.7 cfs 55,365 cf 30.0" Round Culvert n=0.013 L=128.0' S=0.005 ' /' Outflow=16.7 cfs 55,365 cf
Pond cb121: cb	Peak Elev=96.31' Inflow=11.0 cfs 36,953 cf 24.0" Round Culvert n=0.013 L=70.0' S=0.005 ' /' Outflow=11.0 cfs 36,953 cf
Pond cb123: cb	Peak Elev=93.57' Inflow=1.3 cfs 4,476 cf 12.0" Round Culvert n=0.013 L=71.0' S=0.005 ' /' Outflow=1.3 cfs 4,476 cf
Pond cb124: cb	Peak Elev=95.31' Inflow=1.3 cfs 4,476 cf 12.0" Round Culvert n=0.013 L=62.0' S=0.010 ' /' Outflow=1.3 cfs 4,476 cf
Pond cb125: cb	Peak Elev=94.83' Inflow=1.3 cfs 4,476 cf 12.0" Round Culvert n=0.013 L=47.0' S=0.010 ' /' Outflow=1.3 cfs 4,476 cf
Pond cb126: cb	Peak Elev=96.66' Inflow=1.9 cfs 5,890 cf 12.0" Round Culvert n=0.013 L=61.0' S=0.010 ' /' Outflow=1.9 cfs 5,890 cf
Pond DB1: Detention Basin	Peak Elev=93.73' Storage=16,382 cf Inflow=11.1 cfs 35,429 cf Primary=4.0 cfs 28,818 cf Secondary=0.0 cfs 0 cf Outflow=4.0 cfs 28,818 cf
Pond DB2: Detention Basin	Peak Elev=90.62' Storage=36,601 cf Inflow=30.6 cfs 99,634 cf Primary=16.4 cfs 87,315 cf Secondary=0.0 cfs 0 cf Outflow=16.4 cfs 87,315 cf
Pond dmh100: cb	Peak Elev=94.26' Inflow=9.9 cfs 33,671 cf 24.0" Round Culvert n=0.013 L=77.0' S=0.010 ' /' Outflow=9.9 cfs 33,671 cf
Pond dmh101: cb	Peak Elev=94.80' Inflow=5.2 cfs 18,490 cf 18.0" Round Culvert n=0.013 L=96.0' S=0.007 ' /' Outflow=5.2 cfs 18,490 cf
Pond dmh108a: cb	Peak Elev=97.76' Inflow=5.4 cfs 16,809 cf 24.0" Round Culvert n=0.013 L=170.0' S=0.005 ' /' Outflow=5.4 cfs 16,809 cf
Pond dmh109: cb	Peak Elev=96.71' Inflow=11.0 cfs 36,953 cf 24.0" Round Culvert n=0.013 L=58.0' S=0.005 ' /' Outflow=11.0 cfs 36,953 cf
Pond dmh126: cb	Peak Elev=95.80' Inflow=1.9 cfs 5,890 cf 15.0" Round Culvert n=0.013 L=14.0' S=0.010 ' /' Outflow=1.9 cfs 5,890 cf
Pond dmh131: cb	Peak Elev=92.73' Inflow=2.0 cfs 19,318 cf 15.0" Round Culvert n=0.013 L=277.0' S=0.006 ' /' Outflow=2.0 cfs 19,318 cf

Subcatchment3.4a: On site	Runoff Area=16,118 sf 53.16% Impervious Runoff Depth=5.65" Tc=8.0 min CN=87 Runoff=2.2 cfs 7,594 cf
Subcatchment3.4b: On site	Runoff Area=16,118 sf 53.16% Impervious Runoff Depth=5.65" Tc=8.0 min CN=87 Runoff=2.2 cfs 7,594 cf
Subcatchment3.4c: On site	Runoff Area=16,119 sf 53.15% Impervious Runoff Depth=5.65" Tc=8.0 min CN=87 Runoff=2.2 cfs 7,594 cf
Subcatchment3.4R: On site roof	Runoff Area=8,997 sf 100.00% Impervious Runoff Depth=6.94" Tc=5.0 min CN=98 Runoff=1.5 cfs 5,204 cf
SubcatchmentA: On site	Runoff Area=44,531 sf 0.00% Impervious Runoff Depth=3.98" Flow Length=120' Slope=0.010 '/' Tc=7.4 min CN=72 Runoff=4.5 cfs 14,780 cf
SubcatchmentB: On site	Runoff Area=101,653 sf 14.22% Impervious Runoff Depth=4.53" Flow Length=135' Slope=0.017 '/' Tc=5.4 min CN=77 Runoff=12.2 cfs 38,357 cf
SubcatchmentOS-A: Offsite	Runoff Area=54,783 sf 25.00% Impervious Runoff Depth=4.86" Flow Length=236' Slope=0.050 '/' Tc=5.0 min CN=80 Runoff=7.1 cfs 22,191 cf
SubcatchmentOS-B1a: Offsite	Runoff Area=20,223 sf 25.00% Impervious Runoff Depth=4.86" Flow Length=236' Slope=0.050 '/' Tc=5.0 min CN=80 Runoff=2.6 cfs 8,192 cf
SubcatchmentOS-B1b: Offsite	Runoff Area=45,050 sf 25.00% Impervious Runoff Depth=4.86" Flow Length=236' Slope=0.050 '/' Tc=5.0 min CN=80 Runoff=5.9 cfs 18,248 cf
SubcatchmentOS-B2: Offsite	Runoff Area=47,366 sf 25.00% Impervious Runoff Depth=4.86" Flow Length=236' Slope=0.050 '/' Tc=5.0 min CN=80 Runoff=6.2 cfs 19,186 cf
Reach 9002R: Routing sheet flow through a subcatchment	Avg. Flow Depth=0.05' Max Vel=0.45 fps Inflow=2.6 cfs 8,192 cf n=0.150 L=100.0' S=0.120 '/' Capacity=523.8 cfs Outflow=2.3 cfs 8,192 cf
Reach 9003R: Routing sheet flow through a subcatchment	Avg. Flow Depth=0.08' Max Vel=0.22 fps Inflow=6.2 cfs 19,186 cf n=0.150 L=781.0' S=0.015 '/' Capacity=187.4 cfs Outflow=2.0 cfs 19,186 cf
Reach AP1: Analysis Point 1	Inflow=14.7 cfs 68,482 cf Outflow=14.7 cfs 68,482 cf
Reach AP2: Analysis Point 2	Inflow=31.8 cfs 256,782 cf Outflow=31.8 cfs 256,782 cf
Reach TS1: Treatment Swale	Avg. Flow Depth=1.72' Max Vel=0.72 fps Inflow=12.3 cfs 53,702 cf n=0.150 L=130.0' S=0.005 '/' Capacity=17.2 cfs Outflow=12.2 cfs 53,702 cf
Reach TS2: Treatment Swale	Avg. Flow Depth=1.78' Max Vel=0.84 fps Inflow=19.8 cfs 161,359 cf n=0.150 L=130.0' S=0.005 '/' Capacity=24.9 cfs Outflow=19.8 cfs 161,354 cf
Reach TS3: Treatment Swale	Avg. Flow Depth=0.98' Max Vel=0.56 fps Inflow=6.9 cfs 37,885 cf n=0.150 L=160.0' S=0.005 '/' Capacity=26.8 cfs Outflow=6.5 cfs 37,885 cf
Pond ad1: ad	Peak Elev=94.13' Inflow=10.4 cfs 34,812 cf 24.0" Round Culvert n=0.013 L=66.0' S=0.006 '/' Outflow=10.4 cfs 34,812 cf
Pond ad2: ad	Peak Elev=95.10' Inflow=5.4 cfs 18,200 cf 15.0" Round Culvert n=0.013 L=121.0' S=0.005 '/' Outflow=5.4 cfs 18,200 cf
Pond ad3: ad	Peak Elev=94.45' Inflow=3.7 cfs 12,385 cf 15.0" Round Culvert n=0.013 L=11.0' S=0.010 '/' Outflow=3.7 cfs 12,385 cf
Pond cb102: cb	Peak Elev=95.95' Inflow=5.8 cfs 22,006 cf 15.0" Round Culvert n=0.013 L=4.0' S=0.020 '/' Outflow=5.8 cfs 22,006 cf
Pond cb104: cb	Peak Elev=95.76' Inflow=2.4 cfs 7,494 cf 15.0" Round Culvert n=0.013 L=105.0' S=0.011 '/' Outflow=2.4 cfs 7,494 cf

Post_rev3

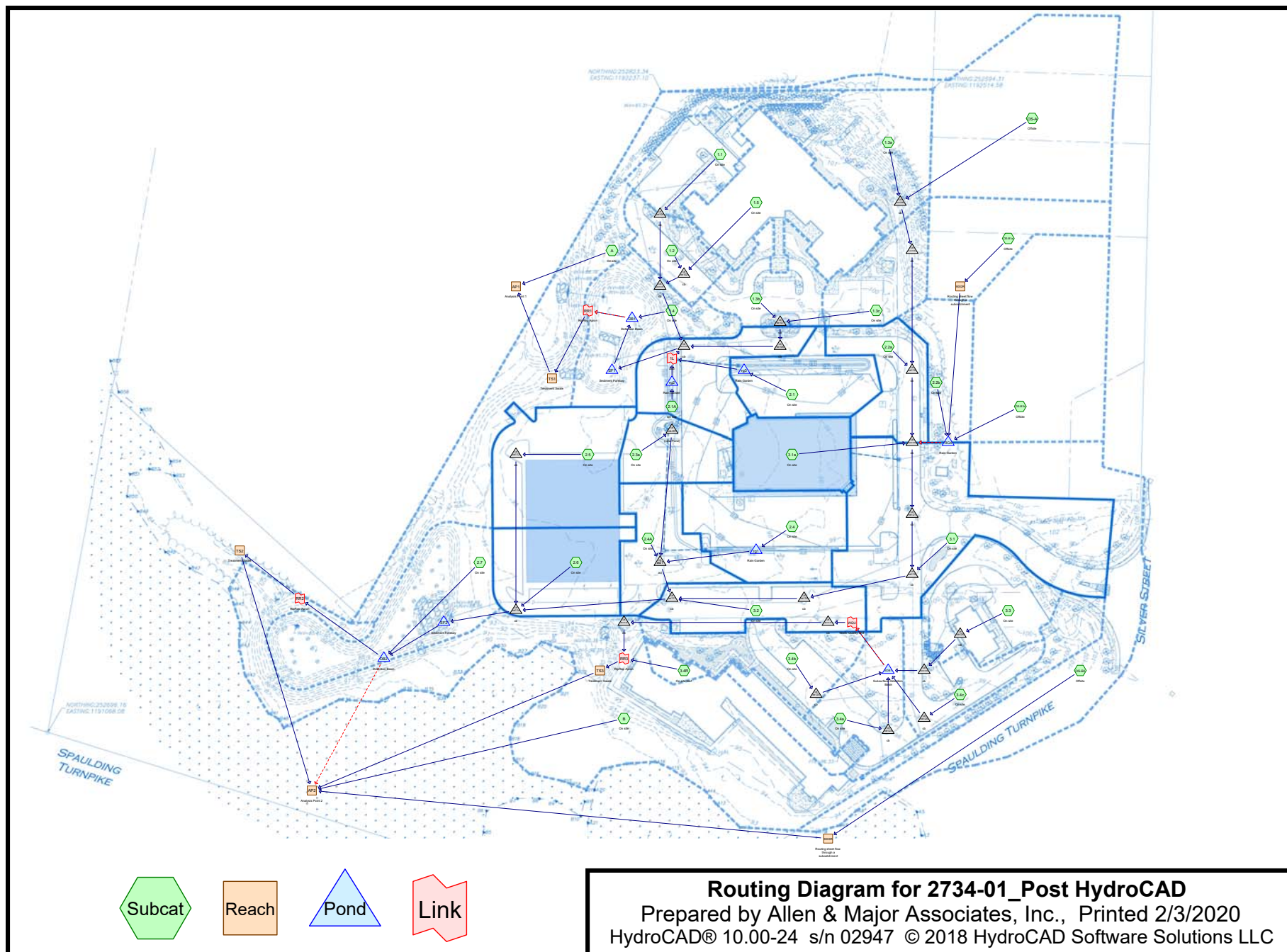
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Type III 24-hr 50 yr Rainfall=7.18"

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Pond cb106: cb	Peak Elev=94.51' Inflow=4.0 cfs 12,899 cf 24.0" Round Culvert n=0.013 L=132.0' S=0.005 '/' Outflow=4.0 cfs 12,899 cf
Pond cb107: cb	Peak Elev=95.17' Inflow=4.0 cfs 12,899 cf 18.0" Round Culvert n=0.013 L=32.0' S=0.017 '/' Outflow=4.0 cfs 12,899 cf
Pond cb108b: cb	Peak Elev=98.74' Inflow=9.8 cfs 31,093 cf 24.0" Round Culvert n=0.013 L=63.0' S=0.005 '/' Outflow=9.8 cfs 31,093 cf
Pond cb110: cb	Peak Elev=97.58' Inflow=12.0 cfs 38,447 cf 24.0" Round Culvert n=0.013 L=109.0' S=0.005 '/' Outflow=12.0 cfs 38,447 cf
Pond cb113: cb	Peak Elev=94.34' Inflow=3.8 cfs 14,472 cf 15.0" Round Culvert n=0.013 L=216.0' S=0.006 '/' Outflow=3.8 cfs 14,472 cf
Pond cb114: cb	Peak Elev=94.00' Inflow=48.7 cfs 167,745 cf 36.0" Round Culvert n=0.013 L=64.0' S=0.005 '/' Outflow=48.7 cfs 167,745 cf
Pond cb117: cb	Peak Elev=96.44' Inflow=42.2 cfs 142,521 cf 30.0" Round Culvert n=0.013 L=214.0' S=0.007 '/' Outflow=42.2 cfs 142,521 cf
Pond cb118: cb	Peak Elev=95.99' Inflow=29.4 cfs 98,535 cf 30.0" Round Culvert n=0.013 L=183.0' S=0.005 '/' Outflow=29.4 cfs 98,535 cf
Pond cb119: cb	Peak Elev=96.77' Inflow=29.4 cfs 98,535 cf 30.0" Round Culvert n=0.013 L=128.0' S=0.005 '/' Outflow=29.4 cfs 98,535 cf
Pond cb121: cb	Peak Elev=97.67' Inflow=20.2 cfs 67,872 cf 24.0" Round Culvert n=0.013 L=70.0' S=0.005 '/' Outflow=20.2 cfs 67,872 cf
Pond cb123: cb	Peak Elev=93.85' Inflow=2.2 cfs 7,594 cf 12.0" Round Culvert n=0.013 L=71.0' S=0.005 '/' Outflow=2.2 cfs 7,594 cf
Pond cb124: cb	Peak Elev=95.55' Inflow=2.2 cfs 7,594 cf 12.0" Round Culvert n=0.013 L=62.0' S=0.010 '/' Outflow=2.2 cfs 7,594 cf
Pond cb125: cb	Peak Elev=95.07' Inflow=2.2 cfs 7,594 cf 12.0" Round Culvert n=0.013 L=47.0' S=0.010 '/' Outflow=2.2 cfs 7,594 cf
Pond cb126: cb	Peak Elev=97.04' Inflow=3.1 cfs 9,900 cf 12.0" Round Culvert n=0.013 L=61.0' S=0.010 '/' Outflow=3.1 cfs 9,900 cf
Pond DB1: Detention Basin	Peak Elev=94.16' Storage=19,895 cf Inflow=18.3 cfs 60,296 cf Primary=12.3 cfs 53,702 cf Secondary=0.0 cfs 0 cf Outflow=12.3 cfs 53,702 cf
Pond DB2: Detention Basin	Peak Elev=91.92' Storage=59,275 cf Inflow=51.9 cfs 173,681 cf Primary=19.8 cfs 161,359 cf Secondary=0.0 cfs 0 cf Outflow=19.8 cfs 161,359 cf
Pond dmh100: cb	Peak Elev=94.87' Inflow=15.8 cfs 54,784 cf 24.0" Round Culvert n=0.013 L=77.0' S=0.010 '/' Outflow=15.8 cfs 54,784 cf
Pond dmh101: cb	Peak Elev=95.29' Inflow=8.1 cfs 29,500 cf 18.0" Round Culvert n=0.013 L=96.0' S=0.007 '/' Outflow=8.1 cfs 29,500 cf
Pond dmh108a: cb	Peak Elev=98.26' Inflow=9.8 cfs 31,093 cf 24.0" Round Culvert n=0.013 L=170.0' S=0.005 '/' Outflow=9.8 cfs 31,093 cf
Pond dmh109: cb	Peak Elev=98.03' Inflow=20.2 cfs 67,872 cf 24.0" Round Culvert n=0.013 L=58.0' S=0.005 '/' Outflow=20.2 cfs 67,872 cf
Pond dmh126: cb	Peak Elev=96.07' Inflow=3.1 cfs 9,900 cf 15.0" Round Culvert n=0.013 L=14.0' S=0.010 '/' Outflow=3.1 cfs 9,900 cf
Pond dmh131: cb	Peak Elev=94.76' Inflow=6.2 cfs 32,681 cf 15.0" Round Culvert n=0.013 L=277.0' S=0.006 '/' Outflow=6.2 cfs 32,681 cf



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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
167,422	80	1/2 acre lots, 25% imp, HSG C (OS-A, OS-B1a, OS-B1b, OS-B2)
256,449	74	>75% Grass cover, Good, HSG C (1.1, 1.2, 1.3a, 1.3b, 1.3c, 1.4, 2.1, 2.1A, 2.2a, 2.2b, 2.3a, 2.4, 2.4A, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3, 3.4a, 3.4b, 3.4c, A, B)
209,449	98	Paved parking, HSG C (1.1, 1.2, 1.3b, 1.3c, 2.1, 2.1A, 2.2a, 2.3a, 2.4, 2.4A, 2.5, 2.6, 3.1, 3.2, 3.3, 3.4a, 3.4b, 3.4c)
90,049	98	Roofs, HSG C (1.5, 2.5, 2.6, 3.1a, 3.3, 3.4R, B)
5,738	98	Walkway, HSG C (3.3, 3.4a, 3.4b, 3.4c, B)
5,873	98	Walkways, HSG C (1.1, 1.2, 1.3a, 1.3b, 1.3c)
58,384	70	Woods, Good, HSG C (1.1, 1.3a, 1.3c, 2.2b, 3.1, A, B)
793,364	84	TOTAL AREA

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Type III 24-hr 2 yr Rainfall=3.15"

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Reach AP2: Analysis Point 2

Inflow=3.4 cfs 69,952 cf

Outflow=3.4 cfs 69,952 cf

Reach TS1: Treatment SwaleAvg. Flow Depth=0.44' Max Vel=0.34 fps Inflow=0.7 cfs 15,177 cf
n=0.150 L=130.0' S=0.005 '/ Capacity=17.2 cfs Outflow=0.7 cfs 15,176 cf**Reach TS2: Treatment Swale**Avg. Flow Depth=0.55' Max Vel=0.44 fps Inflow=2.4 cfs 41,535 cf
n=0.150 L=130.0' S=0.005 '/ Capacity=24.9 cfs Outflow=2.3 cfs 41,530 cf**Reach TS3: Treatment Swale**Avg. Flow Depth=0.27' Max Vel=0.27 fps Inflow=0.8 cfs 13,076 cf
n=0.150 L=160.0' S=0.005 '/ Capacity=26.8 cfs Outflow=0.6 cfs 13,076 cf**Pond ad1: ad**Peak Elev=93.31' Inflow=3.4 cfs 10,823 cf
24.0" Round Culvert n=0.013 L=66.0' S=0.006 '/ Outflow=3.4 cfs 10,823 cf**Pond cb-03: (new Pond)**Peak Elev=94.32' Inflow=0.8 cfs 2,646 cf
12.0" Round Culvert n=0.013 L=160.0' S=0.008 '/ Outflow=0.8 cfs 2,646 cf**Pond cb102: cb**Peak Elev=95.14' Inflow=2.5 cfs 8,953 cf
15.0" Round Culvert n=0.013 L=4.0' S=0.020 '/ Outflow=2.5 cfs 8,953 cf**Pond cb104: cb**Peak Elev=95.41' Inflow=0.8 cfs 2,424 cf
15.0" Round Culvert n=0.013 L=105.0' S=0.011 '/ Outflow=0.8 cfs 2,424 cf**Pond cb106: cb**Peak Elev=94.09' Inflow=1.4 cfs 4,237 cf
24.0" Round Culvert n=0.013 L=132.0' S=0.005 '/ Outflow=1.4 cfs 4,237 cf**Pond cb107: cb**Peak Elev=94.73' Inflow=1.4 cfs 4,237 cf
18.0" Round Culvert n=0.013 L=32.0' S=0.017 '/ Outflow=1.4 cfs 4,237 cf**Pond cb108b: cb**Peak Elev=97.84' Inflow=2.6 cfs 8,355 cf
24.0" Round Culvert n=0.013 L=63.0' S=0.005 '/ Outflow=2.6 cfs 8,355 cf**Pond cb110: cb**Peak Elev=96.58' Inflow=3.4 cfs 10,948 cf
24.0" Round Culvert n=0.013 L=109.0' S=0.005 '/ Outflow=3.4 cfs 10,948 cf**Pond cb113: cb**Peak Elev=93.89' Inflow=1.7 cfs 6,301 cf
15.0" Round Culvert n=0.013 L=216.0' S=0.006 '/ Outflow=1.7 cfs 6,301 cf**Pond cb114: cb**Peak Elev=91.73' Inflow=16.3 cfs 55,838 cf
36.0" Round Culvert n=0.013 L=64.0' S=0.005 '/ Outflow=16.3 cfs 55,838 cf**Pond cb117: cb**Peak Elev=93.05' Inflow=13.3 cfs 44,907 cf
30.0" Round Culvert n=0.013 L=214.0' S=0.007 '/ Outflow=13.3 cfs 44,907 cf**Pond cb118: cb**Peak Elev=94.24' Inflow=9.0 cfs 30,444 cf
30.0" Round Culvert n=0.013 L=183.0' S=0.005 '/ Outflow=9.0 cfs 30,444 cf**Pond cb119: cb**Peak Elev=95.02' Inflow=9.0 cfs 30,444 cf
30.0" Round Culvert n=0.013 L=128.0' S=0.005 '/ Outflow=9.0 cfs 30,444 cf

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Pond SDB1: Subsurface Detention Basin Peak Elev=93.66' Storage=5,243 cf Inflow=3.3 cfs 10,888 cf
Primary=0.2 cfs 10,110 cf Secondary=0.1 cfs 779 cf Outflow=0.4 cfs 10,888 cf

Pond SF1: Sediment Forebay Peak Elev=92.46' Storage=2,748 cf Inflow=5.5 cfs 22,179 cf
Outflow=5.5 cfs 19,936 cf

Pond SF2: Sediment Forebay Peak Elev=91.04' Storage=5,312 cf Inflow=16.3 cfs 55,838 cf
Outflow=16.9 cfs 51,350 cf

Link 1L: ad3

Inflow=1.1 cfs 6,565 cf
Primary=1.1 cfs 6,565 cf

Link RR1: RipRap Apron

Inflow=0.7 cfs 15,177 cf
Primary=0.7 cfs 15,177 cf

Link RR2: RipRap Apron

Inflow=2.4 cfs 41,535 cf
Primary=2.4 cfs 41,535 cf

Link RR3: RipRap Apron

Inflow=0.8 cfs 13,076 cf
Primary=0.8 cfs 13,076 cf

Link WQU: Water Quality Unit

Inflow=0.4 cfs 10,888 cf
Primary=0.4 cfs 10,888 cf

Total Runoff Area = 793,364 sf Runoff Volume = 115,562 cf Average Runoff Depth = 1.75"
55.51% Pervious = 440,400 sf 44.49% Impervious = 352,965 sf

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Type III 24-hr 10 yr Rainfall=4.75"

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Reach AP2: Analysis Point 2

Inflow=20.2 cfs 140,057 cf

Outflow=20.2 cfs 140,057 cf

Reach TS1: Treatment SwaleAvg. Flow Depth=1.07' Max Vel=0.55 fps Inflow=4.4 cfs 32,125 cf
n=0.150 L=130.0' S=0.005 '/ Capacity=17.2 cfs Outflow=4.2 cfs 32,124 cf**Reach TS2: Treatment Swale**Avg. Flow Depth=1.60' Max Vel=0.79 fps Inflow=16.4 cfs 86,338 cf
n=0.150 L=130.0' S=0.005 '/ Capacity=24.9 cfs Outflow=16.1 cfs 86,333 cf**Reach TS3: Treatment Swale**Avg. Flow Depth=0.53' Max Vel=0.40 fps Inflow=2.2 cfs 22,702 cf
n=0.150 L=160.0' S=0.005 '/ Capacity=26.8 cfs Outflow=2.1 cfs 22,702 cf**Pond ad1: ad**Peak Elev=93.56' Inflow=5.3 cfs 17,503 cf
24.0" Round Culvert n=0.013 L=66.0' S=0.006 '/ Outflow=5.3 cfs 17,503 cf**Pond cb-03: (new Pond)**Peak Elev=94.45' Inflow=1.2 cfs 4,199 cf
12.0" Round Culvert n=0.013 L=160.0' S=0.008 '/ Outflow=1.2 cfs 4,199 cf**Pond cb102: cb**Peak Elev=95.43' Inflow=3.8 cfs 14,114 cf
15.0" Round Culvert n=0.013 L=4.0' S=0.020 '/ Outflow=3.8 cfs 14,114 cf**Pond cb104: cb**Peak Elev=95.56' Inflow=1.4 cfs 4,376 cf
15.0" Round Culvert n=0.013 L=105.0' S=0.011 '/ Outflow=1.4 cfs 4,376 cf**Pond cb106: cb**Peak Elev=94.28' Inflow=2.4 cfs 7,577 cf
24.0" Round Culvert n=0.013 L=132.0' S=0.005 '/ Outflow=2.4 cfs 7,577 cf**Pond cb107: cb**Peak Elev=94.92' Inflow=2.4 cfs 7,577 cf
18.0" Round Culvert n=0.013 L=32.0' S=0.017 '/ Outflow=2.4 cfs 7,577 cf**Pond cb108b: cb**Peak Elev=98.23' Inflow=5.4 cfs 16,809 cf
24.0" Round Culvert n=0.013 L=63.0' S=0.005 '/ Outflow=5.4 cfs 16,809 cf**Pond cb110: cb**Peak Elev=96.99' Inflow=6.7 cfs 21,194 cf
24.0" Round Culvert n=0.013 L=109.0' S=0.005 '/ Outflow=6.7 cfs 21,194 cf**Pond cb113: cb**Peak Elev=94.09' Inflow=2.6 cfs 9,872 cf
15.0" Round Culvert n=0.013 L=216.0' S=0.006 '/ Outflow=2.6 cfs 9,872 cf**Pond cb114: cb**Peak Elev=92.49' Inflow=28.3 cfs 97,767 cf
36.0" Round Culvert n=0.013 L=64.0' S=0.005 '/ Outflow=28.3 cfs 97,767 cf**Pond cb117: cb**Peak Elev=93.77' Inflow=23.8 cfs 80,641 cf
30.0" Round Culvert n=0.013 L=214.0' S=0.007 '/ Outflow=23.8 cfs 80,641 cf**Pond cb118: cb**Peak Elev=94.89' Inflow=17.0 cfs 57,287 cf
30.0" Round Culvert n=0.013 L=183.0' S=0.005 '/ Outflow=17.0 cfs 57,287 cf**Pond cb119: cb**Peak Elev=95.67' Inflow=17.0 cfs 57,287 cf
30.0" Round Culvert n=0.013 L=128.0' S=0.005 '/ Outflow=17.0 cfs 57,287 cf

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Type III 24-hr 10 yr Rainfall=4.75"

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Pond SDB1: Subsurface Detention Basin Peak Elev=94.08' Storage=7,841 cf Inflow=5.7 cfs 19,318 cf
Primary=0.5 cfs 12,929 cf Secondary=1.4 cfs 6,390 cf Outflow=2.0 cfs 19,318 cf

Pond SF1: Sediment Forebay Peak Elev=92.57' Storage=2,838 cf Inflow=9.5 cfs 36,990 cf
Outflow=10.0 cfs 34,748 cf

Pond SF2: Sediment Forebay Peak Elev=91.20' Storage=5,312 cf Inflow=28.3 cfs 97,767 cf
Outflow=27.9 cfs 93,278 cf

Link 1L: ad3 Inflow=2.2 cfs 10,924 cf
Primary=2.2 cfs 10,924 cf

Link RR1: RipRap Apron Inflow=4.4 cfs 32,125 cf
Primary=4.4 cfs 32,125 cf

Link RR2: RipRap Apron Inflow=16.4 cfs 86,338 cf
Primary=16.4 cfs 86,338 cf

Link RR3: RipRap Apron Inflow=2.2 cfs 22,702 cf
Primary=2.2 cfs 22,702 cf

Link WQU: Water Quality Unit Inflow=2.0 cfs 19,318 cf
Primary=2.0 cfs 19,318 cf

Total Runoff Area = 793,364 sf Runoff Volume = 206,789 cf Average Runoff Depth = 3.13"
55.51% Pervious = 440,400 sf 44.49% Impervious = 352,965 sf

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Type III 24-hr 50 yr Rainfall=7.18"

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Reach AP2: Analysis Point 2

Inflow=31.7 cfs 253,861 cf

Outflow=31.7 cfs 253,861 cf

Reach TS1: Treatment SwaleAvg. Flow Depth=1.73' Max Vel=0.72 fps Inflow=12.3 cfs 59,020 cf
n=0.150 L=130.0' S=0.005 '/' Capacity=17.2 cfs Outflow=12.3 cfs 59,019 cf**Reach TS2: Treatment Swale**Avg. Flow Depth=1.77' Max Vel=0.83 fps Inflow=19.7 cfs 158,438 cf
n=0.150 L=130.0' S=0.005 '/' Capacity=24.9 cfs Outflow=19.7 cfs 158,433 cf**Reach TS3: Treatment Swale**Avg. Flow Depth=0.98' Max Vel=0.56 fps Inflow=6.9 cfs 37,885 cf
n=0.150 L=160.0' S=0.005 '/' Capacity=26.8 cfs Outflow=6.5 cfs 37,885 cf**Pond ad1: ad**Peak Elev=93.88' Inflow=8.1 cfs 27,702 cf
24.0" Round Culvert n=0.013 L=66.0' S=0.006 '/' Outflow=8.1 cfs 27,702 cf**Pond cb-03: (new Pond)**Peak Elev=94.62' Inflow=1.9 cfs 6,570 cf
12.0" Round Culvert n=0.013 L=160.0' S=0.008 '/' Outflow=1.9 cfs 6,570 cf**Pond cb102: cb**Peak Elev=95.95' Inflow=5.8 cfs 22,006 cf
15.0" Round Culvert n=0.013 L=4.0' S=0.020 '/' Outflow=5.8 cfs 22,006 cf**Pond cb104: cb**Peak Elev=95.76' Inflow=2.4 cfs 7,494 cf
15.0" Round Culvert n=0.013 L=105.0' S=0.011 '/' Outflow=2.4 cfs 7,494 cf**Pond cb106: cb**Peak Elev=94.51' Inflow=4.0 cfs 12,899 cf
24.0" Round Culvert n=0.013 L=132.0' S=0.005 '/' Outflow=4.0 cfs 12,899 cf**Pond cb107: cb**Peak Elev=95.17' Inflow=4.0 cfs 12,899 cf
18.0" Round Culvert n=0.013 L=32.0' S=0.017 '/' Outflow=4.0 cfs 12,899 cf**Pond cb108b: cb**Peak Elev=98.74' Inflow=9.8 cfs 31,093 cf
24.0" Round Culvert n=0.013 L=63.0' S=0.005 '/' Outflow=9.8 cfs 31,093 cf**Pond cb110: cb**Peak Elev=97.57' Inflow=12.0 cfs 38,264 cf
24.0" Round Culvert n=0.013 L=109.0' S=0.005 '/' Outflow=12.0 cfs 38,264 cf**Pond cb113: cb**Peak Elev=94.38' Inflow=4.0 cfs 15,313 cf
15.0" Round Culvert n=0.013 L=216.0' S=0.006 '/' Outflow=4.0 cfs 15,313 cf**Pond cb114: cb**Peak Elev=93.90' Inflow=47.1 cfs 164,824 cf
36.0" Round Culvert n=0.013 L=64.0' S=0.005 '/' Outflow=47.1 cfs 164,824 cf**Pond cb117: cb**Peak Elev=96.13' Inflow=40.3 cfs 138,260 cf
30.0" Round Culvert n=0.013 L=214.0' S=0.007 '/' Outflow=40.3 cfs 138,260 cf**Pond cb118: cb**Peak Elev=96.10' Inflow=29.9 cfs 101,323 cf
30.0" Round Culvert n=0.013 L=183.0' S=0.005 '/' Outflow=29.9 cfs 101,323 cf**Pond cb119: cb**Peak Elev=96.88' Inflow=29.9 cfs 101,323 cf
30.0" Round Culvert n=0.013 L=128.0' S=0.005 '/' Outflow=29.9 cfs 101,323 cf

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Type III 24-hr 50 yr Rainfall=7.18"

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Pond cb121: cb

Peak Elev=98.01' Inflow=22.4 cfs 76,283 cf
 24.0" Round Culvert n=0.013 L=70.0' S=0.005 '/' Outflow=22.4 cfs 76,283 cf

Pond cb123: cb

Peak Elev=93.85' Inflow=2.2 cfs 7,594 cf
 12.0" Round Culvert n=0.013 L=71.0' S=0.005 '/' Outflow=2.2 cfs 7,594 cf

Pond cb124: cb

Peak Elev=95.55' Inflow=2.2 cfs 7,594 cf
 12.0" Round Culvert n=0.013 L=62.0' S=0.010 '/' Outflow=2.2 cfs 7,594 cf

Pond cb125: cb

Peak Elev=95.07' Inflow=2.2 cfs 7,594 cf
 12.0" Round Culvert n=0.013 L=47.0' S=0.010 '/' Outflow=2.2 cfs 7,594 cf

Pond cb126: cb

Peak Elev=97.04' Inflow=3.1 cfs 9,900 cf
 12.0" Round Culvert n=0.013 L=61.0' S=0.010 '/' Outflow=3.1 cfs 9,900 cf

Pond DB1: Detention Basin

Peak Elev=94.17' Storage=19,963 cf Inflow=17.9 cfs 65,581 cf
 Primary=12.3 cfs 59,020 cf Secondary=0.0 cfs 0 cf Outflow=12.3 cfs 59,020 cf

Pond DB2: Detention Basin

Peak Elev=91.85' Storage=57,975 cf Inflow=50.4 cfs 170,760 cf
 Primary=19.7 cfs 158,438 cf Secondary=0.0 cfs 0 cf Outflow=19.7 cfs 158,438 cf

Pond dmh100: cb

Peak Elev=94.84' Inflow=15.6 cfs 60,069 cf
 24.0" Round Culvert n=0.013 L=77.0' S=0.010 '/' Outflow=15.6 cfs 60,069 cf

Pond dmh101: cb

Peak Elev=95.29' Inflow=8.1 cfs 29,500 cf
 18.0" Round Culvert n=0.013 L=96.0' S=0.007 '/' Outflow=8.1 cfs 29,500 cf

Pond dmh108a: cb

Peak Elev=98.26' Inflow=9.8 cfs 31,093 cf
 24.0" Round Culvert n=0.013 L=170.0' S=0.005 '/' Outflow=9.8 cfs 31,093 cf

Pond dmh109: cb

Peak Elev=98.35' Inflow=22.4 cfs 76,283 cf
 24.0" Round Culvert n=0.013 L=58.0' S=0.005 '/' Outflow=22.4 cfs 76,283 cf

Pond dmh126: cb

Peak Elev=96.07' Inflow=3.1 cfs 9,900 cf
 15.0" Round Culvert n=0.013 L=14.0' S=0.010 '/' Outflow=3.1 cfs 9,900 cf

Pond dmh131: cb

Peak Elev=94.76' Inflow=6.2 cfs 32,681 cf
 15.0" Round Culvert n=0.013 L=277.0' S=0.006 '/' Outflow=6.2 cfs 32,681 cf

Pond dmh132: cb

Peak Elev=92.18' Inflow=6.2 cfs 32,681 cf
 15.0" Round Culvert n=0.013 L=5.0' S=0.000 '/' Outflow=6.2 cfs 32,681 cf

Pond rg1: Rain Garden

Peak Elev=97.77' Storage=599 cf Inflow=3.8 cfs 13,226 cf
 Outflow=3.8 cfs 12,665 cf

Pond rg2: Rain Garden

Peak Elev=96.12' Storage=818 cf Inflow=2.9 cfs 9,903 cf
 Outflow=3.0 cfs 9,903 cf

Pond rg3: Rain Garden

Peak Elev=97.58' Storage=1,863 cf Inflow=2.4 cfs 7,773 cf
 Outflow=1.3 cfs 7,767 cf

Pond RG4: Rain Garden

Peak Elev=99.77' Storage=1,516 cf Inflow=8.7 cfs 30,385 cf
 Discarded=0.0 cfs 960 cf Primary=8.5 cfs 29,425 cf Secondary=0.0 cfs 0 cf Outflow=8.5 cfs 30,385 cf

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Type III 24-hr 50 yr Rainfall=7.18"

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Pond SDB1: Subsurface Detention Basin Peak Elev=94.45' Storage=10,102 cf Inflow=9.4 cfs 32,681 cf
Primary=2.8 cfs 19,416 cf Secondary=3.3 cfs 13,265 cf Outflow=6.2 cfs 32,681 cf

Pond SF1: Sediment Forebay Peak Elev=92.67' Storage=2,838 cf Inflow=15.6 cfs 60,069 cf
Outflow=15.7 cfs 57,826 cf

Pond SF2: Sediment Forebay Peak Elev=91.43' Storage=5,312 cf Inflow=47.1 cfs 164,824 cf
Outflow=47.1 cfs 160,336 cf

Link 1L: ad3

Inflow=3.7 cfs 17,670 cf

Primary=3.7 cfs 17,670 cf**Link RR1: RipRap Apron**

Inflow=12.3 cfs 59,020 cf

Primary=12.3 cfs 59,020 cf

Link RR2: RipRap Apron

Inflow=19.7 cfs 158,438 cf

Primary=19.7 cfs 158,438 cf

Link RR3: RipRap Apron

Inflow=6.9 cfs 37,885 cf

Primary=6.9 cfs 37,885 cf

Link WQU: Water Quality Unit

Inflow=6.2 cfs 32,681 cf

Primary=6.2 cfs 32,681 cf

Total Runoff Area = 793,364 sf Runoff Volume = 354,808 cf Average Runoff Depth = 5.37"
55.51% Pervious = 440,400 sf 44.49% Impervious = 352,965 sf

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Type III 24-hr 50 yr Rainfall=7.18"

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Inlet / Outlet Invert= 94.20' / 93.73' S= 0.010 ' / ' Cc= 0.900
 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.1 cfs @ 12.11 hrs HW=95.05' (Free Discharge)↑**1=Culvert** (Barrel Controls 2.1 cfs @ 4.01 fps)**Summary for Pond cb126: cb**

Inflow Area = 20,594 sf, 59.83% Impervious, Inflow Depth = 5.77" for 50 yr event
 Inflow = 3.1 cfs @ 12.07 hrs, Volume= 9,900 cf
 Outflow = 3.1 cfs @ 12.07 hrs, Volume= 9,900 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.1 cfs @ 12.07 hrs, Volume= 9,900 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 97.04' @ 12.07 hrs

Flood Elev= 99.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	95.89'	12.0" Round Culvert L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 95.89' / 95.28' S= 0.010 ' / ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.0 cfs @ 12.07 hrs HW=97.00' (Free Discharge)↑**1=Culvert** (Inlet Controls 3.0 cfs @ 3.77 fps)**Summary for Pond DB1: Detention Basin**

[81] Warning: Exceeded Pond SF1 by 1.60' @ 12.25 hrs

Inflow Area = 139,197 sf, 61.12% Impervious, Inflow Depth = 5.65" for 50 yr event
 Inflow = 17.9 cfs @ 12.09 hrs, Volume= 65,581 cf
 Outflow = 12.3 cfs @ 12.20 hrs, Volume= 59,020 cf, Atten= 31%, Lag= 6.3 min
 Primary = 12.3 cfs @ 12.20 hrs, Volume= 59,020 cf
 Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 94.17' @ 12.20 hrs Surf.Area= 11,632 sf Storage= 19,963 cf

Flood Elev= 96.00' Surf.Area= 13,951 sf Storage= 37,650 cf

Plug-Flow detention time= 148.0 min calculated for 58,979 cf (90% of inflow)

Center-of-Mass det. time= 99.4 min (900.4 - 801.0)

Volume	Invert	Avail.Storage	Storage Description
#1	89.33'	2,091 cf	Filter Media (Irregular) Listed below (Recalc) 5,227 cf Overall x 40.0% Voids
#2	91.00'	35,560 cf	Basin (above filter) (Irregular) Listed below (Recalc)
		37,650 cf	Total Available Storage

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Type III 24-hr 50 yr Rainfall=7.18"

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Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
89.33	3,130	210.4	0	0	3,130
91.00	3,130	210.4	5,227	5,227	3,481

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
91.00	3,130	210.4	0	0	3,130
92.00	3,790	229.2	3,455	3,455	3,823
93.00	7,068	405.7	5,345	8,799	12,747
94.00	8,304	401.1	7,678	16,477	13,246
95.00	9,534	419.9	8,912	25,389	14,542
96.00	10,821	438.7	10,171	35,560	15,896

Device	Routing	Invert	Outlet Devices
#1	Primary	89.20'	15.0" Round Culvert L= 41.0' Ke= 0.500 Inlet / Outlet Invert= 89.20' / 89.00' S= 0.005 ' / ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	92.25'	6.0" Vert. Orifice opening in riser C= 0.600
#3	Device 1	93.50'	24.0" x 24.0" Horiz. Top of Riser C= 0.600 Limited to weir flow at low heads
#4	Secondary	95.00'	10.0' long Emergency Spillway 2 End Contraction(s) 1.0' Crest Height

Primary OutFlow Max=12.3 cfs @ 12.20 hrs HW=94.16' (Free Discharge)

1=Culvert (Inlet Controls 12.3 cfs @ 10.03 fps)

2=Orifice opening in riser (Passes < 1.2 cfs potential flow)

3=Top of Riser (Passes < 14.2 cfs potential flow)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=89.33' (Free Discharge)

4=Emergency Spillway (Controls 0.0 cfs)

Summary for Pond DB2: Detention Basin

[81] Warning: Exceeded Pond SF2 by 0.81' @ 12.40 hrs

Inflow Area = 382,671 sf, 50.84% Impervious, Inflow Depth = 5.35" for 50 yr event
 Inflow = 50.4 cfs @ 12.09 hrs, Volume= 170,760 cf
 Outflow = 19.7 cfs @ 12.35 hrs, Volume= 158,438 cf, Atten= 61%, Lag= 15.8 min
 Primary = 19.7 cfs @ 12.35 hrs, Volume= 158,438 cf
 Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

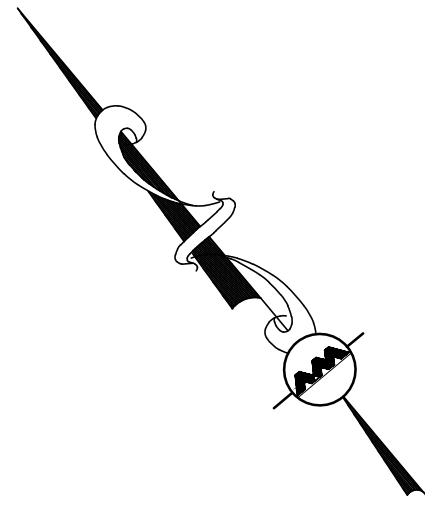
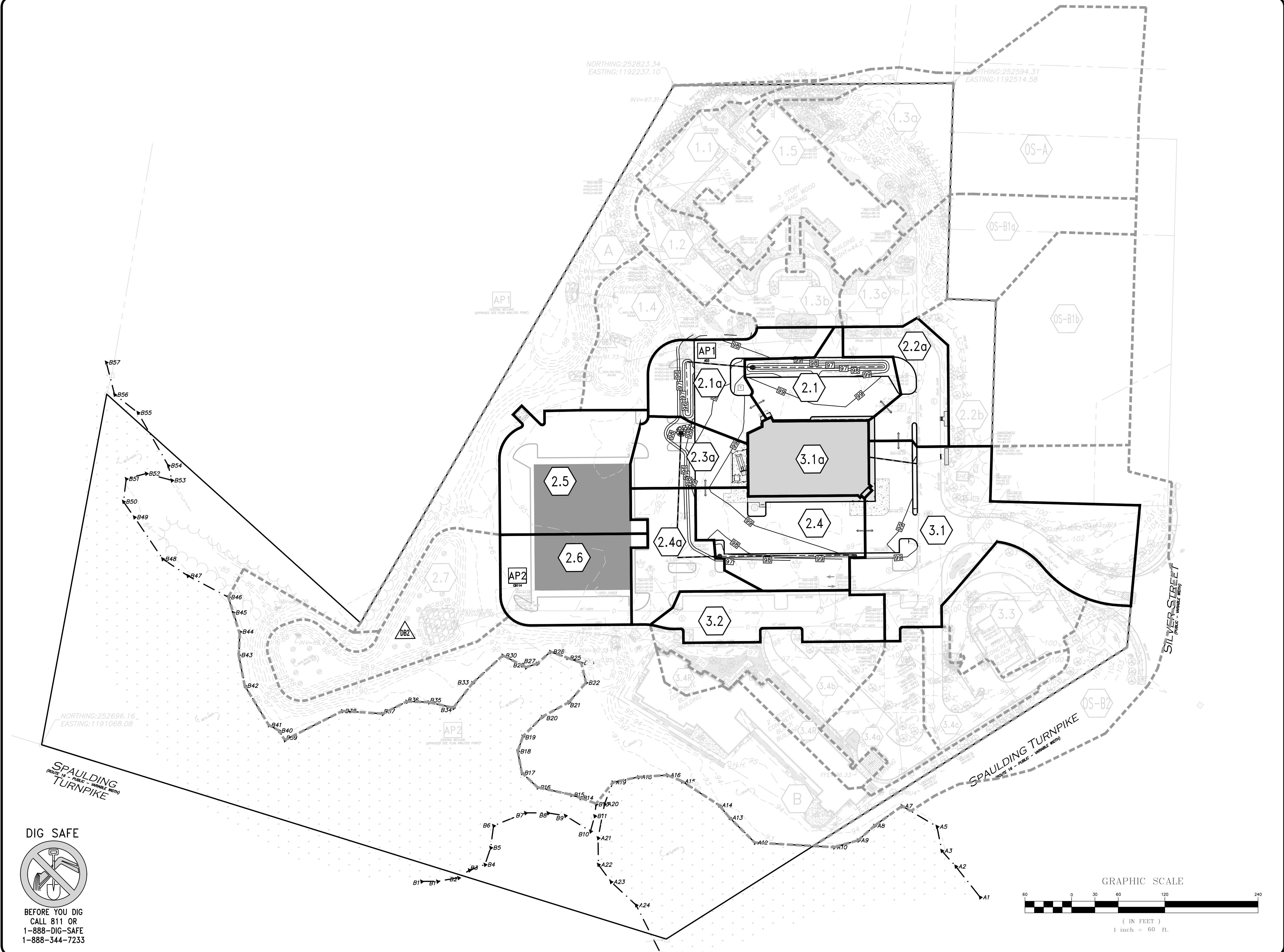
Peak Elev= 91.85' @ 12.35 hrs Surf.Area= 28,943 sf Storage= 57,975 cf

Flood Elev= 93.00' Surf.Area= 31,684 sf Storage= 81,135 cf

Plug-Flow detention time= 176.4 min calculated for 158,438 cf (93% of inflow)

Center-of-Mass det. time= 138.5 min (936.6 - 798.1)

R:\PROJECTS\2734-01\CIVIL\DRAWINGS\CURRENT\G-2734-01_WATERSHED-PROPOSED.DWG



REV	DATE	DESCRIPTION
-----	------	-------------

OWNER/APPLICANT:
V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:
**RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH**

PROJECT NO. 2734-01 DATE: 02-14-2020

SCALE: 1" = 60' DWG. NAME: C2734-01

DESIGNED BY: SM CHECKED BY: MAM

PREPARED BY:

**ALLEN & MAJOR
ASSOCIATES, INC.**
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environmental consulting ♦ landscape architecture
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MANCHESTER, NH 03103
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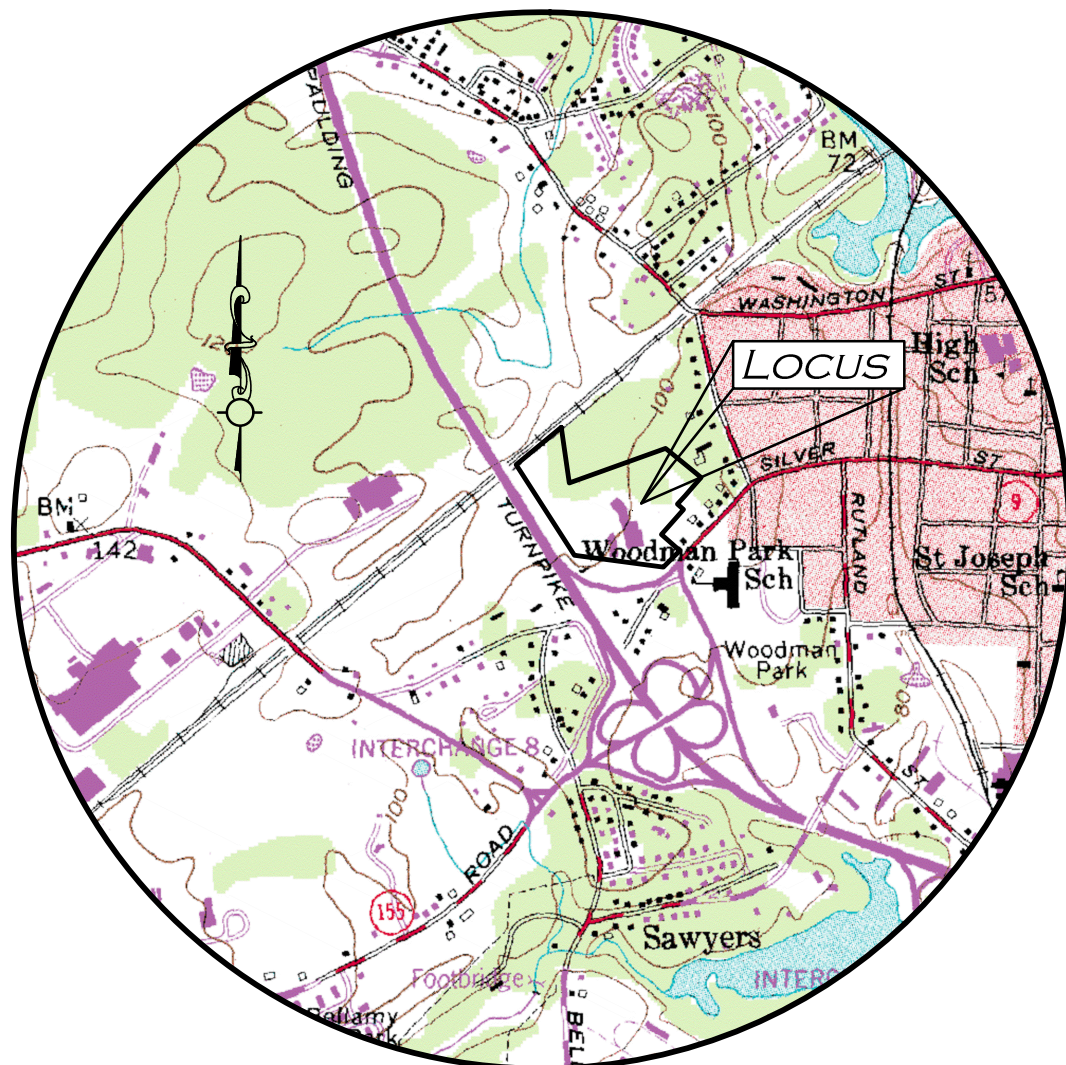
DRAWING TITLE: SHEET No.

PROPOSED WATERSHED PLAN PWS-1

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SITE AMENDMENT PLANS FOR RETAIL STORE WITH DRIVE-THRU

STERLING WAY DOVER, NEW HAMPSHIRE



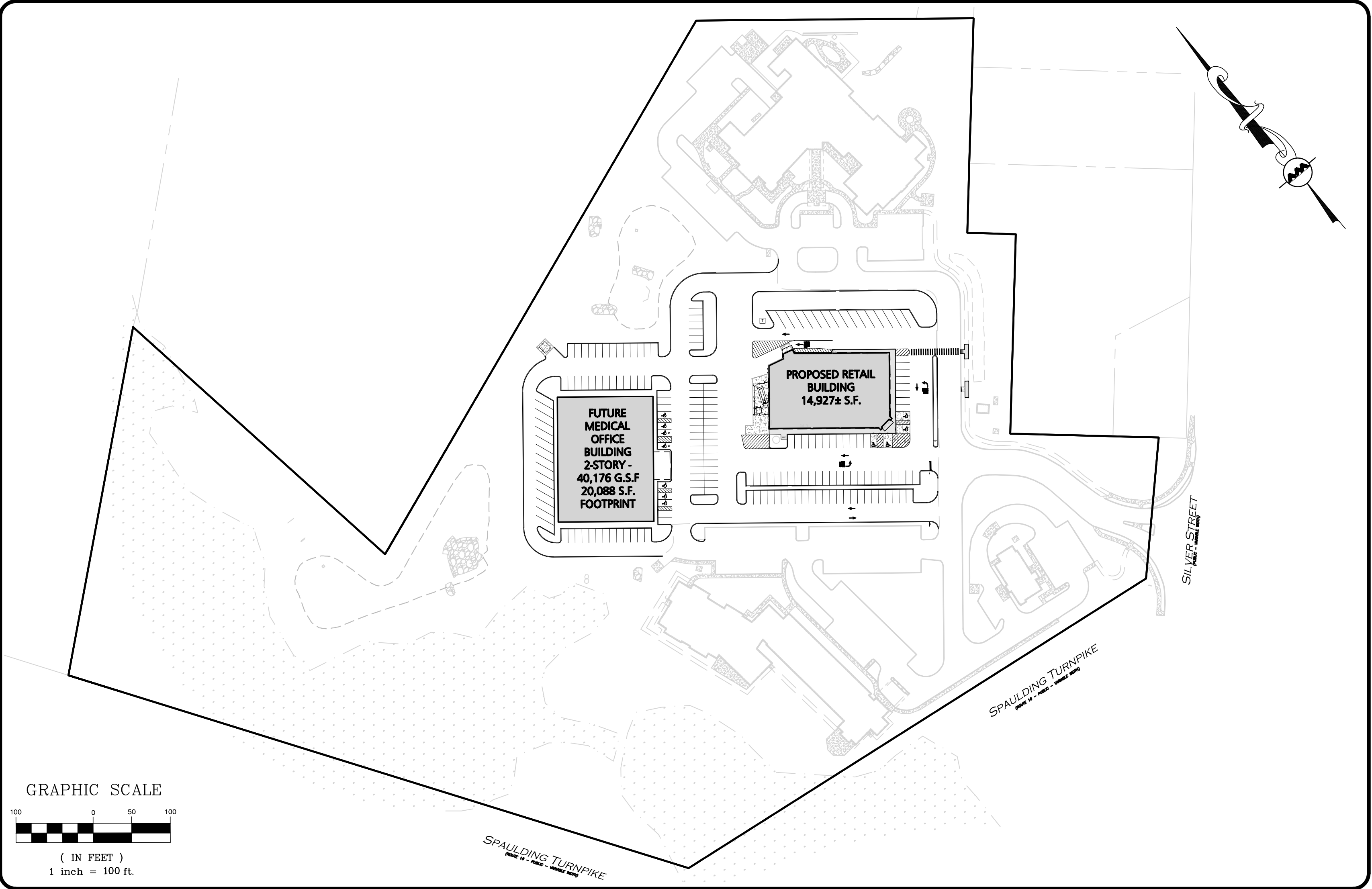
LOCUS MAP
SCALE: 1" = 1,500'

OWNER/APPLICANT:
V.M.D. COMPANIES, LLC.
733 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

**CIVIL ENGINEER / SURVEYOR /
LANDSCAPE ARCHITECT:**
ALLEN & MAJOR ASSOCIATES, INC.
400 HARVEY ROAD
MANCHESTER, NH 03103
PHONE: 603.627.5500

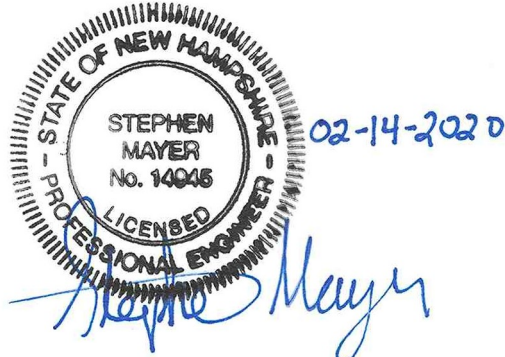
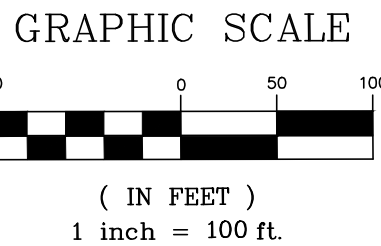
ARCHITECT:
WILLIAM STARCK ARCHITECTS, INC.
126 COVER STREET
FALL RIVER, MA 02720

TRAFFIC ENGINEER
TEC, INC.
169 OCEAN BOULEVARD
PO BOX 249
HAMPTON, NH 03842



LIST OF DRAWINGS

DRAWING TITLE	SHEET NO.	ISSUED
EXISTING CONDITIONS	V-101	02-14-2020
OVERALL SITE PLAN	C-101	02-14-2020
SITE PREPARATION PLAN	C-102A	02-14-2020
SITE PREPARATION NOTES	C-102B	02-14-2020
SITE PREPARATION DETAILS	C-102C	02-14-2020
LAYOUT & MATERIALS PLAN	C-103	02-14-2020
GRADING & DRAINAGE PLAN	C-104	02-14-2020
UTILITIES PLAN	C-105	02-14-2020
DETAILS	C-501	02-14-2020
DETAILS	C-502	02-14-2020
DETAILS	C-503	02-14-2020
DETAILS	C-504	02-14-2020
DETAILS	C-505	02-14-2020
LANDSCAPING PLAN	L-101	02-14-2020
LANDSCAPING DETAILS	L-501	02-14-2020
LIGHTING PLAN	E-101	02-14-2020



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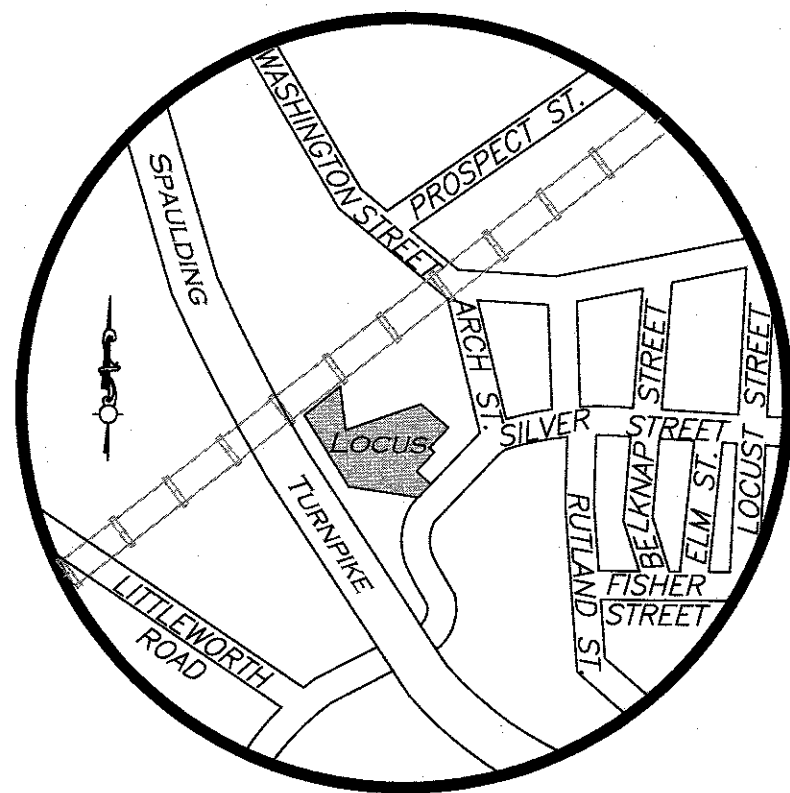
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PERMITS/APPROVALS			
	PERMIT NUMBER	APPROVED DATE	EXPIR. DATE
CITY OF DOVER CONDITIONAL USE PERMIT	P15-55	03-22-2016	N/A
CITY OF DOVER SITE PLAN REVIEW	P15-56	03-22-2016	N/A
CITY OF DOVER ZONING BOARD	CASE Z 15-10	05-21-2015	-
NHDES AOT	AoT-1085	05-16-2016	05-16-21
NHDES DREDGE AND FILL (WETLAND)	2015-03065	04-22-2016	N/A
NHDOT DRIVEWAY PERMIT	06-125-387	05-02-2016	05-02-17

ISSUED FOR AMENDMENT TO APPROVED PLAN:
FEBRUARY 14, 2020



LOCUS MAP
(NOT TO SCALE)

LEGEND

STONE/CONCRETE BOUND (SB/CB)	FLARED END SECTION	BUILDING	ELECTRIC LINE
IRON PIPE (IP)	LIGHT	BUILDING OVERHANG	TELEPHONE LINE
IRON ROD (IR)	FLOODLIGHT	WETLAND	OVERHEAD WIRES
DRAIN MANHOLE (DMH)	TREE	1' CONTOUR	BITUMINOUS
SEWER MANHOLE (SMH)	SIGN	5' CONTOUR	CONCRETE
ELECTRIC MANHOLE (EMH)	SIGN	PROPERTY LINE	GRANITE
TELEPHONE MANHOLE (TMH)	HAND HOLE	ABUTTERS LINE	BOTTOM CENTER
CATCH BASIN (CB)	CABLE BOX	STONE WALL	POLYVINYL CHLORIDE PIPE
UTILITY POLE	TELEPHONE BOX	TREE LINE	CAST IRON PIPE
UTILITY POLE W/LIGHT	ELECTRIC BOX	EDGE OF PAVEMENT	HIGH DENSITY POLYETHYLENE PIPE
GUY WIRE	GAS METER	CURB	STONE BOUND W/DRILL HOLE
FIRE HYDRANT	ELECTRIC METER	CHAIN LINK FENCE	CONC. BOUND W/DRILL HOLE
WATER SERVICE	HANDICAPPED PARKING SPACE	STOCKADE FENCE	NEW HAMPSHIRE HIGHWAY BOUND
GAS GATE	IRRIGATION CONTROL VALVE	WATER LINE	FOUND
BOLLARD	PAINTED ARROW	SEWER LINE	NOW OR FORMERLY
CLEANOUT	PARKING SPACE COUNT	DRAIN LINE	BOOK
INVERT (INV)	CONCRETE	GAS LINE	PAGE

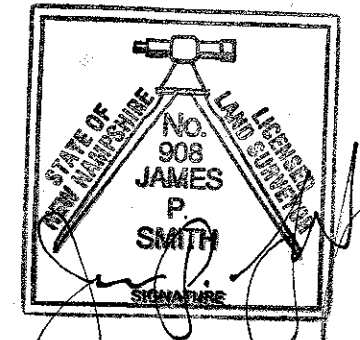
NOTES

1. NORTH ARROW IS BASED ON NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM (NAD 83).
2. VERTICAL DATUM IS NAVD88 ESTABLISHED BY RTK GPS OBSERVATION.
3. CONTOUR INTERVAL IS ONE FOOT (1').
4. BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM STRAFFORD COUNTY REGISTRY OF DEEDS.
5. UNDERGROUND UTILITY INFORMATION SHOWN HEREON WAS TAKEN FROM AS-BUILT INFORMATION PROVIDED BY THE CONTRACTOR.
6. THIS PLAN IS TO SHOW TOPOGRAPHIC INFORMATION ONLY, NO TITLE RESEARCH WAS PERFORMED.

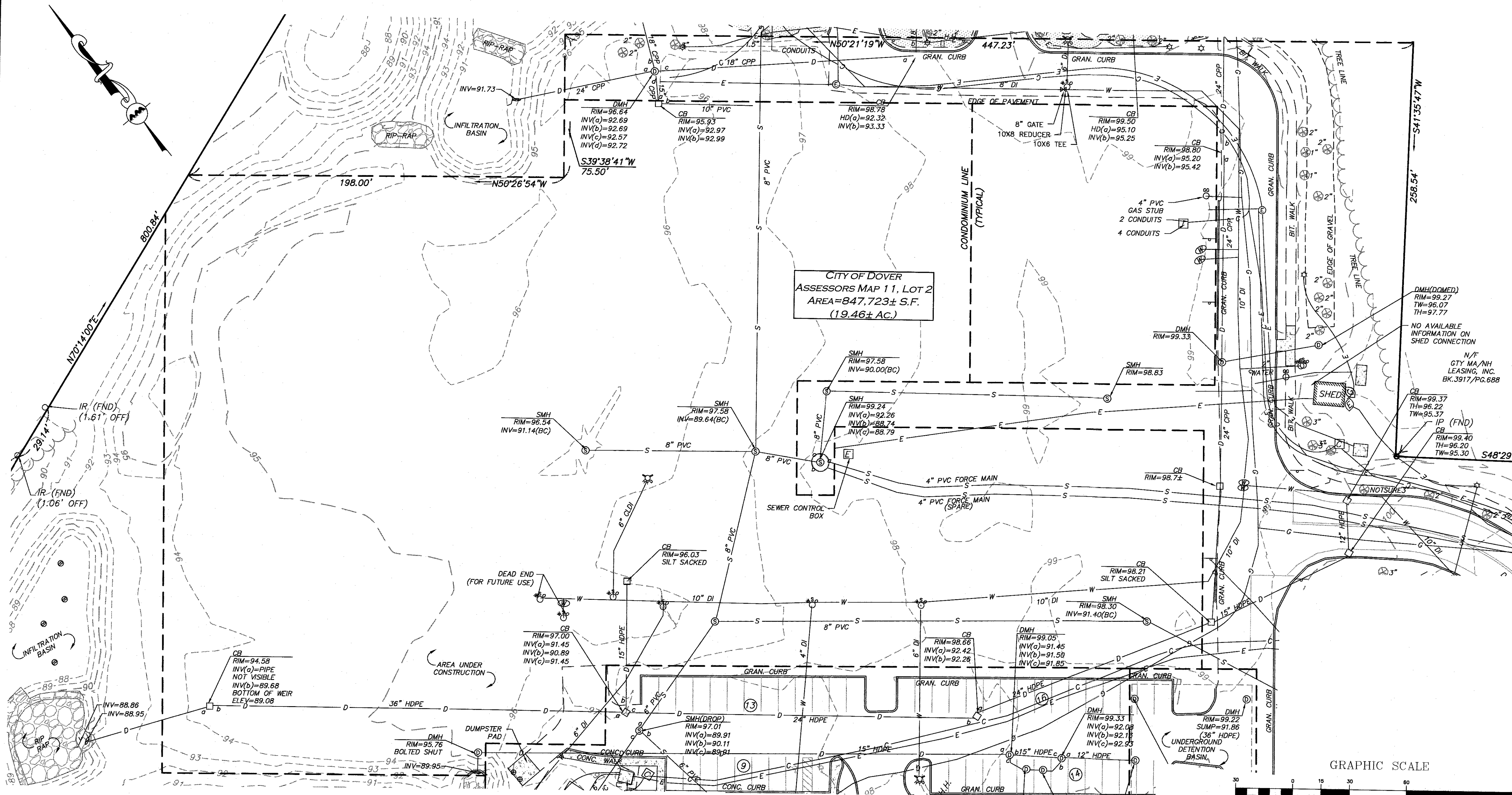
THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN APRIL 20, 2015 AND JANUARY 16, 2020 AND HAD AN ERROR OF CLOSURE OF NO GREATER THAN 1/10,000.

ALLEN & MAJOR ASSOCIATES, INC.

2/14/2020
DATE



LICENSED LAND SURVEYOR FOR
ALLEN & MAJOR ASSOCIATES, INC.



REV DATE DESCRIPTION

OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO. 2734-01 DATE: 02-14-2020

SCALE: 1" = 30' DWG. NAME: S-2734-01-EC

DRAFTED BY: AJR CHECKED BY: JPS

PREPARED BY:

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EXISTING CONDITIONS V-101

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N:\PROJECTS\2734-01\SURVEY\DRAWINGS\CURRENT\S-2734-01-EC.DWG
FB# 1705 PG. 104

OFF-STREET PARKING SUMMARY

		ALLOWED	PROVIDED		
		TOTAL	ADA	STANDARD	TOTAL
COFFEE SHOP (GATHERING PLACE ⁵)	0.5 SPACE PER SEAT + 1 SPACE PER EMP. (0.5 * 26 SEATS) + (1 * 5 EMP.)	18	1	17	18
RETAIL BUILDING (RETAIL/SERVICE USE ¹⁰)	1 SPACE PER 275 S.F. (14,927)/(275) =	54	4	50	54
MEDICAL OFFICE BUILDING (OFFICE USE) ⁹	1 SPACE PER 300 S.F. 40,176 S.F./300 S.F.=	134	7	133	140
HOTEL (LODGING) ⁷	1/PER UNIT + 1/EMP + 1/500SF COMMON (1*66 UNITS) + (1*8 EMP) + (3000SF/500) =	80	4	70	74
ASSISTED LIVING (MEDICAL)	0.5 SP. PER UNIT + 1 SP. PER EMPLOYEE (0.5 * 76 UNITS) + (1 * 15 EMPLOYEES) =	53	4	43	47
(GRAYSCALE TEXT INDICATES EXISTING FACILITY)					
MINIMUM ADA SPACES	SEE TABLE 1106.1 ACCESSIBLE PARKING SPACES IBC 2009	TOTAL ALLOWED	ADA	STANDARD	TOTAL PROVIDED
TOTALS		339	20	313	333

⁵ FACILITY THAT HAS A LARGE GROUPING OF CUSTOMERS FOR A LONGER DURATION ACTIVITY.

⁹ FACILITY THAT HAS EMPLOYEES BUT NOT A HIGH VOLUME OF CUSTOMERS OR CLIENTS.

⁷ FACILITY WITH OVERNIGHT UNITS DESIGNED FOR SHORT TERM OCCUPANCY

¹⁰ FACILITY THAT HAS EMPLOYEES AND A HIGH VOLUME OF CUSTOMERS OR CLIENTS.

VARIANCES GRANTED

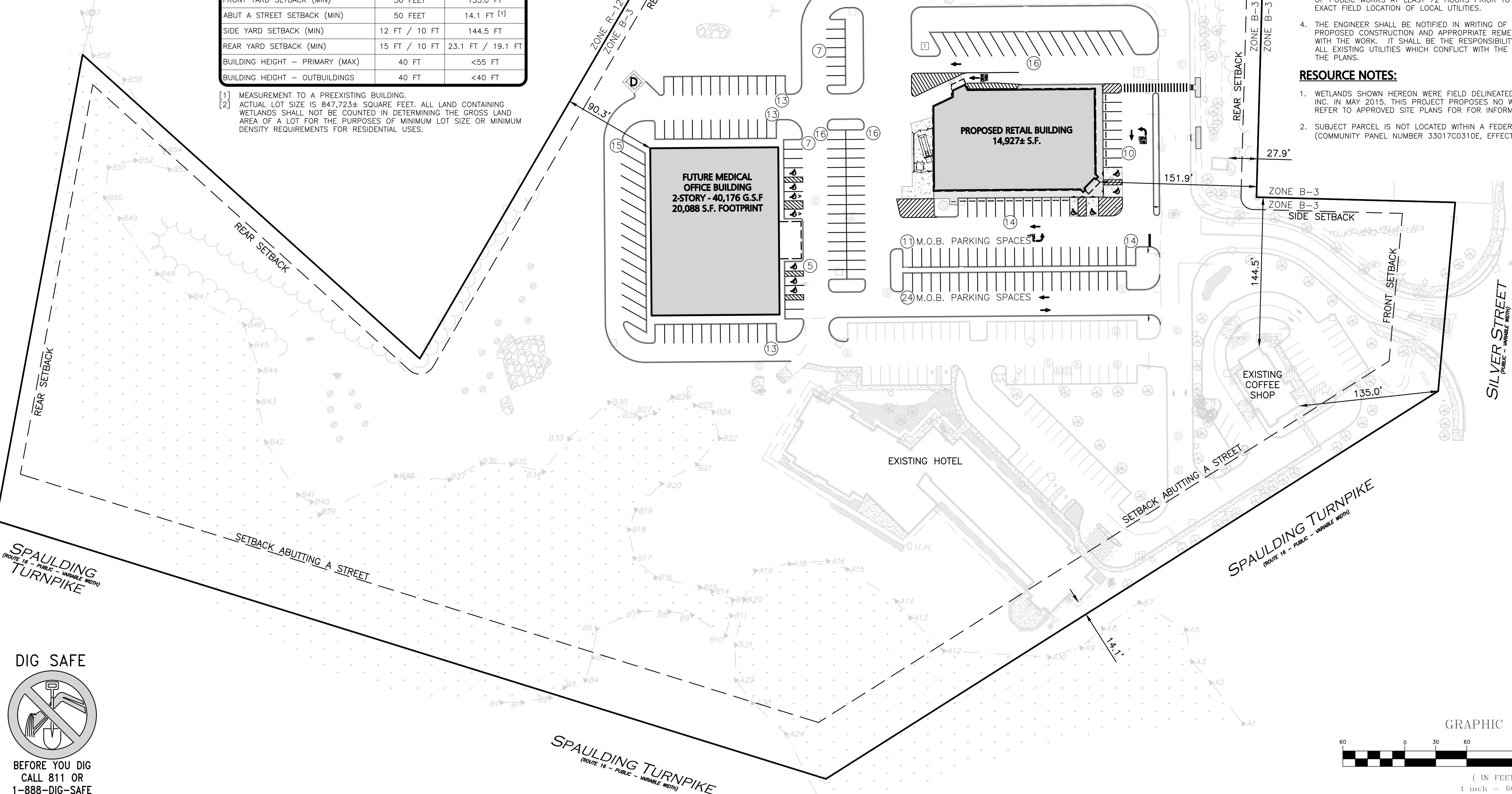
- VARIANCES WERE GRANTED ON 05-21-2015 (CASE Z 15-10) TO ALLOW A BUILDING HEIGHT OF 55 FEET AND ASSISTED LIVING USE IN B-3 DISTRICT (SECTION 170-11.C).
- VARIANCE GRANTED ON 02-13-1984 FOR RELIEF FROM DEFINITION OF LOT IN ORDER TO CONSTRUCT AN ADDITIONAL BUILDING ON THE LOT. (H84-6)
- SIGN APPROVED ON 07-24-1979 TO ALLOW EXISTING RAMADA SIGN TO BE RAISED FROM 30 FEET TO 40 FEET IN HEIGHT.

CITY OF DOVER
THOROUGHFARE BUSINESS (B-3) DISTRICT

ITEM	B-3	PROPOSED
LOT AREA (MIN) [2]	20,000 SF	643,379 SF ±
MAXIMUM COVERAGE	50%	10.5%
FRONTAGE (MIN) (PUBLIC WAY)	125 FEET	183.5 FT
PRINCIPLE / ACCESSORY USE		
FRONT YARD SETBACK (MIN)	50 FEET	135.0 FT
ABUT A STREET SETBACK (MIN)	50 FEET	14.1 FT [1]
SIDE YARD SETBACK (MIN)	12 FT / 10 FT	144.5 FT
REAR YARD SETBACK (MIN)	15 FT / 10 FT	23.1 FT / 19.1 FT
BUILDING HEIGHT - PRIMARY (MAX)	40 FT	<55 FT
BUILDING HEIGHT - OUTBUILDINGS	40 FT	<40 FT

[1] MEASUREMENT TO A PREEXISTING BUILDING.

[2] ACTUAL LOT SIZE IS 847,723± SQUARE FEET. ALL LAND CONTAINING WETLANDS SHALL NOT BE COUNTED IN DETERMINING THE GROSS LAND AREA OF A LOT FOR THE PURPOSES OF MINIMUM LOT SIZE OR MINIMUM DENSITY REQUIREMENTS FOR RESIDENTIAL USES.



GENERAL NOTES:

- THE PURPOSE OF THIS PLAN IS TO AMEND THE APPROVED SITE PLAN, WHICH WAS APPROVED ON MARCH 22, 2016, PLANNING BOARD FILE NUMBER P15-56.
- SNOW SHALL BE TAKEN OFF-SITE ONCE SNOW STORAGE AREAS ON SITE BECOME INADEQUATE, AND BEGINS TO BLOCK ACCESS TO AND FROM THE SITE, OR BLOCKS THE USE OF ON-SITE PARKING. ANY EXCESS WILL BE TRUCKED OFF-SITE & DISPOSED OF IN ACCORDANCE WITH CITY OF DOVER AND NHDES GUIDELINES.
- CONTRACTOR TO PROVIDE ALL-WEATHER ACCESS FOR CITY OF DOVER FIRST RESPONDERS DURING CONSTRUCTION.

PLAN NOTES:

- EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE CITY OF DOVER AND OTHER SOURCES.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR SHALL ALSO CONTACT THE CITY OF CHELSEA, MA DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF LOCAL UTILITIES.
- THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

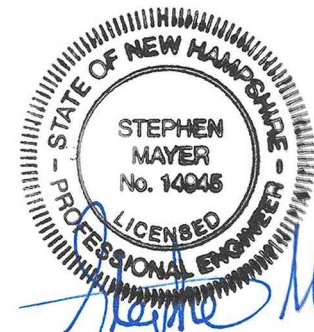
RESOURCE NOTES:

- WETLANDS SHOWN HEREON WERE FIELD DELINEATED BY COVE ENVIRONMENTAL SERVICES INC. IN MAY 2015. THIS PROJECT PROPOSES NO WORK ADJACENT TO THE WETLANDS. REFER TO APPROVED SITE PLANS FOR INFORMATION REGARDING ONSITE WETLANDS.
- SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0310E, EFFECTIVE DATE: SEPTEMBER 30, 2015).

PROPERTY OWNER:

VMD EQUITIES DVR LLC, C/O VMD COMPANIES LLC
733 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

SIGNATURE



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV DATE DESCRIPTION

OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO. 2734-01 DATE: 02-14-2020

SCALE: 1" = 60' DWG. NAME: C2734-01

DESIGNED BY: SM CHECKED BY: MAM

PREPARED BY:



ALLEN & MAJOR
ASSOCIATES, INC.

civil engineering ♦ land surveying
environmental consulting ♦ landscape architecture
www.allenmajor.com

400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
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WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

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DRAWING TITLE:

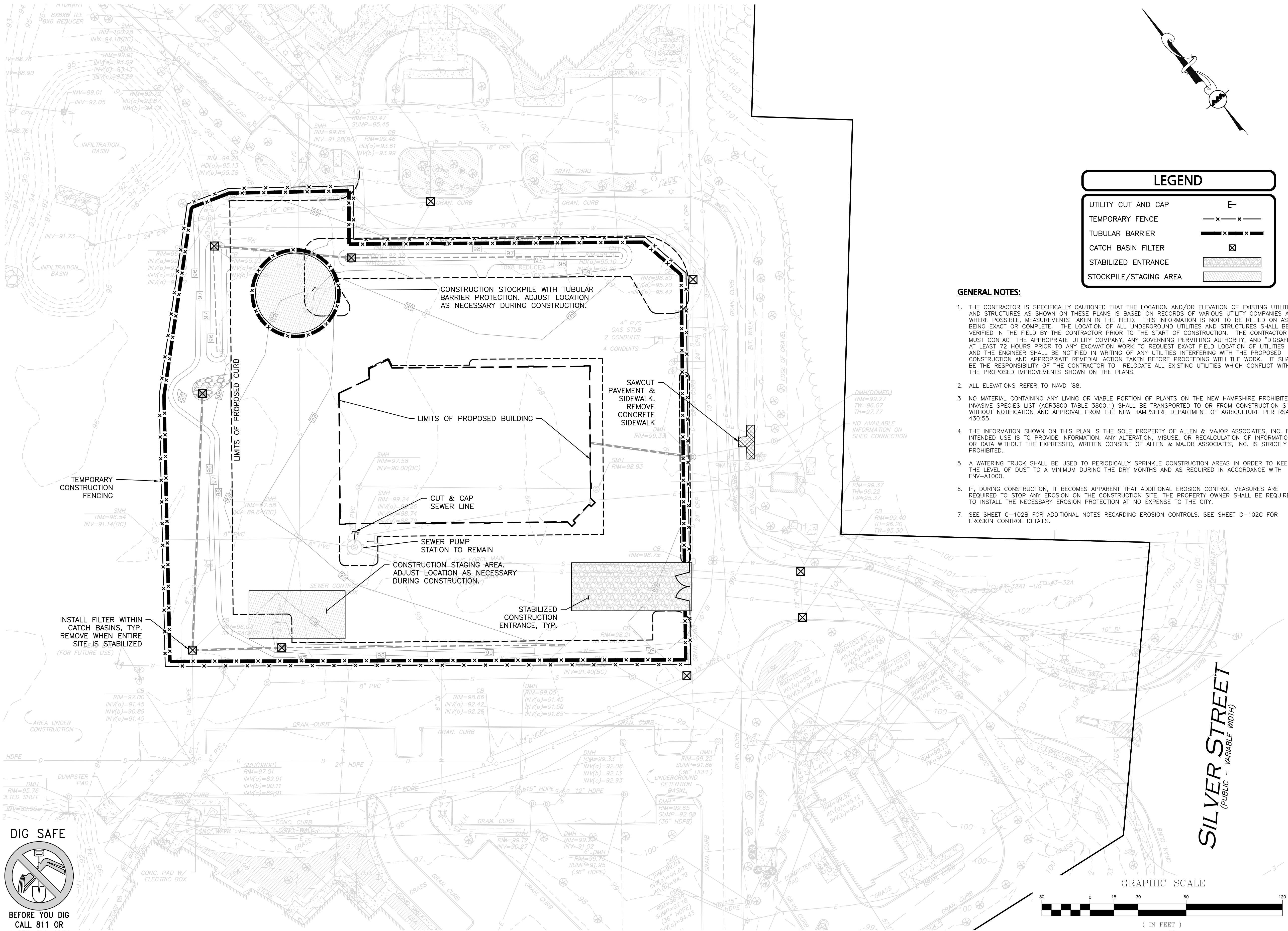
OVERALL SITE PLAN

SHEET No.

C-101

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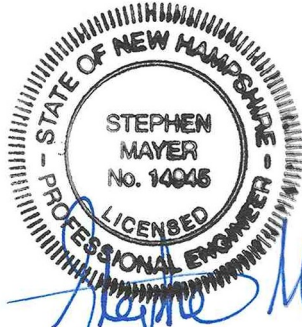
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LEGEND	
UTILITY CUT AND CAP	E-
TEMPORARY FENCE	— x — x —
TUBULAR BARRIER	— x — x —
CATCH BASIN FILTER	⊠
STABILIZED ENTRANCE	▨
STOCKPILE/STAGING AREA	▨

GENERAL NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. ALL ELEVATIONS REFER TO NAVD '88.
3. NO MATERIAL CONTAINING ANY LIVING OR VIBILE PORTION OF PLANTS ON THE NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST (AGR3800 TABLE 3800.1) SHALL BE TRANSPORTED TO OR FROM CONSTRUCTION SITE WITHOUT NOTIFICATION AND APPROVAL FROM THE NEW HAMPSHIRE DEPARTMENT OF AGRICULTURE PER RSA 430:55.
4. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION, ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.
5. A WATERING TRUCK SHALL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS AND AS REQUIRED IN ACCORDANCE WITH ENV-A1000.
6. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE, THE PROPERTY OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE CITY.
7. SEE SHEET C-102B FOR ADDITIONAL NOTES REGARDING EROSION CONTROLS. SEE SHEET C-102C FOR EROSION CONTROL DETAILS.



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO.	2734-01	DATE:	02-14-2020
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SCALE:	1" = 30'	DWG. NAME:	C2734-01
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DESIGNED BY:	SM	CHECKED BY:	MAM
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PREPARED BY:



**ALLEN & MAJOR
ASSOCIATES, INC.**

civil engineering • land surveying
environmental consulting • landscape architecture
www.allenmajor.com

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DRAWING TITLE:

SITE PREPARATION PLAN

SHEET No.

C-102A

R:\PROJECTS\2734-01\CIVIL DRAWINGS\CURRENT\G-2734-01_SITE-PREP.DWG

EROSION CONTROL AND SEDIMENT CONTROL NOTES

1. AS CONSTRUCTION DISTURBANCE IS GREATER THAN 1 ACRE, A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT NOI, AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WILL NEED TO BE SUBMITTED TO THE EPA NEW ENGLAND AND NH DES. THE NPDES PERMIT FOR STORM WATER DISCHARGE, & CONSTRUCTION GENERAL PERMIT NOI WILL BE REQUIRED TO BE SUBMITTED AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION.
2. OWNER AND CONTRACTOR ARE RESPONSIBLE FOR COMPLIANCE WITH THE CONSTRUCTION GENERAL PERMIT NOI. COPIES OF ALL SWPPP REPORTS SHALL BE PROVIDED TO THE CITY OF DOVER WITHIN 3 DAYS OF EACH INSPECTION.
3. APPLICABLE WORK AND MATERIALS SHALL COMPLY WITH ALL CITY OF DOVER, NH DES, NH REGULATIONS AND CODES AND O.S.H.A. STANDARDS. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE SITE PLAN REGULATIONS FROM THE CITY OF DOVER, NH PLANNING BOARD, AND THE PUBLIC WORKS DEPARTMENT SPECIFICATIONS, USDA SOIL CONSERVATION SERVICE VEGETATIVE PRACTICES IN SITE DEVELOPMENT.
4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES, AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK.
5. ALL DISTURBED AREAS NOT OTHERWISE NOTED SHALL RECEIVE 6" OF SUITABLE LOAM & SEED UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED. TEMPORARY SEEDING MIX SHALL BE APPLIED AT RATE OF 5 LBS PER 1,000 S.F. WITH A MIXTURE OF 40% CREEPING RED FESCUE, 20% ANNUAL RYE GRASS, 20% KENTUCKY BLUEGRASS, 10% RED TOP, & 10% PERENIAL RYE GRASS. CONTRACTOR SHALL AVOID PLANTING ANY INVASIVE SPECIES OR PROHIBITED PLANTS (AS LISTED ON THE "NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST") IN ACCORDANCE WITH THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800.
6. AREAS WITH OVER 3:1 SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET OR JUTE MESH.
7. SILT CONTROL SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS TO SILT CONTROLS SHOWN ON THE APPROVED PLANS AS A RESULT OF ACTUAL FIELD CONDITIONS OR CONSTRUCTION PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH B.M.P. (BEST MANAGEMENT PRACTICES) PER THE E.P.A. 1992 "STORMWATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES" MANUAL. ANY SUCH MODIFICATIONS SHALL BE INSTALLED AS APPROVED BY THE ENGINEER.
8. AREAS OF EXPOSED SOIL UNDERGOING CONSTRUCTION THAT WILL NOT BE COVERED AND OR FINISHED GRADED WITHIN 7 DAYS OF EXPOSURE SHALL BE ANCHORED WITH TEMPORARY EROSION CONTROL MEASURES WITHIN 7 DAYS OF DISTURBANCE. TEMPORARY EROSION CONTROL MEASURES SHALL INCLUDE EROSION CONTROL MESH, NETTING OR MULCH AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND SHOWN ON THE DESIGN PLANS. IF HAY OR STRAW MULCH IS USED IT SHALL BE APPLIED AT THE RATE OF 1.5 TO 2 TONS PER ACRE OR 70 TO 90 LBS. PER 1,000 S.F. APPLICATION AREA SHALL BE SUFFICIENTLY COVERED WITH MULCH TO AVOID ANY VISIBLE SOIL EXPOSURE. MULCH SHALL BE KEPT MOIST TO AVOID LOSS DUE TO WIND. MULCH AND NETTING SHALL BE APPLIED IN THE BASE OF ALL GRASSED WATERWAYS AND IN VEGETATIVE SLOPES WHICH EXCEED 15% AND DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS.
9. IF DISTURBED AREAS DO NOT RECEIVE FINAL SEEDING BY SEPTEMBER 15 OF THE CONSTRUCTION YEAR, THEN ALL DISTURBED AREAS SHALL BE SEEDDED WITH A WINTER COVER CROP AT THE RATE OF 2 LBS PER 1,000 SQUARE FEET. WINTER SEEDING SHALL BE COVERED WITH EROSION CONTROL MESH (MULCH AND NETTING). HEAVY GRADE MATS SHALL BE USED IN THE BASE OF ALL GRASSED WATERWAYS, ON VEGETATED SLOPES IN EXCESS OF 5%, AND ANY DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS. MULCH AND NETTING SHALL ALSO BE PROVIDED FOR ADDITIONAL WINTER PROTECTION.
10. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH HAY AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDDED WITH WINTER RYE (FOR FALL SEEDING AT 3LB/1,000 SF) OR DATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH HAY MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL. LOAM SHALL BE STOCKPILED AT LOCATIONS DESIGNATED BY THE OWNER AND ENGINEER.
11. ALL FILTER BARRIERS, SILT SACKS, AND EROSION CONTROL MEASURES SHALL BE INSTALLED ACCORDING TO THE STORMWATER POLLUTION PREVENTION PLAN. THESE SHALL BE MAINTAINED DURING CONSTRUCTION TO REMOVE SEDIMENT FROM RUNOFF WATER. ALL THE FILTER BARRIERS AND EROSION CONTROL BERMS SHALL BE INSPECTED AFTER ANY RAINFALL OR RUNOFF EVENT, MAINTAINED AND CLEANED UNTIL ALL AREAS HAVE AT LEAST 85-90% VIGOROUS PERENNIAL COVER OF GRASSES.
12. A WATERING TRUCK SHALL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS AND AS REQUIRED IN ACCORDANCE WITH ENV-A1000.
13. THE PROJECT MUST MEET THE REQUIREMENTS AND INTENT OF NH RSA 430:53 TITLE XL AGRICULTURE, HORTICULTURE AND ANIMAL HUSBANDRY, CHAPTER 430, INSECT PESTS AND PLANT DISEASES, INVASIVE SPECIES AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
14. THE CONTRACTOR SHALL USE EXTREME CAUTION TO AVOID ALLOWING SEDIMENTS TO ENTER THE STORM DRAIN SYSTEM DURING CONSTRUCTION. CATCH BASIN INLETS SHALL ALSO BE PROTECTED DURING CONSTRUCTION BY THE USE OF STONE INLET PROTECTION AROUND EACH INLET. SILT SACKS SHALL ALSO BE INSTALLED IN ALL EXISTING BASINS. INLET PROTECTION MAY BE REMOVED ONLY AFTER FINISHED AREAS ARE PAVED AND THE VEGETATED SLOPES ARE ESTABLISHED WITH AT LEAST 85-90% OF VIGOROUS PERENNIAL GROWTH.
15. REVEGETATION MEASURES SHALL COMMENCE IMMEDIATELY UPON THE COMPLETION OF CONSTRUCTION. FOLLOWING SEED BED PREPARATION ALL AREAS NOTED TO RECEIVE COVER SHALL BE SEEDDED WITHIN 15 TO AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15TH. HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER. HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE OR 70 TO 90 LBS. PER 1,000 S.F.
13. IN LIEU OF SOIL TESTS, SOIL AMENDMENTS FOR TEMPORARY SEEDDED AREAS MAY BE APPLIED AS FOLLOWS:
 - 10-10-10 FERTILIZER (N-P205-K20 OR EQUAL); APPLICATION RATE= 25 LBS/1,000 S.F.
 - GROUND LIMESTONE (85% OF TOTAL CARBONATES). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT 50% WILL PASS A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE; APPLICATION RATE= 100 LB/1,000 S.F.
 - WHEN FERTILIZER IS APPLIED WITHIN 100' OF ANY RIVER, STREAM, POND, OR LAKE IT SHALL BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER.
14. LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE PER SPECIFICATIONS. LOAM SHALL BE FREE OF SOIL & CLAY LUMPS, STONES, WEEDS, ROOTS OR OTHER DELETERIOUS MATERIAL AND MEET THE LOAM SPECIFICATION DETAIL.
15. EROSION CONTROL MESH SHALL BE APPLIED IN ACCORDANCE WITH THE PLANS OVER ALL FINISHED SEEDDED AREAS AS SPECIFIED ON THE DESIGN PLANS.
16. AT THE OWNER'S DISCRETION ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED TO MAINTAIN STABILITY OF EARTHWORKS AND FINISHED GRADED AREAS. THE CONTRACTOR, AT HIS EXPENSE, WILL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ADDITIONAL MEASURES AS SPECIFIED BY THE OWNER. THIS INCLUDES BUT IS NOT LIMITED TO REQUESTS BY NH DES AND THE MUNICIPALITY, AS AUTHORIZED BY THE OWNER.
17. TOTAL LAND AREA IS 20.33± ACRES. TOTAL DISTURBED AREA = 86,000SF± (NPDES NOI CONSTRUCTION GENERAL PERMIT IS REQUIRED)
18. INSPECTIONS AND MONITORING MAINTENANCE MEASURES SHALL BE APPLIED DURING THE ENTIRE CONSTRUCTION CYCLE. WEEKLY INSPECTIONS SHALL BE HELD THROUGH THE DURATION OF CONSTRUCTION ACTIVITY. WEEKLY INSPECTION REPORTS SHALL BE MAINTAINED IN THE CONTRACTORS FIELD OFFICE. IN ADDITION TO THE NORMAL WEEKLY INSPECTIONS, THE CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL EROSION CONTROL MEASURES AFTER EACH RAINFALL AT A MINIMUM OF (1/4" OR GREATER OF RAINFALL) OR RUNOFF EVENT, AND PERFORM THE NECESSARY REPAIRS. THE INSPECTIONS SHALL INCLUDE BUT NOT BE LIMITED TO THE SITE'S DOWN STREAM DISCHARGE POINTS. THE CONTRACTOR SHALL MAINTAIN A LOG IN ACCORDANCE WIT THE PLANS, NHDES, AND CITY OF DOVER, NH.
19. IF ANY EVIDENCE OF SEDIMENTATION IS OBSERVED IN THE INLETS, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE A PLAN TO THE ENGINEER TO REMOVE ANY ACCUMULATED SEDIMENT IN THESE AREAS. THE CONTRACTOR SHALL ALSO IMMEDIATELY PROVIDE ADDITIONAL ON SITE EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT FURTHER DEGRADATION OF THE AREA.
20. FOLLOWING THE TEMPORARY OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA BIMONTHLY TO ENSURE THE AREAS HAVE A MINIMUM OF 85-90% VEGETATED VIGOROUS GROWTH. RESEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW UP INSPECTIONS IN THE EVEN OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.
21. THE AREA OR AREAS OF ENTRANCE AND EXIT TO AND FROM THE SITE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
22. STOCKPILES SHALL BE SURROUNDED ON THEIR PERIMETERS WITH STAKED HAYBALES AND/OR SILTATION FENCES TO PREVENT AND/OR CONTROL SILTATION AND EROSION.
23. ALL EXISTING & PROPOSED CATCH BASINS SUBJECT TO STORMWATER RUNOFF DURING CONSTRUCTION SHALL HAVE STONE INLET PROTECTION AND SILT SACKS INSTALLED OR AS DIRECTED BY THE OWNER/ENGINEER. NO SEDIMENTATION SHALL ENTER THE ON-SITE OR OFF-SITE DRAINAGE SYSTEMS AT ANY TIME.
24. CONTRACTOR TO CONTROL FUGITIVE DUST IN ACCORDANCE WITH ENV-A 1002. CONTRACTOR TO PREVENT, ABATE, AND CONTROL THE EMISSION OF FUGITIVE DUST, INCLUDING BUT NOT LIMITED TO THE FOLLOWING METHODS: WETTING, COVERING, SHIELDING OR VACUUMING.
25. IF DOWATERING IS NECESSARY IT SHALL ONLY BE COMPLETED AS FOLLOWS: THE DISCHARGE SHALL BE STOPPED IMMEDIATELY IF THE RECEIVING AREA SHOWS ANY SIGN OF INSTABILITY OR EROSION. ALL CHANNELS, SWALES, AND DITCHES DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA SHALL BE STABLE PRIOR TO DIRECTING DISCHARGE TO THEM. IF A CONSTRUCTION EQUIPMENT BUCKET IS USED, IT SHALL EMPTY THE MATERIAL TO A STABLE AREA. NO DOWATERING SHALL OCCUR DURING PERIODS OF INTENSE, HEAVY RAIN. FLOW TO THE SEDIMENT REMOVAL STRUCTURE SHALL NOT EXCEED THE STRUCTURE'S CAPACITY TO SETTLE AND FILTER FLOW OR ITS VOLUME CAPACITY. WHENEVER POSSIBLE, THE DISCHARGE FROM THE SEDIMENT REMOVAL STRUCTURE SHALL DRAIN TO A WELL-VEGETATED BUFFER BY SHEET FLOW WHILE MAXIMIZING THE DISTANCE TO THE NEAREST WATER RESOURCE AND MINIMIZING THE SLOPE OF THE BUFFER AREA. THERE SHALL BE NO DIRECT DISCHARGE TO EXISTING WETLANDS OR STREAMS. ALL DISCHARGE SHALL BE IN COMPLIANCE WITH STATE, LOCAL, AND FEDERAL REQUIREMENTS.

CONSTRUCTION GENERAL PERMIT NOTES

NARRATIVE: THE STORMWATER POLLUTION PREVENTION PLANS TOGETHER WITH AN EXISTING CONDITIONS PLAN, AND GRADING & DRAINAGE PLAN ARE THE TOTAL EROSION CONTROL MEASURES. THE STORMWATER POLLUTION PREVENTION PLANS CONSIST OF:

- SITE PREPARATION PLAN: C-102A (SHOWING THE EROSION CONTROL MEASURES)
- SITE PREPARATION NOTES: C-102B
- SITE PREPARATION DETAILS: C-102C

THE EROSION CONTROL PLAN WILL BE IMPLEMENTED TO:

- A. TREAT EROSION AS SOON AS POSSIBLE AFTER DISTURBANCE.
- B. PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION AREA AND ENTERING THE MUNICIPAL SYSTEM.
- C. CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED TO MINIMIZE EROSION.
- D. ONLY DISTURB, CLEAR, OR GRADE AREAS NECESSARY FOR CONSTRUCTION

MAINTENANCE

ALL MEASURES STATED ON THIS STORMWATER POLLUTION PREVENTION PLANS, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.
2. ALL SEEDDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A HEALTHY STAND OF GRASS IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEDED AS NEEDED.
3. FILTER BARRIERS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE FILTER BARRIERS WHEN IT REACHES 6" IN HEIGHT OR AS REQUESTED BY THE OWNER OR ENGINEER.
4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.
6. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

GENERAL SEQUENCE OF CONSTRUCTION:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
2. PREPARE TEMPORARY PARKING AND STORAGE AREA UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAY DOWN, WHEEL WASH, CONCRETE WASHOUT, MASONS AREA, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., DENOTE THEM ON THE SITE MAPS IMMEDIATELY AND NOTE ANY CHANGES IN THE LOCATIONS AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.
3. CONSTRUCT THE FILTER BARRIERS ON THE SITE AND AT THE PERIMETER PRIOR TO ALL EARTHMOVING ACTIVITIES.
4. CLEAR AND GRUB THE SITE.
5. CONSTRUCT THE TEMPORARY SEDIMENTATION AND SEDIMENT TRAP BASINS AS NECESSARY.
6. CONSTRUCT STORMWATER MEASURES. PONDS AND SWALES SHALL BE INSTALLED PRIOR TO ROUGH GRADING AND STABILIZED PRIOR TO RECEIVING RUNOFF.
7. HALT ALL ACTIVITIES AND CONTACT THE CIVIL ENGINEERING CONSULTANT TO PERFORM INSPECTION OF BMPS. GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT STORM WATER PRE-CONSTRUCTION MEETING WITH ENGINEER AND ALL GROUND DISTURBING CONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.
8. BEGIN GRADING THE SITE.
9. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES. TEMPORARILY SEED DENUDED AREAS. ALL CUT AND FILL SLOPES SHALL BE SEEDDED / LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
10. INSTALL BUILDING, UTILITIES, STORM SEWERS, CURBS AND GUTTERS.
11. INSTALL INLET PROTECTION DEVICES AROUND ALL STORM DRAIN STRUCTURES.
12. INSTALL RIP RAP AROUND OUTLET STRUCTURES.
13. FINALIZE GRADING, AND PREPARE SITE FOR PAVING. NOTE, ALL PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
14. PAVE SITE.
15. COMPLETE FINISH GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
16. ONCE SITE IS STABILIZED, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (AFTER APPROVAL BY CIVIL ENGINEER, OWNER, CITY OF DOVER, AND NHDES).

POST CONSTRUCTION PHASE

THE DEVELOPER (OWNER) WILL BE RESPONSIBLE FOR MAINTENANCE OF THE SYSTEMS IN ACCORDANCE WITH THE PROJECT OPERATION AND MAINTENANCE PLAN INCLUDING THE FOLLOWING:

1. INSPECTION OF ALL DRAINAGE FACILITIES AND SYSTEMS THREE MONTHS. DURING THE FIRST YEAR OF OPERATION, ALL DRAINAGE FACILITIES SHOULD BE INSPECTED AFTER EVERY STORM, AND 2-3 DAYS AFTERWARD. THESE INSPECTIONS SHOULD LOOK FOR EVIDENCE STRUCTURAL DAMAGE, SILT ACCUMULATION (NEAR INLET INVERTS ON CATCH BASINS), AND IMPROPER FUNCTION.
2. AFTER INSPECTION, IF ANY OF THE ABOVE CONDITIONS EXIST, THE OWNER SHALL IMMEDIATELY ARRANGE FOR ALL NECESSARY REPAIRS AND SEDIMENT REMOVAL.
3. THE CATCH BASINS ARE TO BE INSPECTED ANNUALLY. REMOVE OIL, DEBRIS, AND SEDIMENT AFTER INSPECTIONS.
4. ALL GRADED SLOPES SHALL BE INSPECTED FOR EROSION. UPON DISCOVERY OF ANY EROSION, LOAM AND SEED SHALL BE PUT IN PLACE AND NURTURED.
5. CONTRACTOR SHALL SPREAD PERMANENT SEED AT A RATE OF 5 LBS PER 1,000 S.F. IN ALL DISTURBED AREAS NOT NOTED TO RECEIVE OTHER MATERIALS, AND AT AREAS SHOWN ON THE PLAN PER SPECIFICATIONS BELOW:

SCIENTIFIC NAME	COMMON NAME	PROPORTION BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION
FESTUCA RUBRA "RUBRA"	CREEPING RED FESCUE	37%	95%	90%
PAO PRAENTENSIS "BARON"	BARON KENTUCKY BLUEGRASS	40%	85%	90%
LOLIUM PERENNE "PALMER"	PALMER PERENNIAL RYEGRASS	15%	95%	90%
FESTUCA RUBRA COMMUTATA WILMA	WILMA CHEWINGS	8%	95%	80%

NH DES ALTERATION OF TERRAIN (ENV-WQ 1500) REQUIREMENTS:

THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE NH DES, ALTERATION OF TERRAIN REGULATIONS; INCLUDING BUT NOT LIMITED TO ENV-WQ 1500 AND THE SECTIONS BELOW:

PART ENV-WQ 1505 REQUIREMENTS TO PROTECT WATER QUALITY DURING TERRAIN ALTERATION ACTIVITIES

ENV-WQ 1505.01 WATER QUALITY DEGRADATION PROHIBITED. NO PERSON UNDERTAKING ANY TERRAIN ALTERATION ACTIVITY SHALL CAUSE OR CONTRIBUTE TO, OR ALLOW THE ACTIVITY TO CAUSE OR CONTRIBUTE TO, ANY VIOLATIONS OF THE SURFACE WATER QUALITY STANDARDS ESTABLISHED IN ENV-WQ 1700.

ENV-WQ 1505.02 MAXIMUM OPEN AREA ALLOWED.

- (a) ALL AREAS OF UNSTABILIZED SOIL SHALL BE:
 - (1) TEMPORARILY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS OF INITIAL DISTURBANCE, UNLESS A SHORTER TIME IS SPECIFIED BY LOCAL AUTHORITIES, THE CONSTRUCTION SEQUENCE APPROVED AS PART OF THE ISSUED PERMIT, OR AN INDEPENDENT MONITOR; AND
 - (2) PERMANENTLY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 3 DAYS OF FINAL GRADING.
- (b) EXCEPT AS FURTHER LIMITED BY (E), BELOW, THE AREA OF UNSTABILIZED SOIL SHALL NOT EXCEED 5 ACRES AT ANY TIME UNLESS THE APPLICANT:
 - (1) SUBMITS DOCUMENTATION THAT THE REQUIRED AREAS OF EARTH CUTS AND FILLS ARE SUCH THAT AN AREA OF DISTURBANCE OF 5 ACRES OR LESS WOULD UNREASONABLY LIMIT THE CONSTRUCTION SCHEDULE;
 - (2) SUBMITS A CONSTRUCTION SEQUENCE PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST; AND
 - (3) EMPLOYS AN ENVIRONMENTAL MONITOR DURING CONSTRUCTION.
- (c) SUBJECT TO (D) BELOW, THE ENVIRONMENTAL MONITOR SHALL:
 - (1) INSPECT THE PROJECT SITE AT LEAST ONCE EACH WEEK FROM THE START OF TERRAIN ALTERATION ACTIVITIES UNTIL ALL TERRAIN ALTERATION ACTIVITIES ARE COMPLETED AND THE SITE IS STABILIZED;
 - (2) IN ADDITION TO REGULAR WEEKLY INSPECTIONS, INSPECT THE PROJECT SITE DURING ANY RAIN EVENT IN WHICH 0.5 INCH OF PRECIPITATION OR MORE FALLS WITHIN A 24 HOUR PERIOD, PROVIDED THAT IF THE ENVIRONMENTAL MONITOR IS UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THE RAIN EVENT;
 - (3) SUBMIT A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, TO THE DEPARTMENT WITHIN 24 HOURS OF EACH INSPECTION THAT:
 - a. DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
 - b. IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
 - c. INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT; AND
- (d) ROUTINE INSPECTION FREQUENCY MAY BE REDUCED FROM ONCE EACH WEEK TO AT LEAST ONCE EACH MONTH IF EITHER OF THE FOLLOWING CONDITIONS IS MET:
 - (1) WORK HAS BEEN SUSPENDED AND THE ENTIRE SITE IS STABILIZED IN ACCORDANCE WITH ENV-WQ 1505.03; OR
 - (2) RUNOFF IS UNLIKELY BECAUSE:
 - a. THE GROUND IS FROZEN OR THE SITE IS COVERED WITH SNOW OR ICE; AND
 - b. THE PROJECT IS IN AN AREA WHERE FROZEN CONDITIONS ARE ANTICIPATED TO CONTINUE FOR MORE THAN ONE MONTH.
- (e) IF THE SITE IS WITHIN 50 FEET OF SURFACE WATER, HAS A GRADE OF 25% OR GREATER, OR CONTAINS SOILS HAVING AN ERODIBILITY FACTOR OF 0.4 OR GREATER, OR ANY COMBINATION OF THESE, THE OWNER SHALL COMPLY WITH (B) THROUGH (D), ABOVE, REGARDLESS OF THE SIZE OF THE OPEN AREA.

ENV-WQ 1505.03 STABILIZATION.

A SITE SHALL BE DEEMED TO BE STABILIZED WHEN IT IS IN A CONDITION IN WHICH THE SOILS ON THE SITE WILL NOT ERODE UNDER THE CONDITIONS OF A 10-YEAR STORM, SUCH AS BUT NOT LIMITED TO:

- (a) IN AREAS THAT WILL NOT BE PAVED, A MINIMUM OF 85% VEGETATIVE COVER HAS BEEN ESTABLISHED, A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED, OR EROSION CONTROL BLANKETS HAVE BEEN INSTALLED IN ACCORDANCE WITH ENV-WQ 1506.03; OR
- (b) IN AREAS TO BE PAVED, BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2006, ITEM NO. 304.1 OR 304.2 HAVE BEEN INSTALLED.

ENV-WQ 1505.04 STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL.

THE METHODS DESCRIBED IN ENV-WQ 1506.01 THROUGH ENV-WQ 1506.13, USED INDIVIDUALLY OR IN COMBINATION TO MEET THE REQUIREMENT OF ENV-WQ 1505.01, SHALL BE ACCEPTABLE METHODS FOR MINIMIZING POLLUTANT DISCHARGES FROM ANY TERRAIN-ALTERATION PROJECT, INCLUDING PROJECTS THAT ARE SUBJECT TO ENV-WQ 1503.03 RELATIVE TO GENERAL PERMITS BY RULE, FROM THE TIME THAT WORK STARTS ON A PROJECT UNTIL THE SITE IS PERMANENTLY STABILIZED, PROVIDED THAT THE METHODS:

- (a) SHALL BE CONSIDERED AS MINIMUM STANDARDS, WITH THE MORE PROTECTIVE REQUIREMENTS APPLYING, FOR PROJECTS SUBJECT TO ENV-WQ 1503.05; AND
- (b) ARE IMPLEMENTED IN ACCORDANCE WITH THE INDIVIDUAL CRITERIA SPECIFIED FOR EACH METHOD.

ENV-WQ 1505.05 COLD WEATHER SITE STABILIZATION.

- (a) TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE ADDITIONAL STABILIZATION TECHNIQUES SPECIFIED IN THIS SECTION SHALL BE EMPLOYED DURING THE PERIOD FROM NOVEMBER 30 THROUGH MAY 1.
- (b) THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO ONE ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE PROGRESS OF A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY THE DEPARTMENT.
- (c) ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING.
- (d) THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
- (e) ALL PROPOSED STABILIZATION IN ACCORDANCE WITH (C) OR (D), ABOVE, SHALL BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
- (f) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS, AS DETERMINED BY THE OWNER'S ENGINEERING CONSULTANT.
- (g) AFTER NOVEMBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION OF THE ROAD OR PARKING AREA HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM 3 INCH LAYER OF BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2006, ITEM NO. 304.1 OR 304.2.

ENV-WQ 1506.01 EROSION CONTROL METHODS: TEMPORARY AND PERMANENT MULCHING.

MULCHING SHALL BE USED ONLY AS FOLLOWS:

- (a) HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER;
- (b) MULCH MATERIALS SHALL BE SELECTED BASED UPON SOILS, SLOPE, FLOW CONDITIONS, AND TIME OF YEAR;
- (c) HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE OR 70 TO 90 POUNDS PER 1,000 SQUARE FEET;
- (d) WOOD CHIPS OR GROUND BARK SHALL BE APPLIED AT 2 TO 6 INCHES DEEP AT A RATE OF 10 TO 20 TONS PER ACRE OR 460 TO 920 POUNDS PER 1,000 SQUARE FEET;
- (e) JUTE AND FIBROUS MATS AND WOOD EXCELSIOR SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS; AND
- (f) EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H) SHALL BE PLACED AT A MINIMUM THICKNESS OF 2 INCHES.

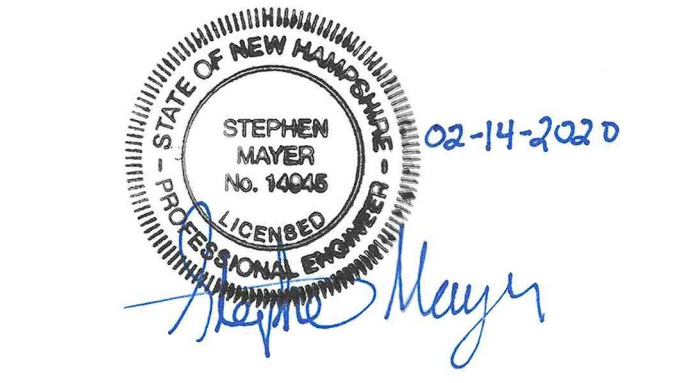
ENV-WQ 1506.02 EROSION CONTROL METHODS: VEGETATION.

VEGETATING DISTURBED AREAS SHALL BE COMPLETED ONLY AS FOLLOWS:

- (a) STONES AND TRASH SHALL BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA;
- (b) ON SLOPES 4:1 OR STEEPER, THE FINAL PREPARATION SHALL INCLUDE CREATING HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF;
- (c) IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHALL BE APPLIED DURING THE GROWING SEASON;
- (d) FERTILIZER SHALL BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER WHEN APPLIED TO AREAS WITHIN 100 FEET OF ANY RIVER, STREAM, POND, OR LAKE, AND AREAS THAT ARE SUBJECT TO THE PROVISIONS OF RSA 483-B, THE COMPREHENSIVE SHORELAND PROTECTION ACT (CSPA), SHALL MEET THE MINIMUM STANDARDS OF THE CSPA;
- (e) RUNOFF SHALL BE DIVERTED FROM THE SEEDDED AREA;
- (f) SUBJECT TO (G) BELOW, SEEDING SHALL OCCUR PRIOR TO SEPTEMBER 15TH;
- (g) AREAS SEEDDED BETWEEN MAY 15TH TO AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH MEETING THE CRITERIA OF ENV-WQ 1506.01(A) THROUGH (C); AND
- (h) VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHALL BE ACHIEVED PRIOR TO OCTOBER 15TH.

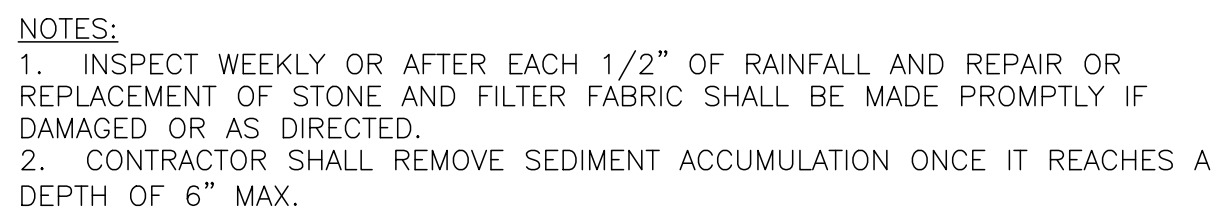
GENERAL NOTES

1. SEE SHEET 1 FOR EXISTING CONDITIONS.
2. SEE SHEET C-104 FOR GRADING AND DRAINAGE
3. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV		DATE		DESCRIPTION	
OWNER/APPLICANT:					
V.M.D. COMPANIES, LLC. 33 TURNPIKE STREET, RTE 114 NORTH ANDOVER, MA 01845					
PROJECT:					
RETAIL STORE WITH DRIVE-THRU STERLING WAY DOVER, NH					
PROJECT NO.		2734-01	DATE:		02-14-2020
SCALE:		NONE	DWG. NAME:		C2734-01
DESIGNED BY:		SM	CHECKED BY:		MAM
PREPARED BY:					
ALLEN & MAJOR ASSOCIATES, INC. civil engineering ♦ land surveying environmental consulting ♦ landscape architecture www.allenmajor.com					
400 HARVEY ROAD MANCHESTER, NH 03103 TEL: (603) 627-3500 FAX: (603) 627-3501					
WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH					
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DRAWING TITLE:					SHEET No.
NOTES					C-102B
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- NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. SILT SOXX® FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

(2) 2"x2"x48" HARDWOOD STAKES, WRAPPED TOGETHER WITH 16 GAUGE WIRE, 10" O.C.

2"x2"x36" HARDWOOD STAKE, 10" O.C., STARTING 5" FROM ANGLED STAKES

The diagram shows a cross-section of a pond liner being installed. Two angled wooden stakes are driven into the ground, and a third vertical wooden stake is placed between them. A wire mesh is wrapped around the stakes, and a liner is being pulled over them. The stakes are labeled with their dimensions and spacing.

Diagram illustrating a closed end connection for a formwork panel. The diagram shows a cross-section of a panel with a central opening. The connection is formed by overlapping sections of the panel, which are secured by stakes. The diagram includes labels for the STAKE, ALTERNATE STAKING OPTION, OVERLAPPING SECTIONS FORM CONNECTION, CLOSED END, and a dimension of 18" min.

The diagram consists of two parts: a **SIDE VIEW** on the left and a **TOP VIEW** on the right.

SIDE VIEW: This cross-sectional drawing shows the assembly of the filter. At the top, a line points to the **PROPOSED GROUND**. Below this is the **DRAIN INLET FRAME AND GRATE**. The filter fabric, labeled **MIRAFIX 100X FILTER FABRIC**, is shown as a layer between the frame and the **COLLECTED SEDIMENT** at the bottom.

TOP VIEW: This plan view shows the **DRAIN INLET FRAME AND GRATE** as a square grid of small squares. The **MIRAFIX 100X FILTER FABRIC** is shown as a larger, irregularly shaped area surrounding the central grate.

NOTE:

1. FILTER FABRIC SHALL BE SECURELY IN PLACE UNDERNEATH GRATE.
2. FREQUENT INSPECTIONS SHALL BE CONDUCTED AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY IF NECESSARY.

A 3D perspective diagram showing a cross-section of a stone-filled access road. The road is adjacent to a 'HARD SURFACE PUBLIC ROAD' on the left. The access road is filled with '3"-4" CLEAN STONE' and has a minimum thickness of '8" MINIMUM'. A 'MIRAFI 600X WOVEN GEOTEXTILE UNDERLINER' is shown at the base of the stone. A dimension line indicates a length of '50' MINIMUM' for the stone-filled section. A note specifies: '20' WIDE MINIMUM OR FULL WIDTH OF ACCESS ROAD, WHICHEVER IS GREATER.' A small circle with a line pointing to it is located within the stone layer.

ORIGINAL GROUND ELEVATION

4' MAX.

3,600 CU. FT. / ACRE (EXCAVATED)

SECTION A-A

W

1.0'

3:1

H

3:1

1.0'

ORIGINAL GROUND ELEVATION

WASHED 2-3" GRAVEL

FILTER FABRIC

RIP-RAP

H	W
1.5	2.0
2.0	2.0
2.5	2.5
3.0	2.5
3.5	3.0
4.0	3.0
4.5	4.0
5.0	4.5

RIP-RAP

FILTER FABRIC

SECTION A

LENGTH (IN FEET) EQUAL TO 6 x DRAINAGE AREA (IN AC.)

DIVERSION DIKE

EXCAVATED AREA

SECTION A

WASHED 2-3" GRAVEL

OUTLET (PERSPECTIVE)

<u>H</u>	<u>W</u>
1.5	2.0
2.0	2.0
2.5	2.5
3.0	2.5
3.5	3.0
4.0	3.0
4.5	4.0
5.0	4.5

The diagram illustrates a weir section and a cross-section view. The top part shows a plan view of the weir with a crest width of 24 inches. The weir is 18 inches high, and the water depth upstream is 6 inches. The water surface is labeled "2\" to 4\" STONE". The bottom part shows a cross-section view of the weir, labeled "VIEW LOOKING UPSTREAM". The weir is 36 inches high, and the water depth upstream is 8 feet. The weir is labeled "SECTION A". Below the cross-section, a note states: "L = THE DISTANCE SUCH THAT POINTS 'A' AND 'B' ARE OF EQUAL ELEVATION (TO BE FIELD COORDINATED)".

NOTE:

1. STONE CHECK DAM TO BE USED IF DRAINAGE AREA IS GREATER THAN $\frac{1}{2}$ ACRE. LOCATIONS TO BE AS SHOWN ON THE PLANS AND FIELD COORDINATED.
2. KEY STONE INTO CHANNEL BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 18" TO PREVENT FLOW AROUND THE DAM.
3. CONTRACTOR TO INSPECT CHECK DAMS AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL EVENTS. CONTRACTOR TO REPAIR AND REPLACE THE STONE AS NECESSARY.

Diagram illustrating a Proposed Stockpile Area with erosion control measures:

- EROSION CONTROL BARRIER (HAYBALES AND SILT SOCK OR TUBULAR SEDIMENT CONTROL) INSTALLED DOWN SLOPE OF PROPOSED STOCKPILE AREA**: Indicated by arrows pointing to the ECB (Erosion Control Barrier) lines.
- PROPOSED STOCKPILE AREA**: The central area designated for stockpiling.
- PROVIDE DRAIN SWALE TO DIRECT WATER AWAY FROM PROPOSED STOCKPILE AREA**: Indicated by arrows pointing to the dashed lines representing the drain swale.
- FLOW**: Arrows indicating the direction of water flow away from the stockpile area.
- ECB**: Erosion Control Barrier, shown as a line of haybales or silt socks.

ANCHOR FABRIC AT TOP OF SLOPE WITH BERM PER DETAIL BELOW AND MANUFACTURERS RECOMMENDATIONS

FABRIC SHALL BE INSTALLED VERTICALLY DOWNSLOPE.

4" (MIN) OVERLAP. STAPLE PER MANUFACTURERS RECOMMENDATIONS.

ISOMETRIC VIEW

NOTES:

STAPLE DETAILS

6" 1.5" 12" 1.5"

TAMP SOIL OVER FABRIC

4'

ANCHOR BERM AT TOP OF SLOPE

12"

ISOMETRIC VIEW

NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. FABRIC SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING FABRIC. PLACE FABRIC WITHIN 24 HOURS AFTER SEEDING.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. CHOOSE MATERIAL BASED ON SLOPE, SOILS, AND APPLICATION.
5. EROSION CONTROL FABRIC IS REQUIRED ON ALL SLOPES GREATER THAN 3:1.
6. PROVIDE SHOP DRAWING FOR APPROVAL PRIOR TO INSTALLATION.

02-14-2020

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO.	2734-01	DATE:	02-14-2020
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SCALE: AS SHOWN DWG. NAME: C2734-01

DESIGNED BY:	SM	CHECKED BY:	MAM
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PREPARED BY:



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DRAWING TITLE:

SHEET No

DETAILS

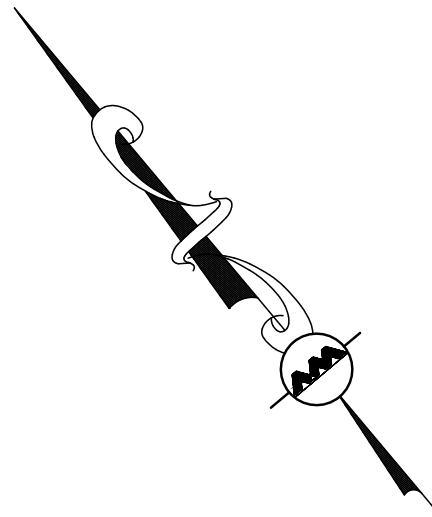
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GENERAL NOTES:

- AS-BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON A REPRODUCIBLE MYLAR MEDIUM AND IN A DIGITAL DXF FORMAT ON DISK TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E.
- BUILDING ADDRESSES SHALL BE ASSIGNED BY THE BUILDING INSPECTOR AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
- THIS PROJECT WILL BE SERVED BY PUBLIC SEWER, WATER, NATURAL GAS, TELEPHONE, CABLE AND ELECTRIC. ALL UTILITY LINES WILL BE INSTALLED UNDERGROUND.
- ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTIES DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
- ALL PROPERTY MARKERS AND STREET LINE MONUMENTS SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED AND RESTORED BY A SURVEYOR REGISTERED IN THE STATE OF NEW HAMPSHIRE AT THE CONTRACTORS EXPENSE.
- ALL APPLICABLE PERMITS AND AN APPROVED SET OF PLANS SHALL BE AVAILABLE AT THE CONSTRUCTION SITE.
- THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A PRECONSTRUCTION MEETING WITH THE CITY, THE APPROPRIATE UTILITY COMPANIES, THE OWNER AND OWNER'S REPRESENTATIVE. THE MEETING SHALL TAKE PLACE PRIOR TO THE START OF CONSTRUCTION AND THE CONTRACTOR MUST PROVIDE 48 HOURS NOTICE TO ALL ATTENDEES PRIOR TO THE START OF THE MEETING.
- APPROPRIATE WARNING SIGNS, MARKERS, BARRICADES AND/OR FLAGMEN SHALL BE PROVIDED TO REGULATE TRAFFIC. CONSTRUCTION TRAFFIC CONTROL SHALL BE IMPLEMENTED PER THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE LOCAL AUTHORITY.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ADDITIONAL BENCHMARK INFORMATION IF REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING BENCHMARKS. IF IT IS NECESSARY TO RELOCATE A BENCHMARK, IT SHALL BE RELOCATED BY A NEW HAMPSHIRE PROFESSIONAL LAND SURVEYOR AND DONE SO AT THE CONTRACTOR'S EXPENSE.

- ALL PERMITS AND APPROVALS NECESSARY FROM AGENCIES GOVERNING THE WORK SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK.
- IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITE WORK OR EARTHWORK OPERATIONS. SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DETERMINED NECESSARY BY ON SITE INSPECTIONS BY THE OWNER, THEIR REPRESENTATIVES, OR REGULATORY AGENCIES HAVING JURISDICTION AT NO ADDITIONAL COST TO THE OWNER.
- CONSTRUCTION DURING WET WEATHER OR WINTER CONDITIONS IS TO BE ANTICIPATED AND PROVISIONS TO ADEQUATELY ADDRESS THESE CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- SNOW SHALL BE TAKEN OFF-SITE ONCE SNOW STORAGE AREAS ON SITE BECOME INADEQUATE, AND BEGINS TO BLOCK ACCESS TO AND FROM THE SITE OR BLOCKS THE USE OF ON-SITE PARKING. ANY EXCESS WILL BE TRUCKED OFF-SITE & DISPOSED OF IN ACCORDANCE WITH CITY OF DOVER AND NHDES GUIDELINES.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE START OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DRAWINGS, SPECIFICATIONS, OR RELATIVE CODES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT PRIOR TO START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AND/OR DESIGN INTENT OF THE DRAWINGS AND IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND CODES.
- THE DESIGN ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS, AND/OR THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE GUIDANCE OF THE DESIGN ENGINEER WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.

- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY ALLEN & MAJOR ASSOCIATES, DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK, OR THE OWNER'S EMPLOYEES, CUSTOMERS, OR THE GENERAL PUBLIC. THE SEAL OF THE ENGINEER AS INCLUDED IN THE PLAN SET DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PROVIDE THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), STATE, AND LOCAL REGULATIONS.
- REFER TO SHEET C-101 FOR ZONING SUMMARY INFORMATION.
- ACCESSIBLE SITE FEATURES SHALL COMPLY WITH IBC 2009, ICC/ANSI A117.1-2003, AS AMENDED AND THE ARCHITECTURAL BARRIER FREE DESIGN CODE FOR THE STATE OF NH (ABFD 300-ABCODE)
- LOADING DOCKS, DUMPSTERS, GENERATORS, GROUND-LEVEL MECHANICAL UNITS AND OTHER SIMILAR DEVICES SHALL BE ADEQUATELY SCREENED SO AS NOT TO BE VISIBLE FROM THE PUBLIC ROAD OR ADJACENT PARCELS AND CONFORM TO THE GENERAL STANDARDS OF CITY OF DOVER SRR SECTION 149-15.
- THE APPLICANT SHALL APPEAR, AT A LATER DATE, AT A COMPLIANCE HEARING TO PRESENT AND RECEIVE APPROVAL ON THE ARCHITECTURE FOR THE MEDICAL OFFICE BUILDING.



LEGEND

SIGN	
BOLLARD	
BUILDING	
CURB	
PARKING STRIPING	
SLOPED GRANITE CURB	
TRAFFIC ARROWS	
HEAVY DUTY CONCRETE	
SIDEWALK	
ADA DET. WARNING PANEL	
SETBACK LINE	
TRANSFORMER	



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO.	2734-01	DATE:	02-14-2020
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SCALE:	1" = 30'	DWG. NAME:	C2734-01
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DESIGNED BY:	SM	CHECKED BY:	MAM
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PREPARED BY:



ALLEN & MAJOR
ASSOCIATES, INC.

civil engineering • land surveying
environmental consulting • landscape architecture
www.allenmajor.com

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WOBURN, MA • LAKEVILLE, MA • MANCHESTER, NH

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DRAWING TITLE:

LAYOUT & MATERIALS PLAN

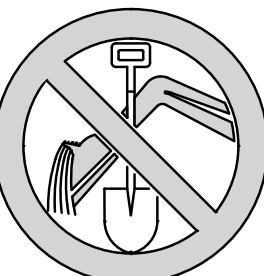
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GRAPHIC SCALE



(IN FEET)
1 inch = 30 ft.

CITY OF DOVER DRAINAGE NOTES:

- ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
- 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 TO THE COMMENCEMENT OF SITE WORK.
- A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
- 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.

GRADING & DRAINAGE NOTES:

- ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING THE CITY OF DOVER, NHDOT, NHDES, MUTCD, AND AASHTO.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY ALLEN & MAJOR ASSOCIATES DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK, OR THE OWNER'S EMPLOYEES, CUSTOMERS, OR THE GENERAL PUBLIC. THE SEAL OF THE ENGINEER AS INCLUDED IN THE PLAN SET DOES NOT

EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PROVIDE THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE

- ALL ELEVATIONS REFER TO NAVD 88.
- PIPE DIMENSIONS ARE MEASURED FROM THE CENTER OF THE STRUCTURE.
- THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.
- ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
- EXISTING AND PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT
- ROOF DRAINS SHALL CONNECT TO NEAREST DRAIN STRUCTURE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS.
- IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
- ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
- ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RINGS & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "DRAIN".

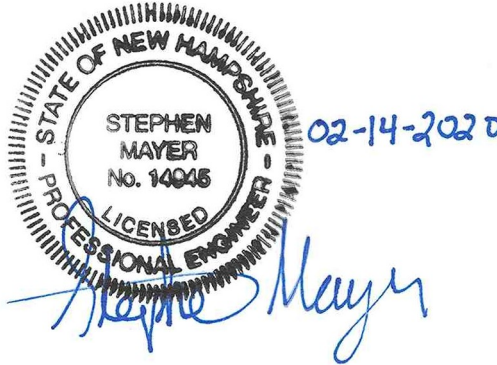
- THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
- CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
- ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL GRASS DISTURBED AREAS IN ACCORDANCE WITH COUNTY SPECIFICATIONS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
- ALL CATCH BASINS ON-SITE SHALL BE EQUIPPED WITH HOODS AND 4 FOOT SUMPS AND SHALL CONFORM TO LOCAL DRAINAGE REQUIREMENTS.
- A MINIMUM OF 18" VERTICAL CLEARANCE SHALL BE MAINTAINED WHERE WATER SERVICES CROSS STORM DRAIN LINES. WATER SERVICES SHALL BE ENCASED IN CONCRETE REGARDLESS OF CLEARANCE WHEN PASSING BELOW STORM DRAIN LINES. ENCASEMENT SHALL EXTEND ALONG WATER SERVICE A MINIMUM DISTANCE OF TEN FEET FROM THE CROSSING POINT OF THE OTHER PIPE AS MEASURED NORMALLY FROM ALL POINTS ALONG THE PIPE.
- ALL DRAINAGE SHALL CONFORM TO LOCAL AND NHDES REQUIREMENTS.
- PRIOR TO CONSTRUCTION OF IMPERVIOUS AREAS, ALL DRAINAGE STRUCTURES, PIPES AND BASINS SHALL BE INSTALLED AND INSPECTED FOR PROPER FUNCTION.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE START OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH

THE DRAWINGS, SPECIFICATIONS, OR RELATIVE CODES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT PRIOR TO START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AND/OR DESIGN INTENT OF THE DRAWINGS AND IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND CODES.

- THE DESIGN ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS, AND/OR THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE GUIDANCE OF THE DESIGN ENGINEER WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.

LEGEND

- CATCH BASIN
- DRAIN LINE
- RIPRAP OUTFALL
- 5' CONTOUR
- 1' CONTOUR
- SPOT GRADE
- UNDERDRAIN
- FLOW DIRECTION



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV DATE DESCRIPTION

OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO. 2734-01 DATE: 02-14-2020

SCALE: 1" = 30' DWG. NAME: C2734-01

DESIGNED BY: SM CHECKED BY: MAM

PREPARED BY:



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ASSOCIATES, INC.

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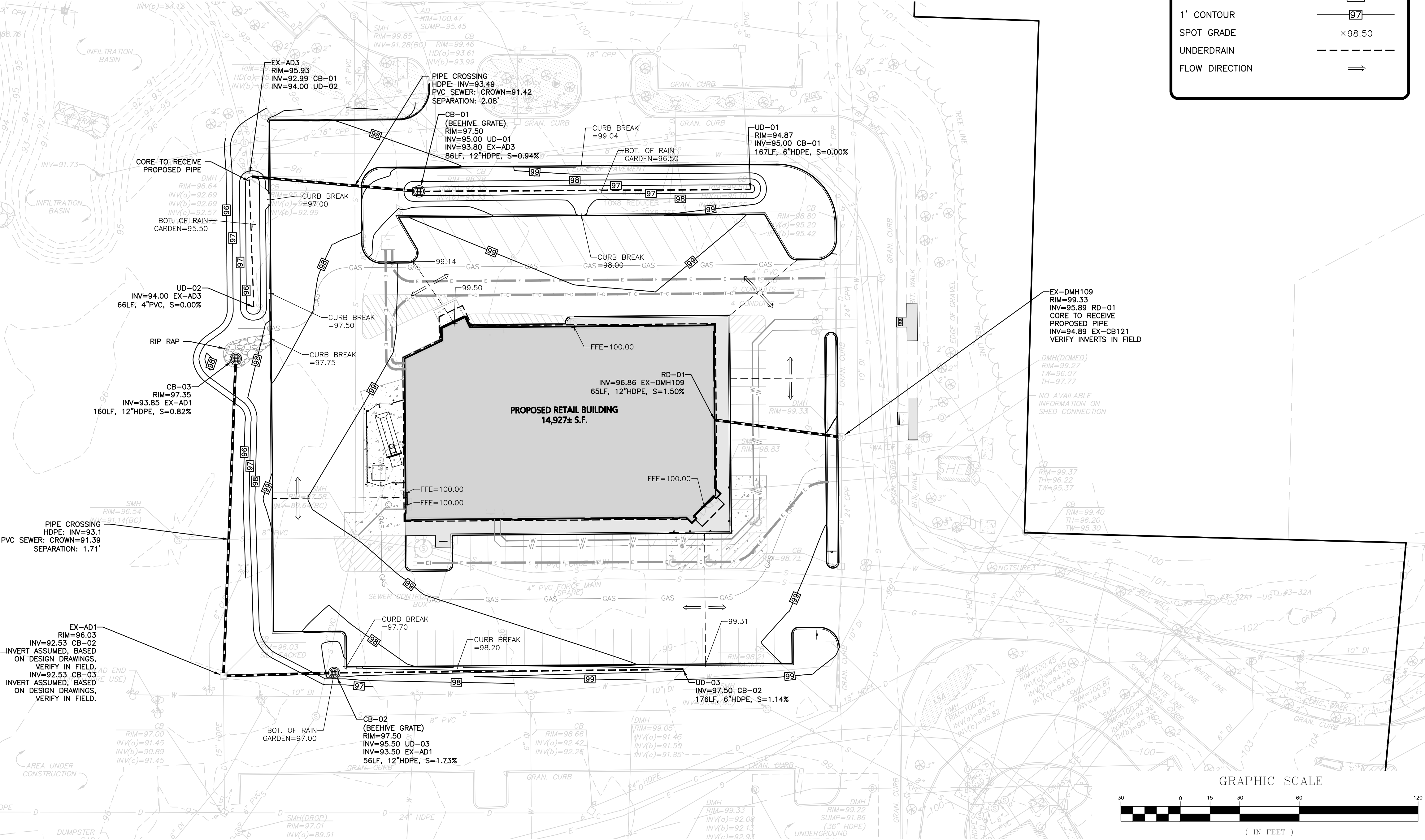
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GRADING & DRAINAGE PLAN

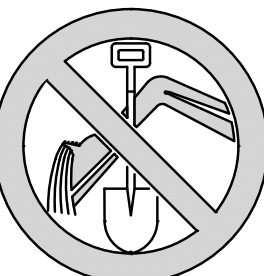
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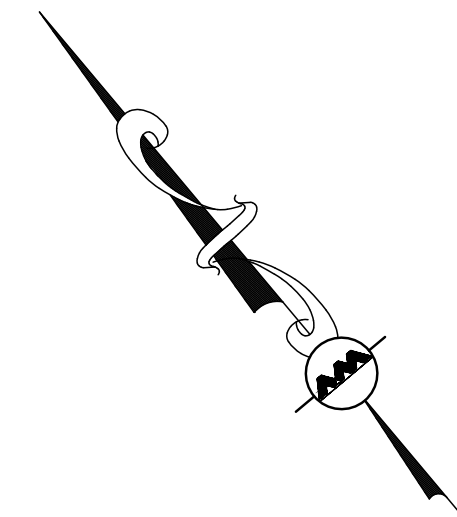


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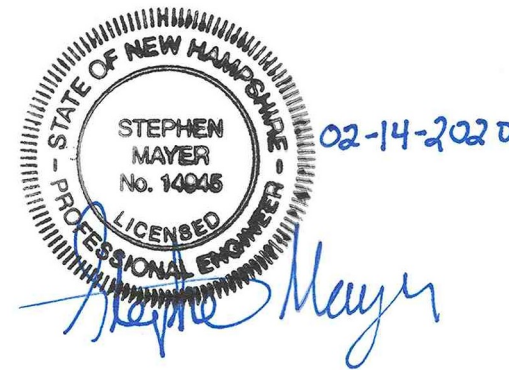
1. EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 149-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
2. THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED UNDER CHAPTER 109-30 OF THE CODE OF THE CITY OF DOVER AND THE 2009 STATE BUILDING CODES.
3. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED.
4. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13.
5. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 58, ARTICLE I, SECTION 58-2 OF THE CODE OF THE CITY OF DOVER.
6. ALL ON-SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
7. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.
8. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
9. BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.

1. A MINIMUM OF 10 FEET CLEAR HORIZONTALLY SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY SEWER MAINS AND/OR STORM DRAINS. WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET TO A WATER MAIN, THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH AND THE DIFFERENCE IN ELEVATION BETWEEN THE WATER MAIN AND THE SEWER MAIN SHALL BE AT LEAST 18 INCHES.
2. IN THE CASE THAT WATER MAINS CROSS SANITARY SEWER MAINS AND ARE SEPARATED BY LESS THAN 18" OF VERTICAL CLEARANCE, THE SEWER MAIN SHALL BE ENCASED IN CONCRETE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR A DISTANCE OF 8 LINEAR FEET CENTERED ON THE CROSSING.
3. THE LATEST STANDARDS OF THE CITY OF DOVER "CHAPTER 147 – SEWERS" SHALL BE FOLLOWED WHEN PERFORMING ANY SANITARY SEWER WORK. SEWER WORK WILL BE INSPECTED BY CITY OF DOVER PERSONNEL AND ALL COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE LATEST STANDARDS OF THE CITY OF DOVER "CHAPTER 148 – WATER SYSTEMS" SHALL BE FOLLOWED WHEN PERFORMING ANY WATER DISTRIBUTION WORK. WATER WORK WILL BE INSPECTED BY CITY OF DOVER PERSONNEL AND ALL COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL DUCTILE IRON MAINS SHALL BE PROVIDED WITH POLYETHYLENE ENCASEMENT "POLYWRAP" AS REQUIRED BY THE CITY OF DOVER.
6. THE CONTRACTOR SHALL REFER TO ARCHITECTS PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL ROOF DRAIN LATERALS AND UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRIC, TELEPHONE, AND GAS SERVICE. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND COORDINATE WITH THE PROPER AGENCY THE LOCATION AND SCHEDULING OF CONNECTIONS WITH THEIR FACILITIES.

7. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION. THE ENGINEER WILL THEN PROVIDE RESOLUTION TO UTILITY CONFLICTS WITHOUT DELAY.
8. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING THE CITY OF DOVER, NHDOT, NHDES, MUTCD, AND ASHTO.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS OF THE SITE. THESE PLANS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC., DO NOT EXTEND TO, NOR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THE EMPLOYEES, AGENTS OF REPRESENTATIVES IN PERFORMANCE OF THE WORK. THE SEAL OF THE ARCHITECT OR ENGINEER HEREON DOES NOT EXTEND TO AND SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREINAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OF OBTAIN THE APPROPRIATE SAFETY SYSTEMS THAT MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
10. ALL ELEVATIONS REFER TO NAVD 88.
11. PIPE DIMENSIONS ARE MEASURED FROM THE INSIDE FACE OF THE STRUCTURE.
12. LOCATION OF PROPOSED ELECTRICAL/COMMUNICATION SERVICE IS SCHEMATIC IN NATURE AND COORDINATION PURPOSES ONLY. SPECIFIC ALIGNMENTS ARE TO BE DESIGNED BY OTHERS AND REVIEWED BY THE UTILITY PROVIDING SERVICE. PROPOSED ELECTRICAL SERVICE TO BE BURIED IN ACCORDANCE WITH THE CITY OF DOVER REGULATIONS AND ELECTRIC COMPANY.
13. LOCATION OF PROPOSED GAS MAIN IS SCHEMATIC IN NATURE AND FOR COORDINATION PURPOSES ONLY. SPECIFIC ALIGNMENTS ARE TO BE DESIGNED BY OTHERS AND REVIEWED BY THE UTILITY PROVIDING SERVICE.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE START OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DRAWINGS, SPECIFICATIONS, OR RELATIVE CODES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT PRIOR TO START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE ENGINEER AND/OR ARCHITECT SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AND/OR DESIGN INTENT OF THE DRAWING AND IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND CODES.
15. THE DESIGN ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS, AND/OR THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE GUIDANCE OF THE DESIGN ENGINEER WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.
16. POWER FEEDS AND INTERCONNECTIONS FOR SITE LIGHTING TO BE COORDINATED WITH THE ELECTRICAL ENGINEER.



SEWER CLEANOUT	
SEWER LINE	
WATER LINE	
GAS LINE	
LIGHT FIXTURE	
ELECTRICAL CONDUIT	
TELE/DATA CONDUIT	



REV	DATE	DESCRIPTION
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V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

SCALE: 1" = 30' DWG. NAME: C2734-01

PREPARED BY:



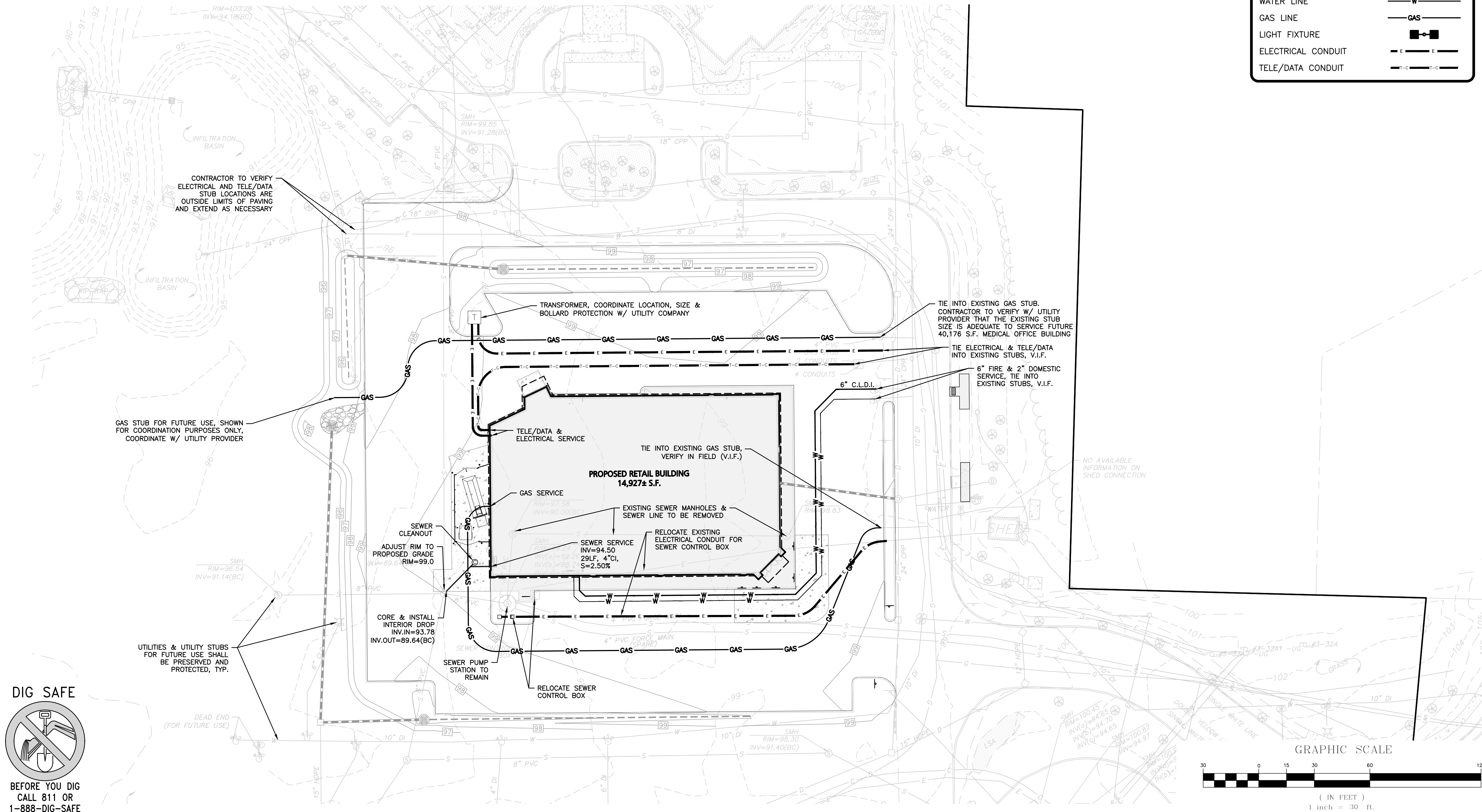
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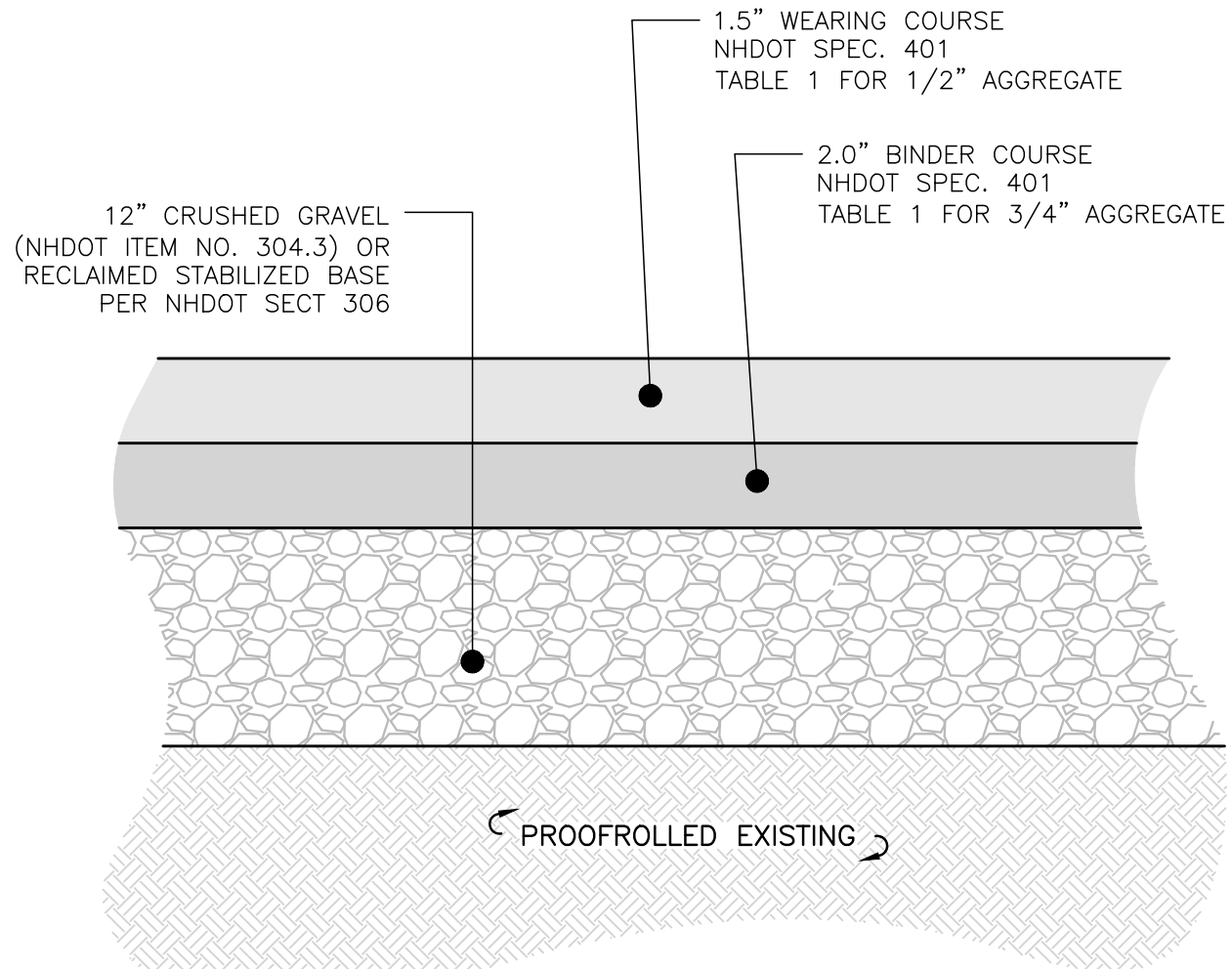
UTILITIES PLAN

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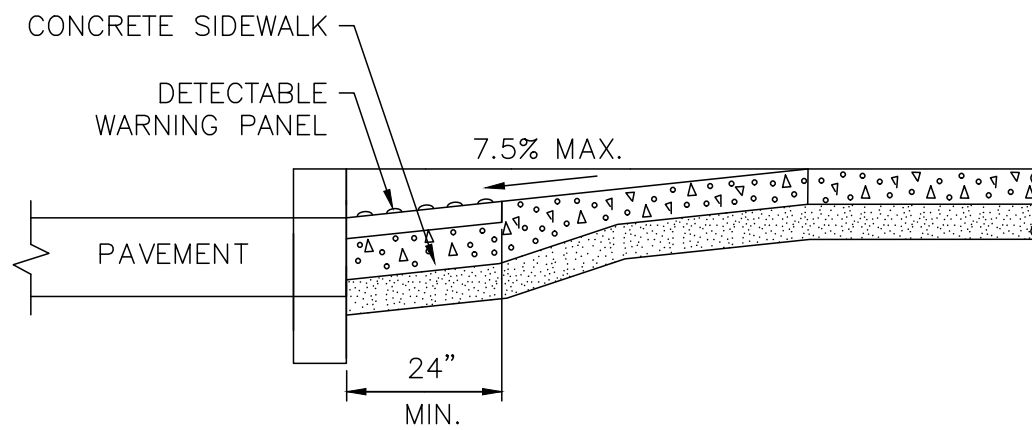
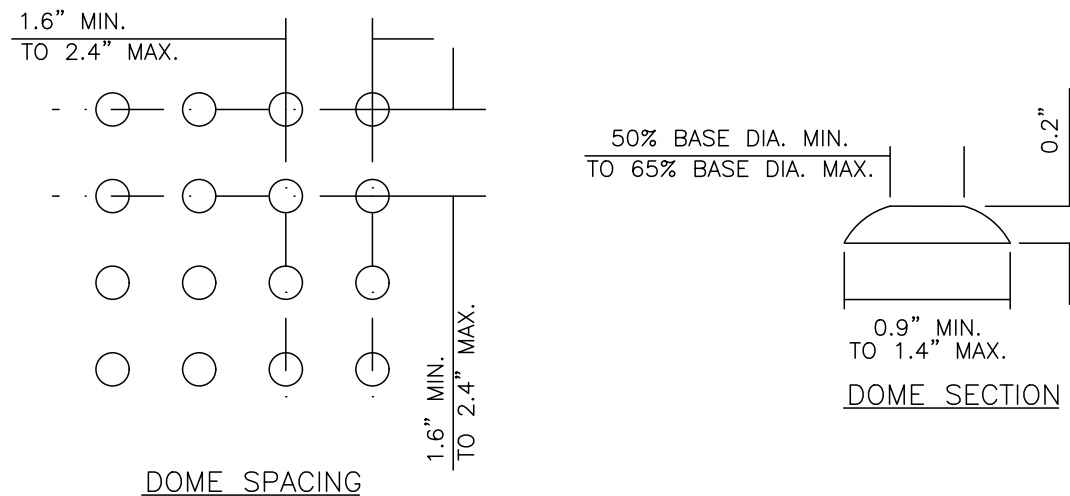
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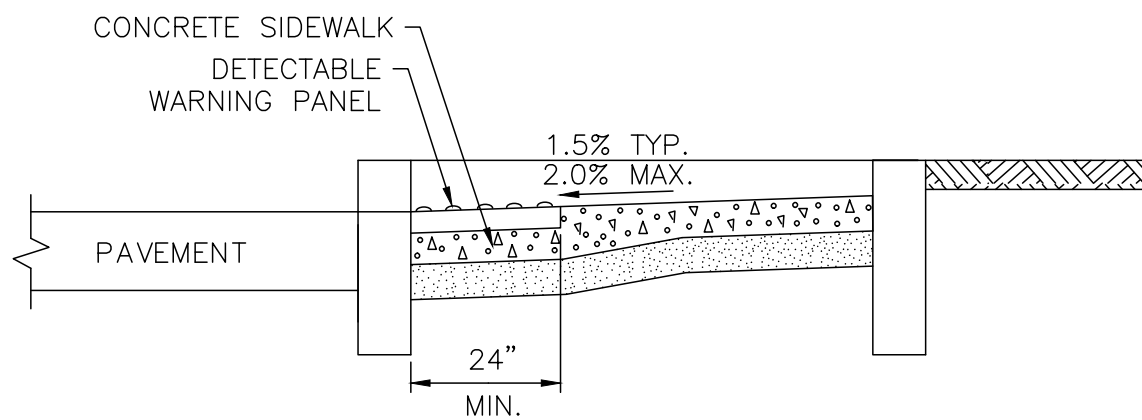
NOTES:

1. ALL MATERIALS SHALL BE PLACED IN 12" MAXIMUM LIFTS AND COMPACTED TO ACHIEVE A MINIMUM 95% MAXIMUM DRY DENSITY PER ASTM D 1557.
2. PROOFROLLING OF EXISTING SUBGRADE SHOULD BE PERFORMED WITH A MINIMUM OF FOUR PASSES USING A STEEL DRUM ROLLER WITH A MINIMUM STATIC WEIGHT OF 10 TONS, WITHOUT THE USE OF VIBRATORY ACTION. THE UPPER 12 INCHES OF ALL APPROVED PROOFROLLED SUBGRADE SURFACES SHOULD BE COMPACTED TO A MINIMUM OF 95 PERCENT OF MAXIMUM DRY DENSITY PER ASTM D 1557.
3. REFER TO GEOTECHNICAL REPORT FOR SUBGRADE STABILIZATION RECOMMENDATIONS.

A TYPICAL PAVEMENT SECTION
NOT TO SCALE



PERPENDICULAR CURB RAMP SECTION



PARALLEL CURB RAMP SECTION

NOTES:

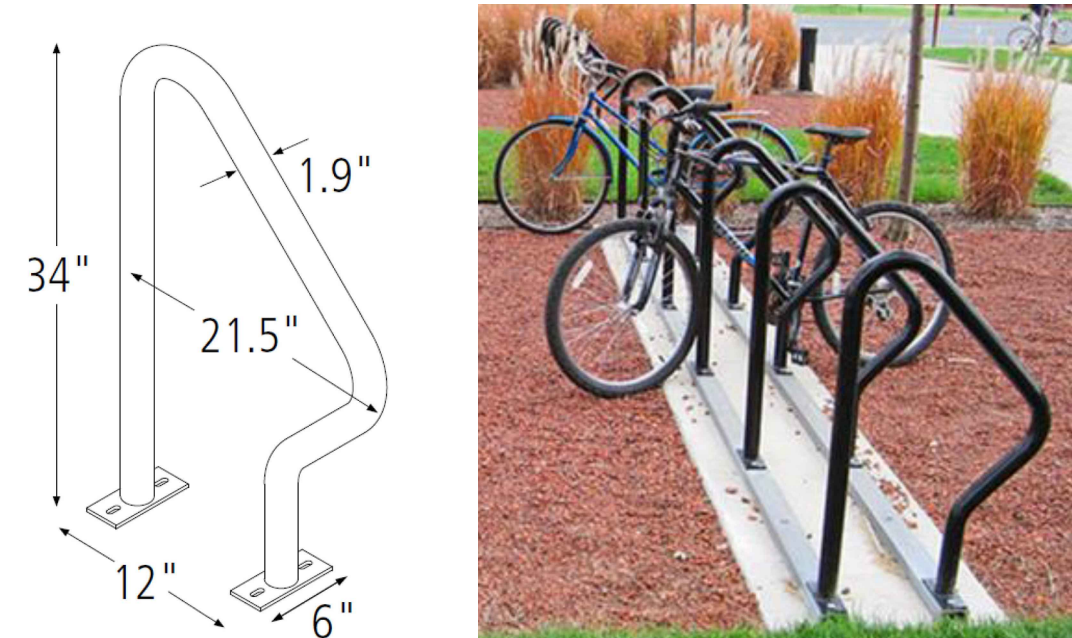
1. DETECTABLE WARNING PANELS SHALL BE THE FULL WIDTH OF THE LANDING, BLENDED TRANSITION, OR CURB RAMP. THEY ARE A PART OF AND SHALL BE A MINIMUM OF 2 FEET IN DEPTH. THE ROWS OF TRUNCATED DOMES SHALL BE ALIGNED PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP, BLENDED TRANSITION, OR LANDING AND THE STREET.
2. DETECTABLE WARNING PANELS SHALL BE A NATURAL-FINISH CAST IRON PRODUCT.
3. **PERPENDICULAR CURB RAMP:**

WHERE BOTH ENDS OF THE BOTTOM GRADE ARE LESS THAN 5'-0" FROM THE BACK OF THE CURB, LOCATE THE DETECTABLE WARNING PANELS ON THE RAMP SURFACE AT THE BOTTOM OF THE RAMP. WHERE EITHER END OF THE BOTTOM GRADE IS GREATER THAN 5'-0" FROM THE BACK OF THE CURB, LOCATE THE DETECTABLE WARNINGS AT THE BOTTOM OF THE LANDING.

4. **PARALLEL CURB RAMP:**

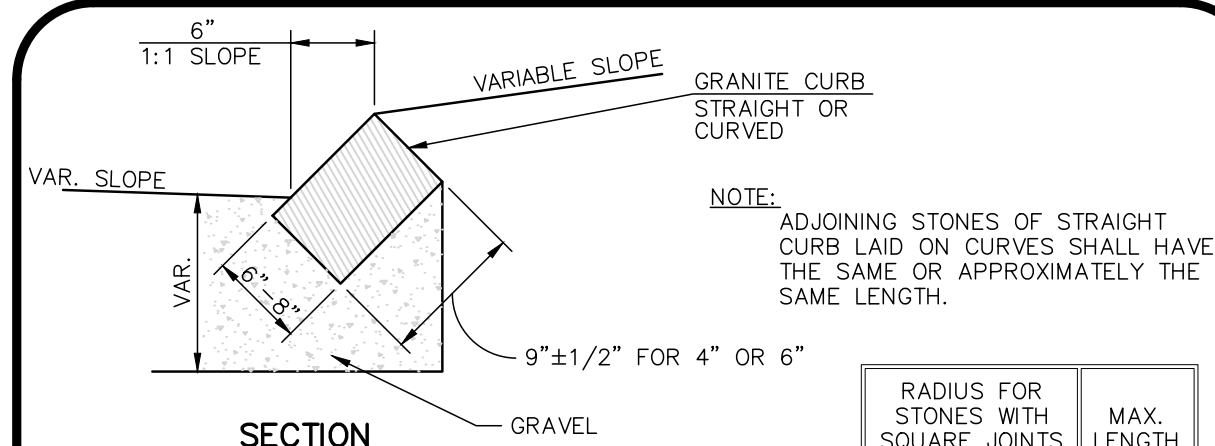
LOCATE THE DETECTABLE WARNING SURFACES AT THE BACK OF THE CURB ALONG THE EDGE OF THE LANDING.

C DETECTABLE WARNING PANELS
NOT TO SCALE



NOTE:
1. SWERVE RACK BY AMERICAN BICYCLE SECURITY COMPANY.
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E BICYCLE RACK DETAIL
NOT TO SCALE

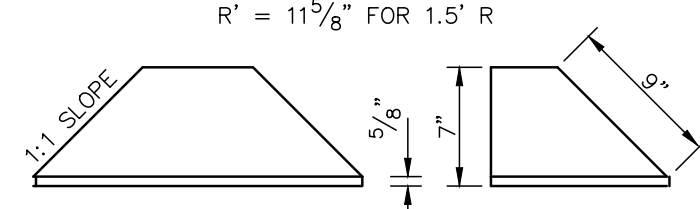
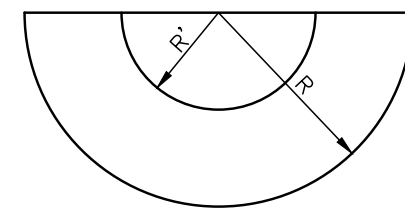


SECTION

MINIMUM LENGTH OF STRAIGHT CURB STONES - 18"
MAXIMUM LENGTH OF STRAIGHT CURB STONES - 8"
MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES - SEE CHART

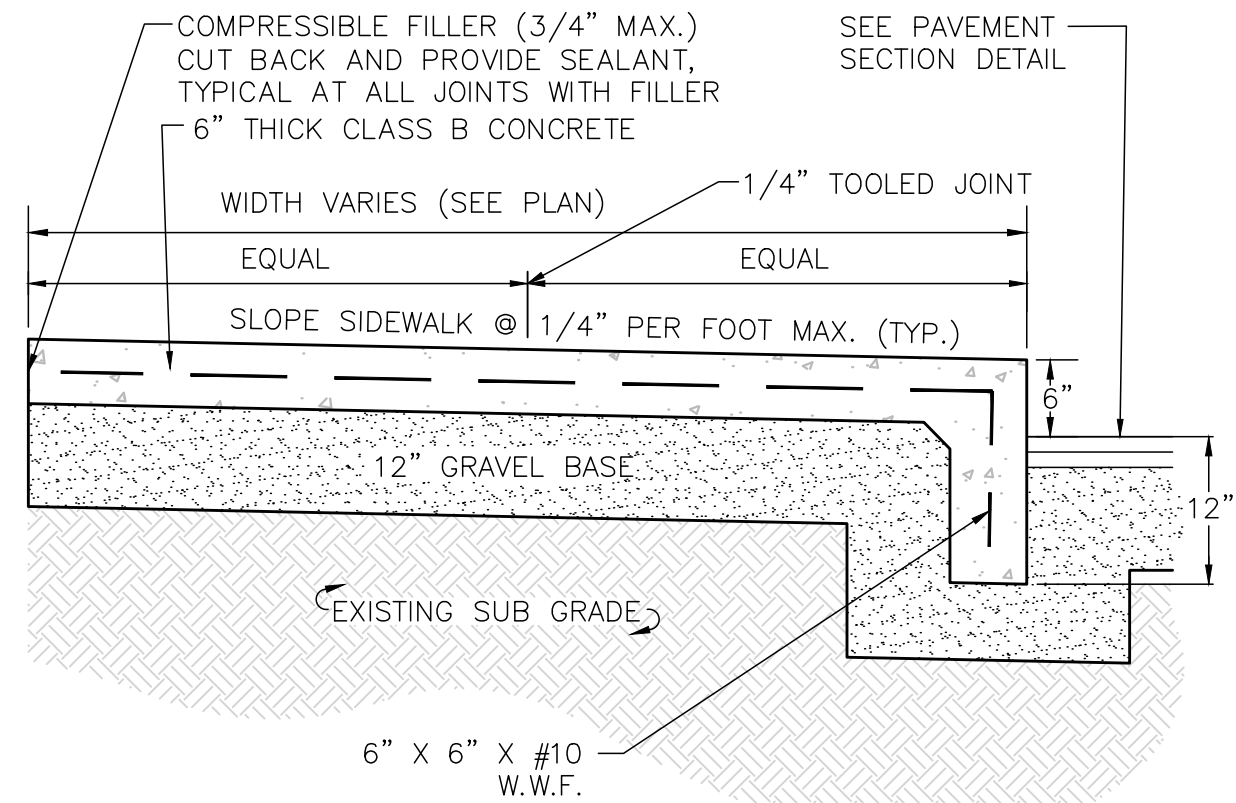
RADIUS FOR STONES WITH SQUARE JOINTS	MAX. LENGTH
16'-28'	1'-6"
29'-41'	2'
42'-55'	3'
56'-68'	4'
69'-82'	5'
83'-96'	6'
97'-110'	7'
OVER 110'	8'

FOR 1' OR 1.5' RADIUS = R
 $R' = 5\frac{5}{8}"$ FOR 1' R
 $R' = 11\frac{5}{8}"$ FOR 1.5' R



USE WITH SLOPE CURB

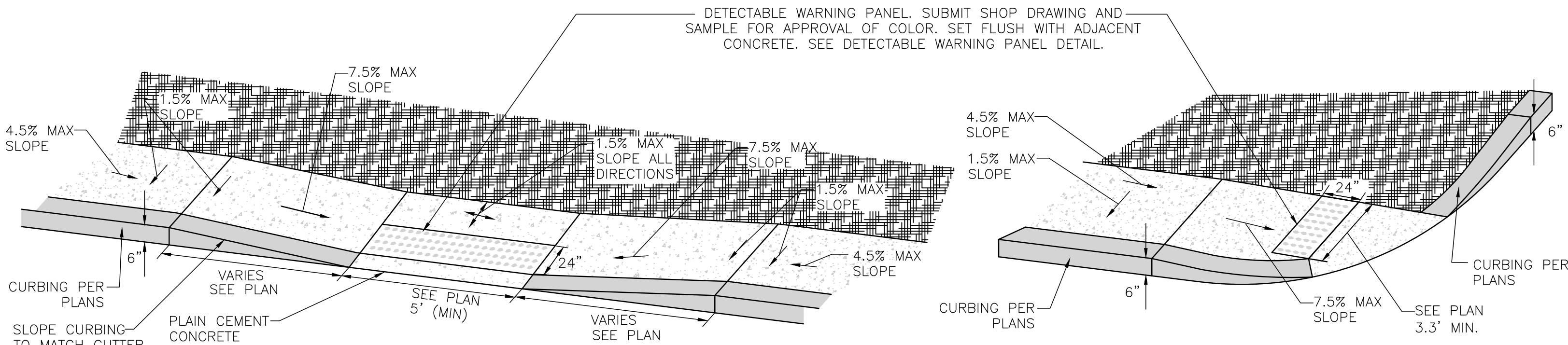
F SLOPED GRANITE CURB
NOT TO SCALE



B CONCRETE SIDEWALK DETAIL
NOT TO SCALE

NOTES:

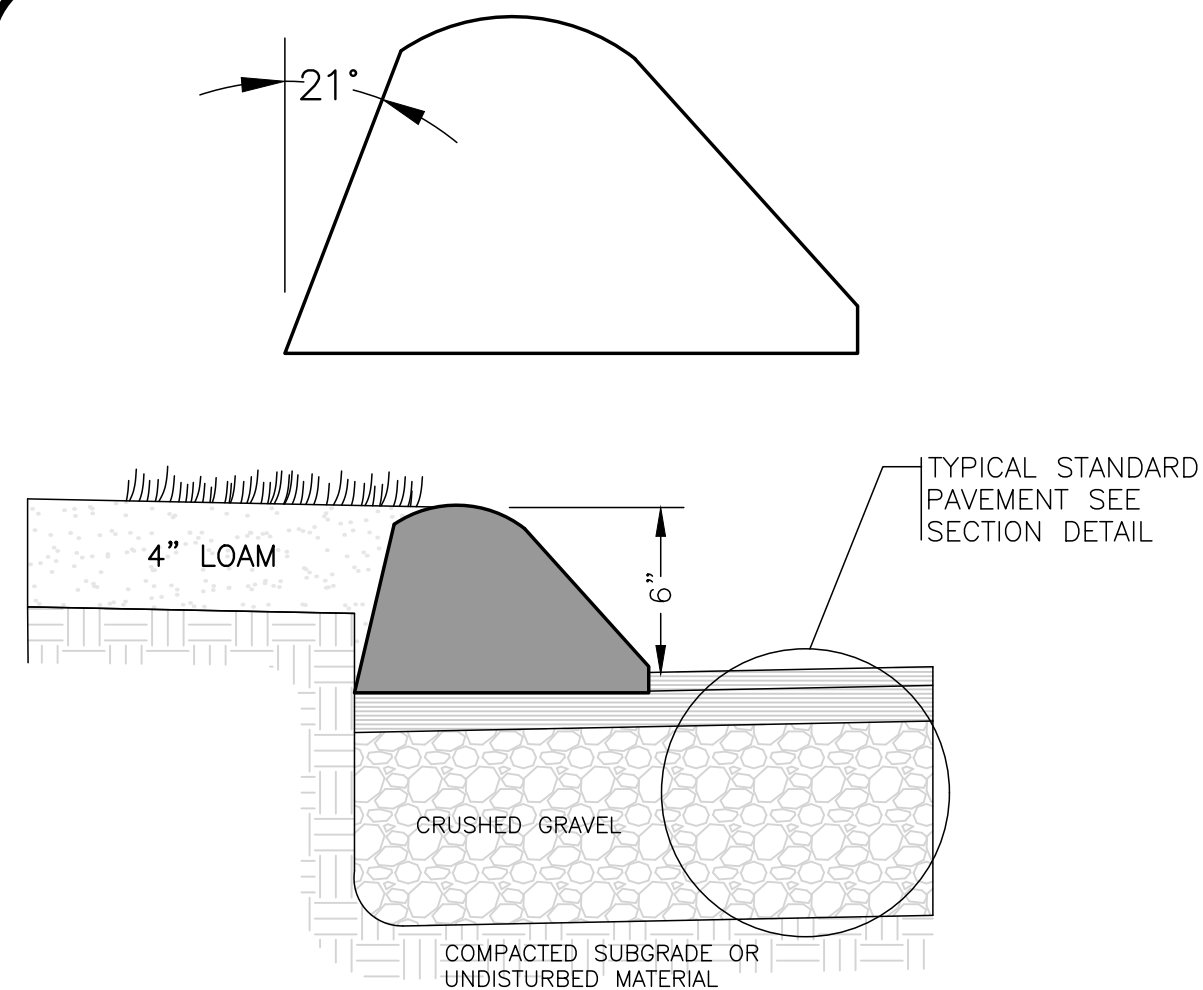
1. SIDEWALK TO SLOPE TO THE ROADWAY WITH A CROSS SLOPE OF 2.0%
2. MAXIMUM SIDEWALK SLOPE IS 5%
3. MAXIMUM SIDEWALK CROSS SLOPE IS 2%
4. SIDEWALK TO HAVE TOOLED JOINTS IN A 5' X 5' (TYP) GRID WITH EXPANSION JOINTS 15' ON CENTER AND PREMOLDED FILLER.
5. TOOLED JOINT 6" FROM FACE OF CURB.
6. SEE PLAN FOR ELEVATIONS AT CURB.
7. LIFT WWF TO CENTER OF SLAB WITH HOOKS AFTER CONCRETE PLACEMENT.
8. DOWEL SIDEWALK INTO FOUNDATION AT DOORS.
9. REFER TOP ARCHITECTURAL PLANS FOR SIDEWALK DETAIL AT DOORS.
10. STRIPPED SUBSOIL MAY BE PLACED AS FILL AT DEPTHS GREATER THAN 4' BELOW THE TOP OF PAVEMENT



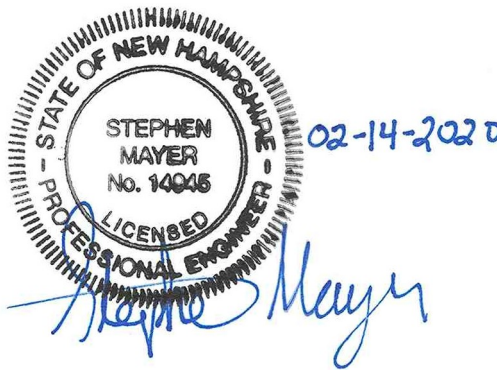
NOTES:

1. THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
2. RAMP CROSS SECTION TO BE THE SAME AS ADJACENT SIDEWALK; I.E. DEPTH OF SURFACE AND FOUNDATION.
3. PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
4. IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.
5. THE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE. CONSULT CIVIL ENGINEER PRIOR TO MAKING ANY MODIFICATIONS.

D HANDICAP CURB CUT & CURB TRANSITION
NOT TO SCALE



G TEMPORARY BITUMINOUS CONCRETE CURB
NOT TO SCALE



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO.	2734-01	DATE:	02-14-2020
SCALE:	AS SHOWN	DWG. NAME:	C2734-01
DESIGNED BY:	SM	CHECKED BY:	MAM

PREPARED BY:



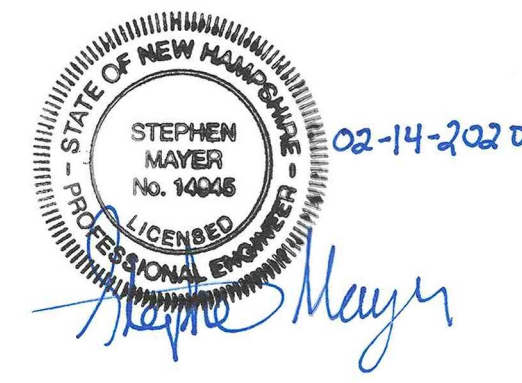
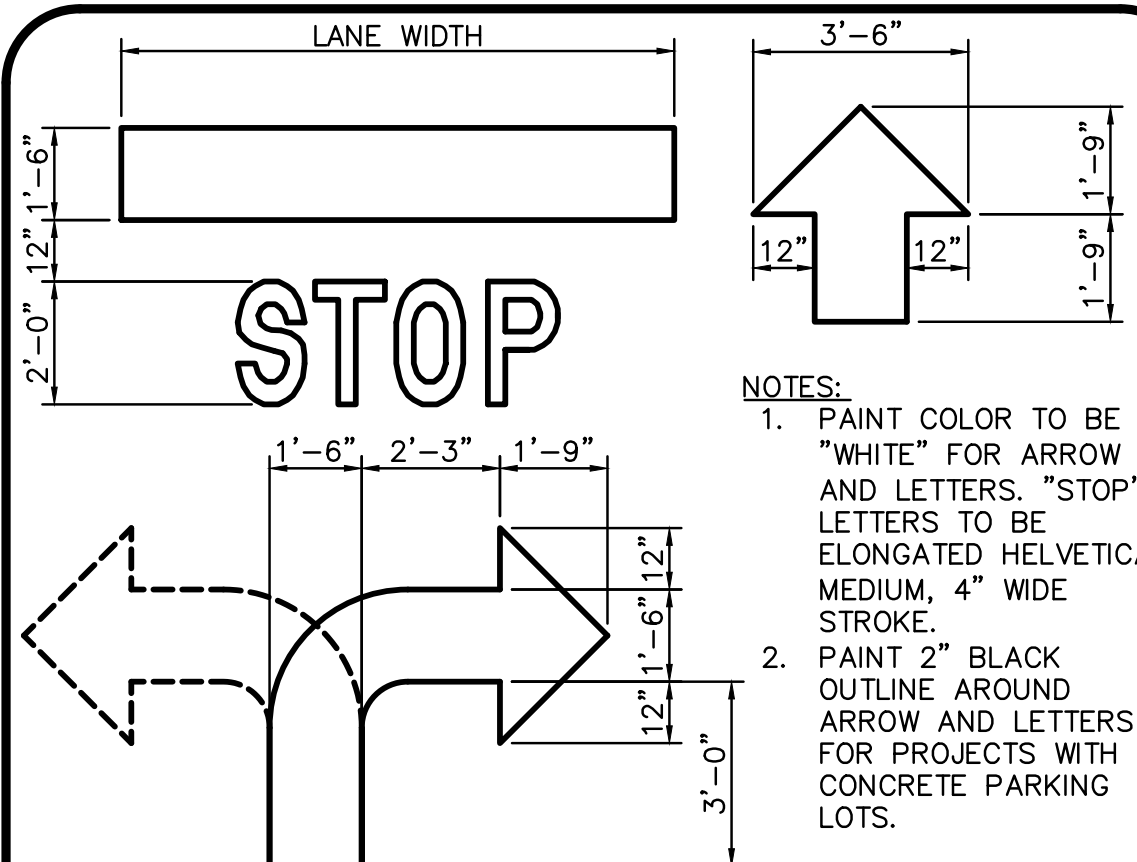
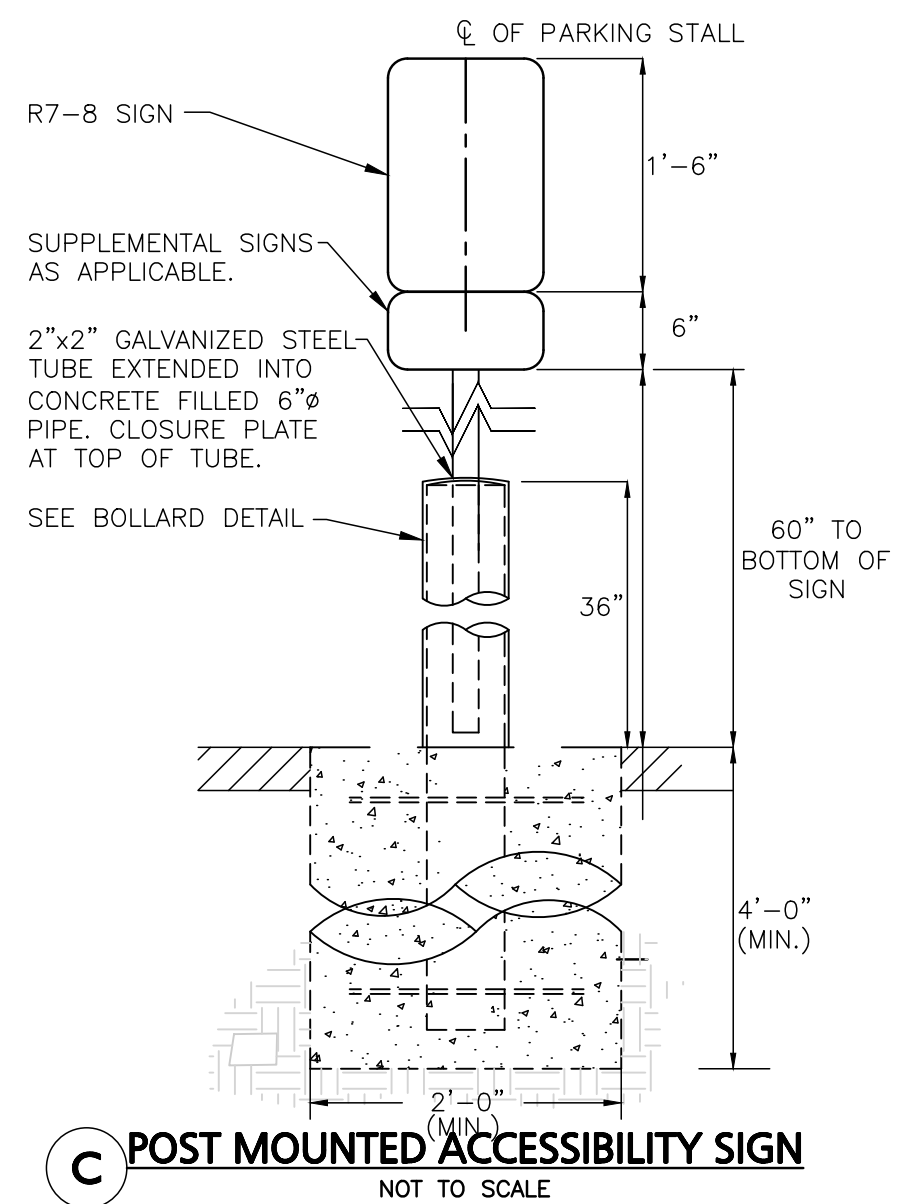
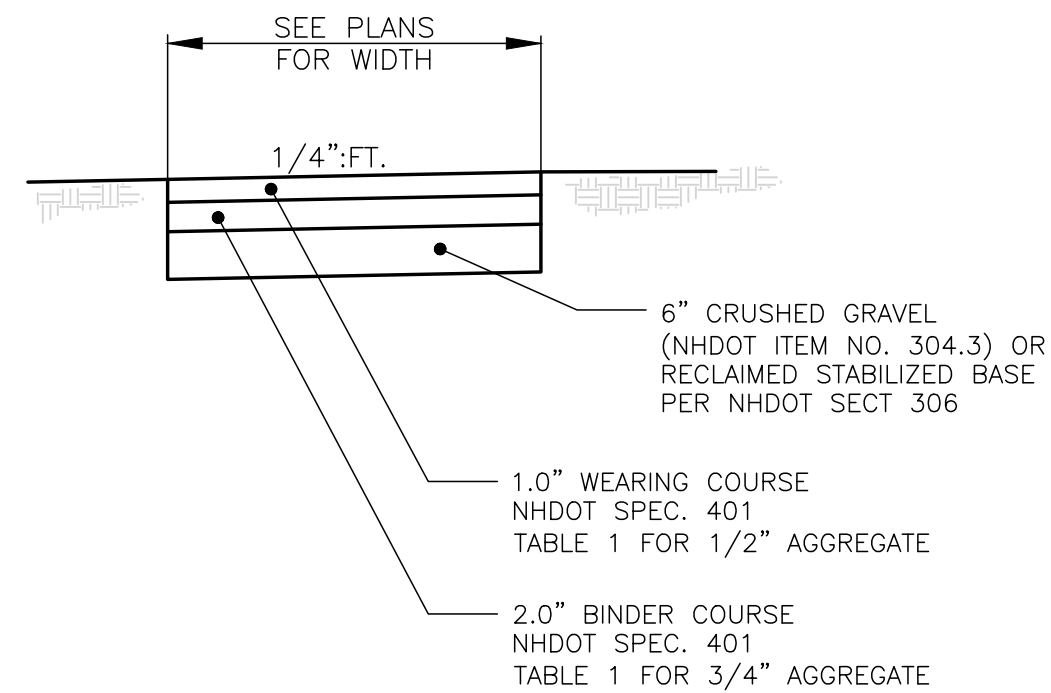
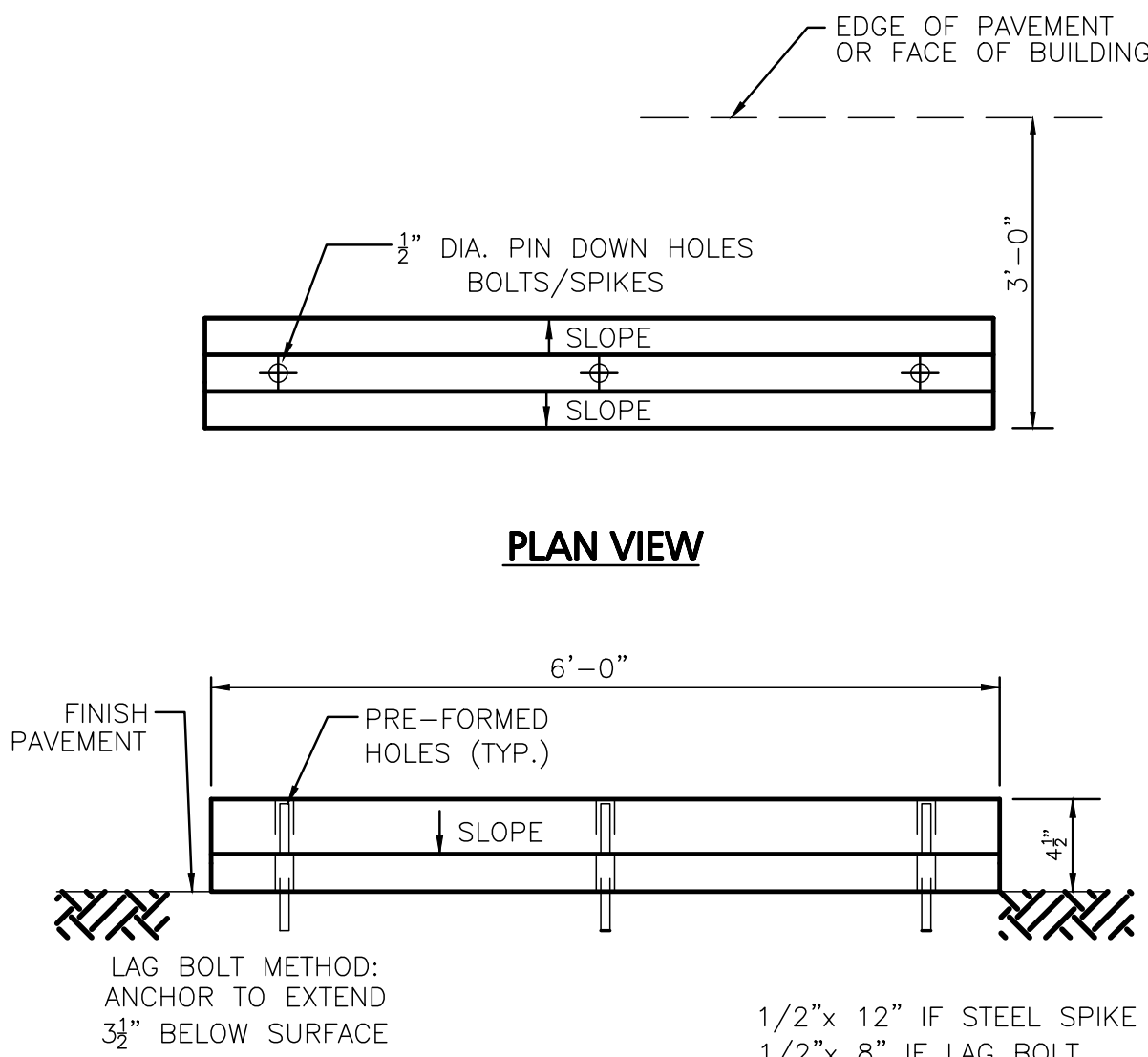
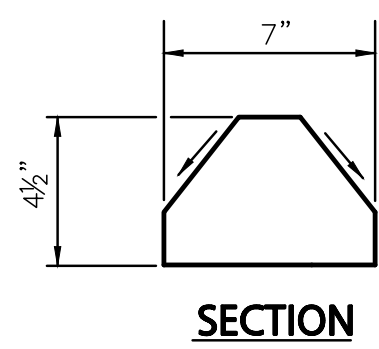
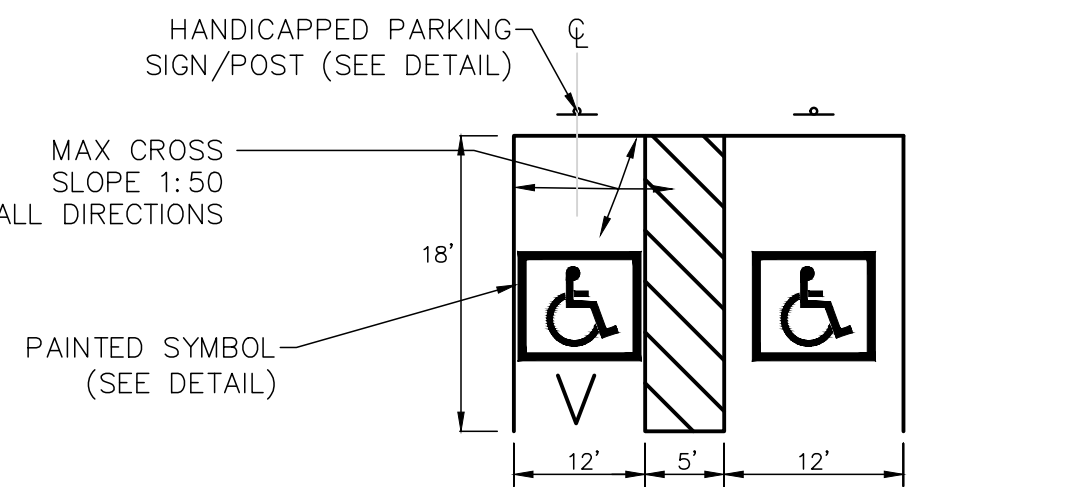
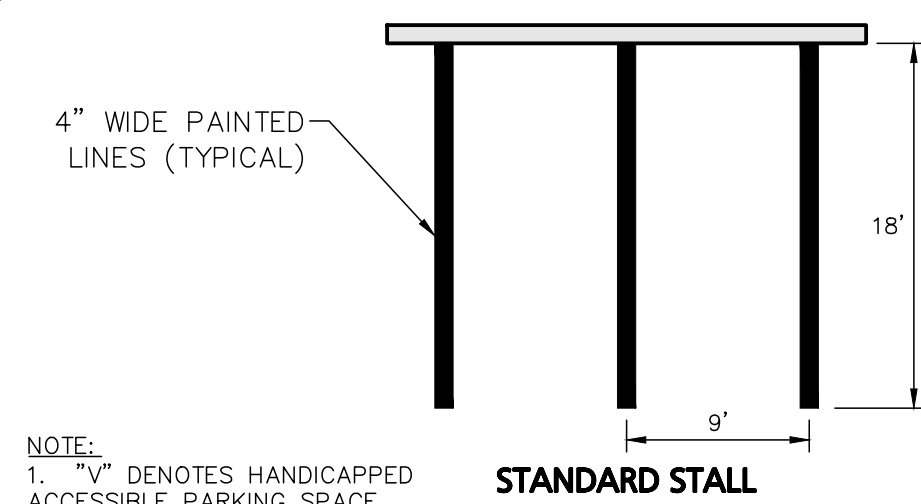
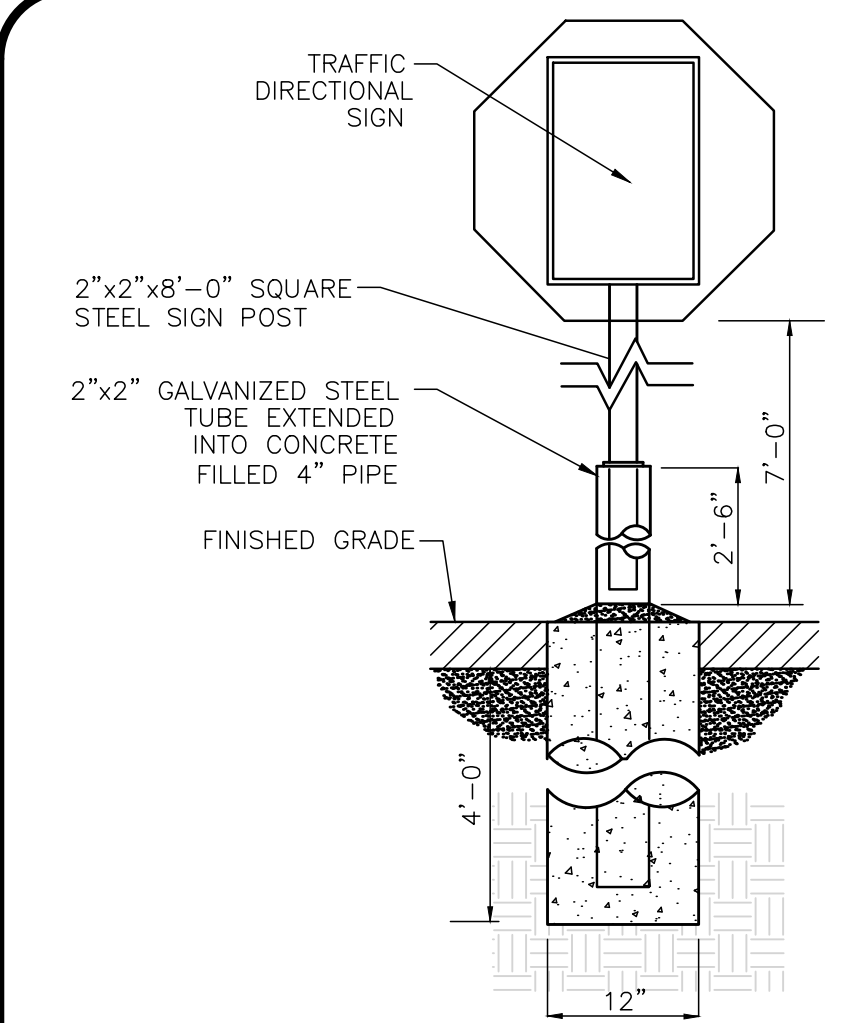
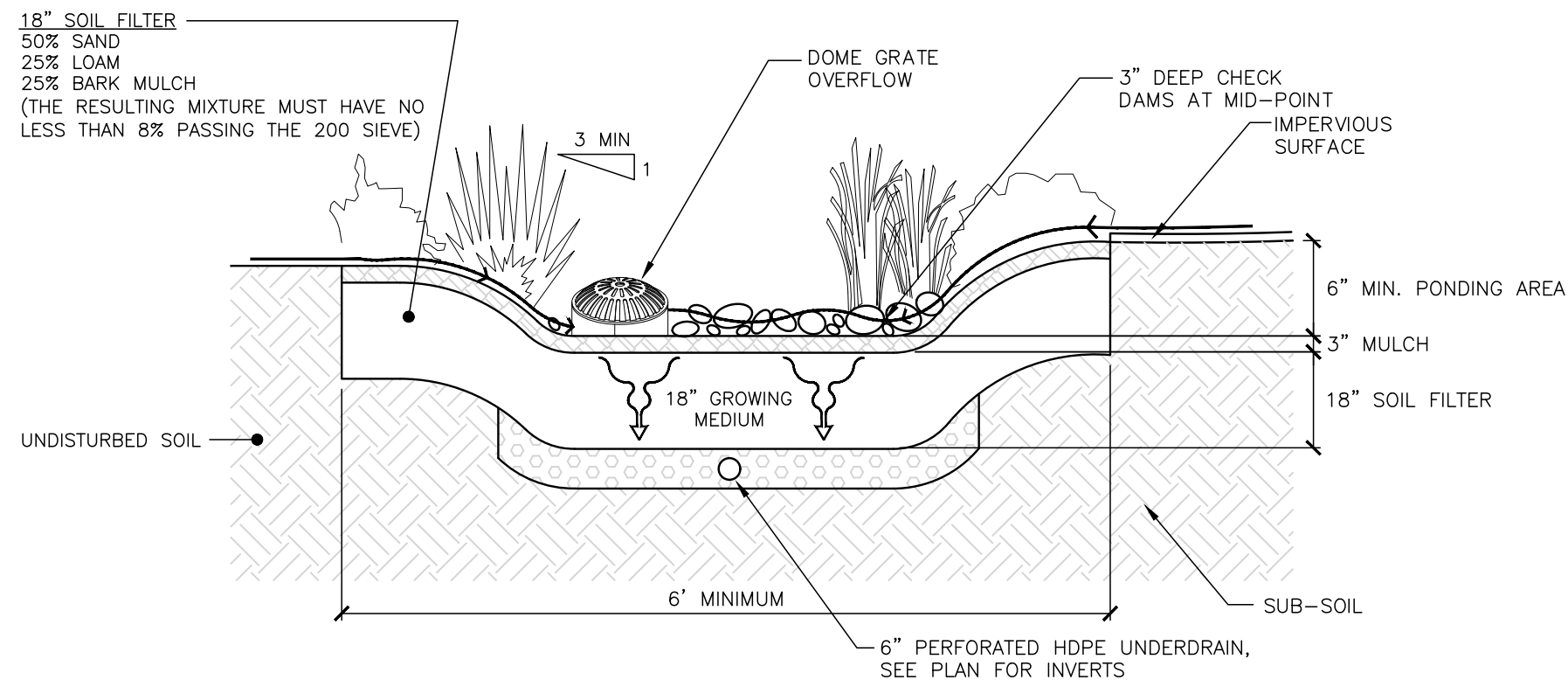
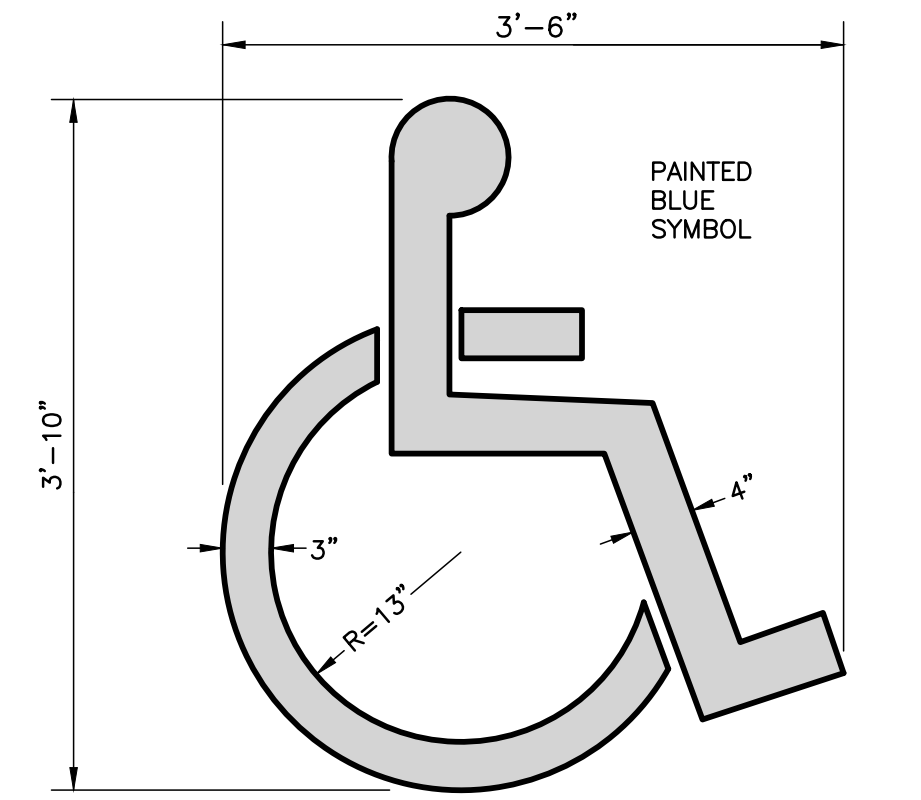
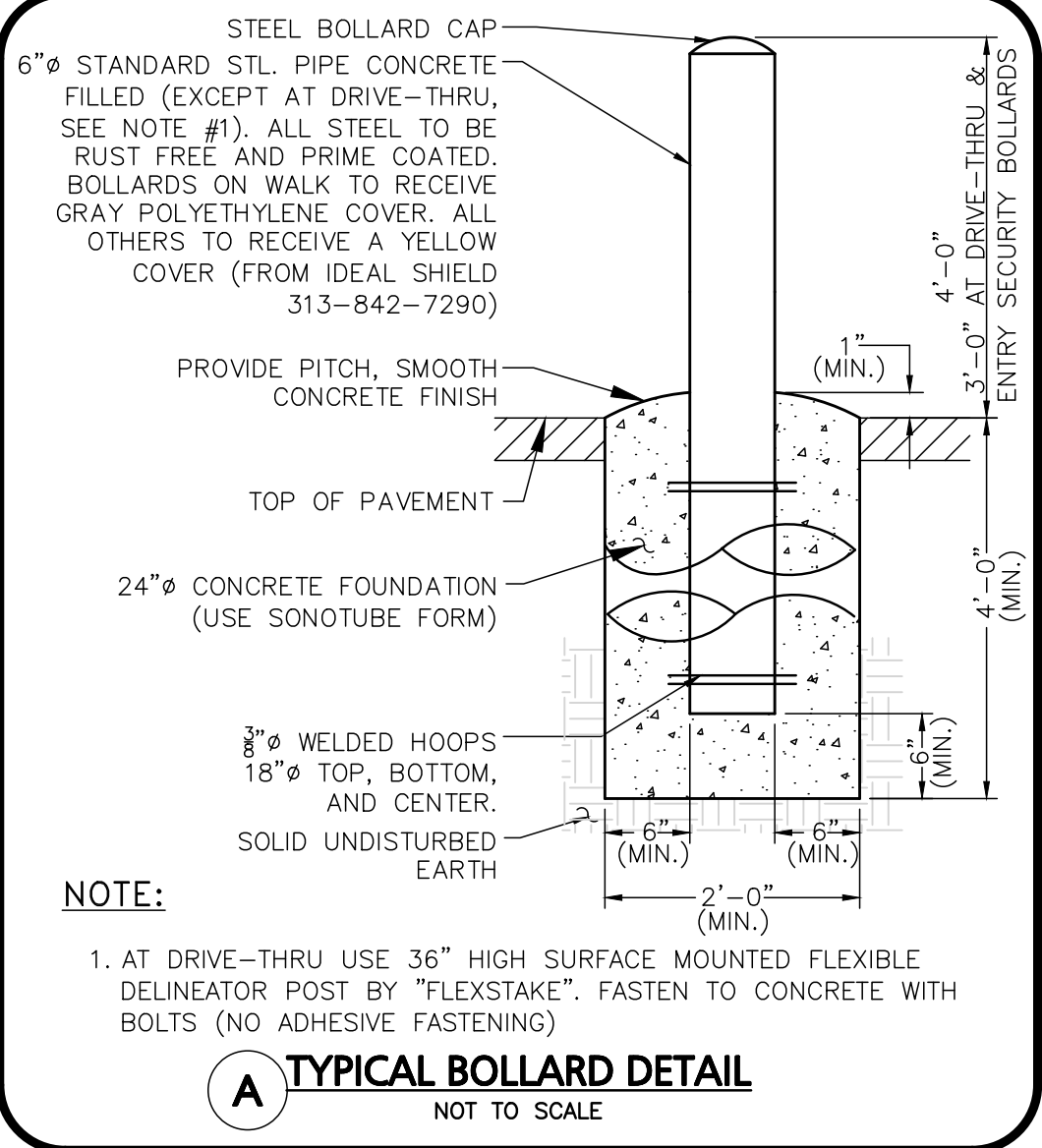
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DRAWING TITLE:	SHEET No.
DETAILS	C-501



REV	DATE	DESCRIPTION

OWNER/APPLICANT:
V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:
RETAIL STORE WITH DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO.	2734-01	DATE:	02-14-2020
SCALE:	AS SHOWN	DWG. NAME:	C2734-01
DESIGNED BY:	SM	CHECKED BY:	MAM

PREPARED BY:

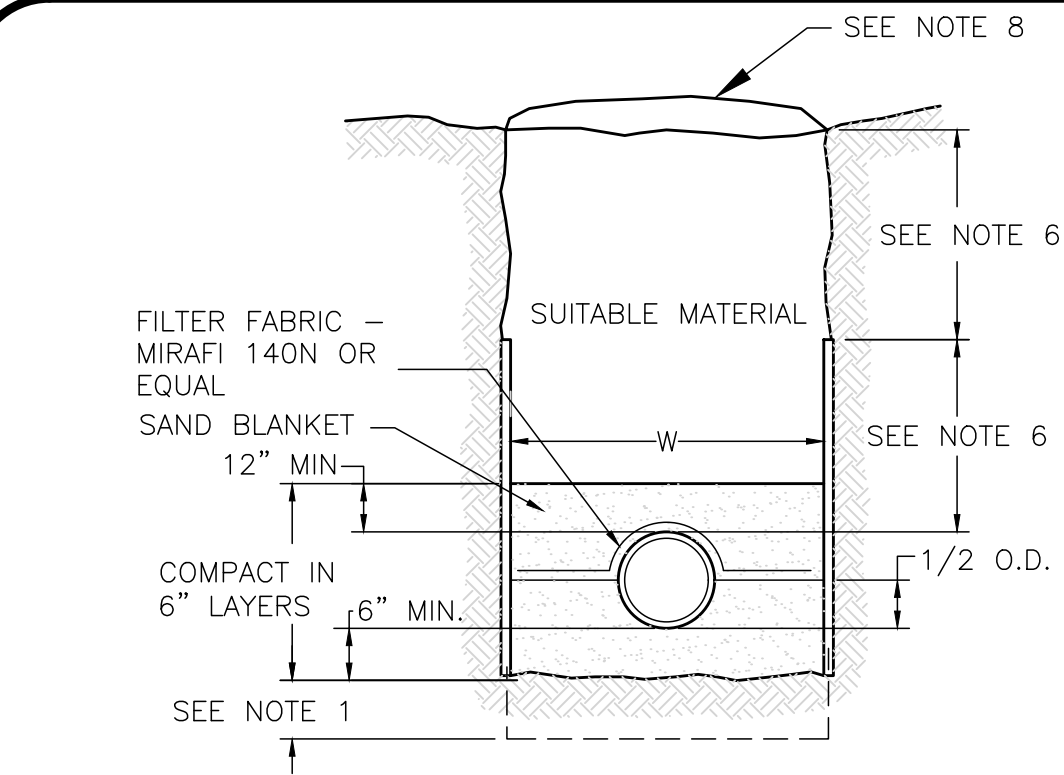
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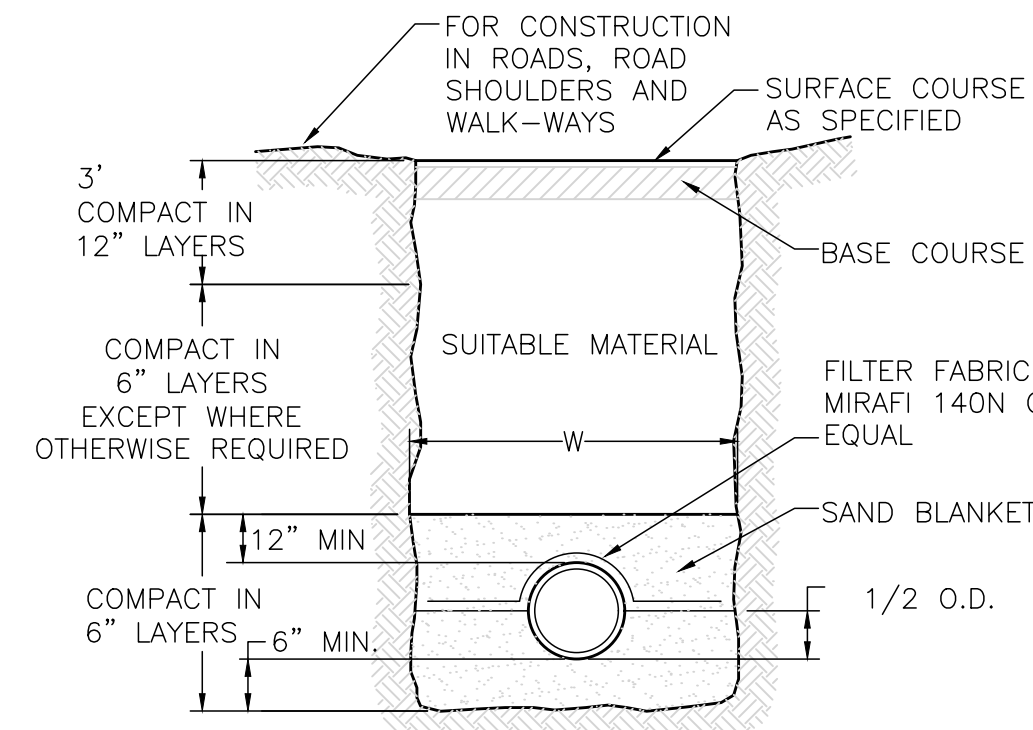
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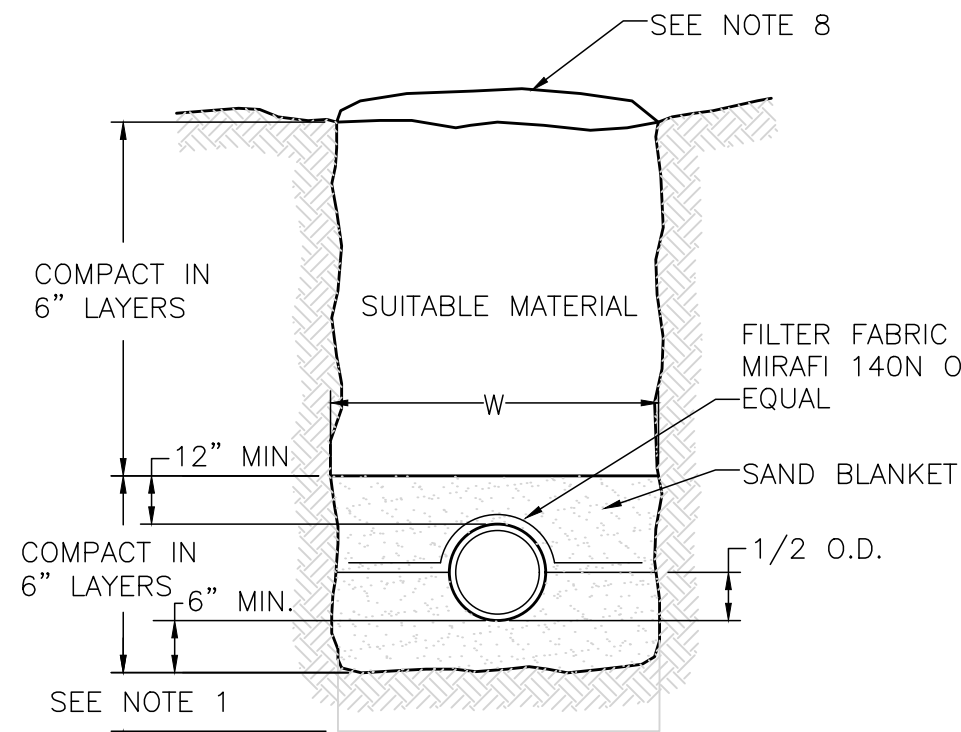
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EARTH CONSTRUCTION WITH SHEETING



LEDGE CONSTRUCTION



EARTH CONSTRUCTION

TRENCH NOTES:

- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH SUITABLE MATERIAL. SEE ALSO NOTE 7.
SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL, AND MEETING ASTM C33-67.

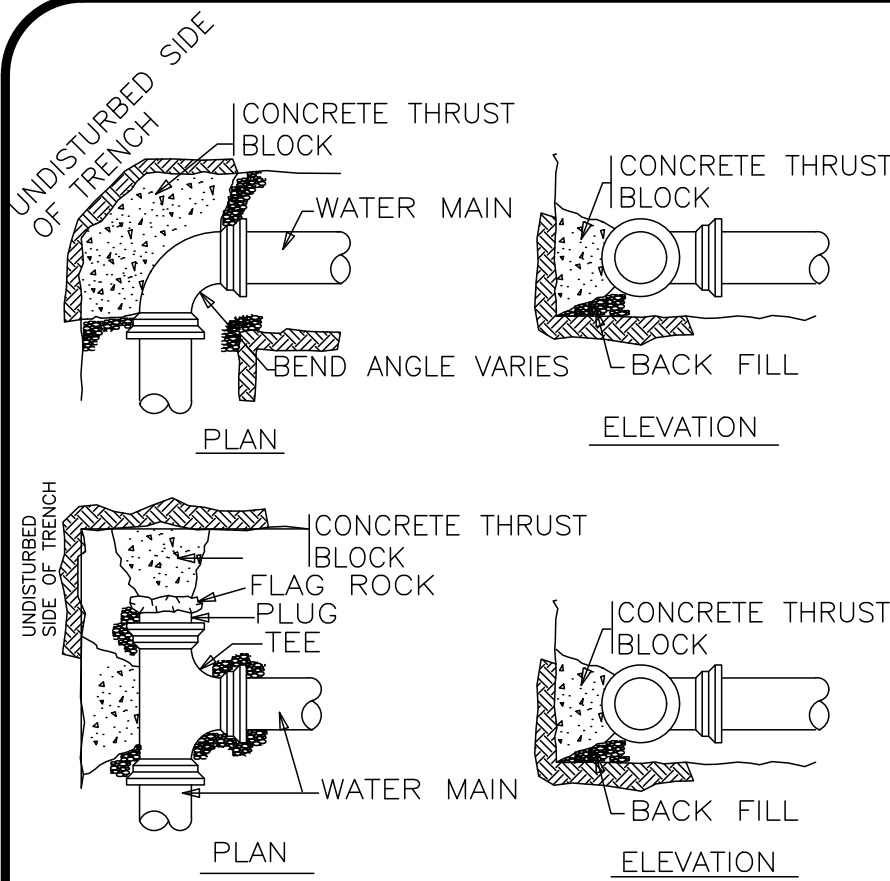
100% PASSING	1 INCH SCREEN
90-100% PASSING	3/4 INCH SCREEN
20-55% PASSING	3/8 SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.
- SAND BEDDING & BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 90-100% PASSES A 1/2 SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE. BLANKET MAY BE OMITTED FOR CAST-IRON, DUCTILE IRON, AND REINFORCED CONCRETE PIPE PROVIDED, HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
- FILTER FABRIC SHALL BE INSTALLED ABOVE PIPE - MIRAFI 140N OR EQUAL.
- SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS, AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT, OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER 6" IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

IN CROSS COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK, OR PEAT, IF HE IS SATISFIED THAT THE CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED.
- BASE COURSE, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS.
- WOOD SHEETING: IF REQUIRED, WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE AT AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOPE OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW THE FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
- W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHED ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
- FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL PROTECTION SERVICES DESIGN STANDARDS REQUIRE 10 FT SEPARATION. HOWEVER, SHOULD CONSTRUCTION OR OPERATIONS REVEAL OR EXPOSE A WATERLINE (MAIN OR SERVICE) RUNNING APPROXIMATELY PARALLEL AND LESS THAN 10 FEET HORIZONTALLY FROM THE PROPOSED SEWER INSTALLATION AND WHERE IT IS NOT PRACTICAL TO RELOCATE THE SEWER, THE FOLLOWING METHODS OF PROTECTION MUST BE EMPLOYED.
A. SEWER PIPE SHALL BE CLASS 52 DUCTILE IRON PIPE.
B. JOINTS SHALL BE PRESSURE TESTED WITH ZERO LEAKAGE AT 25 POUNDS PER SQUARE INCH FOR GRAVITY SEWERS, AND TIMES WORKING PRESSURE FOR FORCE MAINS.
- WHERE WATER LINES AND SEWER LINES CROSS, THEY SHALL CROSS AS PERPENDICULAR AS POSSIBLE AND THE WATER MAIN SHALL CROSS AT LEAST 18 INCHES ABOVE THE SEWER. FURTHER, THE SEWER JOINTS SHALL BE LOCATED AT LEAST 9 FEET HORIZONTALLY FROM THE WATER MAIN. SEWER JOINTS SHALL BE PRESSURE TESTED WITH ZERO LEAKAGE AT 25 POUNDS PER SQUARE INCH FOR GRAVITY SEWERS, AND 1-1/2 TIMES WORKING PRESSURE FOR FORCE MAINS.
- ALL SEWERS AT 8% OR GREATER SLOPE SHALL HAVE TRENCH DAMS INSTALLED.
- ALL STRUCTURAL FILL, CRUSHED AGGREGATE, PAVEMENT SUBBASE GRAVEL AND PAVEMENT BASE GRAVEL SHOULD BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY PER ASTM D 1557, METHOD C. REFER TO THE GEOTECH REPORT FOR OPTIMUM MOISTURE CONTENT AND LIFT THICKNESS.
- ALL DUCTILE IRON MAINS SHALL BE PROVIDED WITH POLYETHYLENE ENCASEMENT "POLYWRAP" AS REQUIRED BY THE CITY OF DOVER.

A WATER TRENCH SECTIONS

NOT TO SCALE



NOTES:

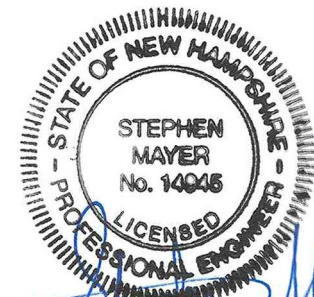
- ALL WATER MAIN AND SEWER MAIN FITTINGS, BENDS, TEES, PLUGS ETC. SHALL BE RESTRAINED W/ THRUST BLOCKS EXCEPT WHERE NOTED.
- ALL THRUST BLOCKS & COLLARS SHALL BE INSTALLED SO THAT THEY BEAR AGAINST UNDISTURBED EARTH.
- SIZE OF CONCRETE THRUST BLOCKS SHALL BE AS NOTED BELOW.
- MINIMUM COMPRESSIVE STRENGTH OF THRUST BLOCK CONCRETE SHALL BE 3,000 P.S.I.
- KEEP CONCRETE CLEAR OF MECHANICAL JOINTS.
- THE BELOW PREDICATED ON A WATER PRESSURE OF 225 PSI AND A SOIL RESISTANCE OF 2000 PSF (TILL). FOR OTHER SOILS THE VALUES IN THE ABOVE TABLE SHALL BE MULTIPLIED BY:

SOFT CLAY	4
SAND	2
SAND & GRAVEL	1.33
SHALE	0.4

MINIMUM THRUST BLOCK BEARING AREAS				
PIPE DIAMETER	90° BEND (SQ. FT.)	45° BEND (SQ. FT.)	22.5° BEND (SQ. FT.)	TEES, PLUGS, CAPS & HYDRANTS (SQ.FT.)
6"	5	5	2	4
8"	8	7	3	6
10"	13	10	4	9
12"	18	10	5	13

B THRUST BLOCK DETAILS

NOT TO SCALE



02-14-2020

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV DATE DESCRIPTION

OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

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DESIGNED BY:	SM	CHECKED BY:	MAM

PREPARED BY:



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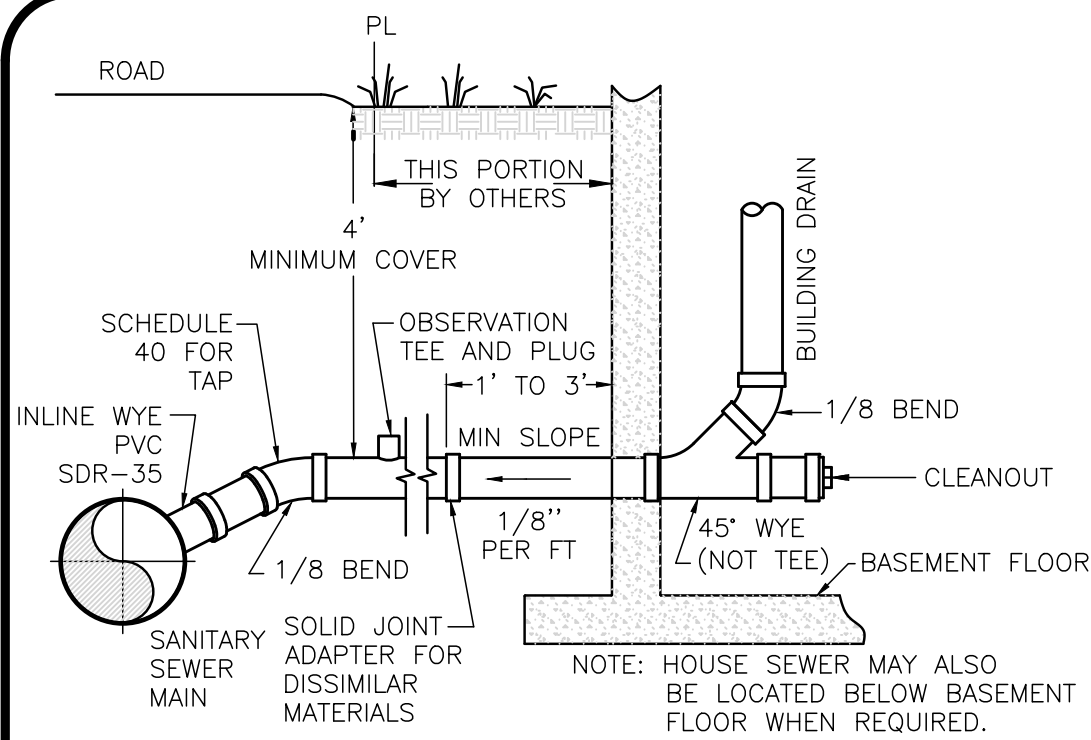
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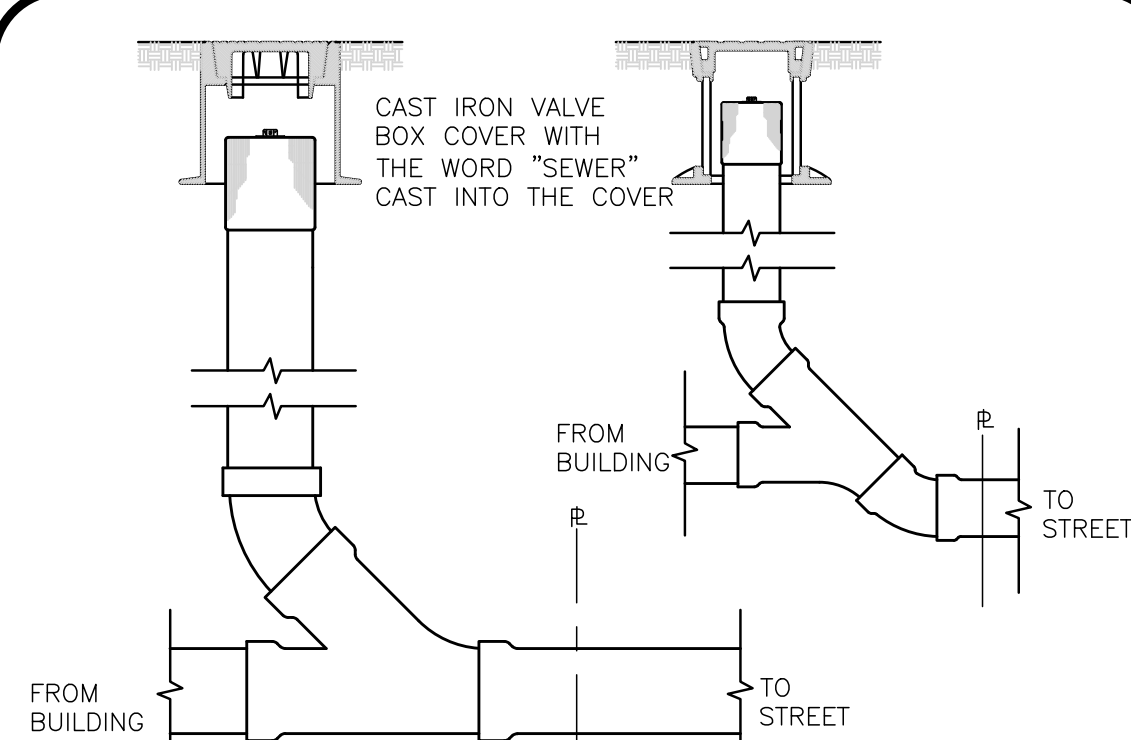
TYPICAL SERVICE DETAIL

NOTES:

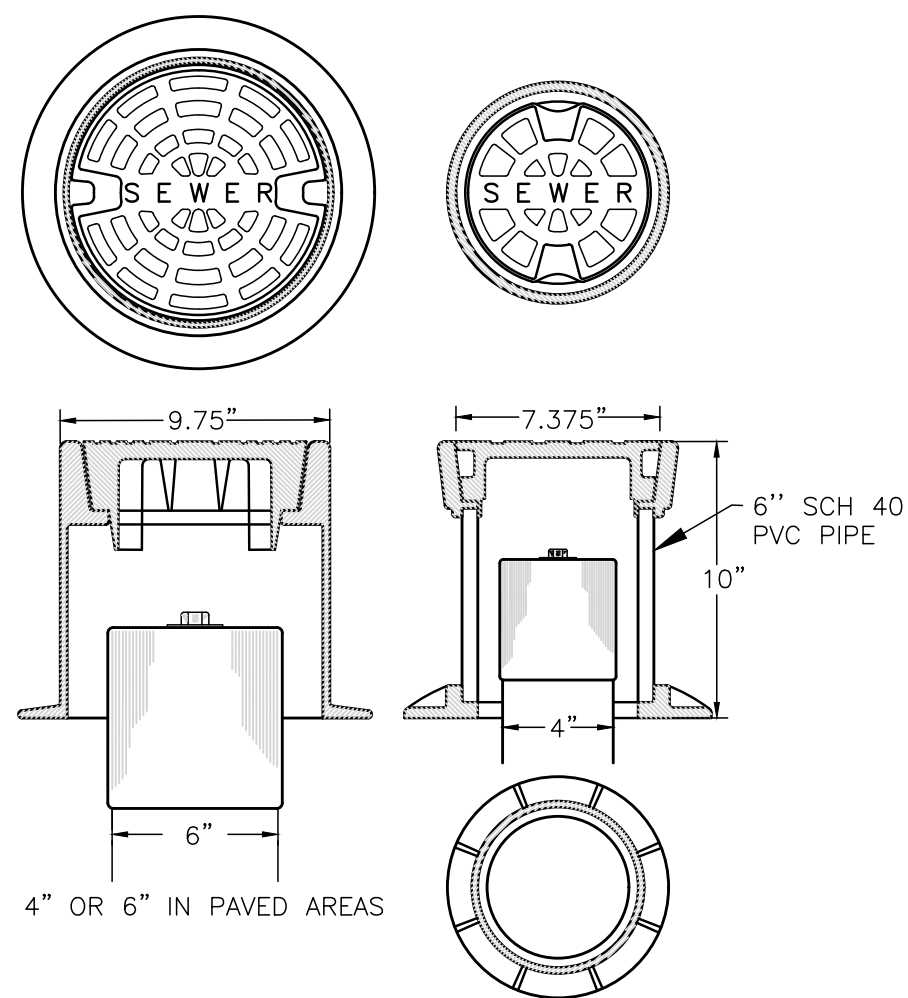
1. JOINTS SHALL BE DEPENDENT ON A NEOPRENE OR ELASTOMETRIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHOULD BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERENT MATERIALS ARE TO BE CONNECTED AT THE STREET SEWER OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
 2. WYES: WHERE A WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING THE MANUFACTURER'S INSTRUCTIONS. USING A BOLTED, CLAMPED, OR EPOXY CEMENTED SADDLE TOPPED INTO A SMOOTHLY DRILLED OR SAWED OPENING IN THE SEWER. THE PRACTICE OF BREAKING IN AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR EXPECTING MORTAR TO HOLD THE CONNECTION, AND OTHER SUCH CRUDE PRACTICES OR INEPT HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL.
 3. PIPE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED, AND JOINTED, IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL, AS SPECIFIED IN NOTE 7. BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH THE APPROPRIATE MECHANICAL DEVICES. THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE OF NO LESS THAN 1/8 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.
 4. TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS:
(PRIOR TO BACKFILLING)
 - A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND, WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
 - B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER TO SIMULATE, AS CLOSELY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTION FOR LEAKS SHALL BE MADE THROUGHOUT THE CLEAN OUT WITH A FLASHLIGHT.
 - C. DRY FLUORESCENCE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER OR, IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN TRENCH OVER THE PIPE. OBSERVATIONS FOR LEAKS SHALL BE MADE IN THE FIRST DOWNSTREAM MANHOLE.
- LEAKAGE OBSERVED IN ANY OF THE ABOVE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG UP, IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.
5. ILLEGAL CONNECTION: NOTHING BUT SANITARY WASTE FLOW FROM HOUSE TOILETS, SINKS, LAUNDRY, ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS, OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE, OR GROUND WATER SHALL NOT BE PERMITTED.
 6. HOUSE WATER SERVICE SHOULD NOT BE LAID IN THE SAME TRENCH AS SEWER SERVICE BUT, WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO ONE SIDE OF THE HOUSE SEWER AS SHOWN.
 7. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL, AND MEETING ASTM C33-67.

100% PASSING	1 INCH SCREEN
90-100% PASSING	3/4 INCH SCREEN
20-55% PASSING	3/8" SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE
 - WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.
 8. LOCATION: THE LOCATION OF THE WYE SHALL BE RECORDED AND FILED WITH THE SEWER DEPARTMENT. IN ADDITION, A METALLIC TAPE SHALL BE PLACED OVER THE PIPE TO THE WYE TO AID IN LOCATING THE BURIED PIPE.
 9. CHIMNEYS: NOT PERMITTED.
 10. SEWER SERVICE AND CLEAN OUT TO BE CONSTRUCTED AT TIME OF SEWER MAIN CONSTRUCTION TO EACH PROPOSED AND EXISTING LOT SERVICE TO BE BROUGHT TO RIGHT OF WAY LINE.

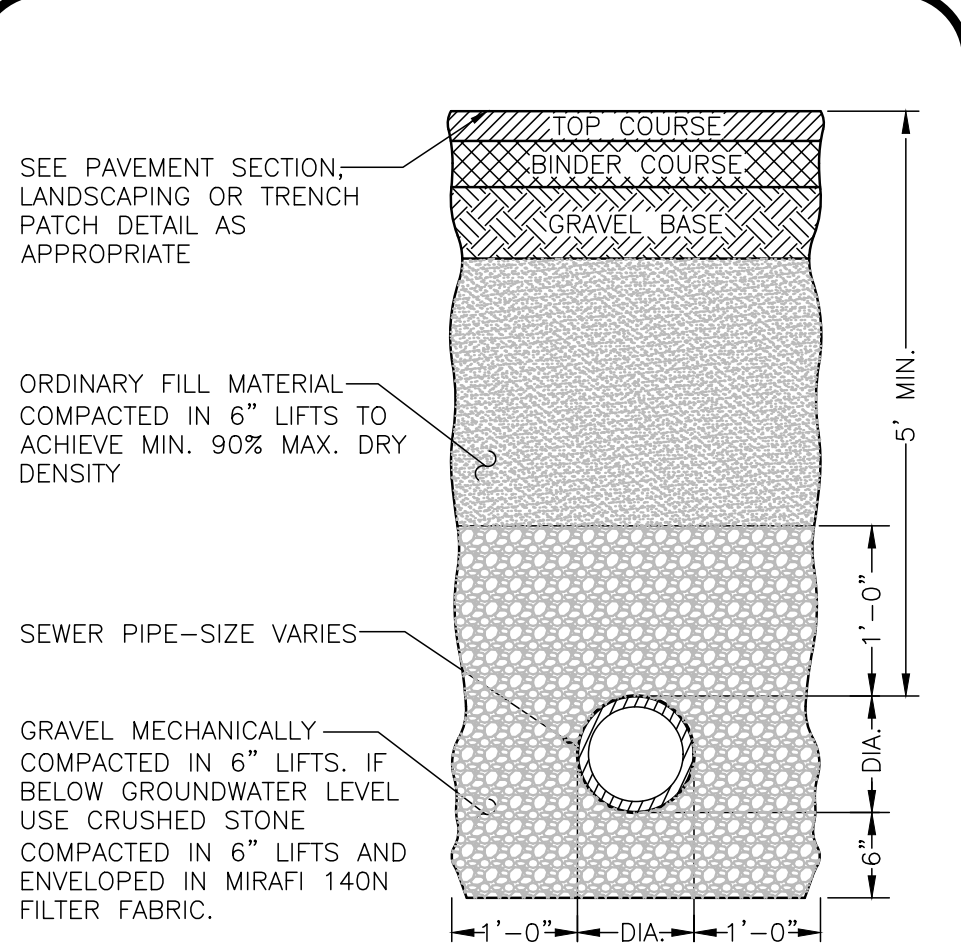
A SEWER SERVICE DETAIL
NOT TO SCALE



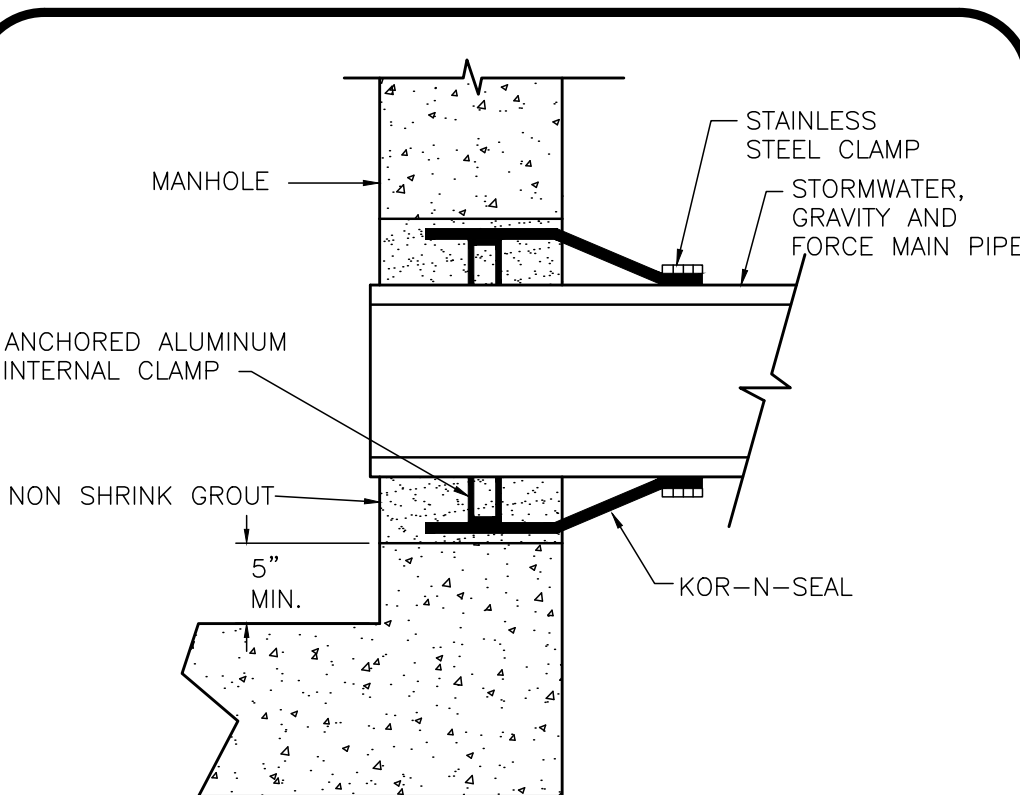
B SEWER SERVICE CLEANOUT DETAIL
NOT TO SCALE



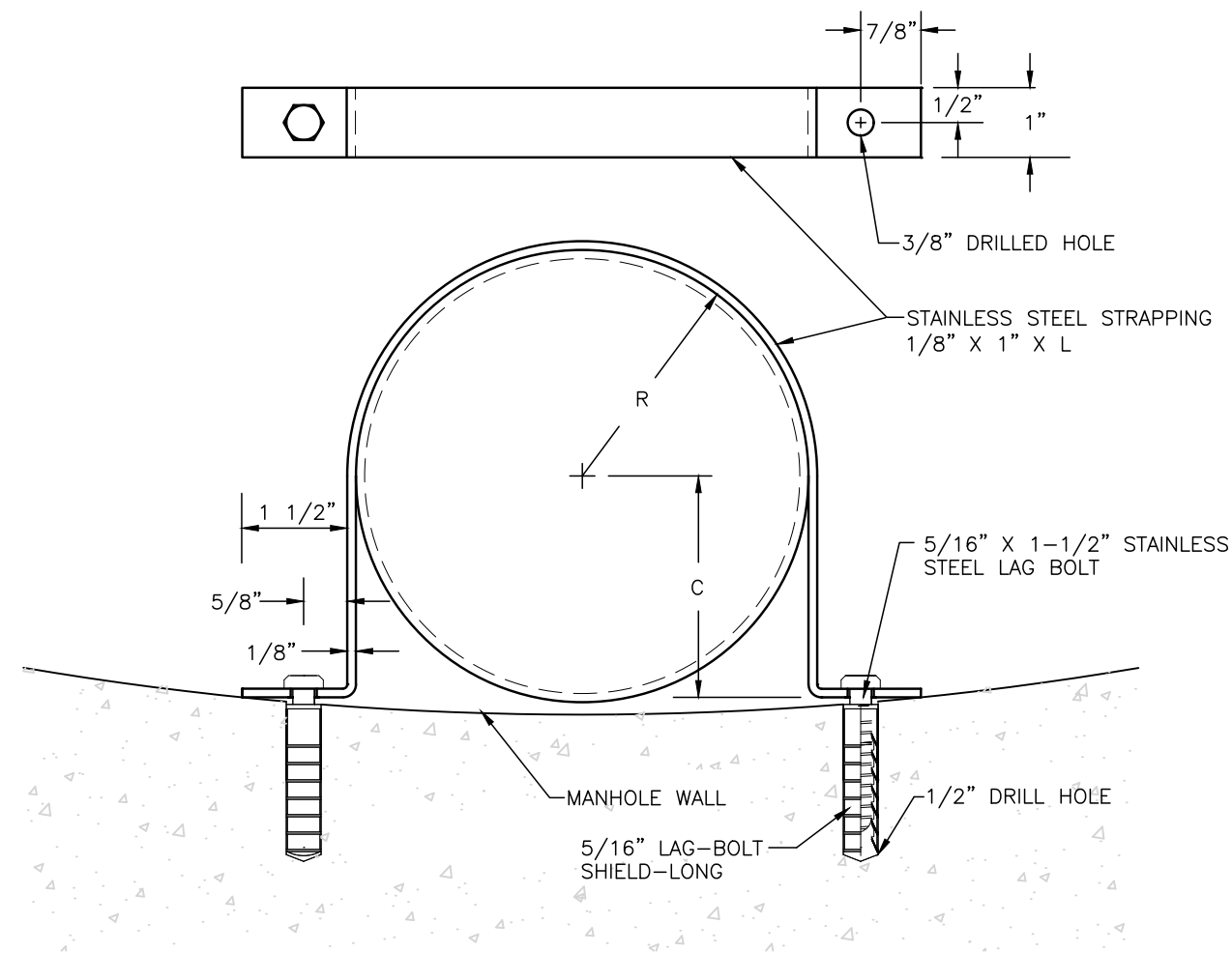
C SEWER CLEANOUT COVERS
NOT TO SCALE



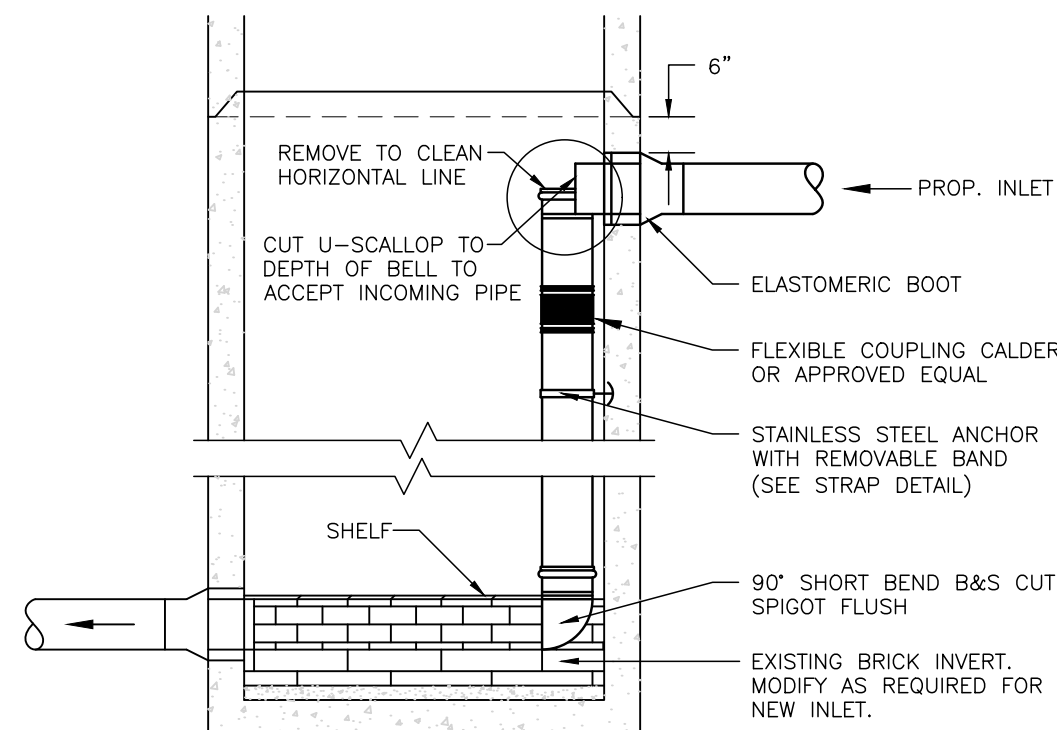
D TYPICAL SEWER TRENCH DETAIL
NOT TO SCALE



E SEWER MANHOLE JOINT DETAIL
NOT TO SCALE

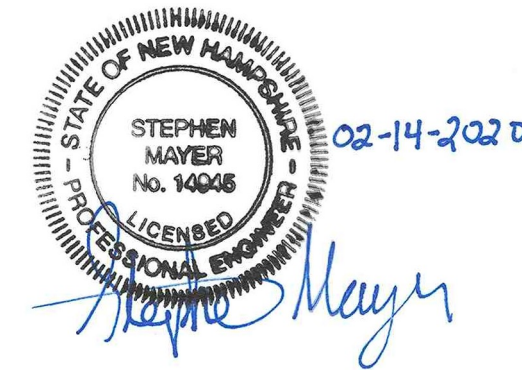


STRAP CONNECTION DETAIL
NOT TO SCALE



INSIDE DROP MANHOLE CONNECTION
NOT TO SCALE

F INSIDE SEWER DROP CONNECTION DETAILS
NOT TO SCALE



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
-----	------	-------------

OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO.	2734-01	DATE:	02-14-2020
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SCALE:	AS SHOWN	DWG. NAME:	C2734-01
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DESIGNED BY:	SM	CHECKED BY:	MAM
--------------	----	-------------	-----

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ♦ land surveying
environmental consulting ♦ landscape architecture
www.allenmajor.com
400 HARVEY ROAD
MANCHESTER, NH 03103
TEL: (603) 627-5500
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WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

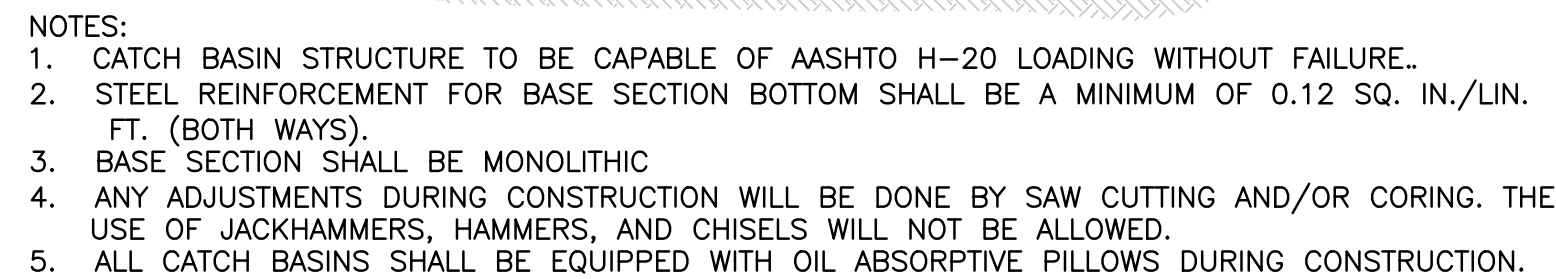
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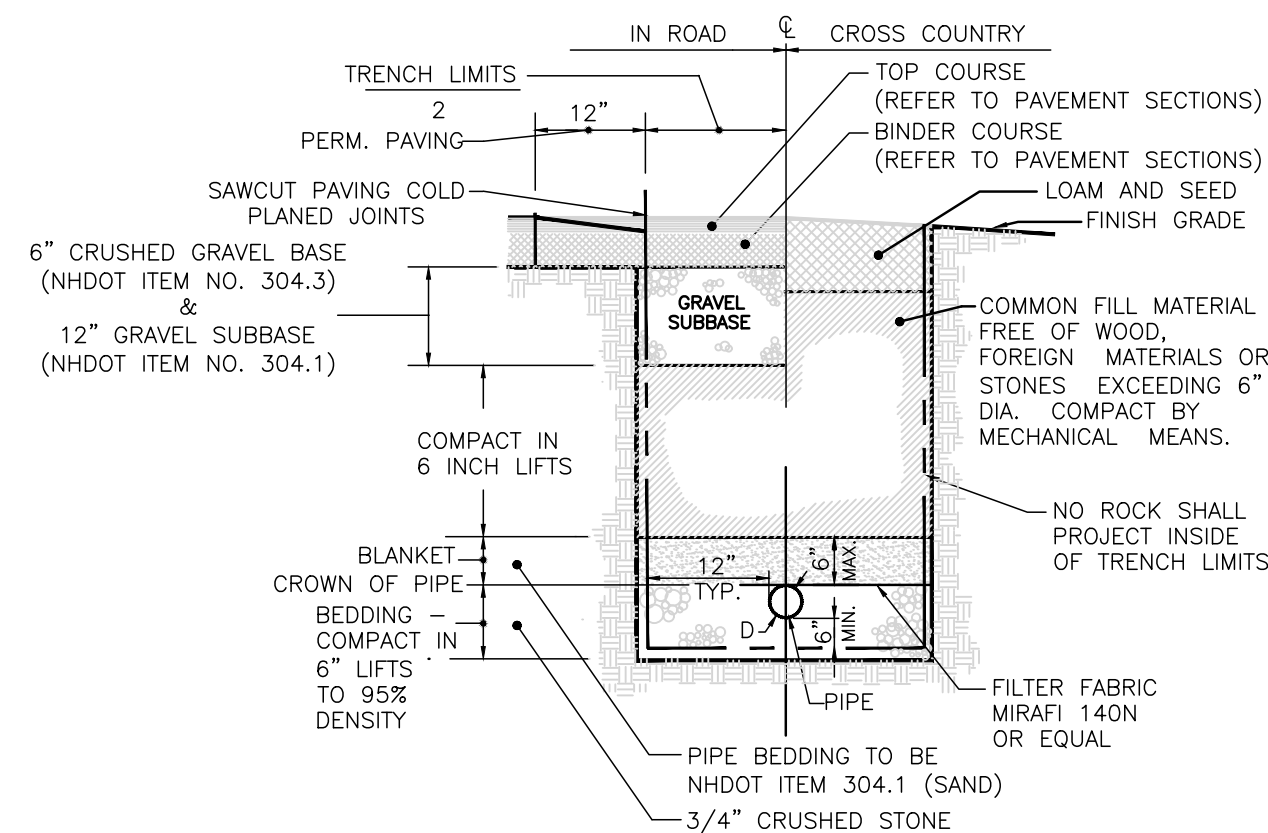
DETAILS

SHEET No.

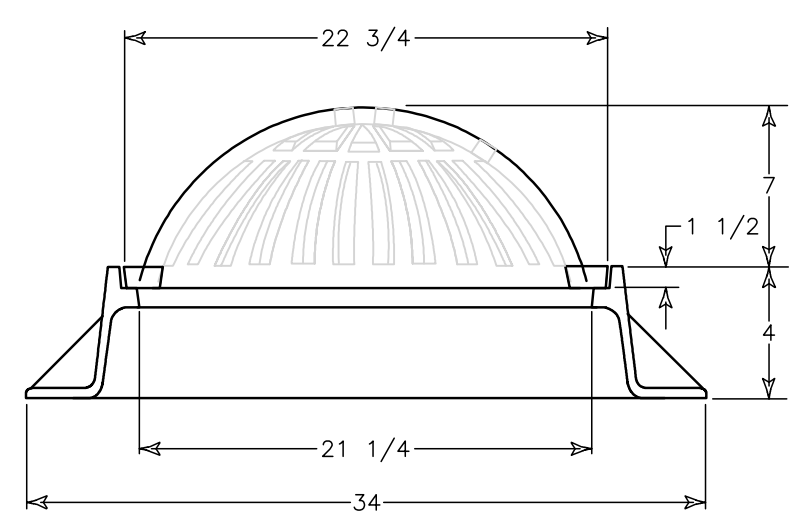
C-504



A CATCH BASIN WITH HOOD DETAIL
NOT TO SCALE

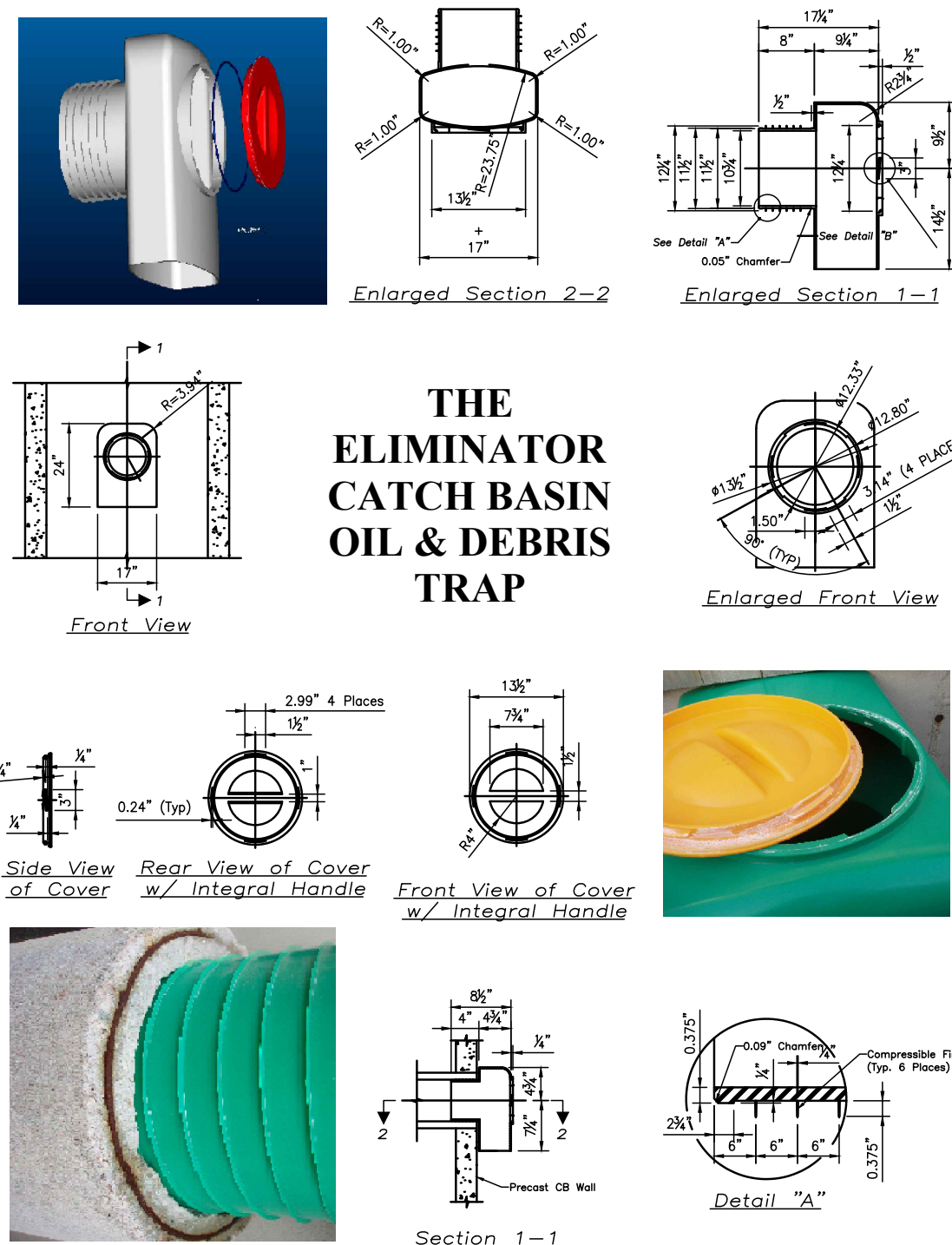


B TRENCH DETAIL-FOR DRAINAGE PIPES
NOT TO SCALE

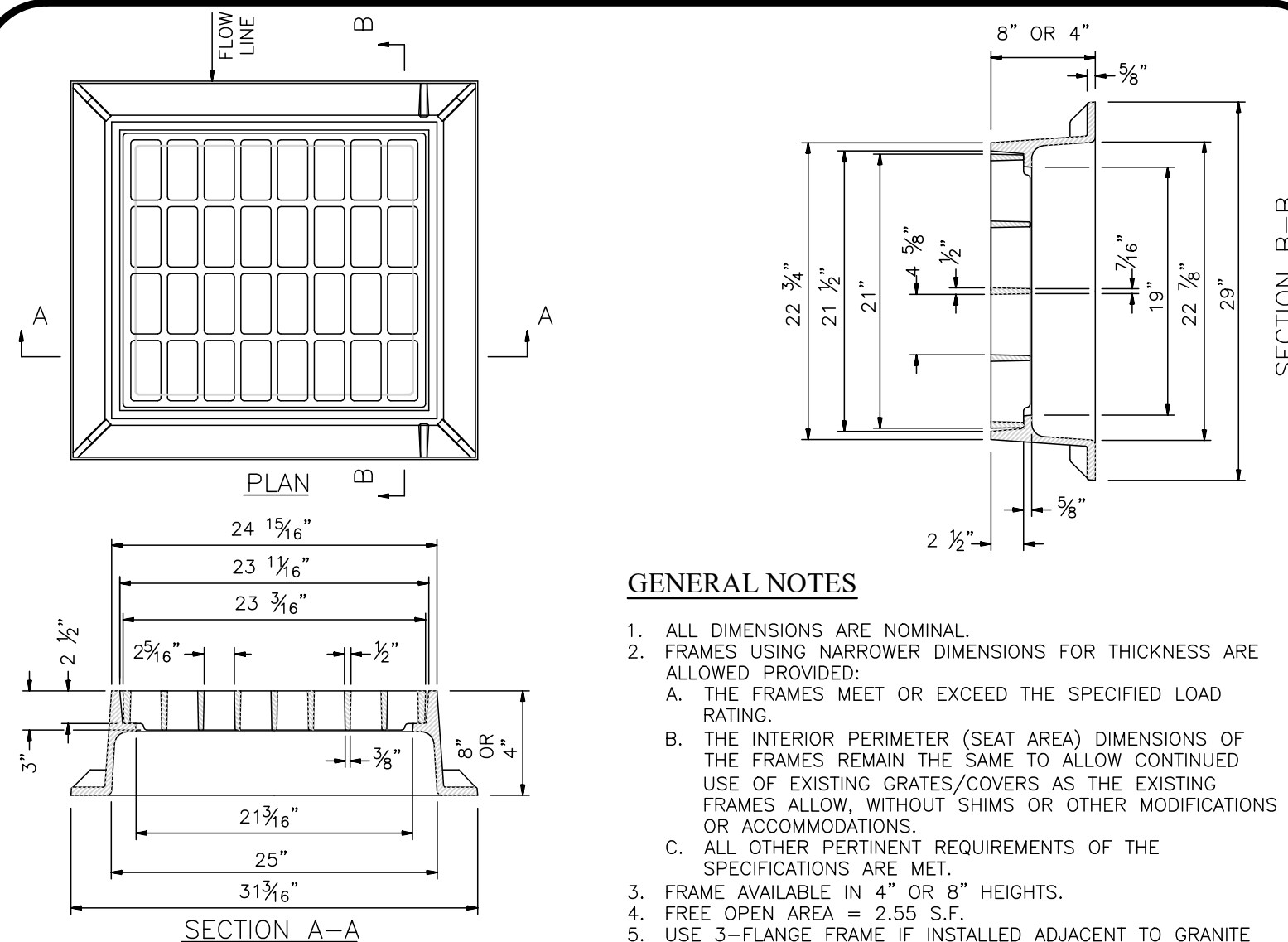


C BEEHIVE GRATE & FRAME AT PRECAST AREA DRAINS
NOT TO SCALE

1. ALL DIMENSIONS ARE NOMINAL.
2. GRATE TO BE BY NEENAH FOUNDRY MODEL R-2560-D7 OR APPROVED EQUAL.
3. FRAME TO BE BY NEENAH FOUNDRY, MODEL R-1647-A OR APPROVED EQUAL.



D OIL & GAS TRAP MOUNTING DETAIL



E TYPE 'B' GRATE & FRAME DETAIL
NOT TO SCALE

02-14-2020

Stephen Mayer

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC

REV	DATE	DESCRIPTION

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT: RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO.	2734-01	DATE:	02-14-2020
SCALE:	AS SHOWN	DWG. NAME:	C2734-01
DESIGNED BY:	SM	CHECKED BY:	MAM

PREPARED BY:



ALLEN & MAJOR
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DRAWING TITLE:

DETAILS

SHEET No.	
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C-505

PLANTING SCHEDULE-TREES, SHRUBS, GROUNDCOVERS & PERENNIALS

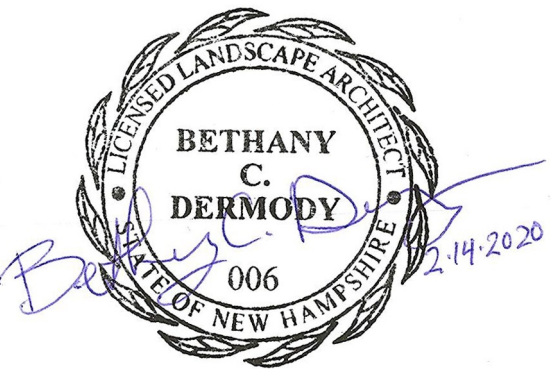
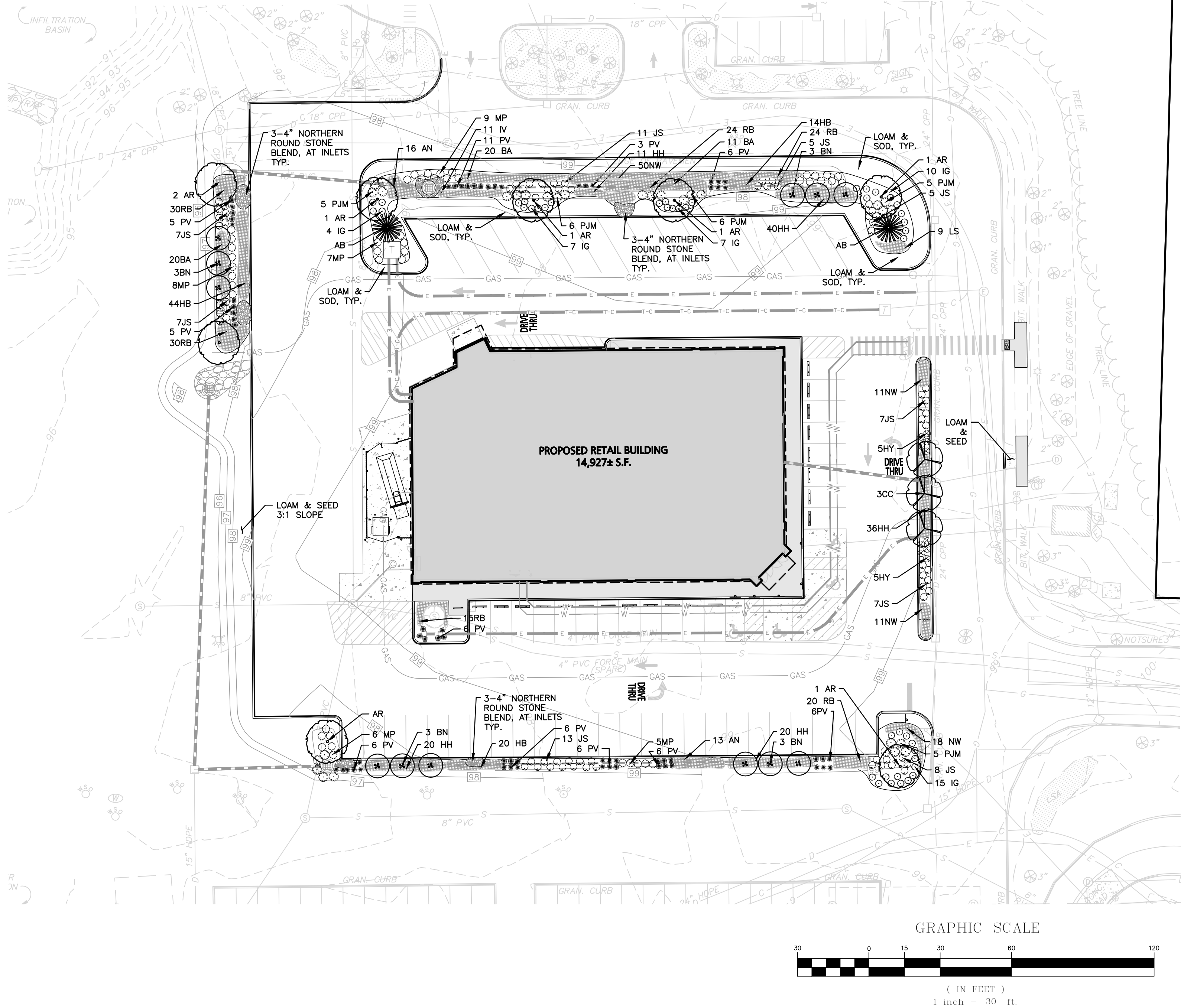
KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	COMMENTS
DECIDUOUS TREES						
AR	8	ACER RUBRUM 'REDPOINTE'	REDPOINTE RED MAPLE	2.5"-3" CAL.	AS SHOWN	B&B
BN	12	BETULA N. 'HERITAGE'	HERITAGE RIVER BIRCH	10-12' HT.	AS SHOWN	B&B
EVERGREEN/FLOWERING TREES						
AF	2	ABIES FRASERI	FRASER FIR	7-8' HT.	AS SHOWN	B&B
CC	3	CRATAEGUS CRUSGALLI INERMIS	THORNLESS COCKSPUR HAWTHORNE	1.5-2" CAL.	AS SHOWN	B&B
SHRUBS						
KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	COMMENTS
HA	10	HYDRANGEA A. 'INCREDIBALL'	INCREDIBALL HYDRANGEA	#7	AS SHOWN	POT
IG	43	ILEX GLABRA 'SHAMROCK'	INKBERRY	#3	AS SHOWN	POT
JS	70	JUNIPERUS CHINENSIS 'SEAGREEN'	SEAGREEN JUNIPER	#3	AS SHOWN	POT
MP	44	MYRICA PENNSYLVATICA	BAYBERRY	#3	AS SHOWN	POT
PJM	31	RHODODENDRON 'PJM'	PJM RHODODENDRON	#7	AS SHOWN	POT
PERENNIALS/GRASSES						
KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	COMMENTS
AN	29	ASTER 'PURPLE DOME'	PURPLE DOME ASTER	#2	24" O.C.	POT
BA	51	BAPTISIA 'PURPLE SMOKE'	PURPLE SMOKE BAPTISIA	#2	36" O.C.	POT
HB	78	HELENIUM 'BUTTER PAT'	BUTTER PAT SNEEZEWEED	#2	24" O.C.	STAGGERED
HH	127	HEMEROCALLIS 'GENTLE SHEPHERD'	GENTLE SHEPHERD WHITE DAYLILY	#2	24" O.C.	STAGGERED
IV	11	IRIS SIBERICA 'CEASAR'S BROTHER'	BLUE CEASAR'S BROTHER IRIS	#2	24" O.C.	STAGGERED
NW	90	NEPETA 'WALKER'S LOW'	WALKERS LOW NEPETA	#2	24" O.C.	STAGGERED
PV	64	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCH GRASS	#2	24" O.C.	STAGGERED
RB	143	RUDBECKIA FULGIDA 'GOLDSTRUM'	BLACK EYED SUSAN	#2	24" O.C.	STAGGERED

NOTES:

1. THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.
2. ALL LANDSCAPED AREAS WITH SHRUBS, TREES, AND PERENNIALS TO HAVE 18" MINIMUM DEPTH OF TOPSOIL. EIGHTEEN INCHES OF TOPSOIL AROUND TREES AND SHRUBS DOES NOT INCLUDE AMENDED PLANTING SOIL WITHIN TREE / SHRUB PIT FOR FULL DEPTH OF ROOTBALLS. SEE PLANTING DETAILS FOR PLANTING DEPTH AT SHRUBS AND TREES. ALL AREAS OF LOAM AND SEED OR LOAM & SOD TO HAVE 6" MINIMUM DEPTH OF TOPSOIL. TOPSOIL TO BE TESTED BY CONTRACTOR, AND APPROVED BY A&M PRIOR TO PURCHASE AND OR PLACEMENT. GENERAL CONTRACTOR, DEMOLITION CONTRACTOR, AND LANDSCAPE CONTRACTOR TO COORDINATE PROPER DEPTH OF EXISTING MATERIAL REMOVAL ACROSS SITE SO THAT 18" MINIMUM AND 6" MINIMUM DEPTHS OF PROPOSED TOPSOIL NOTED ABOVE ARE MET AT NO ADDITIONAL COST TO OWNER. SEE TOPSOIL DETAIL.
3. SEE SHEET L-501 FOR ADDITIONAL LANDSCAPE INFORMATION.

LEGEND

DECIDUOUS TREE	
EVERGREEN TREE	
FLOWERING TREE	
SHRUBS	
MULCH BED	
PERENNIALS/GROUNDCOVER	
WILDFLOWER SEED MIX	
EROSION CONTROL SEED MIX	



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV DATE DESCRIPTION

OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO. 2734-01 DATE: 02-14-2020

SCALE: 1" = 30' DWG. NAME: C2734-01

DESIGNED BY: SM CHECKED BY: MAM

PREPARED BY:



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LANDSCAPING PLAN

SHEET No.

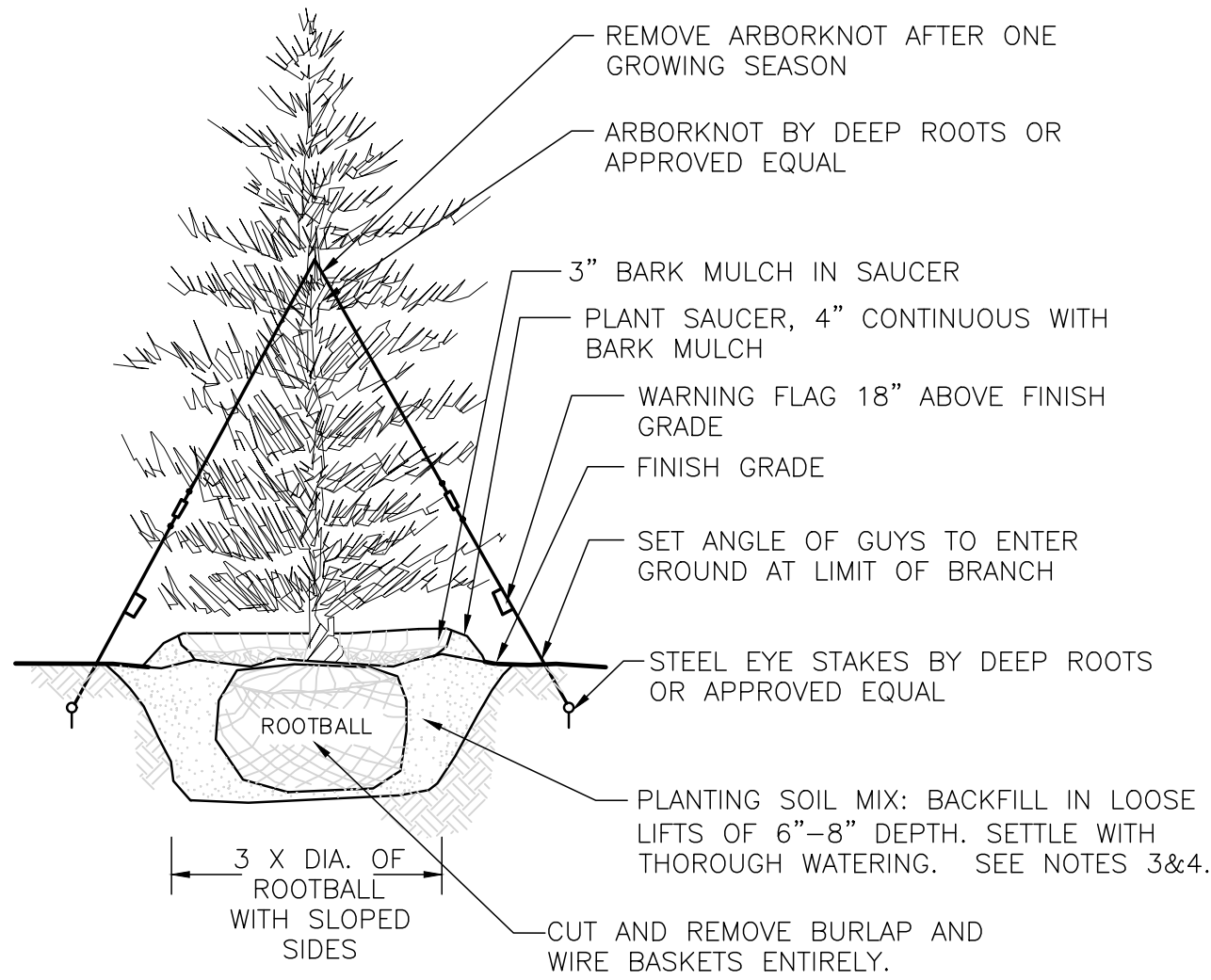
L-101

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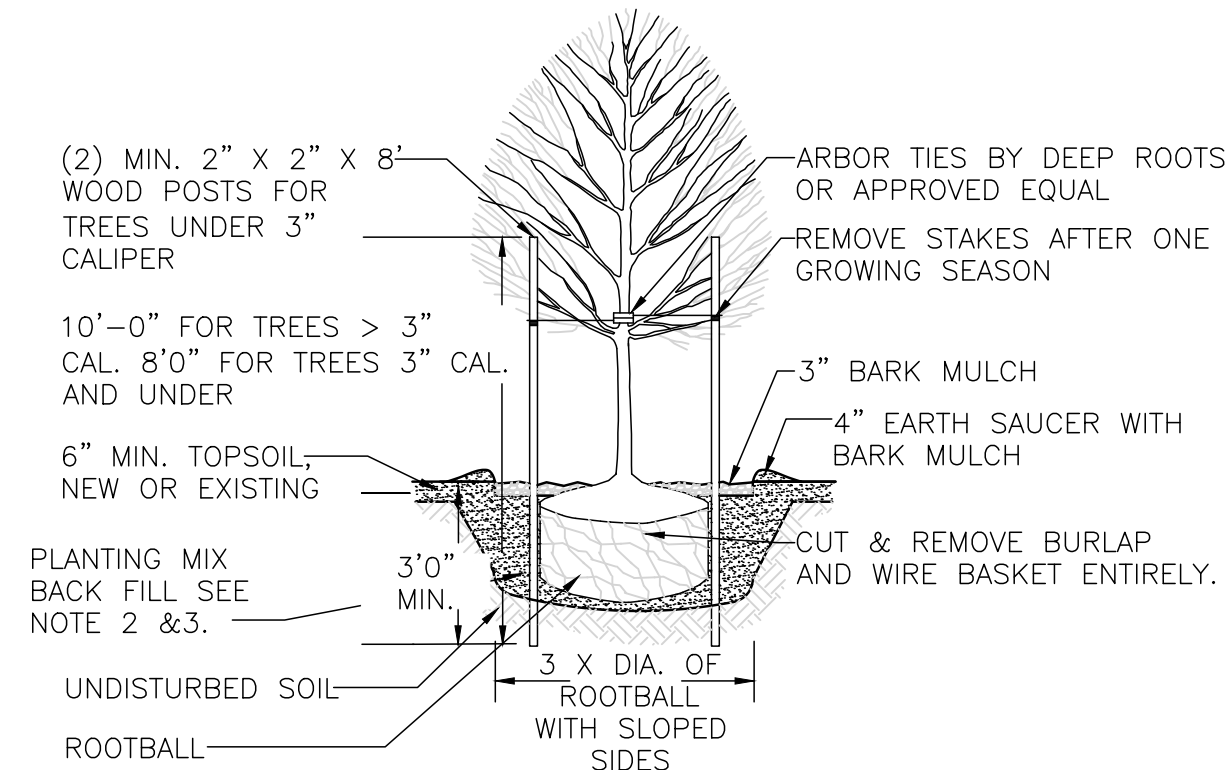


NOTES:

1. TREES SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS IT BORE TO NURSERY OR FIELD GRADE. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL TOP OF ROOTBALL AREA.
2. INSTALL THREE GUYS PER TREE; EQUALLY SPACED AROUND BALL.
3. ATTACH GUYS AT 2/3 HEIGHT OF TREE.
4. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
5. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.

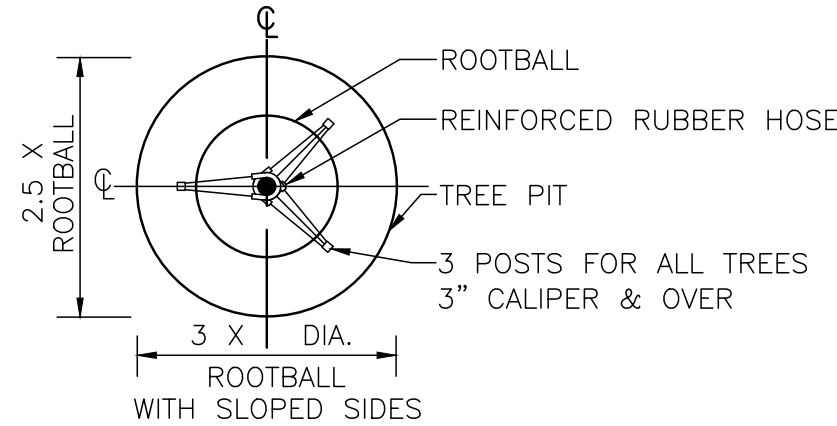
EVERGREEN TREE DETAIL
NOT TO SCALE

1



NOTES:

1. ALL TREES SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL ROOTBALL AREA.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.



DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

2

LOAM AND SEEDING NOTES:

CONTRACTOR SHALL SEED ALL DISTURBED AREAS NOT NOTED TO RECEIVE OTHER MATERIALS, AND AT AREAS SHOWN ON THE PLAN PER SPECIFICATIONS BELOW

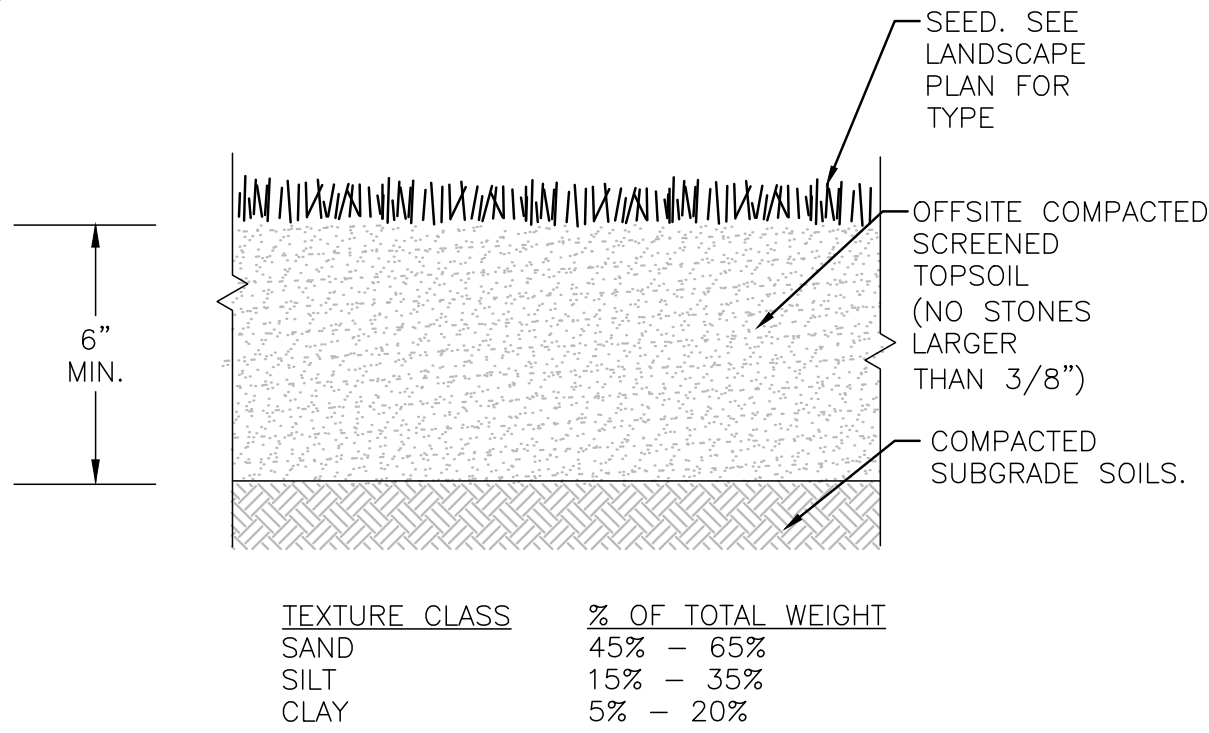
SCIENTIFIC NAME	COMMON NAME	PROPORTION BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION
FESTUCA RUBRA "RUBRA"	CREeping RED FESCUE	37%	95%	90%
PAO PRAENTENSIS "BARON"	BARON KENTUCKY BLUEGRASS	40%	85%	90%
LOLIUM PERENNE "PALMER"	PALMER PERENNIAL RYEGRASS	15%	95%	90%
FESTUCA RUBRA COMMUTATA WILMA	WILMA CHEWINGS	8%	95%	80%

1. SEED TO BE SPREAD AT MINIMUM RATE OF 5 LBS. PER 1000 SQ. FT.
2. SEEDING TO BE COMPLETED "IN SEASON" BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 1, EXCEPT FOR RESEEDING OF BARE SPOTS. IF UNABLE TO SEED WITHIN THESE TIMEFRAMES, CONTRACTOR TO INSTALL EROSION CONTROL MATS ON ALL SLOPES 3:1 AND OVER, HYDROSEED ALL EXPOSED AREAS, ADD SOIL STABILIZER "FLUX TERRA HP-FGM SOIL STABILIZER" AS MANUFACTURED BY "PROFILE" TO HYDROSEED (AT RATE OF 3,000 LBS PER ACRE), AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR TO COMPLETE ALL ABOVE "OUT OF SEASON" REQUIREMENTS AND THEN ALSO BE RESPONSIBLE FOR RE-GRADING AND RE-SEEDING ALL DISTURBED, ERODED, OR BARE SPOTS WITHIN NEXT CLOSEST PLANTING SEASON IN FALL OR SPRING AT NO ADDITIONAL COST TO OWNER. CONTRACTOR RESPONSIBLE FOR ALL MAINTENANCE UNTIL FINAL ACCEPTANCE OF LAWN AREAS INCLUDING: WATERING, ADDING FERTILIZERS AND LIME AND MOWING AT NO ADDITIONAL COST TO OWNER.
3. COMMERCIAL FERTILIZER SHALL BE APPLIED AT THE RATE OF 25 POUNDS PER 1000 SQ. FT. OR AS RECOMMENDED BY THE TESTING AGENCY. LIME TO BE SPREAD AT THE RATE OF 100 POUNDS PER 1000 SQ. FT OR AS RECOMMENDED BY THE TESTING AGENCY. COMMERCIAL FERTILIZER SHALL BE A COMPLETE FERTILIZER CONTAINING AT LEAST 50% OF THE NITROGEN OF WHICH IS DERIVED FROM NATURAL ORGANIC SOURCES OF UREAFORM. IT SHALL CONTAIN THE FOLLOWING PERCENTAGES BY WEIGHT: NITROGEN (N) 10%, PHOSPHORUS (P) 6%, POTASH (K) 4%. LIME SHALL BE AN APPROVED AGRICULTURAL LIMESTONE CONTAINING NOT LESS THAN 85% OF TOTAL CARBONATES. LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT 50% WILL PASS A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE.
4. LAWN AREAS TO BE SEEDDED BY SOWING EVENLY WITH AN APPROVED MECHANICAL SEEDER AT THE RATE OF TEN POUNDS PER 1000 SQUARE FEET.
5. CONTRACTOR RESPONSIBLE FOR WATERING, MOWING, AND RESEEDING OF LAWN BARE SPOTS UNTIL A UNIFORM, HEALTHY STAND OF GRASS IS ESTABLISHED AND ACCEPTED.

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TEXTURE CLASS	% OF TOTAL WEIGHT
SAND	45% - 65%
SILT	15% - 35%
CLAY	5% - 20%

SIEVE	% PASSING
3/8"	100
NO. 4	85-100
NO. 10	60-85
NO. 100	38-60
NO. 200	10-35
20 um	LESS THAN 5%

NOTES:

1. TOP OF LOAM (TOPSOIL) IS FINISH GRADE.
2. ALL TOPSOIL (BOTH ONSITE AND OFFSITE SOURCES) SHALL BE COMPOSED OF A NATURAL, FERTILE, FRIABLE SOIL TYPICAL OF CULTIVATED TOPSOILS OF THE LOCALITY. OFFSITE SOIL SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND SUPPORT OF VEGETATIVE GROWTH, WITH ADDITIVES, IF REQUIRED, TO ACHIEVE PARTICLE DISTRIBUTION AND ORGANIC CONTENT BELOW. TOPSOIL SHALL BE TAKEN FROM A WELL-DRAINED, ARIABLE SITE, FREE OF SUBSOIL, LARGE STONES, EARTH CLOUDS, STICKS, STUMPS, CLAY LUMPS, ROOTS, OTHER OBJECTIONABLE, EXTRANEEOUS MATTER OR DEBRIS NOR CONTAIN TOXIC SUBSTANCES.
3. THE CONTRACTOR SHALL PROVIDE THE OWNER / LANDSCAPE ARCHITECT WITH TOPSOIL TEST RESULTS (RECOMMEND UMASS AMHERST SOIL TESTING LAB) FOR APPROVAL PRIOR TO OBTAINING AND PLACING THE SOIL. IF ANY TOPSOIL IS PURCHASED OR PLACED PRIOR TO APPROVAL BY OWNER / LANDSCAPE ARCHITECT, IT IS AT CONTRACTORS RISK, AND IT CAN BE REMOVED AT NO ADDITIONAL COST TO THE OWNER. IF THE PLANTING SOIL (BOTH ONSITE AND OFFSITE SOURCES) DOES NOT FALL WITHIN THE REQUIRED SIEVE ANALYSIS, TEXTURAL CLASS, ORGANIC CONTENT, OR PH RANGE, IT SHALL BE ADJUSTED TO MEET THE SPECIFICATIONS THROUGH THE ADDITION OF SAND, COMPOST, LIMESTONE, OR ALUMINUM SULFATE TO BRING IT WITHIN THE SPECIFIED LIMITS AT NO ADDITIONAL COST TO THE OWNER.
4. TOPSOIL SHALL HAVE A PH VALUE BETWEEN 5.5 AND 6.5. TOPSOIL SHALL CONTAIN BETWEEN 4% AND 8% ORGANIC MATTER OF TOTAL DRY WEIGHT AND SHALL CONFORM TO THE FOLLOWING GRADATION AND TEXTURE CLASS ABOVE.

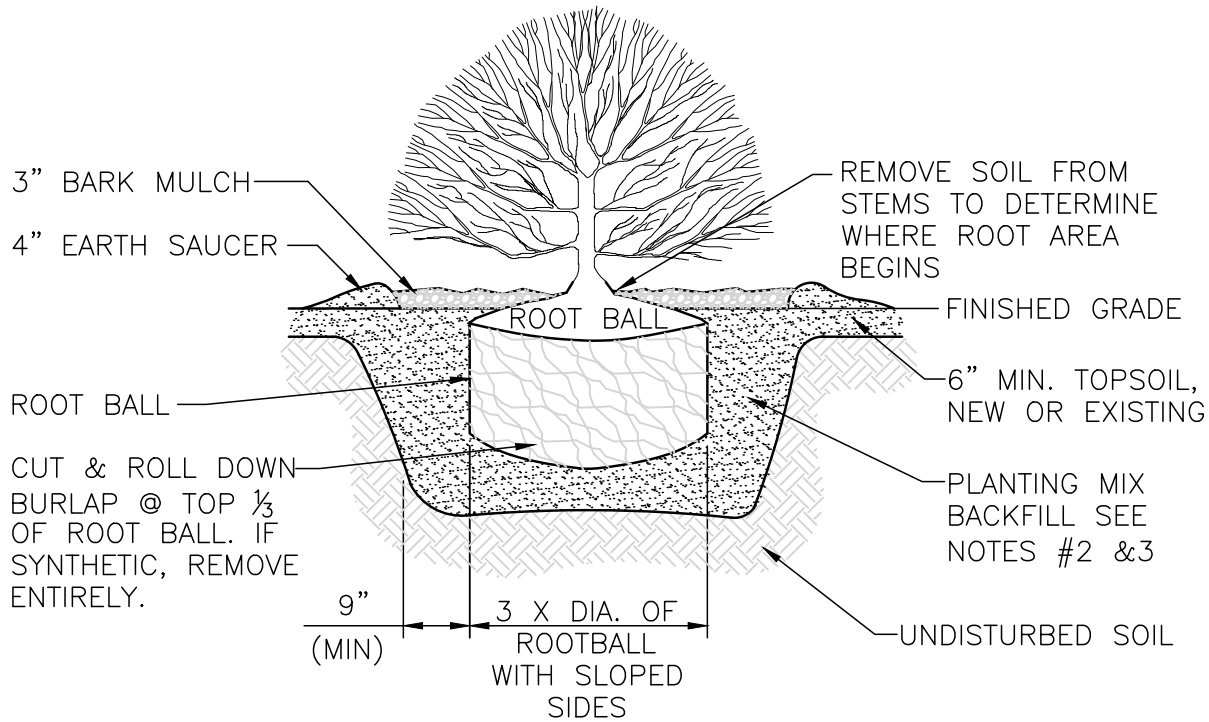
TOPSOIL FOR LAWN, TREES, SHRUBS, & PERENNIALS

NOT TO SCALE

3

NOTES:

1. ALL SHRUBS SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. SET SHRUB 1"-2" ABOVE FINISH GRADE.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.
4. SHRUB BEDS TO HAVE 24" MIN. OF CONTINUOUS PLANTING SOIL.



SHRUB PLANTING DETAIL
NOT TO SCALE

4

LANDSCAPE NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF DOVER, NH, SPECIFICATIONS.
2. PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES, ANY PERMITTING AGENCIES, AND "DIG-SAFE"(1-888-DIG-SAFE)AT LEAST 72 HOURS IN ADVANCE OF ANY WORK THAT WILL REQUIRE EXCAVATION. CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE OF ANY CONFLICTS IN WRITING.
4. NO PLANT MATERIAL SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA, ANY TREES NOTED AS "SEAL OR SELECTED SPECIMEN" SHALL BE TAGGED AND SEALED BY THE LANDSCAPE ARCHITECT.
5. ALL TREES SHALL BE BALLED AND BURLAPPED (B&B) UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
6. CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT LIST. QUANTITIES SHOWN ON PLANS SHALL GOVERN OVER PLANT LIST.
7. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
8. ALL PLANT MATERIALS INSTALLED SHALL MEET THE GUIDELINES ESTABLISHED BY THE STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
9. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE.
10. ALL DISTURBED AREAS NOT OTHERWISE NOTED SHALL RECEIVE 4" OF LOAM AND SEED. LAWNS WITH OVER 3:1 SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET.
11. ANY FALL TRANSPLANTING HAZARD PLANTS SHALL BE DUG IN THE SPRING AND STORED FOR FALL PLANTING.
12. TREES SHALL HAVE A MINIMUM CALIPER OF AS NOTED ON THE PLANTING PLAN ONE FOOT ABOVE THE ROOT CROWN.
13. ALL PLANT BEDS AND TREE SAUCERS TO RECEIVE 3" OF PINE BARK MULCH, AND GROUND COVER AREAS SHALL RECEIVE 1" OF PINE BARK MULCH.
14. ALL DECIDUOUS TREES ADJACENT TO WALKWAYS AND ROADWAYS SHALL HAVE A BRANCHING PATTERN TO ALLOW FOR A MINIMUM OF 7' OF CLEARANCE BETWEEN THE GROUND AND THE LOWEST BRANCH.
15. CONTRACTOR RESPONSIBLE FOR WATERING, AND RESEEDING OF BARE SPOTS UNTIL A UNIFORM STAND OF VEGETATION IS ESTABLISHED AND ACCEPTED.
16. ALL PARKING ISLANDS PLANTED WITH SHRUBS SHALL HAVE 24" OF TOP SOIL. FINISH GRADE SHALL BE EQUAL TO THE TOP OF CURB.
17. SOIL SAMPLES AND TESTS SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT OR THE OWNER.
18. AS THERE IS NO PROPOSED IRRIGATION SYSTEM, AFTER PLANTINGS & LAWNS & SEEDED AREAS HAVE BEEN INSTALLED, LANDSCAPE CONTRACTOR RESPONSIBLE TO TEMPORARILY WATER ALL INSTALLED PLANTINGS, SEEDED AREAS, & LAWN AREAS MIN. 4 TIMES A WEEK DURING INITIAL ESTABLISHMENT PERIOD OF 6 MONTHS AFTER ALL LANDSCAPING IS INSTALLED.

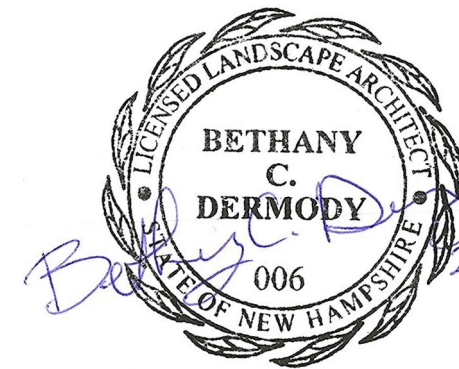
LOAM AND SODDING NOTES

CONTRACTOR SHALL SOD AREAS NOTED ON THE PLANS.

SOD IS TO BE A BLEND OF FOUR TO FIVE CURRENT AND IMPROVED HYBRID BLUEGRASS AND FESCUE MIXES APPROPRIATE FOR BOTH SEMI-SHADED AND AREAS OF SUN.

HYBRIDS MAY INCLUDE: BLACKSTONE KENTUCKY BLUEGRASS, AWARD KENTUCKY BLUEGRASS, CHALLENGER KENTUCKY BLUEGRASS, BLACKBURG II KENTUCKY BLUEGRASS OR COMPARABLE AND EQUAL BLUEGRASS HYBRIDS.

1. SOD SHALL BE HIGH QUALITY, NURSERY GROWN ON CULTIVATED MINERAL AGRICULTURAL SOILS. SOD SHALL BE MOIST, AND MACHINE CUT AT A UNIFORM SOIL THICKNESS OF AT LEAST 3/4" AT TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL INCLUDE TOP GROWTH AND THATCH. SOD SHALL BE FREE OF DISEASES, WEEDS, BARE SPOTS, OR INSECTS.
2. SODDING TO BE COMPLETED "IN SEASON" BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 1 EXCEPT FOR RE-SODDING OF BARE SPOTS. IF UNABLE TO SOD WITHIN THESE TIMEFRAMES, CONTRACTOR TO INSTALL EROSION CONTROL MATS ON ALL SLOPES 3:1 AND OVER, HYDROSEED ALL EXPOSED AREAS, ADD SOIL STABILIZER "FLUX TERRA HP-FGM SOIL STABILIZER" AS MANUFACTURED BY "PROFILE" TO HYDROSEED (AT RATE OF 3,000 LBS PER ACRE), AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR TO COMPLETE ALL ABOVE "OUT OF SEASON" REQUIREMENTS AND THEN ALSO BE RESPONSIBLE FOR RE-GRADING AND RE-SODDING ALL DISTURBED, ERODED, OR BARE SPOTS WITHIN NEXT CLOSEST PLANTING SEASON IN FALL OR SPRING AT NO ADDITIONAL COST TO OWNER. CONTRACTOR RESPONSIBLE FOR ALL MAINTENANCE UNTIL FINAL ACCEPTANCE OF LAWN AREAS INCLUDING: WATERING, ADDING FERTILIZERS AND LIME AND MOWING AT NO ADDITIONAL COST TO OWNER.
3. COMMERCIAL FERTILIZER SHALL BE APPLIED AT THE RATE OF 25 POUNDS PER 1000 SQ. FT. OR AS RECOMMENDED BY THE TESTING AGENCY. LIME TO BE SPREAD AT THE RATE OF 100 POUNDS PER 1000 SQ. FT OR AS RECOMMENDED BY THE TESTING AGENCY. COMMERCIAL FERTILIZER SHALL BE A COMPLETE FERTILIZER CONTAINING AT LEAST 50% OF THE NITROGEN OF WHICH IS DERIVED FROM NATURAL ORGANIZE SOURCES OF UREAFORM. IT SHALL CONTAIN THE FOLLOWING PERCENTAGES BY WEIGHT: NITROGEN (N) 10%, PHOSPHORUS (P) 6%, POTASH (K) 4%. LIME SHALL BE AN APPROVED AGRICULTURAL LIMESTONE CONTAINING NOT LESS THAN 85% OF TOTAL CARBONATES. LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT 50% WILL PASS A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE.
4. CONTRACTOR RESPONSIBLE FOR WATERING, MOWING, AND RE-SODDING OF LAWN BARE SPOTS UNTIL A UNIFORM, HEALTHY STAND OF GRASS IS ESTABLISHED AND ACCEPTED.



PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

OWNER/APPLICANT:

V.M.D. COMPANIES, LLC.
33 TURNPIKE STREET, RTE 114
NORTH ANDOVER, MA 01845

PROJECT:

RETAIL STORE WITH
DRIVE-THRU
STERLING WAY
DOVER, NH

PROJECT NO.	2734-01	DATE:	02-14-2020
SCALE:	AS SHOWN	DWG. NAME:	C2734-01
DESIGNED BY:	SM	CHECKED BY:	MAM

PREPARED BY:



ALLEN & MAJOR
ASSOCIATES, INC.

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environmental consulting • landscape architecture
www.allenmajor.com

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MANCHESTER, NH 03103
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DRAWING TITLE:	SHEET No.
LANDSCAPING DETAILS	L-501

Mr. Ari B. Pollack, Esq.
Gallagher, Callahan & Gartrell, P.C.
214 N. Main Street
Concord, New Hampshire 03301

January 9, 2020

Ref. T0960

Re: Silver Square Development – Sterling Way, Dover, New Hampshire
Trip Generation Summary for Change-in-Use

Dear Mr. Pollack:

TEC, Inc. (TEC) has prepared a trip generation comparison for the change-in-use of permitted floor area at the Silver Square Development (the “Project”) along Sterling Way, a private way, in Dover, New Hampshire. The Project’s permitted traffic impact was outlined in a *Traffic Impact Assessment* (TIA) prepared by TEC on January 22, 2016. The traffic impact for design purposes from the original building program of the Silver Square Development was previously approved by both the New Hampshire Department of Transportation (NHDOT) - Bureau of Traffic and the Dover Planning Board. To-date, the Project’s Proponent has completed construction and opened several buildings onsite. In addition, the Project’s Proponent has completed off-site transportation mitigation measures, such as the Silver Street roundabout, at the Project’s front door.

The original building program¹ as defined in the TIA consisted of a 75-unit assisted living facility, a ±66,000 square foot (SF) medical office building, an 85-room hotel, a ±2,930 SF bank with drive-through window, and a ±2,400 SF coffee shop with drive-through. Minor modifications incorporated into the site plan subsequent to the TIA’s submittal resulted in a permitted site plan with slightly different floor areas that were deemed to not significantly change traffic impact. Prior to the proposed change-in-use, the completed Garrison Hotel was constructed with only 66-rooms, the Residences at Silver Square was constructed with 76-units, and the Dunkin Donuts was constructed with 2,300 SF of floor area. The Proponent has proposed to change the permitted building program to remove the ±2,930 SF bank and ±22,000 SF of the ±66,000 SF medical office building in exchange for a proposed ±14,000 SF retail building. A summary of the permitted and proposed development building program is provided in Table 1.

Table 1 – Summary of Permitted and Proposed Building Program

Land Use	From TIA	Proposed Program	Change
Assisted Living Facility ^a	75-units	76-units	+ 1 unit
Medical Office Building	66,000 SF	44,000 SF	- 22,000 SF
Hotel ^b	85-rooms	66-rooms ^b	- 19 Rooms
Bank	2,930 SF	0 SF	- 2,930 SF
Coffee Shop w/ DT ^c	2,400 SF	2,300 SF	- 100 SF
Retail	0 SF	14,000 SF	+ 14,000 SF

^a Residences at Silver Square constructed with 76 units, 1 unit more than TIA

^b Garrison Hotel constructed with 66-rooms, 19 rooms below TIA

^c Dunkin Donuts constructed with 2,300 SF, 100 SF below TIA

¹ Permitted as included in the *Traffic Impact Assessment* prepared by TEC on January 22, 2016.

This letter provides a trip generation comparison for the permitted building program as compared to the proposed change-in-use to assess whether the development will result in further impact to the surrounding transportation network.

Trip Generation Summary

The change-in-use is expected to fill-out the site while allowing traffic impact from the development to remain at or below the projected traffic generation as previously approved by the Town and NHDOT documentation. The updated site generated traffic projected for the change-in-use were based on the standard trip rates published in the Institute of Transportation Engineers' (ITE) publication *Trip Generation, 9th Edition* for Land Use Codes (LUC) 254 – Assisted Living, LUC 310 – Hotel, LUC 720 – Medical-Dental Office Building, LUC 820 – Shopping Center, and LUC 937 – Coffee/Donut Shop with Drive-Through. Although a more recent *10th Edition* of the ITE publication was published in 2017; this letter utilizes the *9th Edition* to provide a direct comparison to the original permitting documents. The use of refined data in the updated publication would generally have no significant impact to the results of the comparison.

Trip Generation Credit Parameters

To remain consistent with original permitting, trip generation parameters for the project were adjusted to reflect credits for both pass-by trips and internal capture of trips. The methodology for these credits is consistent with those presented in the original 2016 TIA.

Pass-by Traffic

Not all trips generated by the project will be new to the study area. Many of the trips are already present in the existing traffic flow passing by the site. For example, some vehicles which are already on the roadways may decide to visit the Dunkin Donuts on their way to another destination. These vehicle trips are known as “pass-by” trips and are subtracted from the total trips to calculate the total primary (or “new”) trips that affect the volume of traffic within the study area away from the site. Based on information contained in the ITE publication *Trip Generation Handbook, 3rd Edition*, for LUC 820, approximately 34 percent of the retail site-generated traffic is expected to be pass-by traffic during the weekday peak hour and 26 percent during all other time periods. Similarly based on information for LUC 937, approximately 50 percent of the coffee/donut shop site-generated traffic is expected to be pass-by traffic.

Internal Capture

It is reasonable to expect that some trips to the site will be shared between multiple land uses. For example, someone traveling to the medical office building may choose to eat at the coffee/donut shop on-site. Therefore, a reduction in the overall trips experienced at the site driveway and the proposed roundabout can be anticipated as a result of multi-use trips that include stops at more than one use on the site. Based on information contained in the ITE publication *Trip Generation Handbook, 3rd Edition*, multi-use trips will account for approximately 17 to 20 percent of the site-generated trips.

Table 2 provides a summary of the resulting trip generation estimate based on the proposed change-in-use of the building program. The detailed trip generation calculation worksheets are provided in Attachment A.

Table 2 - Trip Generation Summary

Time Period / Direction	Assisted Living (LUC 254)	Hotel (LUC 310)	Medical Office (LUC 720)	Retail (LUC 820)	Coffee/Donut Shop (LUC 937)	Total Trips	Internal Capture	Pass-by Trips ^a	Net New Trips
<i>Weekday Daily</i>	202	218	1,590	598	1,882	4,490	754	918	2,818
<i>Weekday Morning Peak Hour</i>									
Enter	7	21	83	8	118	237	36	51	150
Exit	4	<u>14</u>	<u>22</u>	<u>5</u>	<u>113</u>	<u>158</u>	<u>36</u>	<u>51</u>	<u>71</u>
Total	11	35	105	13	231	395	72	102	221
<i>Weekday Evening Peak Hour</i>									
Enter	7	20	39	25	49	140	33	21	86
Exit	<u>10</u>	<u>20</u>	<u>100</u>	<u>27</u>	<u>49</u>	<u>206</u>	<u>33</u>	<u>21</u>	<u>152</u>
Total	17	40	139	52	98	346	66	42	238
<i>Saturday Daily</i>	168	340	394	700	1,582	3,184	648	820	1,716
<i>Saturday Midday Peak Hour</i>									
Enter	13	28	91	35	92	259	49	43	167
Exit	<u>12</u>	<u>22</u>	<u>69</u>	<u>32</u>	<u>92</u>	<u>227</u>	<u>49</u>	<u>43</u>	<u>135</u>
Total	25	50	160	67	184	486	98	86	302

^a Pass-by trips represent 50 percent of coffee/donut shop trips, and 34 percent weekday PM with 26 percent all other time periods of retail trips.

As shown in Table 2, the site with the proposed change-in-use of the building program is anticipated to generate 2,818 new vehicle trips during the typical weekday; including 221 new vehicle trips (150 entering and 71 exiting) during the weekday morning peak hour and 238 new vehicle trips (86 entering and 152 exiting) during the weekday evening peak hour. During a typical Saturday, the site with the proposed change-in-use of the building program is anticipated to generate 1,716 new vehicle trips with 302 new vehicle trips (167 entering and 135 exiting) during the midday peak hour.

Comparison to Permitted Trip Generation

The site trip generation for the change-in-use of the building program was compared to originally permitted project volumes. The site trip generation calculations for the originally permitted project were assessed from the Project's TIA prepared by TEC on January 22, 2016. Table 3 provides a comparison of the permitted versus proposed trip generation to/from the site.

Table 3 – Trip Generation Comparison (Primary / New Trips)

Time Period	Proposed Change-in-Use Program ^a	Permitted Program (2016) ^b	Change in Trip Generation
<i>Weekday Daily</i>	2,818	3,707	- 889
<i>Weekday Morning</i>			
IN	150	189	- 39
OUT	<u>71</u>	<u>75</u>	<u>- 4</u>
TOTAL	221	264	- 43
<i>Weekday Evening</i>			
IN	86	110	- 24
OUT	<u>152</u>	<u>198</u>	<u>- 46</u>
TOTAL	238	308	- 70
<i>Saturday Daily</i>	1,716	1,942	- 226
<i>Saturday Midday</i>			
IN	167	216	- 49
OUT	<u>135</u>	<u>173</u>	<u>- 38</u>
TOTAL	302	389	- 87

^a From Table 2

^b From Table 1 of the January 22, 2016 *Traffic Impact Assessment*

As shown in Table 3, the new program is expected to generate 889 trips less than originally permitted over the course of a typical weekday; including 43 trips less during the weekday morning peak hour and 70 trips less during the weekday evening peak hour. During a typical Saturday, the site with the proposed change-in-use of the building program is anticipated to generate 226 trips less daily with 87 trips less during the midday peak hour. **The change in use will result in a noticeable drop in peak hour traffic and will benefit the motoring public during the times of greatest congestion.** The detailed trip generation calculations from the original building program are provided in Attachment B.

Conclusions

The future site trips projected to be generated by the proposed change-in-use of the building program is expected to be significantly less than those generated by the originally permitted program during all typical weekday and Saturday time periods. This indicates overall that the potential change in use from the permitted building program to the proposed land uses would decrease the potential traffic impact along Silver Street and other the surrounding roadways. In addition, the decreased level of trip generation from the site provides additional reserve capacity into the recently constructed roundabout at the Project's front door. With the significant decrease in traffic proposed based on the change-in-use, no further off-site transportation mitigation is warranted.

Please do not hesitate to contact me directly if you have any questions concerning our summary at 603-601-8154. Thank you for your consideration.

Sincerely,
TEC, Inc.
"The Engineering Corporation"



Samuel W. Gregorio, PE, PTOE, RSP₁
Senior Design Engineer – Transportation Planning & ITS



Attachment A – Trip Generation Calculations
 B – Original TIA Trip Generation

Attachment A

Change-in-Use Trip Generation Calculations

Trip Generation Assessment - Mixed-Use Development, Silver Street, Dover, NH

Project: Mixed-Use Development, Silver Street, Dover, NH
Date: January 9, 2020
Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE, RSP
Source: Institute of Transportation Engineers - Trip Generation - 9th Ed.

Proposed Development

44,000 SF Medical-Dental Office Building (ITE LUC 720)

Units:	44 ksf	Total Trips		% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips		Total New Primary Trips		# Passby Trips		# Primary Trips	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Weekday Daily	1590	50%	50%	795	795	59		136	59	0		1395		0	0	659	736
Weekday AM PH Adj St	105	79%	21%	83	22	15	17	15	17	0		73		0	0	68	5
Weekday PM PH Adj St	139	28%	72%	39	100	2	3	2	3	0		134		0	0	37	97
Saturday Daily	394	50%	50%	197	197	43	54	43	54	0		297		0	0	154	143
Sat MIDDAY PH	160	57%	43%	91	69	16	6	16	6	0		138		0	0	75	63

2,300 SF Coffee/Donut Shop with Drive-Through (ITE LUC 937)

Units:	2.3 ksf	Total Trips		% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips		Total New Primary Trips		# Passby Trips		# Primary Trips	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Weekday Daily	1882	50%	50%	941	941	205		132	205	772		773		386	386	423	350
Weekday AM PH Adj St	231	51%	49%	118	113	14	14	16	14	100		101		50	50	52	49
Weekday PM PH Adj St	98	50%	50%	49	49	11	17	11	17	36		34		18	18	20	14
Saturday Daily	1582	50%	50%	791	791	148	135	148	135	650		649		325	325	318	331
Sat MIDDAY PH	184	50%	50%	92	92	16	28	16	28	70		70		35	35	41	29

Assumes 50% pass-by for all conditions based on ITE Trip Generation Handbook, 3rd Edition for LUC 934 (Fast-Food Restaurant with Drive-Thru).

76 Units Assisted Living (ITE LUC 254)

Units:	76 Units	Total Trips		% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips		Total New Primary Trips		# Passby Trips		# Primary Trips	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Weekday Daily	202	50%	50%	101	101	0	0	0	0	0		202		0	0	101	101
Weekday AM PH Adj St	11	65%	35%	7	4	0	0	0	0	0		11		0	0	7	4
Weekday PM PH Adj St	17	44%	56%	7	10	0	0	0	0	0		17		0	0	7	10
Saturday Daily	168	50%	50%	84	84	0	0	0	0	0		168		0	0	84	84
Sat MIDDAY PH	25	51%	49%	13	12	0	0	0	0	0		25		0	0	13	12

66 Room Hotel (ITE LUC 310)

Units:	66 Units	Total Trips		% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips		Total New Primary Trips		# Passby Trips		# Primary Trips	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Weekday Daily	218	50%	50%	109	109	36		16	36	0		166		0	0	93	73
Weekday AM PH Adj St	35	59%	41%	21	14	1	3	1	3	0		31		0	0	20	11
Weekday PM PH Adj St	40	51%	49%	20	20	4	3	4	3	0		33		0	0	16	17
Saturday Daily	340	50%	50%	170	170	24	43	24	43	0		273		0	0	146	127
Sat MIDDAY PH	50	56%	44%	28	22	4	6	4	6	0		40		0	0	24	16

14,000 SF Retail (ITE LUC 820)

Units:	14 ksf	Total Trips		% Distribution		# New Trips		Multi-Use Trips		Total New Pass-by Trips		Total New Primary Trips		# Passby Trips		# Primary Trips	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Weekday Daily	598	50%	50%	299	299	77		93	77	146		282		73	73	133	149
Weekday AM PH Adj St	13	62%	38%	8	5	2	2	4	2	2		5		1	1	3	2
Weekday PM PH Adj St	52	48%	52%	25	27	16	10	16	10	6		20		3	3	6	14
Saturday Daily	700	50%	50%	350	350	92		109	92	170		329		85	85	156	173
Sat MIDDAY PH	67	52%	48%	35	32	13	9	13	9	16		29		8	8	14	15

Assumes 34% pass-by for weekday evening, 26% for all other time periods based on ITE Trip Generation Handbook, 3rd Edition for LUC 820.

Net Increase		Total New Trips		Total Multi-Use Trips		Total New Pass-by Trips		Total New Primary Trips		Total Pass-by Trips		Total Primary Trips			
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out		
Weekday Daily	4490	2245	2245	377	377			918		2818		459	459	1409	1409
	395		158		36	36		102		221		51	51	150	71
	346		206		33	33		42		238		21	21	86	152
	3184		1592		324	324		820		1716		410	410	858	858
	486		259		49	49		86		302		43	43	167	135
Sat MIDDAY PH															



Land Use Description	Land Use	A	B	C	D
	Land Use Name	Retail	Hotel	MOB	Dunkins
	Land Use Type	Retail	Hotel	Office	Restaurant
	ITE LUC	820	310	720	937
	Size	14 kSF	85-Rooms	44 kSF	2.5 kSF
New Trips	<i>Weekday Daily</i>				
	Enter	299	109	795	941
	Exit	299	109	795	941
	<i>Weekday AM</i>				
	Enter	8	21	83	118
	Exit	5	14	22	113
	<i>Weekday PM</i>				
	Enter	25	20	39	49
	Exit	27	20	100	49
	<i>Saturday Daily</i>				
	Enter	350	170	197	791
	Exit	350	170	197	791
	<i>Saturday Midday</i>				
	Enter	35	28	91	92
	Exit	32	22	69	92

Project Name: Silver Square

Analyst: Samuel W. Gregorio, PE, PTOE

Date: 1/7/2020

KEY: Entry Cells

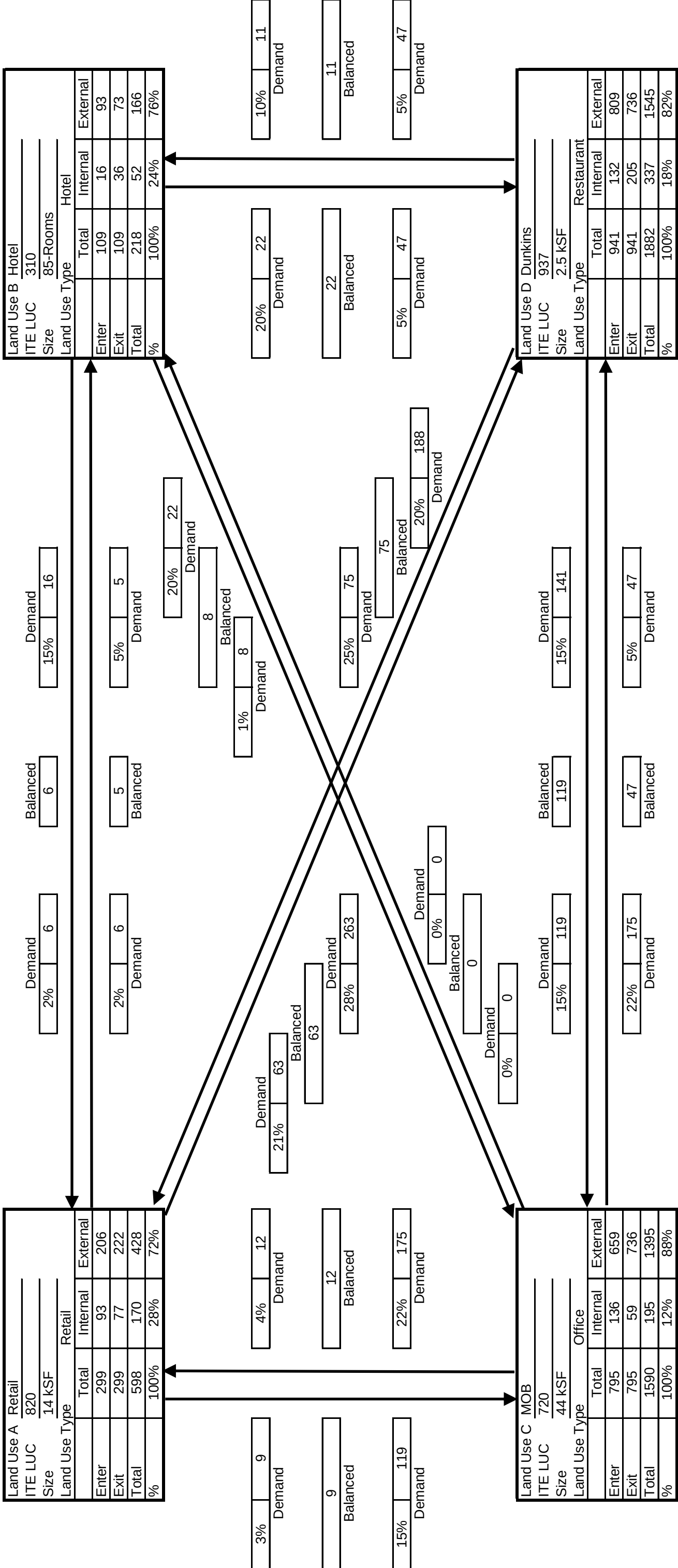
INSTRUCTIONS:

- 1.) Enter the Land Use Name for each land use in table above.
- 2.) Select from the drop down menu in the table above which Land Use Type to use.
- 3.) Enter the ITE LUC for each land use in the table above.
- 4.) Enter the Size of each land use in the table above.
- 5.) Fill in the NEW TRIPS for each land use in the table above (Note: This is the total of primary and pass-by trips).
- 6.) Enter the Project Name above.
- 7.) Enter you initials for the Analyst above.
- 8.) Enter the Date above.
- 9.) Print the Multi-Use Trip Generation Calculation Sheet for each time period.

Multi-Use Trip Generation Calculation

Analyst: Samuel W. Gregorio, PE
Date: 1/7/2020

Project Name: Silver Square
Time Period: Weekday Daily



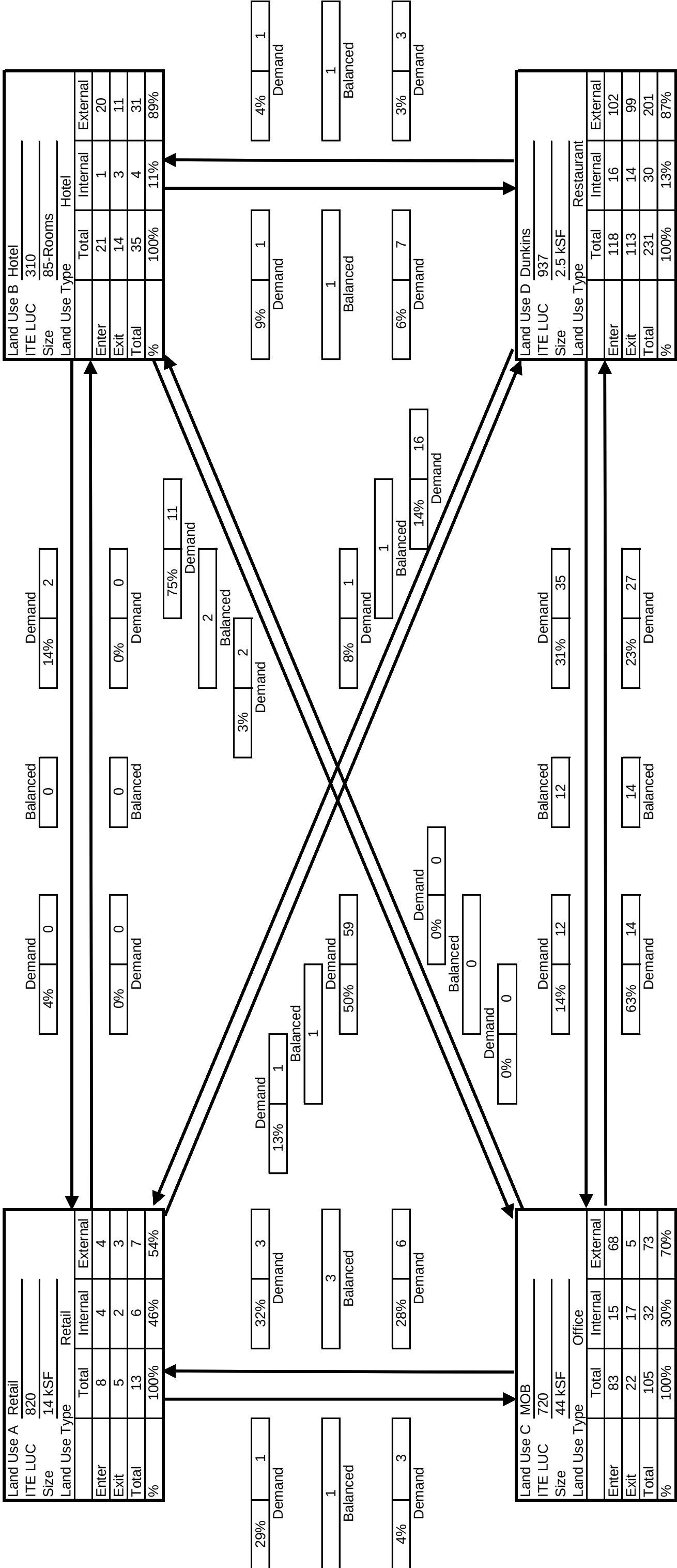
Net External Trips for Multi-Use Development				
Land Use	A	B	C	D
Enter	206	93	659	809
Exit	222	73	736	736
Total External Trips	428	166	1395	1545
Single-Use Trip Gen. Est.	598	218	1590	1882
Net Internal Trips	170	52	195	337
Internal Capture				18%



Multi-Use Trip Generation Calculation

Analyst: Samuel W. Gregorio, PE
Date: 1/7/2020

Project Name: Silver Square
Time Period: Weekday AM Peak Hour



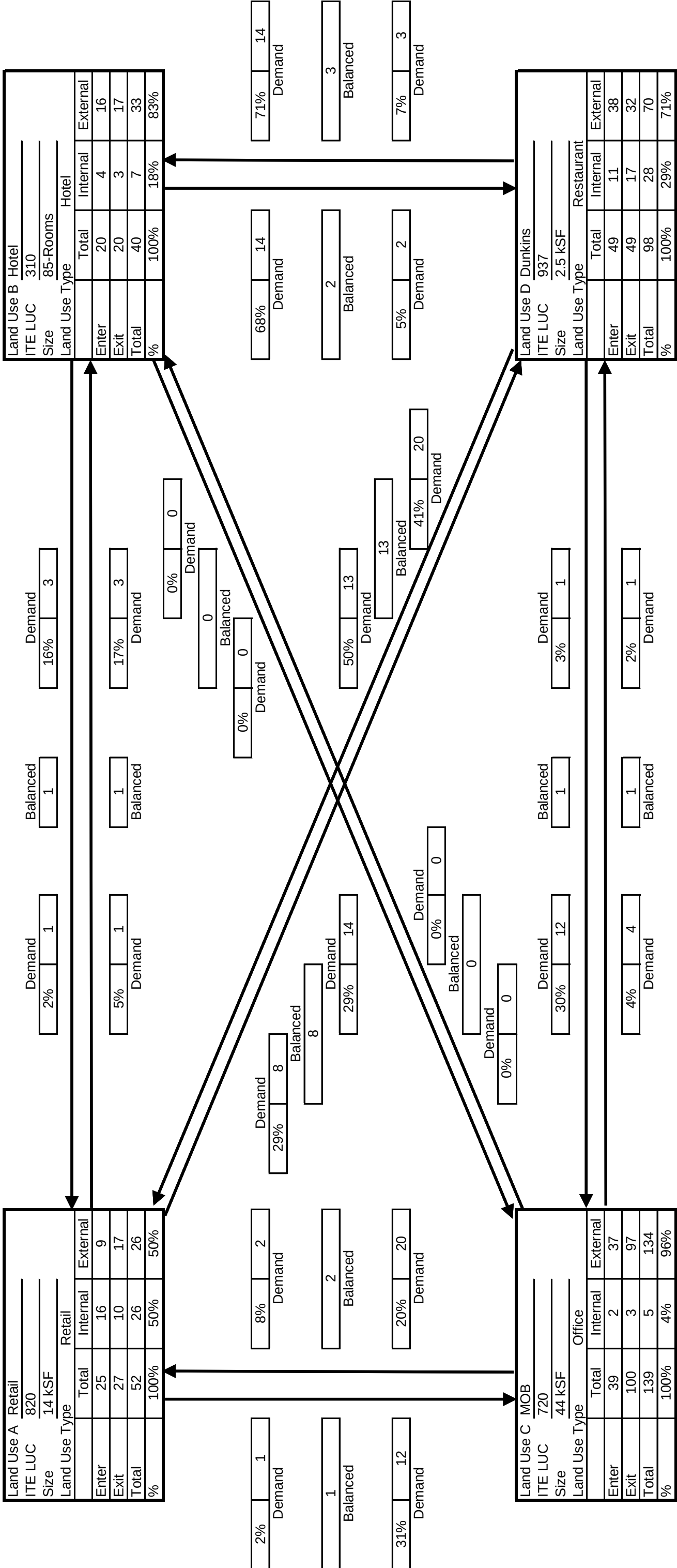
Net External Trips for Multi-Use Development					
Land Use	A	B	C	D	Total
Enter	4	20	68	102	194
Exit	3	11	5	99	118
Total External Trips	7	31	73	201	312
Single-Use Trip Gen. Est.	13	35	105	231	384
Net Internal Trips	6	4	32	30	72
Internal Capture					19%



Multi-Use Trip Generation Calculation

Analyst: Samuel W. Gregorio, PE
Date: 1/7/2020

Project Name: Silver Square
Time Period: Weekday PM Peak Hour



Net External Trips for Multi-Use Development					
Land Use	A	B	C	D	Total
Enter	9	16	37	38	100
Exit	17	17	97	32	163
Total External Trips	26	33	134	70	263
Single-Use Trip Gen. Est.	52	40	139	98	329
Net Internal Trips	26	7	5	28	66

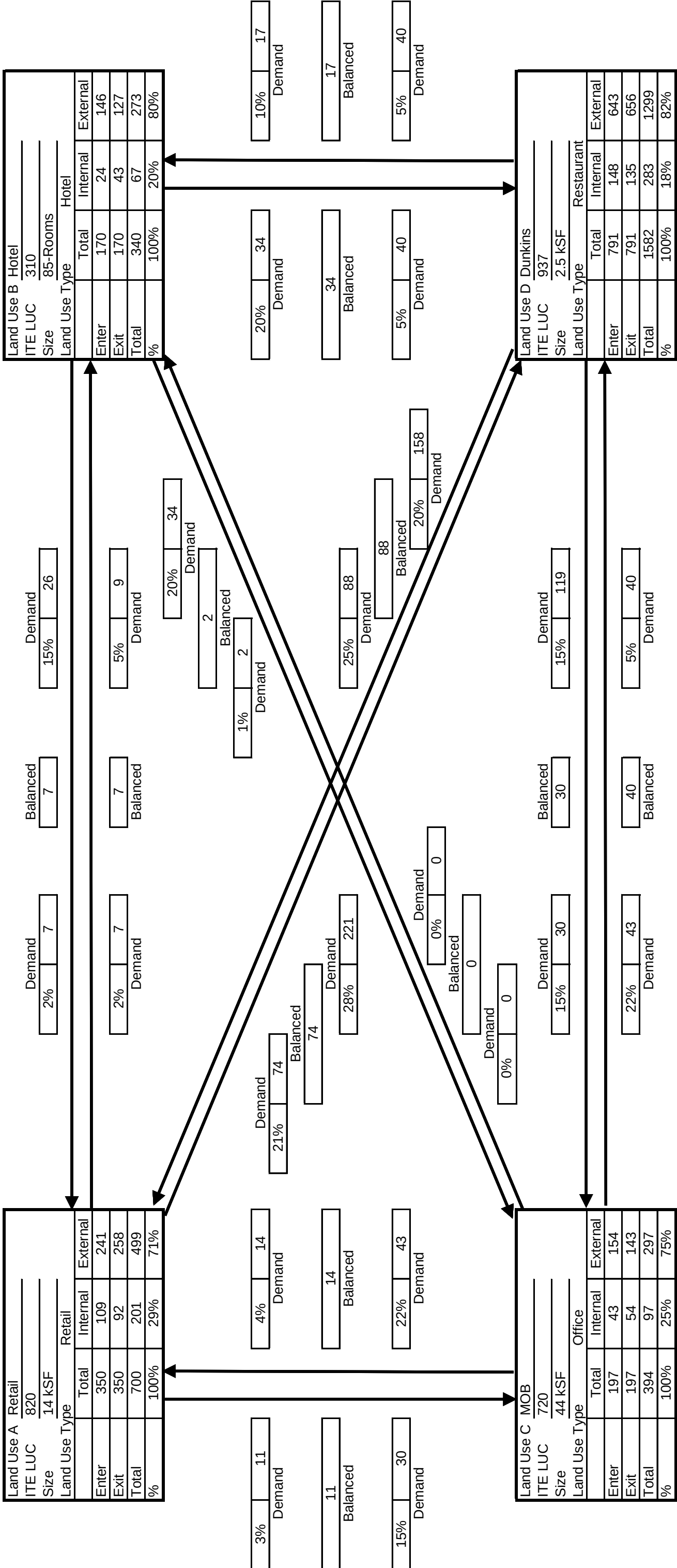
Internal Capture 20%



Multi-Use Trip Generation Calculation

Analyst: Samuel W. Gregorio, PE
Date: 1/7/2020

Project Name: Silver Square
Time Period: Saturday Daily



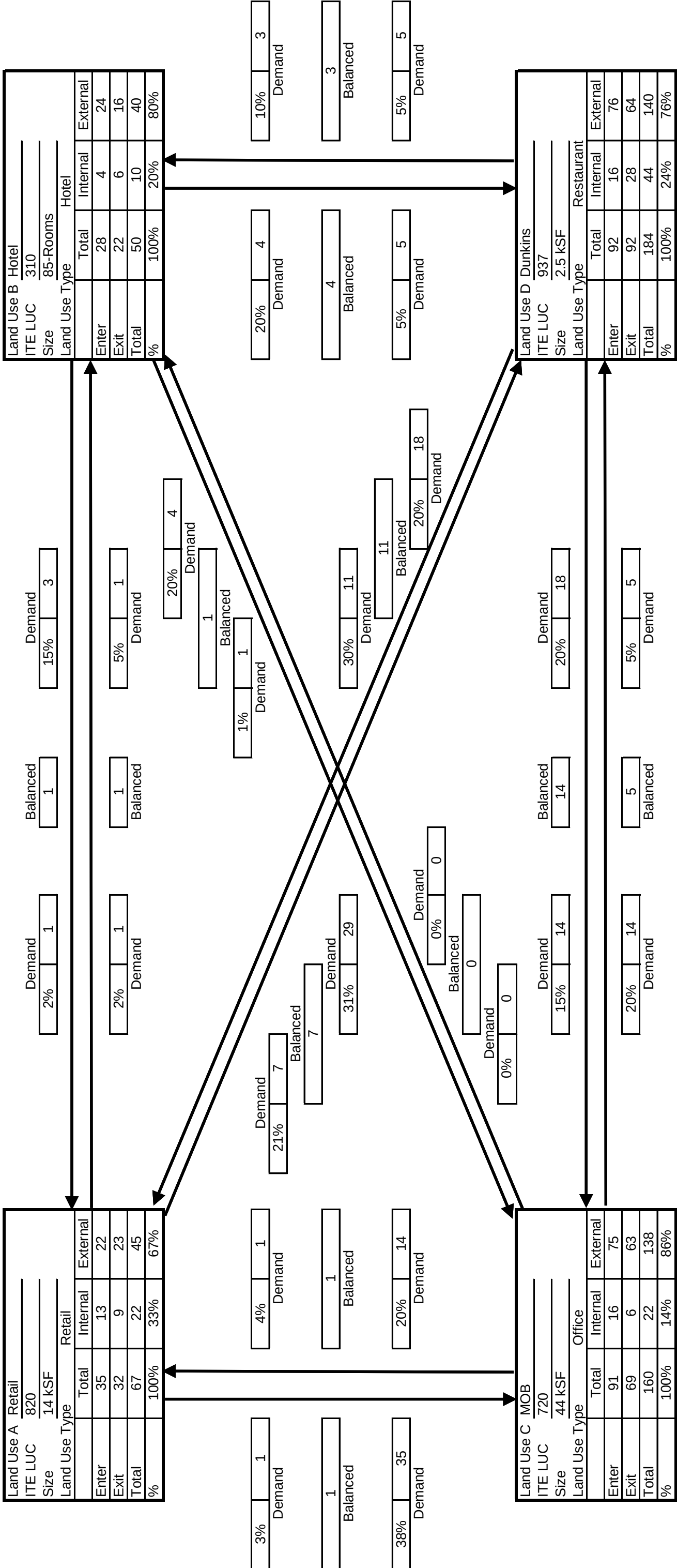
Net External Trips for Multi-Use Development				
Land Use	A	B	C	D
Enter	241	146	154	643
Exit	258	127	143	656
Total External Trips	499	273	297	1299
Single-Use Trip Gen. Est.	700	340	394	1582
Net Internal Trips	201	67	97	283
Internal Capture				21%



Multi-Use Trip Generation Calculation

Analyst: Samuel W. Gregorio, PE
Date: 1/7/2020

Project Name: Silver Square
Time Period: Saturday Midday



Net External Trips for Multi-Use Development				
Land Use	A	B	C	D
Enter	22	24	75	76
Exit	23	16	63	64
Total External Trips	45	40	138	140
Single-Use Trip Gen. Est.	67	50	160	184
Net Internal Trips	22	10	22	44
Internal Capture				21%



From	To	Weekday Midday Peak Hour	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily
None	Office	0%	0%	0%	0%
None	None	0%	0%	0%	0%
None	Hotel	0%	0%	0%	0%
None	Restaurant	0%	0%	0%	0%
None	Retail	0%	0%	0%	0%
None	Residential	0%	0%	0%	0%
Office	Office	2%	2%	1%	2%
Office	None	0%	0%	0%	0%
Office	Hotel	0%	0%	0%	0%
Office	Restaurant	20%	63%	4%	22%
Office	Retail	20%	28%	20%	22%
Office	Residential	0%	1%	2%	2%
Hotel	Office	20%	75%	0%	20%
Hotel	None	0%	0%	0%	0%
Hotel	Hotel	0%	0%	0%	0%
Hotel	Restaurant	20%	9%	68%	20%
Hotel	Retail	15%	14%	16%	15%
Hotel	Residential	0%	0%	2%	0%
Restaurant	Office	20%	31%	3%	15%
Restaurant	None	0%	0%	0%	0%
Restaurant	Hotel	5%	3%	7%	5%
Restaurant	Restaurant	0%	0%	0%	0%
Restaurant	Retail	20%	14%	41%	20%
Restaurant	Residential	10%	4%	18%	10%
Retail	Office	3%	29%	2%	3%
Retail	None	0%	0%	0%	0%
Retail	Hotel	2%	0%	5%	2%
Retail	Restaurant	21%	13%	29%	21%
Retail	Retail	29%	20%	20%	30%
Retail	Residential	7%	14%	26%	11%
Residential	Office	2%	2%	4%	2%
Residential	None	0%	0%	0%	0%
Residential	Hotel	0%	0%	3%	0%
Residential	Restaurant	20%	20%	21%	20%
Residential	Retail	34%	1%	42%	38%
Residential	Residential	0%	0%	0%	0%

Note: Weekday Midday and Weekday Daily shared trip percentages were obtained from the Trip Generation Handbook 2nd Edition unless otherwise noted. Green highlighted numbers are interpolated from other data. No data is provided for blue highlighted numbers but some shared use is reasonable. All other data obtained from Trip Generation Handbook 3rd Edition.

To	From	Weekday Midday Peak Hour	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily
Office	Office	6%	6%	6%	2%
Office	None	0%	0%	0%	0%
Office	Hotel	1%	3%	0%	1%
Office	Restaurant	15%	14%	30%	15%
Office	Retail	38%	4%	31%	15%
Office	Residential	10%	3%	57%	10%
Hotel	Office	0%	0%	0%	0%
Hotel	None	0%	0%	0%	0%
Hotel	Hotel	0%	0%	0%	0%
Hotel	Restaurant	10%	4%	71%	10%
Hotel	Retail	5%	0%	17%	5%
Hotel	Residential	5%	0%	12%	5%
Restaurant	Office	5%	23%	2%	5%
Restaurant	None	0%	0%	0%	0%
Restaurant	Hotel	5%	6%	5%	5%
Restaurant	Restaurant	0%	0%	0%	0%
Restaurant	Retail	31%	50%	29%	28%
Restaurant	Residential	10%	20%	14%	10%
Retail	Office	4%	32%	8%	4%
Retail	None	0%	0%	0%	0%
Retail	Hotel	2%	4%	2%	2%
Retail	Restaurant	30%	8%	50%	25%
Retail	Retail	31%	20%	20%	28%
Retail	Residential	5%	17%	10%	9%
Residential	Office	0%	0%	4%	3%
Residential	None	0%	0%	0%	0%
Residential	Hotel	0%	0%	0%	0%
Residential	Restaurant	10%	5%	16%	10%
Residential	Retail	37%	2%	46%	33%
Residential	Residential	0%	0%	0%	0%
None	None	0%	0%	0%	0%
None	Office	0%	0%	0%	0%
None	Hotel	0%	0%	0%	0%
None	Restaurant	0%	0%	0%	0%
None	Retail	0%	0%	0%	0%
None	Residential	0%	0%	0%	0%

Note: Weekday Midday and Weekday Daily shared trip percentages were obtained from the Trip Generation Handbook 2nd Edition unless otherwise noted. Green highlighted numbers are interpolated from other data. No data is provided for blue highlighted numbers but some shared use is reasonable. All other data obtained from Trip Generation Handbook 3rd Edition.

Attachment B

January 2016 Trip Generation Calculations

Table 1 - Trip Generation Summary

Time Period / Direction	Medical							Total Trips	Multi-Use Trips	Pass-by Trips ^a	Net New Trips
	Assisted Living (LUC 254)	Hotel (LUC 310)	Medical Office Trips (LUC 720)	Bank Trips (LUC 912)	Coffee/Donut Shop (LUC 937)						
Weekday Daily	202	388	2,384	434	1,965			3,707	780	886	5,373
Weekday Morning Peak Hour											
Enter	7	27	125	20	123			189	61	52	302
Exit	4	18	33	15	118			75	61	52	188
Total	11	45	158	35	241			264	122	104	490
Weekday Evening Peak Hour											
Enter	7	26	56	36	52			110	45	22	177
Exit	10	25	144	35	51			198	45	22	265
Total	17	51	200	71	103			308	90	44	442
Saturday Daily	167	523	592	253	1,651			1,942	456	788	3,186
Saturday Midday Peak Hour											
Enter	13	35	137	39	95			216	59	44	319
Exit	13	28	103	38	94			173	59	44	276
Total	26	63	240	77	189			389	118	88	595

^a Pass-by trips represent 50 percent of coffee/donut shop trips; and 26 percent of weekday daily, 29 percent of weekday morning, 35 percent of weekday evening, and 38 percent for Saturday daily and midday trips of bank trips.