CITY OF DOVER

DOVER PLANNING BOARD – AGENDA

Meeting Type:	Regular Meeting
Meeting Location:	Council Chambers, City Hall, 288 Central Avenue, Dover, NH 03820
Meeting Date:	**Tuesday, September 26, 2023**
Meeting Time:	**7:00 pm**

1. **CITIZENS' FORUM**
2. **APPROVAL OF THE PRIOR MINUTES**
   - September 12, 2023 Regular Meeting Minutes
3. **OLD BUSINESS**
4. **NEW BUSINESS**

A. Consideration and acceptance of a Conditional Use Permit for Cooperative Alliance for Seacoast Transportation (COAST) ,Assessor's Map H, Lot 35-C-4, zoned CM, located at 42 Sumner Drive. (Proposal is to allow grading, placement of impervious surfaces and a stormwater management system, within the 50-foot wetland buffer). * (COND-2023-0056)

B. Consideration and acceptance of a Site Review for Cooperative Alliance for Seacoast Transportation (COAST), Assessor's Map H, Lot 35-C-4, zoned CM, located at 42 Sumner Drive. (Proposal is to build a 28,700 s.f vehicle storage building and 17,000 s.f. administration, operations and maintenance building). *(SITE-2023-0002)

C. Consideration and acceptance of a Site Plan Amendment for John Kniphfer (Owner: Kniphfer, LLC) Assessor's Map I, Lot 55-A, zoned R-12, located at 43 Back River Road. (Proposal is for a daycare use and to install a second driveway to help with traffic flow at drop off and pick up with associated parking). *(WAIV-2023-0004)

D. Consideration and acceptance of a Site Plan Amendment for Dewberry Engineers, Inc. (Owners: Giri Dover 200, Inc.), Assessor's Map 11, Lot 2-4, zoned C, located at 200 Sterling Way. (Proposal is to install three (3) Electric Vehicle Charging Stations in parking lot, totaling twelve (12) chargers). *(WAIV-2023-0005)

E. Consideration and acceptance of a Conditional Use Permit for David A. Laroche and Mihaela Nicoleta Laroche, Assessor's Map A, Lot 39-2, zoned R-40, located at 7 Fieldstone Drive. (Proposal is to allow a septic system within 75' of wetlands). *(COND-2023-0055)

5. **STAFF COMMENT**
6. **MEMBER COMMENTS**
7. **ADJOURNMENT**

*Indicates that if the application is accepted for discussion, the public hearing will be held the same evening. Note that some hearings will be continued from one meeting to another and some may be postponed. Since this is only a partial description of the proposal and may change, persons with questions or wishing to see the plans are invited to visit the Planning Office, Monday through Thursday from 8:30 am to 5:30 pm and Friday 8:30 am to 4:00 pm or email Dover-Planning@dover.nh.gov. You may also view materials at www.dover.nh.gov. Follow us on Twitter @DoverNHPlanning and find us on Facebook at https://www.facebook.com/DoverNHPlanning. The public is encouraged to leave comments in advance by emailing Dover-Planning@dover.nh.gov, or mailing written comments to Planning Board, Dover City Hall, 288 Central Ave., Dover, NH 03820. Messages must be received no later than 4 p.m. the day of the meeting and should identify the name and Dover address of the person leaving the message or providing the comment.

CITY OF DOVER

DOVER PLANNING BOARD – MINUTES

Meeting Type: Regular Meeting
Meeting Location: City Council Chamber's 288 Central Avenue
Meeting Date: **Tuesday, September 12, 2023**
Meeting Time: **7:00 pm**

Members Present: Gina Cruikshank (Chair), Hayley Harmon (Vice Chair), Mark Speidel, Fergus Cullen (Councilor), Ken Mavrogeorge, Melina Gambino (Alternate), George DeBoer (Alternate)
Members Not Present (excused): Tom Clark, Erinn Kaspari, Kyle Pimental, Jon Elliard (Alternate)
Members Not Present (un-excused): None
Staff Present: Donna Benton, Director of Planning and Community Development

G. Cruikshank called the meeting to order at 7p.m, explained the citizens' forum process and noted George DeBoer would sit for Tom Clark, and Melina Gambino for Kyle Pimental.

1. CITIZENS' FORUM

Citizens Forum Open
Bradley Amari, 51 Tuttle Ln read into the record some history of George Tuttle- original owner of the home he lives in. He referenced a book titled "Wetland restoration and construction- a technical guide".
He read definitions of wells and streams. He noted there is a windmill on his property (not functional) which shows evidence of wetlands at the time of construction. This area is a wet area, but not too many folks have resided in that area thus far. Mr. Amari was given a 30 second warning and ended his comments.
Citizens Forum Closed

2. APPROVAL OF THE PRIOR MINUTES

- August 22, 2023 Regular Meeting Minutes

Motion M. Speidel moved to approve August 22, 2023 as amended. Seconded by: K. Mavrogeorge. Vote: U/A

3. OLD BUSINESS

None

4. NEW BUSINESS

A. Consideration and acceptance of a Minor Subdivision for Ethan Snitker (Owner: Jeffrey S & Darlene Kay White Trustees of White Family 1995 Trust,) Assessor's Map J, Lot 12, zoned R-40, located at Old Garrison Road. (2 new lots). *(SUBM-2023-0004)

D. Benton explained that the applicant is proposing to subdivide the parcel at Old Garrison Road into three lots, resulting in the creation of two (2) new lots. All lots will retain adequate parcel size as required by zoning. The lots are to be serviced by private well and septic. As a minor subdivision, this application did not appear before the TRC. Lots J/12-4, 12-5, and 12-6 were subdivided December of 2018 years ago and therefore this subdivision application can still be considered a minor subdivision. There is a waiver request to not do a full topo and wetland survey for the entire 12-acre parcel.

M. Speidel recused himself from this item.

Ethan Snitker, Ambit Engineering represented the application, described the property and the proposal by walking through the pages of the plans. There is one waiver request to not include a full topography and wetland survey as that excess land is outside the project area.

He confirmed the road access is David Tuttle Rd.
K. Mavrogeorge pointed out the well restriction for Dover is 75' from the wetland. D. Benton said she was going to be suggesting it be added as a condition of approval.

Motion: H. Harmon moved to accept the application and declared no regional impact. Seconded by: F. Cullen. Vote: U/A

Public hearing opened
No one spoke
Public hearing closed.

STAFF RECOMMENDATION – Waiver:
Section 157-51.A. of the Land Subdivision Regulations states: "The Planning Board may waive specific provisions of this chapter. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that: (1) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or (2) Specific circumstances relative to the subdivision, or conditions of the land in such subdivision, indicate that the waiver will properly carry out the spirit and intent of the regulations."

Staff feels the request for relief from providing topography, wetlands, and other site features on the remainder possible (to remain vacant at this time) is reasonable and that criterion 2 has been met for the waiver request.

Therefore, Planning Department recommends that the Planning Board make the necessary and supporting findings of fact, and vote to approve the waiver with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Signing of Plans:
1. Add note that a waiver from Section 157-28 has been approved by the Planning Board and that the Board found Section 157-51.A. has been met.
2. Add note that if the remaining lot J/12 is to be subdivided in the future, then full wetlands and topography review may be required.

Motion: G. DeBoer moved to grant the waiver with subsequent conditions and found the criteria of Section 157-51.A have been met. Seconded by: M. Gambino. Vote: U/A

STAFF RECOMMENDATION – Minor Subdivision:
The Planning Department recommends that the Planning Board make the necessary and supporting findings of fact, and vote to approve the minor subdivision with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of Plans:
1. Provide physical and digital copies (including CAD) of complete plan set for recording at Strafford Country Registry of Deeds, which additionally shall include:
   1.1. The owners' signatures;
   1.2. The Planning File # on bottom right of plan sheet: SUBM-2023-0010;
   1.3. The stamp and signature of the LLS on the final plans
   1.4. Remove Dover Planning Board signature area. Move length table to that space, and provide 2x2" space on lower right corner.
   1.5. Add note that Chapter 117 needs to be abided by.
   1.6. Add building envelope on sheet 2.
   1.7. Add existing trees shown on C1 onto sheet 2.
   1.8. Confirm scale on 11x17s.
   1.9. Provide lot numbering and revised current use plan to the City Assessor.

1.10. Add 50' wetland buffer on lot 2.
1.11. Updated NHDES Subdivision Permit number added.
1.12. Add note that no septic system be installed within 75' of a wetland

Motion: G. DeBoer moved to approve the minor subdivision with subsequent conditions. Seconded by: K. Mavrogeorge. Vote: U/A

M.Speidel returned to his seat.

B. Consideration and acceptance of a Lot Line Adjustment for 6 Brick Road, LLC and Bennett Soja-Park Rev Trust 94, Assessor's Map 28, Lots 9-C & 10, zoned O & G, located at 1-24 Jefferson Drive & 751 Central Avenue. *(LOTA-2023-0010)

D. Benton explained the applicant is requesting to complete a lot line adjustment between two lots, adding 8,000 sq. ft. (0.184± ac.) from Lot 10 to Lot 9-C, resulting in leaving Lot 10 with 0.128± ac. and Lot 9-C with 2.891± ac. As a Lot Line Adjustment, this application did not appear before the TRC. Lot 10 will continue to meet the minimum lot size (which is N/A in the Gateway) post-adjustment with the frontage along Central Avenue, and lot coverage continue to be met. Lot (9-C) is zoned Office and its area is increasing, thus zoning will continue to be met.

Robert Stowell, Tritech Engineering represented the application and explained the reason for the proposed lot line adjustment.
He clarified for M. Speidel that the anticipated future proposal will be for seven additional units.

Motion: M. Speidel moved to accept the application and declared no regional impact. Seconded by: G. DeBoer. Vote: U/A

Public hearing opened
Ayrn Wintle, 12 Brick Rd commented on a proposed roadway at the end of the parcel and her understanding is there will be a condition of approval that that is removed. She also asked if additional units go in there, will another access road be required?

Valerie Duclos, 2 Floral Ave is concerned where the additional units will be. Also concerns about the conservation area, density, traffic and drainage.

Greg Hede, 4 Floral Ave had questions about the number of apartments going in on lot 13, additional access road needed, and the access road on the plan is actually not in existence so that needs to be addressed. He is concerned about all of the added density in that area.
Public hearing closed.

Mr. Stowell addressed public comment:

- The old footpath does not exist so that will be removed from the plans
- The additional units are planned to go in the additional land they are proposing to acquire through tonight's application along with the open space that currently exists behind building one.
- The access is planned through an extension that goes between buildings one and three.
- No additional access road is planned

D. Benton addressed public comment:

- Lot 13 has approvals for 12-15 units along with turning one of the existing homes into a duplex.
- There are conditions she plans to add:
  - Northern branch of pathway be removed from the plans
  - Update of ownership of lot 32
- Concerns about the proposed plans will be heard when there is a plan to be presented. There will be an opportunity for public comment if the proposal gets to the next stage.

STAFF RECOMMENDATION:
Chapter §157-17 of the Land Subdivision Regulations of the City Code provides for the adjustment of existing lot lines between two or more lots. This plan is consistent with those regulations.

The Planning Department recommends the Planning Board make findings, and vote to approve the application with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of Plans:

1. Provide physical and digital copies (including CAD) of complete plan set for recording at Strafford County Registry of Deeds which additionally shall include:
   a. Planning File Number #LOTA-2023-0010
   b. The owner's signatures
   c. The LLS stamp and signature
   d. Zoning District boundary
   e. Revise note 10 to include surveyor's name, and error not greater than 1 in 10,000.
   f. Revise note 12 to indicate who the easement benefits.
   g. Revise plans to add 2" x 2" signature block for Planning Board approval stamp.
   h. Add common notes 12 (public water and sewer) and 13 (basis of bearing).
   i. Remove northern branch of pathway that does not currently exist.
   j. Revise owner of Map 28, Lot 32.

Motion: F. Cullen moved to approve the lot line adjustment with subsequent conditions. Seconded by: G. DeBoer. Vote: U/A

C. Consideration and acceptance of a Conditional Use Permit for Fraggle Rock Environmental (Owner: Settlement on 6th, LLC), Assessor's Map B, Lot 5-2, zoned R-40, located at 27 Wildcat Drive. (Proposal is to impact 530 sf of wetland buffer associated with a foundation). *(COND-2023-0044)

D. Benton explained that the applicant is requesting a Conditional Use Permit to allow for 142 s.f. of permanent wetland buffer impact which is associated with 850 s.f. of wetland restoration area. As part of an approved subdivision, it was discovered that a house foundation was not placed per the plan and a portion falls within the 50-foot wetlands buffer. The applicant has worked with NHDES on a restoration plan for the wetland area which is part of the materials attached.

The Conservation Commission endorsed this application at their August 14, 2023 meeting with the understanding that there be no further development in the buffer and that wetland placards will be installed post restoration (minutes attached). Therefore, a condition of approval be added that no further encroachment (including a deck currently shown on the building permit application) be built.

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The applicant provided a narrative which outlines how the proposal meets the criteria for granting the CUP per 170-27.1.F of the Code.

Damon Burt, Fraggle Rock Environmental represented the application and explained the restoration plan has already been submitted to DES and will take place this fall. The other impact is due to 142 sq ft of foundation encroachment into the buffer.

Board members asked questions and Mr. Burt clarified: the area near the foundation will be a yard, the disturbance to the other 850 sq ft area and the plans to restore it, DES will be involved in the restoration process, his theory that the plastic flagging was disturbed/ removed/ decomposed which led to the wetlands being disturbed in error. He also explained the wetland survey methods of taping off.

Walter Woods, Graystone Builders York, ME commented that from here on they will have surveyors survey each foundation so this does not happen again. The wetlands markers were disturbed during the logging process. The applicant had the surveyors delineate a no-cut buffer because they wanted to leave as much woodlands as possible.

F. Cullen asked why the lawn isn't a concern, but the proposed deck is. D. Benton explained the deck would be a permanent impact.

Discussion occurred about where the wetland placards should go since the foundation is within and whether placards are needed for buffer and wetland or not on this particular property since it will be the house and yard itself. Suggestions were made and discussed.

Discussion occurred whether the impact sq ft should be increased more than 142 sq ft if a lawn is anticipated around the back foundation of the house. Mr. Woods explained his contract to customers specifies a 30' perimeter of lawn which then blends into the natural surroundings with mulch in between.
He also mentioned the deck has been relocated to the right side of the home to remove it from the buffer.
He has ordered 100 placards from the City, but they are on back order. His plan was to put them every 50' on the wetlands line.

K. Mavrogeorge referenced the approved plan showing no tree cut or disturbance or lawns or otherwise allowed within the 50' buffer.
Mr. Woods was not aware of the restrictions of even no lawns in the buffer and would like more information from staff so that he can pull the buildings further towards the road if necessary to be able to include a yard, but not impact the wetlands.
He stated the Conservation Commission is aware of the 30' yard and gave their endorsement with that knowledge.

Motion: F. Cullen moved to accept the application and declared no regional impact. Seconded by: M. Gambino. Vote: U/A.

Public hearing opened
No one spoke
Public hearing closed

STAFF RECOMMENDATION:

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The Planning Department recommends the Planning Board make findings and vote on the Conditional Use Permit. Should the Board grant the Conditional Use Permit, staff suggests adding the following subsequent conditions:

Subsequent Conditions to Be Met Prior to the Issuance of the Conditional Use Permit:

1. The owner shall sign the final plans before Planning Board signature.
2. State permits are issued and/or restoration plan has been satisfied to NHDES' satisfaction.
3. Add note to the plan that no further disturbance including building of a deck or similar amenity occur.
4. Wetland buffer placards which are available for purchase in the Planning Department be installed every 30'.
5. Delineate wetland area
6. Restore wetland buffer beyond 5' from foundation around area of the 142' calculation or provide surety or other form of security acceptable to the City for restoration.

Discussion occurred among the board and Mr. Burt regarding the disturbed land in the wetland buffer, where to place the placards at this point after disturbed and restored, options of extra vegetation in the back of the buffer area to allow for some yard area.

Chair Cruikshank expressed appreciation that the applicant seems genuine and will not allow this error to occur again and implored surveyors and developers to utilize a better system than plastic tape flags that can disintegrate or be carried off or at the minimum do a double check prior to building begins and was clear that this vote did not create a precedent.

Motion: F. Cullens moved to approve the CUP with subsequent conditions set by staff and amended by the Planning Board. Seconded by: K. Mavrogeorge. Vote: U/A.

The Vice Chair announced items 4D & E will be heard together.

D. Consideration and acceptance of a Conditional Use Permit for Tighe and Bond, (Owners: Reynolds Avenue North, LLC), Assessor's Map E, Lot 27-B, zoned IT, located at 100 Education Way. (Proposal is to allow for 350 parking spaces whereas 332 is the maximum allowed). *(COND-2023-0043)

E. Consideration and acceptance of Site Review for Tighe and Bond, (Owners: Reynolds Avenue North, LLC), Assessor's Map E, Lot 27-B, zoned IT, located at 100 Education Way. (Proposal is for exterior and interior renovations to the existing building and the associated site improvements such as sealing and restriping of the existing parking lot, parking lot expansion, stormwater improvements, lighting, and landscaping). *(SITE-2023-0006)

The applicant is looking to renovate the exterior and interior of an existing office building along with improvements to the existing parking lot, expanding parking lot, improving stormwater management, lighting, and landscaping improvements (SITE-2023-0006). As part of that development, the applicant is requesting 18 extra spaces above the maximum allowed for that size of office building to have 350 parking spaces on site. The site is proposed to be serviced by municipal water and sewer. The plan appeared before the TRC July 20, 2023 and August 10, 2023 (most recent minutes attached). Both EVSE readiness and EVSE chargers are required based off the site plan and CUP request which the applicant has shown on the plan. The applicant is also requesting several waivers as part of the site plan application which they should discuss during their presentation.

Eben Tormey, Reynolds Avenue North and Patrick Crimmins, Tighe & Bond represented the application. Mr. Tormey gave background of the purchase and subdivision of the plot, tenant and location info. He described the use of the development once complete.

Mr. Crimmins reviewed the site plan details for the board including parking, landscaping, pedestrian areas, connection to rail trail, paving, storm water, and EV chargers (4 spaces).
Waivers are being sought from lighting calculations, minimum internal landscaping of parking lots, trees spaced every 35' and traffic analysis. He explained the reasons for these which include keeping what is already on site with little to no changes and/or proposing changes that move towards the regulations from what is there.

H. Harmon recused herself from this item.

The applicants answered that the community trail is owned by the applicant with an easement for the City for the trail. The City maintains the trail.

Motion: M. Speidel moved to accept the application and declared no regional impact. Seconded by: F. Cullen. Vote: U/A

Public hearing opened
No one spoke
D. Benton read an email from Mark Herrick, President of Waldron Falls Homeowners Association, received to the office inquiring about the traffic study waiver.
Public hearing closed

The applicants anticipate less traffic to this building under the new occupant than what was there and operating initially.

STAFF RECOMMENDATION-CUP:
§153-14.D(5) of the Site Review Regulations of the City Code provides for granting Conditional Use Permit by the Planning Board to allow additional parking spaces over the maximum. This plan is consistent with the following criteria as addressed in the applicant's narrative and plan notes on C-103.

The Planning Department recommends the Planning Board vote to grant the Conditional Use Permit with subsequent conditions, as the plans meet the standards outlined.

Subsequent Conditions to Be Met Prior to Granting of the Conditional Use Permit

1. Site Plan (SITE-2023-0006) has been approved.
2. A note added to the plan that the EVSE comply with 153-14.D.(3).

Motion: F. Cullen moved to grant the Conditional Use Permit with subsequent conditions. Seconded by: M. Speidel. Vote: U/A

STAFF RECOMMENDATION-Waivers:

Per the applicant's narrative dated August 18, 2023, the applicant is requesting the Board grant four waivers from:

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- §153-14.E.2 for parking lot lighting calculations as most lighting is existing lighting which is cumbersome to get calculations on, and relocating 2 light poles and add one additional light in the parking expansion area
- §153-14.G.2.a for internal landscaping to be less than the minimum 10% as most of the parking lot is existing and the improvements increase the landscaping from 6.6% to 7.6%. The interior landscaping on the northern lot is 15.5%
- §153-14.G.3.a. for trees every 35' along perimeter of parking lots since the southern parking lot is mostly unchanged and adjacent to a wooded area, 10 new trees are proposed in the expansion area.
- §153-13.A.19 for traffic impact analysis and assessment since this isn't a change of use and the gross floor area is not changing

§153-21 of the Site Plan Review Regulations states the "Planning Board may waive specific provisions of these regulations. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that:

(1) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or

(2) Specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations."

Planning Staff finds the waiver requests for lighting and traffic study are supported under criterion (1) above and the intent of the requirements are upheld and the waiver requests for landscaping as additional landscaping is being provided and there is so much wooded area in conservation directly adjacent.

The Planning Department recommends the Planning Board vote to approve the waivers with subsequent conditions, as the plans meet the standards outlined.

Subsequent Conditions to Be Met Prior to the Signing of the Plans:

1. A note be added that waivers for from the 153-14.E.2 for parking lot lighting calculations, 153-14.G.2.a for internal landscaping, 153-14.G.3.a. for trees every 35', 153-13.A.19 for traffic impact analysis and assessment and the Board found the criteria of Chapter 153-21 have been met.

Motion: F. Cullen moved to grant the waivers with subsequent conditions as they meet the criteria required. Seconded by: M. Speidel. Vote: U/A

STAFF RECOMMENDATION:

The Planning Department recommends the Planning Board make necessary findings and vote to approve the Site Plan with the following subsequent conditions as the plans meet the standards outlined:

Subsequent Conditions to Be Met Prior to Signing of Plans:

1. Conditional Use Permit (COND-2023-0043) be approved.
2. The applicant shall provide the Planning Department with a digital version of the final plan set.
3. Provide a CAD file to the satisfaction of the Asset Management Administrator's satisfaction.
4. The applicant shall revise the plan set to:
   a. Add owners' signatures;
   b. Add all professional signatures and stamps;

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Subsequent Conditions to Be Met Prior to any Construction:

5. A site construction sign with the contact information for the general contractor must be located and approved by the City Engineer or Planning Director.
6. The wetland buffer placards be installed every 50 feet;

Subsequent Condition to Be Met Prior to Issuance of a Building Permit:

7. Payment of Water and Sewer Investment Fees if applicable;

Subsequent Conditions to Be Met Prior to Occupancy:

8. Impact fees per unit will be invoiced through the permit portal and shall be paid.
9. Confirmation, by staff, that the wetlands buffer signs are in place, or replaced if damaged during construction;
10. The applicant shall provide a letter of credit or other form of security acceptable to the City for any unfinished work;
11. Wetland buffer placards be inspected and replaced if needed; and
12. Issuance of the Certificate of Occupancy.
13. Provide a letter certifying that the tie in locations or discharge points for all sump pumps and roof leaders for existing structures on the property do not connect to the municipal sewer system.

Motion: G. DeBoer moved to approve the site plan with subsequent conditions. Seconded by: M. Speidel. Vote: U/A.

7. STAFF COMMENTS

- TRCs since last meeting:
  - Site Review for Horizons Engineering Inc. (Owners: Zeland Schwartz Trustee, The Zeland Schwartz Revocable Trust), Assessor's Map A, Lot 45-A-2, zoned R-40, located at 36 Olive Meadow Lane. (Proposal is to build 32 individual units through Transfer of Development Rights.)
  - Site Review for Stonefield Engineering & Design (Owners: Dover Retail Management, LLC), Assessor's Map 38, Lot 15-A, zoned C, located at 1-3 Webb Place. (Proposal is for demolition of current building and constructing a 3,300-sf bank with a drive through ATM, (28) twenty-eight parking spaces. One (1) related Conditional Use Permit application would also appear before the Planning Board.
  - Site Review Amendment for Dewberry Engineers, Inc. (Owners: Giri Dover 200, INC.) Assessor's Map 11, Lot 2-4, zoned Commercial, located at 200 Sterling Way. (Proposal is to install three (3) Electric Vehicle Charging Station in parking lot)
- TRCs coming up:
  - Site Review for TF Moran (Owners 256-264 Central Avenue, LLC), zoned Central Business District, located at 256 & 264 Central Avenue. (Proposal is to replace gravel parking with 10,595 sf of paved parking related to their renovation of the buildings). (SITE-2023-0013)

6. MEMBER COMMENTS

- Chair signed plans for Macs Convenience site plan amendment and Preble St. site plan and a development agreement for 239 Knox Marsh Rd.

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- K. Mavrogeorge commented that the wetland placards tend to go in as the last item of a project rather than the first item. His office will take a closer look at this process, but this board should keep an eye on it as well.

7. ADJOURNMENT

Motion: M. Speidel moved to adjourn at 8:49pm. Seconded by F. Cullen. Vote: U/A

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CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2023-0056

Application Type:	Conditional Use Permit
Applicant(s):	Rad Nichols, Cooperative Alliance for Seacoast Transportation (COAST)
Owner(s):	Rad Nichols, Cooperative Alliance for Seacoast Transportation (COAST)
Location:	42 Sumner Drive (Assessor's Map H, Lot 35-C-4)
Meeting Date:	September 26, 2023

INTENT: To obtain a CUP to allow grading, placement of impervious surfaces and a stormwater management system within 50' of a wetland buffer.

AGENDA ITEM #: 4-A

UNITS PROPOSED: 2 structures

ACREAGE: 6.39± ac.

ZONING DISTRICT: CM and Secondary Groundwater Protection District

EXISTING LAND USE: Commercial

PROPOSED LAND USE: Additional vehicle storage, Office space

SURROUNDING LAND USE: Commercial Manufacturing, Residential

ZBA ACTION: N/A

ATTACHMENTS: Application materials, Impact Plan

APPLICATION IS COMPLETE: Yes

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for this meeting

PERMITS REQUIRED:
- CUP for wetland buffer
- NHDES AoT

WAIVERS REQUESTED:
- N/A for this case

TRCs: April 6, 2023 and June 22, 2023

Summary of Request and Background
The applicant is looking to raze the existing building and build two new buildings at 42 Sumner Drive. These would host COAST's fleet and offices, revise and add parking. The proposal is for a 28,700 s.f. vehicle storage building and a 17,000 s.f. administration operations and maintenance building.

The development requires a CUP request for 14,479 s.f. of temporary and 5,862 s.f. of permanent wetland buffer impact.

The Conservation Commission endorsed the application at their September 11, 2023 meeting.

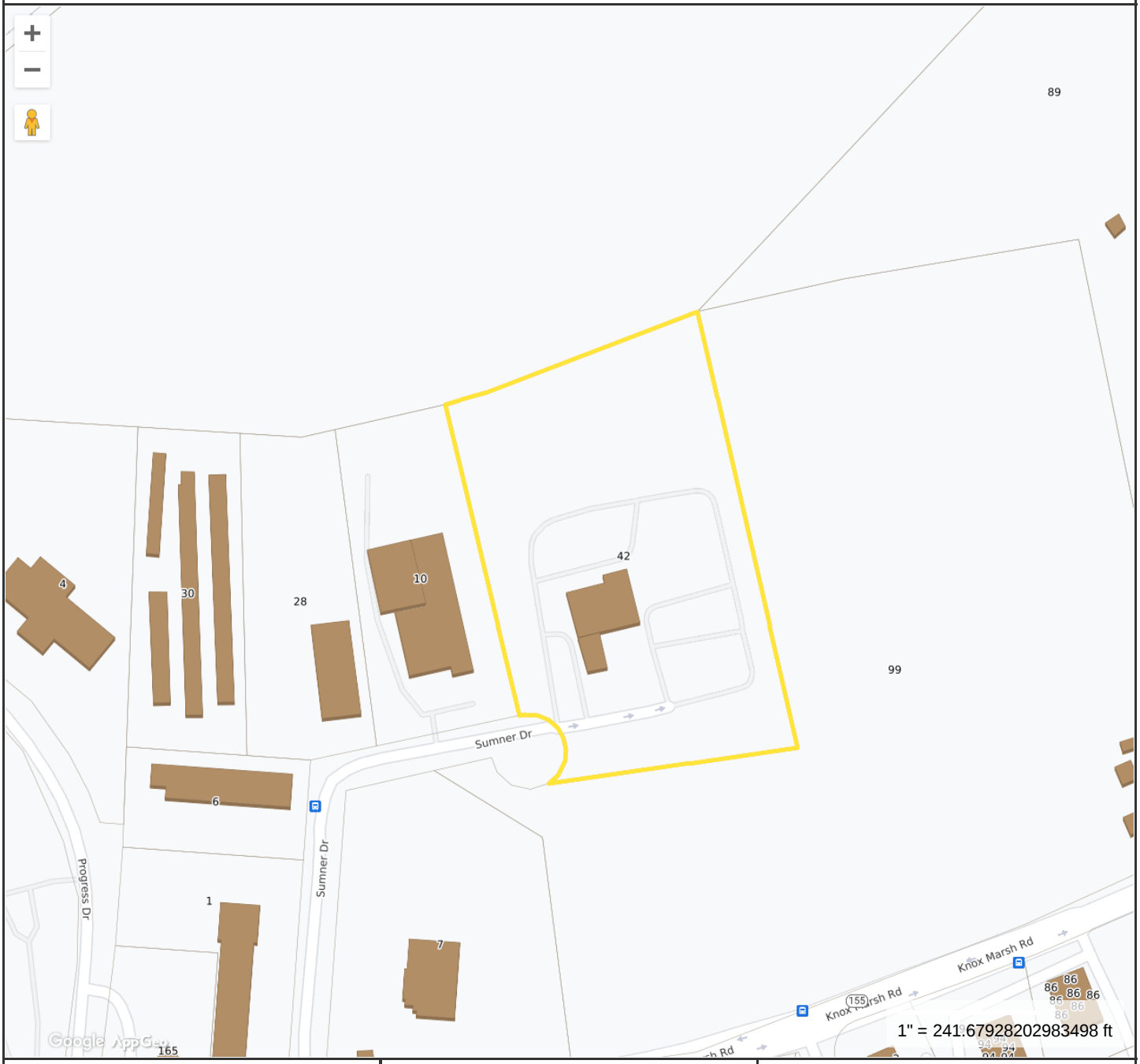
Consistency with Land Use Regulations
The Conservation District ordinance §170.27.1.F. provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

Planning Staff feels that the applicant has tried to design the site to improve the existing conditions by lessening the overall impervious area by 1,100 s.f. and has located stormwater management systems where the existing systems are and will expand upon the footprint to meet the stormwater treatment requirements. The applicant has considered the criteria of practical alternative, avoidance, minimization, and mitigation and propose to create minimal additional wetland disturbance on the site as described in the narrative in the application materials.

STAFF RECOMMENDATION
The Planning Department recommends the Planning Board accept the application, open the public hearing, and vote to grant the Conditional Use Permit with subsequent condition, as the plans meet the standards outlined.

Subsequent Condition to Be Met Prior to the Granting of the Conditional Use Permit:
1. Site Plan (SITE-2023-0002) be approved.
2. Wetland buffer placards are noted on the plan to be added pre-disturbance and replaced if needed post construction.

COND-2023-0056 42 Sumner Drive



Property Information

Property ID	H0035-C00004
Location	42 SUMNER DR
Owner	COOPERATIVE ALLIANCE FOR
Land Use	910
Zoning Code	CM

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 7/10/2023
Data updated Daily

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

PERMIT SNAPSHOT REPORT COND-2023-0056
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	09/05/2023
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Fees Due	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: To allow stormwater management and impervious surfaces within the wetland buffer

Parcel:	**Address:**	**Zone:**
H0035-C00004 Main	42 Sumner Dr Main Dover, NH	CM(Non-Residential - Commercial Manuf

Owner	Plan Preparer	Applicant
Rad Nichols	Ben Clark	Ben Clark
Business: (603) 743-5777	35 Bow Street	35 Bow Street
	Portsmouth, NH 03801	Portsmouth, NH 03801
	Business: (603) 431-6196	Business: (603) 431-6196
	Mobile: (603) 953-8131	Mobile: (603) 953-8131

Permit Custom Fields

Select Permit Type	Wetland Protection District
What is the parcel zoned?	CM
permitstatefed	NHDES Alteration of Terrain - Not submitted yet

General Purpose	Alteration / Addition
New Change in Impervious/Paved Area (sq ft)	-1100

Project Zone	Non-Residential
Work	The project proposes to regrade within the wetland buffer for a stormwater management system and impervious surfaces. The redevelopment results in a net loss of 1,100 sq ft of impervious surface within the wetland buffer.

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Ben_Clark_9/5/2023.jpg	09/05/2023 18:33	Clark, Ben		Uploaded via CSS
Permit Snapshot Report.pdf	09/05/2023 18:33	Service, EnerGov		Attached by IO - ATTACH: Initial Permit Snapshot
COND-2023-0056 Snapshot report.pdf	09/07/2023 15:06	Blonigen, Rachel		
2023.09.26_PlanningBoard.Agenda.pdf	09/12/2023 11:10	Blonigen, Rachel		

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00004953	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-00004953	$200.00	$0.00
	Grand Total for Permit	**$200.00**	**$0.00**

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Conditional Use Review v.1	In Review	09/12/2023	10/10/2023		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	In Review	09/12/2023	10/10/2023	

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		09/06/2023 12:47	
Confirm application complete v.1	Generic Action		09/06/2023 12:48
Conditional Use Review v.1	Receive Submittal	09/12/2023 0:00	
Technical Review Committee Meeting v.1	Hold Meeting		

PERMIT SNAPSHOT REPORT (COND-2023-0056)

Planning Board v.1	
Planning Board Agenda v.1	Task
Invoice for Notices v.1	Task
Send Notices v.1	Task
Planner Creates Staff Recommendations v.1	Plan Activity
Distribute Planning Board Materials v.1	Task
Planning Board Hearing v.1	Hold Hearing
Planning Board Decision v.1	Permit Activity
NOD Sent to Applicant v.1	Create Report
Issue Permit v.1	
Verify Fees Prior to Permit v.1	Generic Action
Issue and Review Permit v.1	Generic Action
Print and Email Permit v.1	Generic Action
Plans uploaded to Treeno v.1	Generic Action
Property Info Group v.1	Generic Action
Recording v.1	Task

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:	COND-2023-0056	Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Rad Nichols Telephone # 603-743-5777

Address of Applicant: 42 Sumner Drive

E-Mail Address: RNichols@coastbus.org

Name of Property Owner (if different from applicant): _____ Telephone #_____

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # H0035-C00004 Lot(s) # _____

Address of Property: 42 Sumner Drive

Zoning District(s) CM Overlay District(s) _____

Existing Use of Property: Operations, maintenance, and vehicle storage for COAST.

CONDITIONAL USE PERMIT INFORMATION

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

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

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

The project proposes to regrade within the wetland buffer for a stormwater management system and impervious surfaces. The redevelopment results in a net reduction of 1,100 sq ft of impervious surface within the wetland buffer.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: NHDES Alteration of Terrain - not submitted yet

Name of Professional That Prepared Plans: CMA Engineers - Benjamin Clark, PE

Address 35 Bow Street, Portsmouth, NH Telephone #: 603-431-6196

Professional License #: 15219 E-mail address: bclark@cmaengineers.com

SIGNATURES

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

Signature of Property Owner: _____ Date: _____

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

Signature of Agent: _____ Date: _____

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: _____ Date: _____

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

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

Property Owner Name: Rad Nichols

Signature(s) of Property Owner(s): Rad Nichols Digitally signed by Rad Nichols Date: 2023.03.15 17:15:01 -04'00' Date: 2023-03-16

Signature of Applicant: Benjamin Clark Digitally signed by Benjamin Clark DN: C=US, E=bclark@cmaengineers.com, O=CMA Engineers, CN=Benjamin Clark Date: 2023.03.16 15:02:57-04'00' Date: 2023-03-16
if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Property Owner Name: Rad Nichols

Signature(s) of Property Owner(s): Rad Nichols Digitally signed by Rad Nichols Date: 2023.03.15 17:15:41 -04'00' Date: 2023-03-16

Signature of Applicant: Benjamin Clark Digitally signed by Benjamin Clark DN: C=US, E=bclark@cmaengineers.com, O=CMA Engineers, CN=Benjamin Clark Date: 2023.03.16 15:03:54-04'00' Date: 2023-03-16
if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

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

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

Address of Sign Location: _____

Sign Permit Application Type: (check one)

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

COND-2023-0056 **42 SUMNER DRIVE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
H0031-000000	30 LITTLEWORTH RD	SOUSANE RUTH K &	QUINLAN NANCY K	30 LITTLEWORTH RD	DOVER	NH	03820
H0033-E00000	89 KNOX MARSH RD	QUINLAN DENIS J	QUINLAN NANCY K	89 KNOX MARSH RD	DOVER	NH	03820
H0034-000000	99 KNOX MARSH RD	RY DEVELOPMENT LLC		290 HERITAGE AVE STE 1	PORTSMOUTH	NH	03801
H0035-C00001	7 SUMNER DR	GRAY ROSE PROPERTIES LLC		PO BOX 1812	DOVER	NH	03821-1812
H0035-C0003B	28 SUMNER DR	28 SUMNER DRIVE LLC		6 LONGVIEW CIRCLE	PELHAM	NH	03076
H0035-C0003C	10 SUMNER DR	10 SUMNER DR LLC		6 SUMNER DR	DOVER	NH	03820
H0035-C00004	42 SUMNER DR	COOPERATIVE ALLIANCE FOR	SEACOAST TRANSPORTATION	42 SUMNER DR	DOVER	NH	03820
		DOUCET SURVEY LLC	WILLIAM DOUCET	12 KENT PLACE	NEWMARKET	NH	03857
		CMA ENGINEERS INC	BENJAMIN CLARK, PE	35 BOW STREET	PORTSMOUTH	NH	03801
		ROBERT E BOYLE, RA		35 CUSHING STREET	DOVER	NH	03820

CMA ENGINEERS, INC.

CIVIL | ENVIRONMENTAL | STRUCTURAL

35 Bow Street
Portsmouth, New Hampshire
03801-3819

P: 603|431|6196
www.cmaengineers.com

September 5, 2023

Donna Benton, AICP
Director of Planning and Community Development
City of Dover New Hampshire
288 Central Avenue
Dover, New Hampshire 03820

RE: **COAST Bus Facility**
Conditional Use Permit – Wetland Buffer Impacts
CMA #1250

Dear Ms. Benton,

This letter is to request a Conditional Use Permit to allow grading, placement of impervious surfaces, and a stormwater management system within the 50-foot wetland buffer, per section 170-27.1.G.d.iv of the City of Dover's Zoning Ordinance.

Being a redevelopment project, the goal of the design is to create a site without significantly increasing the impervious footprint of the site. Although the extents of the project footprint will be slightly expanded in the proposed condition, impervious area will be reduced by approximately 1,100 square feet when compared with the existing condition. The design of an improved stormwater management system requires a temporary wetland buffer impact of 14,341 square feet and a permanent impact of 5,862 square feet. The proposed stormwater management systems are located where the existing systems are and will expand upon the footprint to meet the stormwater treatment requirements per the City of Dover's Site Plan Regulations.

With that in mind, we respectfully request your consideration for a Conditional Use Permit to allow grading, placement of impervious surfaces, and stormwater management systems within the wetland buffer. As always, if you have any questions, feel free to contact me at your convenience.

Respectfully,

Benjamin Clark, P.E.
Senior Project Manager
CMA Engineers, Inc.

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday, September 11, 2023
Meeting Time:	**5:30 pm**

MEMBERS PRESENT: Bill Hunt (Chair), Steve Fellows (Vice Chair), Jay Aube, Amy Kramer-Perry, Kristen Murphy, Bruce Batchelder (Alternate), Abigail Lyon
Absent (Excused): Robert Atwood (Secretary), Jake Geddes (Alternate)
STAFF PRESENT: Jackson Kaspari – Resilience Manager
OTHERS PRESENT: Ben Clark, Rad Nichols, Ryan Kaplan

A. Kramer-Perry arrived at 5:40 pm.

1. **CALL TO ORDER AND ROLL CALL**
   The meeting was convened at 5:30 PM.

2. **CITIZENS' FORUM**
   None

3. **APPROVAL OF THE PRIOR MEETING MINUTES** – August 14, 202
   S. Fellows moved to approve the minutes of August 14th as submitted. B. Batchelder seconded. Vote: 4 yes with J. Aube and A. Lyon abstaining.

4. **OLD BUSINESS:**
   None

5. **NEW BUSINESS:**

   A. City of Dover Conditional Use Permit for David Laroche, (Agent: Nichols Environmental, LLC.), Assessor's Map A, Lot 39-2, zoned R-40, located at 7 Fieldstone Drive. Proposal is to allow a septic system to be constructed within 75 feet of wetlands.

   Ryan Kaplan represented the item and explained when the house was built, the regulations were 50'. Since then, the lot has been subdivided into two lots and in March of 2003 a note was added to the file that although the State regulations remain 50', the City changed to 75', but this property was given exception as being 'grandfathered in'. However, a CUP wasn't pulled at that time, so it is being sought now as a replacement in kind with no changes. The plan has been submitted and approved by the state.

   He walked the board through the site and described the proposed plan and confirmed the existing system has failed. There is no change in size for the proposed new system. He answered specific questions about the proposed system specs.

   J. Kaspari noted the Planning Department wanted to be sure the proper procedures were followed for CUP. They are comfortable with the proposal.

   S. Fellows moved to endorse the proposal as presented. K. Murphy seconded. Vote: 6 yes with A. Kramer Perry abstaining (due to late arrival).

DRAFT

B. City of Dover Conditional Use Permit for Cooperative Alliance for Seacoast Transportation, (Agent: CMA Engineers, Inc.), Assessor's Map H, Lot 35-C-4, zoned CM, located at 42 Sumner Drive. Proposal is to allow grading, placement of impervious surfaces and a stormwater management system, creating 14,479 square feet of temporary impact and 5,862 square feet of permanent impact to the 50-foot wetland buffer.

Ben Clark represented the item and explained the proposal for work on site at the COAST headquarters. The goal is to get all operations on one site, so the proposal includes an admin and maintenance building as well as bus storage.

The proposal includes roughly the same amount of impervious area which he described along with details of storm water and drainage.

He answered questions and gave further details about drainage, storm water, impervious areas, green areas, snow storage and invasive species.

J. Kaspari noted the applicant has been good at responding to Planning Department requests throughout the process and they have been through TRC. Staff is satisfied with the proposal due to the reduction of impervious areas and use of an existing site.

A. Lyon moved to endorse the proposal as presented. A. Kramer Perry seconded. Vote: 7 yes.

6. REPORT FROM THE CHAIR

A. Review of Correspondence Received from NH Department of Environmental Services

J. Kaspari noted the receipt of a request for more information on a standard wetlands dredge and fill permit that was filed with the state.

7. OTHER BUSINESS

A. Update from Forest Management Subcommittee

S. Fellows reported the subcommittee met and discussed the pocket forest and issues with the high school site. Other options were discussed.

J. Kaspari has been in touch with folks at the elementary school and they would love to see this happen. Staff will work on getting the proposal together and submitted for funding which would come from SUGI, an international organization.

A certified arborist was also in attendance and educated the subcommittee on several interesting topics and details.

J. Kaspari gave a few more details about the meeting. Discussion occurred on a set of ash trees in the CBD.

Discussion occurred about updates regarding the storm water proposal.

J. Kaspari extended an invitation to the Commission members to the installation of a pergola at the Dover Community Garden this Sunday.

DRAFT

A. Lyon reported grant results for natural resource inventory should come in soon. Also, Coastal Conservation Commission round table information was emailed out to all members. The next meeting will present and discuss flood disclosure laws and proposed legislation at the state level. The meeting/ presentation can be viewed virtually. She also highlighted Great Bay 2030 and a project they are funding called changemaker bootcamp.

8. ADJOURNMENT

S. Fellows motioned to adjourn. A. Lyon seconded. Vote: 7 yes.
The meeting was adjourned at 6:27 PM.

DRAFT

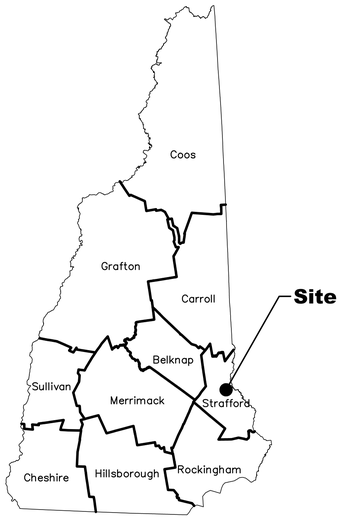
Cooperative Alliance for Seacoast Transportation
Operations and Maintenance Facility

Preliminary Permitting Plans
March 16, 2023

Revised: May 31, 2023
Revised: June 27, 2023
Revised: September 5, 2023

Sheet Index

1	Cover Sheet
2-3	General Notes
4-5	Existing Conditions Plan
6	Site Preparation & Demolition Plan
7	Site Layout Plan
8	Neighborhood Plan
9	Utilities Plan
10	Grading & Drainage Plan
11	Sediment & Erosion Control Plan
12	Landscape Plan
13	Lighting Plan
14-23	Construction Details
24	Fire Truck Turning Template
25-26	Drainage Maps
27-28	Building Floor Plans



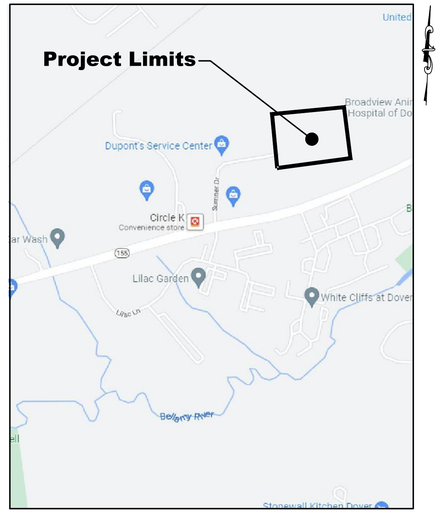
Locus Plan

Prepared For:
Cooperative Alliance for Seacoast Transportation
42 Sumner Drive
Dover, NH 03820

Prepared By:

CMA ENGINEERS
CIVIL/ENVIRONMENTAL/STRUCTURAL
Portsmouth, NH 603/431-6196 • Manchester, NH 603/627-0708 • Portland, ME 207/541-4223
cmaengineers.com

STATE OF NEW HAMPSHIRE
BENJAMIN C. CLARK
No. 15219
LICENSED PROFESSIONAL ENGINEER
09/05/2023



Project Location

0 83.3333 166.6666
Feet

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL BE IN CONFORMANCE WITH CURRENT CITY OF DOVER SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, AND PROCEDURES, AND FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH ALL WORK INCLUDED UNDER THIS CONTRACT, INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA REGULATIONS. THE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL SAFETY BARRIERS, WARNING FLASHERS, ETC., AS REQUIRED BY THE CONDUCT OF THE WORK FOR THE PROTECTION OF WORKERS AND NON-WORKERS ALIKE. THE OWNER AND ENGINEER WILL PERIODICALLY REVIEW CONSTRUCTION FOR COMPLIANCE WITH THE PLANS AND SPECIFICATIONS; SUCH REVIEW DOES NOT IMPLY APPROVAL OF METHODS OF CONSTRUCTION.
3. THE CONTRACTOR SHALL PROVIDE STAGING AREAS AS REQUIRED FOR STAGING, PROCESSING, AND STOCKPILING OF EQUIPMENT AND MATERIALS. THE CONTRACTOR SHALL PREPARE THE AREA AS NECESSARY AND INSTALL ALL EROSION CONTROL DEVICES TO MEET NHDES STANDARDS. THE CONTRACTOR SHALL STOCKPILE, HANDLE AND TRANSPORT MATERIALS TO PRESERVE THEIR QUALITY AND FITNESS FOR THE WORK. MATERIALS SHALL ALSO BE STORED TO FACILITATE INSPECTION AND MAY BE SUBJECT TO INSPECTION AND RETESTING BEFORE INCORPORATION IN THE WORK. PRIVATE PROPERTY SHALL NOT BE USED FOR STORAGE PURPOSES WITHOUT WRITTEN PERMISSION OF THE PROPERTY OWNER. IF REQUESTED, COPIES OF SUCH WRITTEN PERMISSION SHALL BE FURNISHED TO THE OWNER. AFTER COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL RETURN THE STAGING AREA TO PREEXISTING CONDITIONS TO THE SATISFACTION OF THE PROPERTY OWNER AND THE CITY.
4. EXISTING CONDITIONS SURVEY AND TOPOGRAPHY PROVIDED BY DOUCET SURVEY, LCC IN JULY 2020. BENCHMARKS AND HORIZONTAL CONTROL POINTS FOR THE CONTRACTOR TO LAYOUT THE WORK HAVE BEEN ESTABLISHED AND ARE SHOWN ON THE PLANS.
5. THE CONTRACTOR SHALL PERFORM ALL REQUIRED LAYOUT AND DEVELOPING AS-BUILT DOCUMENTATION WORK WITH COMPETENT, QUALIFIED PERSONNEL IN A MANNER CONSISTENT WITH THE CURRENT SURVEY/LAYOUT PRACTICES AND ACCEPTABLE TO THE ENGINEER. NO SEPARATE PAYMENT FOR THIS WORK WILL BE MADE. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH QUALIFIED PERSONS TO ASSIST IN THIS CHECKING AS NEEDED AND ON REQUEST OF THE ENGINEER. THE CONTRACTOR SHALL PERFORM ALL NECESSARY LAYOUT WORK IN ORDER TO CONSTRUCT ALL ELEMENTS OF THE PROJECT AS SHOWN ON THE PLANS AND SPECIFIED IN THE CONTRACT. THIS WORK SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, STAKEOUT NECESSARY TO ESTABLISH LINES AND GRADES AS EARTHWORK OPERATIONS PROGRESS; STAKEOUT, LAYOUT AND ELEVATIONS AS REQUIRED FOR INSTALLING DRAIN LINES, SEWER LINES, WATER LINES, AND OTHER ITEMS INCLUDED IN THE WORK.
6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE ACCURACY OF THE WORK. THE ENGINEER MAY CHECK ALL, OR ANY PORTION, OF THE LAYOUT, MADE BY THE CONTRACTOR. ANY NECESSARY CORRECTION TO THE WORK SHALL BE MADE IMMEDIATELY BY THE CONTRACTOR. SUCH CHECKING BY THE ENGINEER WILL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITIES FOR THE ACCURACY OR COMPLETENESS OF THE WORK. NO CLAIM WILL BE CONSIDERED BECAUSE OF ALLEGED INACCURACIES UNLESS THE CONTRACTOR NOTIFIES THE ENGINEER THEREOF IN WRITING IMMEDIATELY UPON DISCOVERY OF THE ALLEGED INACCURACIES AND AFFORDS THE ENGINEER THE OPPORTUNITY TO CHECK OR VERIFY THE CONTROL IN QUESTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL BENCHMARKS AND CONTROL POINTS. IF ANY OF THE CONTROL POINTS ARE DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THEM AT NO EXPENSE TO THE OWNER. DAMAGED OR DESTROYED CONTROL POINTS, BENCHMARKS, STAKES, OR ANY REFERENCE POINTS DAMAGED OR MADE INACCESSIBLE BY THE PROGRESS OF CONSTRUCTION SHALL BE REPLACED OR TRANSFERRED BY THE CONTRACTOR, SUBJECT TO VERIFICATION BY THE ENGINEER. REPLACEMENT OF ANY LAYOUT POINTS SHALL BE PERFORMED BY, OR UNDER, THE DIRECTION OF A NH LICENSED LAND SURVEYOR.
8. APPARENT PROPERTY BOUNDARY IS BASED ON THE EXISTING CONDITIONS SURVEY. PERFORM ALL WORK WITHIN THE EXISTING PROPERTY BOUNDARY OR ACQUIRE A TEMPORARY RIGHT-OF-ENTRY AGREEMENT.
9. THE CONTRACTOR SHALL PROTECT PRIVATE PROPERTY AND SHALL TAKE ALL NECESSARY MEASURES AND PRECAUTIONS TO AVOID DAMAGE TO EXISTING TREES, SHRUBS, LAWNS, PLANTINGS, ETC. THIS PROTECTION WILL INCLUDE THE TRIMMING OF TREES PRIOR TO CONSTRUCTION IF NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS/REPLACEMENT OF ALL DAMAGED ITEMS.
10. THE CONTRACTOR SHALL PLAN AND PERFORM TEST PIT EXCAVATION WELL IN ADVANCE OF COMMENCING CONSTRUCTION AND ORDERING MATERIALS TO ALLOW TIME TO REVIEW ACTUAL CONDITIONS ENCOUNTERED. TEST PITS NOT SPECIFICALLY IDENTIFIED, SHALL BE EXCAVATED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER.
11. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
12. ALL DRAINAGE STRUCTURES TO BE ABANDONED IN PLACE SHALL HAVE THE CONE REMOVED AND BE FILLED WITH GRAVEL. THE MATERIAL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 12 INCHES OF COMPACTED THICKNESS. ALL PIPE CURVES SHALL BE PLUGGED WITH A CONCRETE MASONRY PLUG.
13. PLUGGING EXISTING PIPES WITH BRICK AND MORTAR SHALL BE CONSIDERED SUBSIDIARY TO THE DRAINAGE WORK.
14. PIPE CONNECTIONS TO REPLACEMENT STRUCTURES ARE SUBSIDIARY TO THE STRUCTURE.
15. ALL PROPOSED AND EXISTING DRAINAGE AND SANITARY SEWER STRUCTURE RIM AND PIPE INVERT ELEVATIONS ARE TO BE FIELD VERIFIED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER.
16. THE CONTRACTOR SHALL SET ALL MANHOLE FRAMES AND COVERS, CATCH BASIN GRATES, AND WATER VALVE COVERS TO BE FLUSH WITH THE BASE PAVEMENT GRADES, THEN RAISED TO 1/8" TO 1/4" BELOW FINAL PAVEMENT ELEVATIONS DURING INSTALLATION OF THE FINAL WEARING COARSE.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND RELOCATION OF ALL SIGNS THAT CONFLICT WITH THE WORK (INCIDENTAL TO CONSTRUCTION). ANY SIGNS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
18. FINAL LOCATION OF TRAFFIC SIGNS AND SUPPORTS AS SHOWN IN THE PLANS SHALL BE FIELD-CONFIRMED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER PRIOR TO INSTALLATION.
19. REMOVE TOPSOIL FOR ITS TOTAL DEPTH WITHIN THE LIMITS OF THE SLOPE LINES. UNLESS OTHERWISE DIRECTED, STOCKPILE TOPSOIL AND USE IT ON THIS PROJECT AS NEEDED.
20. ALL DISTURBED AREAS NOT DESIGNATED TO BE PAVED OR LANDSCAPED OTHERWISE SHALL HAVE LOAM BORROW PLACED AND SEEDED. THE LOAM BORROW SHALL HAVE A MINIMUM DEPTH OF 4" AND SHALL BE PLACED FLUSH WITH THE TOP OF ADJACENT CURBING, EDGING, PAVEMENT MILLINGS, BACK OF SIDEWALK OR OTHER PAVED EDGE.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE RESTORATION AND CLEAN UP UPON COMPLETION OF THE PROJECT.

PERMIT NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS: LOCAL AND STATE, AS WELL AS FROM PUBLIC UTILITIES, INCLUDING BUT NOT LIMITED TO A RIGHT-OF-WAY TRENCH PERMIT FROM THE DOVER DPW.
2. THE CONTRACTOR SHALL PREPARE A PROJECT SPECIFIC STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND OBTAIN AN EPA CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL ADHERE TO ALL THE CONDITIONS OF THE ENVIRONMENTAL PERMITS OBTAINED FOR THE PROJECT (SEE APPENDIX IN SPECIFICATIONS).

EXISTING UTILITY NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS, PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN, ON THESE PLANS PRIOR TO CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL NOTIFY DIG-SAFE AT 1-800-225-4977 AT LEAST 72 HOURS PRIOR TO BEGINNING WORK TO CONFIRM THE LOCATION OF UNDERGROUND UTILITIES.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION, PROTECTION AND REPAIR (IF DAMAGED) OF ALL EXISTING UTILITY MAINS AND SERVICES. THE LOCATIONS OF KNOWN GAS, WATER, AND SEWER MAINS SHOWN ON THESE DRAWINGS ARE APPROXIMATE. EXISTING GAS, WATER, AND SEWER SERVICE LATERALS MAY NOT BE SHOWN AND THE CONTRACTOR SHOULD ANTICIPATE THEIR EXISTENCE. THE CONTRACTOR SHOULD CONSIDER CONFLICTS, HAND EXCAVATION, AND DECREASE IN PRODUCTION WHEN PREPARING THEIR BID.

DISPOSAL OF SURPLUS MATERIAL:

1. UNSUITABLE MATERIALS AND BOULDERS/ROCK/STONES AS DEFINED BY THE SPECIFICATIONS THAT ARE NOT ACCEPTABLE AS FILL MATERIAL SHALL BE REMOVED FROM THE SITE. ALL PAVEMENT AND SUBGRADE SOILS REMOVED DURING CONSTRUCTION TO ACHIEVE PROPOSED GRADES SHALL BECOME PROPERTY OF THE CONTRACTOR. DISPOSAL IS THE CONTRACTOR'S RESPONSIBILITY.
2. UNLESS REQUESTED BY THE OWNER, ALL FRAMES, COVERS, GRATES, VALVES AND VALVE BOXES, AND CURBING TO BE REMOVED DURING THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL PAVEMENT, CONCRETE AND SUBGRADE SOILS REMOVED DURING CONSTRUCTION TO ACHIEVE PROPOSED GRADES SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL SIDEWALK PAVEMENT, SIDEWALK BRICK, CONCRETE OR BRICK STRUCTURES, SEWER MANHOLES, DRAINAGE, WATER AND SEWER PIPE TO BE REMOVED/DEMOLISHED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
3. IF ASBESTOS CEMENT (AC) PIPE IS ENCOUNTERED, ALL WORK SHALL BE DONE IN ACCORDANCE WITH ENV-A 1800 ASBESTOS MANAGEMENT AND CONTROL. IF THE AC PIPE IS BROKEN OR REQUIRES CUTTING OR BREAKING, A LICENSED ABATEMENT CONTRACTOR MUST COMPLETE THIS WORK AND PROPERLY BAG AND DISPOSE OF THE PIPE MATERIALS. ALL DISPOSAL SHALL BE DONE IN ACCORDANCE WITH ENV-A 1800 AND ENV-SW 901. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING ASBESTOS CEMENT PIPE, INCLUDING SERVICE CONNECTIONS, WITHIN THE LIMITS OF TRENCH EXCAVATION. THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO USERS THROUGH THE USE OF TEMPORARY BYPASS PIPING AND VALVES.
4. REMOVAL AND PROPER DISPOSAL OF EXISTING DRAINAGE AND SANITARY SEWER STRUCTURES AND PIPE SHALL BE SUBSIDIARY TO PROPOSED WORK ITEMS WHEN THE EXISTING DRAINAGE AND SEWER ITEMS ARE LOCATED WITHIN THE TRENCH LIMITS OF THE PROPOSED DRAINAGE ITEMS AS SPECIFIED IN SECTION 206 OF THE NHDOT STANDARD SPECIFICATION.

BORING NOTES:

1. BORINGS INDICATED ON THE PLANS WERE MADE BY JOHN TURNER CONSULTING AND GEOTECHNICAL SERVICES, INC IN JULY 2022. BLOW COUNTS SHOWN ARE THE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. STANDARD SPLIT SPOON SAMPLER 6" USING A 140 LB WEIGHT FALLING 30".
2. BORINGS ARE FOR DESIGN PURPOSES SHOWING CONDITIONS AT BORING POINTS ONLY, AND DO NOT NECESSARILY INDICATE MATERIAL TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS INDICATE THUS ▽ WERE MEASURED AT THE TIME OF EXPLORATION. THE WATER LEVELS ENCOUNTERED DURING CONSTRUCTION MAY VARY CONSIDERABLY DUE TO PREVAILING CLIMATE, RAINFALL, OR OTHER FACTORS.
4. THE GEOTECHNICAL INVESTIGATION REPORT IS PROVIDED AS AN APPENDIX TO THE CONTRACT DOCUMENTS.

SANITARY SEWER NOTES:

1. THE SANITARY SEWER MAIN SHALL BE SDR 35 PVC. THE PIPE SHALL BE CONNECTED TO THE EXISTING SEWER MANHOLE IN SUMNER DRIVE AND STUBBED AND CAPPED ON THE NORTH END FOR FUTURE CONNECTION AS SHOWN ON THE PLANS.
2. SEWER MAINS SHALL BE CONSTRUCTED WITH ADEQUATE SEPARATION FROM WATER MAINS. ADEQUATE SEPARATION IS DEFINED AS 10' OF HORIZONTAL SEPARATION AND 18 INCHES VERTICAL SEPARATION BELOW THE WATER MAIN. IF THE MINIMUM 18" VERTICAL SEPARATION IS NOT ACHIEVABLE, A WAIVER FROM NHDES IS REQUIRED.

GRADING AND DRAINAGE NOTES:

1. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGES, LATEST EDITION.
2. ALL PROPOSED CATCH BASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 3' SUMPS.

EROSION CONTROL NOTES:

1. SEE SHEET D-101 AND D-102 FOR EROSION CONTROL NOTES AND DETAILS

WATER NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE CITY OF DOVER'S CONSTRUCTION STANDARDS AND DETAILS AND NH DES ENV-DW 404. THE MORE STRINGENT REGULATION SHALL APPLY.
2. ALL WATER MAINS SHALL BE CLASS 52 CEMENT LINED DUCTILE IRON (CLDI) PIPE. ALL CLDI PIPE SHALL MEET, OR EXCEED, CURRENT AWWA C151 SPECIFICATIONS FOR DUCTILE IRON WATER PIPE.
3. WATER MAINS AND SERVICES SHALL HAVE A MINIMUM COVER OF 5'-0". WHERE TOP OF WATER MAIN IS LESS THAN 5'-0" BELOW FINISHED GRADE, THE CONTRACTOR SHALL INSTALL RIGID INSULATION IN CONFORMANCE WITH THE TYPICAL WATER TRENCH DETAIL.
4. ALL CLDI WATER MAINS SHALL BE ENCASED IN POLYETHYLENE ENCASEMENT (POLYWRAP). SEE SPECIFICATION SECTION 02611W.
5. AT PIPE CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER/DRAIN PIPE AS POSSIBLE. SPECIAL STRUCTURAL SUPPORTS FOR THE WATER AND SEWER PIPES MAY BE REQUIRED.
6. ALL MATERIALS COMING IN PHYSICAL CONTACT WITH DRINKING WATER MUST BE CERTIFIED TO MEET THE ANSI/NSF STANDARD 61 BY EITHER THE UNDERWRITERS LABS (UL) OR THE NATIONAL SANITATION FOUNDATION (NSF).
7. DISINFECTION AND TESTING OF WATER LINES SHALL BE DONE IN ACCORDANCE WITH CITY OF DOVER AND CURRENT AWWA STANDARDS.
8. ALL EXISTING WATER PIPE IDENTIFIED TO BE ABANDONED SHALL BE CAPPED AT ALL EXPOSED ENDS AND ABANDONED IN PLACE UNLESS REMOVAL IS REQUIRED BECAUSE OF OTHER INTERFERENCES (INCIDENTAL).
9. THE CONTRACTOR SHALL USE RESTRAINT SYSTEMS ON ALL VALVES AND FITTINGS UNLESS OTHERWISE NOTED ON THE PLANS.
10. ALL GATE VALVES SHALL HAVE RESTRAINED MECHANICAL JOINTS AND SHALL OPEN LEFT.
11. EXISTING CURB BOX AND/OR OTHER CASTINGS DISTURBED OR RELOCATED BY CONSTRUCTION ACTIVITIES SHALL BE ADJUSTED TO MATCH FINAL GRADE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER (SUBSIDIARY).
12. WHERE WATER MAIN IS LESS THAN 4'-0" HORIZONTALLY FROM A STRUCTURE, THE CONTRACTOR SHALL INSTALL 2" OF RIGID INSULATION ALONG THE SIDE WALL OF THE WATER MAIN TRENCH A MINIMUM OF 10'-0" HORIZONTALLY BEYOND THE CENTERLINE OF THE STRUCTURE IN BOTH DIRECTIONS TO PROTECT THE WATER MAIN FROM FREEZING.
13. MAINTAIN A MINIMUM OF 10' HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SEWER PIPING. NOTIFY ENGINEERS IF ANY DISCREPANCY.
14. EXISTING FIRE HYDRANTS SHALL BE REMOVED, DECOMMISSIONED BELOW GRADE, AND DELIVERED TO A LOCATION SPECIFIED BY THE OWNER.
15. THE CONTRACTOR SHALL INSTALL THE WATER SERVICE CONNECTIONS (INCLUDING SERVICE SADDLES IF REQUIRED, LIVE TAPS, CORPORATIONS, CURB STOP, CURB BOX, AND PE WATER SERVICE PIPE) WITH TRACER WIRE AT THE SIZE SPECIFIED IN THE SERVICE SCHEDULE AND CONNECT THE EXISTING WATER SERVICE TO THE NEW CURB BOX. THE NEW SERVICE SHALL BE CONNECTED TO THE EXISTING SERVICE PIPE PAST THE CURB STOP UNLESS THE EXISTING WATER SERVICE PIPE IS GALVANIZED CAST IRON, GALVANIZED STEEL OR LEAD; IN THIS CASE, THE CONTRACTOR SHALL NOTIFY THE CITY AND ENGINEER.

UTILITY NOTES:

1. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   - WATER/SEWER – CITY OF DOVER
   - ELECTRIC – EVERSOURCE ENERGY
   - GAS – UNITIL
2. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST ADDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
3. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
5. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK INCLUDING, BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, AND TRANSFORMER CONSTRUCTION WITH EVERSOURCE ENERGY.

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
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STATE OF NEW HAMPSHIRE – BENJAMIN C. CLIFFORD No. 15275 – LICENSED PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 0 20' 40' Scale: 1" = 20'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
General Notes
Dover Planning File: Site-2023-002

drawing no. N-1

sheet: 2 of 28

ABBREVIATIONS:

ABBREV.	MEANING
@	AT
ABD	ABANDONED
ABAN	ABANDON IN PLACE
ACP	ASBESTOS CEMENT PIPE
ADD'L	ADDITIONAL
APPROX	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BTM	BOTTOM
BH	BRADLEY HEAD
BIT	BITUMINOUS CONCRETE
BLDG	BUILDING
BMP	BUILDING MONITORING POINT
BOW	BOTTOM OF WALL
BR	BRICK
CB	CATCH BASIN
C.B.	CONCRETE BOUND
CBCI	CATCH BASIN WITH CURB INLET
CC	CAST-IN-PLACE CONCRETE
CEM	CEMENT
CL	CLEAR
℄	CENTER LINE
CLF	CHAIN LINK FENCE
CI	CAST IRON
CICL	CAST IRON CEMENT-LINED
CIP	CAST IN PLACE
C.O.	CLEAN OUT
CONC	CONCRETE
CONN	CONNECTION
COR	CORNER
CP	CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
CSE	COBBLE STONE EDGE
D	DRAIN
DEPT	DEPARTMENT
DH	DRILL HOLE
DI	DUCTILE IRON
DIA	DIAMETER
DICL	DUCTILE IRON CEMENT-LINED
DIA	DIAMETER
DISCH	DISCHARGE
DMH	DRAIN MANHOLE
DLY	DOUBLE SOLID YELLOW LINE
DT	DRAIN TILE
DWG	DRAWING
EA	EACH
EF	EACH FACE
EM	ELECTRIC METER
E-VAULT	ELECTRIC-VAULT
EL, ELEV	ELEVATION
ELEC, E	ELECTRIC
EOP	EDGE OF PAVEMENT
EXIST	EXISTING
ESHWL	EXIST. SEASONAL HIGH WATER TABLE
F&C	FRAME AND COVER
FA	FIRE ALARM
FD	FLOOR DRAIN
FED	FEDERAL
FH	FIRE HYDRANT
FM	FORCE MAIN
FND	FOUND
FP	FLAG POLE
FT	FOOT
GM	GAS METER
GRAN	GRANITE
HDPE	HIGH DENSITY POLYETHYLENE
HH	HAND HOLE
HORIZ	HORIZONTAL
HYD	HYDRANT
H/C	HANDICAP
INV	INVERT
IN	INCHES
IP	IRON PIPE
L	LEAVE
MBOX	MAIL BOX
MHW	MEAN HIGH WATER
MIN	MINIMUM
MON	MONUMENT
NIC	NOT IN CONTRACT
NO, #	NUMBER
NTS	NOT TO SCALE
PB	PULL BOX
PC	PRECAST CONCRETE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PCI	PIT CAST IRON
PCB	PROPOSED CATCH BASIN
PDMH	PROPOSED DRAINAGE MANHOLE
PERF	PEFORATED
PM	PARKING METER
PNS	PIPE NOT SEEN
POCS	PROPOSED OUTLET CONTROL STRUCTURE
PROP	PROPOSE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	REMOVE/RELOCATE
REC	RECORD INFORMATION
REINF	REINFORCEMENT
RES	REVERE EXTENSION SEWER
RET	RETAIN
RCP	REINFORCED CONCRETE PIPE
RS	RECEIVING SHAFT
ROW	RIGHT-OF-WAY
SB	STREET LIGHT BASE
S.B.	STONE BOUND
SD	STORM DRAIN
SF	FIRE SERVICE
SGC	SLOPED GRANITE CURB
SLCC	STREET LIGHT CONTROL CABINET
SMH	SEWER MANHOLE
SPEC	SPECIFICATION
SWL	SINGLE WHITE LINE
SQ	SQUARE
S	SANITARY SEWER
ST	STEEL
STD	SINGLE TILE DUCT

ABBREV.	MEANING
STY	STORY
SW	SIDEWALK
T&B.	TOP AND BOTTOM
TBC	TOP BACK OF CURB
TCC	TRAFFIC CONTROL CABINET
TD	TELEDUCT
TEL	TELEPHONE CONDUIT/DUCT BANK
TH	TOP OF HATCH
TL	TRAFFIC LIGHT CONDUIT
TOH	TOP OF HOOD
TOW	TOP OF WALL
TRAF	TRAFFIC CONDUIT
TS	TRAFFIC SIGNAL
TYP	TYPICAL
UMP	UTILITY MONITORING POINT
UNK	UNKNOWN
UP	UTILITY POLE
VC	VITRIFIED CLAY
VERT	VERTICAL
VGC	VERTICAL GRANITE CURB
W	WATER
W/	WITH
WC	WYE CONNECTION
WIP	WROUGHT IRON PIPE
WM	WATER METER
WMH	WATER MANHOLE
WFLG	WETLAND FLAG

GENERAL SYMBOLS:

EXISTING		PROPOSED
	UTILITY POLE & GUY WIRE	
	UTILITY POLE W/ LIGHT	
	LIGHT POLE	
	MAILBOX	
	VENT PIPE	
	SIGNS (TWO POSTS)	
	GRANITE BOUND FOUND	
	DRILL HOLE FOUND	
	IRON PIPE	
	IRON ROD	
	METAL POST	
	GRANITE OR CONC. POST	
	WOOD HUB	
	DRILL HOLE	
	WOOD FENCE POST	
	SIGNAL JUNCTION BOX	
	ELECTRICAL CONDUIT	
	PAD MOUNTED TRANSFORMER	
	ELECTRICAL PANEL	
	ELECTRICAL BOX	
	ELECTRIC METER	
	FIRE HYDRANT	
	GAS GATE VALVE	
	WATER GATE VALVE	
	WATER CURB STOP	
	VALVE ELECTRIC BOX	
	CATCH BASIN	
	DRAIN MANHOLE	
	ELECTRIC MANHOLE	
	TELEPHONE MANHOLE	
	WATER MANHOLE	
	SEWER MANHOLE	
	MANHOLE	
	BUSH/SHRUB	
	TREE STUMP	
	CONIFEROUS TREE	
	DECIDUOUS TREE	
	ROCK	
	BORING	
	TEST PIT	
	WETLAND	
	WETLAND FLAG	
	SPOT LIGHT	
	GUY WIRE	
LAPN	TAX SHEET – LOT NUMBER	
SCRD	STRAFFORD COUNTY REGISTRY OF DEEDS	
EOP	EDGE OF PAVEMENT	
SGC	SLOPED FACE GRANITE CURB	
VGC	VERTICAL FACED GRANITE CURB	
RWBL	MODULAR BLOCK RETAINING WALL	
RWC	CONCRETE RETAINING WALL	
RWM	MORTARED RETAINING WALL	
RWS	STONE RETAINING WALL	
	EDGE OF PAVEMENT	
	WOOD FENCE	
	CHAIN LINK FENCE	
	EROSION CONTROL FIBER ROLL	
	SPOT ELEVATION	
	City LAYOUT LINE	131.75'
	OVERHEAD WIRES	
	SEWER LINE	T
S	FORCEMAIN	
FM	DRAIN LINE	fm
D	GAS LINE	D
G	WATER SERVICE UNDERGROUND	G
W	UNDERGROUND ELECTRIC LINE	PWS
UGE	UNDERGROUND COMMUNICATIONS	UGE
UGC	APPROX. ABUTTERS	T
	LOT LINE	
	SHRUB LINE	
	TREE LINE	
	STONE WALL	
	GUARDRAIL	
	MAJOR CONTOUR LINE	
	MINOR CONTOUR LINE	100
	EASEMENT LINE	99
	WETLAND LINE	
W	WATER MAIN	
	BARBED WIRE FENCE	
X	CEMENT CONCRETE	PW
	CRUSHED STONE	
	RIP RAP	
	RETAINING WALL	
	LANDSCAPED AREA	
LA	BOLLARD	
	SLOPE LINE	
	CONSTRUCTION BASELINE	
	LIMITS OF WORK	302+00
	THRUST BLOCK	
	ELECTRICAL MANHOLE	
	ELECTRICAL TRANSFORMER	PEMH
	OUTLET CONTROL STRUCTURE WITH GRATE	T
	OUTLET CONTROL STRUCTURE WITH COVER	
	HEADWALL	
	FLARED END SECTION	
	BUILDING MOUNTED LIGHT	

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
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NEW HAMPSHIRE – 4237 – BENJAMIN C. CLARK No. 15019 LICENSED PROFESSIONAL ENGINEER – STATE OF

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale:

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Legend and Abbreviations
Dover Planning File: Site-2023-002

drawing no. N-2

sheet: 3 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250 – Notes.dwg Date Plotted: Sep 05, 2023 – 3:55pm Plotted By: CCHIARAMONTE

NOTES:

1. REFERENCE: PARCEL ID: H0035-C0004
   42 SUMNER DRIVE
   DOVER, NEW HAMPSHIRE
   D.S.I. PROJECT NO. 6545

2. TOTAL PARCEL AREA: SQ. FT. OR AC.

3. OWNER OF RECORD: COOPERATIVE ALLIANCE FOR
   SEACOAST TRANSPORTATION
   42 SUMNER DRIVE
   DOVER, NH 03820
   S.C.R.D. BOOK 2200 PAGE 264

4. ZONE: CM

5. FIELD SURVEY PERFORMED BY J.M.L. & J.H.H. DURING JUNE 2020 USING A TRIMBLE S6 TOTAL STATION AND A TRIMBLE R10 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A TRIMBLE DINI DIGITAL AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.

6. HORIZONTAL DATUM BASED ON NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATE ZONE (2800) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

7. VERTICAL DATUM IS BASED ON APPROXIMATE NAVD88(GEOID12A) (±.2') DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

8. JURISDICTIONAL WETLANDS DELINEATED BY WEST ENVIRONMENTAL, INC DURING JUNE 2020 IN ACCORDING TO THE:
   - US ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JANUARY, 1987).
   - REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (2012).
   - NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). U.S. FISH AND WILDLIFE SERVICE (2013).
   - CODE OF ADMINISTRATIVE RULES. WETLANDS BOARD, STATE OF NEW HAMPSHIRE (CURRENT).
   - FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.0, 2016 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEHSTC (MAY 2017).

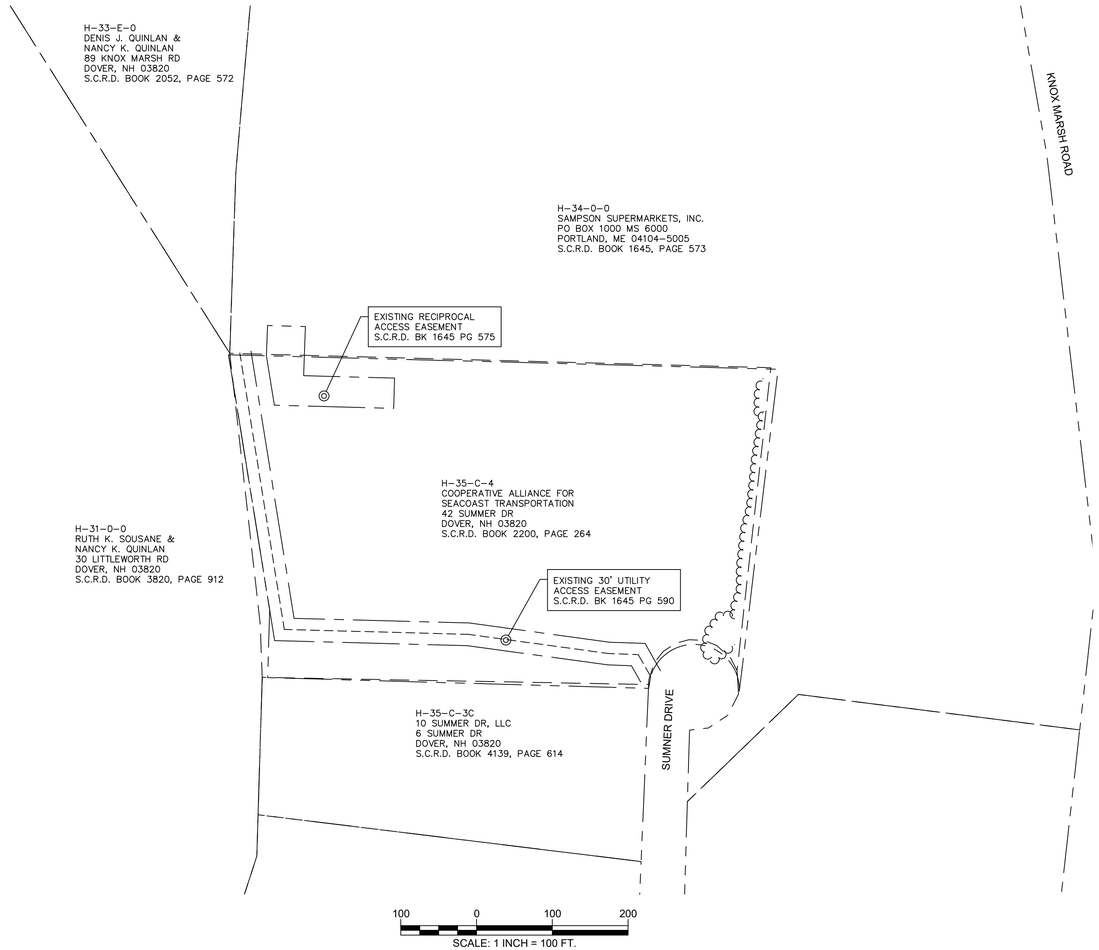
9. FLOOD HAZARD ZONE: "X", PER FIRM MAP #33017C0320E, DATED 09/30/2015.

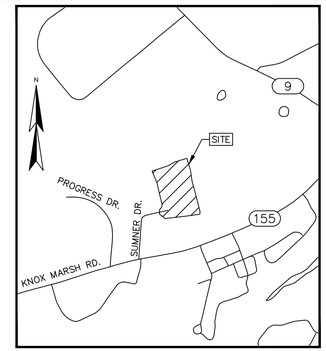
10. PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 1' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY. WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.

11. UNDERGROUND UTILITIES WITHIN THE SURVEY AREA SHOWN HEREON ARE THE RESULT OF AN UNDERGROUND UTILITY DESIGNATION COMPLETED BY DOUCET SURVEY ON JUNE 2020 AND FROM DATA OBTAINED FROM RECORD MAPS AND DRAWINGS. DOUCET'S UTILITY DESIGNATION WAS COMPLETED IN ACCORDANCE WITH THE STANDARD PROCEDURES SET FORTH IN ASCE 38-02 AND CONSISTENT WITH APPROPRIATE QUALITY LEVELS. DRAIN AND SANITARY SEWER LINES WERE VISUALLY ALIGNED AND MAPPED AT QUALITY LEVEL C UNLESS OTHERWISE SHOWN. DRAIN AND SEWER LINES SHOWN AT QUALITY LEVEL B WERE LOCATED USING SURFACE GEOPHYSICAL TECHNIQUES. ALL ABOVE GROUND STRUCTURES, SURFACE FEATURES AND THE LOCATION OF THE MARK OUT ARE THE RESULT OF AN INSTRUMENT SURVEY COMPLETED BY DOUCET UNLESS OTHERWISE NOTED. THERE MAY BE OTHER UNDERGROUND UTILITIES, THE EXISTENCE OF WHICH ARE NOT KNOWN OR CERTIFIED BY THE UNDERSIGNED. DIG SAFE NEW HAMPSHIRE AND THE APPROPRIATE AUTHORITIES MUST BE NOTIFIED PRIOR TO CONDUCTING TEST BORINGS, EXCAVATION, OR CONSTRUCTION ACTIVITIES.

12. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING; THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.

13. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH AND IN RELATION TO THE CURRENT LEGAL DESCRIPTION, AND IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP, OR DEFINE THE LIMITS OF TITLE.





LOCATION MAP (n.t.s.)

LEGEND
- APPROXIMATE LOT LINE
- APPROXIMATE ABUTTER LOT LINE
- EXISTING EASEMENT LINE

REFERENCE PLANS:

1. "SITE PLAN BUS TERMINAL AND MAINTENANCE FACILITY" DATED 8-26-94 BY CIVIL WORKS S.C.R.D. PLAN 1124 COAST SITE PLAN.
2. "F. W. WEBB MFG. CO. DIVISION OF LOT 3 SUMNER DRIVE" DATED SEPT, 1974 BY G. L. DAVIS & ASSOCIATES CIVIL ENGINEERS S.C.R.D. PLAN P001-F005-057.
3. "PROPERTY PLAN INDUSTRIAL DEVELOPMENT AUTHORITY SUMNER DAVIS LAND" DATED AUG, 1969 BY G. L. DAVIS & ASSOCIATES CIVIL ENGINEERS S.C.R.D. PLAN P011-F003-008.
4. "SUMNER DRIVE ACCESS PLAN FOR NEW HAMPSHIRE DISTRIBUTORS INC." DATED AUGUST 27, 1982 BY RICHAD D. BARTLETT L.L.S S.C.R.D. PLAN P023A-0129.
5. "LOT LINE ADJUSTMENT PLAN PREPARED FOR DENNIS QUINLAN AND RUTH SOUSANE" DATED AUGUST 24, 1993 BY MCENEANEY SURVEY ASSOCIATES, INC. S.C.R.D. PLAN P0042-0099.
6. "PLAN OF CONSERVATION EASEMENT- LAND OF RUTH SOUSANE AND DENNIS & NANCY QUINLAN" DATED DEC. 16, 1996 BY RICHARD P. TOWLE S.C.R.D. PLAN P0051-0097.

PURSUANT TO RSA 676:18, III:

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION AND FALLS UNDER THE URBAN SURVEY CLASSIFICATION OF THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. RANDOM TRAVERSE SURVEY BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000.'

_____ L.L.S. #824

_____ DATE

THE CERTIFICATIONS SHOWN HEREON ARE INTENDED TO MEET REGISTRY OF DEED REQUIREMENTS AND ARE NOT A CERTIFICATION TO TITLE OR OWNERSHIP OF PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.

EXISTING CONDITIONS PLAN

FOR

CMA ENGINEERS

OF

COAST PUBLIC TRANSIT

42 SUMNER DRIVE

DOVER, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	5/31/23	Revised for City of Dover TRC Comments	BCC

DRAWN BY:	E.D.P.	DATE:	JULY 2020
CHECKED BY:	W.J.D.	DRAWING NO.	6545A
JOB NO.	6545	SHEET	1 OF 2

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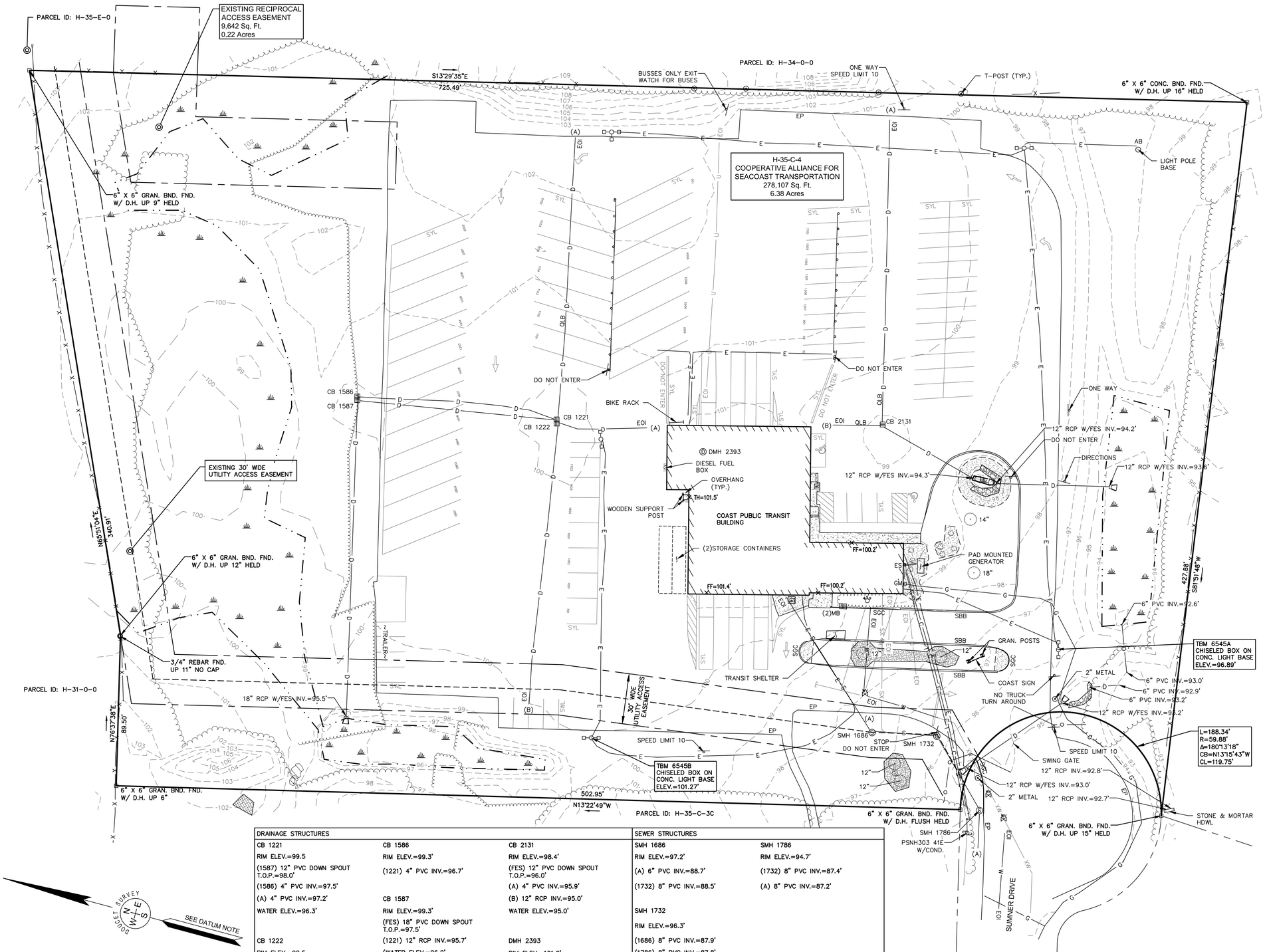
FILE NAME: P:\CAD\PROJECTS\1200 Coast On-Call Eng Services\VRBT\1200-X-SURVEY.dwg LAYOUT NAME: COVER SHEET 1 PLOTTED: Tuesday, May 30, 2023 - 4:08pm



DRAINAGE STRUCTURES		
CB 1221	CB 1586	CB 2131
RIM ELEV.=99.5	RIM ELEV.=99.3'	RIM ELEV.=98.4'
(1587) 12" PVC DOWN SPOUT T.O.P.=98.0'	(1221) 4" PVC INV.=96.7'	(FES) 12" PVC DOWN SPOUT T.O.P.=96.0'
(1586) 4" PVC INV.=97.5'		(A) 4" PVC INV.=95.9'
(A) 4" PVC INV.=97.2'	CB 1587	(B) 12" RCP INV.=95.0'
WATER ELEV.=96.3'	RIM ELEV.=99.3'	WATER ELEV.=95.0'
	(FES) 18" PVC DOWN SPOUT T.O.P.=97.5'	
CB 1222	(1221) 12" RCP INV.=95.7'	DMH 2393
RIM ELEV.=99.5	(WATER ELEV.=96.2'	RIM ELEV.=101.2'
(A) 4" PVC INV.=97.3 CAPPED		INSIDE GARAGE UNABLE TO OPEN
(B) 4" PVC INV.=97.3'		

SEWER STRUCTURES	
SMH 1686	SMH 1786
RIM ELEV.=97.2'	RIM ELEV.=94.7'
(A) 6" PVC INV.=88.7'	(1732) 8" PVC INV.=87.4'
(1732) 8" PVC INV.=88.5'	(A) 8" PVC INV.=87.2'
SMH 1732	
RIM ELEV.=96.3'	
(1686) 8" PVC INV.=87.9'	
(1786) 8" PVC INV.=87.8'	

LEGEND

- LOT LINE
- ABUTTERS LOT LINE
- X — BARBED WIRE FENCE
- S — SEWER LINE (QUALITY LEVEL B)
- D — DRAIN LINE (QUALITY LEVEL B)
- G — GAS LINE (QUALITY LEVEL B)
- E — UNDERGROUND ELECTRIC LINE (QUALITY LEVEL B)
- W — WATER LINE (QUALITY LEVEL B)
- U — POSSIBLE UNDER DRAIN
- XW — WATER LINE (QUALITY LEVEL D)
- XS — SEWER LINE (QUALITY LEVEL D)
- 100 — MAJOR CONTOUR LINE
- 99 — MINOR CONTOUR LINE
- TREE LINE
- SHRUB LINE
- EDGE OF WETLAND
- WETLAND AREA
- CONCRETE
- RIP RAP
- LANDSCAPED AREA
- CRUSHED STONE
- LEDGE OUTCROP
- LIGHT POLE (MULTI-ARMS)
- SIGN
- IRON PIPE/ROD FOUND
- BOUND FOUND
- POST
- POST
- WATER GATE VALVE
- WATER SHUTOFF VALVE
- PAD MOUNTED TRANSFORMER
- CATCH BASIN
- DRAIN MANHOLE
- F.E.S — FLARED END SECTION
- SEWER MANHOLE
- DECIDUOUS TREE
- DECIDUOUS BUSH
- ROCK/BOULDER
- ACCESSIBLE PARKING SPACE

TYP.	TYPICAL
BND. FND.	BOUND FOUND
GRAN.	GRANITE
HDWL	HEADWALL
D.H.	DRILL HOLE
FF	FINISHED FLOOR ELEVATION
TH	THRESHOLD ELEVATION
EP	EDGE OF PAVEMENT
SGC	SLOPED GRANITE CURB
SBB	SLOPED BITUMINOUS BERM
SWL	SINGLE WHITE LINE
SYL	SINGLE YELLOW LINE
ES	ELECTRIC SWITCH
GM	GAS METER
EOI	END OF GEOPHYSICAL INFORMATION
AB	ABANDONED

QUALITY LEVEL ACCORDING TO ASCE 38-02

QLB	QUALITY LEVEL "B" SUBSURFACE UTILITIES HAVE BEEN MARKED USING A VARIETY OF GEOPHYSICAL TOOLS
QLC	QUALITY LEVEL "C" SURVEYED THE LOCATION OF OBSERVABLE UTILITIES
QLD	QUALITY LEVEL "D" LIMITED PHYSICAL EVIDENCE, DIGITIZED FROM RESEARCH AND HISTORICAL DATA

30 0 30 60

SCALE: 1 INCH = 30 FT.

EXISTING CONDITIONS PLAN

FOR

CMA ENGINEERS

OF

COAST PUBLIC TRANSIT

42 SUMNER DRIVE

DOVER, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY

DRAWN BY:	E.D.P.	DATE:	JULY 2020
CHECKED BY:	W.J.D.	DRAWING NO.	6545A
JOB NO.	6545	SHEET	2 OF 2

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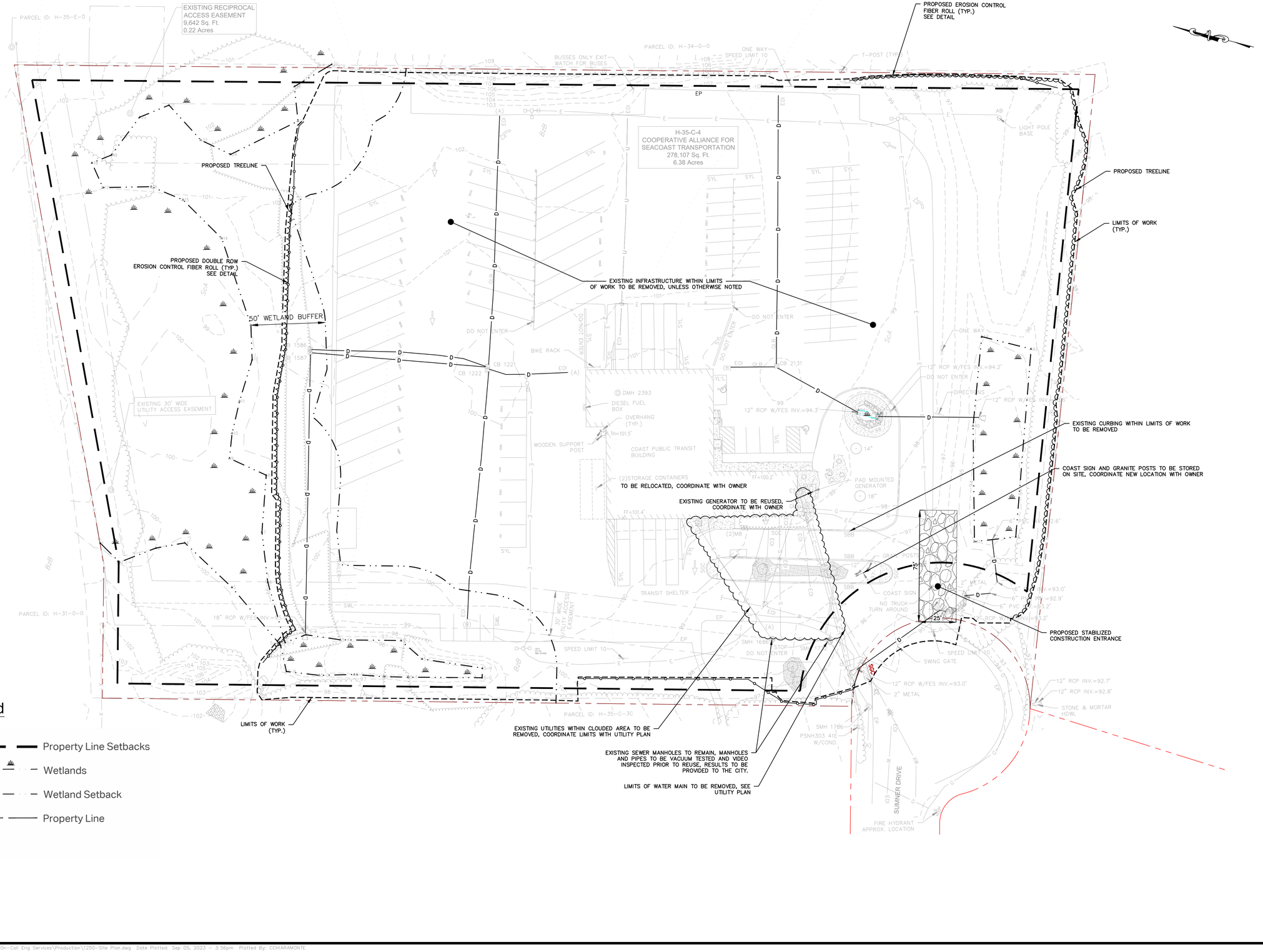
FILE NAME: C:\Users\EAApollon\Local\Temp\AcPublish_30360\6545A CSD2020-07-10.dwg LAYOUT NAME: SHEET 2 PLOTTED: Friday, July 10, 2020 - 3:10pm



Legend

- Property Line Setbacks
- Wetlands
- Wetland Setback
- Property Line

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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BENJAMIN C. CLARK No. 15429 STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 30' Scale: 1" = 30' 60'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Site Preparation and Demolition Plan
Dover Planning File: Site-2023-002

drawing no. C-1

sheet: 6 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Site Plan.dwg Date Plotted: Sep 05, 2023 – 3:56pm Plotted By: CCHIARAMONTE

GENERAL SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO PRESENT THE EXISTING COAST BUS FACILITY REDEVELOPMENT PROJECT CONSISTING OF 28,700 SF VEHICLE STORAGE BUILDING AND 17,000 SF ADMINISTRATION, OPERATIONS, AND MAINTENANCE BUILDING.

2. OWNER OF RECORD:

   COOPERATIVE ALLIANCE FOR SEACOAST TRANSPORTATION
   42 SUMNER DRIVE
   DOVER, NH 03820
   S.C.R.D. BOOK 2200, PAGE 264

   OWNER SIGNATURE

3. THE PARCEL SHOWN IS LOT NO. H–35, MAP C–4 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.

4. THE SUBJECT PARCEL CONTAIN 6.38 ACRES / 278,107 SF OF LAND.

5. EXISTING RECIPROCAL ACCESS EASEMENT S.C.R.D. BK. 1645 PG. 575 & EXISTING 30' UTILITY ACCESS EASEMENT S.C.R.D. BK. 1645 PG. 590

6. CURRENT CITY OF DOVER ZONING DISTRICT IS COMMERCIAL MANUFACTURING:

	REQUIRED	PROVIDED
MIN. LOT SIZE:	20,000 SF	278,107 SF
MIN. LOT FRONTAGE:	100 FT	188.34 FT
MIN. YARD SETBACKS:		
FRONT:	35 FT	150 FT
SIDE:	10 FT	91 FT
REAR:	10 FT	36 FT
ABUT–A–STREET:	35 FT	91 FT
MAX. LOT COVERAGE:	50 %	17 %
MAX. BUILDING HEIGHT:	50 FT	30 FT 8 IN & 26 FT
GREEN SPACE:	33 %	44 %

   THIS PROPERTY FALLS WITHIN THE FOLLOWING ZONING OVERLAY DISTRICTS:
   – GROUND WATER PROTECTION DISTRICT (TERTIARY)
   – WETLAND PROTECTION DISTRICT

8. PARKING REQUIREMENTS – OFFICE & INDUSTRIAL USE

   MAX. # OF SPACES FOR OFFICE = 8,000 SF X 1/300 SF = 26.6 SPACES
   MAX. # OF SPACES FOR INDUSTRIAL = 38,700 SF X 1/800 SF = 48.3 SPACES

   MAX. # OF SPACES ALLOWED = 75 SPACES
   PROVIDED SPACES = 73 SPACES (3 ADA W/ 1 VAN)

9. CONDITIONAL USE PERMIT – CONSTRUCT STORMWATER MANAGEMENT SYSTEM WITHIN THE WETLAND BUFFER. (170–27.1.G.d.iv)

10. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A FIELD SURVEY PERFORMED BY DOUCET SURVEY DURING JUNE 2020 USING A TRIMBLE S6 TOTAL STATION AND A TRIMBLE R10 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A TRIMBLE DINI DIGITIAL AUTO LEVEL, WITH A PRECISION GREATER THAN 1:15,000.

11. HORIZONTAL DATUM BASED ON NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATE ZONE (2800) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

12. VERTICAL DATUM IS BASED ON APPROXIMATE NAVD88(GEOID12A) (±.2') DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

13. SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (33017C0320E EFF. 9/30/2015).

14. JURISDICTIONAL WETLANDS DELINEATED BY WEST ENVIRONMENTAL, INC DURING JUNE 2020 IN ACCORDING TO THE:

   14.1. US ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y–87–1 (JANUARY, 1987).
   14.2. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (2012).
   14.3. NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). U.S. FISH AND WILDLIFE SERVICE (2013).
   14.4. CODE OF ADMINISTRATIVE RULES. WETLANDS BOARD, STATE OF NEW HAMPSHIRE (CURRENT).
   14.5. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.0, 2016 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEHSTC (MAY 2017).

15. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE.

16. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.

17. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED WITHIN 50 FT OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED, AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.

18. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY.

19. 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.

20. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45–2 OF THE CODE OF THE CITY OF DOVER.

21. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7 AM–6 PM, SATURDAY AND SUNDAY 9 AM–4 PM. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.

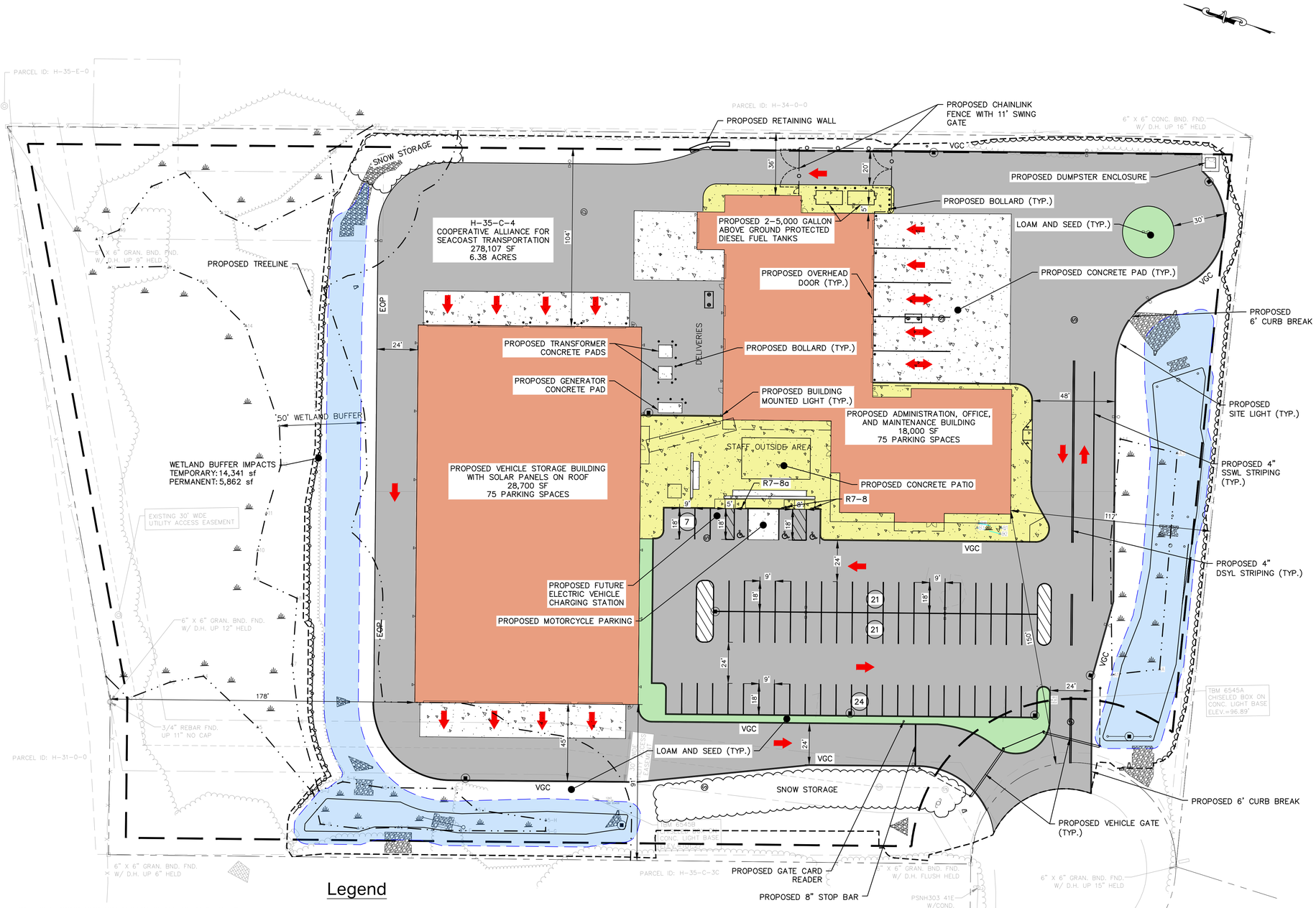
22. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.

23. EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 153–14–E AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.

24. THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81–30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.

25. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NEPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION AND SERVICES PRIOR TO CONNECTION OF THE BLACKFLOW DEVCE.

26. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI–117.1) AND NH RSA 155–A: 5.



Legend

- Property Line Setbacks
- Pavement
- Building
- Sidewalk
- Grass/Landscaping
- Stormwater Treatment
- Traffic Flow Direction
- Concrete Pad
- Wetlands
- Wetland Setback
- Property Line

PERMIT	FILED	APPROVED
CITY OF DOVER – SITE PLAN	3/16/2023	–
CITY OF DOVER – CUP	3/16/2023	–
NHDES – AOT	–	–
NHDHR – RPR	–	–
NHB DATA CHECK	11/15/2022	11/17/2022
NH FISH AND GAME CONSULTATION	–	–
EPA ENOI	–	–
NHDES SEWER CONNECTION	–	–

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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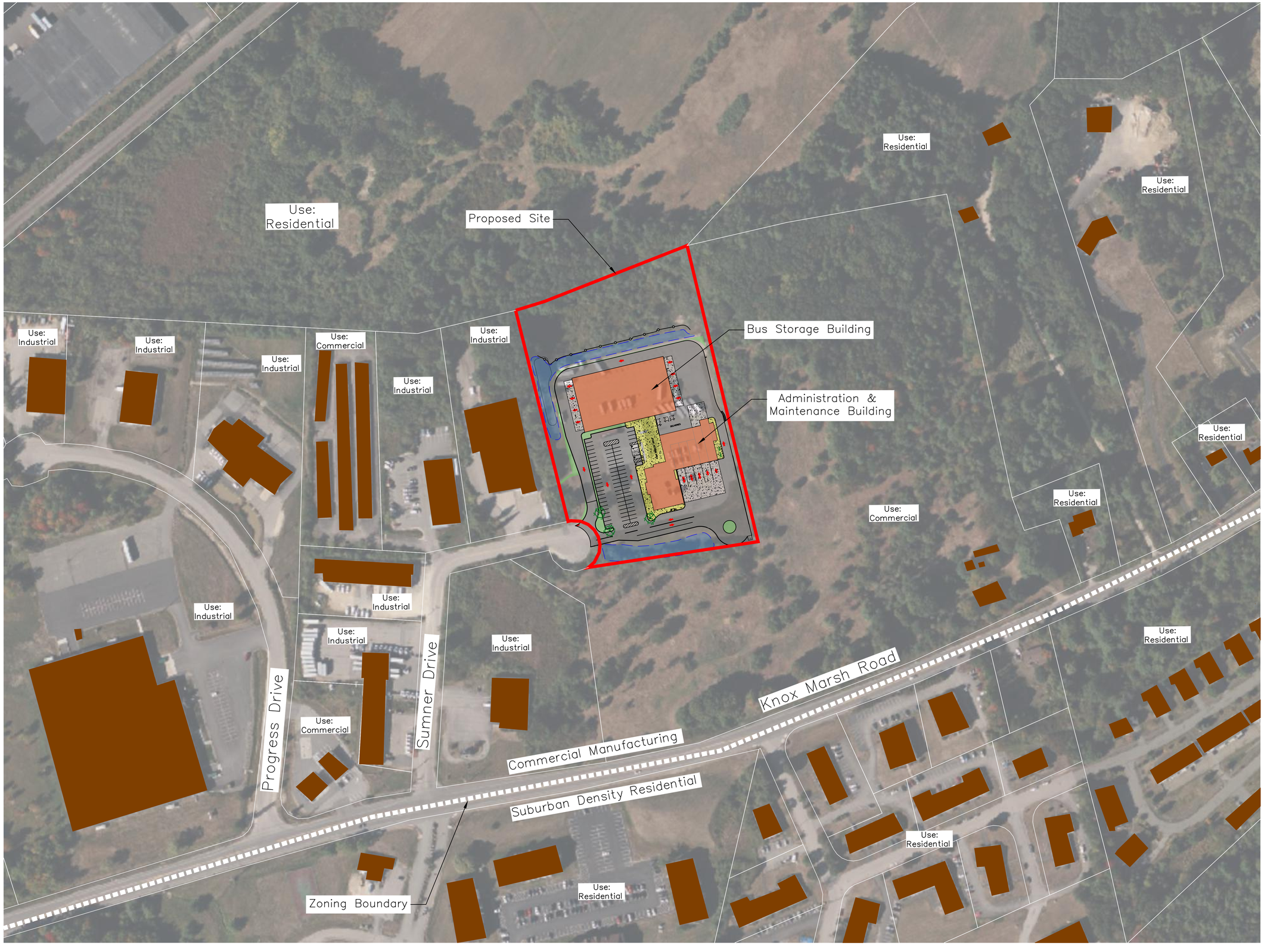
STATE OF NEW HAMPSHIRE – BENJAMIN C. PACHECO No. 15215 – LICENSED PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: PAC
scale: 30' Scale: 1" = 30' 60'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Site Layout Plan
Dover Planning File: Site-2023-002

drawing no. C-2

sheet: 7 of 28



no.	revision	date	by
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NEW HAMPSHIRE – STATE OF – PROFESSIONAL ENGINEER
CHRISTOPHER C. BENJAMIN
No. 15976

designed by: MHH
drawn by: MHH
approved by: BCC
date: June 2023
project no: 1250
checked by: PAC
scale: 1" = 100'
100' 0 200'
Scale: 1" = 100'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Neighborhood Plan
Dover Planning File: Site-2023-002

drawing no. C-3

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Neighborhood Plan.dwg Date Plotted: Sep 05, 2023 – 3:56pm Plotted By: CCHIARAMONTE

PROPOSED 1,000 GALLON OIL-WATER SEPARATOR
RIM:101.40
INV.IN: 91.15
INV.OUT: 90.83

PROPOSED FLOOR DRAIN
INV. OUT=97.83'

PROPOSED 1,000 GALLON OIL-WATER SEPARATOR
RIM:101.35
INV. IN: 97.20
INV. OUT: 97.03

PROPOSED FLOOR DRAIN
INV. OUT=97.83'

12' of 8" SDR 35 @ 1.55%

SMH-103
RIM:100.64
INV. IN:96.85 8"(N)
INV. IN:94.45 8"(W)
INV. OUT:94.20 8"(S)

SMH-104
RIM:98.88
INV. IN:93.15 8"(N)
INV. OUT:92.90 8"(W)

PROPOSED GAS SERVICE

24' of 8" SDR 35 @ 1.76%

18' of 8" SDR 35 @ 3.43%

41' of 8" SDR 35 @ 0.93%

PROPOSED (2) THREE PHASE PAD-MOUNTED TRANSFORMERS

PROPOSED GENERATOR

PROPOSED SANITARY SEWER SERVICE
INV. OUT=94.83'

PROPOSED 2" COPPER DOMESTIC WATER

134' of 8" SDR 35 @ 1.36%

PROPOSED 6" DI FIRE SERVICE PROTECTION & FIRE DEPARTMENT CONNECTION (ABOVE GROUND)

PROPOSED 6" GATE VALVE

PROPOSED EVERSOURCE PULL BOX

PROPOSED WATER SHUT OFF VALVE

SMH-101
RIM:100.19
INV. IN:95.40 8"(E)
INV. IN:95.40 8"(N)
INV. OUT:94.15 8"(W)

PROPOSED CONNECTION FOR FUTURE ELECTRIC VEHICLE CHARGING STATION

PROPOSED 6" DI WATER MAIN

PROPOSED SEWER SERVICE
INV. OUT=95.83'

39' of 8" SDR 35 @ 1.10%

PROPOSED UNDERGROUND ELECTRIC SERVICE

PROPOSED UNDERGROUND TELECOM SERVICE

231' of 8" SDR 35 @ 1.36%

145' of 8" SDR 35 @ 1.03%

PROPOSED 6" GATE VALVE

PROPOSED 2" COPPER DOMESTIC WATER

PROPOSED 6"x6"x6" MJ TEE

PROPOSED JOINT RESTRAINTS AND THRUST BLOCK SEE DETAILS

PROPOSED JOINT RESTRAINTS AND THRUST BLOCK SEE DETAILS

PROPOSED WATER SHUT OFF VALVE

PROPOSED 6" GATE VALVE & DI FIRE SERVICE & FIRE DEPARTMENT CONNECTION

PROPOSED 6" GATE VALVE

SMH-105
RIM:96.56
INV. IN:89.75 8"(E)
INV. OUT:89.50 8"(NW)

CONNECT TO EXISTING 6" WATER MAIN

81' of 8" SDR 35 @ 1.97%

50' WETLAND BUFFER

EXISTING 30' WIDE UTILITY ACCESS EASEMENT

30' WIDE UTILITY EASEMENT

EX. SMH-1732
RIM:96.18
INV. IN:87.90 8"(SE)
INV. IN:87.90 8"(N)
INV. OUT:87.80 8"(SW)

PROPOSED GAS SERVICE

PROPOSED PULL BOX

SMH-102
RIM:99.90
INV. IN:92.65 8"(E)
INV. OUT:92.40 8"(S)

EX. SMH-1686
RIM:97.18
INV. IN:88.75 8"(N)
INV. OUT:88.50 8"(S)

102' of 8" SDR 35 @ 3.58%

PROPOSED RISER POLE

PROPOSED OVERHEAD ELECTRIC

SMH 1786
PSNH303 41E
W/COND.

SUMNER DRIVE

FIRE HYDRANT APPROX. LOCATION

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
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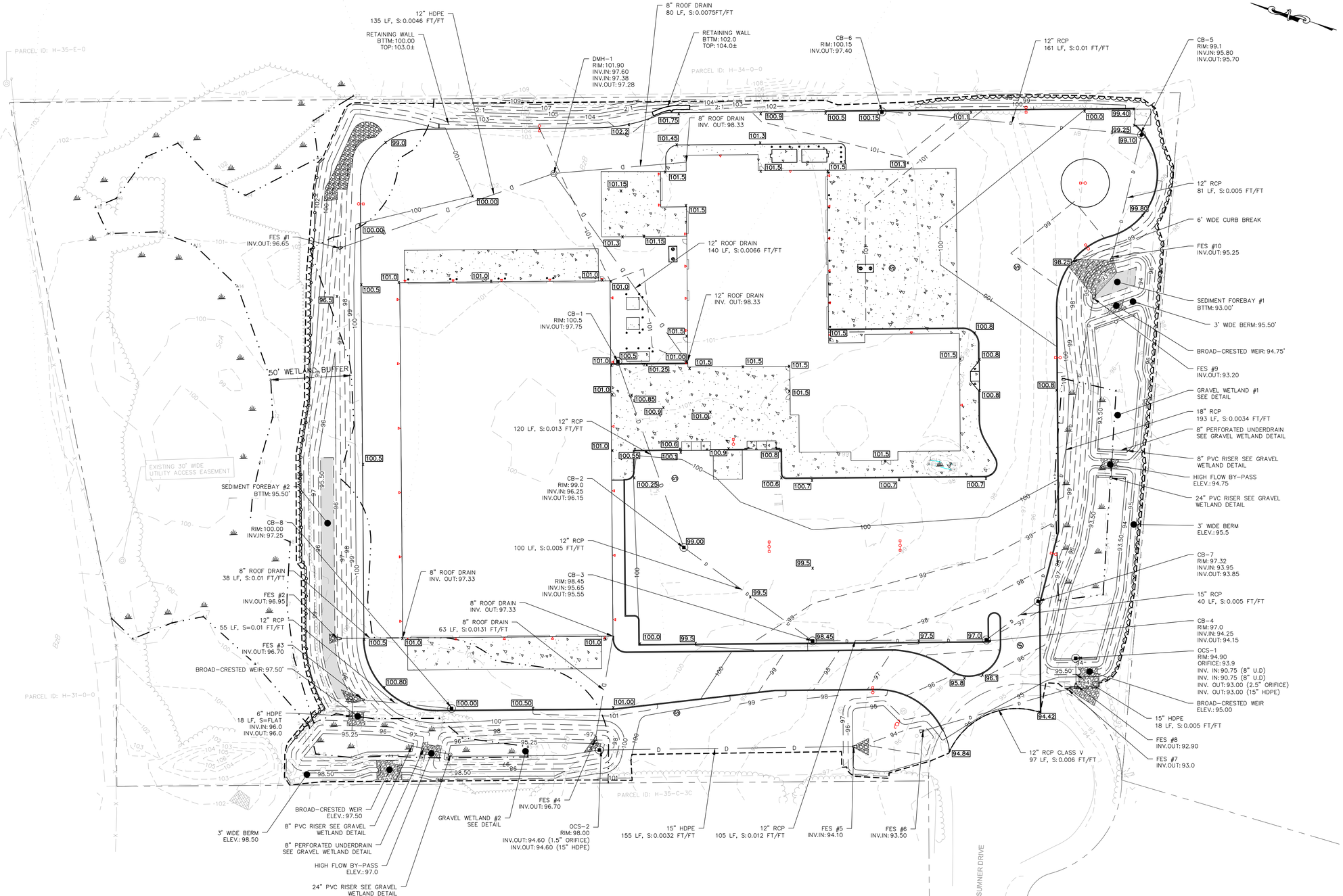
STATE OF NEW HAMPSHIRE – BENJAMIN C. CLARK No. 15019 LICENSED PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 1" = 30'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Utilities Plan
Dover Planning File: Site-2023-002

drawing no. C-4

sheet: 9 of 28



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NEW HAMPSHIRE – 4323 – BENJAMIN C. CLARK No. 15019 LICENSED PROFESSIONAL ENGINEER – STATE OF

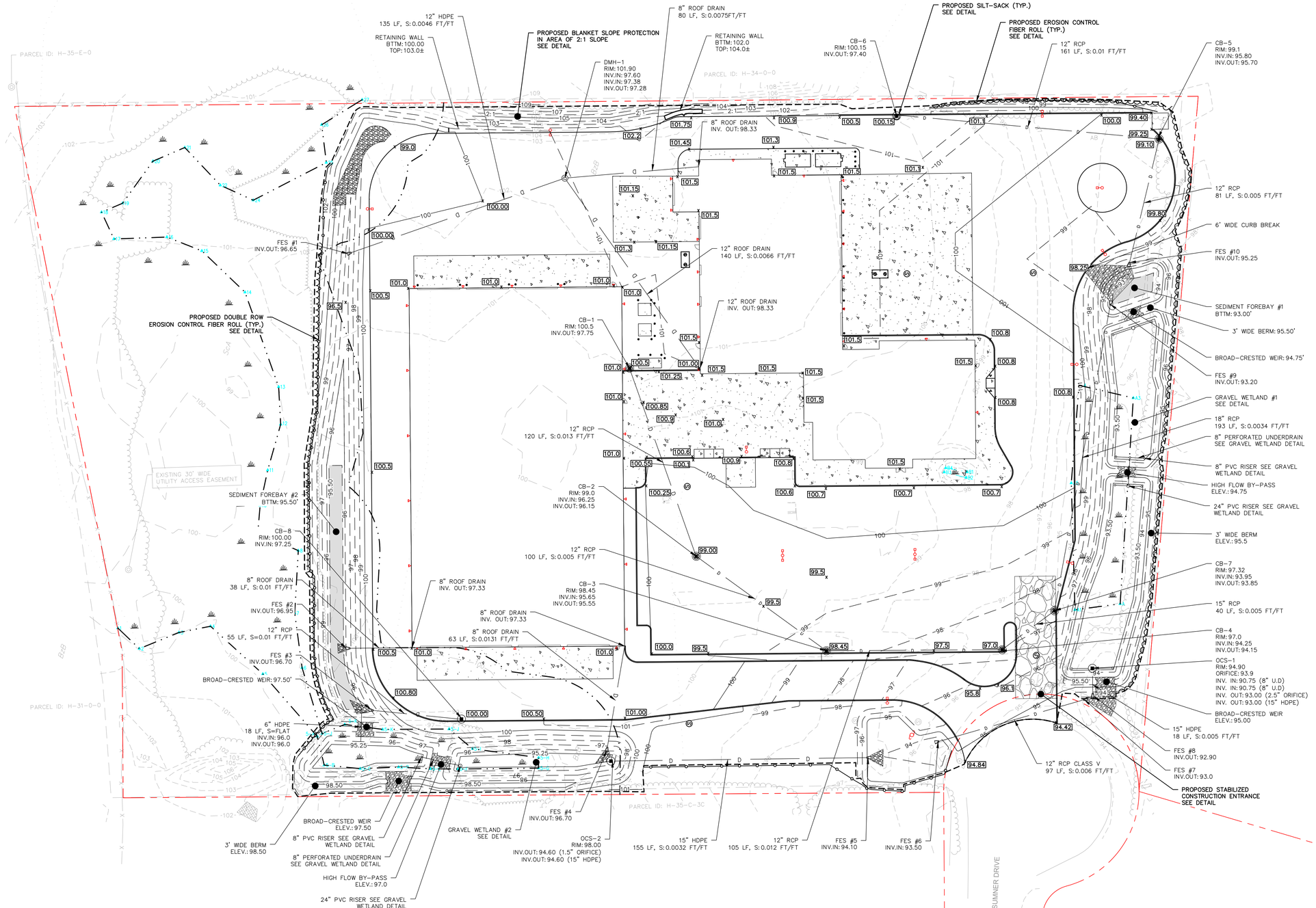
designed by: CFC
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: PAC
scale: 30' 0 60' Scale: 1" = 30'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Grading & Drainage Plan
Dover Planning File: Site-2023-0002

drawing no. C-5

sheet: 10 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Grade and Drain Plan.dwg Date Plotted: Sep 05, 2023 – 3:57pm Plotted By: CCHARAMONTE



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STATE OF NEW HAMPSHIRE – BENJAMIN C. CLARK No. 15019 LICENSED PROFESSIONAL ENGINEER

designed by: CFC
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 40' 20' 0 Scale: 1" = 20'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Sediment and Erosion Control Plan
Dover Planning File: Site-2023-0002

drawing no. C-6

sheet: 11 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Grade and Drain Plan.dwg Date Plotted: Sep 05, 2023 – 3:57pm Plotted By: CCHIARAMONTE

LANDSCAPE GENERAL NOTES

1. ALL LANDSCAPE PLANTINGS SHALL BE LABELED WITH GENUS, SPECIES AND CULTIVAR. AT MINIMUM ONE PLANTING FROM EACH SPECIES SHALL BE LABELED. LABELING SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION.
2. ANY PLANTING MATERIALS THAT ARE NOT OF PROPER SPECIES, SIZE, OR IN GOOD CONDITION SHALL BE REJECTED.
3. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES BEFORE BEGINNING LANDSCAPING INSTALLATION.
4. ALL SEEDED AREAS SHALL HAVE A MINIMUM OF 6 INCHES OF TOPSOIL DEPTH. TOPSOIL TO BE TREATED WITH A 12–25–12 PELLETIZED FERTILIZER @ 10 LBS. PER 1,000 SQUARE FEET. ALL SEEDED AREAS TO BE POWER RAKED PRIOR TO SEEDING.
5. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING A THICK, WEED FREE LAWN THROUGH THE FIRST MOWING.
6. SOIL PLANTING MIXTURE SHALL BE A 6%–10% ORGANIC TOPSOIL, AMENDED WITH 10% WOOD ASH, 10% MANURE, & 30% PEAT MOSS(OR INCORPORATE ALL–GRO OR A SIMILAR DEHYDRATED NATURAL COMPOST MATERIAL. ALL PLANT MATERIAL PITS SHALL RECEIVE A MINIMUM OF 20% ALL–GRO OR EQUAL PLANT AMENDMENT.
7. PERENNIAL BEDS TO HAVE A MINIMUM DEPTH OF 12 INCHES OF SOIL PLANTING MIXTURE OVER UNCOMPACTED SUBGRADE.
8. ALL B&B MATERIAL WHICH ARE ENCASED IN WIRE BASKETS SHALL HAVE THE WIRES CUT LOOSE AND THE TOP THIRD REMOVED.
9. IF ROAD BASE IS ENCOUNTERED IN THE PLANTING BEDS IT SHALL BE REMOVED AND REPLACED WITH AMENDED PLANTING MATERIAL.
10. MULCHED AREAS SHALL HAVE A MINIMUM DEPTH OF 4" OF PINE/HEMLOCK BARK MULCH OVER WEED BARRIER FABRIC.
11. STONE BED AREAS TO HAVE A MINIMUM 3 INCHES OF NATURAL NON–CRUSHED STONE OVER WEED BARRIER FABRIC.
12. TREES SHALL HAVE A 4 INCH COVERING OF PINE/HEMLOCK MULCH. TREES SHALL HAVE A 6 FOOT DIAMETER SAUCER WITH A 'V' GROOVE EDGE.
13. TREES SHALL BE GUYED IN A TRIPOD FASHION WITH 2" X 2" X 8' HARDWOOD STAKES.
14. ALL PLANTING SHALL BE HAND WATERED IMMEDIATELY AFTER PLANTING. PLANTINGS SHALL BE MONITORED FOR THE MAINTENANCE PERIOD (90 DAYS) AND APPLY ADDITIONAL WATERING AS REQUIRED FOR PLANT ESTABLISHMENT.
15. THE CONTRACTOR IS TO PROVIDE A ONE YEAR WARRANTY ON ALL PLANTED MATERIALS. AT ONE YEAR FROM DATE OF INSTALLATION, ANY PLANTINGS NOT IN GOOD CONDITION SHALL BE REPLACED; ALL GUYS AND STAKES ARE TO BE REMOVED FROM TREES AND ANY LAWN BARE SPOTS ARE TO BE RESEEDED.

PLANT MATERIAL LEGEND

ACE	ACER SACCHARUM 'FALL FIESTA' (SUGAR MAPLE)	2 ½" CAL.
ZEL	ZELKOVA SERRATA (GREEN VASE ZELKOVA)	2 ½" CAL.
BET	BETULA NIGRA MULTISTEM (RIVER BIRCH)	6'–7'
CAL	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' (REED GRASS)	#2 GAL.
RUB	RUDBECKIA FULGIDA SULLIVANTII 'GOLDSTURM' (BLACK EYED SUSAN)	#2 GAL.
SAL	SALVIA X SYLVESTRIS (BLUE HILL SAGE)	#1 GAL.

SEED MIXTURES

NEW ENGLAND WETLAND PLANTS, NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES

BLUE SEAL LANDSCAPER'S LAWN SEED MIX

MISC. PRODUCTS

BARK MULCH: PREMIUM BLEND PINE/HEMLOCK MULCH

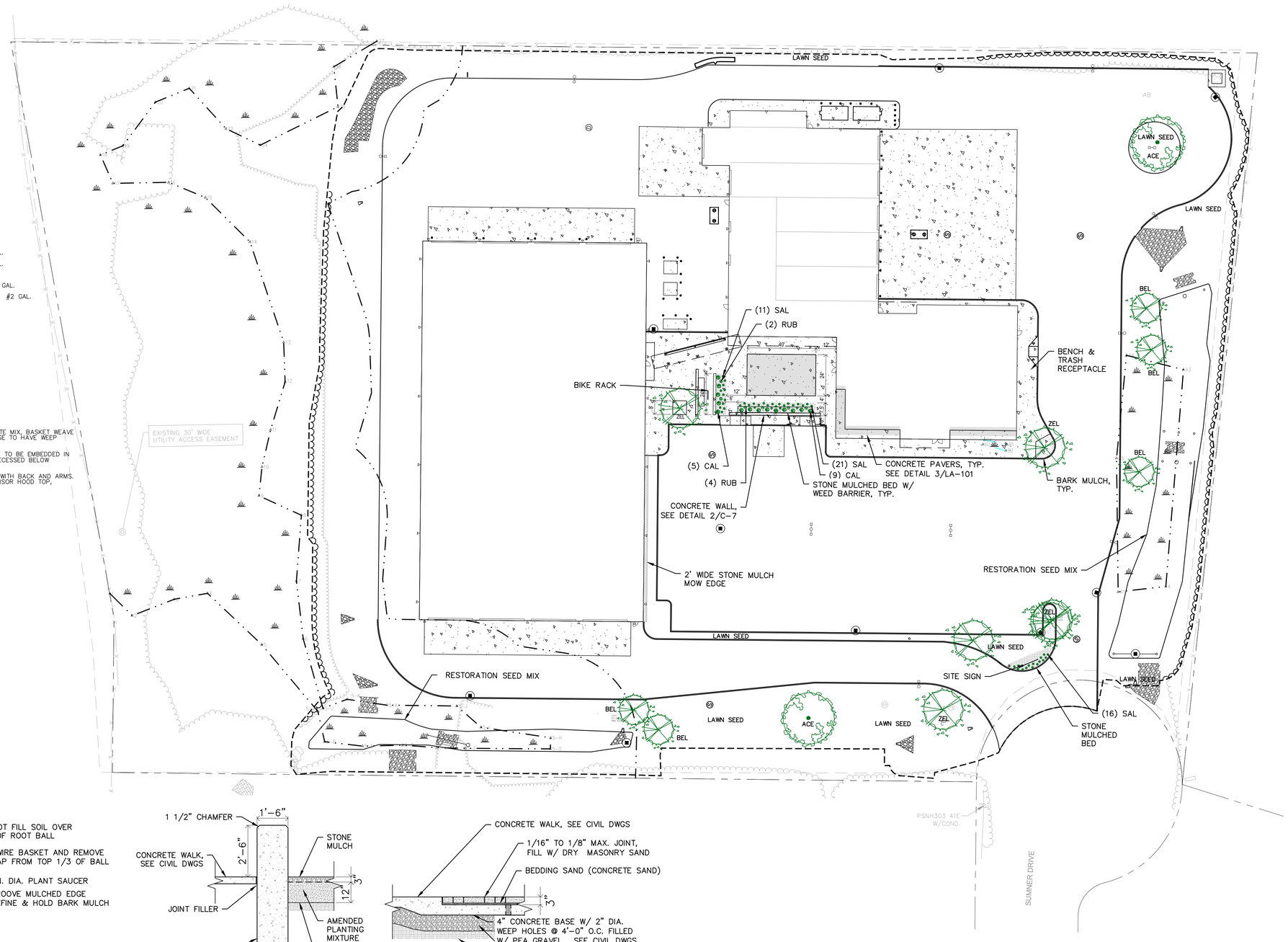
STONE MULCH: NON–CRUSHED ROOF BALLAST W/ 5 OZ. WEED BARRIER

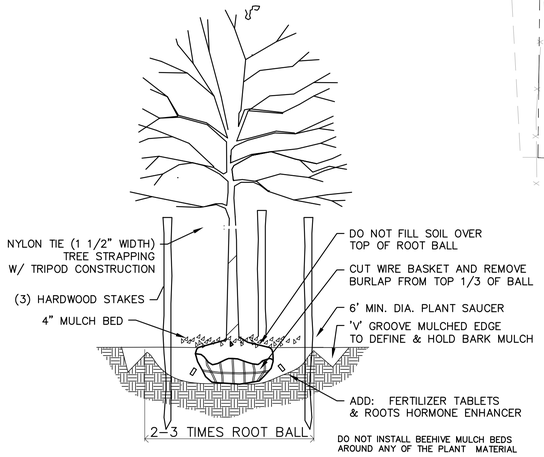
ADDITIONAL ITEMS

CONCRETE PAVERS: GENEST 4" X 8" X 2 3/8" PAVER, HOLLANDSTONE, COLOR: GRANITE MIX, BASKET WEAVE LAYING PATTERN, PAVERS TO SET IN SAND BED OVER A CONCRETE BASE. CONCRETE BASE TO HAVE WEEP HOLES @ 4'–0" O.C. SEE CIVIL DRAWINGS.

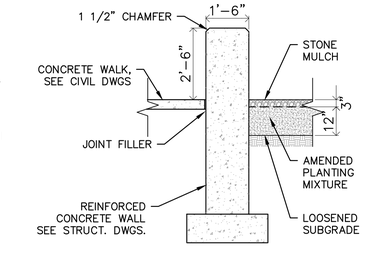
BIKE RACK: PILOT ROCK "SADDLEBACK" 7 BIKE RACK, HOT DIP GALVANIZED FINISH. RACK TO BE EMBEDDED IN 16" DIA. TUBE FOUNDATIONS, 4 FEET DEEP, 3000 LB. CONCRETE. FOUNDATIONS TO BE RECESSED BELOW CONCRETE WALK.

BENCH & TRASH CONTAINER: 6' RECYCLED PLASTIC AND POWDER COATED STEEL BENCH WITH BACK AND ARMS. MADISON CONTOUR BENCH MANUF. ANOVA: 35 GAL. MADISON TRASH RECPETACLE WITH VISOR HOOD TOP, MATERIALS TO MATCH BENCH.

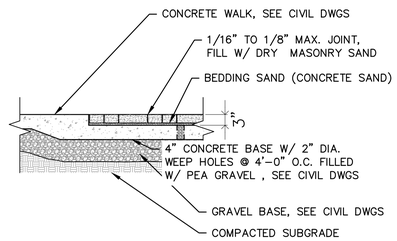




4 C-7 **TREE PLANTING DETAIL**
NTS



2 C-7 **CONCRETE WALL SECTION DETAIL**
NTS



3 C-7 **PAVER INSTALLATION DETAIL**
NTS

no.	revision	date	by
2	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
1	Revised for City of Dover TRC Comments	7/27/23	BCC

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LICENSED ARCHITECT ROBERT E. DOYLE No. 03893 STATE OF NEW HAMPSHIRE

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: PAC
scale: 60" 30" 0 Scale: 1" = 30'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Landscape Plan
Dover Planning File: Site-2023-002

drawing no. C-7

sheet: 12 of 28

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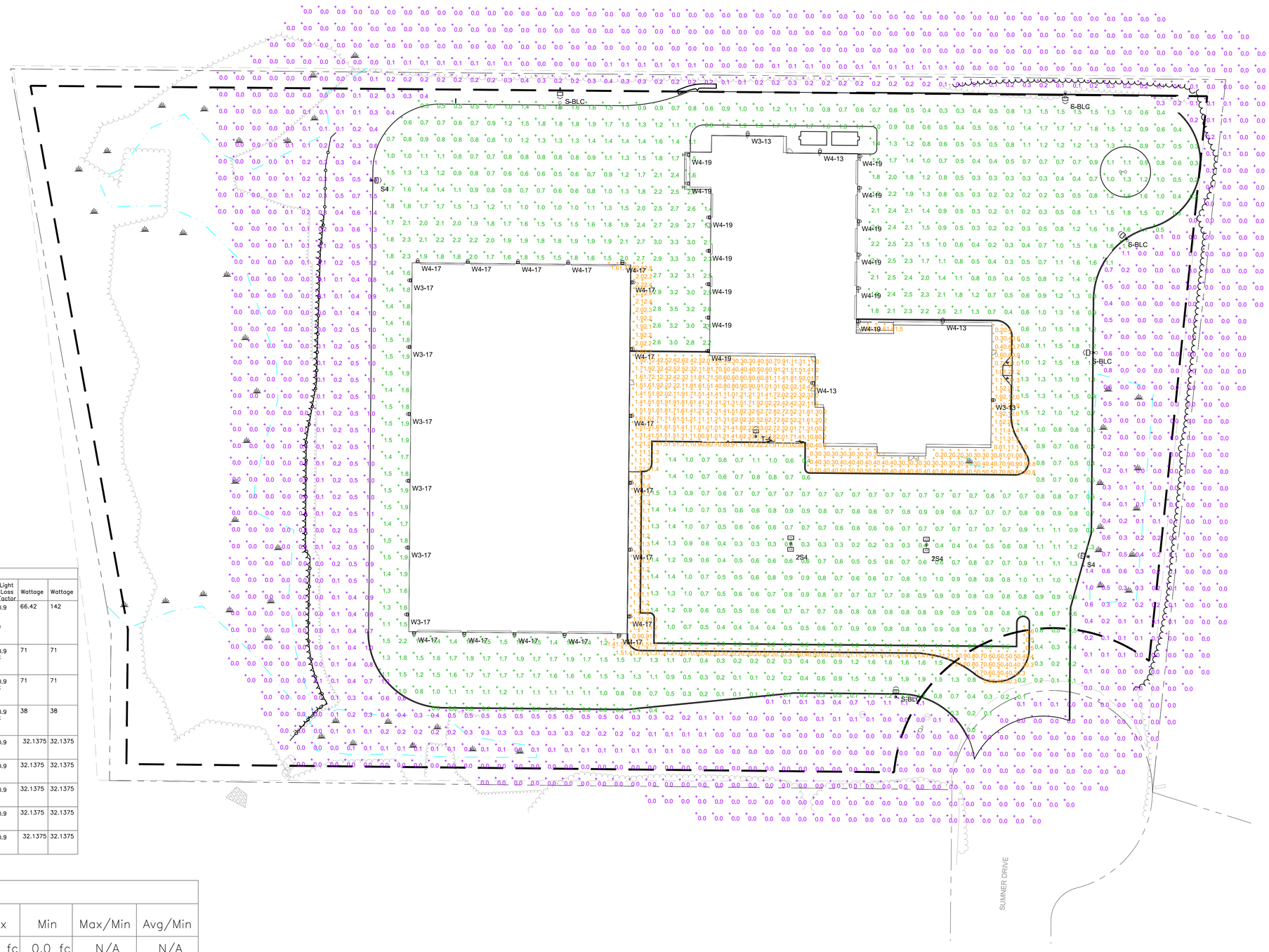

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Light Loss Factor	Wattage	Wattage
	2S4	2	Lithonia Lighting	DSX0 LED P1 30K 80CRI BLC3 with SSS 22 4C DM280AS DDBXD	D-Series Size 0 Area Luminaire P1 Performance Package 3000K CCT 70 CRI Type 3 Extreme Backlight Control	0.9	66.42	142
	S4	2	Lithonia Lighting	DSX0 LED P3 30K TFTM MVOLT SPA DDBXD with SSS 22 4C DM19AS DDBXD	DSX0 LED Area Fixture mounted at 24.5ft (22ft pole on 2.5ft base)	0.9	71	71
	S-BLC	5	Lithonia Lighting	DSX0 LED P3 30K BLC MVOLT SPA DDBXD with SSS 22 4C DM19AS DDBXD	DSX0 LED Area Fixture mounted at 24.5ft (22ft pole on 2.5ft base)	0.9	71	71
	T-4	1	Lithonia Lighting	DSX0 LED P1 30K TFTM MVOLT SPA DDBXD with SSS 12 4C DM19AS DDBXD	DSX0 LED Area Fiture mounted at 12.5ft (12ft pole on 0.5ft base)	0.9	38	38
	W3-13	2	Lithonia Lighting	WDGE2 LED P3 30K 80CRI T3M SRM DDBXD	WDGE2 LED Wallpack; mounted at 13ft	0.9	32.1375	32.1375
	W3-17	6	Lithonia Lighting	WDGE2 LED P3 30K 80CRI T3M SRM DDBXD	WDGE2 LED Wallpack; mounted at 17ft	0.9	32.1375	32.1375
	W4-13	3	Lithonia Lighting	WDGE2 LED P3 30K 80CRI TFTM SRM DDBXD	WDGE2 LED Wallpack; mounted at 13ft	0.9	32.1375	32.1375
	W4-17	16	Lithonia Lighting	WDGE2 LED P3 30K 80CRI TFTM SRM DDBXD	WDGE2 LED Wallpack; mounted at 17ft	0.9	32.1375	32.1375
	W4-19	13	Lithonia Lighting	WDGE2 LED P3 30K 80CRI TFTM SRM DDBXD	WDGE2 LED Wallpack; mounted at 19ft	0.9	32.1375	32.1375

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Outside of Parking Lot	+	0.1 fc	1.5 fc	0.0 fc	N/A	N/A
Parking Lot	+	1.1 fc	3.5 fc	0.0 fc	N/A	N/A
Sidewalk/Patio	+	1.3 fc	3.4 fc	0.1 fc	34.0:1	13.0:1

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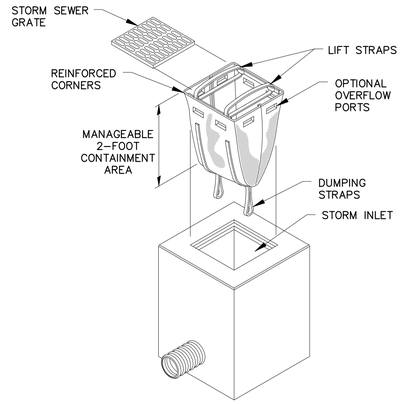
Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Lighting Plan
Dover Planning File: Site-2023-002

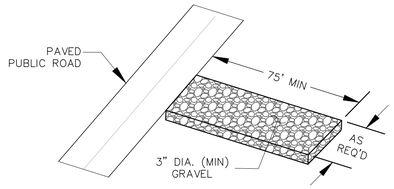
drawing no. C-8

sheet: 13 of 28



"Silt Sack" Sediment Control Device for Inlet Protection

Not to Scale



CONSTRUCTION SPECIFICATIONS:

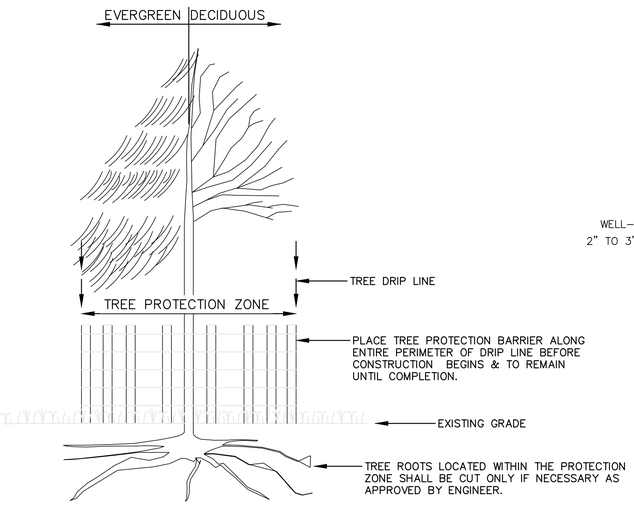
1. STONE SIZE – USE 3" STONE (MIN)
2. LENGTH – AS REQUIRED, 75 FEET (MIN)
3. THICKNESS –Six (6) INCHES (MIN)
4. WIDTH – NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PERFORMED AFTER EACH RAIN.
9. THE MINIMUM LENGTH OF THE PAD SHOULD BE 75', EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50' IF A 3" to 6" HIGH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE

B Stabilized Construction Entrance

Not to Scale

Erosion Control Notes:

1. PERIMETER CONTROLS TO BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
2. PRIOR TO CONSTRUCTION AND THEREAFTER EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING THE SITE).
3. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. LAND SHOULD NOT BE LEFT EXPOSED DURING THE WINTER MONTHS.
4. CATCH BASIN INSERTS, MIRAFI DANDY SACK OR EQUAL, SHALL BE INSTALLED AND MAINTAINED AT CATCH BASINS UNTIL PAVEMENT IS INSTALLED. SEDIMENT AND DEBRIS SHALL BE REMOVED FOLLOWING EACH STORM EVENT.
5. ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISH GRADED WITH NO FURTHER CONSTRUCTION TO TAKE PLACE SHALL BE SEEDED AND MULCHED. ALL DISTURBED AREAS OUTSIDE LIMITS OF BUILDING, AND PAVEMENT SHALL BE STABILIZED WITH LOAM AND SEED. ALL SEED, LIME AND FERTILIZER PROGRAMS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS.
6. ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, OR LONGER THAN TWO WEEKS AND WHICH WILL BE RE-GRADED LATER DURING CONSTRUCTION, SHALL BE TEMPORARILY SEEDED AND MACHINE STRAW MULCHED AT A RATE OF 1.5 TONS/ACRE.
7. AVOID USE OF UNDISTURBED AREAS WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL TRAVEL THE ROADBEDS OF EXISTING AND FUTURE ROADS AND SHALL BE LIMITED TO WITHIN THE LIMITS OF CONSTRUCTION NOTED ON THE PLANS.
8. EROSION CONTROL DEVICES SHOWN REPRESENT MINIMUM MEASURES REQUIRED FOR EROSION CONTROL. THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PREVENT TRANSPORTATION OF SEDIMENT BEYOND THE WORK AREA.
9. ALL STORMWATER MANAGEMENT SYSTEMS SHALL BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
10. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND ACCUMULATED SEDIMENT DISPOSED OFF IN A LOCATION DESIGNATED BY THE OWNER.
11. WITHIN THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES COMPREHENSIVE SHORELAND PROTECTION ACT 250' BUFFER, ONLY LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER OR LIMESTONE, MAY BE USED ON LAWNS OR AREAS WITH GRASS.
12. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
13. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
14. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY 0.5" OF RAINFALL.
15. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
16. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
    - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
    - A MINIMUM OF 3" OF NO-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
    - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
18. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
19. TEMPORARY SEEDING (IF USED) SHALL BE PERENNIAL RYE GRASS, SPREAD 0.7LB/1000 SQ. FT.
20. WINTER CONSTRUCTION NOTES
    - ALL PROPOSED VEGETATED AREAS WHICH 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, ELSEWHERE. 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;
    - ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
    - AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.



Temporary Tree Protection

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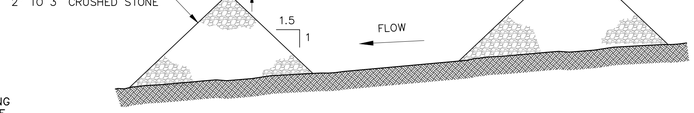
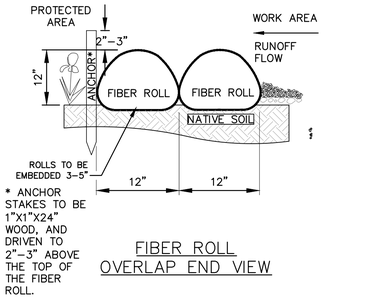


NOTES:

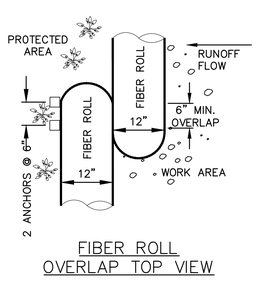
1. PLACE CRUSHED STONE TO WITHIN 6" OF TOP OF DRAINAGE WAY.
2. FOR ACTIVE DRAINAGE OUTFLOW CHECK DAMS SHALL BE PLACED IN SERIES (100-FEET MIN) ALONG FLOW LINE TO RETAIN SEDIMENTS.
3. THE MAXIMUM HEIGHT OF THE STONE CHECK DAM SHALL NOT EXCEED 2 FEET.
4. STONE CHECK DAMS SHALL BE CHECKED AFTER EACH RAINFALL AND REPAIRED IMMEDIATELY.
5. THE MAXIMUM SPACING BETWEEN THE DAMS SHALL BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE OVERFLOW ELEVATION OF THE DOWNSTREAM DAM.

Stone Check Dam

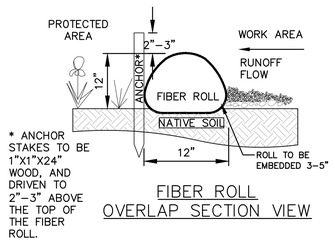
Not to Scale



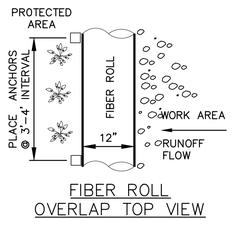
FIBER ROLL OVERLAP END VIEW



FIBER ROLL OVERLAP TOP VIEW



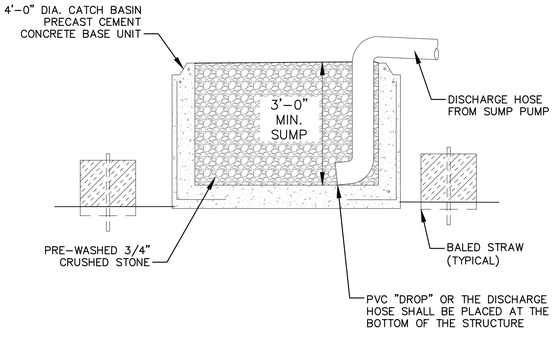
FIBER ROLL OVERLAP SECTION VIEW



FIBER ROLL OVERLAP TOP VIEW

Erosion Control Fiber Roll

Not to Scale



Dewatering Basin (Section)

Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
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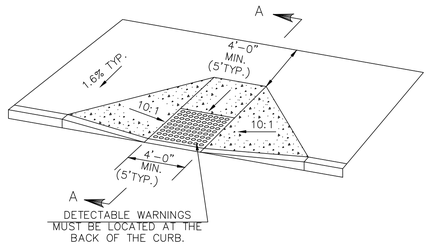
STATE OF NEW HAMPSHIRE – BENJAMIN C. FRENCH No. 15215 – PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale:

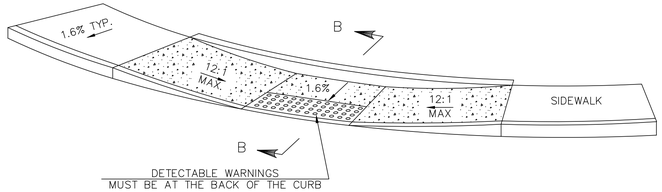
Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-1

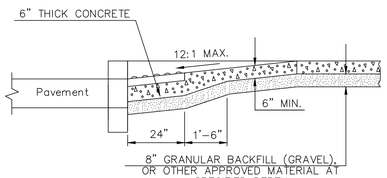
sheet: 14 of 28



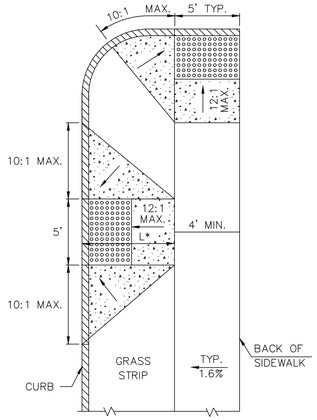
PERPENDICULAR CURB RAMP DETAIL



PARALLEL CURB RAMP DETAIL



SECTION A–A



PERPENDICULAR RAMP WITH GRASS PANEL

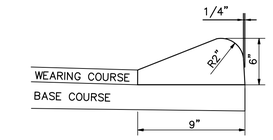
* LENGTH OF RAMP VARIES WITH SLOPE & WIDTH OF GRASS PANEL

THE ORDER OF PREFERENCE FOR LOCATION OF CORNER RAMPS:

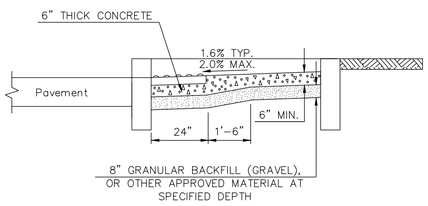
1. TWO SEPARATE RAMPS LOCATED ON TANGENT SIDEWALK AREA IMMEDIATELY OUTSIDE OF CORNER RADIUS.
2. TWO SEPARATE RAMPS SEPARATED BY 5' MINIMUM AS SHOWN ABOVE.
3. SINGLE RAMP SERVING TWO CROSSWALKS.

GENERAL NOTES

1. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB RAMP IS 12:1, THE MAXIMUM CROSS SLOPE IS 2%. THE SLOPE OF THE LANDING SHALL NOT EXCEED 2% IN ANY DIRECTION. RAMP RUNNING SLOPE EXCEPTION: A GREATER THAN 8.33% RAMP RUNNING GRADE IS ALLOWED WHERE THE THE ROADWAY AND THE SIDEWALK(S) ARE PARALLEL AND VERY CLOSE TOGETHER, WITH THE SAME GRADE, AND USING A GRADE OF 8.33% WOULD RESULT IN A RAMP LENGTH LONGER THAN 15'. IN THOSE CIRCUMSTANCES USE A MAXIMUM RAMP LENGTH OF 15' AND THE ALLOWABLE RUNNING SLOPE OF THE RAMP(S) IS GREATER THAN 8.33%
2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. ROADWAY SHOULDER SLOPES ADJOINING SIDEWALK CURB RAMPS SHALL BE A MAXIMUM OF 5% (FULL WIDTH) FOR A DISTANCE OF 2 FT. FROM THE ROADWAY CURB LINE.
3. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF SIDEWALK CURB RAMPS OR LANDINGS. CATCH BASINS, MANHOLES, ETC. SHALL NOT BE LOCATED IN, OR AT THE BASE OF, SIDEWALK CURB RAMPS OR LANDINGS.
4. THE BOTTOM OF THE SIDEWALK CURB RAMP OR LANDING, EXCLUSIVE OF THE FLARED SIDES, SHALL BE WHOLLY CONTAINED WITHIN THE CROSSWALK MARKINGS.
5. THE SURFACE OF A PERPENDICULAR SIDEWALK CURB RAMP OR THE LANDING OF A PARALLEL SIDEWALK CURB RAMP SHALL CONTRAST VISUALLY WITH THE ADJOINING SIDEWALK SURFACE, EITHER ASPHALT/LIGHT–COLORED CONCRETE OR LIGHT–COLORED CONCRETE/DARK–STAINED CONCRETE. THE CONCRETE SURFACE SHALL BE SLIP RESISTANT.
6. 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.

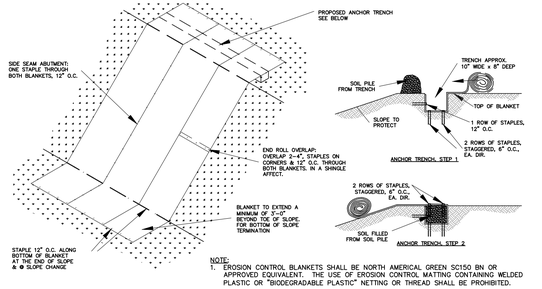


D *Bituminous Concrete Curb*
Not to Scale

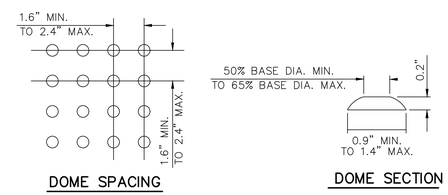


SECTION B–B

A *Sidewalk & Curb Ramp Details*
Not to Scale

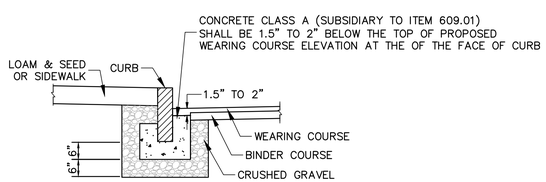


E *Erosion Control Blanket Slope Detail*
Not to Scale



DOME SPACING

DOME SECTION



B *Granite Curb w/ Concrete Backing*
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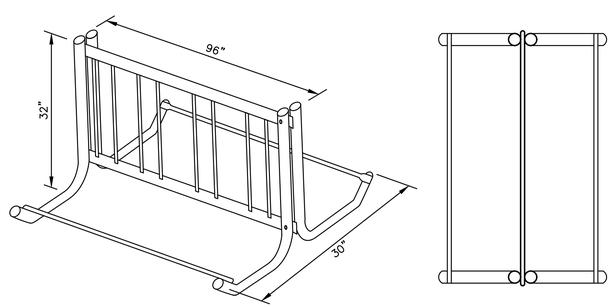
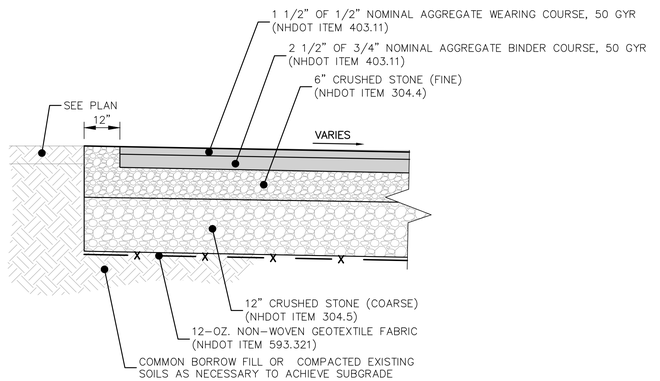


PERSPECTIVE

TOP VIEW

C ***Bike Rack***
Not to Scale



F *General Bituminous Pavement Section*
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
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BENJAMIN C. CLARK No. 15215 STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
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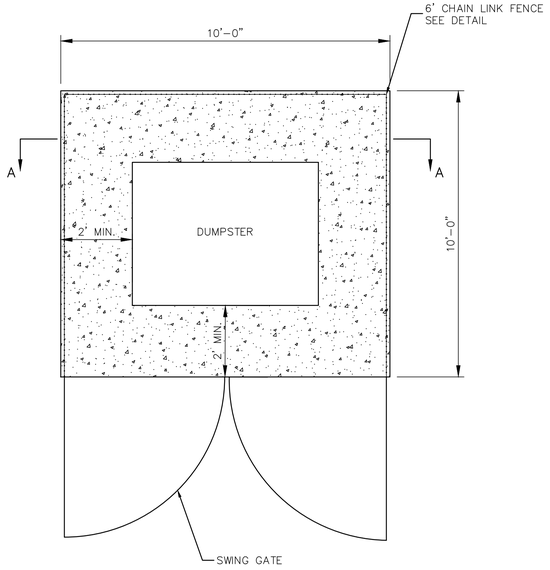
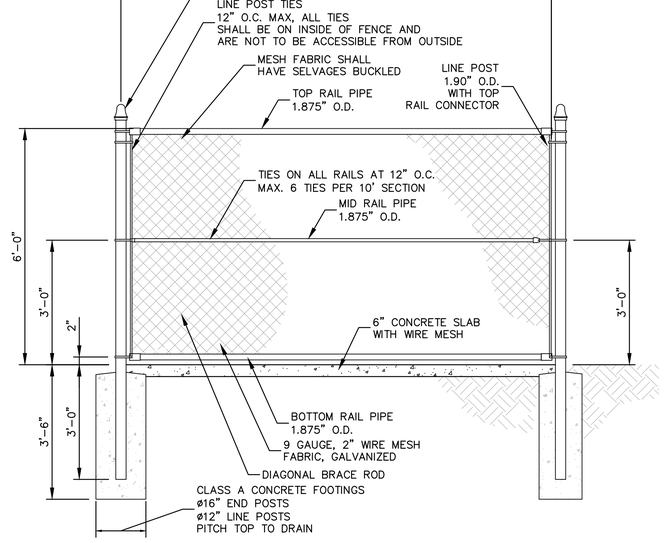


Plan

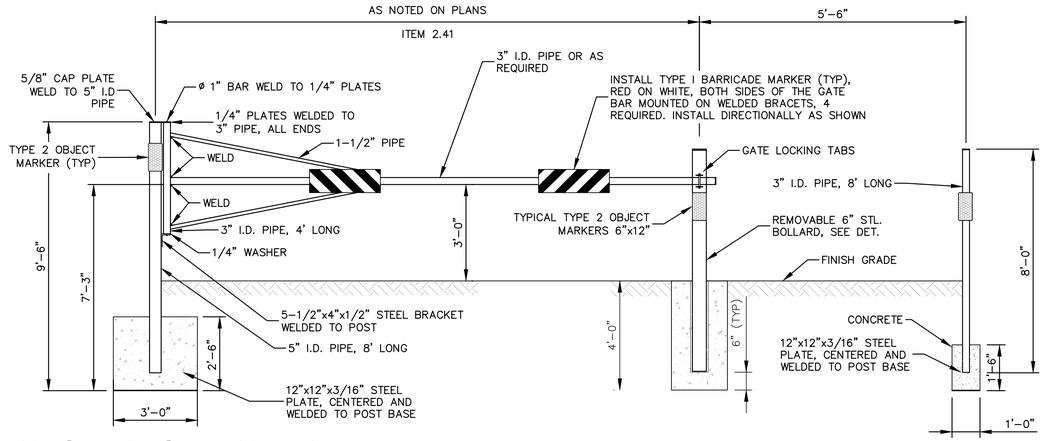


NOTES:

1. GATES AND POSTS SHALL BE HOT DIPPED GALVANIZED STEEL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND/OR CATALOG CUTS FOR APPROVAL PRIOR TO FABRICATION

Section A-A

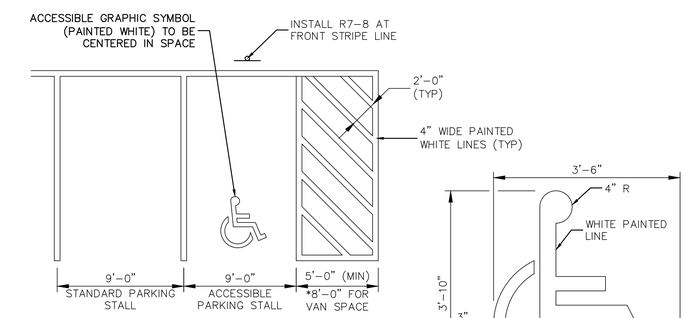
A *Chain Link Dumpster Enclosure*
Not to Scale



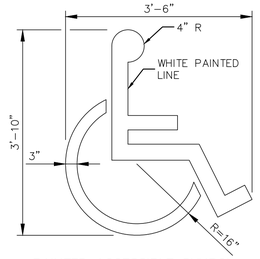
NOTES:

1. GATES AND POSTS SHALL BE HOT DIPPED GALVANIZED STEEL PAINTED GLOSS YELLOW. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND/OR CATALOG CUTS FOR APPROVAL PRIOR TO FABRICATION
2. STEEL POSTS AND SWING ARMS SHALL BE 3" I.D. MINIMUM.
3. CONCRETE FOOTINGS AND GRAVEL BASE ARE SUBSIDIARY.
4. SECURITY GATES SHALL INCLUDE LOCKS AND KEYS AS SPECIFIED.
5. DRILL ø 1/4" HOLES 4'-0" CENTER TO CENTER IN BOTTOM OF GATE ARM FOR DRAINAGE.
6. A SECOND LOCKING POST SHALL BE INSTALLED BEHIND THE GATE, AS STAKED BY THE ENGINEER, ENABLING THE GATE TO BE LOCKED OPEN. TYPICAL TO LOCKING POST.

B *Security Gate with Pedestrian Access*
Not to Scale



NOTE:
1. ALL PAINT SHALL BE FAST DRYING WHITE TRAFFIC PAINT MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOLS, SIGNS, & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WITH DISABILITIES ACT.
3. *SEE SITE PLAN FOR VAN LOCATIONS



PAINTED ACCESSIBLE SYMBOL
ITEM 2.36

C *Parking Stall Striping Detail*
Not to Scale

SIGNING NOTES:

1. EXISTING SIGNS THAT CONFLICT WITH THE PROPOSED LAYOUT SHALL BE REMOVED OR RELOCATED AS DIRECTED BY THE ENGINEER. THIS WORK PAID UNDER CONTRACT ITEMS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND RELOCATION OF ALL ROADWAY SIGNS. ANY SIGNS DAMAGED DURING THE COMPLETION OF WORK SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
3. NOTE NEW REFLECTIVITY REQUIREMENTS IN THE 2016 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 718 PUBLISHED BY THE NHDOT.
4. REFER TO THE 2016 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AS PUBLISHED BY THE NHDOT FOR EXACT DETAILS OF PERMANENT SIGNING STANDARDS AND NHDOT SPECIFIC SIGNS.
5. REFER TO THE LATEST EDITION OF THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT-FHWA FOR EXACT DETAILS OF BORDERS, ETC.
6. THE MINIMUM SIGN HEIGHT FOR A ROAD SIGN IN A RURAL PROJECT SHALL BE 6-FEET. ALL OTHER SIGN HEIGHTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD.
7. ALL WARNING SIGNS SHALL HAVE TYPE IV BACKGROUND SHEETING UNLESS OTHERWISE SPECIFIED.
8. ALL EXISTING SIGNS THAT ARE REMOVED ARE TO BE STORED BY THE CONTRACTOR AND RESET AS DIRECTED. ANY EXISTING SIGNS TO BE RESET THAT ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS ARE TO BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.
9. WHERE NEEDED, SIGNS POSTS SHALL BE U-CHANNEL, DIRECT BURIED, SINGLE POST.

SIGN TABLE (ITEM 2.42)

IDENT #	SIGN SIZE WIDTH (INCH)	SIGN SIZE HEIGHT (INCH)	TEXT	TEXT DIMENSIONS LETTER HEIGHT (INCH) UC	LC	CAPS	SHIELD SIZE (INCH)	ARROW (INCH)	NUMERAL (INCH)	# SIGNS REQ'D	SIGN AREA (SQ. FT) NOM. AREA	TOTAL AREA
R1-2	30	30	YIELD	REFER TO MUTCD AND ITS LATEST REVISIONS						1	2.70	2.70
W1-6R	36	12		REFER TO MUTCD AND ITS LATEST REVISIONS						1	3.00	3.00
R7-8	12	18	RESERVED PARKING	REFER TO MUTCD AND ITS LATEST REVISIONS						4	1.50	6.00
R7-8a	12	6	VAN ACCESSIBLE	REFER TO MUTCD AND ITS LATEST REVISIONS						4	0.50	2.00
R8-3	12	18	NO PARKING	REFER TO MUTCD AND ITS LATEST REVISIONS						1	1.50	1.50
R5-1	30	30	DO NOT ENTER	REFER TO MUTCD AND ITS LATEST REVISIONS						2	6.25	12.50
NA	18	24	AUTHORIZED VEHICLES ONLY	–						2	3.00	6.00

D *Sign Table*
Not to Scale

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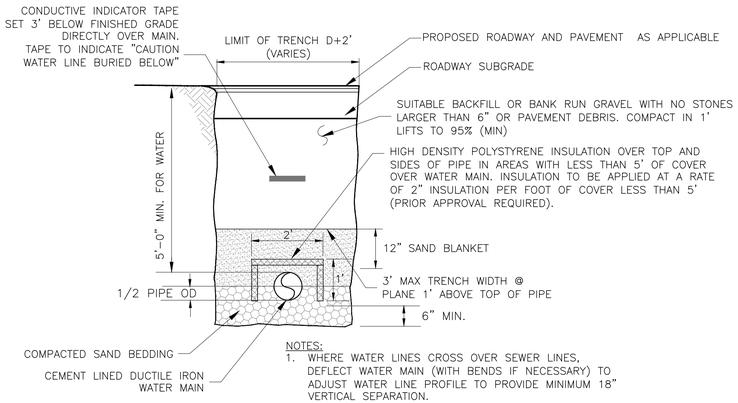
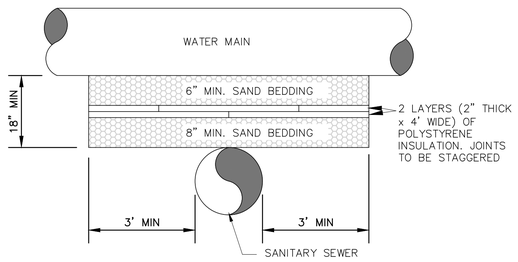


NOTES:
1. WHERE WATER LINES CROSS OVER SEWER LINES, DEFLECT WATER MAIN (WITH BENDS IF NECESSARY) TO ADJUST WATER LINE PROFILE TO PROVIDE MINIMUM 18" VERTICAL SEPARATION.

A Typical Water Main Trench

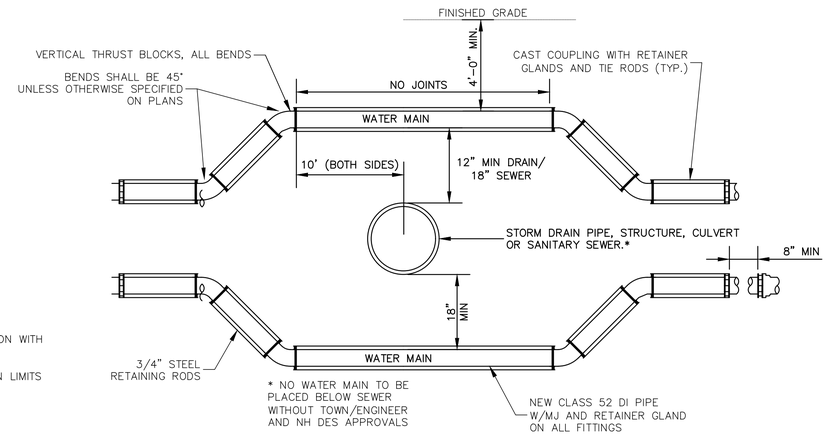
Not to Scale



WATER MAIN INSTALLATION NOTES:
1. INSULATION TO BE USED WHERE VERTICAL PIPE SEPARATION IS 24" OR LESS AND HORIZONTAL SEPARATION WITH A SEWER MANHOLE OR OTHER OPEN STRUCTURE IS 6' OR LESS.
2. INSTALL VERTICAL MJ BENDS WITH RESTRAINED JOINT FITTINGS OR SWEEP PIPE WITHIN THE SPECIFICATION LIMITS IF NECESSARY TO ADJUST WATER MAIN PROFILE TO GAIN MINIMUM VERTICAL SEPARATION ABOVE SEWER.
3. 2" OF INSULATION TO BE USED AROUND WATER SERVICE CONNECTIONS WHERE PIPE CROSSINGS OCCUR.
4. WHERE WATER MAIN CROSSES SEWER AT 45° TO 90° PROVIDE MAXIMUM SPACING OF PIPE JOINTS FROM CROSSING LOCATION FOR BOTH WATER MAIN AND SEWER PIPE.

B Water/Utility Crossing

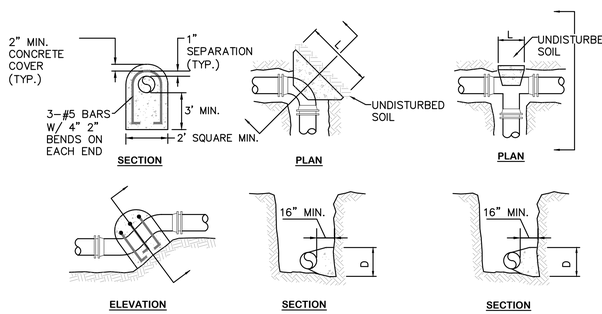
Not to Scale



NOTES:
1. PROVIDE NEW LINE USING CONTINUOUS LENGTHS OF POLYETHYLENE PIPE. NO COUPLING ALLOWED IN ROADWAY WITHOUT APPROVAL OF ENGINEER.
2. TAPS TO BE MADE AT APPROX. 10:00 AND 2:00
3. PROVIDE FOR SERVICE LINE CONTRACTION AND EXPANSION BY INSTALLING "S" IN SERVICE LINE NEAR MAIN.
4. IF SERVICE IS INSTALLED WITH LESS THAN 5'-0" COVER, INSULATE OVER LINE.
5. IF SERVICE HAS LESS THAN ADEQUATE SEPARATION (10' HORIZONTAL/18" VERTICAL-ABOVE) FROM SEWER MAINS/SERVICES, PROVIDE RIGID INSULATION ON TWO SIDES OF SERVICE PIPE.
6. TRACER WIRE (#10 INSULATED) SHALL BE PLACED ALONG THE SERVICE LINE AND SHALL BE A CONTINOUS LENGTH (WITHOUT SPLICES), EXCEPT FOR THE SPLICE AT THE STOP BOX, WHICH SHALL BE MADE WITH A COPPER CRIMP OR SPLIT BOLT CONNECTOR.
7. INSERT STAINLESS STEEL STIFFENERES REQUIRES ON ALL FLEXIBLE PLASTIC CONNECTIONS.
5. PRESSURE TEST, DISINFECT, AND FLUSH ALL WATER SERVICE CONNECTIONS.
6. CONNECT CURB STOP TO EXISTING SERVICE AT PROPERTY LINE OR AT LOCATION APPROVED BY THE ENGINEER (NO COUPLING WITHOUT APPROVAL OF ENGINEER).

C Water Service Installation

Not to Scale



NOTES:
1. Thrust blocks shall be precast concrete, except thrust blocks for vertical bends can be CIP concrete.
2. The minimum bearing areas shown above are based on a system pressure of 100 PSI. If the system pressure is above 100 psi, increase the noted areas proportional to the actual system pressure. For example, if the actual system pressure is 160 psi, multiply the above values by 160%.
3. Place thrust blocks such that the length (L) of the block is approximately twice as long as the depth (D).
4. Place thrust blocks against undisturbed soil.
5. Place thrust blocks along the full length of the fitting to maximize bearing area.
5. Place 2 layers of polyethylene or roofing paper around fittings prior to placement of the concrete to create a bond break & protect the bolts.
6. Place a solid concrete block between cap/plugs and thrust blocks.
7. Place a 12" long steel horseshoe-shaped pickup hook in all plug and cap thrust blocks. Diameter of hook shall be a minimum of 5/8".
8. Use of thrust blocks does not eliminate the requirement of retainer glands.
9. Thrust blocks are required on all fittings.
10. Coat all threaded rods, nuts, and bolts with bituminous paint.
11. Place anti-seize lubricant on all bolts.

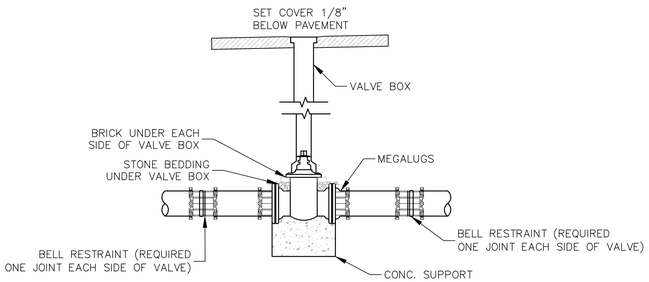
THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE							
Nominal Dia. (in)	4	6	8	10	12	16	20	24
Tees, Caps, Plugs, & Tapping Sleeves	1.05	2.32	4.15	6.37	9.15	16.23	25.44	36.58
90 Degree Bends	1.48	3.29	5.86	9.01	12.93	22.96	35.97	51.73
45 Degree Bends	0.80	1.78	3.17	4.88	7.00	12.42	19.47	28.00
22-1/2 Degree Bends	0.41	0.91	1.62	2.49	3.57	6.33	9.92	14.27
11-1/4 Degree Bends	0.21	0.46	0.81	1.25	1.79	3.18	4.99	7.17

System Pressure: 100psi
Safety Factor: 1.5
Soil Bearing Capacity: 2,000psf

E Thrust Blocks

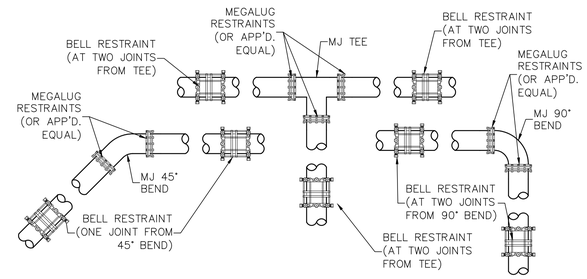
Not to Scale



NOTES:
1. VALVE BOXES SHALL BE HEAVY PATTERN CAST IRON, TWO PIECE, SLIP TYPE, 5-INCH DIAMETER SHAFT WITH EXTENSION PIECES TO ALLOW SUFFICIENT COVER.
2. THE UPPER SECTION OF THE BOX SHALL BE TOP-FLANGE TYPE TO PREVENT SETTLEMENT.
3. THE LOWER SECTION SHALL BE BELLED-TYPE TO ENCLOSE THE OPERATING NUT OF THE VALVE.
4. THE COVER SHALL BE CAST IRON WITH THE WORD "WATER" PLAINLY CAST THEREON.
5. GATE VALVES SHALL OPEN LEFT.

F Valve & Valve Box Detail

Not to Scale



NOTES:
1. JOINT RESTRAINT IS REQUIRED AT ALL FITTINGS PER THE ABOVE TABLE.

VALVE	RESTRAINED JOINTS
IN LINE VALVES	BELL RESTR'T'S REQUIRED 1 JOINT EACH SIDE/VALVE

FITTING	RESTRAINED JOINTS
22.5° BEND	1 EACH SIDE
45° BEND	1 EACH SIDE
90° BEND	2 EACH SIDE
TEE	1 EA SIDE/RUN 2 ON BRANCH

G Joint Restraint Detail

Not to Scale

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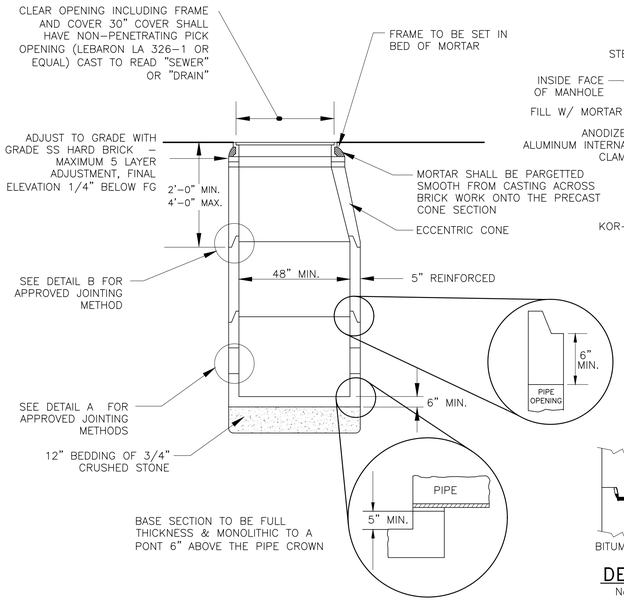
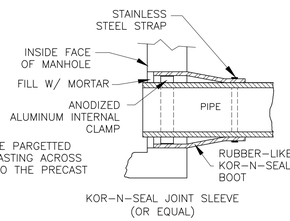
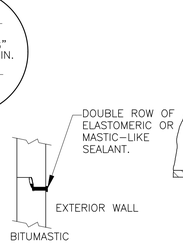
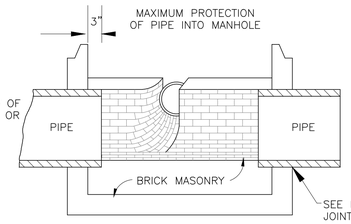




DETAIL A
Not to Scale



DETAIL-B
Not to Scale



SECTION A - A
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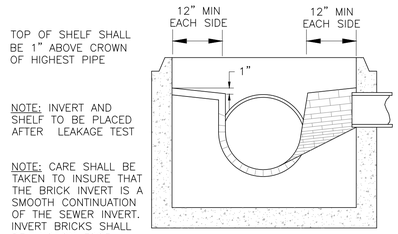

SECTION B - B
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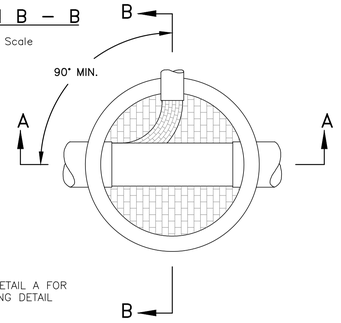


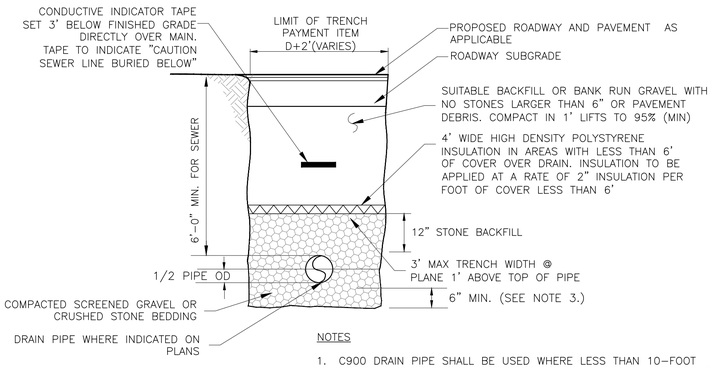
TYPICAL SEWER MANHOLE PLAN
Not to Scale

NOTES:

1. ALL SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
2. MANHOLE BARRELS AND CONE SECTIONS SHALL BE REINFORCED PRECAST CONCRETE.
3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C 478.
4. LEAKAGE TEST SHALL BE PERFORMED PRIOR TO BACKFILL IN ACCORDANCE WITH THE SPECIFICATIONS.
5. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TO THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
6. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) "SEWER" OR "DRAIN" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
7. BEDDING: 3/4" CRUSHED STONE
8. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATERTIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET APPLIED IN DOUBLE ROWS.
9. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL WILL DEPEND FOR WATERTIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.
10. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS: RAM-NEK KENT SEAL NO. 2EZ
11. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
12. NO MANHOLE STEPS ARE ALLOWED.

A

Sewer Manhole Detail
Not to Scale



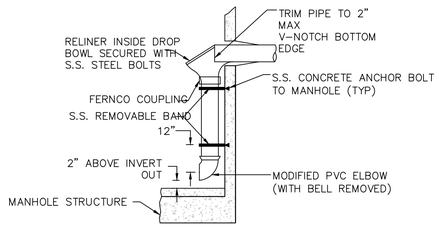
SCREENED GRAVEL BEDDING

PERCENT PASSING	SIEVE SIZE
100%	1"
90-100%	3/4"
20-55%	3/8"
0-10%	#4
0-5%	#8

NOTES

1. C900 DRAIN PIPE SHALL BE USED WHERE LESS THAN 10-FOOT HORIZONTAL SEPARATION BETWEEN WATER AND SEWER LINE OCCURS.
2. WHERE WATER LINES CROSS OVER DRAIN LINES, PROVIDE 22 1/2° MJ BENDS AND THRUST BLOCKS TO ADJUST WATER LINE PROFILE TO PROVIDE MINIMUM 18" VERTICAL SEPARATION.
3. WHERE LEDGE IS ENCOUNTERED, THE TRENCH SHALL BE EXCAVATED 12 INCHES BELOW THE BOTTOM OF THE PIPE.

B
Typical Sanitary Drain Trench
Not to Scale

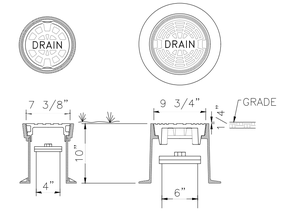


INTERNAL DROP

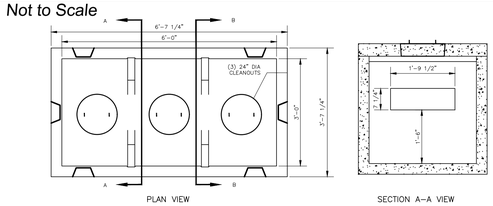
NOTES:

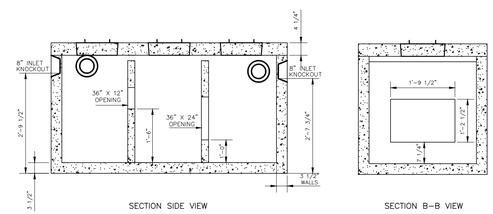
1. INTERNAL DROPS ARE PROHIBITED UNLESS APPROVED BY THE CITY ENGINEER.
2. IF DROP IS FOR AN EXISTING MANHOLE, REWORK SHELF TO FORM NEW CHANNEL FOR NEW DROP CONNECTIONS.
3. BRICK INVERT NOT SHOWN ON DETAIL.

C
Sewer Drop Inlet
Not to Scale



Cast Iron Cleanout Covers
Not to Scale





NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGNED FOR AASHTO HS-20 LOADING, 1 TO 5 FT COVER ALSO AVAILABLE IN H-10 LOADING WITH 3" WALL.
3. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.

BAFFLE WALL DETAIL

D
Oil Water Separator
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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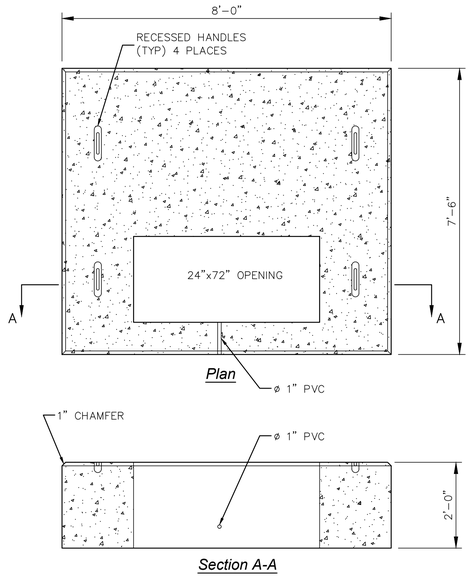
STATE OF NEW HAMPSHIRE - 4232 - CLAIRE C. BENJAMIN - PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-5

sheet: 18 of 28



Plan

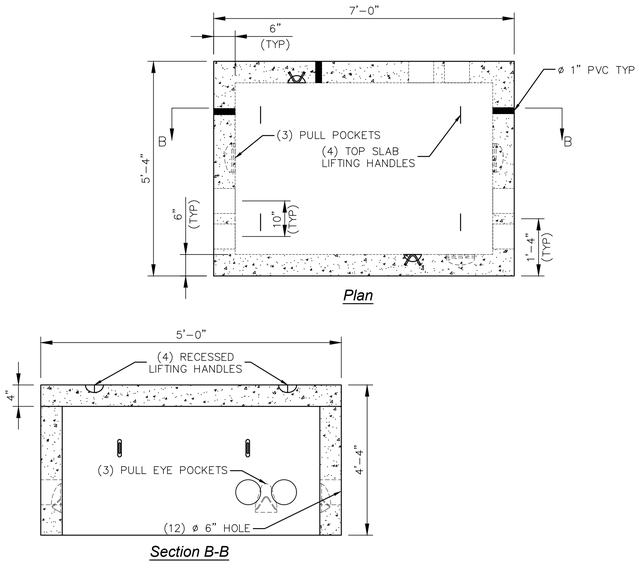
Section A-A

NOTES:

1. CONCRETE MINIMUM 4,000 PSI AFTER 28 DAYS.
2. REINFORCEMENT STEEL SHALL CONFORM TO ASTM A615 GRADE 60.

A 3 Phase 500 KVA Transformer Pad Detail

Not to Scale



Plan

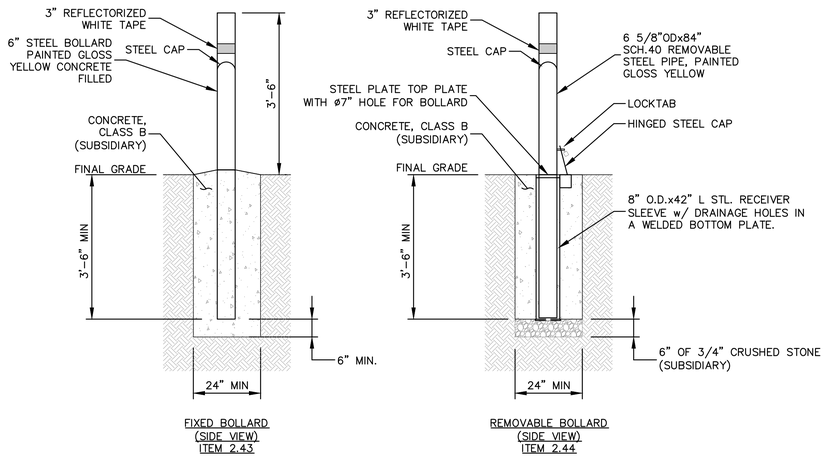
Section B-B

NOTES:

1. CONCRETE MINIMUM 5,000 PSI AFTER 28 DAYS.
2. REINFORCEMENT STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
3. DESIGNED FOR HS-20 LOADING.

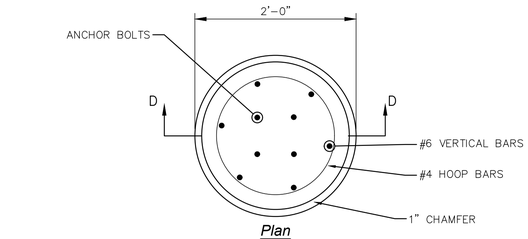
B Pull Box Detail

Not to Scale

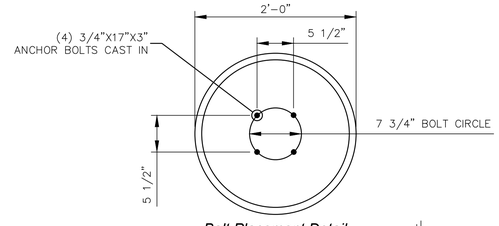


C Steel Bollard Detail

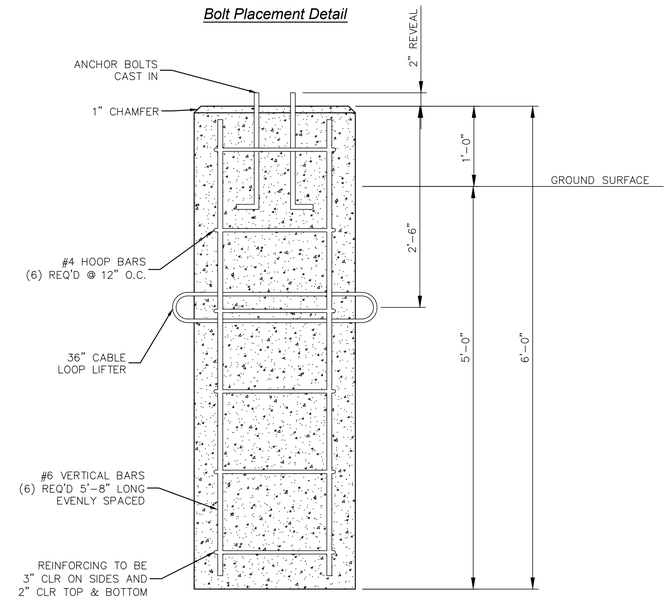
Not to Scale



Plan



Bolt Placement Detail



Section D-D

NOTES:

1. CONCRETE MINIMUM 5,000 PSI AFTER 28 DAYS.
2. LIGHT POLE BASE SIZE SHALL BE DESIGNED BY PROFESSIONAL ENGINEER AND SUBMITTED FOR REVIEW.

D Site Lighting Pole Foundation

Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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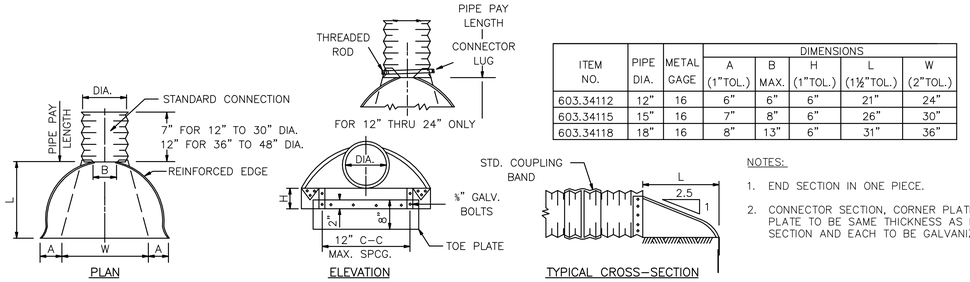
STATE OF NEW HAMPSHIRE – BENJAMIN C. CLARK No. 15393 – PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-6

sheet: 19 of 28

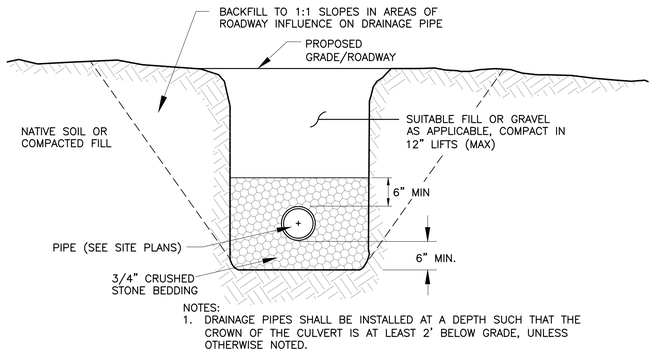


ITEM NO.	PIPE DIA.	METAL GAGE	DIMENSIONS				
			A (1"TOL.)	B MAX.	H (1"TOL.)	L (1½"TOL.)	W (2"TOL.)
603.34112	12"	16	6"	6"	6"	21"	24"
603.34115	15"	16	7"	8"	6"	26"	30"
603.34118	18"	16	8"	13"	6"	31"	36"

NOTES:

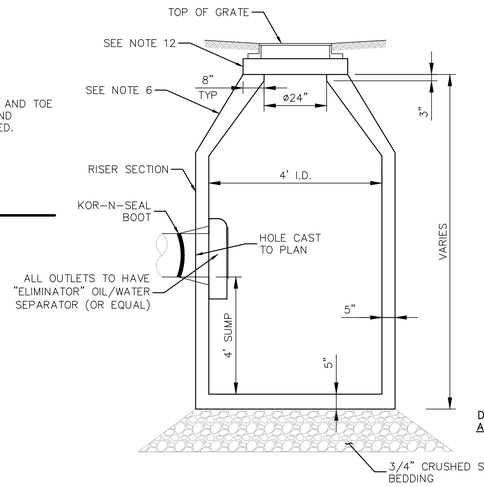
1. END SECTION IN ONE PIECE.
2. CONNECTOR SECTION, CORNER PLATE AND TOE PLATE TO BE SAME THICKNESS AS END SECTION AND EACH TO BE GALVANIZED.

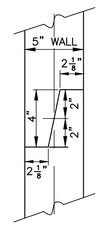
A End Section Detail
Not to Scale



NOTES:
1. DRAINAGE PIPES SHALL BE INSTALLED AT A DEPTH SUCH THAT THE CROWN OF THE CULVERT IS AT LEAST 2' BELOW GRADE, UNLESS OTHERWISE NOTED.

B Drainage Pipe
Not to Scale



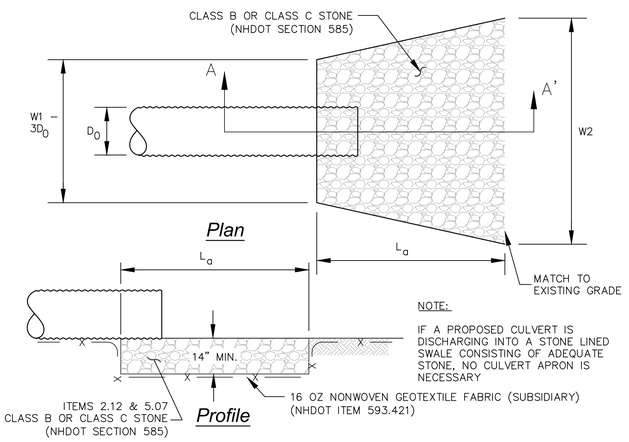


DETAIL OF TONGUE AND GROOVE JOINT

NOTES:

1. ALL STRUCTURES SHALL MEET H-20 LOADING. CONCRETE SHALL BE CLASS AA, 4,000 PSI AFTER 28 DAYS.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE OR THE GROOVE OF THE WALL JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FOOT.
4. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE EITHER AN APPROVED ELASTOMERIC OR BITUMASTIC-LIKE GASKET.
5. FOR BITUMASTIC TYPE JOINTS, THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS INCLUDE RAM-NEK, KENT SEAL NO. 2, EZ OR EQUAL.
6. ECCENTRIC CONES SHALL BE USED WHEN DEPTH TO CROWN OF SHALLOWEST PIPE EXCEEDS 30"; OTHERWISE FLAT TOP SLABS SHALL BE USED. RISERS OF 12", 36" AND 48" CAN BE USED TO REACH THE DESIRED DEPTH.
7. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES. NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.
8. PIPE-TO-MANHOLE JOINTS SHALL BE A RUBBER-LIKE KOR-N-SEAL BOOT OR APPROVED EQUAL
9. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
10. CATCH BASIN GRATES TO BE NHDOT TYPE B WITH FRAMES.
11. FRAME AND GRATES SHALL BE BROUGHT TO GRADE USING GRADE SS HARD BRICKS (2 COURSE MIN., 12" MAX.) LAID FLAT. FRAMES SHALL BE SET IN A FULL BED OF MORTAR AND SEALED WITH PORTLAND CEMENT.
12. MANHOLE FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS HINGE COVER PER CITY OF PORTSMOUTH STANDARD.
13. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.
14. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT
15. INVERT BRICKS SHALL BE LAIN ON EDGE.

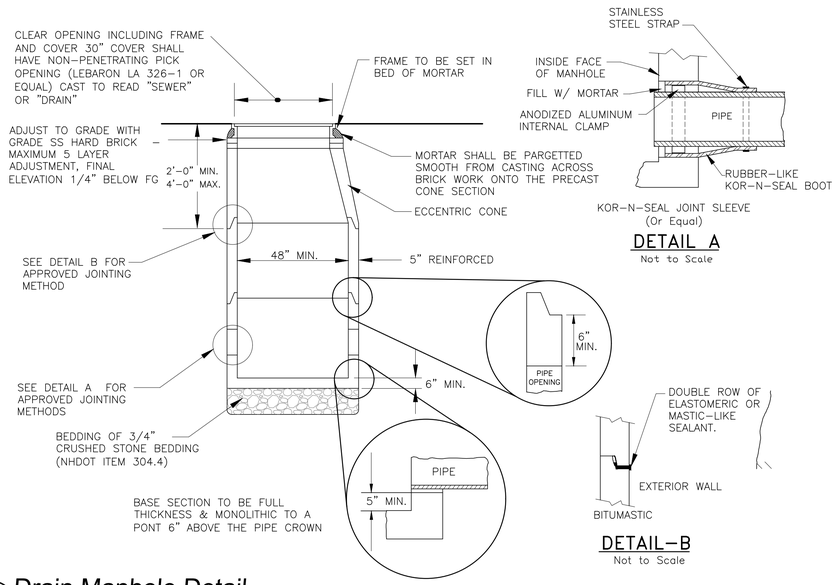
C 4' Diameter Catch Basin
Not to Scale



NOTE:

IF A PROPOSED CULVERT IS DISCHARGING INTO A STONE LINED SWALE CONSISTING OF ADEQUATE STONE, NO CULVERT APRON IS NECESSARY

D Stone Outlet Protection
Not to Scale



DETAIL A
Not to Scale

DETAIL-B
Not to Scale

NOTES:

1. ALL SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
2. MANHOLE BARRELS AND CONE SECTIONS SHALL BE PRECAST CONCRETE.
3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C 478.
4. LEAKAGE TEST SHALL BE PERFORMED PRIOR TO BACKFILL IN ACCORDANCE WITH THE SPECIFICATIONS.
5. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) "SEWER" OR "DRAIN" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
6. BEDDING: 3/4" CRUSHED STONE BEDDING (NHDOT ITEM 304.4).
7. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATERTIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET APPLIED IN DOUBLE ROWS.
8. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL WILL DEPEND FOR WATERTIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.
9. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS: RAM-NEK KENT SEAL NO. 2EZ
10. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
11. NO MANHOLE STEPS ARE ALLOWED.

E Drain Manhole Detail
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of DOver TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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c m a e n g i n e e r s . c o m

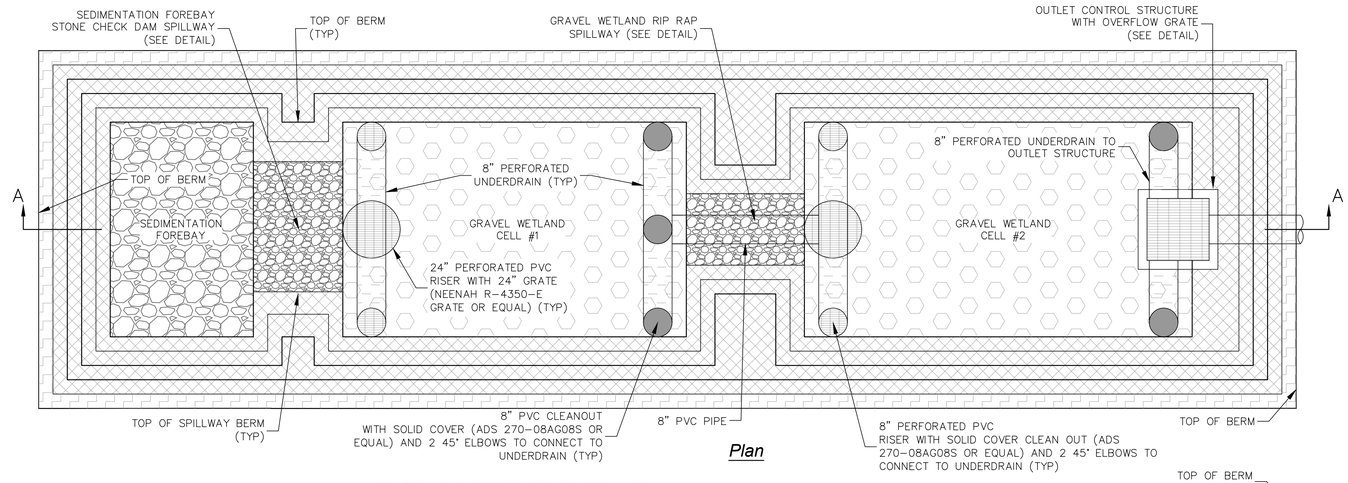
NEW HAMPSHIRE - 4232 - BENJAMIN C. PAGE - CLASS No. 1 - LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: nts

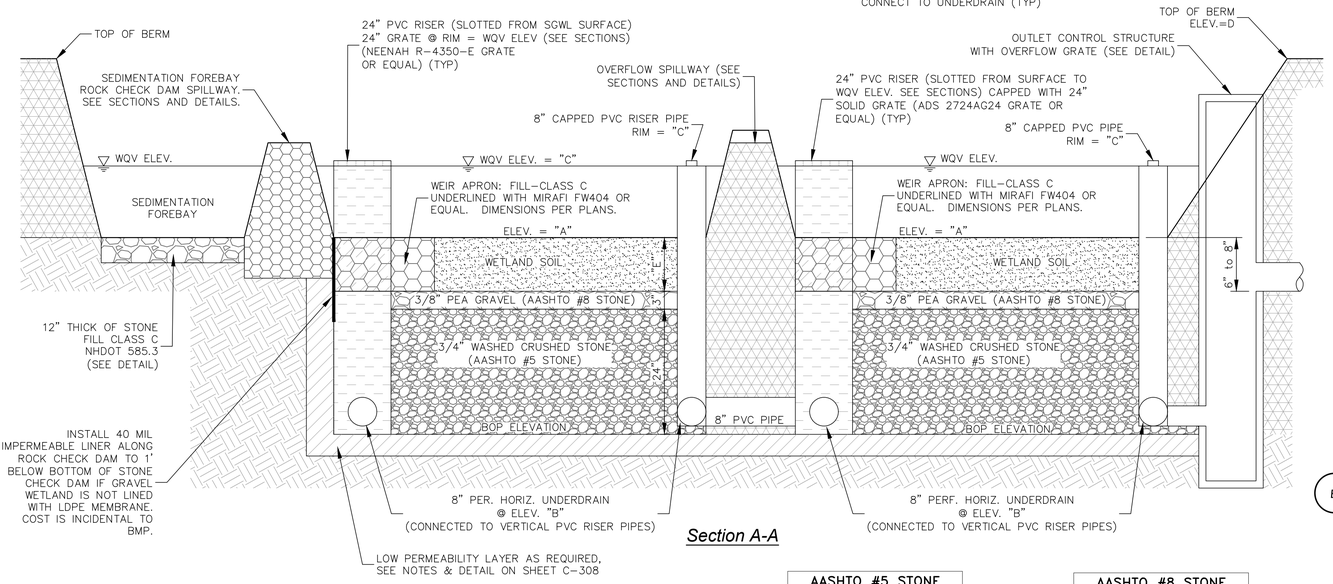
Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-7

sheet: 20 of 28



Plan



Section A-A

NOTES:

1. WETLAND SOIL SHALL BE A SANDY CLAY LOAM WITH A HYDRAULIC CONDUCTIVITY OF 0.1-0.01 FT/DAY. ORGANIC CONTENT SHALL BE GREATER THAN 15% BY VOLUME. CLAY CONTENT SHALL BE LESS THAN 15% BY VOLUME.
2. PERFORATED PVC RISER WITHIN WETLAND SOIL LAYER SHALL BE WRAPPED WITH MIRAFI 160N OR EQUAL.
3. PERFORATED PVC RISERS SHALL HAVE VERTICAL SLOTS CUT INTO PVC RISERS ABOVE GRADE MEASURING 3"x1/8".
4. BMP-2 WETLAND VEGETATION & FOREBAY SLOPES GRASSES SHALL BE SALT TOLERABLE.
5. RISERS AND CLEANOUTS RIM SHALL BE EQUAL TO OR GREATER THAN THE WQV ELEVATIONS. SEE BMP ELEVATIONS TABLE THIS SHEET.
6. RISERS SHALL BE PERFORATED FROM TOP OF WETLAND SOIL TO WQV ELEVATION (SEE BMP ELEVATIONS TABLE). SOLID PORTION OF RISER AND CLEANOUT COVER ADAPTER SHALL BE ABOVE THE WQV ELEVATION.

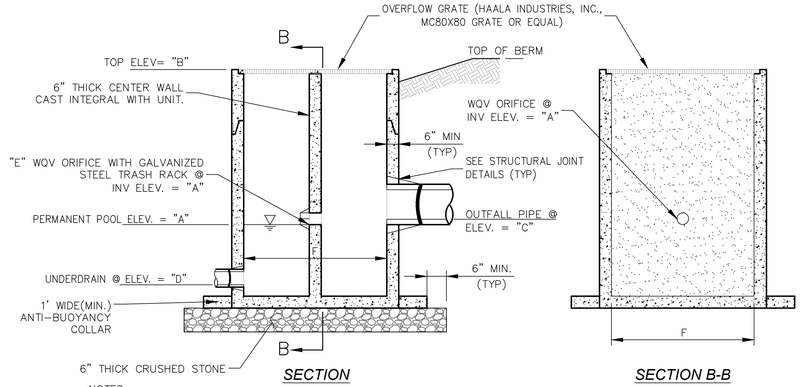
AASHTO #5 STONE (1" TO 1/2")	
SIEVE SIZE	% PASSING
1-1/2"	100
1"	90-100
3/4"	20-55
1/2"	0-10
3/8"	0-5

AASHTO #8 STONE (3/8" TO #8)	
SIEVE SIZE	% PASSING
1/2"	100
3/8"	85-100
#4	10-30
#8	0-10
#16	0-5

BMP ELEVATIONS		
	SUBSURFACE GRAVEL WETLANDS	
DIMENSION/ELEVATION	GW-1	GW-2
A	93.50	95.25
B	90.58	92.32
C (WQV ELEV)	93.76	97.13
D	95.0	98.50
E	8	8

A *Subsurface Gravel Wetland Detail*

Not to Scale



SECTION *SECTION B-B*

NOTES:

1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. PRECAST BOX STRUCTURE SHALL CONFORM TO ASTM C913 SPECIFICATIONS.
3. SEE DETAIL TITLE PIPE CONNECTION TO PRECAST MANHOLE STRUCTURES.
4. REINFORCEMENT:
   - 4.1. DEFORMED BARS SHALL CONFORM TO ASTM A-615 GRADE 60.
   - 4.2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185-GRADE 70
5. REIN. STEEL SHALL HAVE 1" MINIMUM COVER.
6. THE STRUCTURE SHALL BE DESIGNED FOR HS 20-44 LOADING AND TO PREVENT FLOTATION IF FULLY SUBMERGED.
7. CRUSHED STONE BEDDING SHALL CONFORM TO NHDOT 304.4.
8. PIPE ELEVATIONS SHOWN SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
9. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
10. OUTLET PIPE SHALL BE FLUSH WITH INNER WALL.
11. BASE SHALL BE A SINGLE CAST UP TO A MINIMUM OF 8 INCHES ABOVE OUTFALL PIPE OR TOP OF BMP SURFACE WHICH EVER IS HIGHER

STRUCTURE DIMENSIONS		
	POCS STRUCTURE ID	
ELEV.	OCS-1	OCS-2
A	93.00	94.58
B	94.90	98.00
C	93.00	94.58
D	90.58	-
E WQV ORIFICE DIA (IN)	2.5	1.5
F STRUCTURE LxW DIMENSIONS (IN)	48x48	48x48

B *Gravel Wetland Outlet Control Structures*

Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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STATE OF NEW HAMPSHIRE - BENJAMIN C. CLARK No. 15674 - PROFESSIONAL ENGINEER

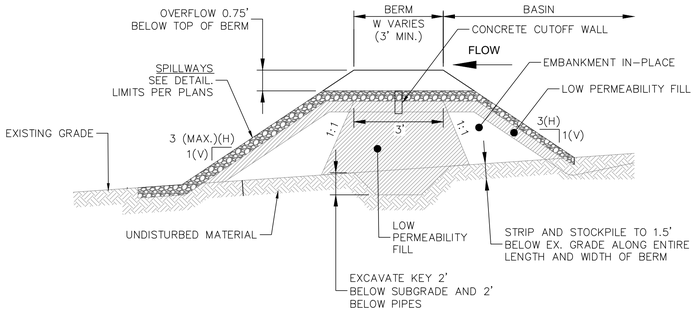
designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-8

sheet: 21 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250 - Details.dwg Date Plotted: Sep 05, 2023 - 3:58pm Plotted By: CCHIARAMONTE



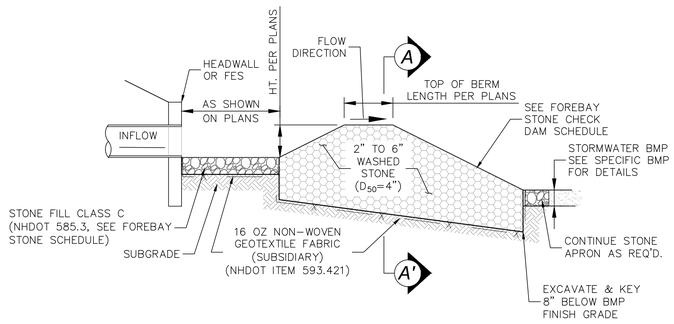
LOCATION	MATERIAL	NHDOT SPEC #	LOOSE LIFT THICKNESS (IN)	COMPACTION REQUIREMENTS (% MDD)[1]
EMBANKMENT	NATIVE SOIL[2]	203.6	12 (MAX)	92%[3]
LOAM COVER	BORROW[2]	646.51	4 (MIN)	80%
IMP. CORE	LOW PERMEABILITY	203.53	6 (MAX)	95%[3]

NOTES:
1. MDD: MAXIMUM DRY DENSITY.
2. ACCEPTABLE TO ENGINEER.
3. COMPACT TO TEST AVERAGE OF 92%, NO TEST LESS THAN 90.

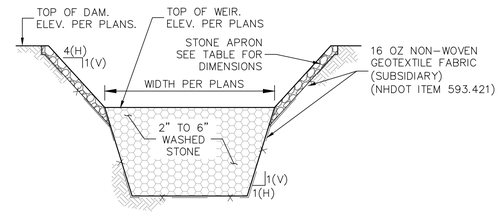
LOW PERMEABILITY FILL	
SIEVE SIZE	% PASSING
3 IN	100
#4	80-100
#40	60-90
#100	40-60
#200	25-45

A Stormwater Dam/Berm Detail
Not to Scale

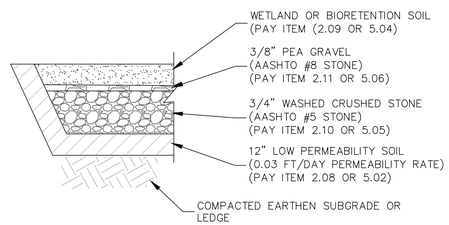
B Emergency/Highflow Bypass Weir and Spillway Detail
Not to Scale



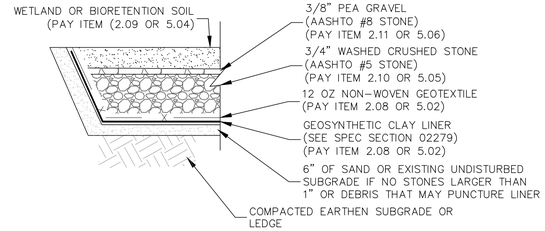
C BMP Forebay Rock Weir
Not to Scale



SECTION A-A



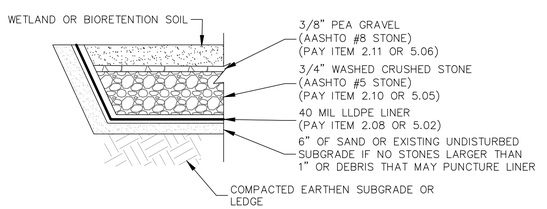
Low Permeability Soil
Alternative A



Geosynthetic Clay Liner (GCL)
Alternative B

LOW PERMEABILITY LAYER NOTES:

1. INFILTRATION TESTING OF THE NATIVE SOILS AT THE SUBGRADE AND WITHIN THE VICINITY OF THE PROPOSED GRAVEL WETLANDS AND BIORETENTION W/ ISR SHALL OCCUR PRIOR TO INSTALLATION AND SHALL BE COORDINATED WITH THE ENGINEER.
2. AN IMPERMEABLE LAYER (SEE ALTERNATIVES, THIS SHEET) SHALL BE USED IF EXISTING/INSITU SOILS HAVE GREATER THAN 10% FINES, IF PERMEABILITY RATE EXCEEDS 0.03 FT/DAY, OR IF EXCESSIVELY FRACTURED BEDROCK IS ENCOUNTERED. THE LINER SHALL EXTEND TO THE TOP OF THE WETLAND SOIL/BIORETENTION SOIL MIX.



LDPE Liner
Alternative C

D Low Permeability Layer Alternatives
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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STATE OF NEW HAMPSHIRE – BENJAMIN C. FRENCH No. 12915 – REGISTERED PROFESSIONAL ENGINEER

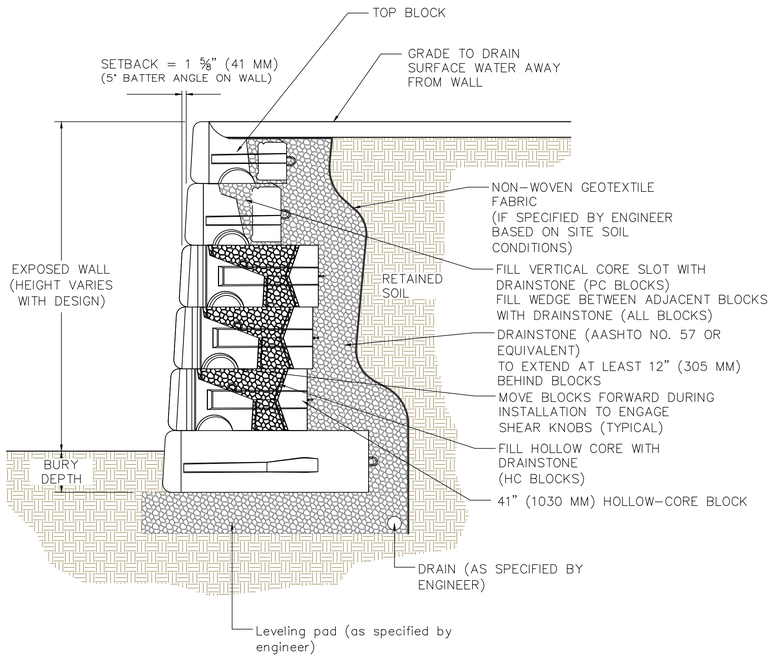
designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no.
D-9

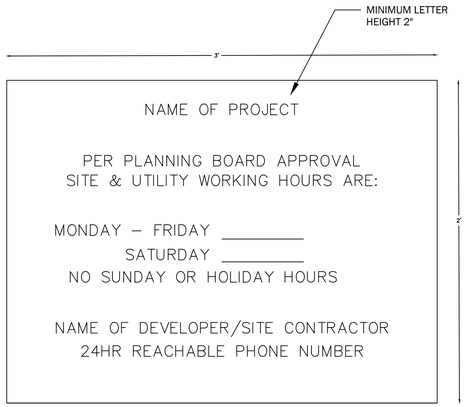
sheet: 22 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250 – Details.dwg Date Plotted: Sep 05, 2023 – 3:58pm Plotted By: CCHIARAMONTE



Note: Wall designs typically include a combination of solid, PC, and hollow-core blocks. Redi-Rock blocks are designed to be used together. Block type, size, and configuration will vary based on site-specific conditions and wall height.

A **Typical Gravity Wall Section with Hollow-Core Blocks**
Not to Scale



NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND
3. HOURS ON THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL.

B **Construction Sign**
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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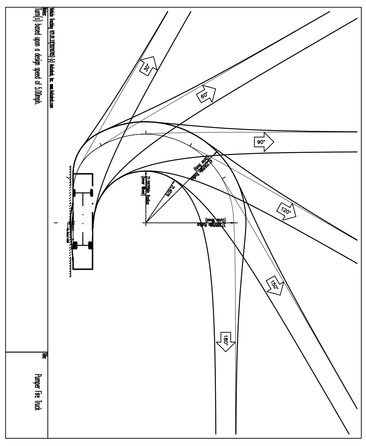
designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

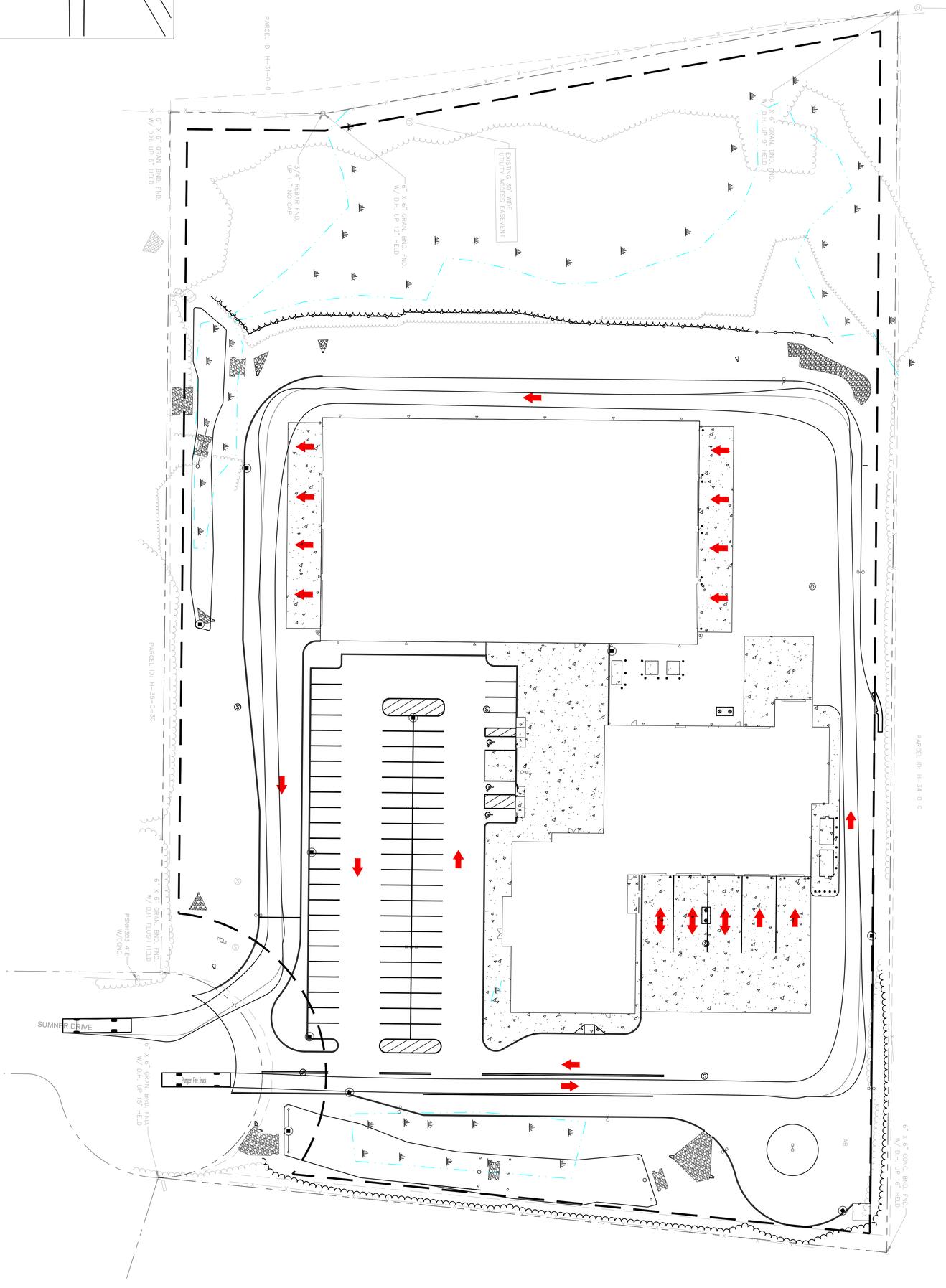
Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-10

sheet: 23 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250 – Details.dwg Date Plotted: Sep 05, 2023 – 3:58pm Plotted By: CCHIARAMONTE





sheet: 24 of 28	drawing no. T-1	Cooperative Alliance for Seacoast Transportation, Dover, NH Operations and Maintenance Facility 42 Sumner Drive Fire Truck Turning Movement Plan Dover Planning File: Site-2023-002	date: March 16, 2023 · designed by: STF/RED project no: 1250 · drawn by: CFC checked by: PAC · approved by: PAC scale: 0 30' 60' Scale: 1" = 30'

STATE OF NEW HAMPSHIRE · BENJAMIN C. CLARK No. 15219 · LICENSED PROFESSIONAL ENGINEER

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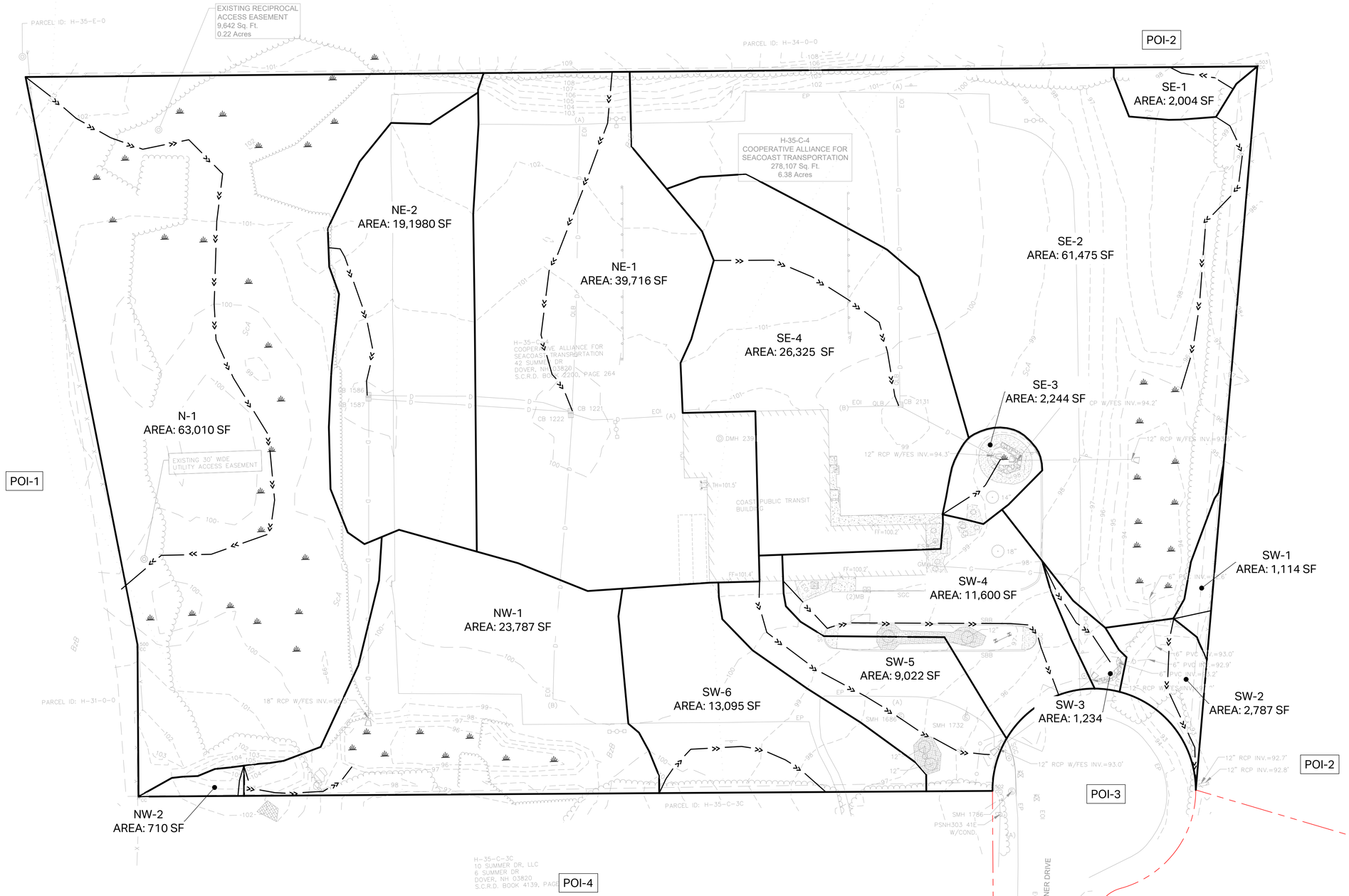
no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC



SUBBASIN	S-1
POINT OF INTEREST	POI-3
SUBBASIN BOUNDARY	———
TIME OF CONCENTRATION	——» ——» ——» ——» ——» ——

no.	revision	date	by
2	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
1	Revised for City of Dover TRC Comments	7/27/23	BCC

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NEW HAMPSHIRE – STATE OF – BENJAMIN C. CLARK No. 15876 – PROFESSIONAL ENGINEER

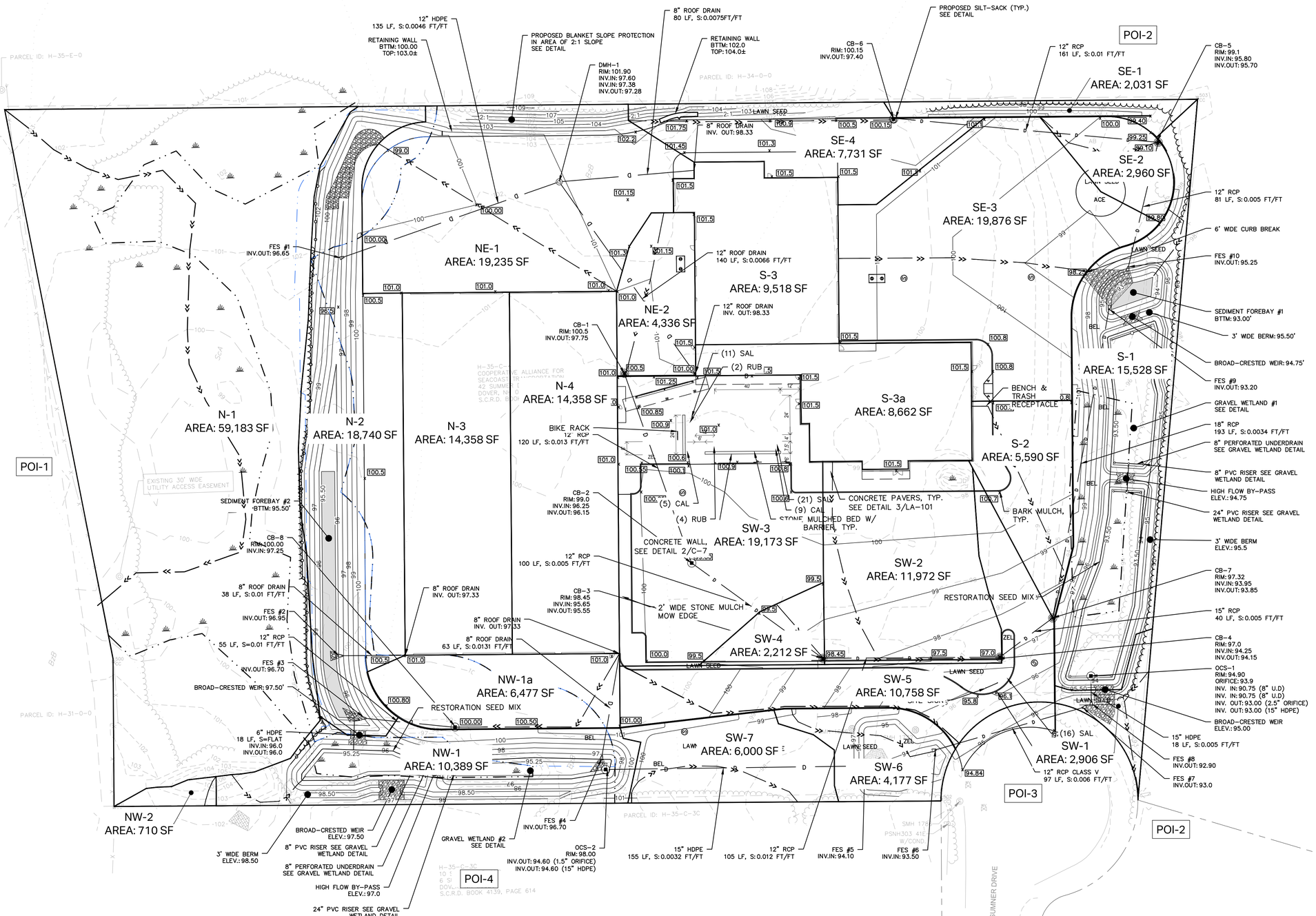
designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 1" = 20' (0, 20', 40')

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Pre-Development Drainage Map
Dover Planning File: Site-2023-002

drawing no.
DRAIN-1

sheet: 25 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Drainage Maps.dwg Date Plotted: Sep 05, 2023 – 4:11pm Plotted By: CCHIARAMONTE



SUBBASIN	S-1
POINT OF INTEREST	POI-3
SUBBASIN BOUNDARY	———
TIME OF CONCENTRATION	——— » ——— » ——— » ——— » ——— » ———

no.	revision	date	by
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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STATE OF NEW HAMPSHIRE – 12126 – CHRISTOPHER T. FISHER – LICENSED PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 1" = 20' (0, 20, 40)

Operations and Maintenance Facility
Transportation, Dover, NH

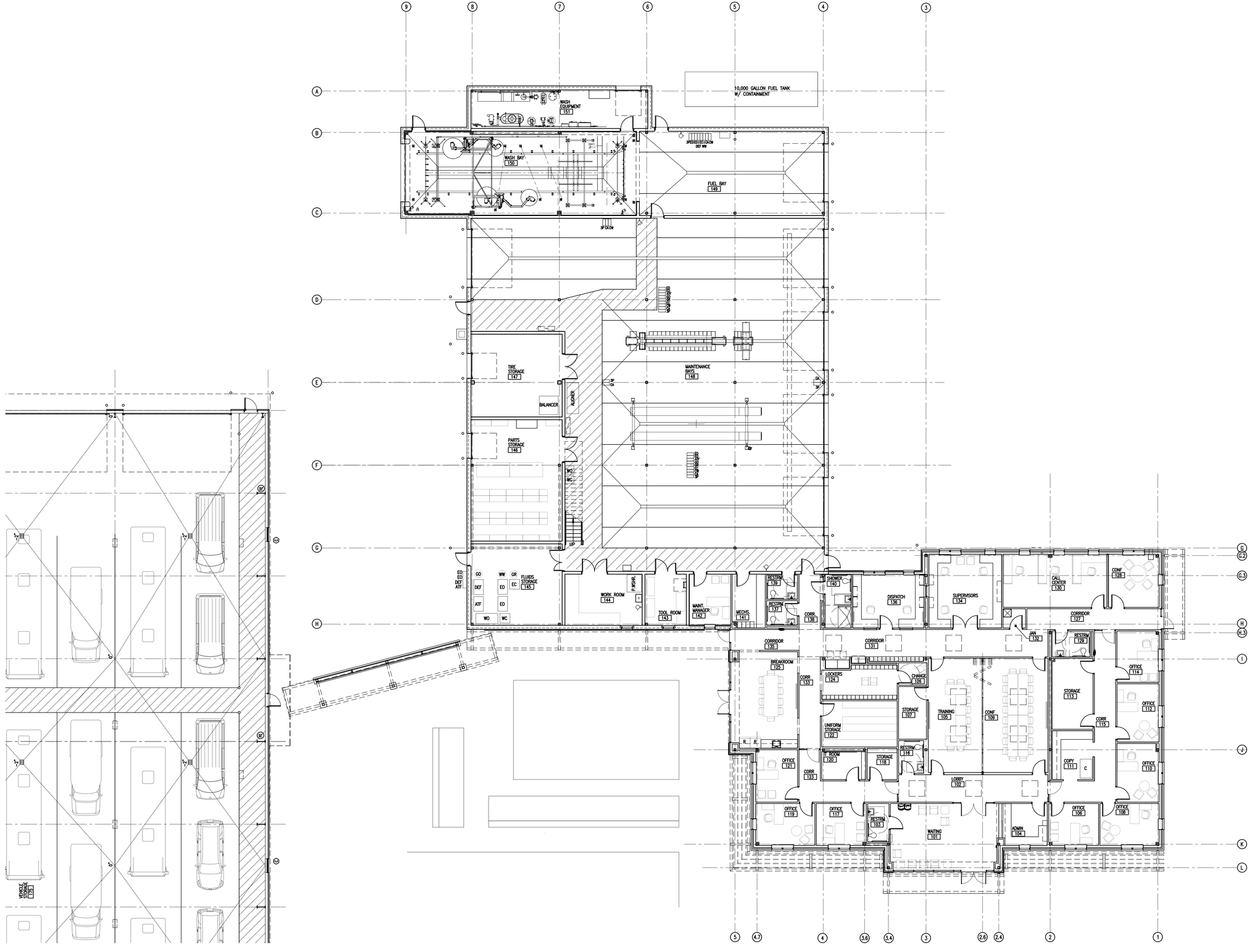
Operations and Maintenance Facility
42 Sumner Drive

Post-Development Drainage Map
Site-2023-002

drawing no.
DRAIN-2

sheet: 26 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Drainage Maps.dwg Date Plotted: Jul 31, 2023 – 10:07am Plotted By: CCHIARAMONTE



1 A-100 **FLOOR PLAN**
3/32" = 1'-0"

PLAN NORTH

no.	issue	date	by

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Civil/Environmental/Structural
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Robert E. Doyle PE RA
603.738.2872
PO Box 1325, 35 Cushing Street
Dover, NH 03821-1325
rdoylepera@gmail.com

LICENSED ARCHITECT
ROBERT E. DOYLE No. 03823
STATE OF NEW HAMPSHIRE

designed by: RED
drawn by: RED
approved by: RED
date: MAR 16, 2023
project no: 0090
checked by: RED
scale: AS NOTED

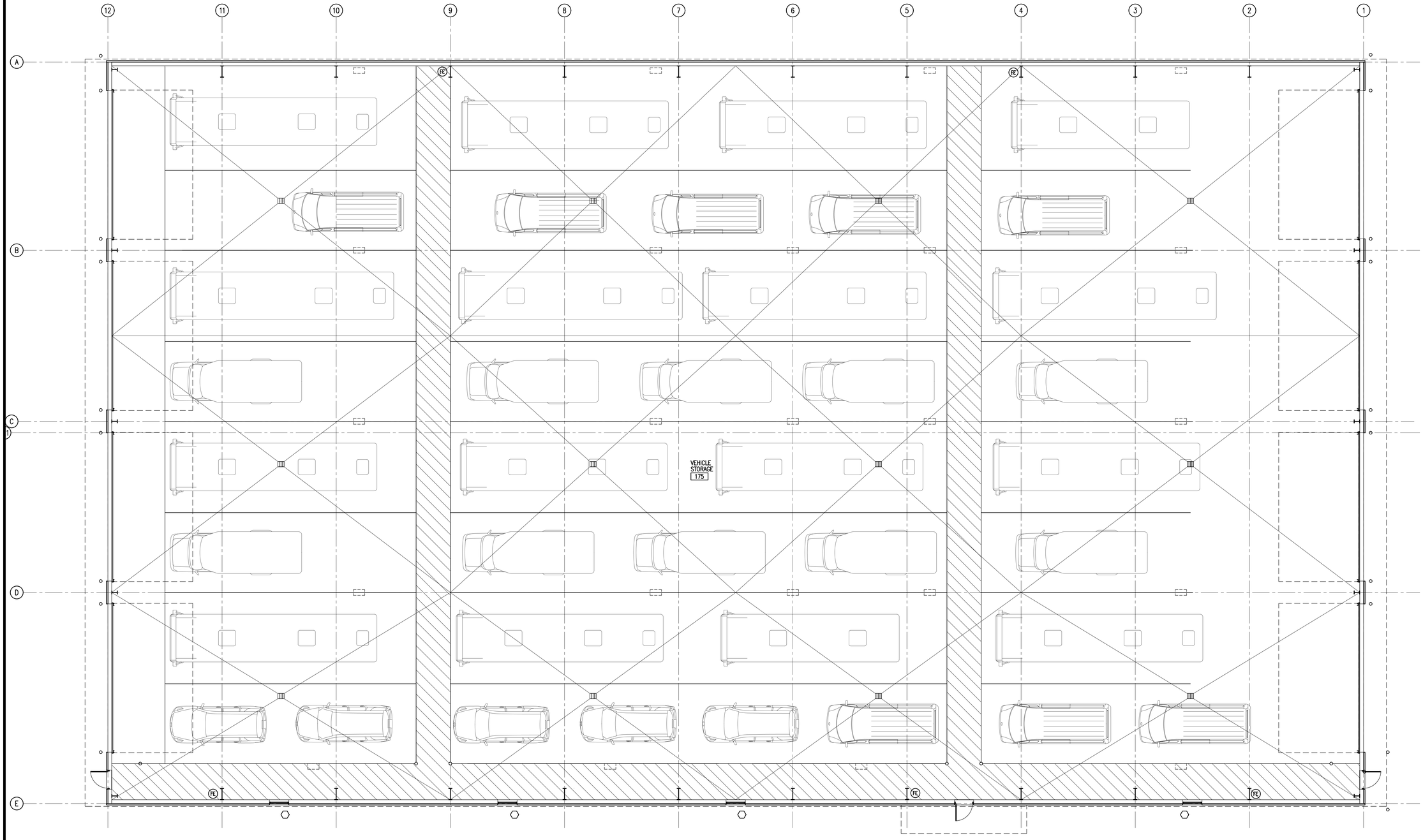
Cooperative Alliance for Seacoast Transportation (COAST)

Operations and Maintenance Facility
42 Sumner Drive, Dover, NH

FLOOR PLAN
Admin, Operations & Maintenance Bldg.

drawing no.
A-100

sheet: 27 of 28



1 A-101 **FLOOR PLAN - VEHICLE STORAGE**
1/8" = 1'-0"

PLAN NORTH

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CIVIL/ENVIRONMENTAL/STRUCTURAL
Portsmouth, NH Manchester, NH Portland, ME
603/431-6196 603/627-0708 207/541-4223
c m a e n g i n e e r s . c o m

Robert E. Doyle PE RA
PO Box 1325, 35 Cushing Street
Dover, NH 03821-1325
603.738.2872
rdoylepera@gmail.com

no.	revision	date	by

LICENSED ARCHITECT ROBERT E. DOYLE No. 03853 STATE OF NEW HAMPSHIRE

designed by: RED
drawn by: RED
approved by: RED
date: MAY 8, 2022
project no: 0090
checked by: RED
scale: AS NOTED

Cooperative Alliance for Seacoast Transportation (COAST)

Operations and Maintenance Facility
42 Sumner Drive, Dover, NH

VEHICLE STORAGE BUILDING
FLOOR PLAN

drawing no. *A-101*

sheet: 28 of 28

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #SITE-2023-0002

Application Type:	Site Plan
Applicant(s):	Rad Nichols, Cooperative Alliance for Seacoast Transportation (COAST)
Owner(s):	Rad Nichols, Cooperative Alliance for Seacoast Transportation (COAST)
Location:	42 Sumner Drive (Assessor's Map H, Lot 35-C-4)
Meeting Date:	September 26, 2023

INTENT: To build a 28,700 sq. ft. vehicle storage building and 17,000 sq. ft. administration, operations, and maintenance building.

AGENDA ITEM #: 4-B

UNITS PROPOSED: 2 structures

ACREAGE: 6.39± ac.

ZONING DISTRICT: CM and Secondary Groundwater Protection District

EXISTING LAND USE: Commercial

PROPOSED LAND USE: Additional vehicle storage, Office space

SURROUNDING LAND USE: Commercial Manufacturing, Residential

ZBA ACTION: N/A

ATTACHMENTS: Application materials, Site Plan

APPLICATION IS COMPLETE: Yes

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for this meeting

PERMITS REQUIRED:
- CUP for wetland buffer
- NHDES AoT

WAIVERS REQUESTED:
- Waiver from interior landscaping §153-13.A.(12)
- Waiver for streetscape §153-13.A.(17)

TRCs: April 6, 2023 and June 22, 2023

Summary of Request and Background
The applicant is looking to raze the existing building and build two buildings at 42 Sumner Drive. These would host COAST's fleet and offices, revise and add parking. The proposal is for a 28,700 s.f. vehicle storage building and a 17,000 s.f. administration operations and maintenance building.

The development requires a CUP request for wetland buffer impact.

The site is proposed to be serviced by municipal water and sewer. The plan appeared before the TRC on April 6 and June 22, 2023 (most recent minutes attached).

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

Summary of Waiver Requests:
Per the applicant's narratives dated June 8, and September 5 2023, the applicant is requesting the Board grant two waivers from:
- Waiver from interior landscaping §153-13.A.(12)
- Waiver from streetscape requirement §153-13.A.(17)

STAFF RECOMMENDATION-Waivers:
§153-21 of the Site Plan Review Regulations states the "Planning Board may waive specific provisions of these regulations. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that:

(1) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or

(2) Specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations."

Planning Staff finds the waiver requests the landscaping and LLA stamp and streetscape meet criterion 2 as the site is setback from Knox Marsh Road, is in an industrial area, is an improvement to the existing conditions and meets the site plan criteria intent.

The Planning Department recommends the Planning Board accept the application, open the public hearing, and vote to

approve the waivers with subsequent conditions, as the plans meet the standards outlined.

Subsequent Conditions to Be Met Prior to the Signing of the Plans:

1. A note be added that waivers for from the interior landscaping and LLA stamp requirements which is stated in §153-13.A.(12) and from 153-13.A(17) for the streetscape and assessment and the Board found the criteria of Chapter 153-21 have been met.

STAFF RECOMMENDATION:

The Planning Department recommends the Planning Board make necessary findings and vote to approve the Site Plan with the following subsequent conditions as the plans meet the standards outlined:

Subsequent Conditions to Be Met Prior to Signing of Plans:

1. Conditional Use Permit (COND-2023-0056) be approved.
2. The applicant shall provide the Planning Department with a digital version of the final plan set.
3. Provide PE stamp and signature on traffic analysis.
4. Provide a CAD file to the satisfaction of the Asset Management Administrator's satisfaction.
5. The applicant shall revise the plan set to:
   5.1. Add owners' signatures;
   5.2. Add all professional signatures and stamps;
   5.3. Revise lighting to not encroach onto abutting parcels.
   5.4. Revise note on C-2 about Groundwater Protection to indicate Secondary.
   5.5. Add note to the plan that Fuel Storage and dispensing shall be in compliance with applicable NFPA and ICC documents.

Subsequent Conditions to Be Met Prior to any Construction:

6. A site construction sign with the contact information for the general contractor must be located and approved by the City Engineer or Planning Director.
7. The wetland buffer placards be installed every 50 feet.

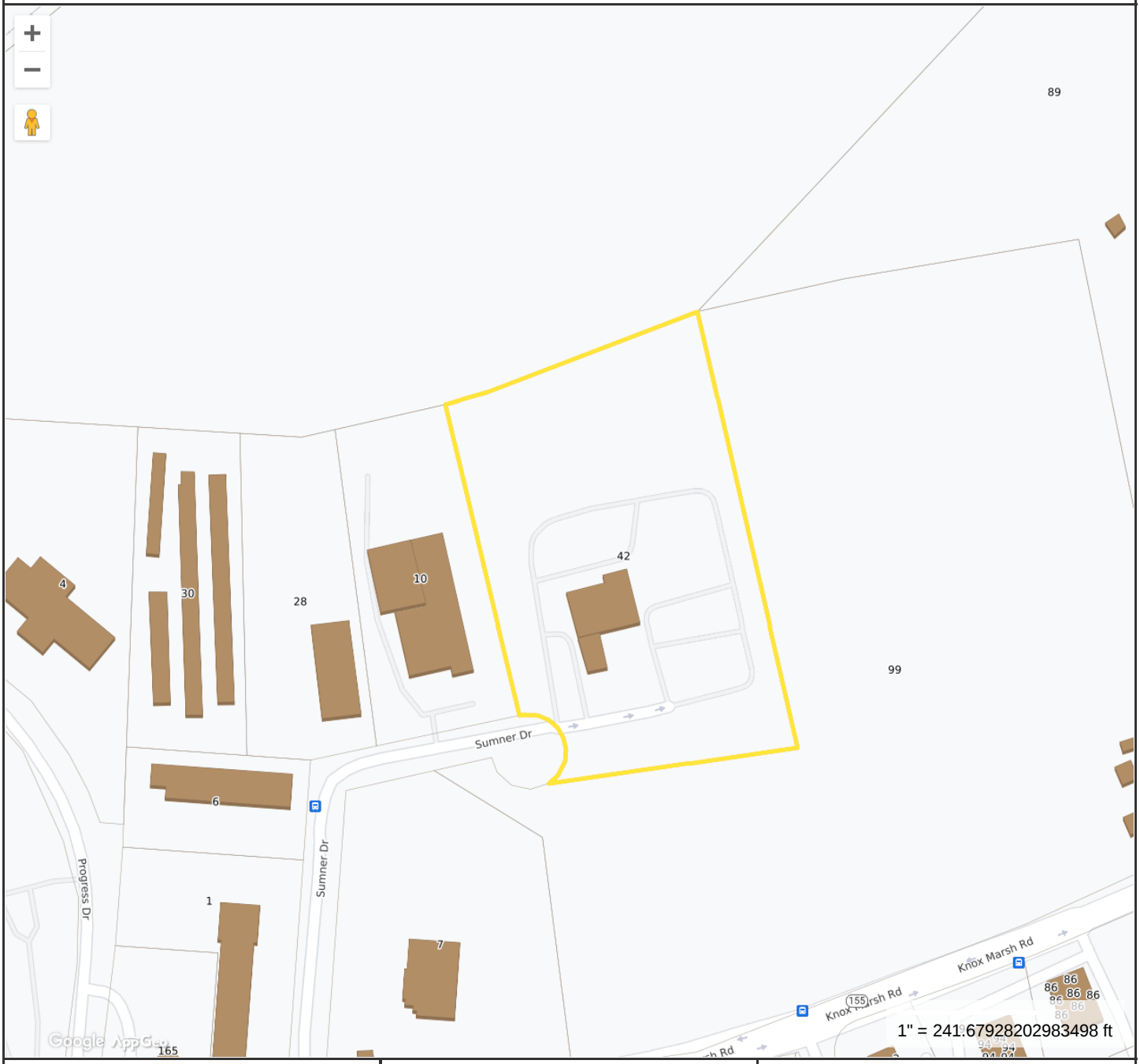
Subsequent Condition to Be Met Prior to Issuance of a Building Permit:

8. Payment of Water and Sewer Investment Fees if applicable;

Subsequent Conditions to Be Met Prior to Occupancy:

9. Impact fees per unit will be invoiced through the permit portal and shall be paid.
10. Confirmation, by staff, that the wetlands buffer signs are in place, or replaced if damaged during construction;
11. The applicant shall provide a letter of credit or other form of security acceptable to the City for any unfinished work;
12. Issuance of the Certificate of Occupancy.

SITE-2023-0002 42 Sumner Drive



Property Information

Property ID	H0035-C00004
Location	42 SUMNER DR
Owner	COOPERATIVE ALLIANCE FOR
Land Use	910
Zoning Code	CM

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 7/10/2023
Data updated Daily

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

PLAN SNAPSHOT REPORT SITE-2023-0002
FOR CITY OF DOVER, N.H.

Plan Type:	Site Plan - Major	**Project:**		**App Date:**	03/16/2023
Work Class:	Alteration / Addition	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	

Description: Site plans in support of two proposed facilities for COAST - a new operations and maintenance building, and a new vehicle storage building.

Parcel:	H0035-C00004 Main	**Address:**	42 Sumner Dr Main Dover, NH	**Zone:**	CM(Non-Residential - Commercial Manuf

Owner	Applicant	Architect	Engineer
Rad Nichols Business: (603) 743-5777	Ben Clark 35 Bow Street Portsmouth, NH 03801 Business: (603) 431-6196 Mobile: (603) 953-8131	Rob Doyle Business: (603) 738-2872	Chris Chiaramonte Business: (603) 431-6196

Plan Custom Fields

Total	0	Total2	0	Total3	112559
Total4	0	Total5	0	Total6	0
Total7	0	Total8	0	Total9	46700
Street Classification Type	Municipal	Net Change in # Parking Spaces (+/-)	22	Water Service	Municipal
Recording Number		Sewer Service	Municipal	Total Acres (GIS)	6.39
Deed Book	2200	Total SQFT	278348	Deed Page	264
Deed Date		Proposed Property Use	Proposed use will match existing use - operations, maintenance, and vehicle storage for COAST.	Area of Parcel to be Developed (SQFT)	211000
Number of Parking Spaces Existing	51	Number of Parking Spaces Proposed	73	Distance to City Water	0
Distance to City Sewer	0	Type of Building to be Built	An operations and maintenance building and a vehicle storage building.	Estimated Construction Value	16220000.00
Refuse Removal	Private	Is there an existing Conservation Easement?	No	Existing Conservation Easement Details	
TotalImpactFeeSDTOD	0.00	TotalImpactFeeTHTOD	0.00	TotalImpactFee23FTOD	0.00
TotalImpactFeeA4TOD	0.00	TotalImpactFeeMHTOD	0.00	TotalImpactFeeADUTOD	0.00
TotalImpactFeeAONRTOD	0.00	TotalImpactFeeAR55TOD	0.00	TotalImpactFeeAR62TOD	0.00
Sub Total Residential	0.00	TotalImpactFeeRIRCTOD	0.00	TotalImpactFeeOCSTOD	0.00
TotalImpactFeeITWCTOD	0.00	TotalImpactFeeNHALTOD	0.00	TotalImpactFeeOIUTOD	0.00
TotalImpactFeeAFAOTOD	0.00	Sub Total Non-Residential	0.00	Total of Impact Fees to be Assessed	0.00

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Ben_Clark_3/16/2023.jpg	03/16/2023 14:28	Clark, Ben		Uploaded via CSS
2023-03-16_1250 COAST Owner Authorization_signed.pdf	03/16/2023 15:35	Glidden, Jean		Owner/Authorization Form
2023.06.22_PlanningTechnicalReviewCommittee_SITE-2023-0002.pdf	07/19/2023 11:25	Blonigen, Rachel		Approved TRC Minutes
2023.04.06_PlanningTechnicalReviewC	07/19/2023 14:23	Blonigen, Rachel		Approved TRC Minutes

ommittee_SITE-2023-0002.pdf

Invoice No.	Fee		Fee Amount	Amount Paid
INV-00002668	Planning General Application Fee		$200.00	$200.00
		Total for Invoice INV-00002668	$200.00	$200.00
NOT INVOICED	Planning Impervious Paved Area Fee		$7,879.13	$0.00
		Total for Invoice NOT INVOICED	$7,879.13	$0.00
		Grand Total for Plan	$8,079.13	$200.00

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	06/22/2023	Technical Review Committee Meeting

Meeting Custom Fields

TRC Meeting Document Posted Date	Apr 6 2023 12:00AM	TRC Meeting Motion	Resubmit

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	03/23/2023	04/20/2023	04/18/2023	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	03/23/2023	04/20/2023	04/18/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	03/23/2023	04/20/2023	04/05/2023

Comments: Reviewer: Ken Mavrogeorge, PE
Checked by: Engineering Staff

- General: Please review and modify details to comply with City of Dover Standard Details. Engineering can provide Standard Details to include in the plan.
- Sheet N-1: Revise Water Note 10 to state that all valves and hydrants shall open left (counterclockwise)
- Sheet N-1: Revise Sanitary Sewer Note 1 to reflect that sanitary sewer is to be SDR 35 PVC.
- Sheet N-2: Remove references to Mass Highway from plans
- Sheet N-2: Dover is Strafford County not Rockingham. Check Abbreviations list.
- Survey 1 of 2: Zone is listed as I-2 while on Sheet C-2 it says CM.
- Sheet C-1: Wetland buffers are shown incorrectly. Provide radii on buffer offsets. This should reduce buffer impact numbers.
- Sheet C-1: Show perimeter controls (silt fence or other) on the plan.
- Sheet C-1: Would it be easier to add a note to identify that everything within the limit of work is to be removed unless otherwise noted then list out what is to remain. What is being saved is unclear.
- Sheet C-1: Engineering requests that the existing concrete sewer structures that are called out to remain be tested and test results be provided to the City. If the structures do not pass the tests then the structures would need to be replaced.
- Sheet C-1: Will the site demolition be phased? Will the site be accessible during construction or will COAST temporarily relocate services? The narrative is unclear.
- Sheet C-2: List of permits does not list NHDES Wastewater Connection Permit. Applicant to review requirements of Env-Wq 703.07 and comment on applicability.
- Sheet C-2: Provide additional detail on the Fuel Storage including the type of fuel, spill prevention/containment, and pumping facilities.
- Sheet C-2: The detail for the gates appears to show that they swing open. It is unclear if they swing into the property or out. If they swing outward, there is concern that it would block the cul-de-sac.
- Sheet C-2: There are two drives entering the site but it is unclear if these are full access drives. How are the public/emergency vehicles supposed to access the facility? Applicant to clarify traffic flow and how vehicles will be controlled by signage and markings.
- Sheet C-2: Stripe ADA aisles and provide ADA accessibility to the charging stations.
- Sheet C-2: The stormwater basin appears to be on the southern property line. How will this be maintained and how will it be constructed. Will easements be required?
- Sheet C-2: Identify single doors versus overhead on building.
- Sheet C-2: Call out bollards.
- Sheet C-2: Confirm if easement to construct the retaining wall is required and if so, are discussions in the works? Does a waiver/variance from a setback encroachment need to be obtained?
- Sheet C-3: Provide gate valve at water main connection.
- Sheet C-3: Verify if the pipes entering SMH-102 aren't conflicting and whether the MH needs to be larger. Engineering Recommends adding a structure just after the oil-water separator and having a perpendicular tie in.
- Sheet C-3: Recommend moving oil-water separators closer to the buildings and away from the stormwater treatment systems. It is also recommended to add one for the floor drain at the rear of the site.
- Sheet C-3: Add gate to isolate domestic service from fire line for both proposed buildings.
- Sheet C-3: Please show the existing hydrant in the cul-de-sac.
- Sheet C-4: Clarify how long narrow sediment forebay will flow towards the two treatment bays on the northern side of the site. It appears that there is room to shift the treatment bays to the south and create a more traditional sized forebay.
- Sheet C-4: ADA spaces have less than 1% cross slopes.
- Sheet C-4: How will stormwater flow out of the paved pedestrian area between the buildings. Add spot grades to show positive drainage.
- Sheet C-4: There is a 6 ft curb break near FES 10. Recommend either adding rip rap to protect the slope from washing out or CB with pipe.
- Sheet C-4: All FES shall have a rip rap apron sized according to DES standards. Provide calcs as required by DES AOT.
- Sheet C-4: Retaining wall is shown at nearly 7 feet. Provide detail for wall and clarify with geotextile is required.
- Sheet C-5: Revise perimeter barrier to stay within the limits of the Limit of Work.
- Sheet LA-101: Revise numbering of general notes.
- Sheet LA-101: Call out the pavers and clarify how this area is to drain.
- Sheet D-1: Revised Stabilized Construction Entrance to match NHDES standard detail (include note about alternate berm for entrances less than 75 feet).
- Sheet D-2: General Bituminous Pavement Section: Is this pavement section recommendation based on a site specific conditions assessment?
- Sheet D-3: Is a 4-inch slab sufficient for dumpster loading?
- Sheet D-3: change "handicap" references to "accessible" where applicable.
- Sheet D-3: Identify the locations of the signs on the site plans.
- Sheet D-5: Typical Sanitary Drain Trench: Revise trench detail to meet City standard. Stone backfill must be placed above pipe.
- Sheet D-5: Drain Manhole: Brick invert not required.
- Sheet D-5: Drainage Pipe: Revise trench detail to meet City standard. Stone backfill must be placed above pipe.
- Sheet D-5: Applicant shall send Utilities Plan and Oil-Water Separator details to the Industrial Pretreatment Coordinator, Jimmy Casey at the WWTP.
- Sheet D-8: What types of plantings are proposed in the gravel wetland. There appears to be hatching on the detail but nothing noted but wetland restoration mix.
- Sheet Drain-2: Check area boundaries for NE-1 and SW-7. Ensure the boundaries follow high points.
- Drainage Report:

o The report states that the stormwater design complies with Dover standards. Applicant shall review the section 153-14 of the Dover Code and clarify how the design meets the City's requirements.

- General Comment: Provide Lighting plan and details.

PLAN SNAPSHOT REPORT (SITE-2023-0002)

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Requires Re-submit	03/23/2023	04/20/2023	04/18/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	Requires Re-submit	03/23/2023	04/20/2023	04/18/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Kypfer, Natasha	Requires Re-submit	03/23/2023	04/20/2023	04/18/2023

Comments: TRC scheduled for 4/6/2023.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	Requires Re-submit	03/23/2023	04/20/2023	04/18/2023

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		07/13/2023 11:27	07/13/2023 11:27
Confirm application complete v.1	Generic Action		03/16/2023 15:39
Technical Review Committee Meeting Agenda v.1	Task	03/16/2023 0:00	03/23/2023 11:52
Land Use Plan Technical Review v.1	Receive Submittal	03/23/2023 0:00	04/18/2023 16:42
Technical Review Committee Meeting v.1	Hold Meeting	03/23/2023 0:00	07/13/2023 11:27
Planning Board v.1		09/05/2023 11:12	
Planning Board Agenda v.1	Task	09/05/2023 11:12	09/12/2023 11:19
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Plan Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Plan Activity		
NOD Sent to Applicant v.1	Create Report		
Final Plan v.1			
Land Use Plan Final Review v.1	Receive Submittal		
Land Use Plan Stamped and Signed v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Recording v.1	Task		
Property Info Group v.1	Generic Action		
Building Official Notifies Address v.1	Generic Action		
Pre-Con Meeting v.1	Hold Meeting		
Create/Link to Records v.1			
Create / Link to Permit - Building Complex v.1	Create Sub Permit		
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit		

City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

Office Use Only	Project #: SITE-2023-0002	Date Received:
	Amount Paid:	Time Received:

APPLICANT AND OWNER INFORMATION

Name of Applicant: Rad Nichols Telephone # 603-743-5777

Address of Applicant: 42 Sumner Drive

E-Mail Address: RNichols@coastbus.org

Name of Property Owner (*if different from applicant*): _____ Telephone #_____

Address of Property Owner: _____

PROPERTY INFORMATION

Address of Property: 42 Sumner Drive

Assessor's Map # _____ Lot(s) # _____

Zoning District(s) H0035-C00004 Overlay District(s) _____

Size of Parcel: _____sq. ft. 6.39 ac. Property Deed: Book 2200 Page: 264

Existing Use of Property: Operations, maintenance, and vehicle storage for COAST.

SITE PLAN INFORMATION

Describe Proposed Use: Proposed use will match existing use - operations, maintenance, and vehicle storage for COAST.

Area of Parcel to be Developed: 211,000 sq. ft.

If Multi-family Residential: Number of Units _____& Buildings Proposed _____

If lodging: Number of Units _____ & number of Buildings _____

Number of Parking Spaces: Existing 51 Proposed 73

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

Number of Employees Total: _____ In Maximum Shift: _____

Disposition of Parcel:

Building Footprint Vehicle storage: 28,700 Office: 18,000 sq. ft.

Total Building Area _____ sq. ft.

Paved Area 112,559 sq. ft.

Building Setbacks:

Front Yard 150 ft.

Rear Yard 36 ft.

Side Yard: Right 117 ft. Left 178 ft.

City Water? X Yes ___ No How far is city water from the property? Currently connected - 0 ft

City Sewer? X Yes ___ No How far is city sewer from the property? Currently connected - 0 ft

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

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

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

Relief sought (Check All That Apply):

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

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

_____

_____

_____

BUILDING INFORMATION

Type of Building to be Built: Two buildings - a vehicle storage facility and an administration, office, and maintenance building.

Height of Building: Vehicle storage: 30' 8" Office: 26' Finished Floor Elevation: Vehicle storage: 101.0' Office: 101.5'

Number of Seats (where applicable) _____

Estimated value of construction: $16,220,000 Refuse removal: Public/Private (circle one)

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: _____

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

_____

_____

_____

_____

_____

_____

_____

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) William Doucet, LLS - Doucet Survey, LLC

Address 102 Kent Place, Newmarket, NH 03857 Telephone #: 603-659-6560

Professional License #: 824 E-mail address: bill@doucetsurvey.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Benjamin Clark, PE - CMA Engineers, Inc.

Address 35 Bow Street, Portsmouth, NH 03801 Telephone #: 603-431-6196

Professional License #: 15219 E-mail address: bclark@cmaengineers.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) Robert E Doyle, RA

Address 35 Cushing Street, Dover, NH 03820 Telephone #: 603-738-2872

Professional License #: 3839 E-mail address: rdoylepera@gmail.com

LANDSCAPE ARCHITECT INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

SOIL SCIENTIST INFORMATION

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

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: _____ Telephone #_____

Address Easement Holder: _____

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: _____ Date: _____

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

Signature of Agent: _____ Date: _____

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: _____ Date: _____

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

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

Signature of Property Owner: _____ 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: _____

SITE-2023-0002 **42 SUMNER DRIVE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
H0031-000000	30 LITTLEWORTH RD	SOUSANE RUTH K &	QUINLAN NANCY K	30 LITTLEWORTH RD	DOVER	NH	03820
H0033-E00000	89 KNOX MARSH RD	QUINLAN DENIS J	QUINLAN NANCY K	89 KNOX MARSH RD	DOVER	NH	03820
H0034-000000	99 KNOX MARSH RD	RY DEVELOPMENT LLC		290 HERITAGE AVE STE 1	PORTSMOUTH	NH	03801
H0035-C00001	7 SUMNER DR	GRAY ROSE PROPERTIES LLC		PO BOX 1812	DOVER	NH	03821-1812
H0035-C0003B	28 SUMNER DR	28 SUMNER DRIVE LLC		6 LONGVIEW CIRCLE	PELHAM	NH	03076
H0035-C0003C	10 SUMNER DR	10 SUMNER DR LLC		6 SUMNER DR	DOVER	NH	03820
H0035-C00004	42 SUMNER DR	COOPERATIVE ALLIANCE FOR	SEACOAST TRANSPORTATION	42 SUMNER DR	DOVER	NH	03820
		DOUCET SURVEY LLC	WILLIAM DOUCET	12 KENT PLACE	NEWMARKET	NH	03857
		CMA ENGINEERS INC	BENJAMIN CLARK, PE	35 BOW STREET	PORTSMOUTH	NH	03801
		ROBERT E BOYLE, RA		35 CUSHING STREET	DOVER	NH	03820

CMA ENGINEERS, INC.

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35 Bow Street
Portsmouth, New Hampshire
03801-3819

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www.cmaengineers.com

June 8, 2023

Donna Benton, AICP
Director of Planning and Community Development
City of Dover New Hampshire
288 Central Avenue
Dover, New Hampshire 03820

RE: **COAST Bus Facility**
Streetscape Requirement Waiver
CMA #1250

Dear Donna:

This letter is to request a waiver from the requirement to provide a 3D streetscape plan as part of the site review submittal for the new COAST facilities on Sumner Drive.

In lieu of a 3D streetscape plan, we are providing colored renderings of both building elevations, which include plantings and sidewalks. Given the unique location of the project, I believe the renderings submitted will adequately convey the visual aspects of the new COAST facilities.

In the absence of immediate neighboring structures, our hope is that a 3D streetscape plan is not required to understand how the proposed facilities integrate with the surrounding environment. With that in mind, we respectfully request your consideration for a waiver from the streetscape requirement.

As always, if you have any questions, feel free to contact me at your convenience.

Respectfully,

Benjamin Clark, P.E.
Senior Project Manager
CMA Engineers, Inc.

CMA ENGINEERS, INC.

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September 5, 2023

Donna Benton, AICP
Director of Planning and Community Development
City of Dover New Hampshire
288 Central Avenue
Dover, New Hampshire 03820

RE: **COAST Bus Facility**
NH Licensed Landscape Architect's Stamp Requirement Waiver
CMA #1250

Dear Ms. Benton,

This letter is to request a waiver from the requirement to provide a Landscape Architect's stamp on the Landscaping Plan as part of the site review submittal for the new COAST facilities on Sumner Drive.

As part of this redevelopment project, the perimeter vegetation will remain largely untouched. In the existing condition the perimeter vegetation provides adequate screening from the abutting properties. The project is proposing a few trees around the perimeter of the parking area, and planting beds throughout the staff patio area. The proposed planting layout is consistent with the existing landscaping, and the vegetation is typical of area landscaping. All landscaping proposed are perennials that are hardy and drought tolerant for the climate zone. The planting details and notes on the drawing are typical and should provide for long term growth.

In the absence of immediate neighboring structures, the site being well screened by existing vegetation, and located at the end of a cul-de-sac, our hope is that a Landscaping Plan stamped by a Landscape Architect is not required. With that in mind, we respectfully request your consideration for a waiver from the Landscape Architect's stamp requirement.

As always, if you have any questions, feel free to contact me at your convenience.

Respectfully,

Benjamin Clark, P.E.
Senior Project Manager
CMA Engineers, Inc.

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2023-0002

Application Type:	Site Review
Applicant(s):	Rad Nichols, Cooperative Alliance for Seacoast Transportation (COAST)
Owner(s):	Rad Nichols, Cooperative Alliance for Seacoast Transportation (COAST)
Location:	42 Sumner Drive (Assessor's Map H, Lot 35-C-4)
Date:	June 22, 2023

INTENT: To build a 28,700 sq. ft. vehicle storage building and 17,000 sq. ft. administration, operations, and maintenance building.

UNITS PROPOSED: 2 structures

AGENDA ITEM #: 2

ACREAGE: 6.39± ac

ZONING DISTRICT: CM

EXISTING LAND USE: Commercial Manufacturing

PROPOSED LAND USE: Additional vehicle storage, Office space

SURROUNDING LAND USE: Commercial Manfacturing, Residential

ZBA ACTION: None

PERMITS REQUIRED:
- NHDES AoT

RELIEF/WAIVERS REQUESTED:
- CUP, §170-27.1,G.d.iv
- Waiver from interior landscaping §153-13.A.(12)
- Waiver for streetscape §153-13.A.(17)

PREVIOUS TRC: 4/6/2023

ATTENDANCE:
Members:
Donna Benton, Planning
Natasha Kypfer, Zoning
Marn Speidel, Police
Jim Maxfield, Fire/Inspection Services
James Burdin, Business Development
Ken Mavrogeorge, Engineering
Others:
Ben Clark, CMA Engineers
Chris Chiaramonte, CMA Engineers
Rob Doyle, Architect
Rad Nichols, COAST

PLAN REVIEW:
Planning:
- Please note Secondary Groundwater Protection District, §170-28.3
- *Reminder: Impact fees and Water and sewer investment fees if applicable*
- Thank you for revising traffic memo
- CUP amd waiver narratives will need to be submitted
- Please provide letters to serve
- Confirm lot coverage is 17% per Note 6, Sheet C-2
- Revise plans:
  - *Planning file number SITE-2023-0002 on lower right*
  - Keep 2x2" space on lower right
  - *Owner's signatures on the final plans*
  - *Impact plan or show CUP areas? A narrative will need to address criteria*
  - *LLA to sign and stamp landscape plan*
  - Revise TRC response as streetscape was not provided
  - Provide neighborhood plan (Section 153-13.A(16))
  - Darkest spot in parking lot should be between 0.3 and 0.5 fc.
  - No light should encroach onto abutting parcels
  - Combine civil and architectural plan sets into one package

Engineering:
- General Comment: Applicant and Contractor shall review the Dover Construction Guidelines prior to scheduling a Preconstruction meeting with City staff. The guidelines can be found on the City of Dover Website on the Engineering page. https://www.dover.nh.gov/Assets/government/city-operations/1form/community-services/engineering/engineering-documents/Construction%20Guidelines.pdf
- General: Please review and modify details to comply with City of Dover Standard Details. Engineering can provide Standard Details to include in the plan.
- Sheet C-1: Note added about vacuum testing of sewer structure but video inspection of sewer mains would be needed too. The note should also note that the test results shall be provided to the City.
- Sheet C-2: Provide additional detail on the Fuel Storage including spill prevention/containment and emergency action plan. Coordinate with Environmental Project Manager, Gretchen Young, to be sure required information is provided.
- Sheet C-2: Electric vehicle charging station are called out across the parking lot which conflicts with the comment response letter.
- Sheet C-3: Show locations of thrust blocks.
- Sheet C-3: Narrative mentions a future sewer connection. It is not apparent where this is. Please identify on C-3.

- Sheet C-3: SMHs are noted as having sumps. Please clarify what the intent of a SMH sump.
- Sheet C-4: *Previous Comment: Clarify how long narrow sediment forebay will flow towards the two treatment bays on the northern side of the site. It appears that there is room to shift the treatment bays to the south and create a more traditional sized forebay.* **New Comment: City Engineer met with Designer and discussed potential revisions to the stormwater basin.**
- Sheet C-4: Provide at least one spot grade in the center of the large pedestrian area between buildings.
- Sheet C-4: Retaining wall exceeds 4 feet in at least one area requiring a building permit.
- Sheet D-5: Drainage Pipe: Revise trench detail to meet City standard. Stone backfill must be placed above pipe.
- Sheet T-2: Truck wheel path at rear of site is outside of the paved surface.
- Sheet Drain-2: Check area boundaries for NW-1 and SW-7. Ensure the boundaries follow high points.
- Drainage Report: The report states that the stormwater design complies with Dover standards. Applicant shall review the section 153-14 of the Dover Code and clarify how the design meets the City's requirements.

Police:

- Verify gate access for Polic & Fire access

Fire/Inspection Services:

- *Indicate location of the FDC on the revised utility plans.*
- *C-2 and C-3 clarify the electric vehicle charging station locations. There appears to be a conflict between sheets 7 and 8*
- *Indicate the accessible route to the EV charging stations.*
- *Plans shall include design note for compliance with applicable accessibility regulations and NH RSA 155-A:5*
- *Indicate the type of fueled vehicles which will be serviced.* Previous response was interpreted as gasoline, diesel and potentially LP, NG.
- *Discuss fuel dispensing and bulk fuel storage*
- Fuel Storage shall be in compliance with applicable NFPA and ICC documents. These documents contain minimum standards regarding the proximity to property lines and adjacent structures.

Business Development:

- No additional comments regarding the design. We would be happy to assist with finding a new user for the existing administrative office location when those personnel are relocated to the proposed development.
- Neighborhood plan
- Impacts to service?

Planning Board: N/A

Next Steps: Revise and schedule an informal TRC

Pause TRC at: 11:46 am

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July 31, 2023

Donna Benton
Director of Planning and Community Development
City of Dover New Hampshire
288 Central Avenue
Dover, New Hampshire 03820

RE: COAST Bus Facility
Response to Technical Review Committee Comments
Site -2023-0002
CMA #1250

Dear Donna:

On behalf of the Cooperative Alliance for Seacoast Transportation (COAST), CMA Engineers has prepared this letter to provide a response to comments made by the **City Planning board,** the **City Engineer Division**, the **City Police Department,** the **Business Development Authority,** and **Fire/Inspection Services** during the Technical Review Committee Meeting dated June 22, 2023.

Our responses to the comments are presented in *italicized type* following the corresponding party's comment in **bold type**.

Planning Review: Donna Benton

1. **Please note Secondary Groundwater Protection District,** §170-28.3
   The site is located within the secondary groundwater protection zone, according to the Groundwater Protection Zone Map dated April 15, 2015 and is noted as such in the Site Layout Plan.
2. **Reminder: Impact fees and Water and sewer investment fees if applicable**
   Acknowledged, they will be paid at the appropriate time.
3. **CUP and waiver narratives will need to be submitted**
   Acknowledged, CUP and waivers will be submitted with the Planning Board application.
4. **Please Provide letters to serve**
   Acknowledged, letters to serve will be submitted with the Planning Board application.
5. **Confirm lot coverage is 17% per Note 6, Sheet C-2**
   Confirmed, the 17% lot coverage represents the area of the building footprints.
6. Revise Plans
   - **Planning file number SITE-2023-0002**
     The planning file number has been added to the title block in the lower right corner.
   - **Keep 2x2" space on lower right**
     Understood.
   - **Owner's signature on the final plans**
     Acknowledged, the COAST Executive Director's signature will appear on the final plans.

- **Impact plan or show CUP areas? A narrative will need to address criteria**
  Acknowledged, a narrative will be submitted with the Planning Board application.
- **LLA to sign and stamp landscape plan**
  Acknowledged, a LLA will stamp the landscape plan submitted for Planning Board approval.
- **Revise TRC response as streetscape was not provided**
  A waiver has been requested to not provide a streetscape rendering. In its place, a Neighborhood Plan has been provided in the plan package.
- **Provide neighborhood plan (Section 153-13.A(16))**
  The Neighborhood Plan (C-3) has been included as part of this resubmittal.
- **Darkest spot in parking lot should be between 0.3 and 0.5 fc.**
  The Lighting Plan will be revised so the darkest portion of the parking lot is between 0.3-0.5 fc.
- **No light should encroach onto abutting parcels**
  The Lighting Plan will be revised so there is no spillage onto abutting properties.
- **Combine civil and architectural plan sets into one package**
  The building floor plans have been added to the civil set.

Engineering Review: Ken Mavrogeorge

7. **General Comment: Applicant and Contractor shall review the Dover Construction Guidelines prior to scheduling a Preconstruction meeting with City staff. The guidelines can be found on the City of Dover Website on the Engineering page.**
   Understood.
8. **General: Please review and modify details to comply with City of Dover Standard Details. Engineering can provide Standard Details to include in the plan.**
   The drainage trench detail has been revised to conform to City of Dover Standards.
9. **Sheet C-1: Note added about vacuum testing of sewer structure but video inspection of sewer mains would be needed too. The note should also note that the test results shall be provided to the City.**
   The note has been revised to include video inspection and to provide the results to the city.
10. **Sheet C-2: Provide additional detail on the Fuel Storage including spill prevention/containment and emergency action plan. Coordinate with Environmental Project Manager, Gretchen Young, to be sure required information is provided.**
    The proposed aboveground fuel tank will be located inside an above-ground concrete vault with ventilation due siting constraints.
11. **Sheet C-2: Electric vehicle charging station are called out across the parking lot which conflicts with the comment response letter.**
    Callouts have been revised to show the same location, adjacent to the ADA parking spaces.
12. **Sheet C-3: Show locations of thrust blocks.**
    Thrust block locations have been added to the Utility Plan.
13. **Sheet C-3: Narrative mentions a future sewer connection. It is not apparent where this is. Please identify on C-3.**
    There is no future sewer connection proposed.
14. **Sheet C-3: SMHs are noted as having sumps. Please clarify what the intent of a SMH sump.**
    The sumps have been removed from the sewer manholes.
15. **Sheet C-4: Previous Comment: Clarify how long narrow sediment forebay will flow towards the two treatment bays on the northern side of the site. It appears that there is room to shift the treatment bays to the south and create a more traditional sized forebay. New Comment: City Engineer met with Designer and discussed potential revision to the stormwater basin.**
    A swale has been added upstream of the forebay to reduce the overall length. A low-flow pipe has

been added to reduce ponding in the forebay, while still meeting the WQV sizing requirements.

16. **Sheet C-4: Provide at least one spot grade in the center of the large pedestrian area between buildings.**
    Spot grades have been added to show drainage through the pedestrian area.
17. **Sheet C-4: Retaining wall exceeds 4 feet in at least one area requiring a building permit.**
    Grading at the east side of the property has been revised to greatly reduce the size of the retaining wall. The wall is now approximately 2' in height.
18. **Sheet C-5: Drainage Pipe: Revise trench detail to meet City's standard. Stone backfill must be placed above pipe.**
    The drainage trench detail has been revised to conform to City of Dover Standards.
19. **Sheet T-2: Truck wheel path at rear of site is outside of the paved surface.**
    The wheel path has been revised to stay on the paved surfaces.
20. **Sheet Drain-2: Check area boundaries for NW-1 and SW-7. Ensure the boundaries follow high points.**
    The boundaries for NW-1 and SW-7 have been revised to follow the high points.
21. **Drainage Report: The report states that the stormwater design complies with Dover standards. Applicant shall review the section 153-14 of the Dover Code and clarify how the design meets the City's requirements.**
    The drainage report has been revised to clarify how it meets the City's requirements for new development projects.

Police Review: Marn Speidel

22. **Verify gate access for Police & Fire Access**
    Police and Fire will be given an access code for the gate.

Fire/Inspection Services Review: Jim Maxfield

23. **Indicate location of the FDC on the revised utility plans.**
    The fire department connections are located on the buildings where the water service comes in. Callouts have been revised to show this.
24. **C-2 and C-3 clarify the electric vehicle charging station locations. There appears to be a conflict between sheets 7 and 8**
    Callouts have been revised to show the same location, adjacent to the ADA parking spaces.
25. **Indicate the accessible route to the EV charging stations**
    The future charging stations are located adjacent to the proposed ADA parking spaces.
26. **Plans shall include design note for compliance with applicable accessibility regulations and NH RSA 155-A:5**
    The note has been added to the Site Layout Plan, Sheet C-2.
27. **Indicate the type of fueled vehicles which will be serviced. Previous response was interpreted as gasoline, diesel and potentially LP, NG**
    The vehicles serviced will be gasoline and diesel.
28. **Discuss fuel dispensing and bulk fuel storage**
    The proposed aboveground fuel tank will be located inside an above-ground concrete vault with ventilation due siting constraints.
29. **Fuel storage shall be in compliance with applicable NFPA and ICC documents. These documents contain minimum standards regarding the proximity to property lines and adjacent structures.**
    After reviewing NFPA and ICC documents, and given the site constraints, the fuel tank is proposed to be in an above-ground concrete vault.

Business Development Review: Reid Amy

30. **No additional comments regarding the design. We would be happy to assist with finding a new user for the existing administrative office location when those personnel are relocated to the proposed development**
    Understood.
31. **Neighborhood Plan**
    The Neighborhood Plan (C-3) has been included as part of this resubmittal.
32. **Impacts to service?**
    Vehicles will have to be located off site during portions of the construction, but there are no expected service interruptions at this time.

If you have any additional questions or comments, please do not hesitate to contact me at (603) 431-6196 or bclark@cmaengineers.com

Very truly yours,

CMA ENGINEERS, INC

Benjamin Clark, PE
Project Manager

CMA ENGINEERS, INC.
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June 2, 2023

Donna Benton
Director of Planning and Community Development
City of Dover New Hampshire
288 Central Avenue
Dover, New Hampshire 03820

RE: COAST Bus Facility
Response to Technical Review Committee Comments
Site -2023-0002
CMA #1250

Dear Donna:

On behalf of the Cooperative Alliance for Seacoast Transportation (COAST), CMA Engineers has prepared this letter to provide a response to comments made by the **City Planning board,** the **City Engineer Division**, the **City Police Department,** the **Business Development Authority,** and **Fire/Inspection Services** during the Technical Review Committee Meeting dated April 6, 2023.

Our responses to the comments are presented in *italicized type* following the corresponding party's comment in **bold type**.

Planning Review: Donna Benton

1. **Reminder: Impact fees and Water and sewer investment fees if applicable**
   Acknowledged, they will be paid at the appropriate time.
2. **Will proposed vehicle gate have lock? Yes**
   All vehicle gates will have locks. All gates will have a card reader or access code to enter, and the main entrance gate will remain open during business hours for visitors.
3. **Were wetlands delineated on site?**
   Wetlands were delineated by West Environmental, Inc. during June of 2020 (Note 14 on Site Layout Plan).
4. **Traffic memo:**
   - **Revise site generation traffic / Revise conclusion assuming reuse of existing leased facility / PE stamp**
     The traffic memorandum has been revised to account for the additional trips generated from relocating COAST's administrative employees and having a new tenant move in at 6 Sumner Drive. The report has been stamped as part of this resubmittal.
5. Revise Plans
   - **Planning file number SITE-2023-0002**
     Understood.
   - **Owner's signature on the final plans**

The COAST Executive Director has signed the site plan. COAST by-laws allow the Executive Director to sign for the organization.

- **Need rest of owner's signatures on application**
  The COAST Executive Director has signed the application. COAST by-laws allow the Executive Director to sign for the organization.
- **Landscape plan needs signature & stamp on LA-101 with interior landscaping or waiver**
  A licensed landscape architect will stamp and signed the Landscaping Plan. A waiver has been requested regarding the interior landscaping.
- **Consecutive Sheet number for plan set**
  Sheet numbers have been revised to be in numerical order.
- **Remove building signage from Elevations, A-301**
  Building signage has been removed from the elevations.
- **Confirm all common notes are added**
  All applicable notes have been added to the plans. Notes are either located on the General Notes or Site Layout Plan sheets. If there are any additional notes that need to be added, please let us know.
- **Provide streetscape**
  A streetscape has been provided as part of this resubmittal.
- **Provide colored renderings for a second building**
  Colored renderings have been included as part of this resubmittal.
- **Enough snow storage?**
  Retaining wall limits have been revised to allow for additional snow storage in the north east corner of the site.
- **Impact plan or show CUP areas? A narrative will need to address criteria**
  Callouts have been added to the Site Layout Plan (C-2) to show the buffer impact area. A Conditional Use Permit application with narrative is forthcoming.
- **Lighting plan needed**
  The Lighting Plan has been included as part of this resubmittal.
- **Solar or green roof? – clarify note**
  Solar panels are proposed on the vehicle storage building. A callout has been added to the Site Layout Plan (Sheet C-2).
- **Provide more info on EV**
  The EV charging stations will not be installed as part of this project. The underground conduit will be run for future EV infrastructure installation.
- **Need that much parking?**
  The amount of parking is desired to accommodate visitors, board members, etc. during larger meetings held on site.
- **Add bike rack and detail**
  A bike rack detail has been added to the plan set, Sheet D-2.

Engineering Review: Ken Mavrogeorge

6. **General: Please review and modify details to comply with City of Dover Standard Details. Engineering can provide Standard Details to include in the plan**
   All applicable details have been modified to comply with the City of Dover Standard Details.
7. **Sheet N-1: Revise Water Note 10 to state that all valves and hydrants shall open left (counterclockwise)**
   The note has been revised to say open left.

8. **Sheet N-1: Revise Sanitary Sewer Note 1 to reflect that sanitary sewer is to be SDR 35 PVC.**
   The note has been revised to say SDR 35 PVC.
9. **Sheet N-2: Remove references to Mass Highway from plans**
   All references to Mass Highway have been removed.
10. **Sheet N-2: Dover is Strafford County not Rockingham. Check Abbreviations list.**
    The abbreviations list has been changed to say Stafford County.
11. **Survey 1 of 2: Zone is listed as I-2 while on Sheet C-2 it says CM.**
    Survey Sheet 1 of 2 has been changed to say CM.
12. **Sheet C-1: Wetlands buffers are shown incorrectly . Provide radii on buffer offsets. This should reduce buffer impacts numbers.**
    Wetland buffers have been changed to provide radii on the offset.
13. **Sheet C-1: Show perimeter controls (silt fence or other) on the plan.**
    Perimeter controls have been added to Sheet C-1.
14. **Sheet C-1: Would it be easier to add a note to identify that everything within the limit of work is to be removed otherwise noted then list out what is to remain. What is being saved is unclear.**
    The plan has been modified to highlight what is to remain with a general callout for everything to be removed within the limits of work.
15. **Sheet C-1: Engineering requests that the existing concrete sewer structures that are called out to remain be tested and test results be provided to the City. If the structures do not pass the tests then the structures would need to be replaced.**
    A note has been added to Sheet C-1 requiring testing before reuse, coordinate the test with the city, and provide results to the city.
16. **Sheet C-1: Will the site demolition be phased? Will the site be accessible during construction or will COAST temporarily relocate services? The narrative is unclear.**
    The site demolition will be phased. Phase 1 would include the demolition of the existing building and southeastern paved areas, and the construction of the proposed AOM building. The fleet would remain on site and be stored in the northern paved area of the site. Phase 2 would consist of the remaining site demolition and construction of the vehicle storage building. During phase 2, the fleet would be relocated off site.
17. **Sheet C-2: List of permits does not list NHDES Wastewater Connection Permit. Applicant to review requirements of Env-Wq 703.07 and comment on applicability.**
    NHDES Sewer Connection Permit has been added to the list. The permit is required based on section 703.07(a)(1).
18. **Sheet C-2: Provide additional detail on the Fuel Storage including the type of fuel, spill prevention/containment and pump facilities.**
    The 10,000-gallon aboveground fuel storage tank will hold diesel fuel. Dispensing pumps will be located internal to the building. Additional information on the fuel system has been uploaded to the Dover online permitting site.
19. **Sheet C-2: The detail for the gates appears to show that they swing open. It is unclear if they swing into the property or out. If they swing outward, there is concern that it would block the cul-de-sac.**
    The plans have been revised to better show the swing direction, but the gates would swing internal to the site.
20. **Sheet C-2: There are two drives entering the site but it is unclear if these are full access drives. How are the public/emergency vehicles supposed to access the facility? Applicant to clarify traffic flow and how vehicles will be controlled by signage and markings.**
    The main entrance gate will be open during business hours for the public to access the administrative office. The opposite gate will be for exiting vehicles only and will have a loop detector system.

21. **Sheet C-2: Stripe ADA aisles and provide ADA accessibility to the charging stations.**
    The future charging stations will be located adjacent to the motorcycle parking and ADA spaces, which has less than a 2% cross slope.
22. **Sheet C-2: The stormwater basin appears to be on the southern property line. How will this be maintained and how will it be constructed. Will easements be required?**
    There is a minimum of 2' between the limits of work and the property line. The stormwater management system hatch has been revised to better depict this.
23. **Sheet C-2: Identify single door versus overhead on building/**
    Callouts have been added to Sheet C-2 to depict the different doors.
24. **Sheet C-2: Call out bollards.**
    Additional callouts have been added for the bollards.
25. **Sheet C-2: Confirm if easement to construct the retaining wall is required and if so, are discussions in the works? Confirm setbacks with Planning/Zoning**
    The retaining wall has been adjusted to not require an easement during construction.
26. **Sheet C-3: Provide gate valve at water main connection.**
    An additional gate valve has been added.
27. **Sheet C-3: Verify if the pipes entering SMH-102 aren't conflicting and whether the MH needs to be larger. Engineering Recommends adding a structure just after the oil-water separator and having a perpendicular tie in.**
    An additional structure has been added to accommodate a perpendicular tie in.
28. **Sheet C-3: Recommend moving oil-water separators closer to the buildings and away from the stormwater treatment systems. It is also recommended to add one for the floor drain at the rear of the site.**
    The oil-water separator has been moved closer to the building. The International Plumbing code (IPC) does not require buildings where there is no vehicle maintenance, washing, and areas only for storage to have an oil-water separator.
29. **Sheet C-3: Add gate to isolate domestic service from fire line for both proposed buildings.**
    Gate valves have been added near the building to isolate the domestic service and fire service.
30. **Sheet C-3: Please show the existing hydrant in the cul-de-sac.**
    The existing hydrant has been added to the plan set.
31. **Sheet C-4: Clarify how long narrow sediment forebay will flow towards the two treatment bays on the northern side of the site. It appears that there is room to shift the treatment bays to the south and create a more traditional sized forebay.**
    The forebay itself can be reconfigured to be smaller, as it is currently oversized. We have opted to leave the configuration as is for this submittal to accommodate the proposed roof drain. We are open to discussing a shallower roof drain, thereby allowing a smaller forebay that will be more traditionally sized.
32. **Sheet C-4: ADA spaces have less than 1% cross slopes.**
    The grading has been revised to have a minimum cross slope of 1%.
33. **Sheet C-4: How will stormwater flow out of the paved pedestrian area between the buildings. Add spot grades to show positive drainage.**
    Additional spot grades have been added to show drainage direction.
34. **Sheet C-4: There is a 6 ft curb break near FES 10. Recommend either adding rip rap to protect the slope from washing out or CB with pipe.**
    Riprap / outlet protection has been added to all curb breaks and flared end sections.
35. **Sheet C-4: All FES shall have a rip rap apron sized according to DES standards. Provide calcs at required by DES AOT.**
    Riprap calculations have been provided as part of this resubmittal.

36. **Sheet C-4: Retaining wall is shown at nearly 7 feet. Provide detail for wall and clarify with geotextile is required.**
    A retaining wall detail has been added to the last detail sheet of the plan set.
37. **Sheet C-5: Revise perimeter to barrier to stay within the limits of the Limit of Work.**
    Perimeter barrier has been revised to stay within the limits of work.
38. **Sheet LA-101: Revise numbering of general notes.**
    The general notes numbers have been revised.
39. **Sheet LA-101: Call out the pavers and clarify how this area is to drain.**
    Callouts and spot grades have been added the Grading and Drainage plan, Sheet C-4.
40. **Sheet D-1:: Revised Stablized Construction Entrance to match NHDES standard detail (include note about alternate berm for entrances less than 75 feet).**
    The stabilized construction entrance has been revised accordingly.
41. **Sheet D-2: General Bituminous Pavement Section: Is this pavement section recommendation based on a site specific conditions assessment?**
    The detail conforms to the City of Dover standard detail. It is not believed that the cross section would need to differ based on the subsurface findings in the geotechnical report.
42. **Sheet D-3: Is a 4-inch slab sufficient for dumpster loading?**
    The slab has been revised to 6-inches to allow for the required cover for reinforcing steel per ACI.
43. **Sheet D-3: change "handicap" references to "accessible" where applicable.**
    Handicap has been changed to accessible.
44. **Sheet D-5: Typical Sanitary Drain Trench: Revise trench detail to meet City standard. Stone backfill must be placed above pipe.**
    The detail has been modified to match the City standard detail.
45. **Sheet D-5: Drain Manhole: Brick invert not required.**
    The brick invert has been removed from the drain manhole detail.
46. **Sheet D-5: Drainage Pipe: Revise trench detail to meet City standard. Stone backfill must be placed above pipe.**
    The detail has been modified to match the City standard detail.
47. **Sheet D-5: Applicant shall send Utilities Plan and Oil-Water Separator details to the Industrial Pretreatment Coordinator, Jimmy Casey at the WWTP.**
    The utility plan and oil-water separator details have been sent to Jimmy Casey.
48. **Sheet D-8: What types of plantings are proposed in the gravel wetland. There appears to be hatching on the detail but nothing noted but wetland restoration mix.**
    There are no plantings associated with the gravel wetland. The wetland restoration mix has been specified by the UNH Stormwater center to mimic a natural wetland.
49. **Sheet Drain-2: Check area boundaries for NE-1 and SW-7. Ensure the boundaries follow high points.**
    Additional spot grades have been added to better depict flow direction, and boundaries have been adjusted to follow high points.
50. **Drainage Report: The report states that the stormwater design complies with Dover standards. Applicant shall review the section 153-14 of the Dover Code and clarify how the design meets the City's requirements.**
    Additional clarification regarding meeting City standards has been added to the drainage report.
51. **General Comment: Provide Lighting Plan and details.**
    Lighting Plan and details have been provided as part of this resubmittal.

Police Review: Marn Speidel

52. **Sheet C-2 shows EV charging station in the same spot that Sheet 3 shows a water shut-off valve**

EV charging station layout will not be finalized at this time, but they will likely be adjacent to the motorcycle and ADA parking.

53. **Sheet C-2, note 20: site construction hours ok for Sundays?**
    The construction hours note (now #21) was taken from the List of Common Site Plan Notes (revised November 28, 2022).
54. **How many vehicles does proposed EV charging station serve?**
    Final EV charging station layout and design will be completed in the future.
55. **Any proposed bike rack, or can these be stored inside?**
    There will be a bike rack on the eastern side of the patio. A bike rack detail has been added to Sheet D-10.
56. **Label all gates**
    Callouts have been added to all gates on Sheet C-2.

Fire/Inspection Services Review: Jim Maxfield

57. **Provide nearest hydrant location to structures**
    The existing fire hydrant on the Sumner Drive cul-de-sac has been added to the plans.
58. **How will first responders access the site?**
    First responders will have a code to access the site if it is outside of typical business hours.
59. **Indicate if the building will be used in a utility power outage**
    Yes, the building will be used in a utility power outage using the proposed generator.
60. **Indicate if generator is a life safety generator and fuel type**
    The generator is sized to handle a full load for both proposed buildings.
61. **Indicate the location of the FDC for each structure**
    FDC callouts have been added to the utility plan.
62. **Sheet C-2 Clarify electric vehicle charging station location conflicts with sheet C-3**
    EV charging station layout will not be finalized at this time, but they will likely be adjacent to the motorcycle and ADA parking.
63. **Indicate accessible route to EV chargers**
    The future EV chagrining stations will be located adjacent to the motorcycle parking and ADA spaces, which have less than a 2% cross slope.
64. **Provide a detail for EV chargers (i.e. quantity, access, mounting height etc.)**
    The EV charging stations would be a future installation, these details are not known at this time. This project will consist of running conduit to the site for future construction.
65. **Plans shall include design compliance with applicable accessibility regulations and NH RSA 155-A:5**
    ADA parking spaces have been located in close proximity to the building, have less than a 2% cross slope, and have an ADA accessible route to the building entrance.
66. **Indicate size, volume, and type of fuel along access road.**
    There is a proposed 10,000 gallon diesel fuel tank. System details have been provided.
67. **Provide location of vehicle fuel dispensing**
    The fuel dispensing will be located internally to the Administrative, Operations, and Maintenance building.
68. **Indicate the type of fueled vehicles which will be serviced.**
    All vehicles in the COAST fleet will be serviced in the maintenance garage.
69. **Clarify the enclosure for the fuel storage.**
    The fuel tank is proposed to be behind the closed vehicle gate and is protected by bollards. The tank is a protected level, 2-hour rated, double walled tank. Containment is within the tank itself and includes a leak detection system. Fuel system details have been provided.
70. **Clarify waste vehicle has adequate area to service dumpster pad near island, etc.**

The dumpster has been realigned to allow a garbage truck to reverse or pull forward into the dumpster.

71. **Provide guardrail detail for the top of retaining wall**
    The abutting property is located on the uphill side of the retaining wall.

Business Development Review: Reid Amy

72. **Impact of service?**
    No, during Phase I, during Phase II fleet service off site.

If you have any additional questions or comments, please do not hesitate to contact me at (603) 431-6196 or bclark@cmaengineers.com

Very truly yours,

CMA ENGINEERS, INC

Benjamin Clark, PE
Project Manager

MEMORANDUM

TO: City of Dover, Planning Department

FROM: Chris Chiaramonte, EIT, CMA Engineers, Inc.
Ben Clark, PE, CMA Engineers, Inc.

RE: COAST, Proposed Operation and Maintenance Facility
Traffic Memorandum
CMA #1250

DATE: March 16, 2023
Revised: May 31, 2023

Introduction

The Cooperative Alliance for Seacoast Transportation (COAST) is proposing to redevelop the existing site to construct a new facility for administration, operations, maintenance, and vehicle storage on the property located at 42 Sumner Drive. The proposed design consists of two different structures, a vehicle storage building that is 28,700 ft^2 and a separate administration, operations, and maintenance building that is 18,000 ft^2. Currently COAST's administrative operations are located at 6 Sumner Drive and will be moved to 42 Sumner Drive, approximately 4-6 employees. In addition to moving the administrative staff, the existing bus stop at 6 Sumner Drive will move to 42 Sumer Drive. This report supplements the Site Plan Application and summarizes traffic issues including adjacent land uses, traffic circulation, sight distances, potential traffic impacts, area roadway facilities and pedestrian facilities.

Site Description

The proposed redevelopment project primarily consists of the previously disturbed area of parcel H-35-C-4 and continued to be accessed from the existing driveway location on Sumner Drive. The driveway is located off the cul-de-sac at the end of Sumner Drive. The proposed access driveway consists of a 66' wide curb cut, which has a two-way 24' wide aisle for entering buses and passenger vehicles and exiting passenger vehicles, and another 24' wide one-way aisle for exiting busses.

The 73 proposed parking spaces would accommodate the existing staff at 42 Sumner Drive and the additional staff migrating from 6 Sumner Drive. COAST's bus fleet will be parked inside the vehicle storage building and not stored in the open paved parking area. The proposed number of parking spaces meets Dover's requirements for maximum allowed off-street parking spaces.

The existing bus stop at 6 Sumner Drive is primarily utilized by COAST and abutting business staff, and pedestrians visiting COAST's administrative building to purchase bus passes. The relocation of this bus stop will not change the current bus schedule.

Sumner Drive is a local road with two 15-foot travel lanes separated by a striped double yellow line and 3-foot gravel shoulders with no speed limit sign posted near the site. Sumner Drive intersects Route 153/Knox Marsh Road approximately 900 feet from the site driveway. The intersection is unsignalized and has left turning lanes coming from the eastbound and westbound directions. Knox Marsh Road has access to Route 9 and Route 16/Spaulding Turnpike approximately three quarters of a mile east from the Sumner Drive and Knox Marsh Road intersection.

Site Generated Traffic

As currently planned, the site would be redeveloped with a new administrative and operations building, and a vehicle storage building. Typically, we would estimate new trips generated by the site by referring to the Institute of Transportation Engineers (ITE) *Trip Generation Manual,* and the appropriate Land Use Code.

Although additional employees are being relocated to 42 Sumner Drive from 6 Sumner Drive, increasing trips generated from the site, the Sumner Drive at Knox Marsh Road intersection will experience the same amount of daily traffic entering and exiting the business park as part of the redevelopment project. However when a new tenant moves in to 6 Sumner Drive, it is expected there will be a small increase in trips at the intersection. Employee schedules are not expected to change, which would not affect the AM and PM peak hour trips from the site.

The land use surrounding the site primarily consists of commercial and industrial uses, and residential development on the southern side of Knox Marsh Road. East of the Knox Marsh Road at Sumner Drive intersection and in the vicinity of the Route 9 and Route 16 intersections, the annual average daily traffic (AADT) volume for Knox Marsh is 15,597 AADT. West of the Sumner Drive intersection the AADT decreases to 11,900.

Sight Distance

In the existing condition, the driveway runs parallel with Sumner Drive. Exiting vehicles have a clear line of site for approximately 350 feet, until the road bends to the south. This would meet AASHTO's recommended intersection sight distance for a 35-mph road. The overall driveway geometry will not change in the proposed condition.

Conclusions

The proposed redevelopment of the COAST Bus Facility will provide adequate parking and proper onsite circulation for the building users and emergency vehicles. No additional trips will be generated by the redevelopment of the COAST facility. The minor amount of additional trips from a new tenant moving into 6 Sumner Drive will have a negligible impact on the Knox March Road at Sumner Drive intersection.

Drainage Report
Cooperative Alliance for Seacoast Transportation
Operations and Maintenance Facility
Dover, New Hampshire

March 2023
Revised: July 2023

Submitted to:

City of Dover – Planning Department
288 Central Ave
Dover, New Hampshire 03820

Submitted by:

CMA Engineers, Inc.
Civil and Environmental Engineers
35 Bow Street
Portsmouth, New Hampshire 03801

Prepared by:

Civil and Environmental Engineers
35 Bow Street
Portsmouth, New Hampshire 03801

Drainage Report
Cooperative Alliance for Seacoast Transportation
Operations and Maintenance Facility
Dover, New Hampshire

March 2023

Revised: July 2023

TABLE OF CONTENTS

Stormwater Management Report Page

PROJECT DESCRIPTION 1

PRE-DEVELOPMENT CONDITIONS 5

POST-DEVELOPMENT CONDITIONS 5

EROSION CONTROL DURING CONSTRUCTION 5

CONCLUSIONS 6

Construction Drawings (34”x22”)

APPENDICES

A. Aerial Photograph
B. Web GIS Map-Surface Water Impairments
C. Web GIS Map-AoT Screening
D. FEMA Flood Insurance Rate Map
E. Environmental Documents
F. NRCS Soil Report
G. Project Photographs
H. Extreme Precipitation
I. Drainage Analysis
    I.1 Pre-Development Drainage Analysis
        i. Drainage Diagram
        ii. 2-YR, 10-YR, 25-YR, and 50-YR Node Summaries
        iii. 10-Year, 24 Hour Storm Calculations
    I.2 Post-Development Drainage Analysis
        i. Drainage Diagram
        ii. NHDES Best Management Practice Worksheets
        iii. 2-YR, 10-YR, 25-YR, and 50-YR Node Summaries
        iv. 10-Year, 24 Hour Storm Calculations
J. Reduced-Size Design Drawings (8.5x11)
K. Tax Maps and Zoning Maps
L. Inspection and Maintenance Plan

PROJECT DESCRIPTION

The Cooperative Alliance for Seacoast Transportation (COAST) is proposing the construction of a new facility for operations, maintenance, and vehicle storage on the property located at 42 Sumner Drive in Dover, New Hampshire. The property is owned by COAST who purchased the 6.39-acre parcel (Tax Map H, Block 35, Lot C-4) from C &J Bus Lines in 2000. Access to the site off Summer Drive is through the intersection of Knox Marsh Road and Summer Drive. Abutting properties include 10 Sumner Drive (2.36 acres) which is owned 10 Sumner Drive LLC, 99 Knox Marsh Road (20.46 acres) owned by Ry Development LLC, and 30 Littleworth Road (50.50 acers) owned by Sousane Ruth K & Quinian Nancy K. A 30' wide utility access easement is shown throughout the property that depicts access to the property at 99 Knox Marsh Road. The site has 188' of frontage on Sumner Drive, and the boundary limits of the main 6.39-acre parcel are depicted on the Existing Conditions Plans. The survey included boundary and topographical information of the entire site. The property is within the City's Commercial Manufacturing zoning district. The property tax map and zoning maps are provided in Appendix L. The project is expected to be constructed during the 2024 season.

The proposed design consists of two different structures, a vehicle storage building that is 28,700 ft^2 and a separate administration, office and maintenance building that is 18,000 ft^2. Along with the two structures the design consists of an outside concrete patio for staff, and general site improvements to utilities, stormwater management, and vehicle circulation. The new facility will be located on flat terrain with slopes ranging from 0 to 5% and elevations ranging from 99 to 108 feet. This project is being permitted concurrently with the Town of Dover Planning Board for Site Plan Approval, and with the NHDES for an Alteration of Terrain Review.

Site survey and wetlands delineation were completed by Doucet Survey LLC of Newmarket, New Hampshire and West Environmental of Nottingham, New Hampshire respectively. The wetlands were delineated in June 2020 and the site survey was completed in June 2020.

The site is currently comprised primarily impervious areas surrounded by grass. The northern portion consisted of wooded wetlands (See Existing Conditions Plan [Sheet 5]). The City of Dover requires that a 50-foot buffer be maintained between wetlands and proposed development, which has been maintained and is depicted on the plans. The project will expand the impervious area by approximately half an acre.

An EPA Construction General Permit (CGP) will be required for this project since there will be greater than one acre of ground disturbance. The CGP includes provisions for actively managing sediment and erosion during construction. Proposed erosion control methods include silt sock, erosion matting for steep slopes (greater than 3H:1V), stabilized construction entrance, stone check dams, and inlet protection for catch basins. Locations for proposed erosion controls are depicted on the enclosed Erosion Control Plan (Sheet 10) and Site Details (Sheet 12).

NHDES Web GIS Screening

A search of the NHDES Onestop Web GIS Data Mapper database was completed for this project including a review of surface water impairments and AoT screening layers. Figures for each are provided in Appendices B and C, respectively. The site is not near any designated river quarter mile buffer. No surface water impairments were identified on the property. The screening map shows the site is located within a wellhead protection area and is considered a Coastal Community. Extreme precipitation depths were increased by 15%. It is also noted that four remediation sites showed up in the proximity of the site including the BioPure Corporation site (Hazardous Waste Generation), the existing COAST Administrative Offices (Oil Spills/Releases), the SWIFT Independent Packing Co. (Leaking Underground Storage Tank) and the Dover Circle K. (Initially response spill site/leaking underground storage tank).

New Hampshire Natural Heritage Bureau (NHB) Search

A review of the New Hampshire Natural Heritage Bureau (NHB) database was completed for this project on November 15, 2022, to identify any rare species and exemplary natural communities in the project area. The review indicated that several recorded occurrences are near the project area, including the Spotted Turtle, New England Cottontail, Northern Black Racer, and plat species greater fringed-gentian. A copy of the NHB report is provided in Appendix E. Correspondence with NHB regarding the threatened plant species has been included with this report. Correspondence with Fish and Game is ongoing. The report is valid for a period of 1 year after the search date.

FEMA Flood Plain

A copy of the FEMA Flood Insurance Rate Map is provided in Appendix D. The project is outside the limits of the depicted 500-year flood plain, and located within Zone X.

Stormwater Analysis

The peak stormwater runoff flows were calculated for the 2-year, 10-year, 25-year, and 50-year Type III, 24-hour storm events and are summarized in this report. The method used for all analyses was SCS TR-55: Urban Hydrology for Small Watersheds and performed with HydroCAD® stormwater modeling software. Pre- and post-development drainage analysis results are presented in Appendix I.

Precipitation values for each 24-hour storm event are obtained from the Extreme Precipitation Estimates published by the Northeast Regional Climate Center (see Appendix I). The results of the analyses are summarized in the following sections.

NRCS mapping and reports are provided in Appendix F. A waiver was requested to allow NRCS soil mapping in place of Site Specific Soils mapping. Borings were conducted by John Turner Consulting and Geotechnical Services, Inc. Results showed a marine clay layer with varying depths across the site. In areas where impervious cover is being expanded, HSG A was used in the pre-development condition to artificially increase runoff and take a conservative approach. The location of the soil groups at the site are depicted on the pre- and post-development drainage diagrams and color coded-soil diagrams (Appendix I).

There are four points of analysis in the stormwater model for drainage areas that discharge to abutting properties or a public right-of-way. The total area modeled in the analysis is 6.384 acres, which encompasses the area of proposed improvements and the tree maintenance area. Peak flow rates are reduced in the post-development condition through the development of the stormwater pond.

A summary of peak off-site flows for the pre-development and post-development conditions at the site is presented below:

	Pre-Development (cfs)			
	2-year	10-year	25-year	50-year
POI-1 (H-31-0-0)	1.42	2.87	4.09	5.23
POI-2 (H-34-0-0)	3.20	7.59	10.41	13.04
POI-3 (Sumner Dr Row)	0.81	1.30	1.69	2.04
POI-4 (H-35-C-4)	6.51	10.51	13.69	16.63
TOTAL	**11.94**	**22.27**	**29.88**	**36.94**

	Post-Development (cfs)			
	2-year	10-year	25-year	50-year
POI-1 (H-31-0-0)	1.23	2.58	3.73	4.82
POI-2 (H-34-0-0)	2.50	6.77	9.87	12.76
POI-3 (Sumner Dr Row)	0.73	1.12	1.42	1.69
POI-4 (H-35-C-4)	1.81	8.20	12.29	15.30
TOTAL	**6.27**	**18.67**	**27.31**	**34.57**

A summary of off-site flow volume for the pre-development and post-development conditions at the site is presented below:

	Pre-Development (af)			
	2-year	10-year	25-year	50-year
POI-1 (H-31-0-0)	**0.182**	**0.362**	**0.515**	**0.663**
POI-2 (H-34-0-0)	**0.417**	**0.741**	**1.010**	**1.267**
POI-3 (Sumner Dr Row)	**0.061**	**0.101**	**0.132**	**0.162**
POI-4 (H-35-C-4)	**0.364**	**0.694**	**0.958**	**1.205**

	Post-Development (af)			
	2-year	10-year	25-year	50-year
POI-1 (H-31-0-0)	**0.160**	**0.326**	**0.470**	**0.609**
POI-2 (H-34-0-0)	**0.564**	**0.889**	**1.152**	**1.402**
POI-3 (Sumner Dr Row)	**0.069**	**0.107**	**0.137**	**0.165**
POI-4 (H-35-C-4)	**0.190**	**0.540**	**0.824**	**1.092**

PRE-DEVELOPMENT CONDITIONS

The pre-development conditions of the site consist primarily of impervious surfaces surrounded by grassed areas and a wooded area to the north. There is minimal grade change throughout the paved areas with slopes ranging from 0.5% to 3%. The site sits over Hydrologic Group A and D soils comprising of smaller watersheds totaling 6.384 acres in the analysis.

Existing stormwater management consists of closed and open drainage systems. Catch basins are utilized to capture site runoff, and infiltration/detention basins for treatment and flow attenuation. However, these treatment practices do not mean the current design standards.

POST-DEVELOPMENT CONDITIONS

The general topography and overall groundcover conditions will be very similar to pre-development conditions. The redevelopment project proposes to expand the paved areas by approximately half an acre. The proposed stormwater management system will be a combination of closed and open drainage. Similarly, to the pre-development conditions, runoff will be captured with catch basins. Forebays will be utilized for pretreatment and gravel wetlands for treatment and flow attenuation. Gravel wetlands were selected as the treatment practice due to the seasonal high-water table being very shallow. The stormwater management systems were designed in accordance with the stormwater management for new development projects in the City of Dover Site Development Regulations (153-14), and NHDES Alteration of Terrain standards. NHDES Stormwater Manual Volume 2 states Gravel Wetlands remove 95% of TSS, 85% of Nitrogen, and 64% of Phosphorus, exceeding the City of Dover's 80, 50, and 50 requirements for new developments. The project utilizes low-impact design strategies and does not cause any discharge in excess of the existing condition for the 2-, 10-, 25-, and 50-year, 24-hour storm events.

EROSION CONTROL DURING CONSTRUCTION

The proposed construction of the operations and maintenance facility will include the installation of temporary erosion control devices until the site is fully stabilized. The erosion control devices include:

- Silt sock around the perimeter of the site
- Bark and Hay mulch for ground cover stabilization

- Stabilized stone construction entrance
- Erosion control matting for berms and swales.

A Notice of Intent (NOI) for coverage under the CGP will be prepared and submitted prior to construction since greater than one acre of land will be disturbed. A copy of the document will be kept on-site for the duration of the project and all stormwater pollution prevention plan (SWPPP) related inspections and maintenance will be performed by qualified personnel.

CONCLUSIONS

Peak flow and volume are reduced with the proposed development of the site. These overall reductions are attributed to the addition of the new stormwater management systems. The proposed drainage system and erosion control measures depicted on the Design Drawings and described herein will provide adequate erosion and sedimentation control during construction. The pretreatment practices have been designed in accordance with City of Dover and NHDES Alteration of Terrain standards. The project will require an EPA Construction General Permit, which will require frequent inspections of erosion control devices, including after major storm events.

Appendix I.2

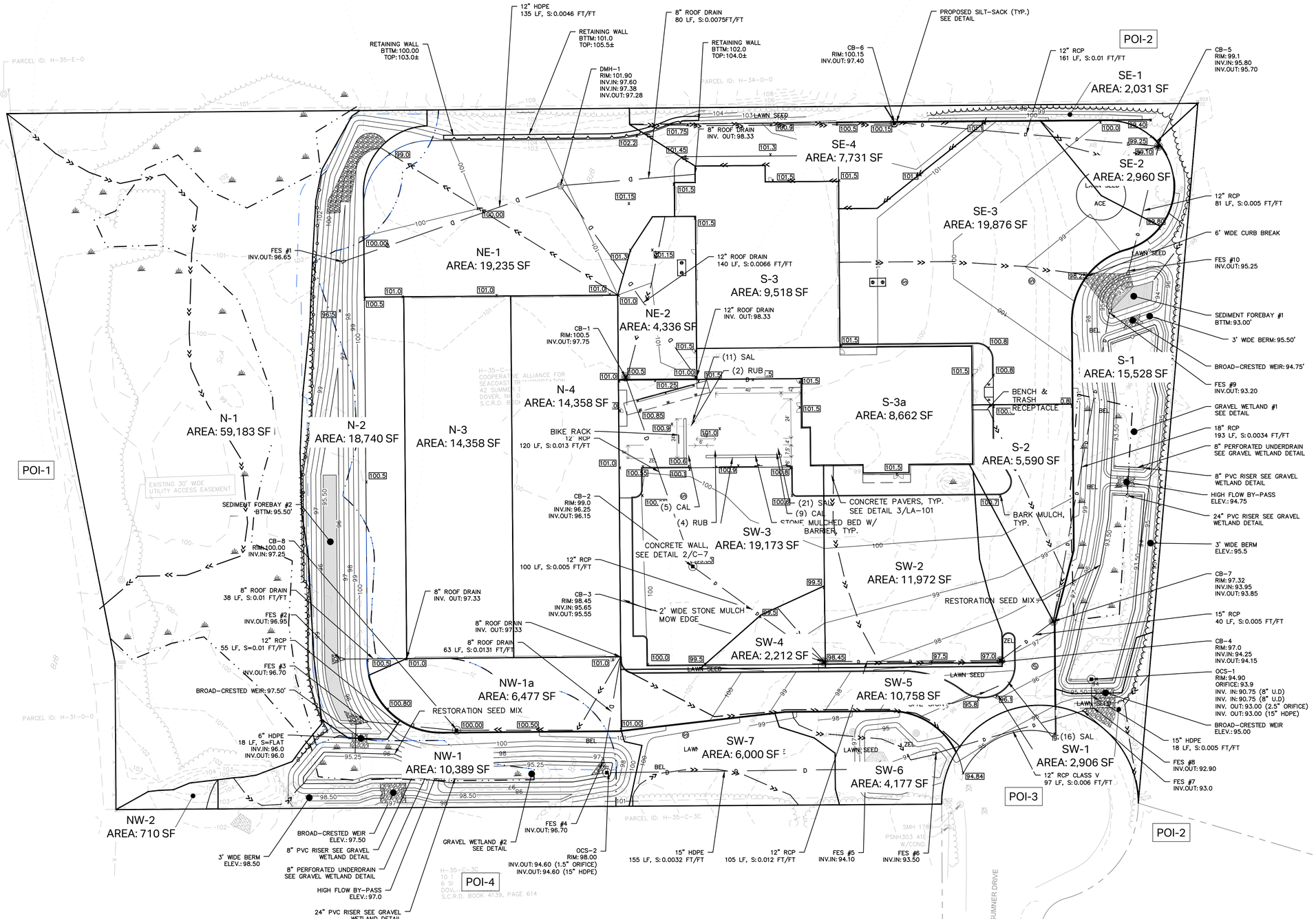
Post-Development Drainage Analysis

I.1 Post-Development Drainage Analysis

- i. Drainage Diagram
- iii. NHDES Best Management Practices Worksheets
- iv. 2-YR, 10-YR, 25-YR, and 50-YR Node Summaries
- v. 10-year, 24-Hour Storm Calculations

Appendix I.2.i

Post-Development Drainage Analysis – Drainage Diagram



SUBBASIN	S-1
POINT OF INTEREST	POI-3
SUBBASIN BOUNDARY	———
TIME OF CONCENTRATION	——— » ——— » ——— » ——— » ——— » ———

no.	revision	date	by
2	Revised for City of Dover TRC Comments	7/14/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

CMA ENGINEERS
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Portsmouth, NH • Manchester, NH • Portland, ME
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cmaengineers.com

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 1" = 20' (0, 20', 40')

Operations and Maintenance Facility
Transportation, Dover, NH

Operations and Maintenance Facility
42 Sumner Drive

Post-Development Drainage Map
Site-2023-002

drawing no.
DRAIN-2

sheet: 26 of 30

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Drainage Maps.dwg Date Plotted: Jul 17, 2023 – 4:31pm Plotted By: CCHIARAMONTE

Appendix I.2.iii

Post-Development Drainage Analysis – NHDES Best Management Practice Worksheets

GRAVEL WETLAND DESIGN CRITERIA
(Env-Wq 1508.05)

Type/Node Name: **Gravel Wetland #2 (23P) - Forebay #2 (3P)**

Enter the node name in the drainage analysis if applicable.

1.44	ac	A = Area draining to the practice	
1.11	ac	A_I = Impervious area draining to the practice	
0.77	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.74	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
1.07	ac-in	WQV= 1" x Rv x A	
3,887	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
389	cf	10% x WQV (check calc for sediment forebay)	
1,749	cf	45% x WQV (check calc for gravel wetland treatment bay volume)	
721	cf	V_{SED} = Sediment forebay volume	**≥ 10%WQV**
2,947	cf	V_{TB1} = Volume of treatment bay 1 [1]	**≥ 45%WQV**
3,291	cf	V_{TB2} = Volume of treatment bay 2 [1]	**≥ 45%WQV**
0.09	cfs	$2Q_{avg}$ = 2* WQV / 24 hrs * (1hr / 3600 sec) [2]	
97.13	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.09	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	**< $2Q_{avg}$**
24.00	hours	T_{ED} = Drawdown time of extended detention = 2WQV/Q_{WQV}	**≥ 24-hrs**
3.00	:1	Pond side slopes	**≥ 3:1**
93.16	ft	Elevation of SHWT	
91.16	ft	SHWT - 2 feet	
94.60	ft	Epp = Elevation of the permanent pool (elevation of lowest orifice) [3]	**≤ E_{SHWT} - 2 ft**
50.00	ft	Length of the flow path between the inlet and outlet in each cell	**≥ 15 ft**
Trash Rack		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of ≤6")?	
98.01	ft	Peak elevation of the 50-year storm event (E_{50})	
98.50	ft	Berm elevation of the pond	
YES		E_{50} ≤ the berm elevation?	**← yes**

Qualified professional that developed the planting plan
Name, Profession:

1. Volume stored above the wetland soil and below the high flow by-pass.
2. To ensure orifice is sized so that WQV is released at a relatively stable rate.
3. 4" to 8" below the wetland soil. If lowest orifice is higher than (SHWT - 2 feet), and saturated hydraulic conductivity (Ksat) is greater than 0.015 in/hr, the system must be lined.

Designer's Notes:

Calc'd 12/1/2022 by C.Chiaramonte, EIT

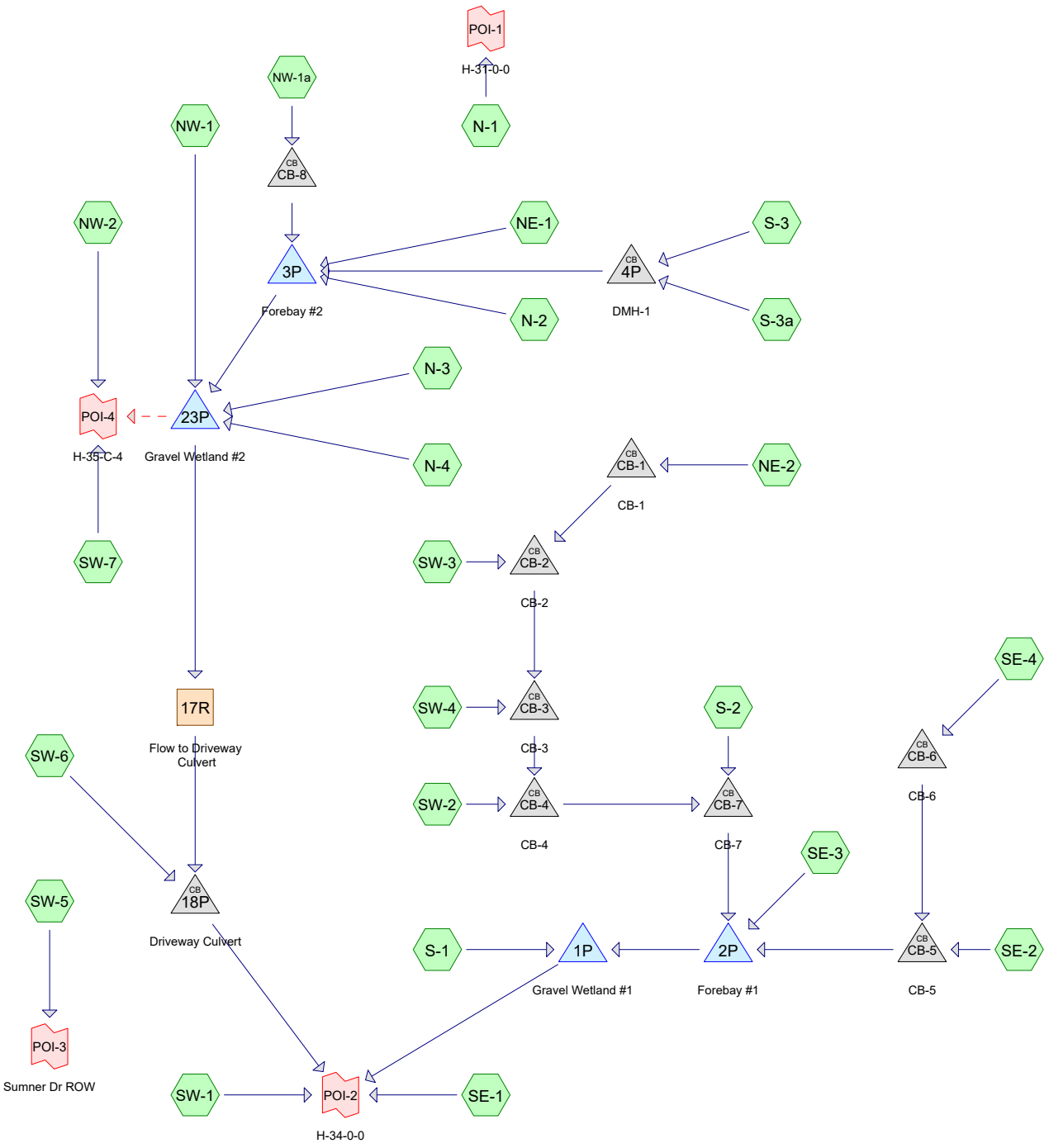
Rev: 7/14/23

Volume of sediment forebay represent volume below lowest outlet orifice at Elev. = 96.0

Area draining to practice is based on contributing area to sediment forebay for sizing and treatment calculations

Appendix I.2.iv

Post-Development Drainage Analysis – Node Summaries



Routing Diagram for 1250 - Post-Development
Prepared by CMA Engineers, Printed 7/17/2023
HydroCAD® 10.20-3c s/n 10642 © 2023 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.070	39	>75% Grass cover, Good, HSG A (N-1)
1.277	80	>75% Grass cover, Good, HSG D (N-2, NE-1, NW-1, S-1, SE-1, SE-2, SE-3, SE-4, SW-1, SW-6, SW-7)
2.586	98	Paved parking, HSG D (N-2, NE-1, NE-2, NW-1a, S-2, SE-2, SE-3, SE-4, SW-2, SW-3, SW-4, SW-5)
1.077	98	Roofs, HSG D (N-3, N-4, S-3, S-3a)
1.374	77	Woods, Good, HSG D (N-1, NW-1, NW-2, SW-1)
6.384	**89**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.070	HSG A	N-1
0.000	HSG B	
0.000	HSG C	
6.314	HSG D	N-1, N-2, N-3, N-4, NE-1, NE-2, NW-1, NW-1a, NW-2, S-1, S-2, S-3, S-3a, SE-1, SE-2, SE-3, SE-4, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7
0.000	Other	
6.384		**TOTAL AREA**

Summary for Subcatchment N-1:

Runoff = 2.56 cfs @ 12.42 hrs, Volume= 0.324 af, Depth= 2.82"
Routed to Link POI-1 : H-31-0-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
56,944	77	Woods, Good, HSG D
3,045	39	>75% Grass cover, Good, HSG A
59,989	75	Weighted Average
59,989		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	63	0.0323	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.61"
7.3	37	0.0050	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.61"
10.0	321	0.0059	0.54		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	27	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.1	448	Total			

Summary for Subcatchment N-2:

Runoff = 1.84 cfs @ 12.09 hrs, Volume= 0.136 af, Depth= 3.79"
Routed to Pond 3P : Forebay #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
13,337	80	>75% Grass cover, Good, HSG D
5,403	98	Paved parking, HSG D
18,740	85	Weighted Average
13,337		71.17% Pervious Area
5,403		28.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment N-3:

Runoff = 1.72 cfs @ 12.09 hrs, Volume= 0.143 af, Depth= 5.21"
Routed to Pond 23P : Gravel Wetland #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
14,358	98	Roofs, HSG D
14,358		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment N-4:

Runoff = 1.72 cfs @ 12.09 hrs, Volume= 0.143 af, Depth= 5.21"
Routed to Pond 23P : Gravel Wetland #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
14,358	98	Roofs, HSG D
14,358		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment NE-1:

Runoff = 2.29 cfs @ 12.09 hrs, Volume= 0.188 af, Depth= 5.10"
Routed to Pond 3P : Forebay #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
18,033	98	Paved parking, HSG D
1,202	80	>75% Grass cover, Good, HSG D
19,235	97	Weighted Average
1,202		6.25% Pervious Area
18,033		93.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment NE-2:

Runoff = 0.52 cfs @ 12.09 hrs, Volume= 0.043 af, Depth= 5.21"
Routed to Pond CB-1 : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
4,336	98	Paved parking, HSG D
4,336		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment NW-1:

Runoff = 0.90 cfs @ 12.09 hrs, Volume= 0.065 af, Depth= 3.29"
Routed to Pond 23P : Gravel Wetland #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
9,587	80	>75% Grass cover, Good, HSG D
802	77	Woods, Good, HSG D
10,389	80	Weighted Average
10,389		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment NW-1a:

Runoff = 0.77 cfs @ 12.09 hrs, Volume= 0.065 af, Depth= 5.21"
Routed to Pond CB-8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
6,477	98	Paved parking, HSG D
6,477		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment NW-2:

Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 3.00"
Routed to Link POI-4 : H-35-C-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
710	77	Woods, Good, HSG D
710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment S-1:

Runoff = 1.34 cfs @ 12.09 hrs, Volume= 0.098 af, Depth= 3.29"
Routed to Pond 1P : Gravel Wetland #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
15,528	80	>75% Grass cover, Good, HSG D
15,528		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment S-2:

Runoff = 0.67 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 5.21"
Routed to Pond CB-7 : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
5,590	98	Paved parking, HSG D
5,590		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment S-3:

Runoff = 1.14 cfs @ 12.09 hrs, Volume= 0.095 af, Depth= 5.21"
Routed to Pond 4P : DMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
9,518	98	Roofs, HSG D
9,518		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment S-3a:

Runoff = 1.04 cfs @ 12.09 hrs, Volume= 0.086 af, Depth= 5.21"
Routed to Pond 4P : DMH-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
8,662	98	Roofs, HSG D
8,662		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment SE-1:

Runoff = 0.18 cfs @ 12.09 hrs, Volume= 0.013 af, Depth= 3.29"
Routed to Link POI-2 : H-34-0-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
2,031	80	>75% Grass cover, Good, HSG D
2,031		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment SE-2:

Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.028 af, Depth= 4.98"
Routed to Pond CB-5 : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
2,653	98	Paved parking, HSG D
307	80	>75% Grass cover, Good, HSG D
2,960	96	Weighted Average
307		10.37% Pervious Area
2,653		89.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment SE-3:

Runoff = 2.43 cfs @ 12.09 hrs, Volume= 0.202 af, Depth= 5.21"
Routed to Pond 2P : Forebay #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
19,876	98	Paved parking, HSG D
399	80	>75% Grass cover, Good, HSG D
20,275	98	Weighted Average
399		1.97% Pervious Area
19,876		98.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment SE-4:

Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.070 af, Depth= 4.75"
Routed to Pond CB-6 : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
6,176	98	Paved parking, HSG D
1,555	80	>75% Grass cover, Good, HSG D
7,731	94	Weighted Average
1,555		20.11% Pervious Area
6,176		79.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Calc'd Tc < 6 min**

Summary for Subcatchment SW-1:

Runoff = 0.24 cfs @ 12.09 hrs, Volume= 0.018 af, Depth= 3.19"
Routed to Link POI-2 : H-34-0-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
1,512	80	>75% Grass cover, Good, HSG D
1,394	77	Woods, Good, HSG D
2,906	79	Weighted Average
2,906		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	25	0.0600	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.61"
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.2	105	Total			

Summary for Subcatchment SW-2:

Runoff = 1.43 cfs @ 12.09 hrs, Volume= 0.119 af, Depth= 5.21"
Routed to Pond CB-4 : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
11,972	98	Paved parking, HSG D
11,972		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment SW-3:

Runoff = 2.29 cfs @ 12.09 hrs, Volume= 0.191 af, Depth= 5.21"
Routed to Pond CB-2 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
19,173	98	Paved parking, HSG D
19,173		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment SW-4:

Runoff = 0.26 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 5.21"
Routed to Pond CB-3 : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
2,212	98	Paved parking, HSG D
2,212		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment SW-5:

Runoff = 1.12 cfs @ 12.15 hrs, Volume= 0.107 af, Depth= 5.21"
Routed to Link POI-3 : Sumner Dr ROW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
10,758	98	Paved parking, HSG D
10,758		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0200	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.61"
1.7	100	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.9	200	Total			

Summary for Subcatchment SW-6:

Runoff = 0.36 cfs @ 12.10 hrs, Volume= 0.026 af, Depth= 3.29"
Routed to Pond 18P : Driveway Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
4,177	80	>75% Grass cover, Good, HSG D
4,177		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0500	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.61"

Summary for Subcatchment SW-7:

Runoff = 0.49 cfs @ 12.12 hrs, Volume= 0.038 af, Depth= 3.29"
Routed to Link POI-4 : H-35-C-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.45"

Area (sf)	CN	Description
6,000	80	>75% Grass cover, Good, HSG D
6,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	100	0.0300	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.61"
0.3	20	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.1	120	Total			

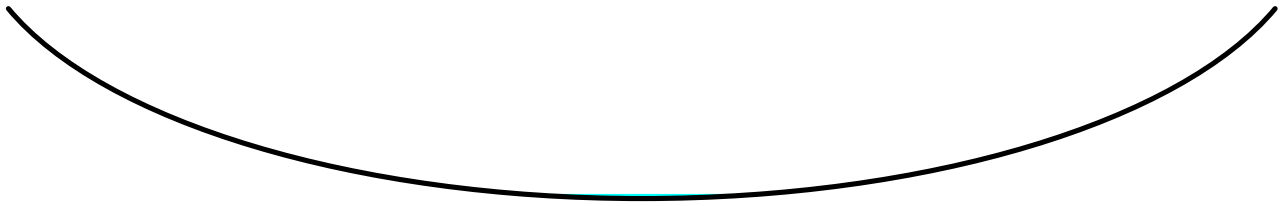
Summary for Reach 17R: Flow to Driveway Culvert

Inflow Area = 2.336 ac, 75.50% Impervious, Inflow Depth > 0.88" for 10-YR event
Inflow = 0.11 cfs @ 12.16 hrs, Volume= 0.170 af
Outflow = 0.11 cfs @ 12.17 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.5 min
Routed to Pond 18P : Driveway Culvert

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.78 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 1.0 min

Peak Storage= 6 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.04' , Surface Width= 4.49'
Bank-Full Depth= 2.00' Flow Area= 40.0 sf, Capacity= 375.01 cfs

30.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 45.0' Slope= 0.0133 '/'
Inlet Invert= 94.10', Outlet Invert= 93.50'



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Summary for Pond 1P: Gravel Wetland #1

Inflow Area = 2.061 ac, 80.19% Impervious, Inflow Depth = 4.71" for 10-YR event
Inflow = 10.12 cfs @ 12.10 hrs, Volume= 0.809 af
Outflow = 6.18 cfs @ 12.21 hrs, Volume= 0.670 af, Atten= 39%, Lag= 6.7 min
Primary = 6.18 cfs @ 12.21 hrs, Volume= 0.670 af
Routed to Link POI-2 : H-34-0-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 95.09' @ 12.21 hrs Surf.Area= 7,085 sf Storage= 13,873 cf
Flood Elev= 95.50' Surf.Area= 7,794 sf Storage= 16,960 cf

Plug-Flow detention time= 257.6 min calculated for 0.670 af (83% of inflow)
Center-of-Mass det. time= 188.3 min (961.3 - 773.0)

Volume	Invert	Avail.Storage	Storage Description
#1	90.58'	8,847 cf	**Cell #1 (Prismatic)** Listed below (Recalc)
#2	90.58'	12,010 cf	**Cell #2 (Prismatic)** Listed below (Recalc)
		20,857 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.58	1,925	0.0	0	0
92.58	1,925	40.0	1,540	1,540
92.83	1,925	30.0	144	1,684
93.49	1,925	20.0	254	1,938
93.50	1,925	100.0	19	1,958
94.00	2,252	100.0	1,044	3,002
95.00	2,956	100.0	2,604	5,606
95.50	3,336	100.0	1,573	7,179
96.00	3,336	100.0	1,668	8,847

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
90.58	2,658	0.0	0	0
92.58	2,658	40.0	2,126	2,126
92.83	2,658	30.0	199	2,326
93.49	2,658	20.0	351	2,677
93.50	2,658	100.0	27	2,703
94.00	3,082	100.0	1,435	4,138
95.00	3,983	100.0	3,533	7,671
95.50	4,458	100.0	2,110	9,781
96.00	4,458	100.0	2,229	12,010

Device	Routing	Invert	Outlet Devices
#1	Primary	95.00'	**9.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Primary	93.00'	**15.0" Round Culvert** L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.00' / 92.90' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	94.65'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	93.00'	**2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.15 cfs @ 12.21 hrs HW=95.08' TW=0.00' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 0.52 cfs @ 0.70 fps)
- **2=Culvert** (Inlet Controls 5.63 cfs @ 4.59 fps)
  - **3=Orifice/Grate** (Passes < 14.88 cfs potential flow)
  - **4=Orifice/Grate** (Passes < 0.23 cfs potential flow)

Summary for Pond 2P: Forebay #1

[80] Warning: Exceeded Pond CB-7 by 0.90' @ 24.45 hrs (2.42 cfs 0.369 af)

Inflow Area = 1.705 ac, 96.95% Impervious, Inflow Depth = 5.16" for 10-YR event
Inflow = 8.85 cfs @ 12.09 hrs, Volume= 0.732 af
Outflow = 8.77 cfs @ 12.10 hrs, Volume= 0.712 af, Atten= 1%, Lag= 0.6 min
Primary = 8.77 cfs @ 12.10 hrs, Volume= 0.712 af
Routed to Pond 1P : Gravel Wetland #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 95.28' @ 12.11 hrs Surf.Area= 981 sf Storage= 1,364 cf
Flood Elev= 97.32' Surf.Area= 1,070 sf Storage= 1,592 cf

Plug-Flow detention time= 34.6 min calculated for 0.710 af (97% of inflow)
Center-of-Mass det. time= 17.3 min (766.8 - 749.5)

Volume	Invert	Avail.Storage	Storage Description
#1	93.00'	1,592 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
93.00	275	0	0
94.00	534	405	405
95.00	871	703	1,107
95.50	1,070	485	1,592

Device	Routing	Invert	Outlet Devices
#1	Primary	94.75'	**9.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=8.02 cfs @ 12.10 hrs HW=95.27' TW=94.95' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 8.02 cfs @ 1.70 fps)

Summary for Pond 3P: Forebay #2

[80] Warning: Exceeded Pond 4P by 0.93' @ 24.45 hrs (1.84 cfs 0.200 af)
[80] Warning: Exceeded Pond CB-8 by 0.25' @ 24.35 hrs (0.17 cfs 0.009 af)

Inflow Area = 1.438 ac, 76.79% Impervious, Inflow Depth = 4.75" for 10-YR event
Inflow = 7.08 cfs @ 12.09 hrs, Volume= 0.569 af
Outflow = 4.41 cfs @ 12.16 hrs, Volume= 0.467 af, Atten= 38%, Lag= 4.1 min
Primary = 4.41 cfs @ 12.16 hrs, Volume= 0.467 af
Routed to Pond 23P : Gravel Wetland #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 97.93' @ 12.20 hrs Surf.Area= 5,656 sf Storage= 7,771 cf

Plug-Flow detention time= 171.8 min calculated for 0.466 af (82% of inflow)
Center-of-Mass det. time= 100.8 min (863.6 - 762.8)

Volume	Invert	Avail.Storage	Storage Description
#1	95.50'	11,311 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
95.50	1,212	0	0
96.00	1,670	721	721
97.00	3,697	2,684	3,404
98.00	5,795	4,746	8,150
98.50	6,849	3,161	11,311

Device	Routing	Invert	Outlet Devices
#1	Primary	97.50'	**9.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Primary	96.00'	**6.0" Round Culvert** L= 18.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 96.00' / 96.00' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=3.80 cfs @ 12.16 hrs HW=97.92' TW=97.85' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 3.60 cfs @ 0.95 fps)
└**2=Culvert** (Inlet Controls 0.20 cfs @ 1.02 fps)

Summary for Pond 4P: DMH-1

Inflow Area = 0.417 ac,100.00% Impervious, Inflow Depth = 5.21" for 10-YR event
Inflow = 2.17 cfs @ 12.09 hrs, Volume= 0.181 af
Outflow = 2.17 cfs @ 12.09 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min
Primary = 2.17 cfs @ 12.09 hrs, Volume= 0.181 af
Routed to Pond 3P : Forebay #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 98.44' @ 12.10 hrs
Flood Elev= 100.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.57'	**12.0" Round Culvert** L= 130.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 96.57' / 96.00' S= 0.0044 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.93 cfs @ 12.09 hrs HW=98.38' TW=97.82' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.93 cfs @ 2.45 fps)

Summary for Pond 18P: Driveway Culvert

[63] Warning: Exceeded Reach 17R INLET depth by 0.09' @ 12.10 hrs

Inflow Area = 2.431 ac, 72.52% Impervious, Inflow Depth > 0.97" for 10-YR event
Inflow = 0.46 cfs @ 12.10 hrs, Volume= 0.197 af
Outflow = 0.46 cfs @ 12.10 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.10 hrs, Volume= 0.197 af
Routed to Link POI-2 : H-34-0-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 94.24' @ 12.10 hrs
Flood Elev= 95.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.90'	**12.0" Round Culvert** L= 97.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 93.90' / 93.00' S= 0.0093 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=0.46 cfs @ 12.10 hrs HW=94.24' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.46 cfs @ 1.98 fps)

Summary for Pond 23P: Gravel Wetland #2

Inflow Area = 2.336 ac, 75.50% Impervious, Inflow Depth > 4.21" for 10-YR event
Inflow = 8.45 cfs @ 12.11 hrs, Volume= 0.818 af
Outflow = 7.82 cfs @ 12.16 hrs, Volume= 0.668 af, Atten= 7%, Lag= 3.1 min
Primary = 0.11 cfs @ 12.16 hrs, Volume= 0.170 af
Routed to Reach 17R : Flow to Driveway Culvert
Secondary = 7.72 cfs @ 12.16 hrs, Volume= 0.498 af
Routed to Link POI-4 : H-35-C-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 97.85' @ 12.16 hrs Surf.Area= 4,593 sf Storage= 9,024 cf
Flood Elev= 98.50' Surf.Area= 6,302 sf Storage= 12,498 cf

Plug-Flow detention time= 182.0 min calculated for 0.668 af (82% of inflow)
Center-of-Mass det. time= 88.5 min (907.5 - 819.0)

Volume	Invert	Avail.Storage	Storage Description
#1	92.32'	5,891 cf	**Cell #1 (Prismatic)** Listed below (Recalc)
#2	92.32'	6,607 cf	**Cell #2 (Prismatic)** Listed below (Recalc)
		12,498 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.32	713	0.0	0	0
92.33	713	40.0	3	3
94.33	713	40.0	570	573
94.58	713	30.0	53	627
95.24	713	20.0	94	721
95.25	713	100.0	7	728
96.00	1,065	100.0	667	1,395
97.00	1,597	100.0	1,331	2,726
98.00	2,199	100.0	1,898	4,624
98.50	2,872	100.0	1,268	5,891

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.32	685	0.0	0	0
92.33	685	40.0	3	3
94.33	685	40.0	548	551
94.58	685	30.0	51	602
95.24	685	20.0	90	693
95.25	685	100.0	7	699
96.00	1,151	100.0	689	1,388
97.00	1,838	100.0	1,495	2,882
98.00	2,597	100.0	2,218	5,100
98.50	3,430	100.0	1,507	6,607

Device	Routing	Invert	Outlet Devices
#1	Secondary	97.50'	**15.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#2	Primary	94.60'	**15.0" Round Culvert** L= 155.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 94.60' / 94.10' S= 0.0032 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	98.00'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	94.60'	**1.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.11 cfs @ 12.16 hrs HW=97.85' TW=94.14' (Dynamic Tailwater)
└─**2=Culvert** (Passes 0.11 cfs of 6.63 cfs potential flow)
  ├─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 0.11 cfs @ 8.59 fps)

Secondary OutFlow Max=7.54 cfs @ 12.16 hrs HW=97.85' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 7.54 cfs @ 1.45 fps)

Summary for Pond CB-1: CB-1

Inflow Area = 0.100 ac,100.00% Impervious, Inflow Depth = 5.21" for 10-YR event
Inflow = 0.52 cfs @ 12.09 hrs, Volume= 0.043 af
Outflow = 0.52 cfs @ 12.09 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 12.09 hrs, Volume= 0.043 af
Routed to Pond CB-2 : CB-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 98.13' @ 12.10 hrs
Flood Elev= 100.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	97.75'	**12.0" Round Culvert** L= 120.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 97.75' / 96.25' S= 0.0125 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=0.46 cfs @ 12.09 hrs HW=98.12' TW=97.35' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.46 cfs @ 2.60 fps)

Summary for Pond CB-2: CB-2

Inflow Area = 0.540 ac,100.00% Impervious, Inflow Depth = 5.21" for 10-YR event
Inflow = 2.81 cfs @ 12.09 hrs, Volume= 0.234 af
Outflow = 2.81 cfs @ 12.09 hrs, Volume= 0.234 af, Atten= 0%, Lag= 0.0 min
Primary = 2.81 cfs @ 12.09 hrs, Volume= 0.234 af
Routed to Pond CB-3 : CB-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 97.42' @ 12.13 hrs
Flood Elev= 99.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	96.15'	**12.0" Round Culvert** L= 100.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 96.15' / 95.65' S= 0.0050 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=2.21 cfs @ 12.09 hrs HW=97.35' TW=96.85' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.21 cfs @ 2.98 fps)

Summary for Pond CB-3: CB-3

Inflow Area = 0.590 ac,100.00% Impervious, Inflow Depth = 5.21" for 10-YR event
Inflow = 3.08 cfs @ 12.09 hrs, Volume= 0.256 af
Outflow = 3.08 cfs @ 12.09 hrs, Volume= 0.256 af, Atten= 0%, Lag= 0.0 min
Primary = 3.08 cfs @ 12.09 hrs, Volume= 0.256 af
Routed to Pond CB-4 : CB-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Peak Elev= 96.97' @ 12.12 hrs
Flood Elev= 98.45'

Device	Routing	Invert	Outlet Devices
#1	Primary	95.55'	**12.0" Round Culvert** L= 105.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 95.55' / 94.25' S= 0.0124 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=2.56 cfs @ 12.09 hrs HW=96.85' TW=96.19' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.56 cfs @ 3.28 fps)

Summary for Pond CB-4: CB-4

Inflow Area = 0.865 ac,100.00% Impervious, Inflow Depth = 5.21" for 10-YR event
Inflow = 4.51 cfs @ 12.09 hrs, Volume= 0.376 af
Outflow = 4.51 cfs @ 12.09 hrs, Volume= 0.376 af, Atten= 0%, Lag= 0.0 min
Primary = 4.51 cfs @ 12.09 hrs, Volume= 0.376 af
Routed to Pond CB-7 : CB-7

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 96.34' @ 12.13 hrs
Flood Elev= 96.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	94.15'	**15.0" Round Culvert** L= 40.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 94.15' / 93.95' S= 0.0050 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=3.30 cfs @ 12.09 hrs HW=96.19' TW=95.88' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.30 cfs @ 2.69 fps)

Summary for Pond CB-5: CB-5

Inflow Area = 0.245 ac, 82.58% Impervious, Inflow Depth = 4.82" for 10-YR event
Inflow = 1.24 cfs @ 12.09 hrs, Volume= 0.098 af
Outflow = 1.24 cfs @ 12.09 hrs, Volume= 0.098 af, Atten= 0%, Lag= 0.0 min
Primary = 1.24 cfs @ 12.09 hrs, Volume= 0.098 af
Routed to Pond 2P : Forebay #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 96.35' @ 12.09 hrs
Flood Elev= 99.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	95.70'	**12.0" Round Culvert** L= 80.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 95.70' / 95.25' S= 0.0056 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=1.21 cfs @ 12.09 hrs HW=96.34' TW=95.26' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 1.21 cfs @ 3.25 fps)

Summary for Pond CB-6: CB-6

Inflow Area = 0.177 ac, 79.89% Impervious, Inflow Depth = 4.75" for 10-YR event
Inflow = 0.89 cfs @ 12.09 hrs, Volume= 0.070 af
Outflow = 0.89 cfs @ 12.09 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.09 hrs, Volume= 0.070 af
Routed to Pond CB-5 : CB-5

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 97.88' @ 12.09 hrs
Flood Elev= 100.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	97.40'	**12.0" Round Culvert** L= 160.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 97.40' / 95.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=0.87 cfs @ 12.09 hrs HW=97.88' TW=96.34' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.87 cfs @ 2.35 fps)

Summary for Pond CB-7: CB-7

[80] Warning: Exceeded Pond CB-4 by 0.15' @ 25.70 hrs (0.72 cfs 0.124 af)

Inflow Area = 0.994 ac,100.00% Impervious, Inflow Depth = 5.21" for 10-YR event
Inflow = 5.18 cfs @ 12.09 hrs, Volume= 0.432 af
Outflow = 5.18 cfs @ 12.09 hrs, Volume= 0.432 af, Atten= 0%, Lag= 0.0 min
Primary = 5.18 cfs @ 12.09 hrs, Volume= 0.432 af
Routed to Pond 2P : Forebay #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 95.94' @ 12.10 hrs
Flood Elev= 97.32'

Device	Routing	Invert	Outlet Devices
#1	Primary	93.85'	**18.0" Round Culvert** L= 193.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 93.85' / 93.20' S= 0.0034 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.76 cfs @ 12.09 hrs HW=95.88' TW=95.26' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 4.76 cfs @ 2.69 fps)

Summary for Pond CB-8:

Inflow Area = 0.149 ac,100.00% Impervious, Inflow Depth = 5.21" for 10-YR event
Inflow = 0.77 cfs @ 12.09 hrs, Volume= 0.065 af
Outflow = 0.77 cfs @ 12.09 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min
Primary = 0.77 cfs @ 12.09 hrs, Volume= 0.065 af
Routed to Pond 3P : Forebay #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 97.97' @ 12.22 hrs
Flood Elev= 100.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	97.25'	**12.0" Round Culvert** L= 55.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 97.25' / 96.70' S= 0.0100 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Primary OutFlow Max=0.50 cfs @ 12.09 hrs HW=97.91' TW=97.82' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.50 cfs @ 1.29 fps)

Summary for Link POI-1: H-31-0-0

Inflow Area = 1.377 ac, 0.00% Impervious, Inflow Depth = 2.82" for 10-YR event
Inflow = 2.56 cfs @ 12.42 hrs, Volume= 0.324 af
Primary = 2.56 cfs @ 12.42 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link POI-2: H-34-0-0

Inflow Area = 4.606 ac, 74.17% Impervious, Inflow Depth > 2.34" for 10-YR event
Inflow = 6.77 cfs @ 12.19 hrs, Volume= 0.897 af
Primary = 6.77 cfs @ 12.19 hrs, Volume= 0.897 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link POI-3: Sumner Dr ROW

Inflow Area = 0.247 ac,100.00% Impervious, Inflow Depth = 5.21" for 10-YR event
Inflow = 1.12 cfs @ 12.15 hrs, Volume= 0.107 af
Primary = 1.12 cfs @ 12.15 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link POI-4: H-35-C-4

Inflow Area = 0.154 ac, 0.00% Impervious, Inflow Depth = 42.05" for 10-YR event
Inflow = 8.20 cfs @ 12.16 hrs, Volume= 0.540 af
Primary = 8.20 cfs @ 12.16 hrs, Volume= 0.540 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment N-1: Runoff Area=60,446 sf 0.00% Impervious Runoff Depth=1.38"
Flow Length=448' Tc=30.1 min CN=75 Runoff=1.23 cfs 0.160 af

Subcatchment N-2: Runoff Area=16,930 sf 31.91% Impervious Runoff Depth=2.20"
Tc=6.0 min CN=86 Runoff=0.98 cfs 0.071 af

Subcatchment N-3: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=1.13 cfs 0.093 af

Subcatchment N-4: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=1.13 cfs 0.093 af

Subcatchment NE-1: Runoff Area=19,235 sf 93.75% Impervious Runoff Depth=3.26"
Tc=6.0 min CN=97 Runoff=1.50 cfs 0.120 af

Subcatchment NE-2: Runoff Area=4,336 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af

Subcatchment NW-1: Runoff Area=11,174 sf 0.00% Impervious Runoff Depth=1.72"
Tc=6.0 min CN=80 Runoff=0.51 cfs 0.037 af

Subcatchment NW-1a: Runoff Area=6,389 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.50 cfs 0.041 af

Subcatchment NW-2: Runoff Area=710 sf 0.00% Impervious Runoff Depth=1.51"
Tc=6.0 min CN=77 Runoff=0.03 cfs 0.002 af

Subcatchment S-1: Runoff Area=15,528 sf 0.00% Impervious Runoff Depth=1.72"
Tc=6.0 min CN=80 Runoff=0.70 cfs 0.051 af

Subcatchment S-2: Runoff Area=5,590 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.44 cfs 0.036 af

Subcatchment S-3: Runoff Area=9,518 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.75 cfs 0.061 af

Subcatchment S-3a: Runoff Area=8,662 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.68 cfs 0.056 af

Subcatchment SE-1: Runoff Area=2,031 sf 0.00% Impervious Runoff Depth=1.72"
Tc=6.0 min CN=80 Runoff=0.09 cfs 0.007 af

Subcatchment SE-2: Runoff Area=2,960 sf 89.63% Impervious Runoff Depth=3.15"
Tc=6.0 min CN=96 Runoff=0.23 cfs 0.018 af

Subcatchment SE-3: Runoff Area=20,275 sf 98.03% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=1.60 cfs 0.131 af

Subcatchment SE-4: Runoff Area=7,731 sf 79.89% Impervious Runoff Depth=2.94"
Tc=6.0 min CN=94 Runoff=0.57 cfs 0.044 af

Subcatchment SW-1: Runoff Area=2,906 sf 0.00% Impervious Runoff Depth=1.65"
Flow Length=105' Tc=6.2 min CN=79 Runoff=0.13 cfs 0.009 af

Subcatchment SW-2: Runoff Area=11,972 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.94 cfs 0.077 af

Subcatchment SW-3: Runoff Area=19,173 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=1.51 cfs 0.124 af

Subcatchment SW-4: Runoff Area=2,212 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.17 cfs 0.014 af

Subcatchment SW-5: Runoff Area=10,758 sf 100.00% Impervious Runoff Depth=3.38"
Flow Length=200' Slope=0.0200 '/' Tc=10.9 min CN=98 Runoff=0.73 cfs 0.069 af

Subcatchment SW-6: Runoff Area=4,177 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=100' Slope=0.0500 '/' Tc=6.4 min CN=80 Runoff=0.19 cfs 0.014 af

Subcatchment SW-7: Runoff Area=6,660 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=120' Tc=8.1 min CN=80 Runoff=0.28 cfs 0.022 af

Reach 17R: Flow to Driveway Culvert Avg. Flow Depth=0.04' Max Vel=0.77 fps Inflow=0.10 cfs 0.153 af
n=0.022 L=45.0' S=0.0133 '/' Capacity=375.01 cfs Outflow=0.10 cfs 0.153 af

Pond 1P: Gravel Wetland #1 Peak Elev=94.76' Storage=11,688 cf Inflow=6.49 cfs 0.502 af
Outflow=2.24 cfs 0.382 af

Pond 2P: Forebay #1 Peak Elev=95.15' Storage=1,245 cf Inflow=5.80 cfs 0.472 af
Outflow=5.79 cfs 0.451 af

Pond 3P: Forebay #2 Peak Elev=97.79' Storage=6,105 cf Inflow=4.41 cfs 0.350 af
Outflow=3.39 cfs 0.243 af

Pond 4P: DMH-1 Peak Elev=98.00' Inflow=1.43 cfs 0.117 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0044 '/' Outflow=1.43 cfs 0.117 af

Pond 18P: Driveway Culvert Peak Elev=94.16' Inflow=0.27 cfs 0.166 af
12.0" Round Culvert n=0.012 L=97.0' S=0.0093 '/' Outflow=0.27 cfs 0.166 af

Pond 23P: Gravel Wetland #2 Peak Elev=97.67' Storage=8,205 cf Inflow=5.75 cfs 0.465 af
Primary=0.10 cfs 0.153 af Secondary=2.44 cfs 0.188 af Outflow=2.54 cfs 0.341 af

Pond CB-1: CB-1 Peak Elev=98.04' Inflow=0.34 cfs 0.028 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=0.34 cfs 0.028 af

Pond CB-2: CB-2 Peak Elev=97.00' Inflow=1.85 cfs 0.152 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/' Outflow=1.85 cfs 0.152 af

Pond CB-3: CB-3 Peak Elev=96.38' Inflow=2.03 cfs 0.166 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0124 '/' Outflow=2.03 cfs 0.166 af

Pond CB-4: CB-4 Peak Elev=95.65' Inflow=2.97 cfs 0.243 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/' Outflow=2.97 cfs 0.243 af

Pond CB-5: CB-5 Peak Elev=96.20' Inflow=0.80 cfs 0.061 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0056 '/' Outflow=0.80 cfs 0.061 af

Pond CB-6: CB-6 Peak Elev=97.78' Inflow=0.57 cfs 0.044 af
12.0" Round Culvert n=0.012 L=160.0' S=0.0100 '/' Outflow=0.57 cfs 0.044 af

Pond CB-7: CB-7 Peak Elev=95.47' Inflow=3.41 cfs 0.280 af
18.0" Round Culvert n=0.013 L=193.0' S=0.0034 '/' Outflow=3.41 cfs 0.280 af

Pond CB-8: Peak Elev=97.84' Inflow=0.50 cfs 0.041 af
12.0" Round Culvert n=0.012 L=55.0' S=0.0100 '/' Outflow=0.50 cfs 0.041 af

Link POI-1: H-31-0-0 Inflow=1.23 cfs 0.160 af
Primary=1.23 cfs 0.160 af

Link POI-2: H-34-0-0 Inflow=2.50 cfs 0.564 af
Primary=2.50 cfs 0.564 af

Link POI-3: Sumner Dr ROW Inflow=0.73 cfs 0.069 af
Primary=0.73 cfs 0.069 af

Link POI-4: H-35-C-4 Inflow=2.67 cfs 0.212 af
Primary=2.67 cfs 0.212 af

Total Runoff Area = 6.384 ac Runoff Volume = 1.378 af Average Runoff Depth = 2.59"
42.66% Pervious = 2.723 ac 57.34% Impervious = 3.661 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment N-1: Runoff Area=60,446 sf 0.00% Impervious Runoff Depth=2.82"
Flow Length=448' Tc=30.1 min CN=75 Runoff=2.58 cfs 0.326 af

Subcatchment N-2: Runoff Area=16,930 sf 31.91% Impervious Runoff Depth=3.89"
Tc=6.0 min CN=86 Runoff=1.70 cfs 0.126 af

Subcatchment N-3: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.72 cfs 0.143 af

Subcatchment N-4: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.72 cfs 0.143 af

Subcatchment NE-1: Runoff Area=19,235 sf 93.75% Impervious Runoff Depth=5.10"
Tc=6.0 min CN=97 Runoff=2.29 cfs 0.188 af

Subcatchment NE-2: Runoff Area=4,336 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=0.52 cfs 0.043 af

Subcatchment NW-1: Runoff Area=11,174 sf 0.00% Impervious Runoff Depth=3.29"
Tc=6.0 min CN=80 Runoff=0.97 cfs 0.070 af

Subcatchment NW-1a: Runoff Area=6,389 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=0.76 cfs 0.064 af

Subcatchment NW-2: Runoff Area=710 sf 0.00% Impervious Runoff Depth=3.00"
Tc=6.0 min CN=77 Runoff=0.06 cfs 0.004 af

Subcatchment S-1: Runoff Area=15,528 sf 0.00% Impervious Runoff Depth=3.29"
Tc=6.0 min CN=80 Runoff=1.34 cfs 0.098 af

Subcatchment S-2: Runoff Area=5,590 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=0.67 cfs 0.056 af

Subcatchment S-3: Runoff Area=9,518 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.14 cfs 0.095 af

Subcatchment S-3a: Runoff Area=8,662 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.04 cfs 0.086 af

Subcatchment SE-1: Runoff Area=2,031 sf 0.00% Impervious Runoff Depth=3.29"
Tc=6.0 min CN=80 Runoff=0.18 cfs 0.013 af

Subcatchment SE-2: Runoff Area=2,960 sf 89.63% Impervious Runoff Depth=4.98"
Tc=6.0 min CN=96 Runoff=0.35 cfs 0.028 af

Subcatchment SE-3: Runoff Area=20,275 sf 98.03% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=2.43 cfs 0.202 af

Subcatchment SE-4: Runoff Area=7,731 sf 79.89% Impervious Runoff Depth=4.75"
Tc=6.0 min CN=94 Runoff=0.89 cfs 0.070 af

Subcatchment SW-1: Runoff Area=2,906 sf 0.00% Impervious Runoff Depth=3.19"
Flow Length=105' Tc=6.2 min CN=79 Runoff=0.24 cfs 0.018 af

Subcatchment SW-2: Runoff Area=11,972 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.43 cfs 0.119 af

Subcatchment SW-3: Runoff Area=19,173 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=2.29 cfs 0.191 af

Subcatchment SW-4: Runoff Area=2,212 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=0.26 cfs 0.022 af

Subcatchment SW-5: Runoff Area=10,758 sf 100.00% Impervious Runoff Depth=5.21"
Flow Length=200' Slope=0.0200 '/' Tc=10.9 min CN=98 Runoff=1.12 cfs 0.107 af

Subcatchment SW-6: Runoff Area=4,177 sf 0.00% Impervious Runoff Depth=3.29"
Flow Length=100' Slope=0.0500 '/' Tc=6.4 min CN=80 Runoff=0.36 cfs 0.026 af

Subcatchment SW-7: Runoff Area=6,660 sf 0.00% Impervious Runoff Depth=3.29"
Flow Length=120' Tc=8.1 min CN=80 Runoff=0.54 cfs 0.042 af

Reach 17R: Flow to Driveway Culvert Avg. Flow Depth=0.04' Max Vel=0.78 fps Inflow=0.11 cfs 0.163 af
n=0.022 L=45.0' S=0.0133 '/' Capacity=375.01 cfs Outflow=0.11 cfs 0.163 af

Pond 1P: Gravel Wetland #1 Peak Elev=95.09' Storage=13,873 cf Inflow=10.12 cfs 0.809 af
Outflow=6.18 cfs 0.670 af

Pond 2P: Forebay #1 Peak Elev=95.28' Storage=1,364 cf Inflow=8.85 cfs 0.732 af
Outflow=8.77 cfs 0.712 af

Pond 3P: Forebay #2 Peak Elev=97.96' Storage=7,066 cf Inflow=6.93 cfs 0.558 af
Outflow=4.75 cfs 0.451 af

Pond 4P: DMH-1 Peak Elev=98.53' Inflow=2.17 cfs 0.181 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0044 '/' Outflow=2.17 cfs 0.181 af

Pond 18P: Driveway Culvert Peak Elev=94.24' Inflow=0.46 cfs 0.189 af
12.0" Round Culvert n=0.012 L=97.0' S=0.0093 '/' Outflow=0.46 cfs 0.189 af

Pond 23P: Gravel Wetland #2 Peak Elev=97.87' Storage=9,101 cf Inflow=8.95 cfs 0.808 af
Primary=0.11 cfs 0.163 af Secondary=8.32 cfs 0.517 af Outflow=8.43 cfs 0.680 af

Pond CB-1: CB-1 Peak Elev=98.13' Inflow=0.52 cfs 0.043 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=0.52 cfs 0.043 af

Pond CB-2: CB-2 Peak Elev=97.42' Inflow=2.81 cfs 0.234 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/' Outflow=2.81 cfs 0.234 af

Pond CB-3: CB-3 Peak Elev=96.97' Inflow=3.08 cfs 0.256 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0124 '/' Outflow=3.08 cfs 0.256 af

Pond CB-4: CB-4 Peak Elev=96.34' Inflow=4.51 cfs 0.376 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/' Outflow=4.51 cfs 0.376 af

Pond CB-5: CB-5 Peak Elev=96.35' Inflow=1.24 cfs 0.098 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0056 '/' Outflow=1.24 cfs 0.098 af

Pond CB-6: CB-6 Peak Elev=97.88' Inflow=0.89 cfs 0.070 af
12.0" Round Culvert n=0.012 L=160.0' S=0.0100 '/' Outflow=0.89 cfs 0.070 af

Pond CB-7: CB-7 Peak Elev=95.94' Inflow=5.18 cfs 0.432 af
18.0" Round Culvert n=0.013 L=193.0' S=0.0034 '/' Outflow=5.18 cfs 0.432 af

Pond CB-8: Peak Elev=98.01' Inflow=0.76 cfs 0.064 af
12.0" Round Culvert n=0.012 L=55.0' S=0.0100 '/' Outflow=0.76 cfs 0.064 af

Link POI-1: H-31-0-0 Inflow=2.58 cfs 0.326 af
Primary=2.58 cfs 0.326 af

Link POI-2: H-34-0-0 Inflow=6.77 cfs 0.889 af
Primary=6.77 cfs 0.889 af

Link POI-3: Sumner Dr ROW Inflow=1.12 cfs 0.107 af
Primary=1.12 cfs 0.107 af

Link POI-4: H-35-C-4 Inflow=8.88 cfs 0.563 af
Primary=8.88 cfs 0.563 af

Total Runoff Area = 6.384 ac Runoff Volume = 2.281 af Average Runoff Depth = 4.29"
42.66% Pervious = 2.723 ac 57.34% Impervious = 3.661 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment N-1: Runoff Area=60,446 sf 0.00% Impervious Runoff Depth=4.06"
Flow Length=448' Tc=30.1 min CN=75 Runoff=3.73 cfs 0.470 af

Subcatchment N-2: Runoff Area=16,930 sf 31.91% Impervious Runoff Depth=5.27"
Tc=6.0 min CN=86 Runoff=2.27 cfs 0.171 af

Subcatchment N-3: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=2.18 cfs 0.183 af

Subcatchment N-4: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=2.18 cfs 0.183 af

Subcatchment NE-1: Runoff Area=19,235 sf 93.75% Impervious Runoff Depth=6.54"
Tc=6.0 min CN=97 Runoff=2.91 cfs 0.241 af

Subcatchment NE-2: Runoff Area=4,336 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=0.66 cfs 0.055 af

Subcatchment NW-1: Runoff Area=11,174 sf 0.00% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=80 Runoff=1.34 cfs 0.098 af

Subcatchment NW-1a: Runoff Area=6,389 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=0.97 cfs 0.081 af

Subcatchment NW-2: Runoff Area=710 sf 0.00% Impervious Runoff Depth=4.28"
Tc=6.0 min CN=77 Runoff=0.08 cfs 0.006 af

Subcatchment S-1: Runoff Area=15,528 sf 0.00% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=80 Runoff=1.87 cfs 0.137 af

Subcatchment S-2: Runoff Area=5,590 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=0.85 cfs 0.071 af

Subcatchment S-3: Runoff Area=9,518 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=1.44 cfs 0.121 af

Subcatchment S-3a: Runoff Area=8,662 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=1.31 cfs 0.110 af

Subcatchment SE-1: Runoff Area=2,031 sf 0.00% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=80 Runoff=0.24 cfs 0.018 af

Subcatchment SE-2: Runoff Area=2,960 sf 89.63% Impervious Runoff Depth=6.42"
Tc=6.0 min CN=96 Runoff=0.45 cfs 0.036 af

Subcatchment SE-3: Runoff Area=20,275 sf 98.03% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=3.08 cfs 0.258 af

Subcatchment SE-4: Runoff Area=7,731 sf 79.89% Impervious Runoff Depth=6.19"
Tc=6.0 min CN=94 Runoff=1.15 cfs 0.092 af

Subcatchment SW-1: Runoff Area=2,906 sf 0.00% Impervious Runoff Depth=4.49"
Flow Length=105' Tc=6.2 min CN=79 Runoff=0.34 cfs 0.025 af

Subcatchment SW-2: Runoff Area=11,972 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=1.82 cfs 0.153 af

Subcatchment SW-3: Runoff Area=19,173 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=2.91 cfs 0.244 af

Subcatchment SW-4: Runoff Area=2,212 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af

Subcatchment SW-5: Runoff Area=10,758 sf 100.00% Impervious Runoff Depth=6.66"
Flow Length=200' Slope=0.0200 '/' Tc=10.9 min CN=98 Runoff=1.42 cfs 0.137 af

Subcatchment SW-6: Runoff Area=4,177 sf 0.00% Impervious Runoff Depth=4.60"
Flow Length=100' Slope=0.0500 '/' Tc=6.4 min CN=80 Runoff=0.50 cfs 0.037 af

Subcatchment SW-7: Runoff Area=6,660 sf 0.00% Impervious Runoff Depth=4.60"
Flow Length=120' Tc=8.1 min CN=80 Runoff=0.75 cfs 0.059 af

Reach 17R: Flow to Driveway Culvert Avg. Flow Depth=0.05' Max Vel=0.78 fps Inflow=0.11 cfs 0.170 af
n=0.022 L=45.0' S=0.0133 '/' Capacity=375.01 cfs Outflow=0.11 cfs 0.170 af

Pond 1P: Gravel Wetland #1 Peak Elev=95.26' Storage=15,134 cf Inflow=12.90 cfs 1.054 af
Outflow=8.91 cfs 0.903 af

Pond 2P: Forebay #1 Peak Elev=95.39' Storage=1,480 cf Inflow=11.23 cfs 0.938 af
Outflow=11.04 cfs 0.917 af

Pond 3P: Forebay #2 Peak Elev=98.07' Storage=7,689 cf Inflow=8.91 cfs 0.724 af
Outflow=6.86 cfs 0.617 af

Pond 4P: DMH-1 Peak Elev=99.08' Inflow=2.76 cfs 0.232 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0044 '/' Outflow=2.76 cfs 0.232 af

Pond 18P: Driveway Culvert Peak Elev=94.29' Inflow=0.60 cfs 0.207 af
12.0" Round Culvert n=0.012 L=97.0' S=0.0093 '/' Outflow=0.60 cfs 0.207 af

Pond 23P: Gravel Wetland #2 Peak Elev=97.95' Storage=9,493 cf Inflow=12.39 cfs 1.082 af
Primary=0.11 cfs 0.170 af Secondary=11.65 cfs 0.783 af Outflow=11.76 cfs 0.953 af

Pond CB-1: CB-1 Peak Elev=98.87' Inflow=0.66 cfs 0.055 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=0.66 cfs 0.055 af

Pond CB-2: CB-2 Peak Elev=98.85' Inflow=3.57 cfs 0.300 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/' Outflow=3.57 cfs 0.300 af

Pond CB-3: CB-3 Peak Elev=98.17' Inflow=3.90 cfs 0.328 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0124 '/' Outflow=3.90 cfs 0.328 af

Pond CB-4: CB-4 Peak Elev=97.18' Inflow=5.72 cfs 0.480 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/' Outflow=5.72 cfs 0.480 af

Pond CB-5: CB-5 Peak Elev=96.46' Inflow=1.59 cfs 0.128 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0056 '/' Outflow=1.59 cfs 0.128 af

Pond CB-6: CB-6 Peak Elev=97.96' Inflow=1.15 cfs 0.092 af
12.0" Round Culvert n=0.012 L=160.0' S=0.0100 '/' Outflow=1.15 cfs 0.092 af

Pond CB-7: CB-7 Peak Elev=96.46' Inflow=6.57 cfs 0.552 af
18.0" Round Culvert n=0.013 L=193.0' S=0.0034 '/' Outflow=6.57 cfs 0.552 af

Pond CB-8: Peak Elev=98.13' Inflow=0.97 cfs 0.081 af
12.0" Round Culvert n=0.012 L=55.0' S=0.0100 '/' Outflow=0.97 cfs 0.081 af

Link POI-1: H-31-0-0 Inflow=3.73 cfs 0.470 af
Primary=3.73 cfs 0.470 af

Link POI-2: H-34-0-0 Inflow=9.87 cfs 1.152 af
Primary=9.87 cfs 1.152 af

Link POI-3: Sumner Dr ROW Inflow=1.42 cfs 0.137 af
Primary=1.42 cfs 0.137 af

Link POI-4: H-35-C-4 Inflow=12.43 cfs 0.847 af
Primary=12.43 cfs 0.847 af

Total Runoff Area = 6.384 ac Runoff Volume = 3.014 af Average Runoff Depth = 5.67"
42.66% Pervious = 2.723 ac 57.34% Impervious = 3.661 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment N-1: Runoff Area=60,446 sf 0.00% Impervious Runoff Depth=5.27"
Flow Length=448' Tc=30.1 min CN=75 Runoff=4.82 cfs 0.609 af

Subcatchment N-2: Runoff Area=16,930 sf 31.91% Impervious Runoff Depth=6.57"
Tc=6.0 min CN=86 Runoff=2.80 cfs 0.213 af

Subcatchment N-3: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=2.61 cfs 0.220 af

Subcatchment N-4: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=2.61 cfs 0.220 af

Subcatchment NE-1: Runoff Area=19,235 sf 93.75% Impervious Runoff Depth=7.89"
Tc=6.0 min CN=97 Runoff=3.48 cfs 0.290 af

Subcatchment NE-2: Runoff Area=4,336 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=0.79 cfs 0.066 af

Subcatchment NW-1: Runoff Area=11,174 sf 0.00% Impervious Runoff Depth=5.86"
Tc=6.0 min CN=80 Runoff=1.69 cfs 0.125 af

Subcatchment NW-1a: Runoff Area=6,389 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=1.16 cfs 0.098 af

Subcatchment NW-2: Runoff Area=710 sf 0.00% Impervious Runoff Depth=5.50"
Tc=6.0 min CN=77 Runoff=0.10 cfs 0.007 af

Subcatchment S-1: Runoff Area=15,528 sf 0.00% Impervious Runoff Depth=5.86"
Tc=6.0 min CN=80 Runoff=2.35 cfs 0.174 af

Subcatchment S-2: Runoff Area=5,590 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=1.02 cfs 0.086 af

Subcatchment S-3: Runoff Area=9,518 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=1.73 cfs 0.146 af

Subcatchment S-3a: Runoff Area=8,662 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=1.57 cfs 0.133 af

Subcatchment SE-1: Runoff Area=2,031 sf 0.00% Impervious Runoff Depth=5.86"
Tc=6.0 min CN=80 Runoff=0.31 cfs 0.023 af

Subcatchment SE-2: Runoff Area=2,960 sf 89.63% Impervious Runoff Depth=7.77"
Tc=6.0 min CN=96 Runoff=0.53 cfs 0.044 af

Subcatchment SE-3: Runoff Area=20,275 sf 98.03% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=3.68 cfs 0.311 af

Subcatchment SE-4: Runoff Area=7,731 sf 79.89% Impervious Runoff Depth=7.53"
Tc=6.0 min CN=94 Runoff=1.38 cfs 0.111 af

Subcatchment SW-1: Runoff Area=2,906 sf 0.00% Impervious Runoff Depth=5.74"
Flow Length=105' Tc=6.2 min CN=79 Runoff=0.43 cfs 0.032 af

Subcatchment SW-2: Runoff Area=11,972 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=2.17 cfs 0.183 af

Subcatchment SW-3: Runoff Area=19,173 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=3.48 cfs 0.294 af

Subcatchment SW-4: Runoff Area=2,212 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=0.40 cfs 0.034 af

Subcatchment SW-5: Runoff Area=10,758 sf 100.00% Impervious Runoff Depth=8.01"
Flow Length=200' Slope=0.0200 '/' Tc=10.9 min CN=98 Runoff=1.69 cfs 0.165 af

Subcatchment SW-6: Runoff Area=4,177 sf 0.00% Impervious Runoff Depth=5.86"
Flow Length=100' Slope=0.0500 '/' Tc=6.4 min CN=80 Runoff=0.63 cfs 0.047 af

Subcatchment SW-7: Runoff Area=6,660 sf 0.00% Impervious Runoff Depth=5.86"
Flow Length=120' Tc=8.1 min CN=80 Runoff=0.95 cfs 0.075 af

Reach 17R: Flow to Driveway Culvert Avg. Flow Depth=0.05' Max Vel=0.84 fps Inflow=0.15 cfs 0.176 af
n=0.022 L=45.0' S=0.0133 '/' Capacity=375.01 cfs Outflow=0.14 cfs 0.176 af

Pond 1P: Gravel Wetland #1 Peak Elev=95.38' Storage=16,040 cf Inflow=15.47 cfs 1.283 af
Outflow=11.58 cfs 1.125 af

Pond 2P: Forebay #1 Peak Elev=95.51' Storage=1,592 cf Inflow=13.46 cfs 1.129 af
Outflow=13.12 cfs 1.109 af

Pond 3P: Forebay #2 Peak Elev=98.15' Storage=8,152 cf Inflow=10.75 cfs 0.880 af
Outflow=8.49 cfs 0.772 af

Pond 4P: DMH-1 Peak Elev=99.64' Inflow=3.30 cfs 0.279 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0044 '/' Outflow=3.30 cfs 0.279 af

Pond 18P: Driveway Culvert Peak Elev=94.33' Inflow=0.73 cfs 0.223 af
12.0" Round Culvert n=0.012 L=97.0' S=0.0093 '/' Outflow=0.73 cfs 0.223 af

Pond 23P: Gravel Wetland #2 Peak Elev=98.01' Storage=9,774 cf Inflow=15.16 cfs 1.338 af
Primary=0.15 cfs 0.176 af Secondary=14.31 cfs 1.032 af Outflow=14.46 cfs 1.208 af

Pond CB-1: CB-1 Peak Elev=100.55' Inflow=0.79 cfs 0.066 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=0.79 cfs 0.066 af

Pond CB-2: CB-2 Peak Elev=100.52' Inflow=4.27 cfs 0.360 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/' Outflow=4.27 cfs 0.360 af

Pond CB-3: CB-3 Peak Elev=99.52' Inflow=4.67 cfs 0.394 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0124 '/' Outflow=4.67 cfs 0.394 af

Pond CB-4: CB-4 Peak Elev=98.09' Inflow=6.84 cfs 0.578 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/' Outflow=6.84 cfs 0.578 af

Pond CB-5: CB-5 Peak Elev=96.55' Inflow=1.91 cfs 0.155 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0056 '/' Outflow=1.91 cfs 0.155 af

Pond CB-6: CB-6 Peak Elev=98.02' Inflow=1.38 cfs 0.111 af
12.0" Round Culvert n=0.012 L=160.0' S=0.0100 '/' Outflow=1.38 cfs 0.111 af

Pond CB-7: CB-7 Peak Elev=97.04' Inflow=7.86 cfs 0.663 af
18.0" Round Culvert n=0.013 L=193.0' S=0.0034 '/' Outflow=7.86 cfs 0.663 af

Pond CB-8: Peak Elev=98.22' Inflow=1.16 cfs 0.098 af
12.0" Round Culvert n=0.012 L=55.0' S=0.0100 '/' Outflow=1.16 cfs 0.098 af

Link POI-1: H-31-0-0 Inflow=4.82 cfs 0.609 af
Primary=4.82 cfs 0.609 af

Link POI-2: H-34-0-0 Inflow=12.74 cfs 1.402 af
Primary=12.74 cfs 1.402 af

Link POI-3: Sumner Dr ROW Inflow=1.69 cfs 0.165 af
Primary=1.69 cfs 0.165 af

Link POI-4: H-35-C-4 Inflow=15.31 cfs 1.114 af
Primary=15.31 cfs 1.114 af

Total Runoff Area = 6.384 ac Runoff Volume = 3.706 af Average Runoff Depth = 6.97"
42.66% Pervious = 2.723 ac 57.34% Impervious = 3.661 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment N-1: Runoff Area=60,446 sf 0.00% Impervious Runoff Depth=6.76"
Flow Length=448' Tc=30.1 min CN=75 Runoff=6.15 cfs 0.781 af

Subcatchment N-2: Runoff Area=16,930 sf 31.91% Impervious Runoff Depth=8.15"
Tc=6.0 min CN=86 Runoff=3.43 cfs 0.264 af

Subcatchment N-3: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=3.12 cfs 0.264 af

Subcatchment N-4: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=3.12 cfs 0.264 af

Subcatchment NE-1: Runoff Area=19,235 sf 93.75% Impervious Runoff Depth=9.51"
Tc=6.0 min CN=97 Runoff=4.17 cfs 0.350 af

Subcatchment NE-2: Runoff Area=4,336 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=0.94 cfs 0.080 af

Subcatchment NW-1: Runoff Area=11,174 sf 0.00% Impervious Runoff Depth=7.40"
Tc=6.0 min CN=80 Runoff=2.12 cfs 0.158 af

Subcatchment NW-1a: Runoff Area=6,389 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=1.39 cfs 0.118 af

Subcatchment NW-2: Runoff Area=710 sf 0.00% Impervious Runoff Depth=7.01"
Tc=6.0 min CN=77 Runoff=0.13 cfs 0.010 af

Subcatchment S-1: Runoff Area=15,528 sf 0.00% Impervious Runoff Depth=7.40"
Tc=6.0 min CN=80 Runoff=2.94 cfs 0.220 af

Subcatchment S-2: Runoff Area=5,590 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=1.22 cfs 0.103 af

Subcatchment S-3: Runoff Area=9,518 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=2.07 cfs 0.175 af

Subcatchment S-3a: Runoff Area=8,662 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=1.88 cfs 0.160 af

Subcatchment SE-1: Runoff Area=2,031 sf 0.00% Impervious Runoff Depth=7.40"
Tc=6.0 min CN=80 Runoff=0.38 cfs 0.029 af

Subcatchment SE-2: Runoff Area=2,960 sf 89.63% Impervious Runoff Depth=9.39"
Tc=6.0 min CN=96 Runoff=0.64 cfs 0.053 af

Subcatchment SE-3: Runoff Area=20,275 sf 98.03% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=4.41 cfs 0.373 af

Subcatchment SE-4: Runoff Area=7,731 sf 79.89% Impervious Runoff Depth=9.14"
Tc=6.0 min CN=94 Runoff=1.66 cfs 0.135 af

Subcatchment SW-1: Runoff Area=2,906 sf 0.00% Impervious Runoff Depth=7.27"
Flow Length=105' Tc=6.2 min CN=79 Runoff=0.54 cfs 0.040 af

Subcatchment SW-2: Runoff Area=11,972 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=2.60 cfs 0.221 af

Subcatchment SW-3: Runoff Area=19,173 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=4.17 cfs 0.353 af

Subcatchment SW-4: Runoff Area=2,212 sf 100.00% Impervious Runoff Depth=9.63"
Tc=6.0 min CN=98 Runoff=0.48 cfs 0.041 af

Subcatchment SW-5: Runoff Area=10,758 sf 100.00% Impervious Runoff Depth=9.63"
Flow Length=200' Slope=0.0200 '/' Tc=10.9 min CN=98 Runoff=2.03 cfs 0.198 af

Subcatchment SW-6: Runoff Area=4,177 sf 0.00% Impervious Runoff Depth=7.40"
Flow Length=100' Slope=0.0500 '/' Tc=6.4 min CN=80 Runoff=0.78 cfs 0.059 af

Subcatchment SW-7: Runoff Area=6,660 sf 0.00% Impervious Runoff Depth=7.40"
Flow Length=120' Tc=8.1 min CN=80 Runoff=1.19 cfs 0.094 af

Reach 17R: Flow to Driveway Culvert Avg. Flow Depth=0.13' Max Vel=1.49 fps Inflow=0.89 cfs 0.189 af
n=0.022 L=45.0' S=0.0133 '/' Capacity=375.01 cfs Outflow=0.94 cfs 0.189 af

Pond 1P: Gravel Wetland #1 Peak Elev=95.51' Storage=17,000 cf Inflow=20.04 cfs 1.558 af
Outflow=14.90 cfs 1.396 af

Pond 2P: Forebay #1 Peak Elev=95.67' Storage=1,592 cf Inflow=16.12 cfs 1.359 af
Outflow=17.10 cfs 1.339 af

Pond 3P: Forebay #2 Peak Elev=98.24' Storage=8,684 cf Inflow=12.95 cfs 1.067 af
Outflow=10.19 cfs 0.959 af

Pond 4P: DMH-1 Peak Elev=100.42' Inflow=3.95 cfs 0.335 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0044 '/' Outflow=3.95 cfs 0.335 af

Pond 18P: Driveway Culvert Peak Elev=94.59' Inflow=1.62 cfs 0.248 af
12.0" Round Culvert n=0.012 L=97.0' S=0.0093 '/' Outflow=1.62 cfs 0.248 af

Pond 23P: Gravel Wetland #2 Peak Elev=98.06' Storage=10,024 cf Inflow=18.29 cfs 1.646 af
Primary=0.89 cfs 0.189 af Secondary=16.81 cfs 1.328 af Outflow=17.70 cfs 1.516 af

Pond CB-1: CB-1 Peak Elev=102.93' Inflow=0.94 cfs 0.080 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=0.94 cfs 0.080 af

Pond CB-2: CB-2 Peak Elev=102.90' Inflow=5.11 cfs 0.433 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/' Outflow=5.11 cfs 0.433 af

Pond CB-3: CB-3 Peak Elev=101.45' Inflow=5.59 cfs 0.474 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0124 '/' Outflow=5.59 cfs 0.474 af

Pond CB-4: CB-4 Peak Elev=99.38' Inflow=8.19 cfs 0.694 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/' Outflow=8.19 cfs 0.694 af

Pond CB-5: CB-5 Peak Elev=96.67' Inflow=2.30 cfs 0.188 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0056 '/' Outflow=2.30 cfs 0.188 af

Pond CB-6: CB-6 Peak Elev=98.10' Inflow=1.66 cfs 0.135 af
12.0" Round Culvert n=0.012 L=160.0' S=0.0100 '/' Outflow=1.66 cfs 0.135 af

Pond CB-7: CB-7 Peak Elev=97.86' Inflow=9.41 cfs 0.797 af
18.0" Round Culvert n=0.013 L=193.0' S=0.0034 '/' Outflow=9.41 cfs 0.797 af

Pond CB-8: Peak Elev=98.33' Inflow=1.39 cfs 0.118 af
12.0" Round Culvert n=0.012 L=55.0' S=0.0100 '/' Outflow=1.39 cfs 0.118 af

Link POI-1: H-31-0-0 Inflow=6.15 cfs 0.781 af
Primary=6.15 cfs 0.781 af

Link POI-2: H-34-0-0 Inflow=17.17 cfs 1.713 af
Primary=17.17 cfs 1.713 af

Link POI-3: Sumner Dr ROW Inflow=2.03 cfs 0.198 af
Primary=2.03 cfs 0.198 af

Link POI-4: H-35-C-4 Inflow=18.07 cfs 1.431 af
Primary=18.07 cfs 1.431 af

Total Runoff Area = 6.384 ac Runoff Volume = 4.544 af Average Runoff Depth = 8.54"
42.66% Pervious = 2.723 ac 57.34% Impervious = 3.661 ac

Appendix I.2.v

Post-Development Drainage Analysis – 10-Year Storm Calculations

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment N-1: Runoff Area=59,989 sf 0.00% Impervious Runoff Depth=1.38"
Flow Length=448' Tc=30.1 min CN=75 Runoff=1.22 cfs 0.158 af

Subcatchment N-2: Runoff Area=18,740 sf 28.83% Impervious Runoff Depth=2.11"
Tc=6.0 min CN=85 Runoff=1.04 cfs 0.076 af

Subcatchment N-3: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=1.13 cfs 0.093 af

Subcatchment N-4: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=1.13 cfs 0.093 af

Subcatchment NE-1: Runoff Area=19,235 sf 93.75% Impervious Runoff Depth=3.26"
Tc=6.0 min CN=97 Runoff=1.50 cfs 0.120 af

Subcatchment NE-2: Runoff Area=4,336 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af

Subcatchment NW-1: Runoff Area=10,389 sf 0.00% Impervious Runoff Depth=1.72"
Tc=6.0 min CN=80 Runoff=0.47 cfs 0.034 af

Subcatchment NW-1a: Runoff Area=6,477 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.51 cfs 0.042 af

Subcatchment NW-2: Runoff Area=710 sf 0.00% Impervious Runoff Depth=1.51"
Tc=6.0 min CN=77 Runoff=0.03 cfs 0.002 af

Subcatchment S-1: Runoff Area=15,528 sf 0.00% Impervious Runoff Depth=1.72"
Tc=6.0 min CN=80 Runoff=0.70 cfs 0.051 af

Subcatchment S-2: Runoff Area=5,590 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.44 cfs 0.036 af

Subcatchment S-3: Runoff Area=9,518 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.75 cfs 0.061 af

Subcatchment S-3a: Runoff Area=8,662 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.68 cfs 0.056 af

Subcatchment SE-1: Runoff Area=2,031 sf 0.00% Impervious Runoff Depth=1.72"
Tc=6.0 min CN=80 Runoff=0.09 cfs 0.007 af

Subcatchment SE-2: Runoff Area=2,960 sf 89.63% Impervious Runoff Depth=3.15"
Tc=6.0 min CN=96 Runoff=0.23 cfs 0.018 af

Subcatchment SE-3: Runoff Area=20,275 sf 98.03% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=1.60 cfs 0.131 af

Subcatchment SE-4: Runoff Area=7,731 sf 79.89% Impervious Runoff Depth=2.94"
Tc=6.0 min CN=94 Runoff=0.57 cfs 0.044 af

Subcatchment SW-1: Runoff Area=2,906 sf 0.00% Impervious Runoff Depth=1.65"
Flow Length=105' Tc=6.2 min CN=79 Runoff=0.13 cfs 0.009 af

Subcatchment SW-2: Runoff Area=11,972 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.94 cfs 0.077 af

Subcatchment SW-3: Runoff Area=19,173 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=1.51 cfs 0.124 af

Subcatchment SW-4: Runoff Area=2,212 sf 100.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=98 Runoff=0.17 cfs 0.014 af

Subcatchment SW-5: Runoff Area=10,758 sf 100.00% Impervious Runoff Depth=3.38"
Flow Length=200' Slope=0.0200 '/' Tc=10.9 min CN=98 Runoff=0.73 cfs 0.069 af

Subcatchment SW-6: Runoff Area=4,177 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=100' Slope=0.0500 '/' Tc=6.4 min CN=80 Runoff=0.19 cfs 0.014 af

Subcatchment SW-7: Runoff Area=6,000 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=120' Tc=8.1 min CN=80 Runoff=0.25 cfs 0.020 af

Reach 17R: Flow to Driveway Culvert Avg. Flow Depth=0.04' Max Vel=0.77 fps Inflow=0.10 cfs 0.158 af
n=0.022 L=45.0' S=0.0133 '/' Capacity=375.01 cfs Outflow=0.10 cfs 0.158 af

Pond 1P: Gravel Wetland #1 Peak Elev=94.76' Storage=11,688 cf Inflow=6.49 cfs 0.502 af
Outflow=2.24 cfs 0.382 af

Pond 2P: Forebay #1 Peak Elev=95.15' Storage=1,245 cf Inflow=5.80 cfs 0.472 af
Outflow=5.79 cfs 0.451 af

Pond 3P: Forebay #2 Peak Elev=97.66' Storage=6,324 cf Inflow=4.48 cfs 0.355 af
Outflow=1.41 cfs 0.255 af

Pond 4P: DMH-1 Peak Elev=97.68' Inflow=1.43 cfs 0.117 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0044 '/' Outflow=1.43 cfs 0.117 af

Pond 18P: Driveway Culvert Peak Elev=94.16' Inflow=0.28 cfs 0.172 af
12.0" Round Culvert n=0.012 L=97.0' S=0.0093 '/' Outflow=0.28 cfs 0.172 af

Pond 23P: Gravel Wetland #2 Peak Elev=97.63' Storage=8,052 cf Inflow=3.20 cfs 0.475 af
Primary=0.10 cfs 0.158 af Secondary=1.71 cfs 0.169 af Outflow=1.81 cfs 0.327 af

Pond CB-1: CB-1 Peak Elev=98.04' Inflow=0.34 cfs 0.028 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=0.34 cfs 0.028 af

Pond CB-2: CB-2 Peak Elev=97.00' Inflow=1.85 cfs 0.152 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/' Outflow=1.85 cfs 0.152 af

Pond CB-3: CB-3 Peak Elev=96.38' Inflow=2.03 cfs 0.166 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0124 '/' Outflow=2.03 cfs 0.166 af

Pond CB-4: CB-4 Peak Elev=95.65' Inflow=2.97 cfs 0.243 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/' Outflow=2.97 cfs 0.243 af

Pond CB-5: CB-5 Peak Elev=96.20' Inflow=0.80 cfs 0.061 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0056 '/' Outflow=0.80 cfs 0.061 af

Pond CB-6: CB-6 Peak Elev=97.78' Inflow=0.57 cfs 0.044 af
12.0" Round Culvert n=0.012 L=160.0' S=0.0100 '/' Outflow=0.57 cfs 0.044 af

Pond CB-7: CB-7 Peak Elev=95.47' Inflow=3.41 cfs 0.280 af
18.0" Round Culvert n=0.013 L=193.0' S=0.0034 '/' Outflow=3.41 cfs 0.280 af

Pond CB-8: Peak Elev=97.68' Inflow=0.51 cfs 0.042 af
12.0" Round Culvert n=0.012 L=55.0' S=0.0100 '/' Outflow=0.51 cfs 0.042 af

Link POI-1: H-31-0-0 Inflow=1.22 cfs 0.158 af
Primary=1.22 cfs 0.158 af

Link POI-2: H-34-0-0 Inflow=2.50 cfs 0.569 af
Primary=2.50 cfs 0.569 af

Link POI-3: Sumner Dr ROW Inflow=0.73 cfs 0.069 af
Primary=0.73 cfs 0.069 af

Link POI-4: H-35-C-4 Inflow=1.81 cfs 0.190 af
Primary=1.81 cfs 0.190 af

Total Runoff Area = 6.384 ac Runoff Volume = 1.377 af Average Runoff Depth = 2.59"
42.62% Pervious = 2.721 ac 57.38% Impervious = 3.663 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment N-1: Runoff Area=59,989 sf 0.00% Impervious Runoff Depth=2.82"
Flow Length=448' Tc=30.1 min CN=75 Runoff=2.56 cfs 0.324 af

Subcatchment N-2: Runoff Area=18,740 sf 28.83% Impervious Runoff Depth=3.79"
Tc=6.0 min CN=85 Runoff=1.84 cfs 0.136 af

Subcatchment N-3: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.72 cfs 0.143 af

Subcatchment N-4: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.72 cfs 0.143 af

Subcatchment NE-1: Runoff Area=19,235 sf 93.75% Impervious Runoff Depth=5.10"
Tc=6.0 min CN=97 Runoff=2.29 cfs 0.188 af

Subcatchment NE-2: Runoff Area=4,336 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=0.52 cfs 0.043 af

Subcatchment NW-1: Runoff Area=10,389 sf 0.00% Impervious Runoff Depth=3.29"
Tc=6.0 min CN=80 Runoff=0.90 cfs 0.065 af

Subcatchment NW-1a: Runoff Area=6,477 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=0.77 cfs 0.065 af

Subcatchment NW-2: Runoff Area=710 sf 0.00% Impervious Runoff Depth=3.00"
Tc=6.0 min CN=77 Runoff=0.06 cfs 0.004 af

Subcatchment S-1: Runoff Area=15,528 sf 0.00% Impervious Runoff Depth=3.29"
Tc=6.0 min CN=80 Runoff=1.34 cfs 0.098 af

Subcatchment S-2: Runoff Area=5,590 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=0.67 cfs 0.056 af

Subcatchment S-3: Runoff Area=9,518 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.14 cfs 0.095 af

Subcatchment S-3a: Runoff Area=8,662 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.04 cfs 0.086 af

Subcatchment SE-1: Runoff Area=2,031 sf 0.00% Impervious Runoff Depth=3.29"
Tc=6.0 min CN=80 Runoff=0.18 cfs 0.013 af

Subcatchment SE-2: Runoff Area=2,960 sf 89.63% Impervious Runoff Depth=4.98"
Tc=6.0 min CN=96 Runoff=0.35 cfs 0.028 af

Subcatchment SE-3: Runoff Area=20,275 sf 98.03% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=2.43 cfs 0.202 af

Subcatchment SE-4: Runoff Area=7,731 sf 79.89% Impervious Runoff Depth=4.75"
Tc=6.0 min CN=94 Runoff=0.89 cfs 0.070 af

Subcatchment SW-1: Runoff Area=2,906 sf 0.00% Impervious Runoff Depth=3.19"
Flow Length=105' Tc=6.2 min CN=79 Runoff=0.24 cfs 0.018 af

Subcatchment SW-2: Runoff Area=11,972 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=1.43 cfs 0.119 af

Subcatchment SW-3: Runoff Area=19,173 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=2.29 cfs 0.191 af

Subcatchment SW-4: Runoff Area=2,212 sf 100.00% Impervious Runoff Depth=5.21"
Tc=6.0 min CN=98 Runoff=0.26 cfs 0.022 af

Subcatchment SW-5: Runoff Area=10,758 sf 100.00% Impervious Runoff Depth=5.21"
Flow Length=200' Slope=0.0200 '/' Tc=10.9 min CN=98 Runoff=1.12 cfs 0.107 af

Subcatchment SW-6: Runoff Area=4,177 sf 0.00% Impervious Runoff Depth=3.29"
Flow Length=100' Slope=0.0500 '/' Tc=6.4 min CN=80 Runoff=0.36 cfs 0.026 af

Subcatchment SW-7: Runoff Area=6,000 sf 0.00% Impervious Runoff Depth=3.29"
Flow Length=120' Tc=8.1 min CN=80 Runoff=0.49 cfs 0.038 af

Reach 17R: Flow to Driveway Culvert Avg. Flow Depth=0.04' Max Vel=0.78 fps Inflow=0.11 cfs 0.170 af
n=0.022 L=45.0' S=0.0133 '/' Capacity=375.01 cfs Outflow=0.11 cfs 0.170 af

Pond 1P: Gravel Wetland #1 Peak Elev=95.09' Storage=13,873 cf Inflow=10.12 cfs 0.809 af
Outflow=6.18 cfs 0.670 af

Pond 2P: Forebay #1 Peak Elev=95.28' Storage=1,364 cf Inflow=8.85 cfs 0.732 af
Outflow=8.77 cfs 0.712 af

Pond 3P: Forebay #2 Peak Elev=97.93' Storage=7,771 cf Inflow=7.08 cfs 0.569 af
Outflow=4.41 cfs 0.467 af

Pond 4P: DMH-1 Peak Elev=98.44' Inflow=2.17 cfs 0.181 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0044 '/' Outflow=2.17 cfs 0.181 af

Pond 18P: Driveway Culvert Peak Elev=94.24' Inflow=0.46 cfs 0.197 af
12.0" Round Culvert n=0.012 L=97.0' S=0.0093 '/' Outflow=0.46 cfs 0.197 af

Pond 23P: Gravel Wetland #2 Peak Elev=97.85' Storage=9,024 cf Inflow=8.45 cfs 0.818 af
Primary=0.11 cfs 0.170 af Secondary=7.72 cfs 0.498 af Outflow=7.82 cfs 0.668 af

Pond CB-1: CB-1 Peak Elev=98.13' Inflow=0.52 cfs 0.043 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=0.52 cfs 0.043 af

Pond CB-2: CB-2 Peak Elev=97.42' Inflow=2.81 cfs 0.234 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/' Outflow=2.81 cfs 0.234 af

Pond CB-3: CB-3 Peak Elev=96.97' Inflow=3.08 cfs 0.256 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0124 '/' Outflow=3.08 cfs 0.256 af

Pond CB-4: CB-4 Peak Elev=96.34' Inflow=4.51 cfs 0.376 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/' Outflow=4.51 cfs 0.376 af

Pond CB-5: CB-5 Peak Elev=96.35' Inflow=1.24 cfs 0.098 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0056 '/' Outflow=1.24 cfs 0.098 af

Pond CB-6: CB-6 Peak Elev=97.88' Inflow=0.89 cfs 0.070 af
12.0" Round Culvert n=0.012 L=160.0' S=0.0100 '/' Outflow=0.89 cfs 0.070 af

Pond CB-7: CB-7 Peak Elev=95.94' Inflow=5.18 cfs 0.432 af
18.0" Round Culvert n=0.013 L=193.0' S=0.0034 '/' Outflow=5.18 cfs 0.432 af

Pond CB-8: Peak Elev=97.97' Inflow=0.77 cfs 0.065 af
12.0" Round Culvert n=0.012 L=55.0' S=0.0100 '/' Outflow=0.77 cfs 0.065 af

Link POI-1: H-31-0-0 Inflow=2.56 cfs 0.324 af
Primary=2.56 cfs 0.324 af

Link POI-2: H-34-0-0 Inflow=6.77 cfs 0.897 af
Primary=6.77 cfs 0.897 af

Link POI-3: Sumner Dr ROW Inflow=1.12 cfs 0.107 af
Primary=1.12 cfs 0.107 af

Link POI-4: H-35-C-4 Inflow=8.20 cfs 0.540 af
Primary=8.20 cfs 0.540 af

Total Runoff Area = 6.384 ac Runoff Volume = 2.280 af Average Runoff Depth = 4.29"
42.62% Pervious = 2.721 ac 57.38% Impervious = 3.663 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment N-1: Runoff Area=59,989 sf 0.00% Impervious Runoff Depth=4.06"
Flow Length=448' Tc=30.1 min CN=75 Runoff=3.70 cfs 0.466 af

Subcatchment N-2: Runoff Area=18,740 sf 28.83% Impervious Runoff Depth=5.16"
Tc=6.0 min CN=85 Runoff=2.48 cfs 0.185 af

Subcatchment N-3: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=2.18 cfs 0.183 af

Subcatchment N-4: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=2.18 cfs 0.183 af

Subcatchment NE-1: Runoff Area=19,235 sf 93.75% Impervious Runoff Depth=6.54"
Tc=6.0 min CN=97 Runoff=2.91 cfs 0.241 af

Subcatchment NE-2: Runoff Area=4,336 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=0.66 cfs 0.055 af

Subcatchment NW-1: Runoff Area=10,389 sf 0.00% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=80 Runoff=1.25 cfs 0.091 af

Subcatchment NW-1a: Runoff Area=6,477 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=0.98 cfs 0.083 af

Subcatchment NW-2: Runoff Area=710 sf 0.00% Impervious Runoff Depth=4.28"
Tc=6.0 min CN=77 Runoff=0.08 cfs 0.006 af

Subcatchment S-1: Runoff Area=15,528 sf 0.00% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=80 Runoff=1.87 cfs 0.137 af

Subcatchment S-2: Runoff Area=5,590 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=0.85 cfs 0.071 af

Subcatchment S-3: Runoff Area=9,518 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=1.44 cfs 0.121 af

Subcatchment S-3a: Runoff Area=8,662 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=1.31 cfs 0.110 af

Subcatchment SE-1: Runoff Area=2,031 sf 0.00% Impervious Runoff Depth=4.60"
Tc=6.0 min CN=80 Runoff=0.24 cfs 0.018 af

Subcatchment SE-2: Runoff Area=2,960 sf 89.63% Impervious Runoff Depth=6.42"
Tc=6.0 min CN=96 Runoff=0.45 cfs 0.036 af

Subcatchment SE-3: Runoff Area=20,275 sf 98.03% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=3.08 cfs 0.258 af

Subcatchment SE-4: Runoff Area=7,731 sf 79.89% Impervious Runoff Depth=6.19"
Tc=6.0 min CN=94 Runoff=1.15 cfs 0.092 af

Subcatchment SW-1: Runoff Area=2,906 sf 0.00% Impervious Runoff Depth=4.49"
Flow Length=105' Tc=6.2 min CN=79 Runoff=0.34 cfs 0.025 af

Subcatchment SW-2: Runoff Area=11,972 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=1.82 cfs 0.153 af

Subcatchment SW-3: Runoff Area=19,173 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=2.91 cfs 0.244 af

Subcatchment SW-4: Runoff Area=2,212 sf 100.00% Impervious Runoff Depth=6.66"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af

Subcatchment SW-5: Runoff Area=10,758 sf 100.00% Impervious Runoff Depth=6.66"
Flow Length=200' Slope=0.0200 '/' Tc=10.9 min CN=98 Runoff=1.42 cfs 0.137 af

Subcatchment SW-6: Runoff Area=4,177 sf 0.00% Impervious Runoff Depth=4.60"
Flow Length=100' Slope=0.0500 '/' Tc=6.4 min CN=80 Runoff=0.50 cfs 0.037 af

Subcatchment SW-7: Runoff Area=6,000 sf 0.00% Impervious Runoff Depth=4.60"
Flow Length=120' Tc=8.1 min CN=80 Runoff=0.68 cfs 0.053 af

Reach 17R: Flow to Driveway Culvert Avg. Flow Depth=0.05' Max Vel=0.78 fps Inflow=0.11 cfs 0.178 af
n=0.022 L=45.0' S=0.0133 '/' Capacity=375.01 cfs Outflow=0.11 cfs 0.178 af

Pond 1P: Gravel Wetland #1 Peak Elev=95.26' Storage=15,134 cf Inflow=12.90 cfs 1.054 af
Outflow=8.91 cfs 0.903 af

Pond 2P: Forebay #1 Peak Elev=95.39' Storage=1,480 cf Inflow=11.23 cfs 0.938 af
Outflow=11.04 cfs 0.917 af

Pond 3P: Forebay #2 Peak Elev=98.06' Storage=8,529 cf Inflow=9.12 cfs 0.740 af
Outflow=6.91 cfs 0.637 af

Pond 4P: DMH-1 Peak Elev=99.06' Inflow=2.76 cfs 0.232 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0044 '/' Outflow=2.76 cfs 0.232 af

Pond 18P: Driveway Culvert Peak Elev=94.29' Inflow=0.60 cfs 0.215 af
12.0" Round Culvert n=0.012 L=97.0' S=0.0093 '/' Outflow=0.60 cfs 0.215 af

Pond 23P: Gravel Wetland #2 Peak Elev=97.95' Storage=9,486 cf Inflow=12.33 cfs 1.094 af
Primary=0.11 cfs 0.178 af Secondary=11.58 cfs 0.766 af Outflow=11.69 cfs 0.944 af

Pond CB-1: CB-1 Peak Elev=98.87' Inflow=0.66 cfs 0.055 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=0.66 cfs 0.055 af

Pond CB-2: CB-2 Peak Elev=98.85' Inflow=3.57 cfs 0.300 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/' Outflow=3.57 cfs 0.300 af

Pond CB-3: CB-3 Peak Elev=98.17' Inflow=3.90 cfs 0.328 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0124 '/' Outflow=3.90 cfs 0.328 af

Pond CB-4: CB-4 Peak Elev=97.18' Inflow=5.72 cfs 0.480 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/' Outflow=5.72 cfs 0.480 af

Pond CB-5: CB-5 Peak Elev=96.46' Inflow=1.59 cfs 0.128 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0056 '/' Outflow=1.59 cfs 0.128 af

Pond CB-6: CB-6 Peak Elev=97.96' Inflow=1.15 cfs 0.092 af
12.0" Round Culvert n=0.012 L=160.0' S=0.0100 '/' Outflow=1.15 cfs 0.092 af

Pond CB-7: CB-7 Peak Elev=96.46' Inflow=6.57 cfs 0.552 af
18.0" Round Culvert n=0.013 L=193.0' S=0.0034 '/' Outflow=6.57 cfs 0.552 af

Pond CB-8: Peak Elev=98.12' Inflow=0.98 cfs 0.083 af
12.0" Round Culvert n=0.012 L=55.0' S=0.0100 '/' Outflow=0.98 cfs 0.083 af

Link POI-1: H-31-0-0 Inflow=3.70 cfs 0.466 af
Primary=3.70 cfs 0.466 af

Link POI-2: H-34-0-0 Inflow=9.87 cfs 1.161 af
Primary=9.87 cfs 1.161 af

Link POI-3: Sumner Dr ROW Inflow=1.42 cfs 0.137 af
Primary=1.42 cfs 0.137 af

Link POI-4: H-35-C-4 Inflow=12.29 cfs 0.824 af
Primary=12.29 cfs 0.824 af

Total Runoff Area = 6.384 ac Runoff Volume = 3.013 af Average Runoff Depth = 5.66"
42.62% Pervious = 2.721 ac 57.38% Impervious = 3.663 ac

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment N-1: Runoff Area=59,989 sf 0.00% Impervious Runoff Depth=5.27"
Flow Length=448' Tc=30.1 min CN=75 Runoff=4.78 cfs 0.605 af

Subcatchment N-2: Runoff Area=18,740 sf 28.83% Impervious Runoff Depth=6.45"
Tc=6.0 min CN=85 Runoff=3.06 cfs 0.231 af

Subcatchment N-3: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=2.61 cfs 0.220 af

Subcatchment N-4: Runoff Area=14,358 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=2.61 cfs 0.220 af

Subcatchment NE-1: Runoff Area=19,235 sf 93.75% Impervious Runoff Depth=7.89"
Tc=6.0 min CN=97 Runoff=3.48 cfs 0.290 af

Subcatchment NE-2: Runoff Area=4,336 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=0.79 cfs 0.066 af

Subcatchment NW-1: Runoff Area=10,389 sf 0.00% Impervious Runoff Depth=5.86"
Tc=6.0 min CN=80 Runoff=1.57 cfs 0.116 af

Subcatchment NW-1a: Runoff Area=6,477 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=1.18 cfs 0.099 af

Subcatchment NW-2: Runoff Area=710 sf 0.00% Impervious Runoff Depth=5.50"
Tc=6.0 min CN=77 Runoff=0.10 cfs 0.007 af

Subcatchment S-1: Runoff Area=15,528 sf 0.00% Impervious Runoff Depth=5.86"
Tc=6.0 min CN=80 Runoff=2.35 cfs 0.174 af

Subcatchment S-2: Runoff Area=5,590 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=1.02 cfs 0.086 af

Subcatchment S-3: Runoff Area=9,518 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=1.73 cfs 0.146 af

Subcatchment S-3a: Runoff Area=8,662 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=1.57 cfs 0.133 af

Subcatchment SE-1: Runoff Area=2,031 sf 0.00% Impervious Runoff Depth=5.86"
Tc=6.0 min CN=80 Runoff=0.31 cfs 0.023 af

Subcatchment SE-2: Runoff Area=2,960 sf 89.63% Impervious Runoff Depth=7.77"
Tc=6.0 min CN=96 Runoff=0.53 cfs 0.044 af

Subcatchment SE-3: Runoff Area=20,275 sf 98.03% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=3.68 cfs 0.311 af

Subcatchment SE-4: Runoff Area=7,731 sf 79.89% Impervious Runoff Depth=7.53"
Tc=6.0 min CN=94 Runoff=1.38 cfs 0.111 af

Subcatchment SW-1: Runoff Area=2,906 sf 0.00% Impervious Runoff Depth=5.74"
Flow Length=105' Tc=6.2 min CN=79 Runoff=0.43 cfs 0.032 af

Subcatchment SW-2: Runoff Area=11,972 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=2.17 cfs 0.183 af

Subcatchment SW-3: Runoff Area=19,173 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=3.48 cfs 0.294 af

Subcatchment SW-4: Runoff Area=2,212 sf 100.00% Impervious Runoff Depth=8.01"
Tc=6.0 min CN=98 Runoff=0.40 cfs 0.034 af

Subcatchment SW-5: Runoff Area=10,758 sf 100.00% Impervious Runoff Depth=8.01"
Flow Length=200' Slope=0.0200 '/' Tc=10.9 min CN=98 Runoff=1.69 cfs 0.165 af

Subcatchment SW-6: Runoff Area=4,177 sf 0.00% Impervious Runoff Depth=5.86"
Flow Length=100' Slope=0.0500 '/' Tc=6.4 min CN=80 Runoff=0.63 cfs 0.047 af

Subcatchment SW-7: Runoff Area=6,000 sf 0.00% Impervious Runoff Depth=5.86"
Flow Length=120' Tc=8.1 min CN=80 Runoff=0.85 cfs 0.067 af

Reach 17R: Flow to Driveway Culvert Avg. Flow Depth=0.05' Max Vel=0.86 fps Inflow=0.17 cfs 0.185 af
n=0.022 L=45.0' S=0.0133 '/' Capacity=375.01 cfs Outflow=0.15 cfs 0.185 af

Pond 1P: Gravel Wetland #1 Peak Elev=95.38' Storage=16,040 cf Inflow=15.47 cfs 1.283 af
Outflow=11.58 cfs 1.125 af

Pond 2P: Forebay #1 Peak Elev=95.51' Storage=1,592 cf Inflow=13.46 cfs 1.129 af
Outflow=13.12 cfs 1.109 af

Pond 3P: Forebay #2 Peak Elev=98.15' Storage=9,027 cf Inflow=11.02 cfs 0.900 af
Outflow=8.70 cfs 0.796 af

Pond 4P: DMH-1 Peak Elev=99.64' Inflow=3.30 cfs 0.279 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0044 '/' Outflow=3.30 cfs 0.279 af

Pond 18P: Driveway Culvert Peak Elev=94.33' Inflow=0.73 cfs 0.231 af
12.0" Round Culvert n=0.012 L=97.0' S=0.0093 '/' Outflow=0.73 cfs 0.231 af

Pond 23P: Gravel Wetland #2 Peak Elev=98.01' Storage=9,783 cf Inflow=15.25 cfs 1.353 af
Primary=0.17 cfs 0.185 af Secondary=14.39 cfs 1.017 af Outflow=14.55 cfs 1.202 af

Pond CB-1: CB-1 Peak Elev=100.55' Inflow=0.79 cfs 0.066 af
12.0" Round Culvert n=0.012 L=120.0' S=0.0125 '/' Outflow=0.79 cfs 0.066 af

Pond CB-2: CB-2 Peak Elev=100.52' Inflow=4.27 cfs 0.360 af
12.0" Round Culvert n=0.012 L=100.0' S=0.0050 '/' Outflow=4.27 cfs 0.360 af

Pond CB-3: CB-3 Peak Elev=99.52' Inflow=4.67 cfs 0.394 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0124 '/' Outflow=4.67 cfs 0.394 af

Pond CB-4: CB-4 Peak Elev=98.09' Inflow=6.84 cfs 0.578 af
15.0" Round Culvert n=0.012 L=40.0' S=0.0050 '/' Outflow=6.84 cfs 0.578 af

Pond CB-5: CB-5 Peak Elev=96.55' Inflow=1.91 cfs 0.155 af
12.0" Round Culvert n=0.012 L=80.0' S=0.0056 '/' Outflow=1.91 cfs 0.155 af

Pond CB-6: CB-6 Peak Elev=98.02' Inflow=1.38 cfs 0.111 af
12.0" Round Culvert n=0.012 L=160.0' S=0.0100 '/' Outflow=1.38 cfs 0.111 af

Pond CB-7: CB-7 Peak Elev=97.04' Inflow=7.86 cfs 0.663 af
18.0" Round Culvert n=0.013 L=193.0' S=0.0034 '/' Outflow=7.86 cfs 0.663 af

Pond CB-8: Peak Elev=98.22' Inflow=1.18 cfs 0.099 af
12.0" Round Culvert n=0.012 L=55.0' S=0.0100 '/' Outflow=1.18 cfs 0.099 af

Link POI-1: H-31-0-0 Inflow=4.78 cfs 0.605 af
Primary=4.78 cfs 0.605 af

Link POI-2: H-34-0-0 Inflow=12.75 cfs 1.411 af
Primary=12.75 cfs 1.411 af

Link POI-3: Sumner Dr ROW Inflow=1.69 cfs 0.165 af
Primary=1.69 cfs 0.165 af

Link POI-4: H-35-C-4 Inflow=15.30 cfs 1.092 af
Primary=15.30 cfs 1.092 af

Total Runoff Area = 6.384 ac Runoff Volume = 3.705 af Average Runoff Depth = 6.96"
42.62% Pervious = 2.721 ac 57.38% Impervious = 3.663 ac

Large Dispenser Systems

envirosafe™
ABOVE-GROUND FUEL SYSTEMS

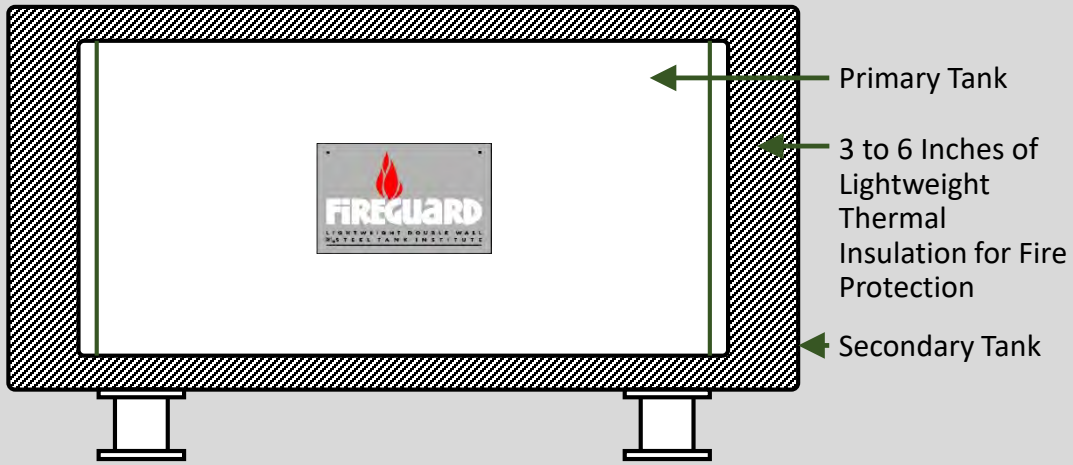
Large Dispenser Systems

Ranges from **5,000** and **30,000** Gallons. These Systems are designed for both commercial and retail use. They offer a gas station like dispenser and are available with an optional canopy.

These systems are available in both Fireguard and Flameshield protection and can be customized to fit your specific needs.

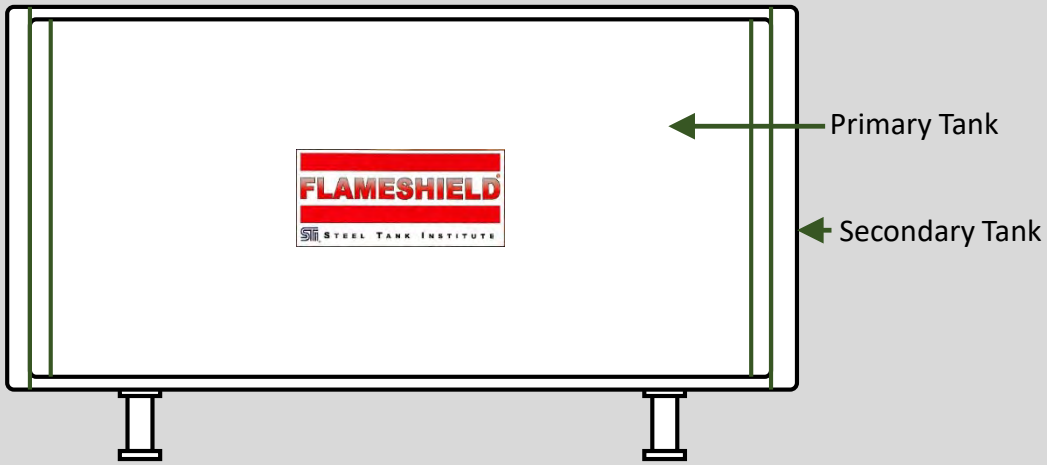
UL-2085 Fireguard VS UL-142 Flameshield

Our UL-2085 is up to 75% lighter in weight in comparison to our competitors vaulted tank.



Fireguard Tank:

1. UL-2085 labeled & listed
2. UL-2085 passes requirements for NFPA 30-30A
3. Double Wall Tank with 3” to 6” of lightweight thermal insulation for fire protection
4. 30 Year Warranty, backed by the Steel Tank Institute



Flameshield Tank:

1. UL-142 labeled & listed
2. 2-hour Rating tested to SWRI 97-04
3. Double Wall Tank
4. 30 Year Warranty, backed by the Steel Tank Institute

An average 12,000 gallon concrete encased tank weighs approximately 100,000 lbs. Fireguard weighs 28,000 lbs.

High Quality Welds

All of our weld seams on our tanks are joggled and sub-arch welded for a seamless caulk like finish. 100% penetration is guaranteed to eliminate corrosion and leaks.

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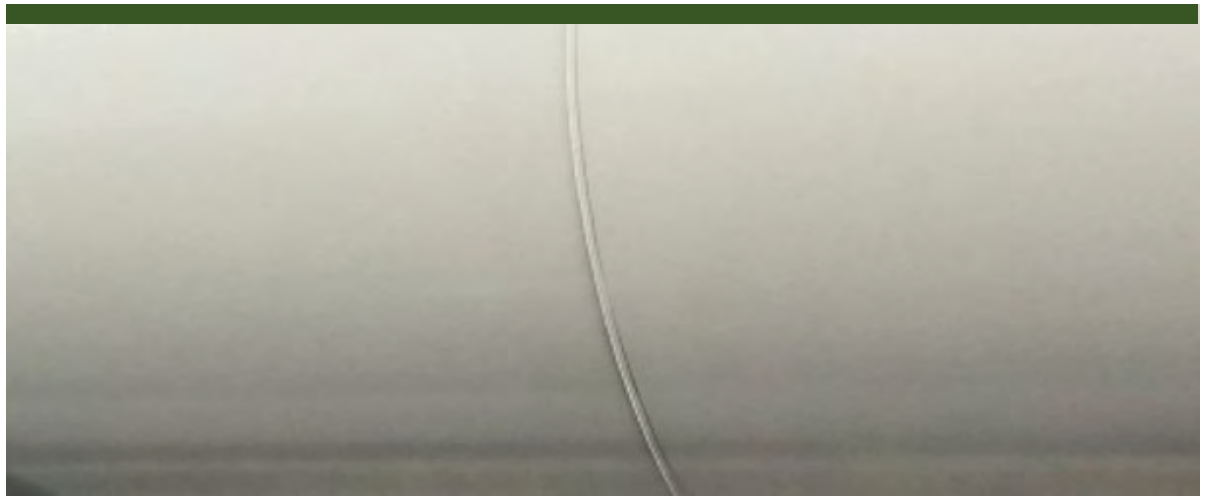
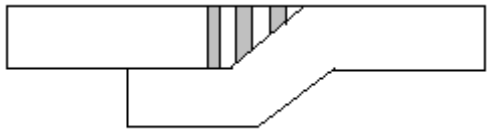
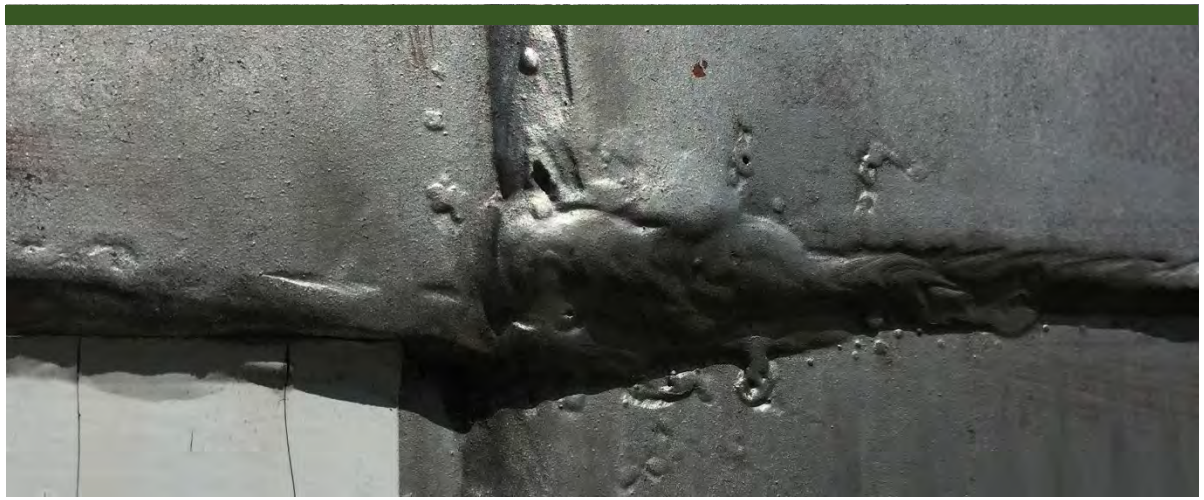
ABOVE-GROUND FUEL SYSTEMS





Joggled Weld Joint

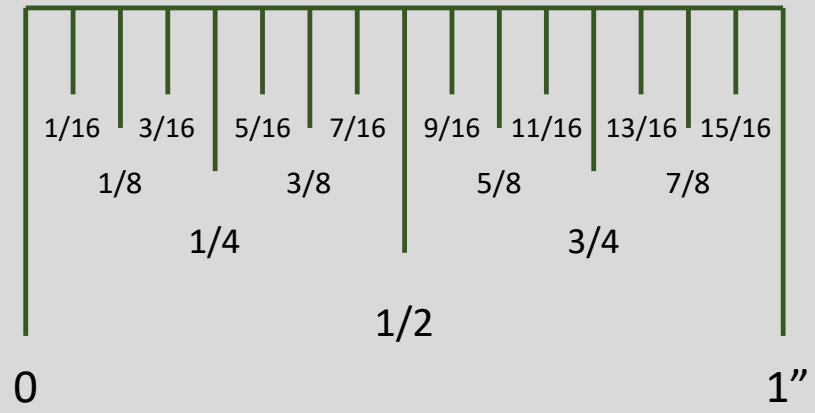
Most Competitor's Weld Seam



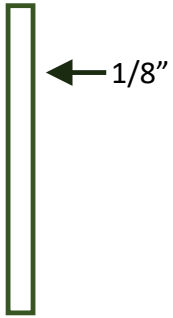
Simple Lap Joint

* All welded seams are also cross sectioned on top of all tanks.

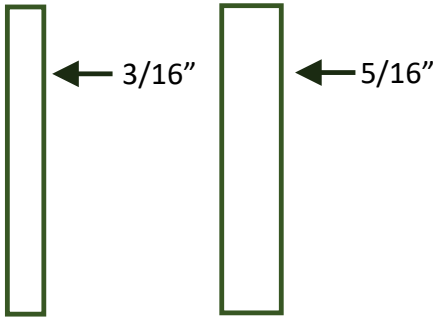
Steel Thickness



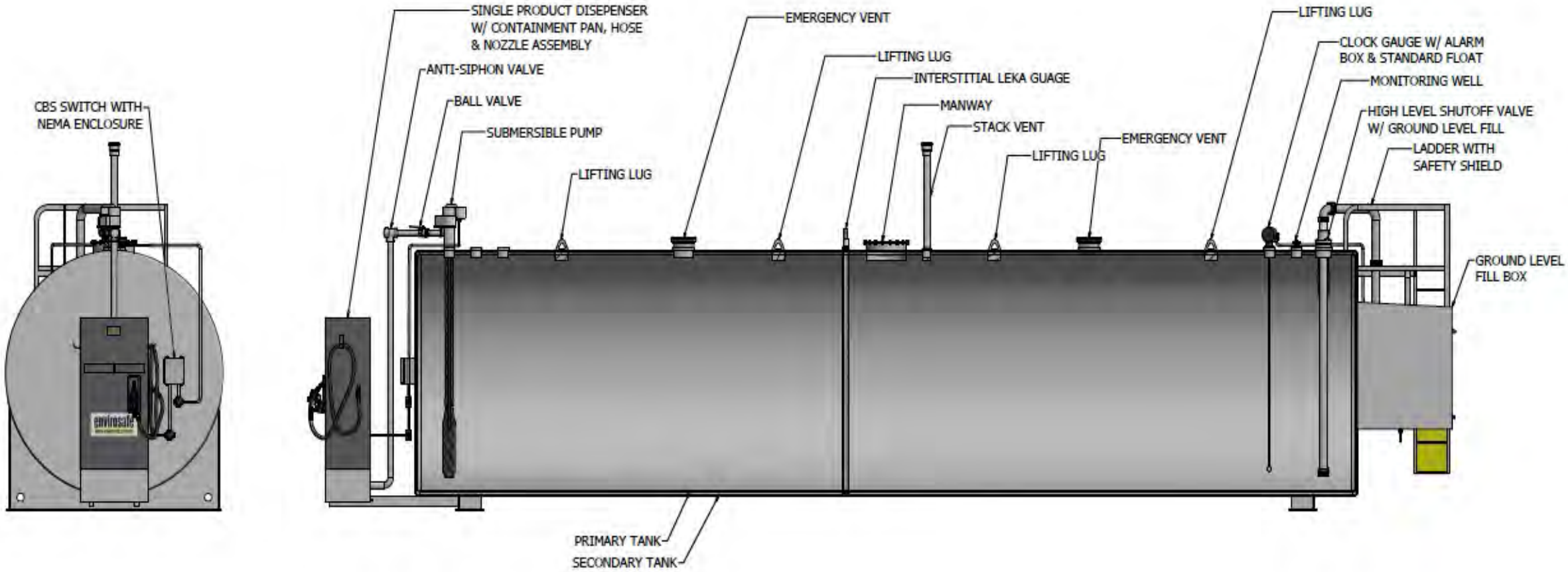
To STI standards the smallest unit of measure on the gauge shall be **1/8”**



Envirosafe’s standard steel thickness starts at **3/16”** thru **5/16”**



Dispenser System Diagram with Fill Box



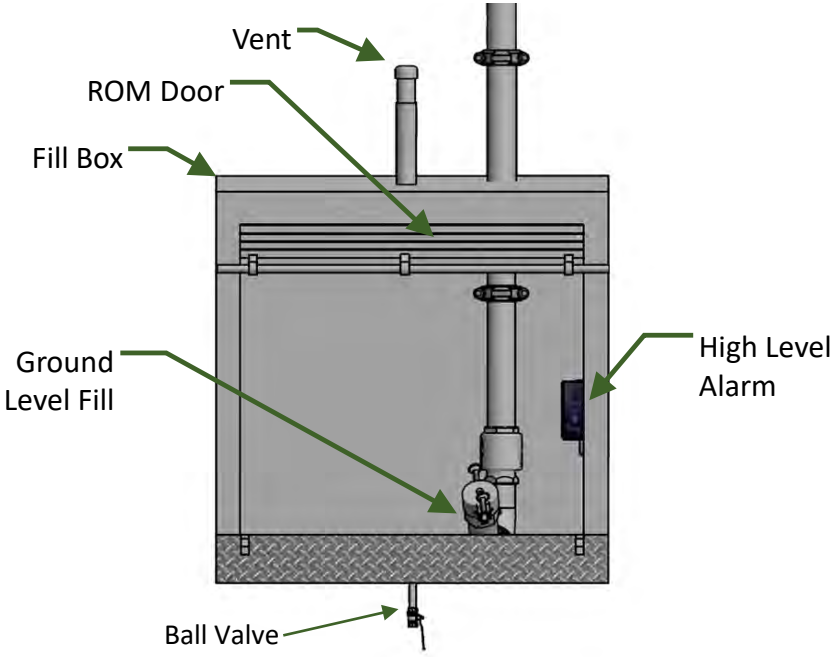
Fill Box is Welded to Tank, Not Bolted

Lessens Liability

Adds Safety to Environment

Protects Equipment

Envirosafe is the only manufacturer that is allowed by the Steel Tank Institute to weld dispensing and fill boxes to tank.



Arrives On-site Complete and Ready to Operate

Tough Weather Paint

SHERWIN-WILLIAMS.

- High Solids
- Tropical Weathering Data Available
- Fast Dry Times
- Systems for Aggressive Environments
- Low VOC
- Colors Available

Direct to Metal (940 DTM) Polyaspartic Urethane

Fuel Management Systems

Can you benefit from a Fuel Management System?

WONDERBOX

Features & Benefits:

- Single hose fueling point
- 4,000 Users & Vehicles | 10,000 transactions
- Handles any fluid with proper pulse meter
- Export data to Excel/Word | Standard PIN code access
- Secured groups: Driver ID, Vehicle ID, Key Fob
- Printer Receipt capable for USB units
- Tank level capacity
- Level probe capability
- Local Area Network, Wi-Fi capability and HDM SKYDRIVE™ (available)

SUPERBOX

Features & Benefits:

- Handles up to 5 fueling points *(available as 2-Hose or 5-Hose configuration)*
- 4,000 Users & Vehicles | 10,000 transactions
- Handles any fluid with proper pulse meter
- Export data to Excel/Word | Standard PIN code access
- Secured groups: Driver ID, Vehicle ID, Key Fob
- Printer Receipt capable for USB units
- Tank level capacity
- Level probe capability
- Local Area Network, Wi-Fi capability and HDM SKYDRIVE™ (available)

WONDERBOX

SUPERBOX

Fuel Level Monitoring Systems

- Monitors and displays the fuel level stored.
- The level sensor utilizes a mechanical float to monitor the tank liquid level
- Electronically converts the fuel level to console.
- Up to 4 programmable liquid level alarm set points per tank
- Supports Email and SMS/Text Message alarm & status notifications.

Morrison Bros. 1218 Electronic Tank Monitoring System Shown. Other models available, ask Sales Associate for details.

Bulk DEF Storage & Dispensing

Can you benefit from a DEF-PRO All In One™ System?

*Image shows optional hose reel upgrade option

SOUTHERN

The DEF-PRO All In One™ southern mini bulk DEF storage tank and dispensing system is a fully assembled out of the box system used for the safe storage and dispensing of Diesel Exhaust Fluid. ***This system is plug and play made easy.*** This system is a complete package.

Specs:

- Hornet W85 Hybrid Pump with 20 ft. delivery hose and automatic nozzle
- Flow meter
- Suction hose in place
- Heavy Duty Aluminum Lockable Cabinets

NORTHERN

The DEF-PRO All In One Northern mini bulk DEF storage tank and dispensing system is a must for anyone who's looking for a safe way to store and dispense DEF in regions of the country where temperatures often fall below freezing. This system is designed to safely store and dispense DEF, even in the coldest of climates.

Specs:

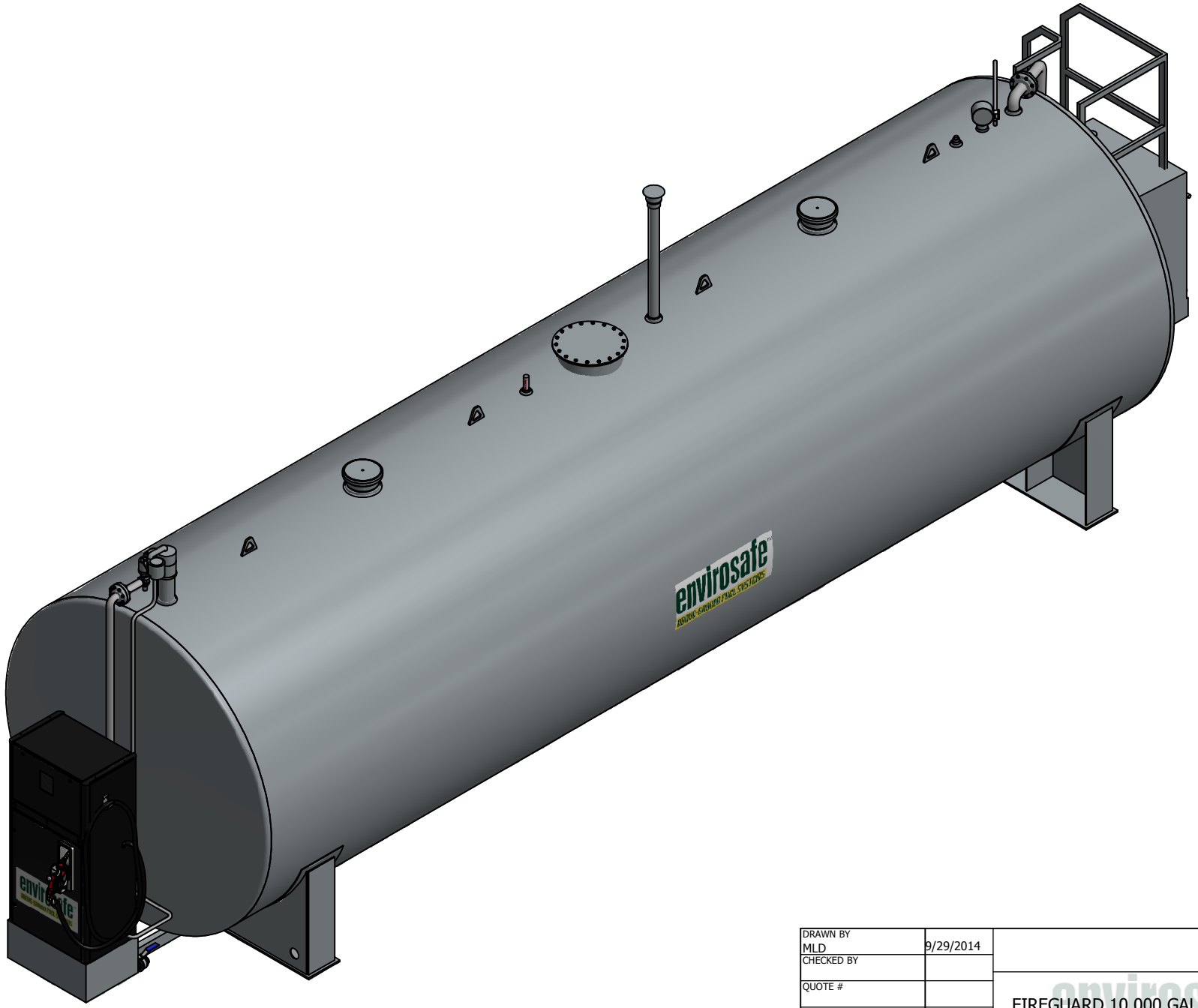
- Hornet W85 Hybrid Pump with 20 ft. delivery hose and automatic nozzle
- Liquid Level PS with LCD Display
- Flow meter
- Heavy Duty Aluminum Lockable Cabinets
- Tank Insulation
- Cabinet Heater

Bare Tank + Parts + Contractor = Time / Money / Frustration

VS

Thank you!

envirosafe™
ABOVE-GROUND FUEL SYSTEMS



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QUOTE #		
Customer Approval Signature		

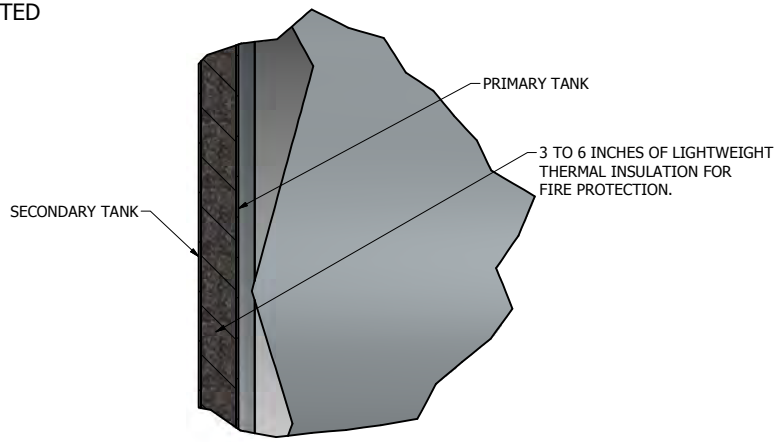
FIREGUARD 10,000 GALLON DISPENSER SYSTEM

envirosafe™ ABOVE-GROUND FUEL SYSTEMS

SIZE	DWG NO	REV
C		

SCALE

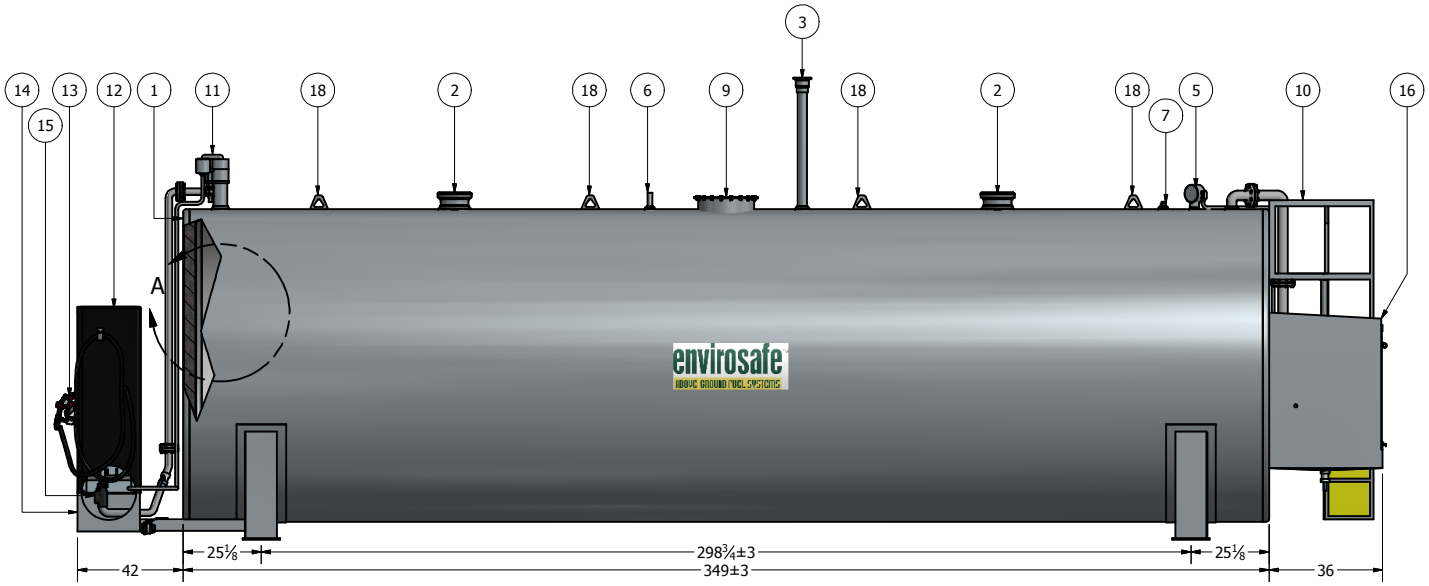
NOTES:
1. ENGINEERED HURRICANE TIE DOWN
2. EPOXY PRIMER & ACRYLIC POLYURETHANE COATING FOR HIGH PERFORMANCE FINSIH
3. UL 2085 LABELED & LISTED
4. UL 2085 PASSES REQUIREMENTS FOR NFPA 30-30A INCLUDED 2 HOUR FIRE TESTED, IMPACT AND BALLISTIC TESTED

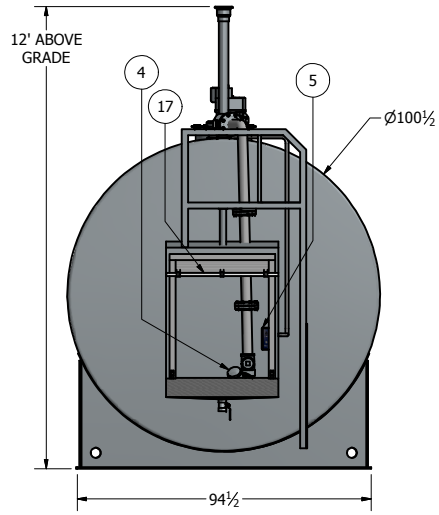


DETAIL A
SCALE 1 / 10

PARTS LIST

ITEM	QTY	PART
1	1	FIREGUARD 10,000 GALLON TANK MOUNTED ON SADDLES
2	2	8" 8 OZ EMERGENCY VENT MALE W/ O-RING
3	1	2" STACK VENT (12' ABOVE GRADE)
4	1	MORRISON BROS HIGH LEVEL SHUTOFF VALVE W/ 3" GROUND LEVEL FILL
5	1	2" 918S CLOCK GAUGE W/ ALARM & STANDARD FLOAT FOR ACCURATE FUEL LEVEL READING
6	1	INTERSTITIAL LEAK GAUGE
7	1	MONITORING WELL W/ 2" CAP
8	1	TANK DECAL KIT (NOT PICTURED)
9	1	18" MANWAY FOR EASY INNER TANK ACCESSIBILITY
10	1	LADDER W/ SAFETY SHIELD
11	1	FE PETRO 3/4 HP PUMP ASSEMBLY W/ ANTI-SYPHON VALVE & BALL VALVE
12	1	BENNETT DISPENSER SINGLE HOSE/SINGLE PRODUCT W/ 10:1 PULSER
13	1	1" AUTOMATIC SHUTOFF NOZZLE, SWIVEL, BREAKAWAY & 18' X 1" HOSE
14	1	SINGLE PRODUCT DISPENSER CONTAINMENT PAN
15	1	EMERGENCY SHUTOFF VALVE (SHEAR VALVE)
16	1	UL LISTED LOCKABLE FILL BOX WELDED ON TANK 3' X 4' X 3', CROSS BROKEN FOR EASY DRAINAGE, 2" VENT
17	1	ROM DOOR (ROLL UP) 3' X 3'
18	4	LIFTING LUGS





SHELL THICKNESS: 1/4"
HEAD THICKNESS: 1/4"
DRY WEIGHT: 22,250 LBS

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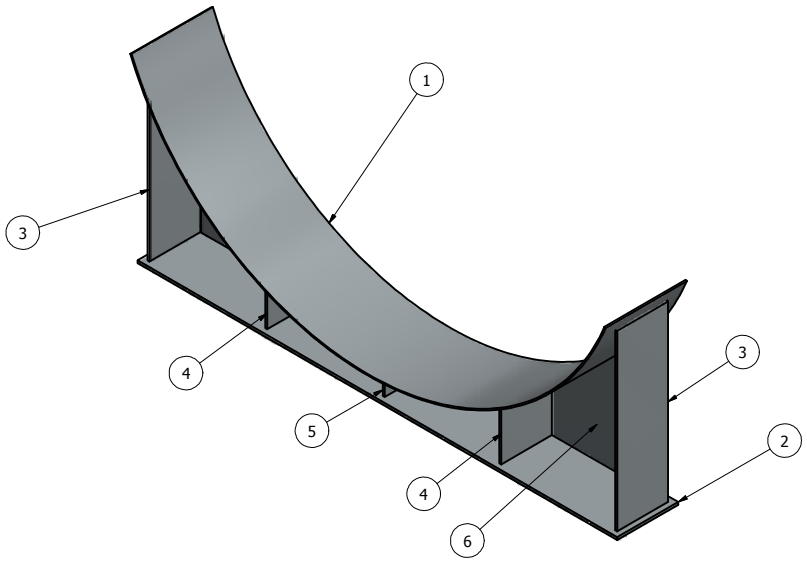
FIREGUARD 10,000 GALLON DISPENSER SYSTEM

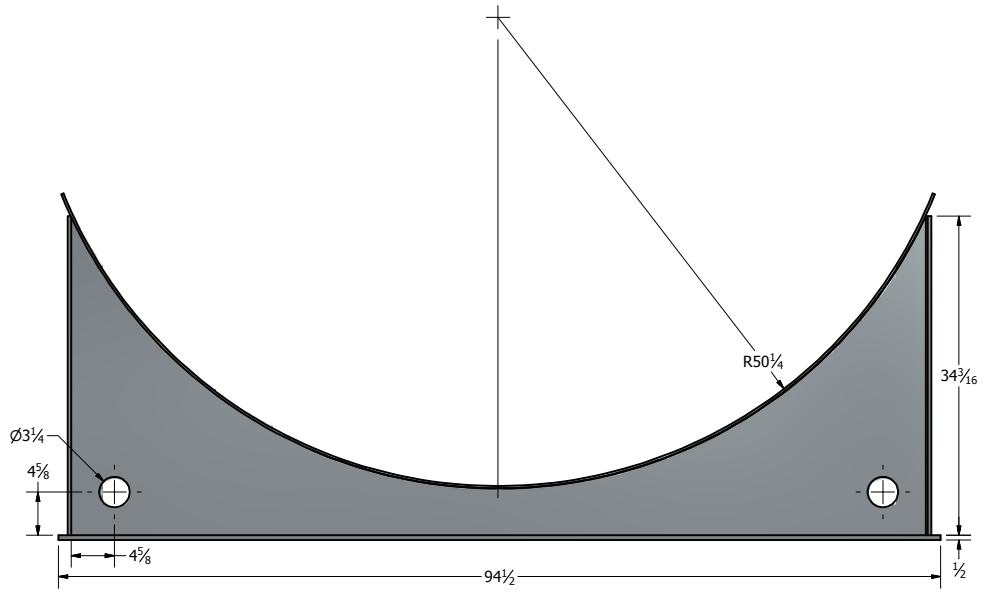
envirosafe™ ABOVE-GROUND FUEL SYSTEMS

SIZE	DWG NO	REV
C		

SCALE

PARTS LIST		
ITEM	QTY	PART
1	1	SADDLE PLATE 119" X 16" X 1/4" THICK
2	1	BASE PLATE 94 1/2" X 12" X 1/2" THICK
3	2	STIFFENER PLATE (LONG) 34 3/16" X 10" X 1/4" THICK
4	2	STIFFENER PLATE (MEDIUM) 10 1/2" X 10" X 1/4" THICK
5	1	STIFFENER PLATE (SHORT) 5" X 10" X 1/4" THICK
6	1	WEB PLATE 92" X 34 3/16" X 1/4" THICK





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FIREGUARD 10,000 GALLON DISPENSER SYSTEM

envirosafe™ ABOVE-GROUND FUEL SYSTEMS

SIZE	DWG NO	REV
C		
SCALE		SHEET 3 OF 3

Quote

Memco Inc.
1789 E C 48
Bushnell, FL
USA, 33513
Phone : 800-555-4754

Quote No.	**10547**
Date :	04/01/2021
Contact :	Robert Doyle Phone : 6037382872

Bill To	***ROBERTDO***
Robert E Doyle PERA	
6 Acorn Ln	
Cumberland, ME	
USA, 04021	

Ship To	***ROBERTDO***
Robert E Doyle PERA	
6 Acorn Ln	
Cumberland, ME	
USA, 04021	

Expiration Date	Price Request	Terms	Carrier	FOB
04/01/2021		100% due prior to delivery - Wire or Check on Order	Not Applicable	

Sales Rep	Currency	Lead Time (Days)	Tax Group
Sam Judkins (SJ)	USD	0	USDEXE

No.	Qty	Item	Description	Disc. %	Amount
1	1.000	DISP	Dispenser Tank 1 10,000 Gallon Fireguard Tank Mounted on Saddles 2 8" 8 Oz Emergency Vent Male w/O-ring 1 3" Stack Vent (12' above grade) w/ 3" Updraft Vent 1 2" 918 Clock Gauge w/ Alarm & Standard Float for Accurate Fuel Level Reading 1 UL Listed Lockable Fill Box Welded on Tank3'-6" x 4' x 4'-2", Cross Broken for Easy Drainage, 2" Vent, 2" Mushroom Cap, & 1/2" Ball Valve 1 Monitoring Well w/ 2" Cap 1 Engineered Hurricane Tie Down 1 Tank Decal Kit 1 Envirolastic 940 DTM Polyaspartic Urethane Coating for High Performance Finish 1 FE Petro 3/4 Hp. Pump Assy w/ Anti-Syphon Valve & Ball Valve w/ Relay & Nema7 Enclosure 1 Interstitial Leak Gauge 1 Emergency Shutoff Valve (Shear Valve) 1 Morrison Bros. Overfill Prevention Valve with test mechanism & 3" Ground Level Fill (Vertical Check Valve, Ball Valve, Fill Pipe w/ Diffuser, Fill Adapter, & Dust Cap) 1 18" Manway for easy inner tank accessibility 1 ROM Door (Roll Up) 3' x 3' 1 Ladder with Safety Shield and hand rails for fill box 1 UL 2085 Labeled & Listed 1 STEEL THICKNESS 1/4" SHELL & 5/16" HEAD 1 Touch-up Paint 1 Owners Manual	0%	$53,487.34
2	2.000	P-0087	Swivel 1" Shipped Separately and Installed by Others	0%	$152.42
3	2.000	P-2276	Breakaway 1" Shipped Separately and Installed by Others	0%	$335.46
4	2.000	P-22341641091	Hose Whip 1"x 12" M x M Pumpflexll Shipped Separately and Installed by Others	0%	$72.46
5	2.000	P-22341641181	Hose Pumpflex ll 1" X 18' w/MxM Fitting Shipped Separately and Installed by Others	0%	$214.84
6	2.000	P-173312-03	Nozzle Hi-Flow Husky Diesel - Green 1" Shipped Separately and Installed by Others	0%	$350.40
7	1.000	P-3712SNR-21-J-P-SO-ET	Dispenser Single Product/Dual Hose Low Cabinet, 2 sided, Side Mounted Nozzle Holders, 10:1 Pulser. W/ Electro-Mechanical Totalizers. 3712SNR-21-J-P-SO-ET (Envirosafe Silk Screen Logo on Door) Shipped Separately and Installed by Others	0%	$6,535.00
8	1.000	P-SB PEDESTAL ASSY-2	Superbox 2 hose assembled to pedestal includes 2 contactors. Fully assembled. Shipped Separately and Installed by Others	0%	$6,416.67

Subtotal: $67,564.59

USD

Tank quotes are only good for 30 days. It does not include sales tax, permitting, installation, setup, or delivery unless stated otherwise. Petroleum equipment/parts are good for 30 days.

Please make checks payable to MEMCO Inc.
Ask Us About Our No Money Down Financing or Leasing Options!
Flameshield and Fireguard tanks include a 30-year tank warranty backed by the Steel Tank Institute.
All Equipment and Piping Quoted is Installed at Factory.

QUOTATION TERMS AND CONDITIONS:

Above Quote has been issued to Customer by MEMCO, INC. D/B/A Envirosafe Fuel Systems ("Memco, Inc." herein) for the purchase of and manufacture/fabrication of an above ground fuel system ("Product" herein).

All custom Quotes are estimates until the CAD drawings are completed and meet with customer's specifications and express approval at which time the estimate may be revised to reflect custom design specifications and requirements. Change orders during the production process will subject the customer to an increased charge.

Memco, Inc. will estimate a time within which manufacture/fabrication may be completed, but the nature of the Product will not enable Memco, Inc. to define a specific date.

The quote is based upon information available at the time it is prepared and is limited to items discussed and detailed during the quotation process. Memco, Inc. is not liable in any way for the system or tank's intended use.

These Terms and Conditions are expressly made part of the Manufacturing Sales Agreement.

1. Quotes are valid for 24 hours after issuance by Memco, Inc.

2. Drawings and Materials Lists:
A. Cost:
- **i. Standard systems: $300.00**
- **ii. Custom systems: $500.00**
- **iii. Aviation systems: $1,200.00**

B. Timeframe: The schedule time for issuance of approval drawings and revisions is dependent upon engineering backlog at the time of the quote and order. The estimated wait time for submission is two weeks depending on the complexity of the project.
C. Custom Systems: Custom systems quoted are only estimates until the system is engineered in Auto CAD and an accurate quote based upon any custom equipment or engineering that the customer requires may be created. Thus, custom designed systems will receive a preliminary estimate and upon receipt of customer-approved drawings a formal quote and purchase price.
D. Drawing charges are not refundable.
E. Memco, Inc. is only responsible for customer's local rules and regulations when Memco, Inc. is coordinating the installation. CUSTOMER EXPRESSLY ASSUMES RESPONSIBILITY FOR IDENTIFICATION OF AND FOLLOWING CUSTOMER'S LOCAL RULES AND REGULATIONS FOR INSTALLATION AND USE OF THE PRODUCT.

3. NOT INCLUDED IN QUOTE: the following are not included in any quote for the manufacture of any Memco, Inc. product:
A. Local, State or Federal Sales Tax.
B. Local, State or Federal Permitting of any sort. Unless, Memco Inc, has been hired as installation contractor. Thus the actual costs of permitting are added to the final invoice.
C. Delivery (a delivery estimate may be given with your quote but is subject to change at any time for any reason).
D. Unless specifically listed, Installation (Installation is a service charge which is in addition to the manufacture/fabrication quote you have/will receive).
E. Spare parts (unless requested and specified on above quotation).
F. Unless specifically listed on the drawing, bill of materials and quote: valves, controls, piping or other attachments are not included and must be supplied by you and installed by you or a third party.

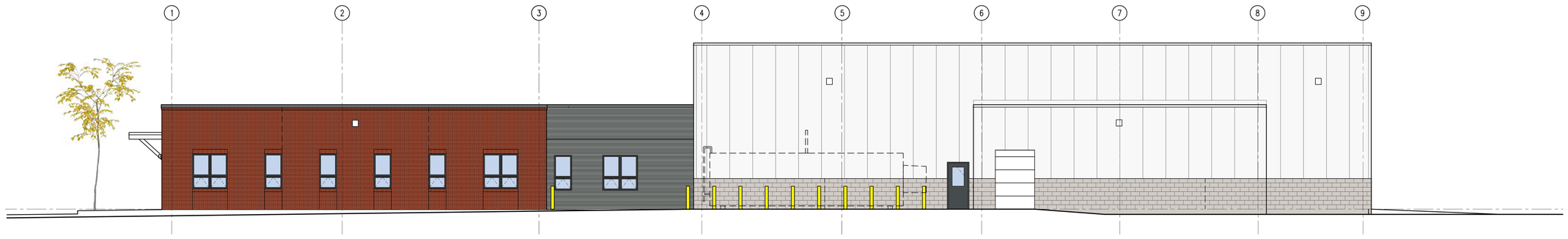
4. REQUIRED PAYMENT SCHEDULE:
A. Some or all materials may be ordered once the deposit is received to prevent material cost increases.
B. Upon acceptance of the product drawings, a 50% deposit is required to commence the manufacturing of your Product.
C. The remaining 50% will be required at the completion of the manufacturing process, before delivery and onsite installation.
D. If Memco, Inc. is doing Installation of product, Sixty Percent (60%) of the Installation fee must be prepaid before on-site delivery is commenced.
E. The product will not leave the manufacturing location until Memco, Inc. D/B/A Envirosafe Manufacturing, Installations, Sales Agreement are signed and returned, the remaining 50% due for manufacturing cost and 60% of installation charges are paid in full.
F. Fees may apply if changes are made after approval to start manufacture/fabrication.
G. Purchased items not requiring manufacture. i.e., stock tanks, pre-owned tanks, parts and equipment, must be invoiced and paid in full before delivery.

5. OTHER TERMS AND CONDITIONS:
A. Materials used in the construction of the Product may be domestic, foreign, or a combination of the two. Specific country of origin requests may increase your cost.
B. All freight is FOB Bushnell, Florida at the manufacturing facility of Memco, Inc. unless otherwise specified.
C. A freight estimate may be given. If so, the original freight estimate and the freight quote at the time of shipment may differ due to fluctuating fuel prices and supply and demand of trucks. Memco, Inc. is not responsible for any additional freight cost associated or delivery time associated with same.
D. Scratching and/or paint scarring may occur to painted or coated surfaces during the loading and shipping process. Field touch-up paint and labor is to be provided by you or a third party. Touch-up paint is available upon request, for a fee.
E. Because the tank equipment and piping on your Product will be subjected to vibrations and motion during delivery, Memco, Inc., will not be responsible for seepage or leaks at any connections. Piping is tested in our shop at these connections after assembly and before shipment to assure there are no leaks or seepage. Memco, Inc. takes all reasonable steps to minimize vibrations in transit. However, we cannot guarantee that seepage will not occur. Re-tightening connections on site BY OTHERS may be required.
F. Memco, Inc. is not responsible for malfunctions in equipment and/or parts due to changes in atmospheric pressure.
G. Memco, Inc. is not responsible for customer payment delays; the product will not ship until Memco, Inc. is paid in full.
H. Unless otherwise specified in writing, Memco, Inc. is not responsible for the customer's local rules, regulations and/or statutes. The customer is solely responsible for compliance with the same. By way of example only, Stage I or II Vapor Recovery, Overfill Prevention, etc.
I. Memco, Inc. is not responsible for the maintenance and/or upkeep of tanks stored on Memco, Inc.'s property after the 15 day inspection period has expired and or waiting for delivery.
J. Memco, Inc. recommends that you contact your fire marshal, environmental agencies, and AHJ (Authorities Having Jurisdiction) for approval before ordering.

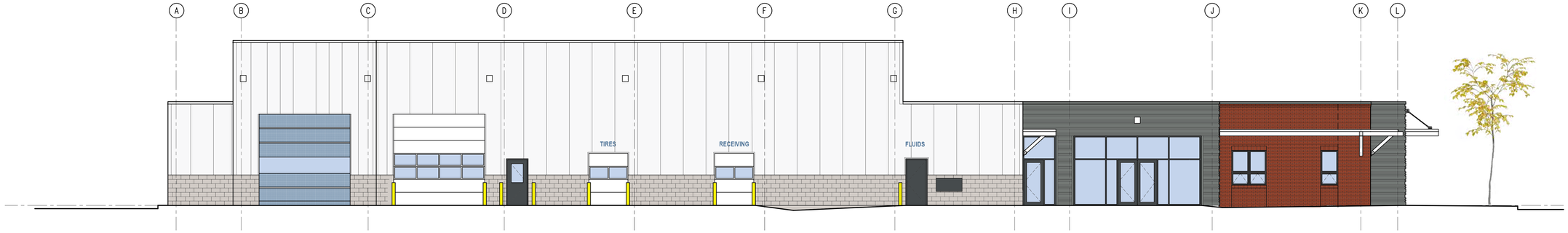
6. ATTORNEY'S FEES – In the event any aspect of the agreement (at the quote stage, production, fabrication or delivery) litigation occurs which concerns the terms of or enforcement of this and/or the sales agreement, Memco, Inc. shall be entitled to the recovery of all reasonable and necessary attorney's fees and costs of court related to said litigation, including those incurred at the demand phase through the fees and costs associated with appellate review. Venue is established in Lake County Florida and all litigation or disputes arising as a result of this quote and/or the sales agreement are governed by the Laws of the State of Florida.

7. FORMAL CONTRACT: Formal contract is required to be signed and returned before the fuel tank/system will be released. (Ask your sales associate for a copy of contract).

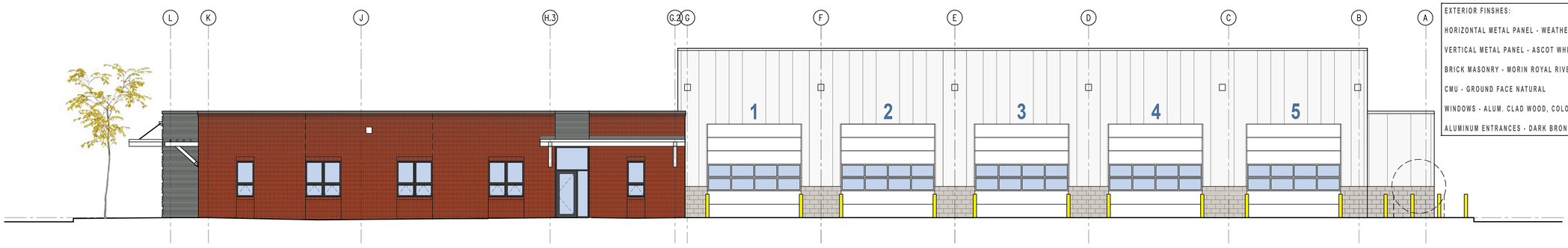
8. By submitting a deposit to Memco, Inc., the buyer is acknowledging and accepting these quotation terms and conditions stated above.



4 A-101 EAST ELEVATION
1/8" = 1'-0"



3 A-101 NORTH ELEVATION
1/8" = 1'-0"



EXTERIOR FINSHES:

HORIZONTAL METAL PANEL - WEATHERED ZINC

VERTICAL METAL PANEL - ASCOT WHITE

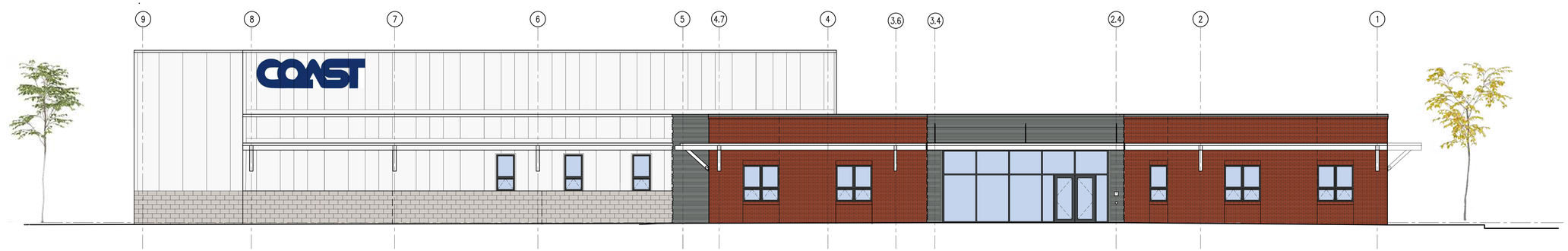
BRICK MASONRY - MORIN ROYAL RIVER RED RANGE

CMU - GROUND FACE NATURAL

WINDOWS - ALUM. CLAD WOOD, COLOR: IRON ORE

ALUMINUM ENTRANCES - DARK BRONZE ANODIZED

2 A-101 SOUTH ELEVATION
1/8" = 1'-0"



1 A-101 WEST ELEVATION
1/8" = 1'-0"

no.	date	by
01	10/3/2022	RED

issue: OWNER REVIEW SET

CMA ENGINEERS
CIVIL/ENVIRONMENTAL/STRUCTURAL
Portsmouth, NH Manchester, NH Portland, ME
603/431-6196 603/627-0708 207/541-4223
cmaengineers.com

Robert E. Doyle PE RA
PO Box 1326 35 Cushing Street 603.736.2872
Dover, NH 03821-1326 rdoylepe@gmail.com

designed by: RED
drawn by: RED
approved by: RED
date: MAY 8, 2023
project no: 0090
checked by: RED
scale: AS NOTED

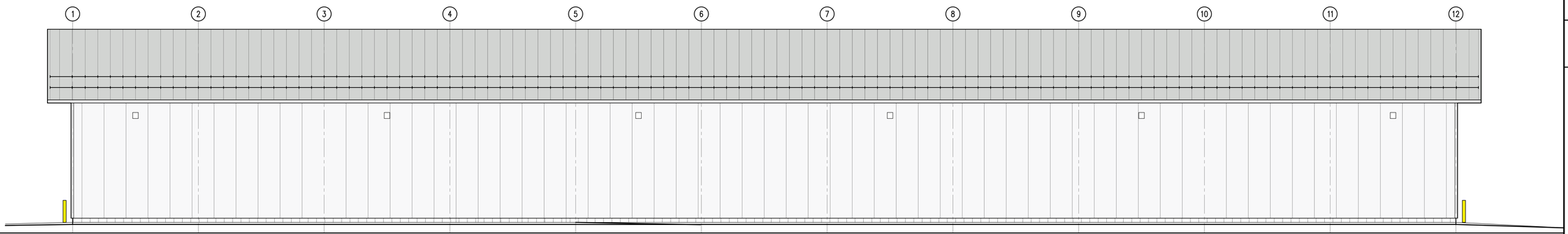
Cooperative Alliance for Seacoast Transportation (COAST)

Operations and Maintenance Facility
42 Sumner Drive, Dover, NH

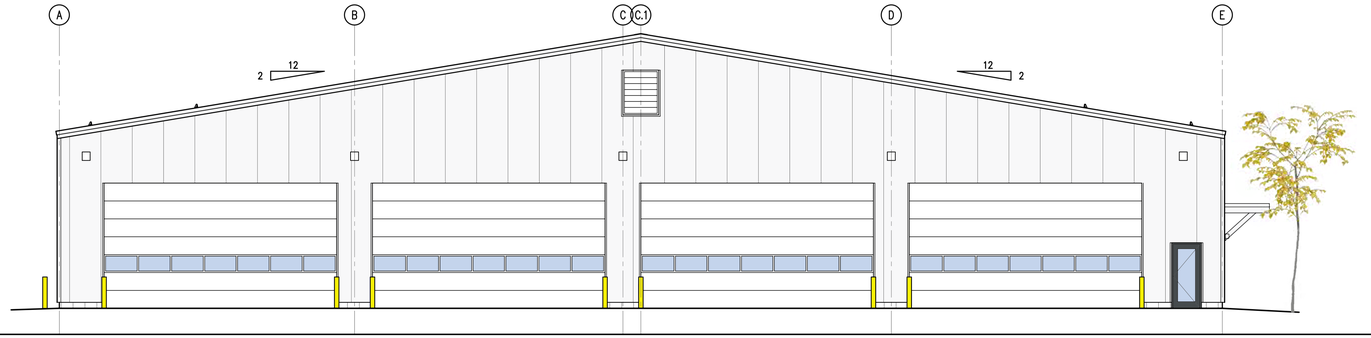
EXTERIOR ELEVATIONS

drawing no. A-301

sheet: XX of XX



4 A-101 NORTH ELEVATION
1/8" = 1'-0"



3 A-101 WEST ELEVATION
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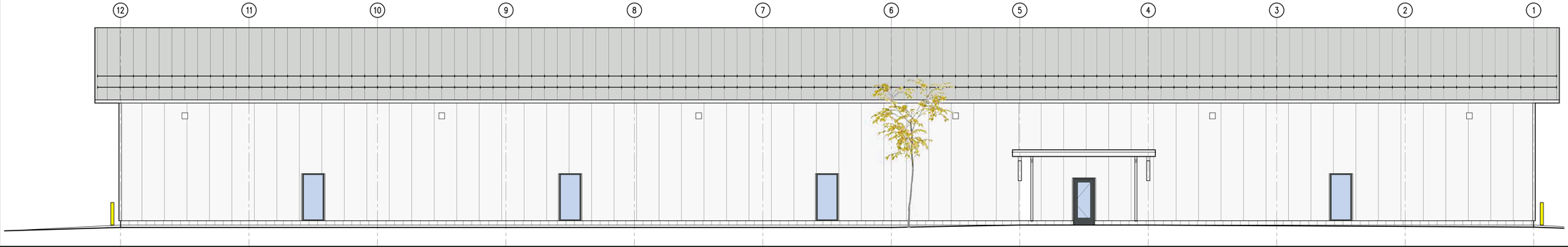
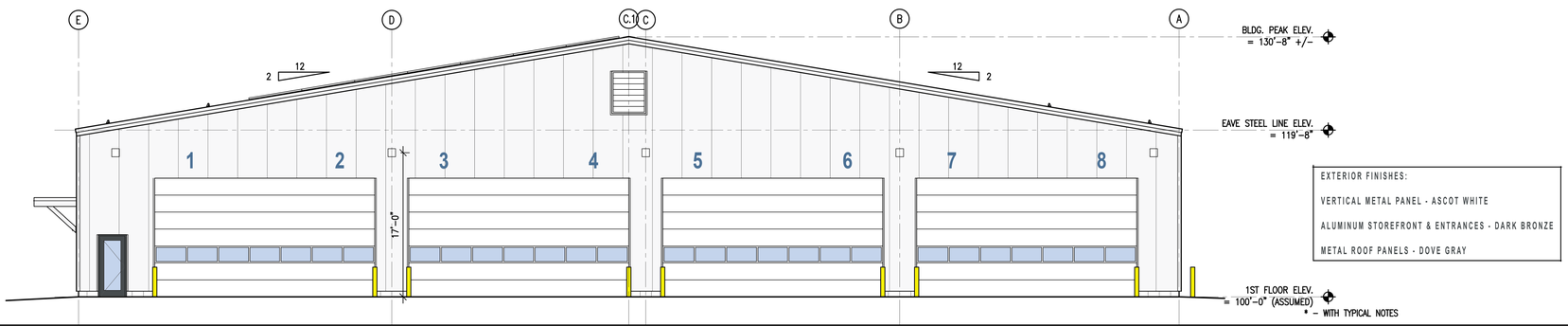


2 A-101 SOUTH ELEVATION
1/8" = 1'-0"



1 A-101 EAST ELEVATION
1/8" = 1'-0"

no.	revision	date	by

CMA ENGINEERS
CIVIL/ENVIRONMENTAL/STRUCTURAL
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603/431-6196 603/627-0708 207/541-4223
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Dover, NH 03821-1326 rdoylepe@gmail.com

designed by: RED | drawn by: RED | approved by: RED | scale: AS NOTED
date: MAY 8, 2022 | project no: 0090 | checked by: RED

Cooperative Alliance for Seacoast Transportation (COAST)
Operations and Maintenance Facility
42 Sumner Drive, Dover, NH
VEHICLE STORAGE BUILDING
EXTERIOR ELEVATIONS

drawing no. A-301
sheet: XX of XX

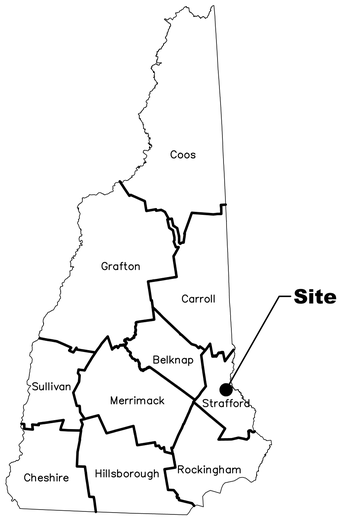
Cooperative Alliance for Seacoast Transportation
Operations and Maintenance Facility

Preliminary Permitting Plans
March 16, 2023

Revised: May 31, 2023
Revised: June 27, 2023
Revised: September 5, 2023

Sheet Index

1	Cover Sheet
2-3	General Notes
4-5	Existing Conditions Plan
6	Site Preparation & Demolition Plan
7	Site Layout Plan
8	Neighborhood Plan
9	Utilities Plan
10	Grading & Drainage Plan
11	Sediment & Erosion Control Plan
12	Landscape Plan
13	Lighting Plan
14-23	Construction Details
24	Fire Truck Turning Template
25-26	Drainage Maps
27-28	Building Floor Plans



Locus Plan

Prepared For:
Cooperative Alliance for Seacoast Transportation
42 Sumner Drive
Dover, NH 03820

Prepared By:

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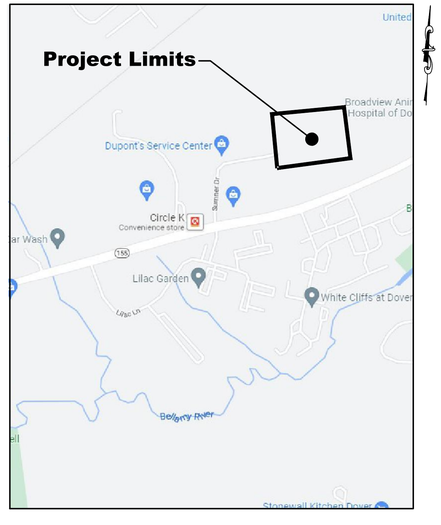
STATE OF NEW HAMPSHIRE
BENJAMIN C. CLARK
No. 15219
LICENSED PROFESSIONAL ENGINEER
09/05/2023



Project Location

0 83.3333 166.6666
Feet

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL BE IN CONFORMANCE WITH CURRENT CITY OF DOVER SPECIFICATIONS AND DETAILS.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, AND PROCEDURES, AND FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH ALL WORK INCLUDED UNDER THIS CONTRACT, INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA REGULATIONS. THE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL SAFETY BARRIERS, WARNING FLASHERS, ETC., AS REQUIRED BY THE CONDUCT OF THE WORK FOR THE PROTECTION OF WORKERS AND NON-WORKERS ALIKE. THE OWNER AND ENGINEER WILL PERIODICALLY REVIEW CONSTRUCTION FOR COMPLIANCE WITH THE PLANS AND SPECIFICATIONS; SUCH REVIEW DOES NOT IMPLY APPROVAL OF METHODS OF CONSTRUCTION.
3. THE CONTRACTOR SHALL PROVIDE STAGING AREAS AS REQUIRED FOR STAGING, PROCESSING, AND STOCKPILING OF EQUIPMENT AND MATERIALS. THE CONTRACTOR SHALL PREPARE THE AREA AS NECESSARY AND INSTALL ALL EROSION CONTROL DEVICES TO MEET NHDES STANDARDS. THE CONTRACTOR SHALL STOCKPILE, HANDLE AND TRANSPORT MATERIALS TO PRESERVE THEIR QUALITY AND FITNESS FOR THE WORK. MATERIALS SHALL ALSO BE STORED TO FACILITATE INSPECTION AND MAY BE SUBJECT TO INSPECTION AND RETESTING BEFORE INCORPORATION IN THE WORK. PRIVATE PROPERTY SHALL NOT BE USED FOR STORAGE PURPOSES WITHOUT WRITTEN PERMISSION OF THE PROPERTY OWNER. IF REQUESTED, COPIES OF SUCH WRITTEN PERMISSION SHALL BE FURNISHED TO THE OWNER. AFTER COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL RETURN THE STAGING AREA TO PREEXISTING CONDITIONS TO THE SATISFACTION OF THE PROPERTY OWNER AND THE CITY.
4. EXISTING CONDITIONS SURVEY AND TOPOGRAPHY PROVIDED BY DOUCET SURVEY, LCC IN JULY 2020. BENCHMARKS AND HORIZONTAL CONTROL POINTS FOR THE CONTRACTOR TO LAYOUT THE WORK HAVE BEEN ESTABLISHED AND ARE SHOWN ON THE PLANS.
5. THE CONTRACTOR SHALL PERFORM ALL REQUIRED LAYOUT AND DEVELOPING AS-BUILT DOCUMENTATION WORK WITH COMPETENT, QUALIFIED PERSONNEL IN A MANNER CONSISTENT WITH THE CURRENT SURVEY/LAYOUT PRACTICES AND ACCEPTABLE TO THE ENGINEER. NO SEPARATE PAYMENT FOR THIS WORK WILL BE MADE. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH QUALIFIED PERSONS TO ASSIST IN THIS CHECKING AS NEEDED AND ON REQUEST OF THE ENGINEER. THE CONTRACTOR SHALL PERFORM ALL NECESSARY LAYOUT WORK IN ORDER TO CONSTRUCT ALL ELEMENTS OF THE PROJECT AS SHOWN ON THE PLANS AND SPECIFIED IN THE CONTRACT. THIS WORK SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, STAKEOUT NECESSARY TO ESTABLISH LINES AND GRADES AS EARTHWORK OPERATIONS PROGRESS; STAKEOUT, LAYOUT AND ELEVATIONS AS REQUIRED FOR INSTALLING DRAIN LINES, SEWER LINES, WATER LINES, AND OTHER ITEMS INCLUDED IN THE WORK.
6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE ACCURACY OF THE WORK. THE ENGINEER MAY CHECK ALL, OR ANY PORTION, OF THE LAYOUT, MADE BY THE CONTRACTOR. ANY NECESSARY CORRECTION TO THE WORK SHALL BE MADE IMMEDIATELY BY THE CONTRACTOR. SUCH CHECKING BY THE ENGINEER WILL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITIES FOR THE ACCURACY OR COMPLETENESS OF THE WORK. NO CLAIM WILL BE CONSIDERED BECAUSE OF ALLEGED INACCURACIES UNLESS THE CONTRACTOR NOTIFIES THE ENGINEER THEREOF IN WRITING IMMEDIATELY UPON DISCOVERY OF THE ALLEGED INACCURACIES AND AFFORDS THE ENGINEER THE OPPORTUNITY TO CHECK OR VERIFY THE CONTROL IN QUESTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL BENCHMARKS AND CONTROL POINTS. IF ANY OF THE CONTROL POINTS ARE DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THEM AT NO EXPENSE TO THE OWNER. DAMAGED OR DESTROYED CONTROL POINTS, BENCHMARKS, STAKES, OR ANY REFERENCE POINTS DAMAGED OR MADE INACCESSIBLE BY THE PROGRESS OF CONSTRUCTION SHALL BE REPLACED OR TRANSFERRED BY THE CONTRACTOR, SUBJECT TO VERIFICATION BY THE ENGINEER. REPLACEMENT OF ANY LAYOUT POINTS SHALL BE PERFORMED BY, OR UNDER, THE DIRECTION OF A NH LICENSED LAND SURVEYOR.
8. APPARENT PROPERTY BOUNDARY IS BASED ON THE EXISTING CONDITIONS SURVEY. PERFORM ALL WORK WITHIN THE EXISTING PROPERTY BOUNDARY OR ACQUIRE A TEMPORARY RIGHT-OF-ENTRY AGREEMENT.
9. THE CONTRACTOR SHALL PROTECT PRIVATE PROPERTY AND SHALL TAKE ALL NECESSARY MEASURES AND PRECAUTIONS TO AVOID DAMAGE TO EXISTING TREES, SHRUBS, LAWNS, PLANTINGS, ETC. THIS PROTECTION WILL INCLUDE THE TRIMMING OF TREES PRIOR TO CONSTRUCTION IF NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS/REPLACEMENT OF ALL DAMAGED ITEMS.
10. THE CONTRACTOR SHALL PLAN AND PERFORM TEST PIT EXCAVATION WELL IN ADVANCE OF COMMENCING CONSTRUCTION AND ORDERING MATERIALS TO ALLOW TIME TO REVIEW ACTUAL CONDITIONS ENCOUNTERED. TEST PITS NOT SPECIFICALLY IDENTIFIED, SHALL BE EXCAVATED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER.
11. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
12. ALL DRAINAGE STRUCTURES TO BE ABANDONED IN PLACE SHALL HAVE THE CONE REMOVED AND BE FILLED WITH GRAVEL. THE MATERIAL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 12 INCHES OF COMPACTED THICKNESS. ALL PIPE CURVES SHALL BE PLUGGED WITH A CONCRETE MASONRY PLUG.
13. PLUGGING EXISTING PIPES WITH BRICK AND MORTAR SHALL BE CONSIDERED SUBSIDIARY TO THE DRAINAGE WORK.
14. PIPE CONNECTIONS TO REPLACEMENT STRUCTURES ARE SUBSIDIARY TO THE STRUCTURE.
15. ALL PROPOSED AND EXISTING DRAINAGE AND SANITARY SEWER STRUCTURE RIM AND PIPE INVERT ELEVATIONS ARE TO BE FIELD VERIFIED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER.
16. THE CONTRACTOR SHALL SET ALL MANHOLE FRAMES AND COVERS, CATCH BASIN GRATES, AND WATER VALVE COVERS TO BE FLUSH WITH THE BASE PAVEMENT GRADES, THEN RAISED TO 1/8" TO 1/4" BELOW FINAL PAVEMENT ELEVATIONS DURING INSTALLATION OF THE FINAL WEARING COARSE.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND RELOCATION OF ALL SIGNS THAT CONFLICT WITH THE WORK (INCIDENTAL TO CONSTRUCTION). ANY SIGNS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
18. FINAL LOCATION OF TRAFFIC SIGNS AND SUPPORTS AS SHOWN IN THE PLANS SHALL BE FIELD-CONFIRMED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER PRIOR TO INSTALLATION.
19. REMOVE TOPSOIL FOR ITS TOTAL DEPTH WITHIN THE LIMITS OF THE SLOPE LINES. UNLESS OTHERWISE DIRECTED, STOCKPILE TOPSOIL AND USE IT ON THIS PROJECT AS NEEDED.
20. ALL DISTURBED AREAS NOT DESIGNATED TO BE PAVED OR LANDSCAPED OTHERWISE SHALL HAVE LOAM BORROW PLACED AND SEEDED. THE LOAM BORROW SHALL HAVE A MINIMUM DEPTH OF 4" AND SHALL BE PLACED FLUSH WITH THE TOP OF ADJACENT CURBING, EDGING, PAVEMENT MILLINGS, BACK OF SIDEWALK OR OTHER PAVED EDGE.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE RESTORATION AND CLEAN UP UPON COMPLETION OF THE PROJECT.

PERMIT NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS: LOCAL AND STATE, AS WELL AS FROM PUBLIC UTILITIES, INCLUDING BUT NOT LIMITED TO A RIGHT-OF-WAY TRENCH PERMIT FROM THE DOVER DPW.
2. THE CONTRACTOR SHALL PREPARE A PROJECT SPECIFIC STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND OBTAIN AN EPA CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL ADHERE TO ALL THE CONDITIONS OF THE ENVIRONMENTAL PERMITS OBTAINED FOR THE PROJECT (SEE APPENDIX IN SPECIFICATIONS).

EXISTING UTILITY NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS, PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN, ON THESE PLANS PRIOR TO CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL NOTIFY DIG-SAFE AT 1-800-225-4977 AT LEAST 72 HOURS PRIOR TO BEGINNING WORK TO CONFIRM THE LOCATION OF UNDERGROUND UTILITIES.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION, PROTECTION AND REPAIR (IF DAMAGED) OF ALL EXISTING UTILITY MAINS AND SERVICES. THE LOCATIONS OF KNOWN GAS, WATER, AND SEWER MAINS SHOWN ON THESE DRAWINGS ARE APPROXIMATE. EXISTING GAS, WATER, AND SEWER SERVICE LATERALS MAY NOT BE SHOWN AND THE CONTRACTOR SHOULD ANTICIPATE THEIR EXISTENCE. THE CONTRACTOR SHOULD CONSIDER CONFLICTS, HAND EXCAVATION, AND DECREASE IN PRODUCTION WHEN PREPARING THEIR BID.

DISPOSAL OF SURPLUS MATERIAL:

1. UNSUITABLE MATERIALS AND BOULDERS/ROCK/STONES AS DEFINED BY THE SPECIFICATIONS THAT ARE NOT ACCEPTABLE AS FILL MATERIAL SHALL BE REMOVED FROM THE SITE. ALL PAVEMENT AND SUBGRADE SOILS REMOVED DURING CONSTRUCTION TO ACHIEVE PROPOSED GRADES SHALL BECOME PROPERTY OF THE CONTRACTOR. DISPOSAL IS THE CONTRACTOR'S RESPONSIBILITY.
2. UNLESS REQUESTED BY THE OWNER, ALL FRAMES, COVERS, GRATES, VALVES AND VALVE BOXES, AND CURBING TO BE REMOVED DURING THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL PAVEMENT, CONCRETE AND SUBGRADE SOILS REMOVED DURING CONSTRUCTION TO ACHIEVE PROPOSED GRADES SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL SIDEWALK PAVEMENT, SIDEWALK BRICK, CONCRETE OR BRICK STRUCTURES, SEWER MANHOLES, DRAINAGE, WATER AND SEWER PIPE TO BE REMOVED/DEMOLISHED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
3. IF ASBESTOS CEMENT (AC) PIPE IS ENCOUNTERED, ALL WORK SHALL BE DONE IN ACCORDANCE WITH ENV-A 1800 ASBESTOS MANAGEMENT AND CONTROL. IF THE AC PIPE IS BROKEN OR REQUIRES CUTTING OR BREAKING, A LICENSED ABATEMENT CONTRACTOR MUST COMPLETE THIS WORK AND PROPERLY BAG AND DISPOSE OF THE PIPE MATERIALS. ALL DISPOSAL SHALL BE DONE IN ACCORDANCE WITH ENV-A 1800 AND ENV-SW 901. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING ASBESTOS CEMENT PIPE, INCLUDING SERVICE CONNECTIONS, WITHIN THE LIMITS OF TRENCH EXCAVATION. THE CONTRACTOR SHALL MAINTAIN WATER SERVICE TO USERS THROUGH THE USE OF TEMPORARY BYPASS PIPING AND VALVES.
4. REMOVAL AND PROPER DISPOSAL OF EXISTING DRAINAGE AND SANITARY SEWER STRUCTURES AND PIPE SHALL BE SUBSIDIARY TO PROPOSED WORK ITEMS WHEN THE EXISTING DRAINAGE AND SEWER ITEMS ARE LOCATED WITHIN THE TRENCH LIMITS OF THE PROPOSED DRAINAGE ITEMS AS SPECIFIED IN SECTION 206 OF THE NHDOT STANDARD SPECIFICATION.

BORING NOTES:

1. BORINGS INDICATED ON THE PLANS WERE MADE BY JOHN TURNER CONSULTING AND GEOTECHNICAL SERVICES, INC IN JULY 2022. BLOW COUNTS SHOWN ARE THE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. STANDARD SPLIT SPOON SAMPLER 6" USING A 140 LB WEIGHT FALLING 30".
2. BORINGS ARE FOR DESIGN PURPOSES SHOWING CONDITIONS AT BORING POINTS ONLY, AND DO NOT NECESSARILY INDICATE MATERIAL TO BE ENCOUNTERED DURING CONSTRUCTION.
3. WATER LEVELS INDICATE THUS ▽ WERE MEASURED AT THE TIME OF EXPLORATION. THE WATER LEVELS ENCOUNTERED DURING CONSTRUCTION MAY VARY CONSIDERABLY DUE TO PREVAILING CLIMATE, RAINFALL, OR OTHER FACTORS.
4. THE GEOTECHNICAL INVESTIGATION REPORT IS PROVIDED AS AN APPENDIX TO THE CONTRACT DOCUMENTS.

SANITARY SEWER NOTES:

1. THE SANITARY SEWER MAIN SHALL BE SDR 35 PVC. THE PIPE SHALL BE CONNECTED TO THE EXISTING SEWER MANHOLE IN SUMNER DRIVE AND STUBBED AND CAPPED ON THE NORTH END FOR FUTURE CONNECTION AS SHOWN ON THE PLANS.
2. SEWER MAINS SHALL BE CONSTRUCTED WITH ADEQUATE SEPARATION FROM WATER MAINS. ADEQUATE SEPARATION IS DEFINED AS 10' OF HORIZONTAL SEPARATION AND 18 INCHES VERTICAL SEPARATION BELOW THE WATER MAIN. IF THE MINIMUM 18" VERTICAL SEPARATION IS NOT ACHIEVABLE, A WAIVER FROM NHDES IS REQUIRED.

GRADING AND DRAINAGE NOTES:

1. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGES, LATEST EDITION.
2. ALL PROPOSED CATCH BASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 3' SUMPS.

EROSION CONTROL NOTES:

1. SEE SHEET D-101 AND D-102 FOR EROSION CONTROL NOTES AND DETAILS

WATER NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE CITY OF DOVER'S CONSTRUCTION STANDARDS AND DETAILS AND NH DES ENV-DW 404. THE MORE STRINGENT REGULATION SHALL APPLY.
2. ALL WATER MAINS SHALL BE CLASS 52 CEMENT LINED DUCTILE IRON (CLDI) PIPE. ALL CLDI PIPE SHALL MEET, OR EXCEED, CURRENT AWWA C151 SPECIFICATIONS FOR DUCTILE IRON WATER PIPE.
3. WATER MAINS AND SERVICES SHALL HAVE A MINIMUM COVER OF 5'-0". WHERE TOP OF WATER MAIN IS LESS THAN 5'-0" BELOW FINISHED GRADE, THE CONTRACTOR SHALL INSTALL RIGID INSULATION IN CONFORMANCE WITH THE TYPICAL WATER TRENCH DETAIL.
4. ALL CLDI WATER MAINS SHALL BE ENCASED IN POLYETHYLENE ENCASEMENT (POLYWRAP). SEE SPECIFICATION SECTION 02611W.
5. AT PIPE CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER/DRAIN PIPE AS POSSIBLE. SPECIAL STRUCTURAL SUPPORTS FOR THE WATER AND SEWER PIPES MAY BE REQUIRED.
6. ALL MATERIALS COMING IN PHYSICAL CONTACT WITH DRINKING WATER MUST BE CERTIFIED TO MEET THE ANSI/NSF STANDARD 61 BY EITHER THE UNDERWRITERS LABS (UL) OR THE NATIONAL SANITATION FOUNDATION (NSF).
7. DISINFECTION AND TESTING OF WATER LINES SHALL BE DONE IN ACCORDANCE WITH CITY OF DOVER AND CURRENT AWWA STANDARDS.
8. ALL EXISTING WATER PIPE IDENTIFIED TO BE ABANDONED SHALL BE CAPPED AT ALL EXPOSED ENDS AND ABANDONED IN PLACE UNLESS REMOVAL IS REQUIRED BECAUSE OF OTHER INTERFERENCES (INCIDENTAL).
9. THE CONTRACTOR SHALL USE RESTRAINT SYSTEMS ON ALL VALVES AND FITTINGS UNLESS OTHERWISE NOTED ON THE PLANS.
10. ALL GATE VALVES SHALL HAVE RESTRAINED MECHANICAL JOINTS AND SHALL OPEN LEFT.
11. EXISTING CURB BOX AND/OR OTHER CASTINGS DISTURBED OR RELOCATED BY CONSTRUCTION ACTIVITIES SHALL BE ADJUSTED TO MATCH FINAL GRADE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER (SUBSIDIARY).
12. WHERE WATER MAIN IS LESS THAN 4'-0" HORIZONTALLY FROM A STRUCTURE, THE CONTRACTOR SHALL INSTALL 2" OF RIGID INSULATION ALONG THE SIDE WALL OF THE WATER MAIN TRENCH A MINIMUM OF 10'-0" HORIZONTALLY BEYOND THE CENTERLINE OF THE STRUCTURE IN BOTH DIRECTIONS TO PROTECT THE WATER MAIN FROM FREEZING.
13. MAINTAIN A MINIMUM OF 10' HORIZONTAL DISTANCE BETWEEN WATER MAIN AND SEWER PIPING. NOTIFY ENGINEERS IF ANY DISCREPANCY.
14. EXISTING FIRE HYDRANTS SHALL BE REMOVED, DECOMMISSIONED BELOW GRADE, AND DELIVERED TO A LOCATION SPECIFIED BY THE OWNER.
15. THE CONTRACTOR SHALL INSTALL THE WATER SERVICE CONNECTIONS (INCLUDING SERVICE SADDLES IF REQUIRED, LIVE TAPS, CORPORATIONS, CURB STOP, CURB BOX, AND PE WATER SERVICE PIPE) WITH TRACER WIRE AT THE SIZE SPECIFIED IN THE SERVICE SCHEDULE AND CONNECT THE EXISTING WATER SERVICE TO THE NEW CURB BOX. THE NEW SERVICE SHALL BE CONNECTED TO THE EXISTING SERVICE PIPE PAST THE CURB STOP UNLESS THE EXISTING WATER SERVICE PIPE IS GALVANIZED CAST IRON, GALVANIZED STEEL OR LEAD; IN THIS CASE, THE CONTRACTOR SHALL NOTIFY THE CITY AND ENGINEER.

UTILITY NOTES:

1. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   - WATER/SEWER – CITY OF DOVER
   - ELECTRIC – EVERSOURCE ENERGY
   - GAS – UNITIL
2. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST ADDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
3. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
5. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK INCLUDING, BUT NOT LIMITED TO: CONDUIT CONSTRUCTION, MANHOLE CONSTRUCTION, AND TRANSFORMER CONSTRUCTION WITH EVERSOURCE ENERGY.

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
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STATE OF NEW HAMPSHIRE – BENJAMIN C. CLIFFORD No. 15275 – LICENSED PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 0 20' 40' Scale: 1" = 20'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
General Notes
Dover Planning File: Site-2023-002

drawing no. N-1

sheet: 2 of 28

ABBREVIATIONS:

ABBREV.	MEANING
@	AT
ABD	ABANDONED
ABAN	ABANDON IN PLACE
ACP	ASBESTOS CEMENT PIPE
ADD'L	ADDITIONAL
APPROX	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BTM	BOTTOM
BH	BRADLEY HEAD
BIT	BITUMINOUS CONCRETE
BLDG	BUILDING
BMP	BUILDING MONITORING POINT
BOW	BOTTOM OF WALL
BR	BRICK
CB	CATCH BASIN
C.B.	CONCRETE BOUND
CBCI	CATCH BASIN WITH CURB INLET
CC	CAST-IN-PLACE CONCRETE
CEM	CEMENT
CL	CLEAR
℄	CENTER LINE
CLF	CHAIN LINK FENCE
CI	CAST IRON
CICL	CAST IRON CEMENT-LINED
CIP	CAST IN PLACE
C.O.	CLEAN OUT
CONC	CONCRETE
CONN	CONNECTION
COR	CORNER
CP	CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
CSE	COBBLE STONE EDGE
D	DRAIN
DEPT	DEPARTMENT
DH	DRILL HOLE
DI	DUCTILE IRON
DIA	DIAMETER
DICL	DUCTILE IRON CEMENT-LINED
DIA	DIAMETER
DISCH	DISCHARGE
DMH	DRAIN MANHOLE
DLY	DOUBLE SOLID YELLOW LINE
DT	DRAIN TILE
DWG	DRAWING
EA	EACH
EF	EACH FACE
EM	ELECTRIC METER
E-VAULT	ELECTRIC-VAULT
EL, ELEV	ELEVATION
ELEC, E	ELECTRIC
EOP	EDGE OF PAVEMENT
EXIST	EXISTING
ESHWL	EXIST. SEASONAL HIGH WATER TABLE
F&C	FRAME AND COVER
FA	FIRE ALARM
FD	FLOOR DRAIN
FED	FEDERAL
FH	FIRE HYDRANT
FM	FORCE MAIN
FND	FOUND
FP	FLAG POLE
FT	FOOT
GM	GAS METER
GRAN	GRANITE
HDPE	HIGH DENSITY POLYETHYLENE
HH	HAND HOLE
HORIZ	HORIZONTAL
HYD	HYDRANT
H/C	HANDICAP
INV	INVERT
IN	INCHES
IP	IRON PIPE
L	LEAVE
MBOX	MAIL BOX
MHW	MEAN HIGH WATER
MIN	MINIMUM
MON	MONUMENT
NIC	NOT IN CONTRACT
NO, #	NUMBER
NTS	NOT TO SCALE
PB	PULL BOX
PC	PRECAST CONCRETE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PCI	PIT CAST IRON
PCB	PROPOSED CATCH BASIN
PDMH	PROPOSED DRAINAGE MANHOLE
PERF	PEFORATED
PM	PARKING METER
PNS	PIPE NOT SEEN
POCS	PROPOSED OUTLET CONTROL STRUCTURE
PROP	PROPOSE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	REMOVE/RELOCATE
REC	RECORD INFORMATION
REINF	REINFORCEMENT
RES	REVERE EXTENSION SEWER
RET	RETAIN
RCP	REINFORCED CONCRETE PIPE
RS	RECEIVING SHAFT
ROW	RIGHT-OF-WAY
SB	STREET LIGHT BASE
S.B.	STONE BOUND
SD	STORM DRAIN
SF	FIRE SERVICE
SGC	SLOPED GRANITE CURB
SLCC	STREET LIGHT CONTROL CABINET
SMH	SEWER MANHOLE
SPEC	SPECIFICATION
SWL	SINGLE WHITE LINE
SQ	SQUARE
S	SANITARY SEWER
ST	STEEL
STD	SINGLE TILE DUCT

ABBREV.	MEANING
STY	STORY
SW	SIDEWALK
T&B.	TOP AND BOTTOM
TBC	TOP BACK OF CURB
TCC	TRAFFIC CONTROL CABINET
TD	TELEDUCT
TEL	TELEPHONE CONDUIT/DUCT BANK
TH	TOP OF HATCH
TL	TRAFFIC LIGHT CONDUIT
TOH	TOP OF HOOD
TOW	TOP OF WALL
TRAF	TRAFFIC CONDUIT
TS	TRAFFIC SIGNAL
TYP	TYPICAL
UMP	UTILITY MONITORING POINT
UNK	UNKNOWN
UP	UTILITY POLE
VC	VITRIFIED CLAY
VERT	VERTICAL
VGC	VERTICAL GRANITE CURB
W	WATER
W/	WITH
WC	WYE CONNECTION
WIP	WROUGHT IRON PIPE
WM	WATER METER
WMH	WATER MANHOLE
WFLG	WETLAND FLAG

GENERAL SYMBOLS:

EXISTING		PROPOSED
	UTILITY POLE & GUY WIRE	
	UTILITY POLE W/ LIGHT	
	LIGHT POLE	
	MAILBOX	
	VENT PIPE	
	SIGNS (TWO POSTS)	
	GRANITE BOUND FOUND	
	DRILL HOLE FOUND	
	IRON PIPE	
	IRON ROD	
	METAL POST	
	GRANITE OR CONC. POST	
	WOOD HUB	
	DRILL HOLE	
	WOOD FENCE POST	
	SIGNAL JUNCTION BOX	
	ELECTRICAL CONDUIT	
	PAD MOUNTED TRANSFORMER	
	ELECTRICAL PANEL	
	ELECTRICAL BOX	
	ELECTRIC METER	
	FIRE HYDRANT	
	GAS GATE VALVE	
	WATER GATE VALVE	
	WATER CURB STOP	
	VALVE ELECTRIC BOX	
	CATCH BASIN	
	DRAIN MANHOLE	
	ELECTRIC MANHOLE	
	TELEPHONE MANHOLE	
	WATER MANHOLE	
	SEWER MANHOLE	
	MANHOLE	
	BUSH/SHRUB	
	TREE STUMP	
	CONIFEROUS TREE	
	DECIDUOUS TREE	
	ROCK	
	BORING	
	TEST PIT	
	WETLAND	
	WETLAND FLAG	
	SPOT LIGHT	
	GUY WIRE	
LAPN	TAX SHEET – LOT NUMBER	
SCRD	STRAFFORD COUNTY REGISTRY OF DEEDS	
EOP	EDGE OF PAVEMENT	
SGC	SLOPED FACE GRANITE CURB	
VGC	VERTICAL FACED GRANITE CURB	
RWBL	MODULAR BLOCK RETAINING WALL	
RWC	CONCRETE RETAINING WALL	
RWM	MORTARED RETAINING WALL	
RWS	STONE RETAINING WALL	
	EDGE OF PAVEMENT	
	WOOD FENCE	
	CHAIN LINK FENCE	
	EROSION CONTROL FIBER ROLL	
	SPOT ELEVATION	
	City LAYOUT LINE	131.75'
	OVERHEAD WIRES	
	SEWER LINE	T
S	FORCEMAIN	
FM	DRAIN LINE	fm
D	GAS LINE	D
G	WATER SERVICE UNDERGROUND	G
W	UNDERGROUND ELECTRIC LINE	PWS
UGE	UNDERGROUND COMMUNICATIONS	UGE
UGC	APPROX. ABUTTERS	T
	LOT LINE	
	SHRUB LINE	
	TREE LINE	
	STONE WALL	
	GUARDRAIL	
	MAJOR CONTOUR LINE	
	MINOR CONTOUR LINE	100
	EASEMENT LINE	99
	WETLAND LINE	
W	WATER MAIN	
	BARBED WIRE FENCE	
X	CEMENT CONCRETE	PW
	CRUSHED STONE	
	RIP RAP	
	RETAINING WALL	
	LANDSCAPED AREA	
LA	BOLLARD	
	SLOPE LINE	
	CONSTRUCTION BASELINE	
	LIMITS OF WORK	302+00
	THRUST BLOCK	
	ELECTRICAL MANHOLE	
	ELECTRICAL TRANSFORMER	PEMH
	OUTLET CONTROL STRUCTURE WITH GRATE	T
	OUTLET CONTROL STRUCTURE WITH COVER	
	HEADWALL	
	FLARED END SECTION	
	BUILDING MOUNTED LIGHT	

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
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NEW HAMPSHIRE – 4237 – BENJAMIN C. CLARK No. 15019 LICENSED PROFESSIONAL ENGINEER – STATE OF

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale:

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Legend and Abbreviations
Dover Planning File: Site-2023-002

drawing no. N-2

sheet: 3 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250 – Notes.dwg Date Plotted: Sep 05, 2023 – 3:55pm Plotted By: CCHIARAMONTE

NOTES:

1. REFERENCE: PARCEL ID: H0035-C0004
   42 SUMNER DRIVE
   DOVER, NEW HAMPSHIRE
   D.S.I. PROJECT NO. 6545

2. TOTAL PARCEL AREA: SQ. FT. OR AC.

3. OWNER OF RECORD: COOPERATIVE ALLIANCE FOR
   SEACOAST TRANSPORTATION
   42 SUMNER DRIVE
   DOVER, NH 03820
   S.C.R.D. BOOK 2200 PAGE 264

4. ZONE: CM

5. FIELD SURVEY PERFORMED BY J.M.L. & J.H.H. DURING JUNE 2020 USING A TRIMBLE S6 TOTAL STATION AND A TRIMBLE R10 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A TRIMBLE DINI DIGITAL AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.

6. HORIZONTAL DATUM BASED ON NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATE ZONE (2800) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

7. VERTICAL DATUM IS BASED ON APPROXIMATE NAVD88(GEOID12A) (±.2') DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

8. JURISDICTIONAL WETLANDS DELINEATED BY WEST ENVIRONMENTAL, INC DURING JUNE 2020 IN ACCORDING TO THE:
   - US ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JANUARY, 1987).
   - REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (2012).
   - NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). U.S. FISH AND WILDLIFE SERVICE (2013).
   - CODE OF ADMINISTRATIVE RULES. WETLANDS BOARD, STATE OF NEW HAMPSHIRE (CURRENT).
   - FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.0, 2016 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEHSTC (MAY 2017).

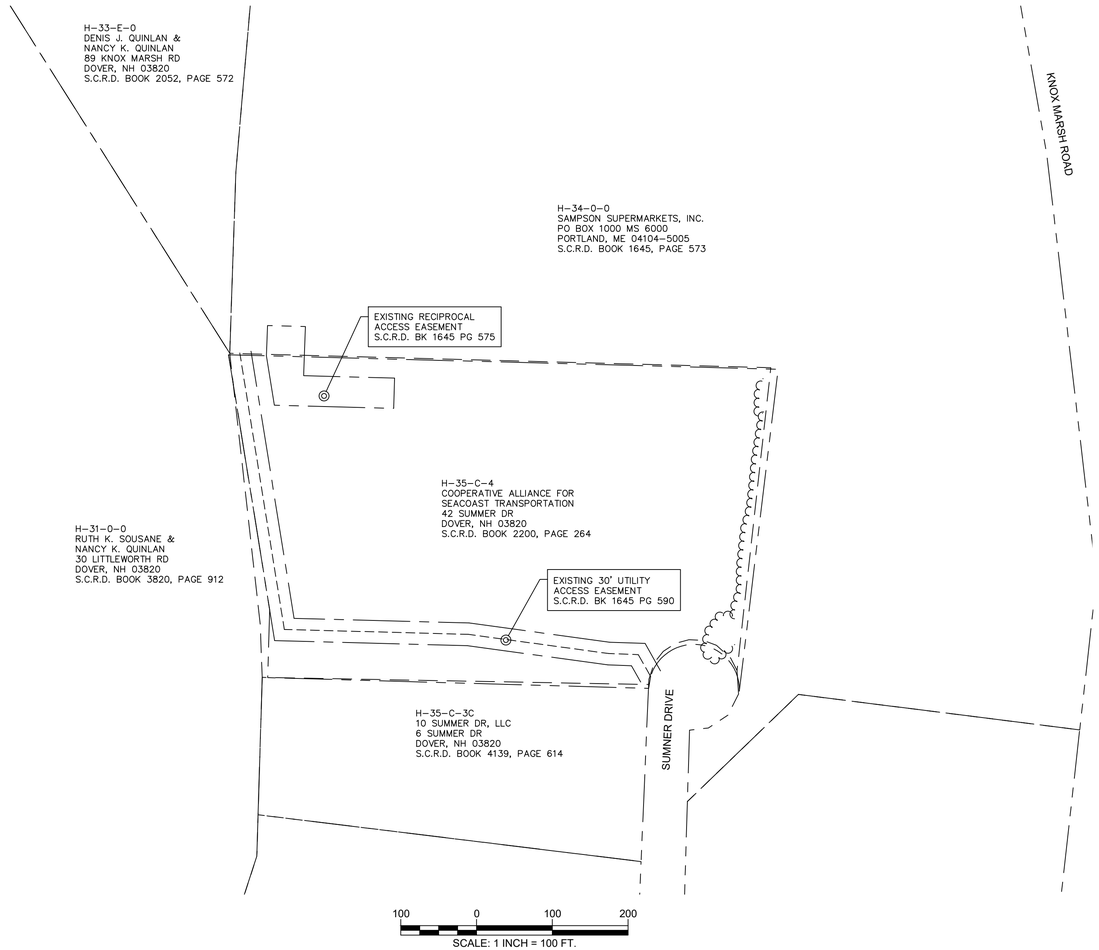
9. FLOOD HAZARD ZONE: "X", PER FIRM MAP #33017C0320E, DATED 09/30/2015.

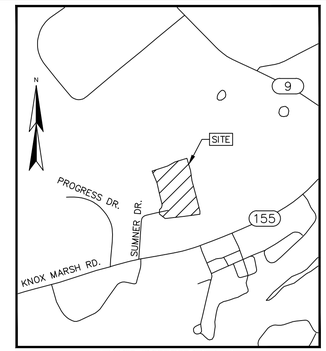
10. PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 1' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY. WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.

11. UNDERGROUND UTILITIES WITHIN THE SURVEY AREA SHOWN HEREON ARE THE RESULT OF AN UNDERGROUND UTILITY DESIGNATION COMPLETED BY DOUCET SURVEY ON JUNE 2020 AND FROM DATA OBTAINED FROM RECORD MAPS AND DRAWINGS. DOUCET'S UTILITY DESIGNATION WAS COMPLETED IN ACCORDANCE WITH THE STANDARD PROCEDURES SET FORTH IN ASCE 38-02 AND CONSISTENT WITH APPROPRIATE QUALITY LEVELS. DRAIN AND SANITARY SEWER LINES WERE VISUALLY ALIGNED AND MAPPED AT QUALITY LEVEL C UNLESS OTHERWISE SHOWN. DRAIN AND SEWER LINES SHOWN AT QUALITY LEVEL B WERE LOCATED USING SURFACE GEOPHYSICAL TECHNIQUES. ALL ABOVE GROUND STRUCTURES, SURFACE FEATURES AND THE LOCATION OF THE MARK OUT ARE THE RESULT OF AN INSTRUMENT SURVEY COMPLETED BY DOUCET UNLESS OTHERWISE NOTED. THERE MAY BE OTHER UNDERGROUND UTILITIES, THE EXISTENCE OF WHICH ARE NOT KNOWN OR CERTIFIED BY THE UNDERSIGNED. DIG SAFE NEW HAMPSHIRE AND THE APPROPRIATE AUTHORITIES MUST BE NOTIFIED PRIOR TO CONDUCTING TEST BORINGS, EXCAVATION, OR CONSTRUCTION ACTIVITIES.

12. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING; THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.

13. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH AND IN RELATION TO THE CURRENT LEGAL DESCRIPTION, AND IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP, OR DEFINE THE LIMITS OF TITLE.





LOCATION MAP (n.t.s.)

LEGEND
- APPROXIMATE LOT LINE
- APPROXIMATE ABUTTER LOT LINE
- EXISTING EASEMENT LINE

REFERENCE PLANS:

1. "SITE PLAN BUS TERMINAL AND MAINTENANCE FACILITY" DATED 8-26-94 BY CIVIL WORKS S.C.R.D. PLAN 1124 COAST SITE PLAN.
2. "F. W. WEBB MFG. CO. DIVISION OF LOT 3 SUMNER DRIVE" DATED SEPT, 1974 BY G. L. DAVIS & ASSOCIATES CIVIL ENGINEERS S.C.R.D. PLAN P001-F005-057.
3. "PROPERTY PLAN INDUSTRIAL DEVELOPMENT AUTHORITY SUMNER DAVIS LAND" DATED AUG, 1969 BY G. L. DAVIS & ASSOCIATES CIVIL ENGINEERS S.C.R.D. PLAN P011-F003-008.
4. "SUMNER DRIVE ACCESS PLAN FOR NEW HAMPSHIRE DISTRIBUTORS INC." DATED AUGUST 27, 1982 BY RICHAD D. BARTLETT L.L.S S.C.R.D. PLAN P023A-0129.
5. "LOT LINE ADJUSTMENT PLAN PREPARED FOR DENNIS QUINLAN AND RUTH SOUSANE" DATED AUGUST 24, 1993 BY MCENEANEY SURVEY ASSOCIATES, INC. S.C.R.D. PLAN P0042-0099.
6. "PLAN OF CONSERVATION EASEMENT- LAND OF RUTH SOUSANE AND DENNIS & NANCY QUINLAN" DATED DEC. 16, 1996 BY RICHARD P. TOWLE S.C.R.D. PLAN P0051-0097.

PURSUANT TO RSA 676:18, III:

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

I CERTIFY THAT THIS SURVEY AND PLAN WERE PREPARED BY ME OR BY THOSE UNDER MY DIRECT SUPERVISION AND FALLS UNDER THE URBAN SURVEY CLASSIFICATION OF THE NH CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS. I CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. RANDOM TRAVERSE SURVEY BY TOTAL STATION, WITH A PRECISION GREATER THAN 1:15,000.'

_____ L.L.S. #824

_____ DATE

THE CERTIFICATIONS SHOWN HEREON ARE INTENDED TO MEET REGISTRY OF DEED REQUIREMENTS AND ARE NOT A CERTIFICATION TO TITLE OR OWNERSHIP OF PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE ACCORDING TO CURRENT TOWN ASSESSORS RECORDS.

EXISTING CONDITIONS PLAN

FOR

CMA ENGINEERS

OF

COAST PUBLIC TRANSIT

42 SUMNER DRIVE

DOVER, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	5/31/23	Revised for City of Dover TRC Comments	BCC

DRAWN BY:	E.D.P.	DATE:	JULY 2020
CHECKED BY:	W.J.D.	DRAWING NO.	6545A
JOB NO.	6545	SHEET	1 OF 2

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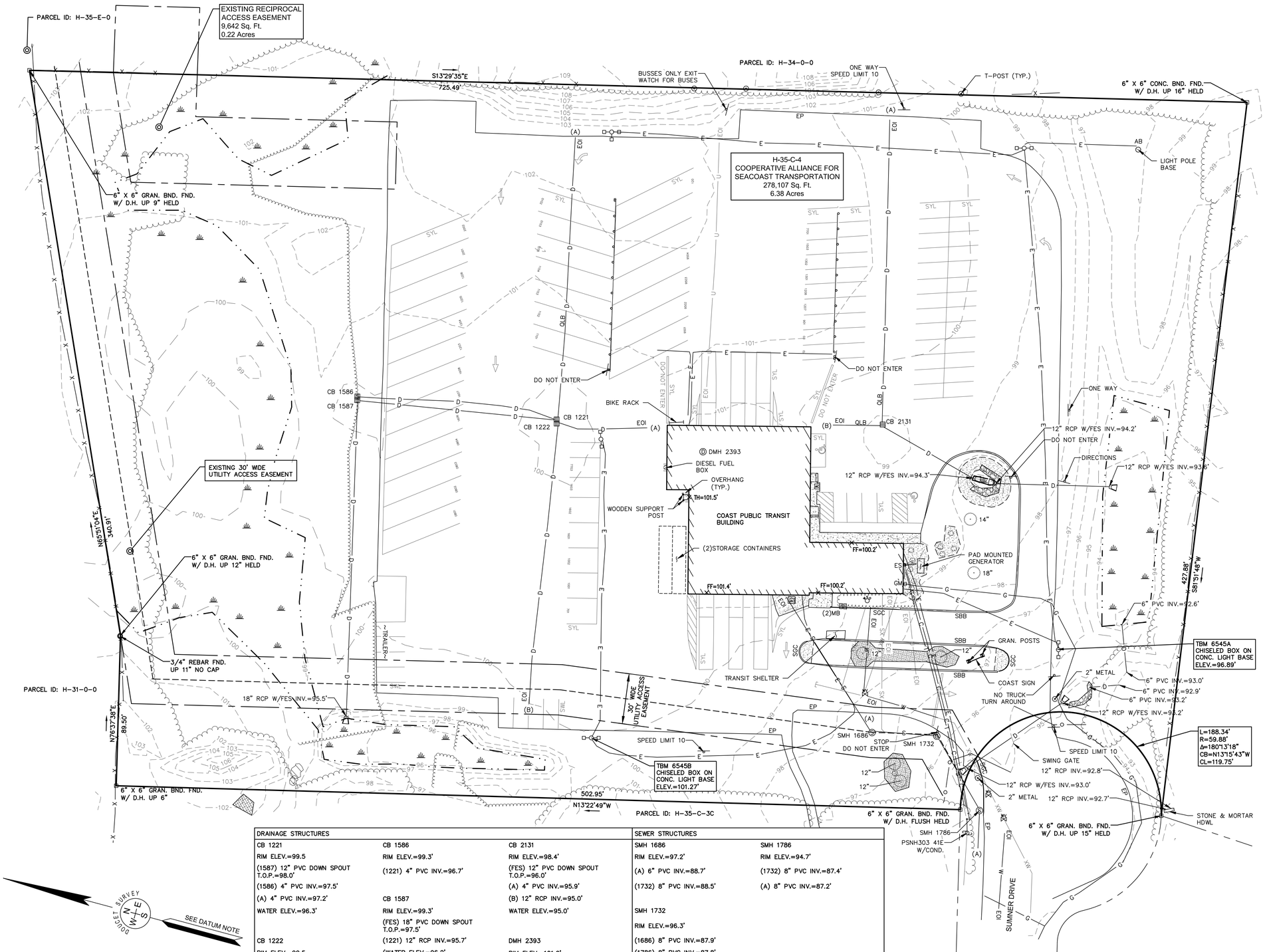
10 Storer Street (Riverview Suite) Kennebunk, ME (207) 502-7005
http://www.doucetsurvey.com

FILE NAME: P:\CAD\PROJECTS\1200 Coast On-Call Eng Services\VRBT\1200-X-SURVEY.dwg LAYOUT NAME: COVER SHEET 1 PLOTTED: Tuesday, May 30, 2023 - 4:08pm



DRAINAGE STRUCTURES		
CB 1221	CB 1586	CB 2131
RIM ELEV.=99.5	RIM ELEV.=99.3'	RIM ELEV.=98.4'
(1587) 12" PVC DOWN SPOUT T.O.P.=98.0'	(1221) 4" PVC INV.=96.7'	(FES) 12" PVC DOWN SPOUT T.O.P.=96.0'
(1586) 4" PVC INV.=97.5'		(A) 4" PVC INV.=95.9'
(A) 4" PVC INV.=97.2'	CB 1587	(B) 12" RCP INV.=95.0'
WATER ELEV.=96.3'	RIM ELEV.=99.3'	WATER ELEV.=95.0'
	(FES) 18" PVC DOWN SPOUT T.O.P.=97.5'	
CB 1222	(1221) 12" RCP INV.=95.7'	DMH 2393
RIM ELEV.=99.5	(WATER ELEV.=96.2'	RIM ELEV.=101.2'
(A) 4" PVC INV.=97.3 CAPPED		INSIDE GARAGE UNABLE TO OPEN
(B) 4" PVC INV.=97.3'		

SEWER STRUCTURES	
SMH 1686	SMH 1786
RIM ELEV.=97.2'	RIM ELEV.=94.7'
(A) 6" PVC INV.=88.7'	(1732) 8" PVC INV.=87.4'
(1732) 8" PVC INV.=88.5'	(A) 8" PVC INV.=87.2'
SMH 1732	
RIM ELEV.=96.3'	
(1686) 8" PVC INV.=87.9'	
(1786) 8" PVC INV.=87.8'	

LEGEND

- LOT LINE
- ABUTTERS LOT LINE
- X — BARBED WIRE FENCE
- S — SEWER LINE (QUALITY LEVEL B)
- D — DRAIN LINE (QUALITY LEVEL B)
- G — GAS LINE (QUALITY LEVEL B)
- E — UNDERGROUND ELECTRIC LINE (QUALITY LEVEL B)
- W — WATER LINE (QUALITY LEVEL B)
- U — POSSIBLE UNDER DRAIN
- XW — WATER LINE (QUALITY LEVEL D)
- XS — SEWER LINE (QUALITY LEVEL D)
- 100 — MAJOR CONTOUR LINE
- 99 — MINOR CONTOUR LINE
- TREE LINE
- SHRUB LINE
- EDGE OF WETLAND
- WETLAND AREA
- CONCRETE
- RIP RAP
- LANDSCAPED AREA
- CRUSHED STONE
- LEDGE OUTCROP
- LIGHT POLE (MULTI-ARMS)
- SIGN
- IRON PIPE/ROD FOUND
- BOUND FOUND
- POST
- POST
- WATER GATE VALVE
- WATER SHUTOFF VALVE
- PAD MOUNTED TRANSFORMER
- CATCH BASIN
- DRAIN MANHOLE
- F.E.S — FLARED END SECTION
- SEWER MANHOLE
- DECIDUOUS TREE
- DECIDUOUS BUSH
- ROCK/BOULDER
- ACCESSIBLE PARKING SPACE

TYP.	TYPICAL
BND. FND.	BOUND FOUND
GRAN.	GRANITE
HDWL	HEADWALL
D.H.	DRILL HOLE
FF	FINISHED FLOOR ELEVATION
TH	THRESHOLD ELEVATION
EP	EDGE OF PAVEMENT
SGC	SLOPED GRANITE CURB
SBB	SLOPED BITUMINOUS BERM
SWL	SINGLE WHITE LINE
SYL	SINGLE YELLOW LINE
ES	ELECTRIC SWITCH
GM	GAS METER
EOI	END OF GEOPHYSICAL INFORMATION
AB	ABANDONED

QUALITY LEVEL ACCORDING TO ASCE 38-02

QLB	QUALITY LEVEL "B" SUBSURFACE UTILITIES HAVE BEEN MARKED USING A VARIETY OF GEOPHYSICAL TOOLS
QLC	QUALITY LEVEL "C" SURVEYED THE LOCATION OF OBSERVABLE UTILITIES
QLD	QUALITY LEVEL "D" LIMITED PHYSICAL EVIDENCE, DIGITIZED FROM RESEARCH AND HISTORICAL DATA

30 0 30 60

SCALE: 1 INCH = 30 FT.

EXISTING CONDITIONS PLAN

FOR

CMA ENGINEERS

OF

COAST PUBLIC TRANSIT

42 SUMNER DRIVE

DOVER, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY

DRAWN BY:	E.D.P.	DATE:	JULY 2020
CHECKED BY:	W.J.D.	DRAWING NO.	6545A
JOB NO.	6545	SHEET	2 OF 2

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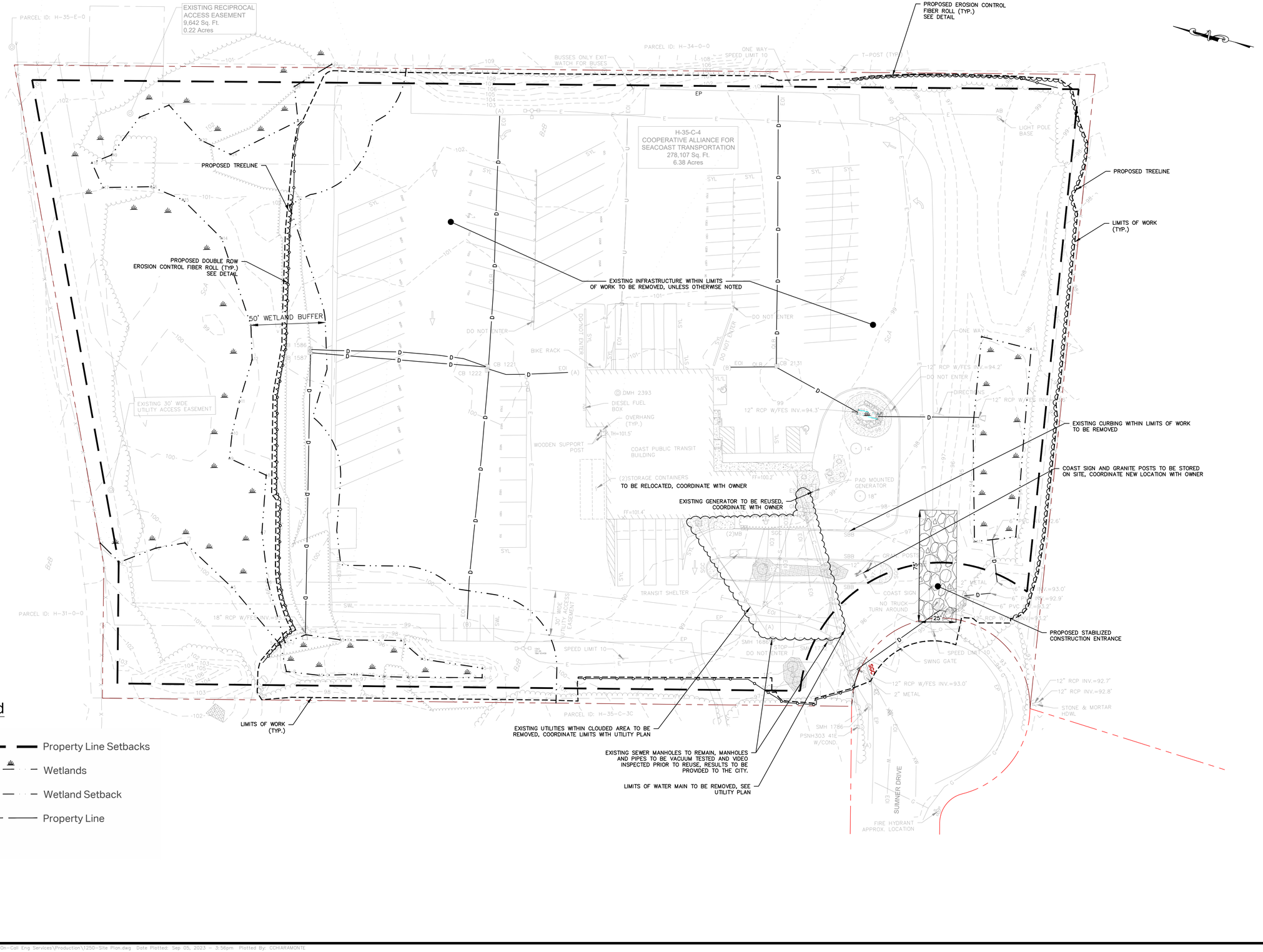
Serving Your Professional Surveying & Mapping Needs
102 Kent Place, Newmarket, NH 03857 (603) 659-6560
2 Commerce Drive (Suite 202) Bedford, NH 03110 (603) 614-4060
10 Storer Street (Riverview Suite) Kennebunk, ME (207) 502-7005
http://www.doucetsurvey.com

FILE NAME: C:\Users\EAApollon\Local\Temp\AcPublish_30360\6545A CSD2020-07-10.dwg LAYOUT NAME: SHEET 2 PLOTTED: Friday, July 10, 2020 - 3:10pm



Legend

- Property Line Setbacks
- Wetlands
- Wetland Setback
- Property Line

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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BENJAMIN C. CLARK No. 15429 STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 30' Scale: 1" = 30' 60'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Site Preparation and Demolition Plan
Dover Planning File: Site-2023-002

drawing no. C-1

sheet: 6 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Site Plan.dwg Date Plotted: Sep 05, 2023 – 3:56pm Plotted By: CCHIARAMONTE

GENERAL SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO PRESENT THE EXISTING COAST BUS FACILITY REDEVELOPMENT PROJECT CONSISTING OF 28,700 SF VEHICLE STORAGE BUILDING AND 17,000 SF ADMINISTRATION, OPERATIONS, AND MAINTENANCE BUILDING.

2. OWNER OF RECORD:

   COOPERATIVE ALLIANCE FOR SEACOAST TRANSPORTATION
   42 SUMNER DRIVE
   DOVER, NH 03820
   S.C.R.D. BOOK 2200, PAGE 264

   OWNER SIGNATURE

3. THE PARCEL SHOWN IS LOT NO. H–35, MAP C–4 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.

4. THE SUBJECT PARCEL CONTAIN 6.38 ACRES / 278,107 SF OF LAND.

5. EXISTING RECIPROCAL ACCESS EASEMENT S.C.R.D. BK. 1645 PG. 575 & EXISTING 30' UTILITY ACCESS EASEMENT S.C.R.D. BK. 1645 PG. 590

6. CURRENT CITY OF DOVER ZONING DISTRICT IS COMMERCIAL MANUFACTURING:

	REQUIRED	PROVIDED
MIN. LOT SIZE:	20,000 SF	278,107 SF
MIN. LOT FRONTAGE:	100 FT	188.34 FT
MIN. YARD SETBACKS:		
FRONT:	35 FT	150 FT
SIDE:	10 FT	91 FT
REAR:	10 FT	36 FT
ABUT–A–STREET:	35 FT	91 FT
MAX. LOT COVERAGE:	50 %	17 %
MAX. BUILDING HEIGHT:	50 FT	30 FT 8 IN & 26 FT
GREEN SPACE:	33 %	44 %

   THIS PROPERTY FALLS WITHIN THE FOLLOWING ZONING OVERLAY DISTRICTS:
   – GROUND WATER PROTECTION DISTRICT (TERTIARY)
   – WETLAND PROTECTION DISTRICT

8. PARKING REQUIREMENTS – OFFICE & INDUSTRIAL USE

   MAX. # OF SPACES FOR OFFICE = 8,000 SF X 1/300 SF = 26.6 SPACES
   MAX. # OF SPACES FOR INDUSTRIAL = 38,700 SF X 1/800 SF = 48.3 SPACES

   MAX. # OF SPACES ALLOWED = 75 SPACES
   PROVIDED SPACES = 73 SPACES (3 ADA W/ 1 VAN)

9. CONDITIONAL USE PERMIT – CONSTRUCT STORMWATER MANAGEMENT SYSTEM WITHIN THE WETLAND BUFFER. (170–27.1.G.d.iv)

10. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A FIELD SURVEY PERFORMED BY DOUCET SURVEY DURING JUNE 2020 USING A TRIMBLE S6 TOTAL STATION AND A TRIMBLE R10 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A TRIMBLE DINI DIGITIAL AUTO LEVEL, WITH A PRECISION GREATER THAN 1:15,000.

11. HORIZONTAL DATUM BASED ON NAD83(2011) NEW HAMPSHIRE STATE PLANE COORDINATE ZONE (2800) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

12. VERTICAL DATUM IS BASED ON APPROXIMATE NAVD88(GEOID12A) (±.2') DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

13. SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (33017C0320E EFF. 9/30/2015).

14. JURISDICTIONAL WETLANDS DELINEATED BY WEST ENVIRONMENTAL, INC DURING JUNE 2020 IN ACCORDING TO THE:

   14.1. US ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y–87–1 (JANUARY, 1987).
   14.2. REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (2012).
   14.3. NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: NORTHEAST (REGION 1). U.S. FISH AND WILDLIFE SERVICE (2013).
   14.4. CODE OF ADMINISTRATIVE RULES. WETLANDS BOARD, STATE OF NEW HAMPSHIRE (CURRENT).
   14.5. FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 8.0, 2016 AND (FOR DISTURBED SITES) FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 4. NEHSTC (MAY 2017).

15. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE.

16. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER AND SEWER.

17. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED WITHIN 50 FT OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED, AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.

18. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY.

19. 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.

20. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45–2 OF THE CODE OF THE CITY OF DOVER.

21. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7 AM–6 PM, SATURDAY AND SUNDAY 9 AM–4 PM. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.

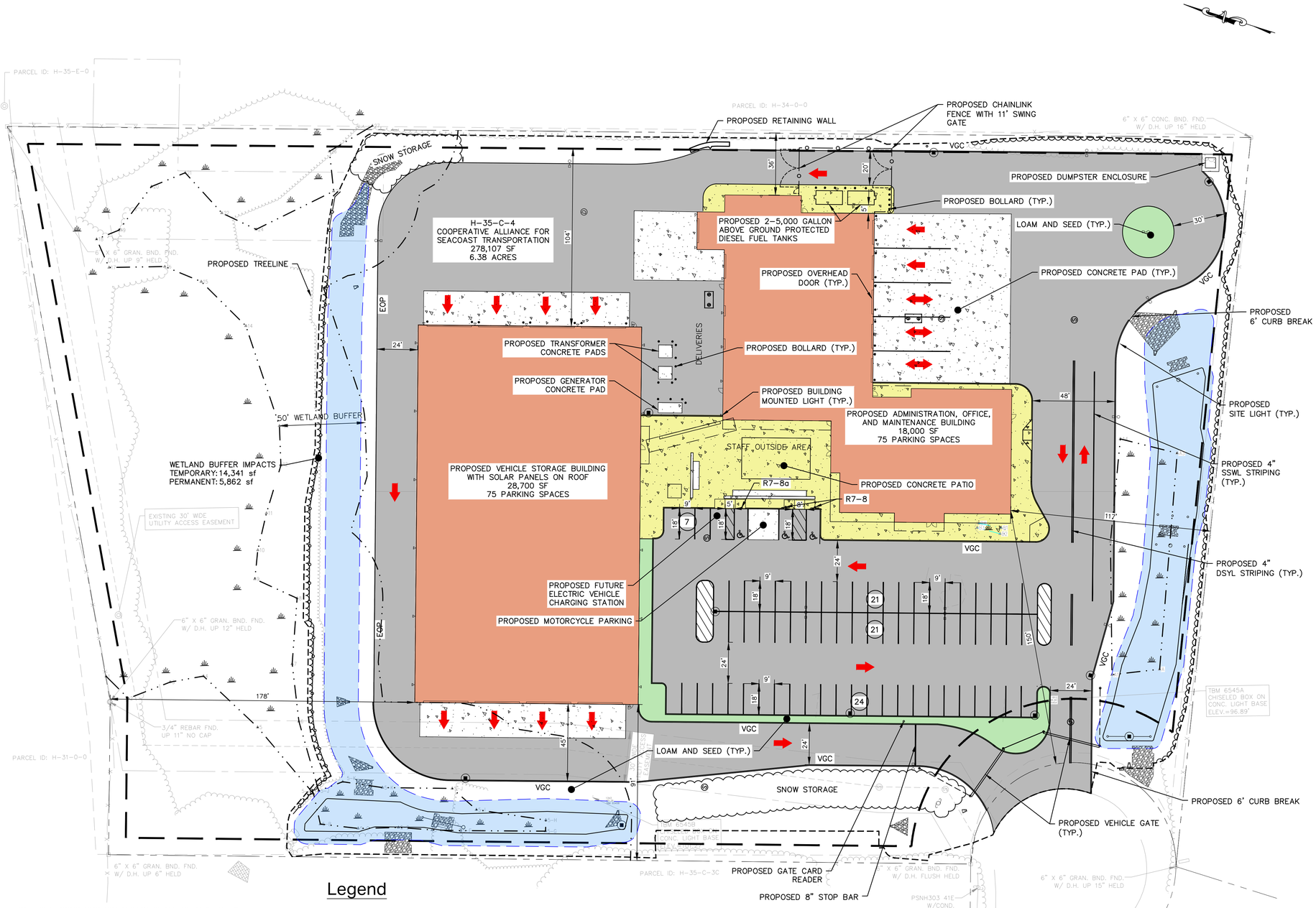
22. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.

23. EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 153–14–E AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.

24. THE PROPOSED STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81–30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.

25. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NEPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION AND SERVICES PRIOR TO CONNECTION OF THE BLACKFLOW DEVCE.

26. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI–117.1) AND NH RSA 155–A: 5.



Legend

- Property Line Setbacks
- Pavement
- Building
- Sidewalk
- Grass/Landscaping
- Stormwater Treatment
- Traffic Flow Direction
- Concrete Pad
- Wetlands
- Wetland Setback
- Property Line

PERMIT	FILED	APPROVED
CITY OF DOVER – SITE PLAN	3/16/2023	–
CITY OF DOVER – CUP	3/16/2023	–
NHDES – AOT	–	–
NHDHR – RPR	–	–
NHB DATA CHECK	11/15/2022	11/17/2022
NH FISH AND GAME CONSULTATION	–	–
EPA ENOI	–	–
NHDES SEWER CONNECTION	–	–

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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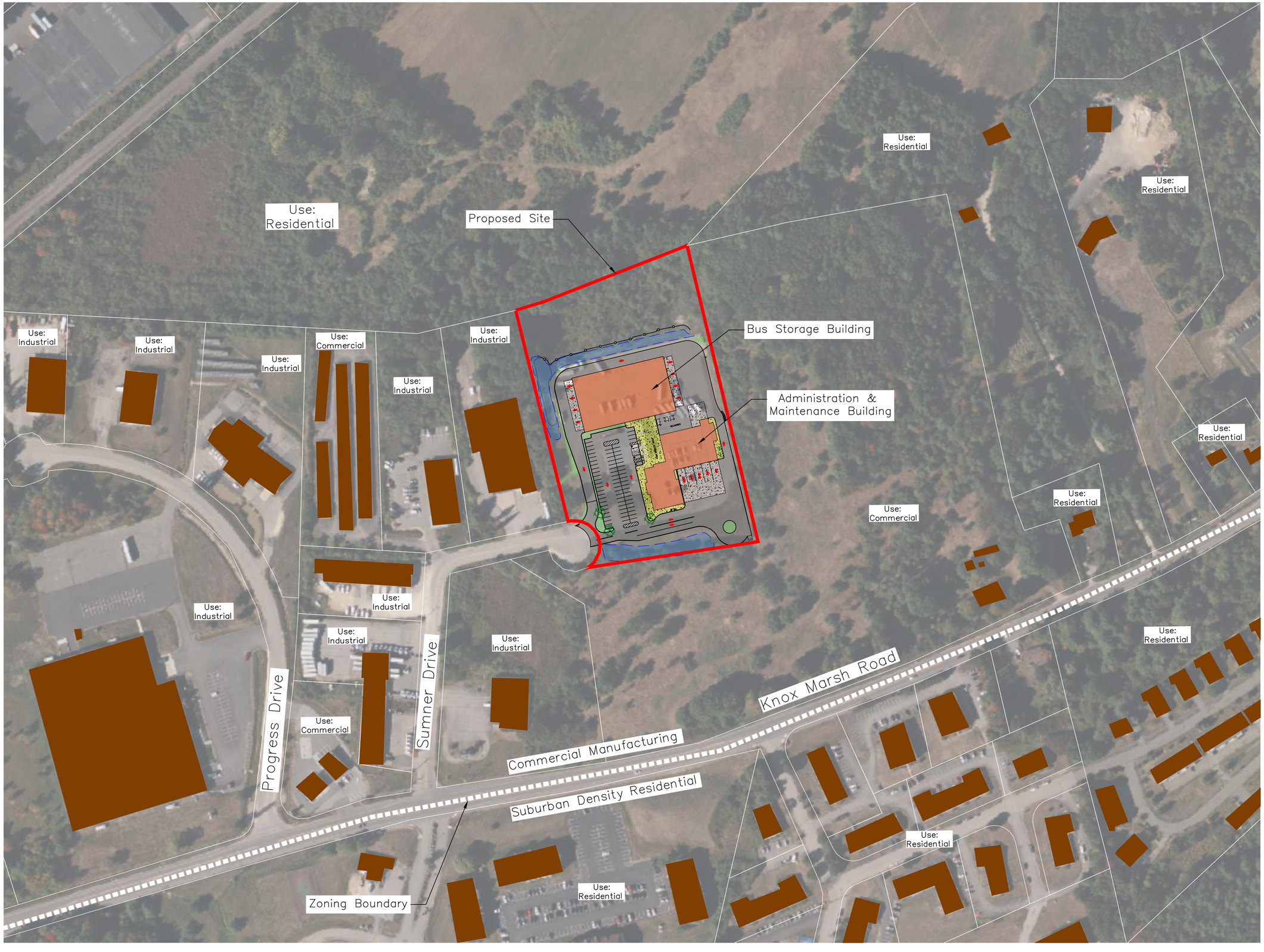
STATE OF NEW HAMPSHIRE – BENJAMIN C. PACHECO No. 15215 – LICENSED PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: PAC
scale: 30' Scale: 1" = 30' 60'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Site Layout Plan
Dover Planning File: Site-2023-002

drawing no. C-2

sheet: 7 of 28



no.	revision	date	by
2	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
1	Revised for City of Dover TRC Comments	7/27/23	BCC

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NEW HAMPSHIRE – STATE OF – PROFESSIONAL ENGINEER
CHRISTOPHER C. BENJAMIN
No. 15976

designed by: MHH
drawn by: MHH
approved by: BCC
date: June 2023
project no: 1250
checked by: PAC
scale: 1" = 100'
100' 0 200'
Scale: 1" = 100'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Neighborhood Plan
Dover Planning File: Site-2023-002

drawing no. C-3

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Neighborhood Plan.dwg Date Plotted: Sep 05, 2023 – 3:56pm Plotted By: CCHIARAMONTE

PROPOSED 1,000 GALLON OIL-WATER SEPARATOR
RIM:101.40
INV.IN: 91.15
INV.OUT: 90.83

PROPOSED FLOOR DRAIN
INV. OUT=97.83'

PROPOSED 1,000 GALLON OIL-WATER SEPARATOR
RIM:101.35
INV. IN: 97.20
INV. OUT: 97.03

PROPOSED FLOOR DRAIN
INV. OUT=97.83'

12' of 8" SDR 35 @ 1.55%

SMH-103
RIM:100.64
INV. IN:96.85 8"(N)
INV. IN:94.45 8"(W)
INV. OUT:94.20 8"(S)

SMH-104
RIM:98.88
INV. IN:93.15 8"(N)
INV. OUT:92.90 8"(W)

PROPOSED GAS SERVICE

24' of 8" SDR 35 @ 1.76%

18' of 8" SDR 35 @ 3.43%

41' of 8" SDR 35 @ 0.93%

PROPOSED (2) THREE PHASE PAD-MOUNTED TRANSFORMERS

PROPOSED GENERATOR

PROPOSED SANITARY SEWER SERVICE
INV. OUT=94.83'

PROPOSED 2" COPPER DOMESTIC WATER

134' of 8" SDR 35 @ 1.36%

PROPOSED 6" DI FIRE SERVICE PROTECTION & FIRE DEPARTMENT CONNECTION (ABOVE GROUND)

PROPOSED 6" GATE VALVE

PROPOSED EVERSOURCE PULL BOX

PROPOSED WATER SHUT OFF VALVE

SMH-101
RIM:100.19
INV. IN:95.40 8"(E)
INV. IN:95.40 8"(N)
INV. OUT:94.15 8"(W)

PROPOSED CONNECTION FOR FUTURE ELECTRIC VEHICLE CHARGING STATION

PROPOSED 6" DI WATER MAIN

PROPOSED SEWER SERVICE
INV. OUT=95.83'

39' of 8" SDR 35 @ 1.10%

PROPOSED UNDERGROUND ELECTRIC SERVICE

PROPOSED UNDERGROUND TELECOM SERVICE

231' of 8" SDR 35 @ 1.36%

145' of 8" SDR 35 @ 1.03%

PROPOSED 6" GATE VALVE

PROPOSED 2" COPPER DOMESTIC WATER

PROPOSED 6"x6"x6" MJ TEE

PROPOSED JOINT RESTRAINTS AND THRUST BLOCK SEE DETAILS

PROPOSED JOINT RESTRAINTS AND THRUST BLOCK SEE DETAILS

PROPOSED WATER SHUT OFF VALVE

PROPOSED 6" GATE VALVE & DI FIRE SERVICE & FIRE DEPARTMENT CONNECTION

PROPOSED 6" GATE VALVE

SMH-105
RIM:96.56
INV. IN:89.75 8"(E)
INV. OUT:89.50 8"(NW)

CONNECT TO EXISTING 6" WATER MAIN

81' of 8" SDR 35 @ 1.97%

50' WETLAND BUFFER

EXISTING 30' WIDE UTILITY ACCESS EASEMENT

30' WIDE UTILITY EASEMENT

EX. SMH-1732
RIM:96.18
INV. IN:87.90 8"(SE)
INV. IN:87.90 8"(N)
INV. OUT:87.80 8"(SW)

PROPOSED GAS SERVICE

PROPOSED PULL BOX

SMH-102
RIM:99.90
INV. IN:92.65 8"(E)
INV. OUT:92.40 8"(S)

EX. SMH-1686
RIM:97.18
INV. IN:88.75 8"(N)
INV. OUT:88.50 8"(S)

102' of 8" SDR 35 @ 3.58%

PROPOSED RISER POLE

PROPOSED OVERHEAD ELECTRIC

SMH 1786
PSNH303 41E
W/COND.

SUMNER DRIVE

FIRE HYDRANT APPROX. LOCATION

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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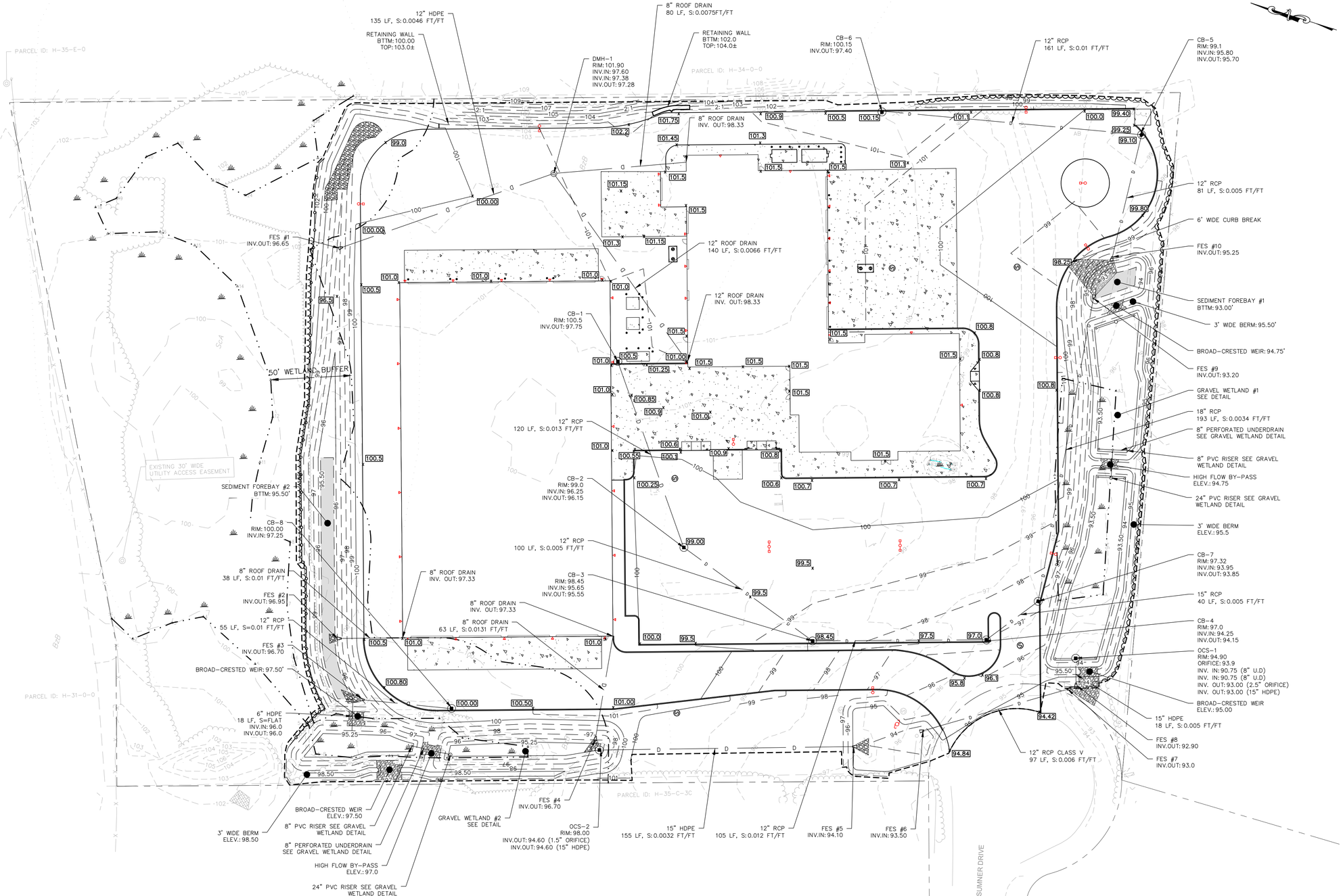
STATE OF NEW HAMPSHIRE – BENJAMIN C. CLARK No. 15019 LICENSED PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 1" = 30'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Utilities Plan
Dover Planning File: Site-2023-002

drawing no. C-4

sheet: 9 of 28



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NEW HAMPSHIRE – 4323 – BENJAMIN C. CLARK No. 15019 LICENSED PROFESSIONAL ENGINEER – STATE OF

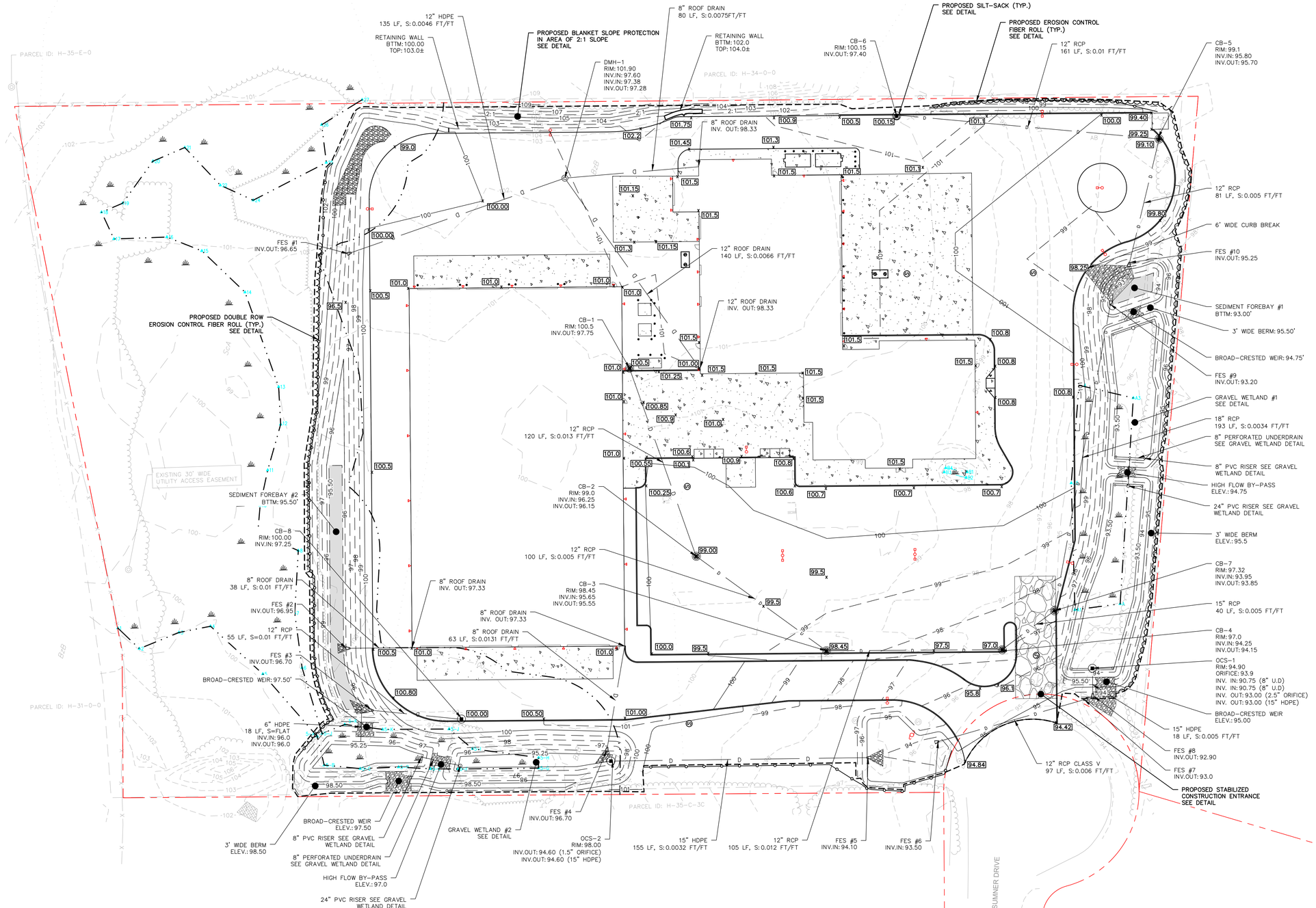
designed by: CFC
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: PAC
scale: 30' 0 60' Scale: 1" = 30'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Grading & Drainage Plan
Dover Planning File: Site-2023-0002

drawing no. C-5

sheet: 10 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Grade and Drain Plan.dwg Date Plotted: Sep 05, 2023 – 3:57pm Plotted By: CCHARAMONTE



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3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
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STATE OF NEW HAMPSHIRE – BENJAMIN C. CLARK No. 15019 LICENSED PROFESSIONAL ENGINEER

designed by: CFC
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 40' 20' 0 Scale: 1" = 20'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Sediment and Erosion Control Plan
Dover Planning File: Site-2023-0002

drawing no. C-6

sheet: 11 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Grade and Drain Plan.dwg Date Plotted: Sep 05, 2023 – 3:57pm Plotted By: CCHIARAMONTE

LANDSCAPE GENERAL NOTES

1. ALL LANDSCAPE PLANTINGS SHALL BE LABELED WITH GENUS, SPECIES AND CULTIVAR. AT MINIMUM ONE PLANTING FROM EACH SPECIES SHALL BE LABELED. LABELING SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION.
2. ANY PLANTING MATERIALS THAT ARE NOT OF PROPER SPECIES, SIZE, OR IN GOOD CONDITION SHALL BE REJECTED.
3. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES BEFORE BEGINNING LANDSCAPING INSTALLATION.
4. ALL SEEDED AREAS SHALL HAVE A MINIMUM OF 6 INCHES OF TOPSOIL DEPTH. TOPSOIL TO BE TREATED WITH A 12–25–12 PELLETIZED FERTILIZER @ 10 LBS. PER 1,000 SQUARE FEET. ALL SEEDED AREAS TO BE POWER RAKED PRIOR TO SEEDING.
5. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING A THICK, WEED FREE LAWN THROUGH THE FIRST MOWING.
6. SOIL PLANTING MIXTURE SHALL BE A 6%–10% ORGANIC TOPSOIL, AMENDED WITH 10% WOOD ASH, 10% MANURE, & 30% PEAT MOSS(OR INCORPORATE ALL–GRO OR A SIMILAR DEHYDRATED NATURAL COMPOST MATERIAL. ALL PLANT MATERIAL PITS SHALL RECEIVE A MINIMUM OF 20% ALL–GRO OR EQUAL PLANT AMENDMENT.
7. PERENNIAL BEDS TO HAVE A MINIMUM DEPTH OF 12 INCHES OF SOIL PLANTING MIXTURE OVER UNCOMPACTED SUBGRADE.
8. ALL B&B MATERIAL WHICH ARE ENCASED IN WIRE BASKETS SHALL HAVE THE WIRES CUT LOOSE AND THE TOP THIRD REMOVED.
9. IF ROAD BASE IS ENCOUNTERED IN THE PLANTING BEDS IT SHALL BE REMOVED AND REPLACED WITH AMENDED PLANTING MATERIAL.
10. MULCHED AREAS SHALL HAVE A MINIMUM DEPTH OF 4" OF PINE/HEMLOCK BARK MULCH OVER WEED BARRIER FABRIC.
11. STONE BED AREAS TO HAVE A MINIMUM 3 INCHES OF NATURAL NON–CRUSHED STONE OVER WEED BARRIER FABRIC.
12. TREES SHALL HAVE A 4 INCH COVERING OF PINE/HEMLOCK MULCH. TREES SHALL HAVE A 6 FOOT DIAMETER SAUCER WITH A 'V' GROOVE EDGE.
13. TREES SHALL BE GUYED IN A TRIPOD FASHION WITH 2" X 2" X 8' HARDWOOD STAKES.
14. ALL PLANTING SHALL BE HAND WATERED IMMEDIATELY AFTER PLANTING. PLANTINGS SHALL BE MONITORED FOR THE MAINTENANCE PERIOD (90 DAYS) AND APPLY ADDITIONAL WATERING AS REQUIRED FOR PLANT ESTABLISHMENT.
15. THE CONTRACTOR IS TO PROVIDE A ONE YEAR WARRANTY ON ALL PLANTED MATERIALS. AT ONE YEAR FROM DATE OF INSTALLATION, ANY PLANTINGS NOT IN GOOD CONDITION SHALL BE REPLACED; ALL GUYS AND STAKES ARE TO BE REMOVED FROM TREES AND ANY LAWN BARE SPOTS ARE TO BE RESEEDED.

PLANT MATERIAL LEGEND

ACE	ACER SACCHARUM 'FALL FIESTA' (SUGAR MAPLE)	2 ½" CAL.
ZEL	ZELKOVA SERRATA (GREEN VASE ZELKOVA)	2 ½" CAL.
BET	BETULA NIGRA MULTISTEM (RIVER BIRCH)	6'–7'
CAL	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' (REED GRASS)	#2 GAL.
RUB	RUDBECKIA FULGIDA SULLIVANTII 'GOLDSTURM' (BLACK EYED SUSAN)	#2 GAL.
SAL	SALVIA X SYLVESTRIS (BLUE HILL SAGE)	#1 GAL.

SEED MIXTURES

NEW ENGLAND WETLAND PLANTS, NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES

BLUE SEAL LANDSCAPER'S LAWN SEED MIX

MISC. PRODUCTS

BARK MULCH: PREMIUM BLEND PINE/HEMLOCK MULCH

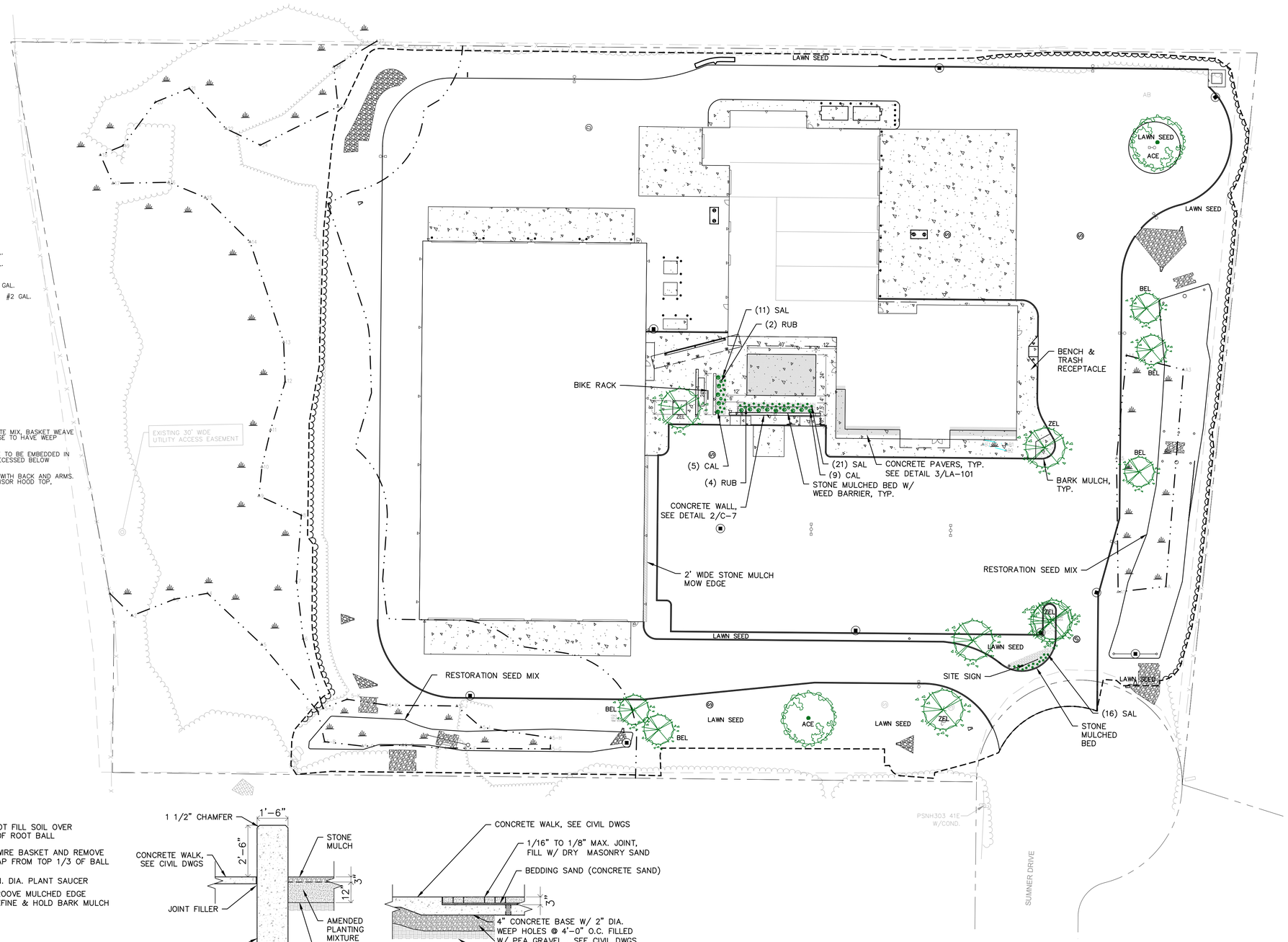
STONE MULCH: NON–CRUSHED ROOF BALLAST W/ 5 OZ. WEED BARRIER

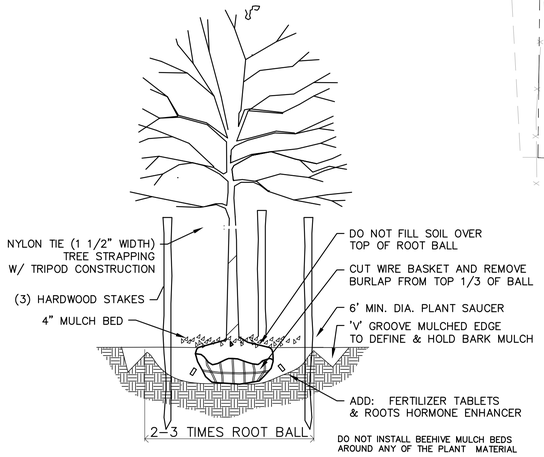
ADDITIONAL ITEMS

CONCRETE PAVERS: GENEST 4" X 8" X 2 3/8" PAVER, HOLLANDSTONE, COLOR: GRANITE MIX, BASKET WEAVE LAYING PATTERN, PAVERS TO SET IN SAND BED OVER A CONCRETE BASE. CONCRETE BASE TO HAVE WEEP HOLES @ 4'–0" O.C. SEE CIVIL DRAWINGS.

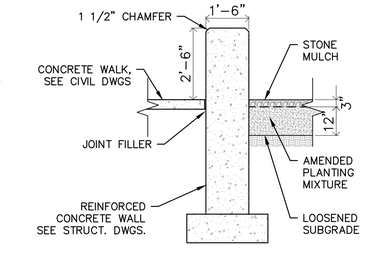
BIKE RACK: PILOT ROCK "SADDLEBACK" 7 BIKE RACK, HOT DIP GALVANIZED FINISH. RACK TO BE EMBEDDED IN 16" DIA. TUBE FOUNDATIONS, 4 FEET DEEP, 3000 LB. CONCRETE. FOUNDATIONS TO BE RECESSED BELOW CONCRETE WALK.

BENCH & TRASH CONTAINER: 6' RECYCLED PLASTIC AND POWDER COATED STEEL BENCH WITH BACK AND ARMS. MADISON CONTOUR BENCH MANUF. ANOVA: 35 GAL. MADISON TRASH RECPETACLE WITH VISOR HOOD TOP, MATERIALS TO MATCH BENCH.

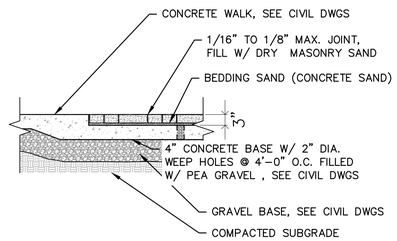




4 C-7 **TREE PLANTING DETAIL**
NTS



2 C-7 **CONCRETE WALL SECTION DETAIL**
NTS



3 C-7 **PAVER INSTALLATION DETAIL**
NTS

no.	revision	date	by
2	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
1	Revised for City of Dover TRC Comments	7/27/23	BCC

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LICENSED ARCHITECT ROBERT E. DOYLE No. 03893 STATE OF NEW HAMPSHIRE

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: PAC
scale: 60" 30" 0 Scale: 1" = 30'

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Landscape Plan
Dover Planning File: Site-2023-002

drawing no. C-7

sheet: 12 of 28

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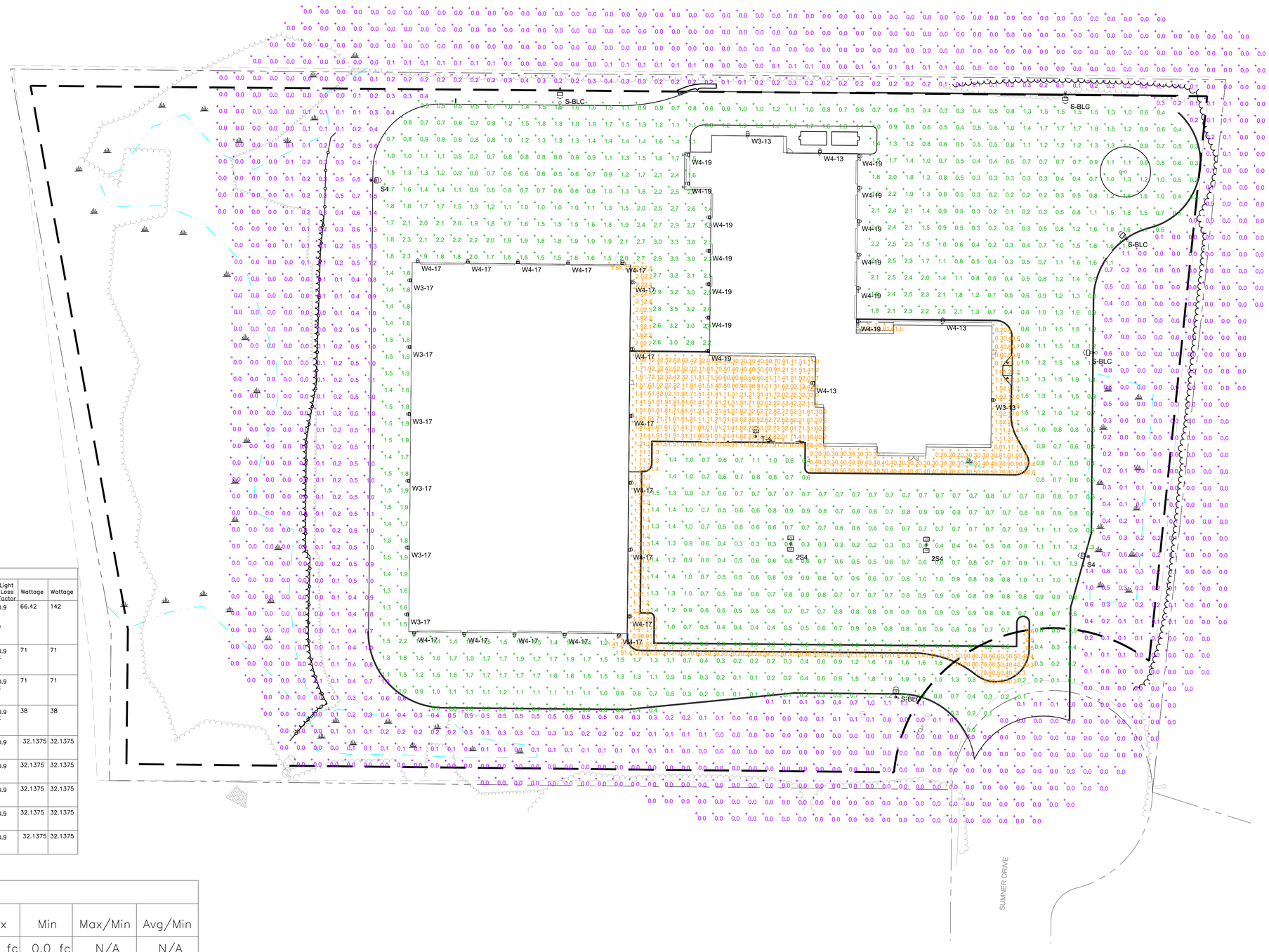

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Light Loss Factor	Wattage	Wattage
	2S4	2	Lithonia Lighting	DSX0 LED P1 30K 80CRI BLC3 with SSS 22 4C DM280AS DDBXD	D-Series Size 0 Area Luminaire P1 Performance Package 3000K CCT 70 CRI Type 3 Extreme Backlight Control	0.9	66.42	142
	S4	2	Lithonia Lighting	DSX0 LED P3 30K TFTM MVOLT SPA DDBXD with SSS 22 4C DM19AS DDBXD	DSX0 LED Area Fixture mounted at 24.5ft (22ft pole on 2.5ft base)	0.9	71	71
	S-BLC	5	Lithonia Lighting	DSX0 LED P3 30K BLC MVOLT SPA DDBXD with SSS 22 4C DM19AS DDBXD	DSX0 LED Area Fixture mounted at 24.5ft (22ft pole on 2.5ft base)	0.9	71	71
	T-4	1	Lithonia Lighting	DSX0 LED P1 30K TFTM MVOLT SPA DDBXD with SSS 12 4C DM19AS DDBXD	DSX0 LED Area Fiture mounted at 12.5ft (12ft pole on 0.5ft base)	0.9	38	38
	W3-13	2	Lithonia Lighting	WDGE2 LED P3 30K 80CRI T3M SRM DDBXD	WDGE2 LED Wallpack; mounted at 13ft	0.9	32.1375	32.1375
	W3-17	6	Lithonia Lighting	WDGE2 LED P3 30K 80CRI T3M SRM DDBXD	WDGE2 LED Wallpack; mounted at 17ft	0.9	32.1375	32.1375
	W4-13	3	Lithonia Lighting	WDGE2 LED P3 30K 80CRI TFTM SRM DDBXD	WDGE2 LED Wallpack; mounted at 13ft	0.9	32.1375	32.1375
	W4-17	16	Lithonia Lighting	WDGE2 LED P3 30K 80CRI TFTM SRM DDBXD	WDGE2 LED Wallpack; mounted at 17ft	0.9	32.1375	32.1375
	W4-19	13	Lithonia Lighting	WDGE2 LED P3 30K 80CRI TFTM SRM DDBXD	WDGE2 LED Wallpack; mounted at 19ft	0.9	32.1375	32.1375

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Outside of Parking Lot	+	0.1 fc	1.5 fc	0.0 fc	N/A	N/A
Parking Lot	+	1.1 fc	3.5 fc	0.0 fc	N/A	N/A
Sidewalk/Patio	+	1.3 fc	3.4 fc	0.1 fc	34.0:1	13.0:1

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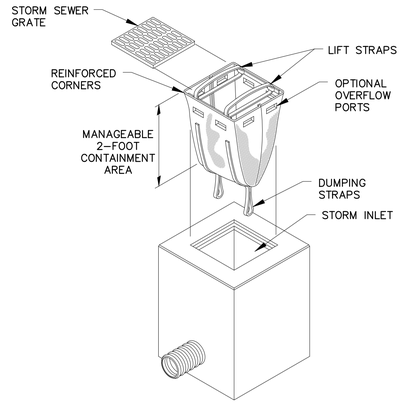
Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Lighting Plan
Dover Planning File: Site-2023-002

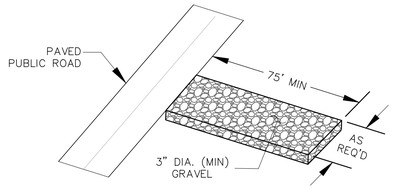
drawing no. C-8

sheet: 13 of 28



"Silt Sack" Sediment Control Device for Inlet Protection

Not to Scale



CONSTRUCTION SPECIFICATIONS:

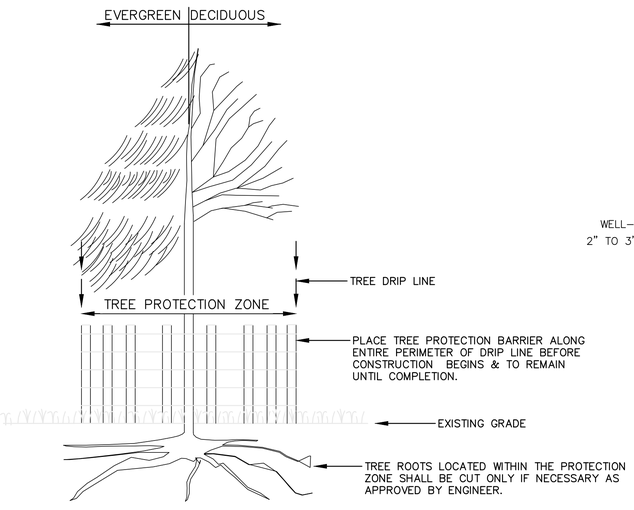
1. STONE SIZE – USE 3" STONE (MIN)
2. LENGTH – AS REQUIRED, 75 FEET (MIN)
3. THICKNESS –Six (6) INCHES (MIN)
4. WIDTH – NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PERFORMED AFTER EACH RAIN.
9. THE MINIMUM LENGTH OF THE PAD SHOULD BE 75', EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50' IF A 3" to 6" HIGH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE

B Stabilized Construction Entrance

Not to Scale

Erosion Control Notes:

1. PERIMETER CONTROLS TO BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
2. PRIOR TO CONSTRUCTION AND THEREAFTER EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING THE SITE).
3. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. LAND SHOULD NOT BE LEFT EXPOSED DURING THE WINTER MONTHS.
4. CATCH BASIN INSERTS, MIRAFI DANDY SACK OR EQUAL, SHALL BE INSTALLED AND MAINTAINED AT CATCH BASINS UNTIL PAVEMENT IS INSTALLED. SEDIMENT AND DEBRIS SHALL BE REMOVED FOLLOWING EACH STORM EVENT.
5. ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISH GRADED WITH NO FURTHER CONSTRUCTION TO TAKE PLACE SHALL BE SEEDED AND MULCHED. ALL DISTURBED AREAS OUTSIDE LIMITS OF BUILDING, AND PAVEMENT SHALL BE STABILIZED WITH LOAM AND SEED. ALL SEED, LIME AND FERTILIZER PROGRAMS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE SPECIFICATIONS.
6. ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, OR LONGER THAN TWO WEEKS AND WHICH WILL BE RE-GRADED LATER DURING CONSTRUCTION, SHALL BE TEMPORARILY SEEDED AND MACHINE STRAW MULCHED AT A RATE OF 1.5 TONS/ACRE.
7. AVOID USE OF UNDISTURBED AREAS WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL TRAVEL THE ROADBEDS OF EXISTING AND FUTURE ROADS AND SHALL BE LIMITED TO WITHIN THE LIMITS OF CONSTRUCTION NOTED ON THE PLANS.
8. EROSION CONTROL DEVICES SHOWN REPRESENT MINIMUM MEASURES REQUIRED FOR EROSION CONTROL. THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY MEASURES TO PREVENT TRANSPORTATION OF SEDIMENT BEYOND THE WORK AREA.
9. ALL STORMWATER MANAGEMENT SYSTEMS SHALL BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
10. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED AND ACCUMULATED SEDIMENT DISPOSED OFF IN A LOCATION DESIGNATED BY THE OWNER.
11. WITHIN THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES COMPREHENSIVE SHORELAND PROTECTION ACT 250' BUFFER, ONLY LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER OR LIMESTONE, MAY BE USED ON LAWNS OR AREAS WITH GRASS.
12. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
13. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
14. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY 0.5" OF RAINFALL.
15. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
16. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
    - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
    - A MINIMUM OF 3" OF NO-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
    - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
18. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
19. TEMPORARY SEEDING (IF USED) SHALL BE PERENNIAL RYE GRASS, SPREAD 0.7LB/1000 SQ. FT.
20. WINTER CONSTRUCTION NOTES
    - ALL PROPOSED VEGETATED AREAS WHICH 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, ELSEWHERE. 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;
    - ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
    - AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.



Temporary Tree Protection

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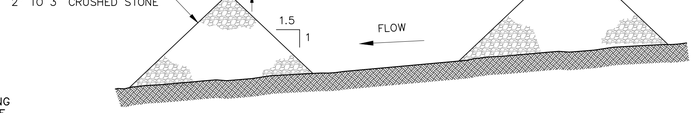
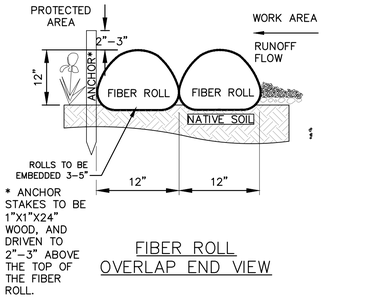


NOTES:

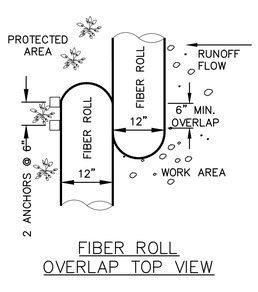
1. PLACE CRUSHED STONE TO WITHIN 6" OF TOP OF DRAINAGE WAY.
2. FOR ACTIVE DRAINAGE OUTFLOW CHECK DAMS SHALL BE PLACED IN SERIES (100-FEET MIN) ALONG FLOW LINE TO RETAIN SEDIMENTS.
3. THE MAXIMUM HEIGHT OF THE STONE CHECK DAM SHALL NOT EXCEED 2 FEET.
4. STONE CHECK DAMS SHALL BE CHECKED AFTER EACH RAINFALL AND REPAIRED IMMEDIATELY.
5. THE MAXIMUM SPACING BETWEEN THE DAMS SHALL BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE OVERFLOW ELEVATION OF THE DOWNSTREAM DAM.

Stone Check Dam

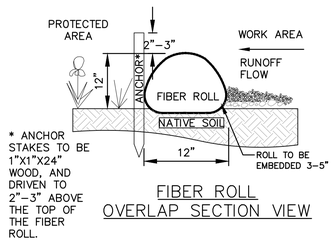
Not to Scale



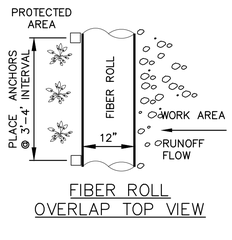
FIBER ROLL OVERLAP END VIEW



FIBER ROLL OVERLAP TOP VIEW



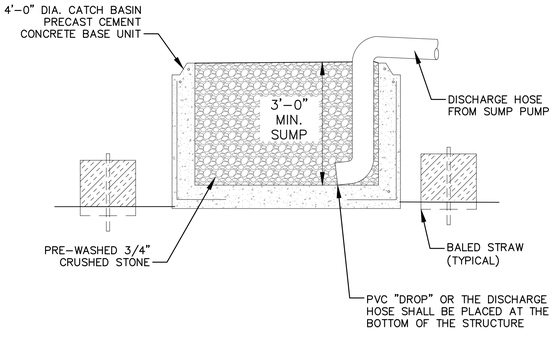
FIBER ROLL OVERLAP SECTION VIEW



FIBER ROLL OVERLAP TOP VIEW

Erosion Control Fiber Roll

Not to Scale



Dewatering Basin (Section)

Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
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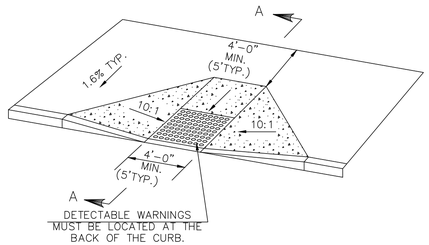
STATE OF NEW HAMPSHIRE – BENJAMIN C. FRENCH No. 15215 – PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale:

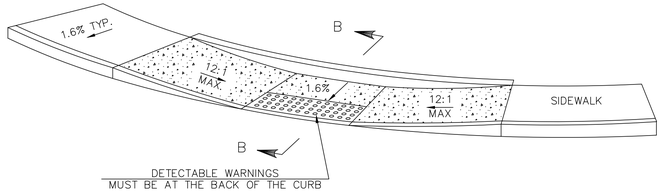
Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-1

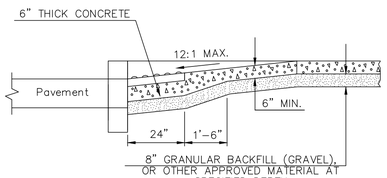
sheet: 14 of 28



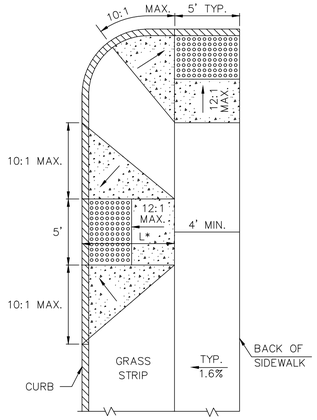
PERPENDICULAR CURB RAMP DETAIL



PARALLEL CURB RAMP DETAIL



SECTION A–A



PERPENDICULAR RAMP WITH GRASS PANEL

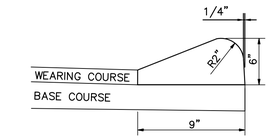
* LENGTH OF RAMP VARIES WITH SLOPE & WIDTH OF GRASS PANEL

THE ORDER OF PREFERENCE FOR LOCATION OF CORNER RAMPS:

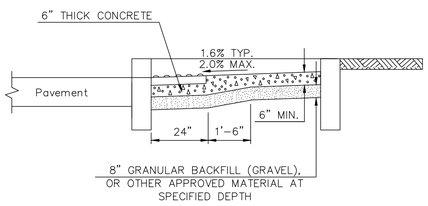
1. TWO SEPARATE RAMPS LOCATED ON TANGENT SIDEWALK AREA IMMEDIATELY OUTSIDE OF CORNER RADIUS.
2. TWO SEPARATE RAMPS SEPARATED BY 5' MINIMUM AS SHOWN ABOVE.
3. SINGLE RAMP SERVING TWO CROSSWALKS.

GENERAL NOTES

1. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB RAMP IS 12:1, THE MAXIMUM CROSS SLOPE IS 2%. THE SLOPE OF THE LANDING SHALL NOT EXCEED 2% IN ANY DIRECTION. RAMP RUNNING SLOPE EXCEPTION: A GREATER THAN 8.33% RAMP RUNNING GRADE IS ALLOWED WHERE THE THE ROADWAY AND THE SIDEWALK(S) ARE PARALLEL AND VERY CLOSE TOGETHER, WITH THE SAME GRADE, AND USING A GRADE OF 8.33% WOULD RESULT IN A RAMP LENGTH LONGER THAN 15'. IN THOSE CIRCUMSTANCES USE A MAXIMUM RAMP LENGTH OF 15' AND THE ALLOWABLE RUNNING SLOPE OF THE RAMP(S) IS GREATER THAN 8.33%
2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. ROADWAY SHOULDER SLOPES ADJOINING SIDEWALK CURB RAMPS SHALL BE A MAXIMUM OF 5% (FULL WIDTH) FOR A DISTANCE OF 2 FT. FROM THE ROADWAY CURB LINE.
3. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF SIDEWALK CURB RAMPS OR LANDINGS. CATCH BASINS, MANHOLES, ETC. SHALL NOT BE LOCATED IN, OR AT THE BASE OF, SIDEWALK CURB RAMPS OR LANDINGS.
4. THE BOTTOM OF THE SIDEWALK CURB RAMP OR LANDING, EXCLUSIVE OF THE FLARED SIDES, SHALL BE WHOLLY CONTAINED WITHIN THE CROSSWALK MARKINGS.
5. THE SURFACE OF A PERPENDICULAR SIDEWALK CURB RAMP OR THE LANDING OF A PARALLEL SIDEWALK CURB RAMP SHALL CONTRAST VISUALLY WITH THE ADJOINING SIDEWALK SURFACE, EITHER ASPHALT/LIGHT–COLORED CONCRETE OR LIGHT–COLORED CONCRETE/DARK–STAINED CONCRETE. THE CONCRETE SURFACE SHALL BE SLIP RESISTANT.
6. 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.

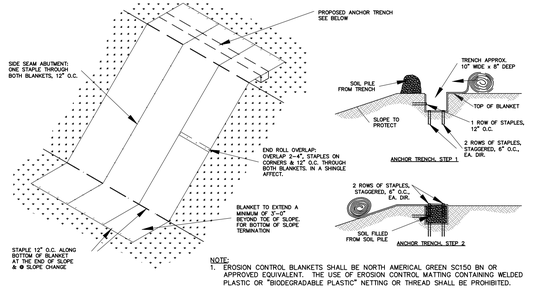


D *Bituminous Concrete Curb*
Not to Scale

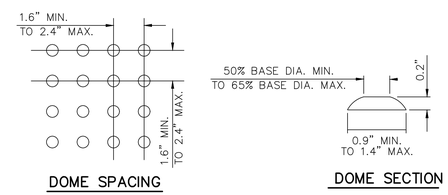


SECTION B–B

A *Sidewalk & Curb Ramp Details*
Not to Scale

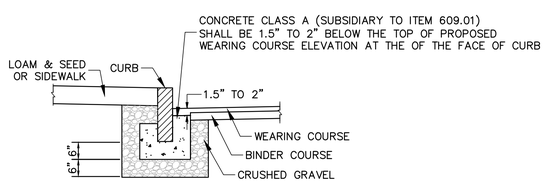


E *Erosion Control Blanket Slope Detail*
Not to Scale

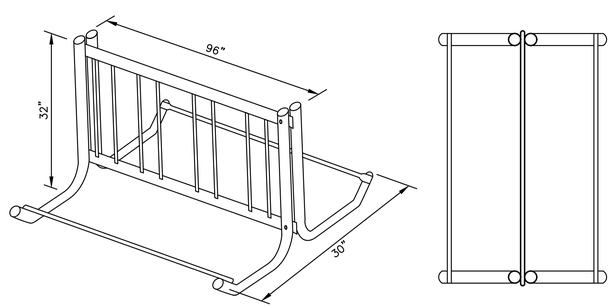


DOME SPACING

DOME SECTION



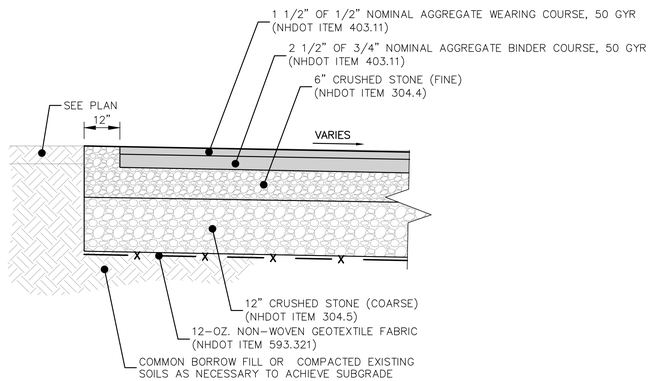
B *Granite Curb w/ Concrete Backing*
Not to Scale



PERSPECTIVE

TOP VIEW

C ***Bike Rack***
Not to Scale



F *General Bituminous Pavement Section*
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
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BENJAMIN C. CLARK No. 15215 STATE OF NEW HAMPSHIRE – PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
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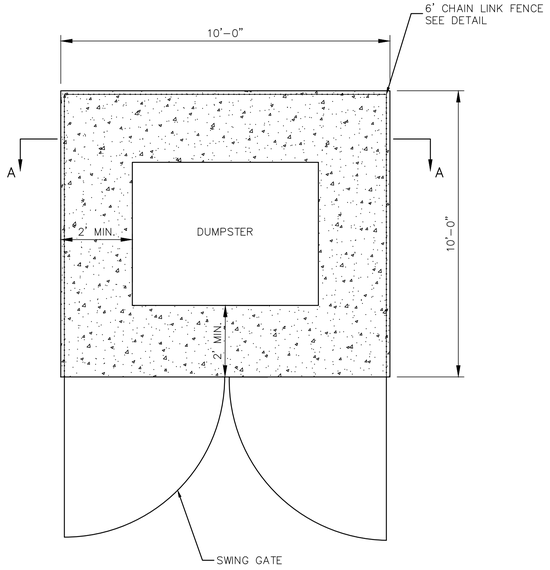
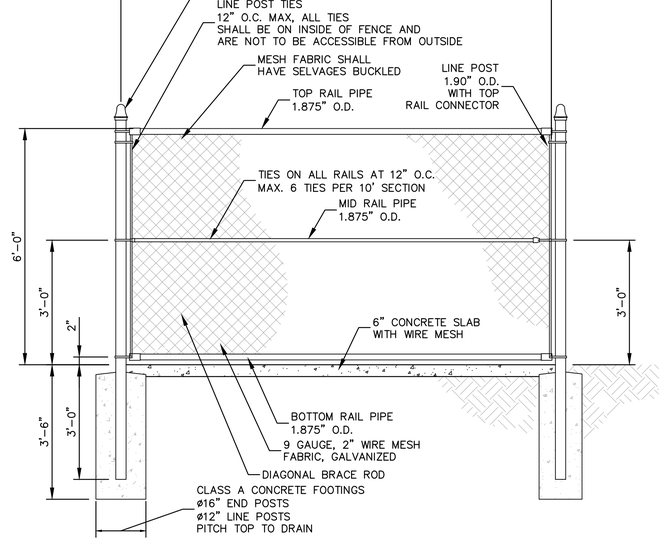


Plan

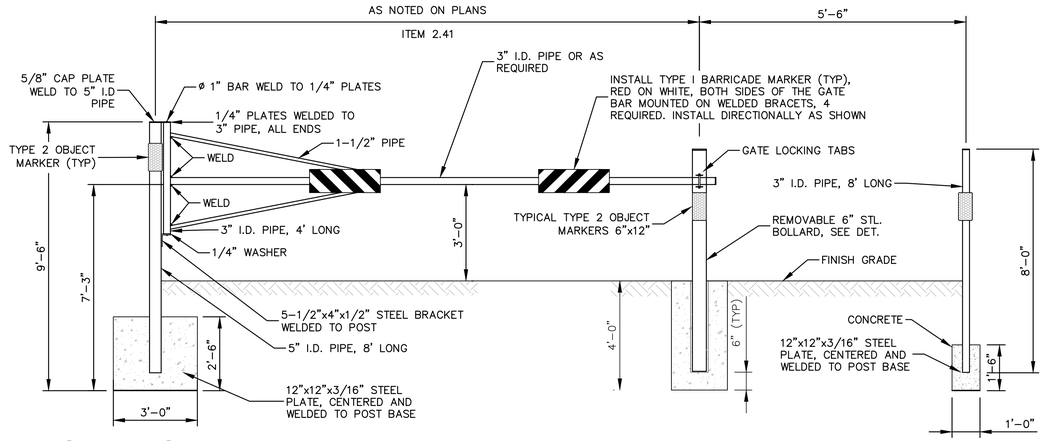


NOTES:

1. GATES AND POSTS SHALL BE HOT DIPPED GALVANIZED STEEL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND/OR CATALOG CUTS FOR APPROVAL PRIOR TO FABRICATION

Section A-A

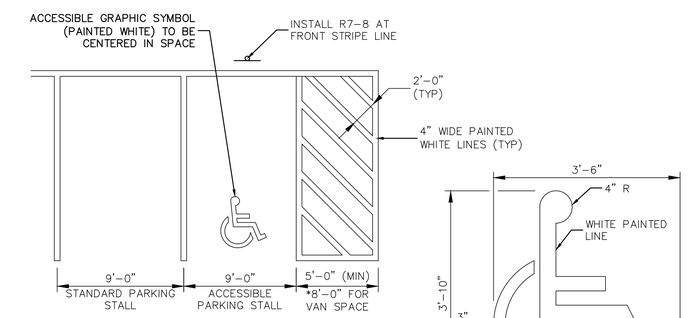
A *Chain Link Dumpster Enclosure*
Not to Scale



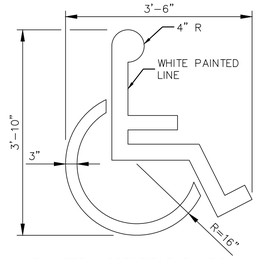
NOTES:

1. GATES AND POSTS SHALL BE HOT DIPPED GALVANIZED STEEL PAINTED GLOSS YELLOW. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND/OR CATALOG CUTS FOR APPROVAL PRIOR TO FABRICATION
2. STEEL POSTS AND SWING ARMS SHALL BE 3" I.D. MINIMUM.
3. CONCRETE FOOTINGS AND GRAVEL BASE ARE SUBSIDIARY.
4. SECURITY GATES SHALL INCLUDE LOCKS AND KEYS AS SPECIFIED.
5. DRILL ø 1/4" HOLES 4'-0" CENTER TO CENTER IN BOTTOM OF GATE ARM FOR DRAINAGE.
6. A SECOND LOCKING POST SHALL BE INSTALLED BEHIND THE GATE, AS STAKED BY THE ENGINEER, ENABLING THE GATE TO BE LOCKED OPEN. TYPICAL TO LOCKING POST.

B *Security Gate with Pedestrian Access*
Not to Scale



NOTE:
1. ALL PAINT SHALL BE FAST DRYING WHITE TRAFFIC PAINT MEETING THE REQUIREMENTS OF AASHTO M248-TYPE F. PAINT SHALL BE APPLIED AS SPECIFIED BY MANUFACTURER.
2. SYMBOLS, SIGNS, & PARKING STALLS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WITH DISABILITIES ACT.
3. *SEE SITE PLAN FOR VAN LOCATIONS



PAINTED ACCESSIBLE SYMBOL
ITEM 2.36

C *Parking Stall Striping Detail*
Not to Scale

SIGNING NOTES:

1. EXISTING SIGNS THAT CONFLICT WITH THE PROPOSED LAYOUT SHALL BE REMOVED OR RELOCATED AS DIRECTED BY THE ENGINEER. THIS WORK PAID UNDER CONTRACT ITEMS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND RELOCATION OF ALL ROADWAY SIGNS. ANY SIGNS DAMAGED DURING THE COMPLETION OF WORK SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
3. NOTE NEW REFLECTIVITY REQUIREMENTS IN THE 2016 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 718 PUBLISHED BY THE NHDOT.
4. REFER TO THE 2016 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AS PUBLISHED BY THE NHDOT FOR EXACT DETAILS OF PERMANENT SIGNING STANDARDS AND NHDOT SPECIFIC SIGNS.
5. REFER TO THE LATEST EDITION OF THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT-FHWA FOR EXACT DETAILS OF BORDERS, ETC.
6. THE MINIMUM SIGN HEIGHT FOR A ROAD SIGN IN A RURAL PROJECT SHALL BE 6-FEET. ALL OTHER SIGN HEIGHTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MUTCD.
7. ALL WARNING SIGNS SHALL HAVE TYPE IV BACKGROUND SHEETING UNLESS OTHERWISE SPECIFIED.
8. ALL EXISTING SIGNS THAT ARE REMOVED ARE TO BE STORED BY THE CONTRACTOR AND RESET AS DIRECTED. ANY EXISTING SIGNS TO BE RESET THAT ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS ARE TO BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.
9. WHERE NEEDED, SIGNS POSTS SHALL BE U-CHANNEL, DIRECT BURIED, SINGLE POST.

SIGN TABLE (ITEM 2.42)

IDENT #	SIGN SIZE WIDTH (INCH)	SIGN SIZE HEIGHT (INCH)	TEXT	TEXT DIMENSIONS LETTER HEIGHT (INCH) UC	LC	CAPS	SHIELD SIZE (INCH)	ARROW (INCH)	NUMERAL (INCH)	# SIGNS REQ'D	SIGN AREA (SQ. FT) NOM. AREA	TOTAL AREA
R1-2	30	30	YIELD	REFER TO MUTCD AND ITS LATEST REVISIONS						1	2.70	2.70
W1-6R	36	12		REFER TO MUTCD AND ITS LATEST REVISIONS						1	3.00	3.00
R7-8	12	18	RESERVED PARKING	REFER TO MUTCD AND ITS LATEST REVISIONS						4	1.50	6.00
R7-8a	12	6	VAN ACCESSIBLE	REFER TO MUTCD AND ITS LATEST REVISIONS						4	0.50	2.00
R8-3	12	18	NO PARKING	REFER TO MUTCD AND ITS LATEST REVISIONS						1	1.50	1.50
R5-1	30	30	DO NOT ENTER	REFER TO MUTCD AND ITS LATEST REVISIONS						2	6.25	12.50
NA	18	24	AUTHORIZED VEHICLES ONLY	–						2	3.00	6.00

D *Sign Table*
Not to Scale

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3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
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drawing no. D-3
sheet: 16 of 28

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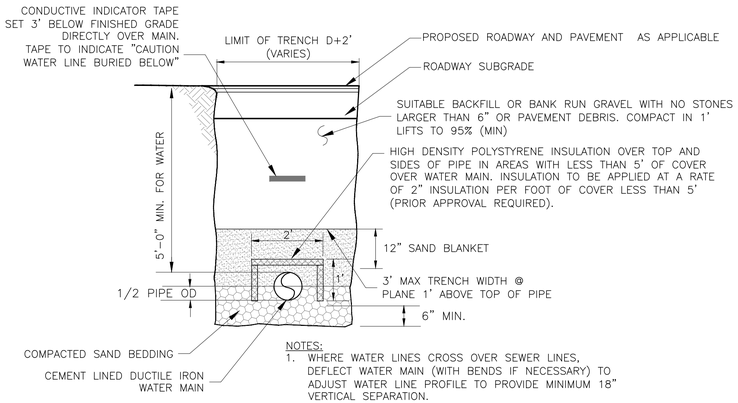
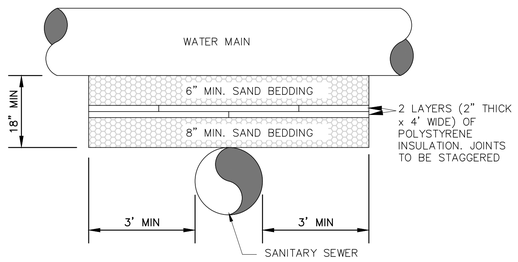


NOTES:
1. WHERE WATER LINES CROSS OVER SEWER LINES, DEFLECT WATER MAIN (WITH BENDS IF NECESSARY) TO ADJUST WATER LINE PROFILE TO PROVIDE MINIMUM 18" VERTICAL SEPARATION.

A Typical Water Main Trench

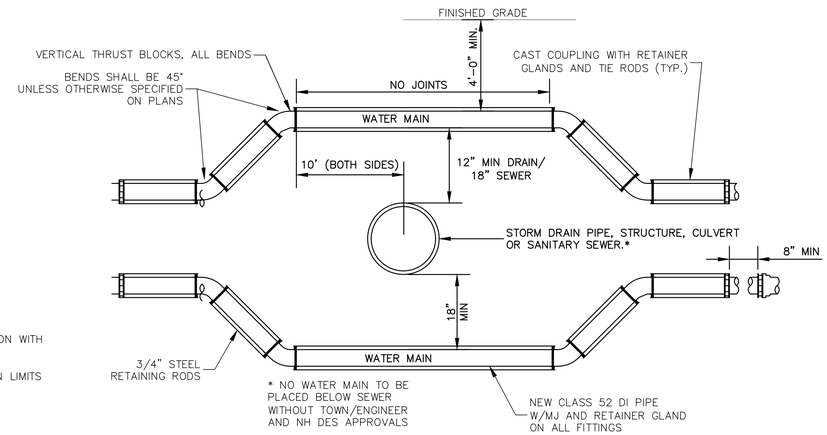
Not to Scale



WATER MAIN INSTALLATION NOTES:
1. INSULATION TO BE USED WHERE VERTICAL PIPE SEPARATION IS 24" OR LESS AND HORIZONTAL SEPARATION WITH A SEWER MANHOLE OR OTHER OPEN STRUCTURE IS 6' OR LESS.
2. INSTALL VERTICAL MJ BENDS WITH RESTRAINED JOINT FITTINGS OR SWEEP PIPE WITHIN THE SPECIFICATION LIMITS IF NECESSARY TO ADJUST WATER MAIN PROFILE TO GAIN MINIMUM VERTICAL SEPARATION ABOVE SEWER.
3. 2" OF INSULATION TO BE USED AROUND WATER SERVICE CONNECTIONS WHERE PIPE CROSSINGS OCCUR.
4. WHERE WATER MAIN CROSSES SEWER AT 45° TO 90° PROVIDE MAXIMUM SPACING OF PIPE JOINTS FROM CROSSING LOCATION FOR BOTH WATER MAIN AND SEWER PIPE.

B Water/Utility Crossing

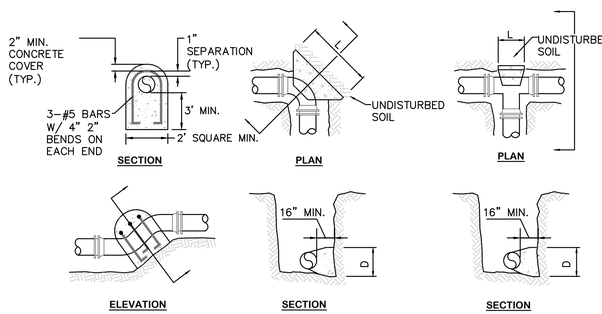
Not to Scale



NOTES:
1. PROVIDE NEW LINE USING CONTINUOUS LENGTHS OF POLYETHYLENE PIPE. NO COUPLING ALLOWED IN ROADWAY WITHOUT APPROVAL OF ENGINEER.
2. TAPS TO BE MADE AT APPROX. 10:00 AND 2:00
3. PROVIDE FOR SERVICE LINE CONTRACTION AND EXPANSION BY INSTALLING "S" IN SERVICE LINE NEAR MAIN.
4. IF SERVICE IS INSTALLED WITH LESS THAN 5'-0" COVER, INSULATE OVER LINE.
5. IF SERVICE HAS LESS THAN ADEQUATE SEPARATION (10' HORIZONTAL/18" VERTICAL-ABOVE) FROM SEWER MAINS/SERVICES, PROVIDE RIGID INSULATION ON TWO SIDES OF SERVICE PIPE.
6. TRACER WIRE (#10 INSULATED) SHALL BE PLACED ALONG THE SERVICE LINE AND SHALL BE A CONTINOUS LENGTH (WITHOUT SPLICES), EXCEPT FOR THE SPLICE AT THE STOP BOX, WHICH SHALL BE MADE WITH A COPPER CRIMP OR SPLIT BOLT CONNECTOR.
7. INSERT STAINLESS STEEL STIFFENERES REQUIRES ON ALL FLEXIBLE PLASTIC CONNECTIONS.
5. PRESSURE TEST, DISINFECT, AND FLUSH ALL WATER SERVICE CONNECTIONS.
6. CONNECT CURB STOP TO EXISTING SERVICE AT PROPERTY LINE OR AT LOCATION APPROVED BY THE ENGINEER (NO COUPLING WITHOUT APPROVAL OF ENGINEER).

C Water Service Installation

Not to Scale



NOTES:
1. Thrust blocks shall be precast concrete, except thrust blocks for vertical bends can be CIP concrete.
2. The minimum bearing areas shown above are based on a system pressure of 100 PSI. If the system pressure is above 100 psi, increase the noted areas proportional to the actual system pressure. For example, if the actual system pressure is 160 psi, multiply the above values by 160%.
3. Place thrust blocks such that the length (L) of the block is approximately twice as long as the depth (D).
4. Place thrust blocks against undisturbed soil.
5. Place thrust blocks along the full length of the fitting to maximize bearing area.
5. Place 2 layers of polyethylene or roofing paper around fittings prior to placement of the concrete to create a bond break & protect the bolts.
6. Place a solid concrete block between cap/plugs and thrust blocks.
7. Place a 12" long steel horseshoe-shaped pickup hook in all plug and cap thrust blocks. Diameter of hook shall be a minimum of 5/8".
8. Use of thrust blocks does not eliminate the requirement of retainer glands.
9. Thrust blocks are required on all fittings.
10. Coat all threaded rods, nuts, and bolts with bituminous paint.
11. Place anti-seize lubricant on all bolts.

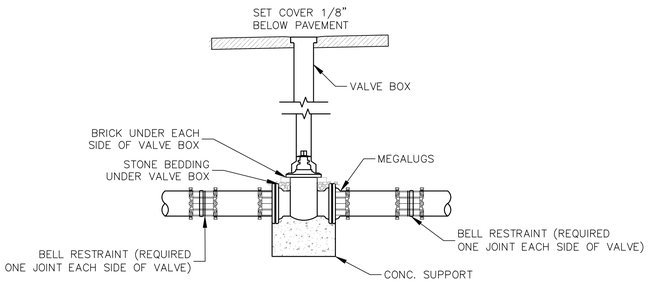
THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE							
Nominal Dia. (in)	4	6	8	10	12	16	20	24
Tees, Caps, Plugs, & Tapping Sleeves	1.05	2.32	4.15	6.37	9.15	16.23	25.44	36.58
90 Degree Bends	1.48	3.29	5.86	9.01	12.93	22.96	35.97	51.73
45 Degree Bends	0.80	1.78	3.17	4.88	7.00	12.42	19.47	28.00
22-1/2 Degree Bends	0.41	0.91	1.62	2.49	3.57	6.33	9.92	14.27
11-1/4 Degree Bends	0.21	0.46	0.81	1.25	1.79	3.18	4.99	7.17

System Pressure: 100psi
Safety Factor: 1.5
Soil Bearing Capacity: 2,000psf

E Thrust Blocks

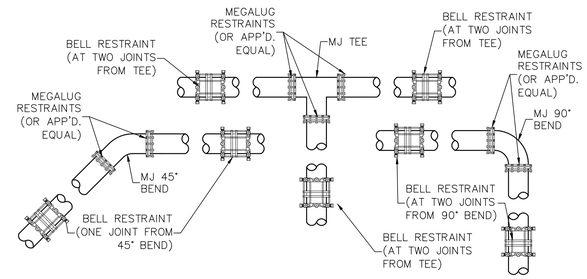
Not to Scale



NOTES:
1. VALVE BOXES SHALL BE HEAVY PATTERN CAST IRON, TWO PIECE, SLIP TYPE, 5-INCH DIAMETER SHAFT WITH EXTENSION PIECES TO ALLOW SUFFICIENT COVER.
2. THE UPPER SECTION OF THE BOX SHALL BE TOP-FLANGE TYPE TO PREVENT SETTLEMENT.
3. THE LOWER SECTION SHALL BE BELLED-TYPE TO ENCLOSE THE OPERATING NUT OF THE VALVE.
4. THE COVER SHALL BE CAST IRON WITH THE WORD "WATER" PLAINLY CAST THEREON.
5. GATE VALVES SHALL OPEN LEFT.

F Valve & Valve Box Detail

Not to Scale



NOTES:
1. JOINT RESTRAINT IS REQUIRED AT ALL FITTINGS PER THE ABOVE TABLE.

VALVE	RESTRAINED JOINTS
IN LINE VALVES	BELL RESTR'T'S REQUIRED 1 JOINT EACH SIDE/VALVE

FITTING	RESTRAINED JOINTS
22.5° BEND	1 EACH SIDE
45° BEND	1 EACH SIDE
90° BEND	2 EACH SIDE
TEE	1 EA SIDE/RUN 2 ON BRANCH

G Joint Restraint Detail

Not to Scale

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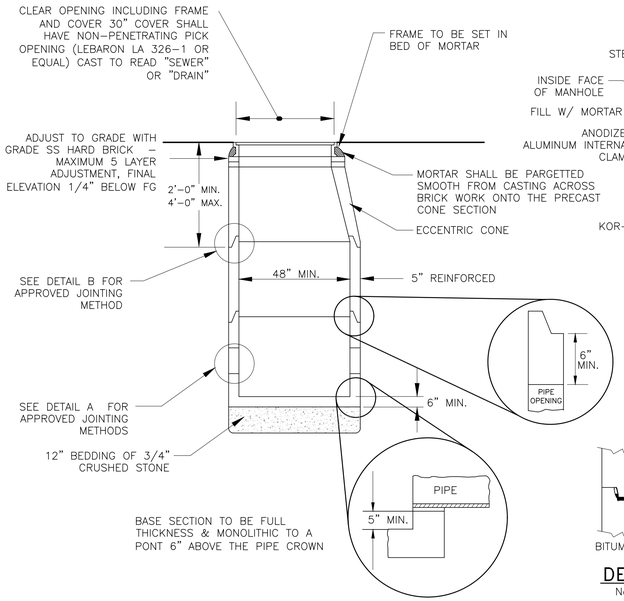
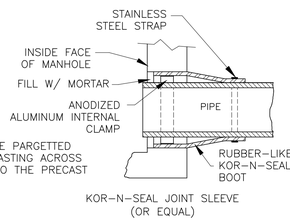
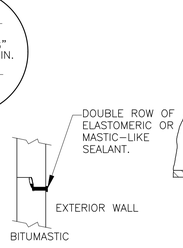
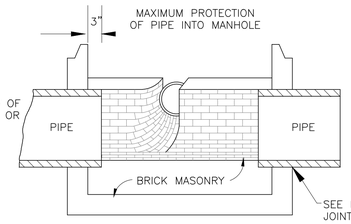




DETAIL A
Not to Scale



DETAIL-B
Not to Scale



SECTION A - A
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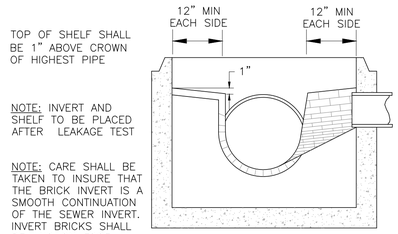

SECTION B - B
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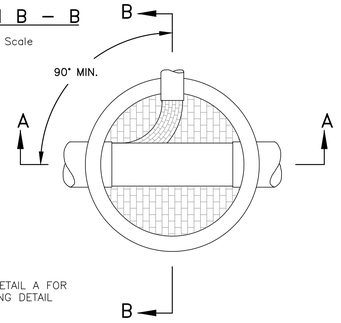


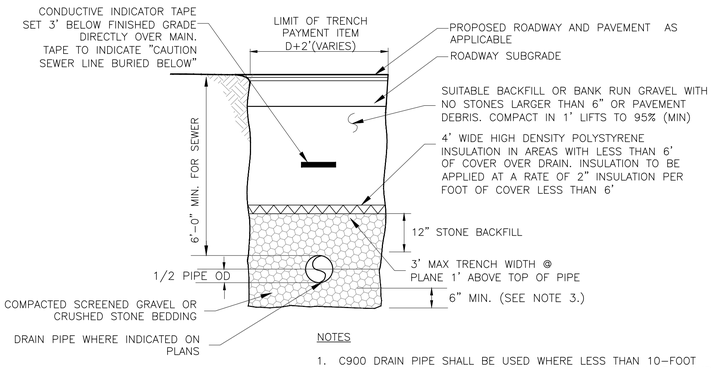
TYPICAL SEWER MANHOLE PLAN
Not to Scale

NOTES:

1. ALL SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
2. MANHOLE BARRELS AND CONE SECTIONS SHALL BE REINFORCED PRECAST CONCRETE.
3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C 478.
4. LEAKAGE TEST SHALL BE PERFORMED PRIOR TO BACKFILL IN ACCORDANCE WITH THE SPECIFICATIONS.
5. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TO THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
6. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) "SEWER" OR "DRAIN" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
7. BEDDING: 3/4" CRUSHED STONE
8. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATERTIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET APPLIED IN DOUBLE ROWS.
9. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL WILL DEPEND FOR WATERTIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.
10. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS: RAM-NEK KENT SEAL NO. 2EZ
11. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
12. NO MANHOLE STEPS ARE ALLOWED.

A

Sewer Manhole Detail
Not to Scale



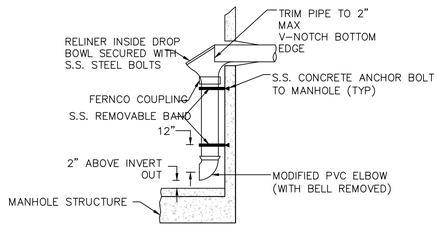
SCREENED GRAVEL BEDDING

PERCENT PASSING	SIEVE SIZE
100%	1"
90-100%	3/4"
20-55%	3/8"
0-10%	#4
0-5%	#8

NOTES

1. C900 DRAIN PIPE SHALL BE USED WHERE LESS THAN 10-FOOT HORIZONTAL SEPARATION BETWEEN WATER AND SEWER LINE OCCURS.
2. WHERE WATER LINES CROSS OVER DRAIN LINES, PROVIDE 22 1/2° MJ BENDS AND THRUST BLOCKS TO ADJUST WATER LINE PROFILE TO PROVIDE MINIMUM 18" VERTICAL SEPARATION.
3. WHERE LEDGE IS ENCOUNTERED, THE TRENCH SHALL BE EXCAVATED 12 INCHES BELOW THE BOTTOM OF THE PIPE.

B
Typical Sanitary Drain Trench
Not to Scale

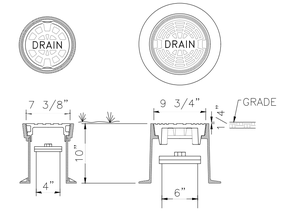


INTERNAL DROP

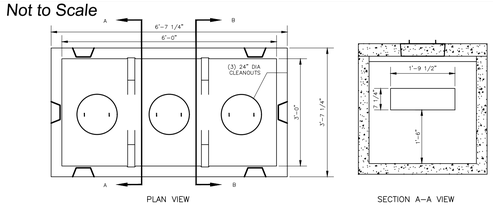
NOTES:

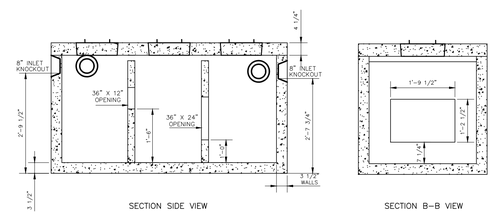
1. INTERNAL DROPS ARE PROHIBITED UNLESS APPROVED BY THE CITY ENGINEER.
2. IF DROP IS FOR AN EXISTING MANHOLE, REWORK SHELF TO FORM NEW CHANNEL FOR NEW DROP CONNECTIONS.
3. BRICK INVERT NOT SHOWN ON DETAIL.

C
Sewer Drop Inlet
Not to Scale



Cast Iron Cleanout Covers
Not to Scale





NOTES:
1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGNED FOR AASHTO HS-20 LOADING, 1 TO 5 FT COVER ALSO AVAILABLE IN H-10 LOADING WITH 3" WALL.
3. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.

BAFFLE WALL DETAIL

D
Oil Water Separator
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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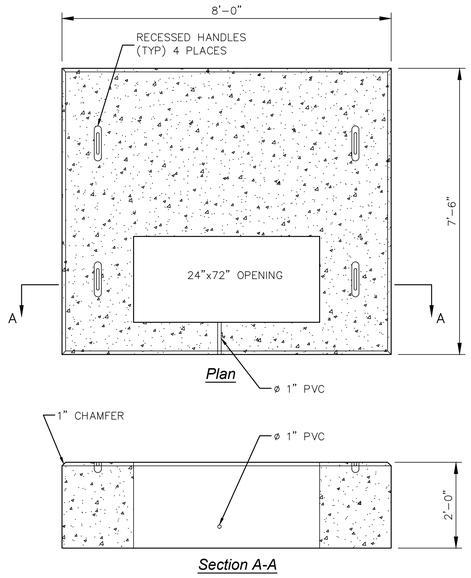
STATE OF NEW HAMPSHIRE - 4232 - CLAIRE C. BENJAMIN - PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-5

sheet: 18 of 28



Plan

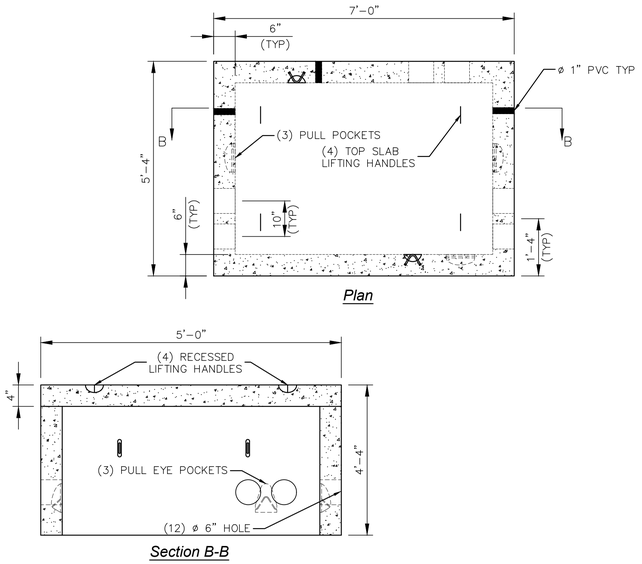
Section A-A

NOTES:

1. CONCRETE MINIMUM 4,000 PSI AFTER 28 DAYS.
2. REINFORCEMENT STEEL SHALL CONFORM TO ASTM A615 GRADE 60.

A 3 Phase 500 KVA Transformer Pad Detail

Not to Scale



Plan

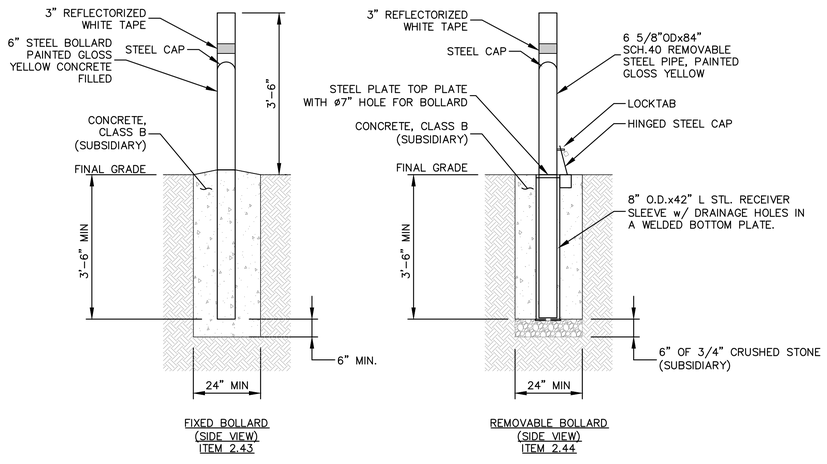
Section B-B

NOTES:

1. CONCRETE MINIMUM 5,000 PSI AFTER 28 DAYS.
2. REINFORCEMENT STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
3. DESIGNED FOR HS-20 LOADING.

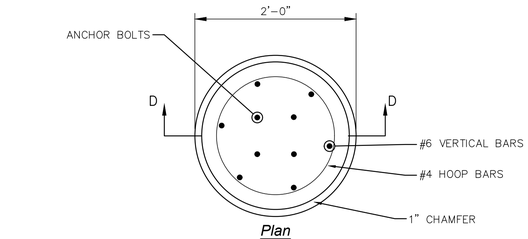
B Pull Box Detail

Not to Scale

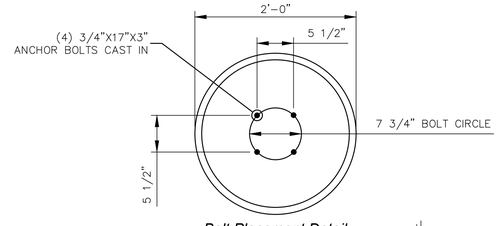


C Steel Bollard Detail

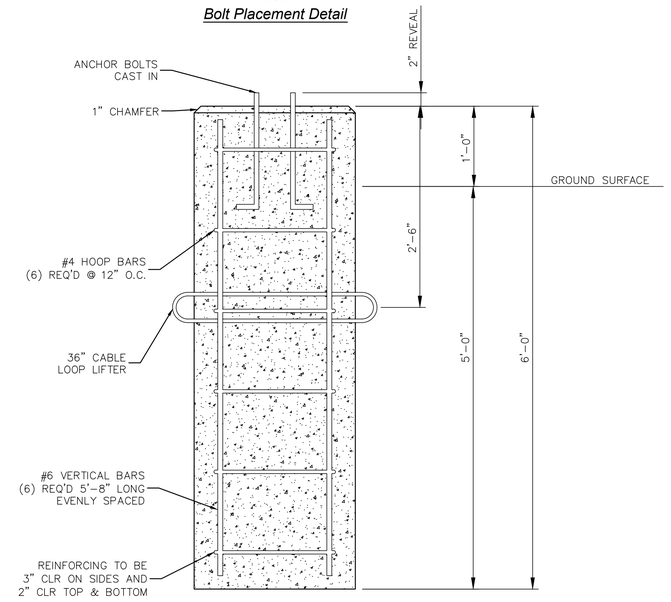
Not to Scale



Plan



Bolt Placement Detail



Section D-D

NOTES:

1. CONCRETE MINIMUM 5,000 PSI AFTER 28 DAYS.
2. LIGHT POLE BASE SIZE SHALL BE DESIGNED BY PROFESSIONAL ENGINEER AND SUBMITTED FOR REVIEW.

D Site Lighting Pole Foundation

Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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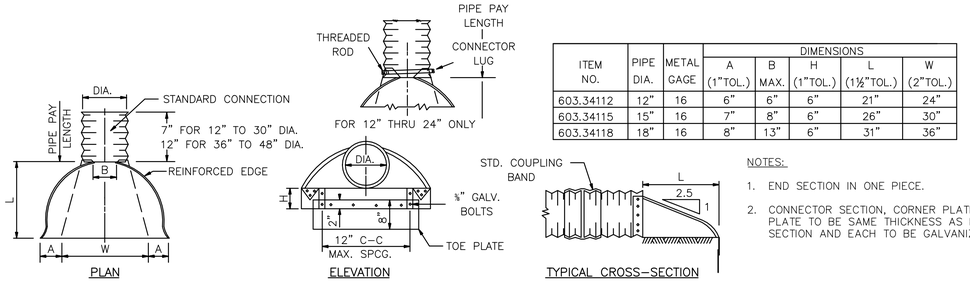
STATE OF NEW HAMPSHIRE – BENJAMIN C. CLARK No. 15393 – PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-6

sheet: 19 of 28

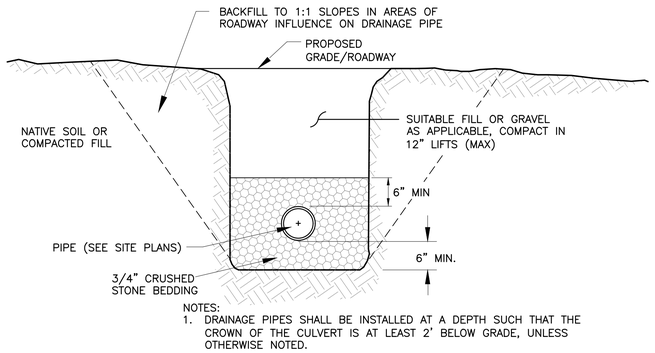


ITEM NO.	PIPE DIA.	METAL GAGE	DIMENSIONS				
			A (1"TOL.)	B MAX.	H (1"TOL.)	L (1½"TOL.)	W (2"TOL.)
603.34112	12"	16	6"	6"	6"	21"	24"
603.34115	15"	16	7"	8"	6"	26"	30"
603.34118	18"	16	8"	13"	6"	31"	36"

NOTES:

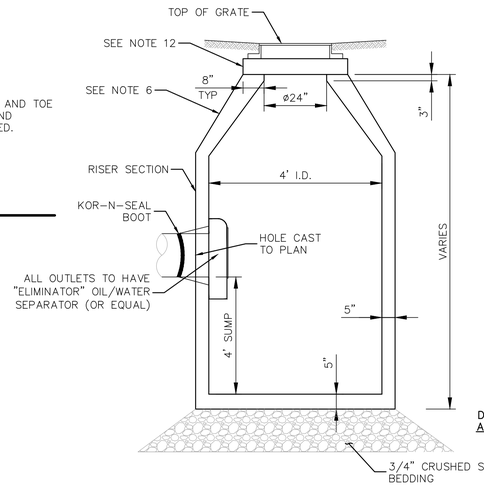
1. END SECTION IN ONE PIECE.
2. CONNECTOR SECTION, CORNER PLATE AND TOE PLATE TO BE SAME THICKNESS AS END SECTION AND EACH TO BE GALVANIZED.

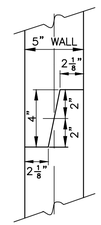
A End Section Detail
Not to Scale



NOTES:
1. DRAINAGE PIPES SHALL BE INSTALLED AT A DEPTH SUCH THAT THE CROWN OF THE CULVERT IS AT LEAST 2' BELOW GRADE, UNLESS OTHERWISE NOTED.

B Drainage Pipe
Not to Scale



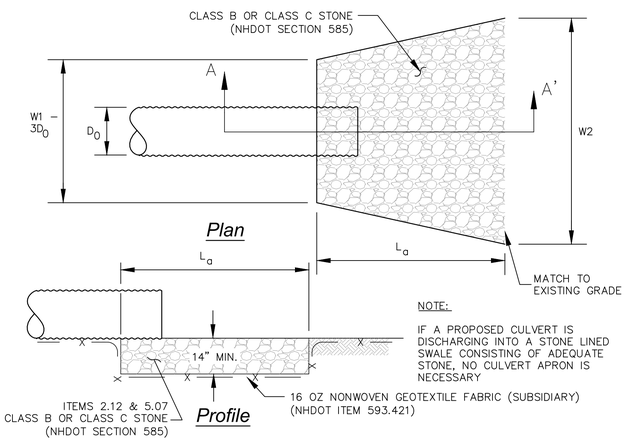


DETAIL OF TONGUE AND GROOVE JOINT

NOTES:

1. ALL STRUCTURES SHALL MEET H-20 LOADING. CONCRETE SHALL BE CLASS AA, 4,000 PSI AFTER 28 DAYS.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE OR THE GROOVE OF THE WALL JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FOOT.
4. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE EITHER AN APPROVED ELASTOMERIC OR BITUMASTIC-LIKE GASKET.
5. FOR BITUMASTIC TYPE JOINTS, THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS INCLUDE RAM-NEK, KENT SEAL NO. 2, EZ OR EQUAL.
6. ECCENTRIC CONES SHALL BE USED WHEN DEPTH TO CROWN OF SHALLOWEST PIPE EXCEEDS 30"; OTHERWISE FLAT TOP SLABS SHALL BE USED. RISERS OF 12", 36" AND 48" CAN BE USED TO REACH THE DESIRED DEPTH.
7. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES. NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.
8. PIPE-TO-MANHOLE JOINTS SHALL BE A RUBBER-LIKE KOR-N-SEAL BOOT OR APPROVED EQUAL
9. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
10. CATCH BASIN GRATES TO BE NHDOT TYPE B WITH FRAMES.
11. FRAME AND GRATES SHALL BE BROUGHT TO GRADE USING GRADE SS HARD BRICKS (2 COURSE MIN., 12" MAX.) LAID FLAT. FRAMES SHALL BE SET IN A FULL BED OF MORTAR AND SEALED WITH PORTLAND CEMENT.
12. MANHOLE FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS HINGE COVER PER CITY OF PORTSMOUTH STANDARD.
13. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.
14. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT
15. INVERT BRICKS SHALL BE LAIN ON EDGE.

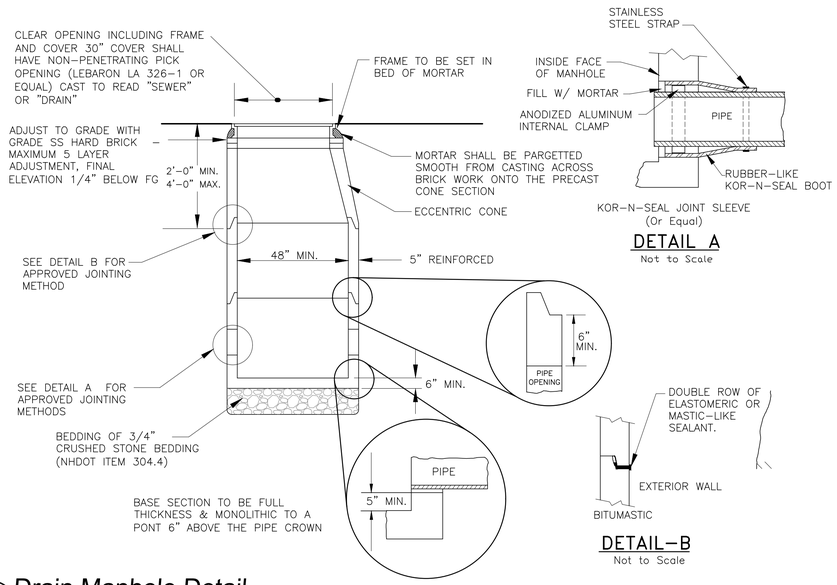
C 4' Diameter Catch Basin
Not to Scale



NOTE:

IF A PROPOSED CULVERT IS DISCHARGING INTO A STONE LINED SWALE CONSISTING OF ADEQUATE STONE, NO CULVERT APRON IS NECESSARY

D Stone Outlet Protection
Not to Scale



DETAIL A
Not to Scale

DETAIL-B
Not to Scale

NOTES:

1. ALL SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
2. MANHOLE BARRELS AND CONE SECTIONS SHALL BE PRECAST CONCRETE.
3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C 478.
4. LEAKAGE TEST SHALL BE PERFORMED PRIOR TO BACKFILL IN ACCORDANCE WITH THE SPECIFICATIONS.
5. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) "SEWER" OR "DRAIN" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
6. BEDDING: 3/4" CRUSHED STONE BEDDING (NHDOT ITEM 304.4).
7. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF A TYPE APPROVED BY THE ENGINEER, WHICH TYPE SHALL, IN GENERAL, DEPEND FOR WATERTIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET APPLIED IN DOUBLE ROWS.
8. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL WILL DEPEND FOR WATERTIGHTNESS UPON EITHER AN APPROVED NON-SHRINKING MORTAR OR ELASTOMERIC SEALANT.
9. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS: RAM-NEK KENT SEAL NO. 2EZ
10. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
11. NO MANHOLE STEPS ARE ALLOWED.

E Drain Manhole Detail
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of DOver TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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c m a e n g i n e e r s . c o m

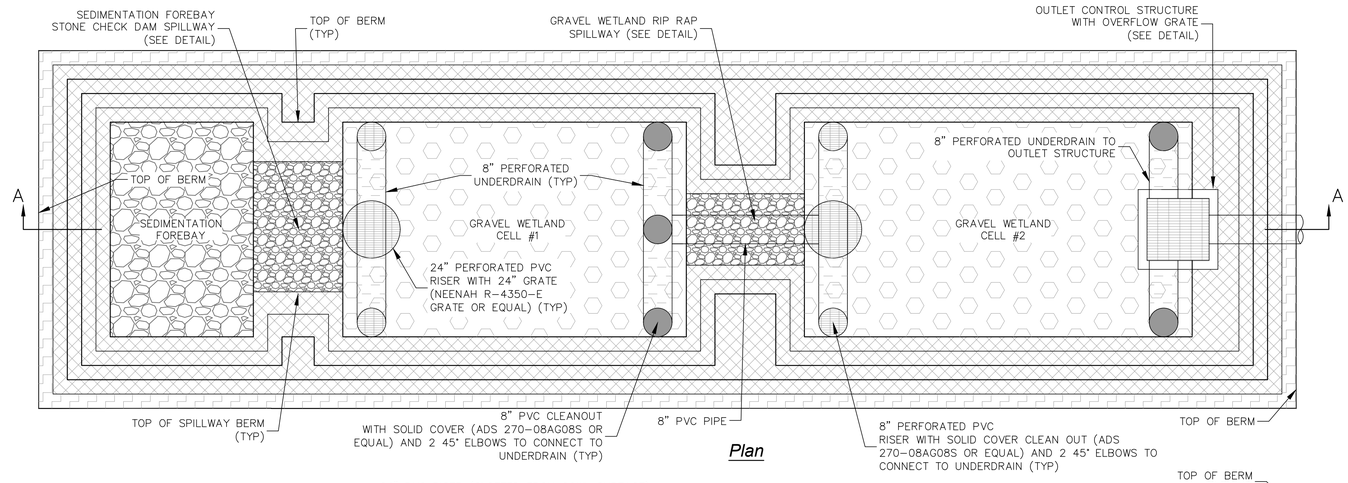
NEW HAMPSHIRE - 4232 - BENJAMIN C. PAGE - CLASS No. 1 - LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: nts

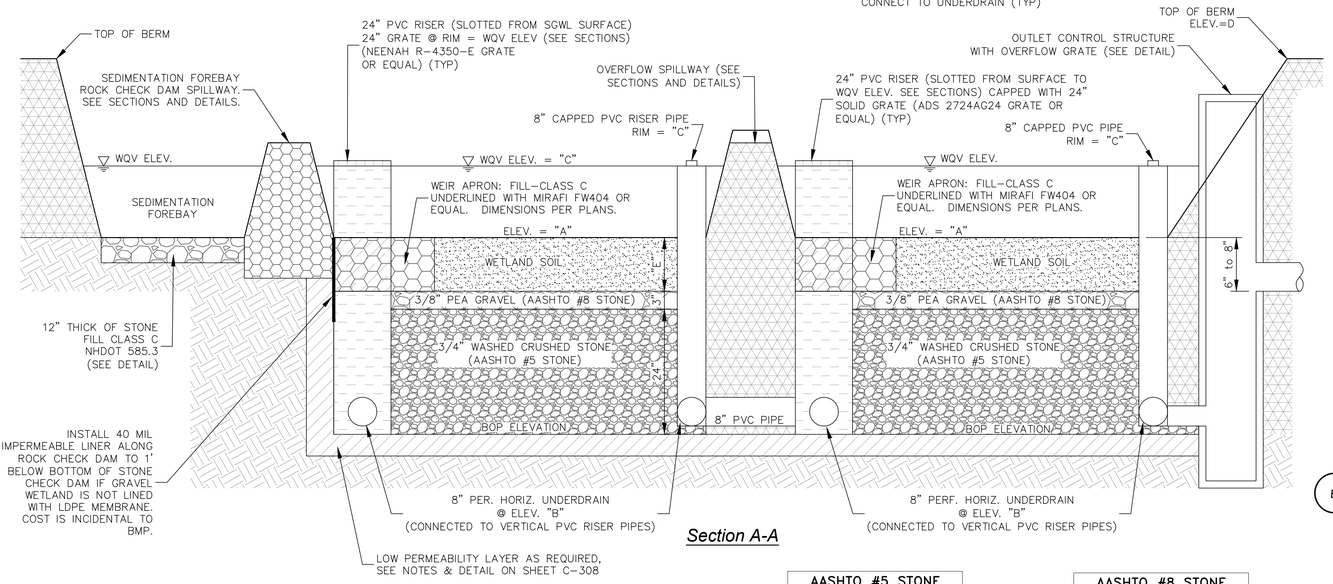
Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-7

sheet: 20 of 28



Plan



Section A-A

NOTES:

1. WETLAND SOIL SHALL BE A SANDY CLAY LOAM WITH A HYDRAULIC CONDUCTIVITY OF 0.1-0.01 FT/DAY. ORGANIC CONTENT SHALL BE GREATER THAN 15% BY VOLUME. CLAY CONTENT SHALL BE LESS THAN 15% BY VOLUME.
2. PERFORATED PVC RISER WITHIN WETLAND SOIL LAYER SHALL BE WRAPPED WITH MIRAFI 160N OR EQUAL.
3. PERFORATED PVC RISERS SHALL HAVE VERTICAL SLOTS CUT INTO PVC RISERS ABOVE GRADE MEASURING 3"x1/8".
4. BMP-2 WETLAND VEGETATION & FOREBAY SLOPES GRASSES SHALL BE SALT TOLERABLE.
5. RISERS AND CLEANOUTS RIM SHALL BE EQUAL TO OR GREATER THAN THE WQV ELEVATIONS. SEE BMP ELEVATIONS TABLE THIS SHEET.
6. RISERS SHALL BE PERFORATED FROM TOP OF WETLAND SOIL TO WQV ELEVATION (SEE BMP ELEVATIONS TABLE). SOLID PORTION OF RISER AND CLEANOUT COVER ADAPTER SHALL BE ABOVE THE WQV ELEVATION.

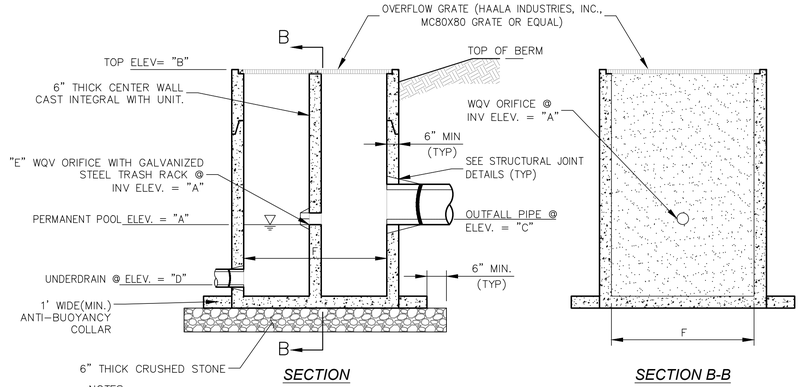
AASHTO #5 STONE (1" TO 1/2")	
SIEVE SIZE	% PASSING
1-1/2"	100
1"	90-100
3/4"	20-55
1/2"	0-10
3/8"	0-5

AASHTO #8 STONE (3/8" TO #8)	
SIEVE SIZE	% PASSING
1/2"	100
3/8"	85-100
#4	10-30
#8	0-10
#16	0-5

BMP ELEVATIONS		
	SUBSURFACE GRAVEL WETLANDS	
DIMENSION/ELEVATION	GW-1	GW-2
A	93.50	95.25
B	90.58	92.32
C (WQV ELEV)	93.76	97.13
D	95.0	98.50
E	8	8

A *Subsurface Gravel Wetland Detail*

Not to Scale



SECTION *SECTION B-B*

NOTES:

1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE (TYPE II CEMENT).
2. PRECAST BOX STRUCTURE SHALL CONFORM TO ASTM C913 SPECIFICATIONS.
3. SEE DETAIL TITLE PIPE CONNECTION TO PRECAST MANHOLE STRUCTURES.
4. REINFORCEMENT:
   - 4.1. DEFORMED BARS SHALL CONFORM TO ASTM A-615 GRADE 60.
   - 4.2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185-GRADE 70
5. REIN. STEEL SHALL HAVE 1" MINIMUM COVER.
6. THE STRUCTURE SHALL BE DESIGNED FOR HS 20-44 LOADING AND TO PREVENT FLOTATION IF FULLY SUBMERGED.
7. CRUSHED STONE BEDDING SHALL CONFORM TO NHDOT 304.4.
8. PIPE ELEVATIONS SHOWN SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
9. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
10. OUTLET PIPE SHALL BE FLUSH WITH INNER WALL.
11. BASE SHALL BE A SINGLE CAST UP TO A MINIMUM OF 8 INCHES ABOVE OUTFALL PIPE OR TOP OF BMP SURFACE WHICH EVER IS HIGHER

STRUCTURE DIMENSIONS		
	POCS STRUCTURE ID	
ELEV.	OCS-1	OCS-2
A	93.00	94.58
B	94.90	98.00
C	93.00	94.58
D	90.58	-
E WQV ORIFICE DIA (IN)	2.5	1.5
F STRUCTURE LxW DIMENSIONS (IN)	48x48	48x48

B *Gravel Wetland Outlet Control Structures*

Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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STATE OF NEW HAMPSHIRE - BENJAMIN C. CLARK No. 15674 - PROFESSIONAL ENGINEER

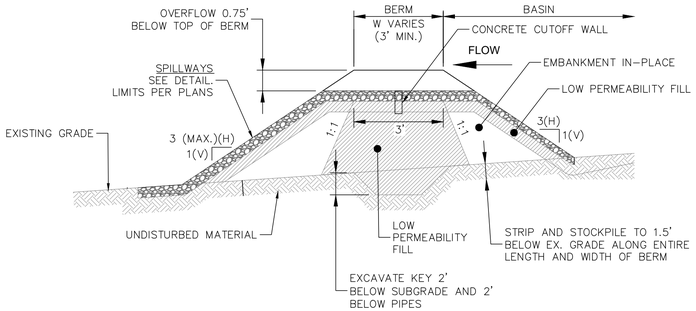
designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-8

sheet: 21 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250 - Details.dwg Date Plotted: Sep 05, 2023 - 3:58pm Plotted By: CCHIARAMONTE



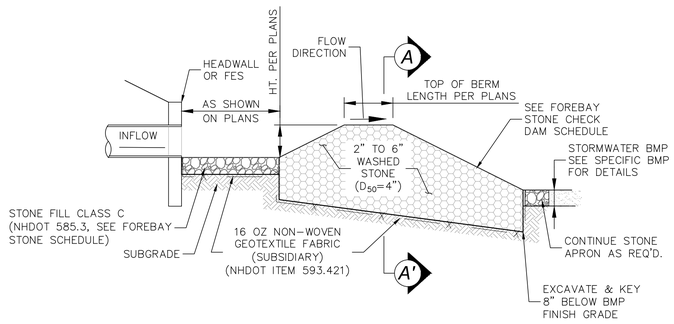
LOCATION	MATERIAL	NHDOT SPEC #	LOOSE LIFT THICKNESS (IN)	COMPACTION REQUIREMENTS (% MDD)[1]
EMBANKMENT	NATIVE SOIL[2]	203.6	12 (MAX)	92%[3]
LOAM COVER	BORROW[2]	646.51	4 (MIN)	80%
IMP. CORE	LOW PERMEABILITY	203.53	6 (MAX)	95%[3]

NOTES:
1. MDD: MAXIMUM DRY DENSITY.
2. ACCEPTABLE TO ENGINEER.
3. COMPACT TO TEST AVERAGE OF 92%, NO TEST LESS THAN 90.

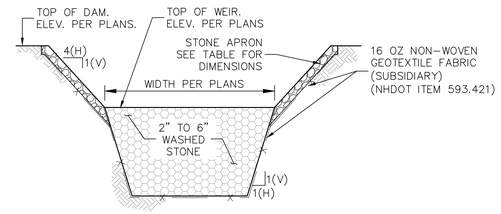
LOW PERMEABILITY FILL	
SIEVE SIZE	% PASSING
3 IN	100
#4	80-100
#40	60-90
#100	40-60
#200	25-45

A Stormwater Dam/Berm Detail
Not to Scale

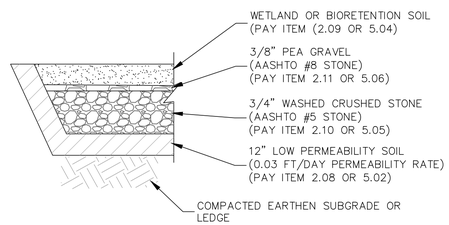
B Emergency/Highflow Bypass Weir and Spillway Detail
Not to Scale



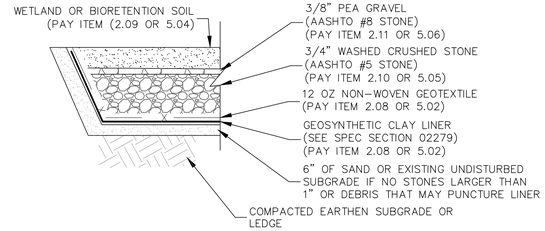
C BMP Forebay Rock Weir
Not to Scale



SECTION A-A



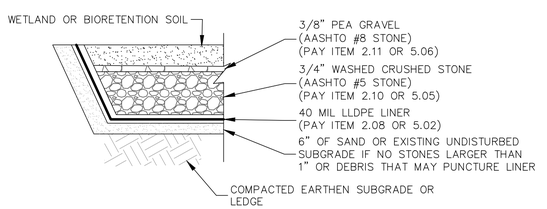
Low Permeability Soil
Alternative A



Geosynthetic Clay Liner (GCL)
Alternative B

LOW PERMEABILITY LAYER NOTES:

1. INFILTRATION TESTING OF THE NATIVE SOILS AT THE SUBGRADE AND WITHIN THE VICINITY OF THE PROPOSED GRAVEL WETLANDS AND BIORETENTION W/ ISR SHALL OCCUR PRIOR TO INSTALLATION AND SHALL BE COORDINATED WITH THE ENGINEER.
2. AN IMPERMEABLE LAYER (SEE ALTERNATIVES, THIS SHEET) SHALL BE USED IF EXISTING/INSITU SOILS HAVE GREATER THAN 10% FINES, IF PERMEABILITY RATE EXCEEDS 0.03 FT/DAY, OR IF EXCESSIVELY FRACTURED BEDROCK IS ENCOUNTERED. THE LINER SHALL EXTEND TO THE TOP OF THE WETLAND SOIL/BIORETENTION SOIL MIX.



LDPE Liner
Alternative C

D Low Permeability Layer Alternatives
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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STATE OF NEW HAMPSHIRE – BENJAMIN C. FRENCH No. 12915 – REGISTERED PROFESSIONAL ENGINEER

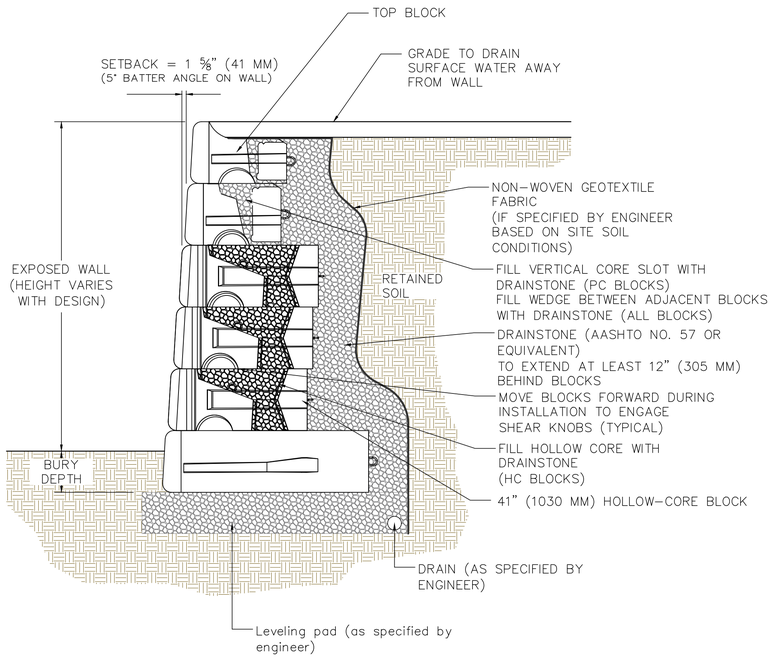
designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no.
D-9

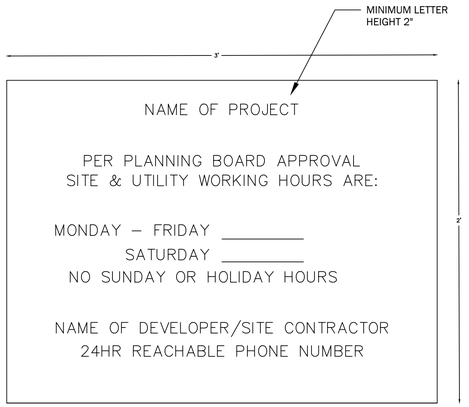
sheet: 22 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250 – Details.dwg Date Plotted: Sep 05, 2023 – 3:58pm Plotted By: CCHIARAMONTE



Note: Wall designs typically include a combination of solid, PC, and hollow-core blocks. Redi-Rock blocks are designed to be used together. Block type, size, and configuration will vary based on site-specific conditions and wall height.

A **Typical Gravity Wall Section with Hollow-Core Blocks**
Not to Scale



NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND
3. HOURS ON THE SIGN SHALL COMPLY WITH ALL PLANNING BOARD CONDITIONS OF APPROVAL.

B **Construction Sign**
Not to Scale

no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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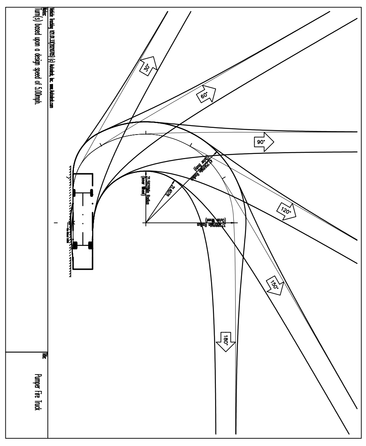
designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: NTS

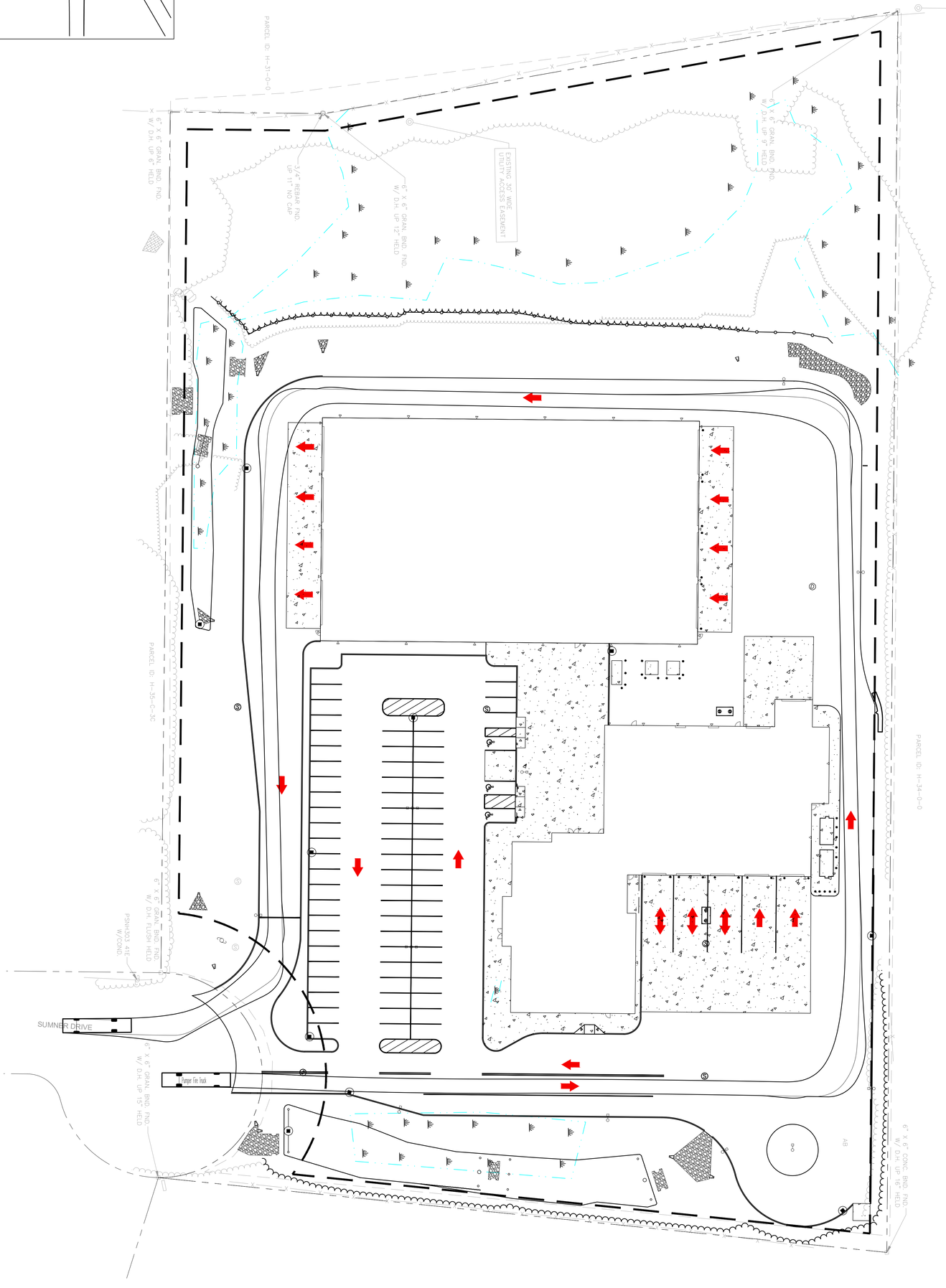
Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Details
Dover Planning File: Site-2023-002

drawing no. D-10

sheet: 23 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250 – Details.dwg Date Plotted: Sep 05, 2023 – 3:58pm Plotted By: CCHIARAMONTE





sheet: 24 of 28	drawing no. T-1	Cooperative Alliance for Seacoast Transportation, Dover, NH Operations and Maintenance Facility 42 Sumner Drive Fire Truck Turning Movement Plan Dover Planning File: Site-2023-002	date: March 16, 2023 · designed by: STF/RED project no: 1250 · drawn by: CFC checked by: PAC · approved by: PAC scale: 0 30' 60' Scale: 1" = 30'

STATE OF NEW HAMPSHIRE · BENJAMIN C. CLARK No. 15219 · LICENSED PROFESSIONAL ENGINEER

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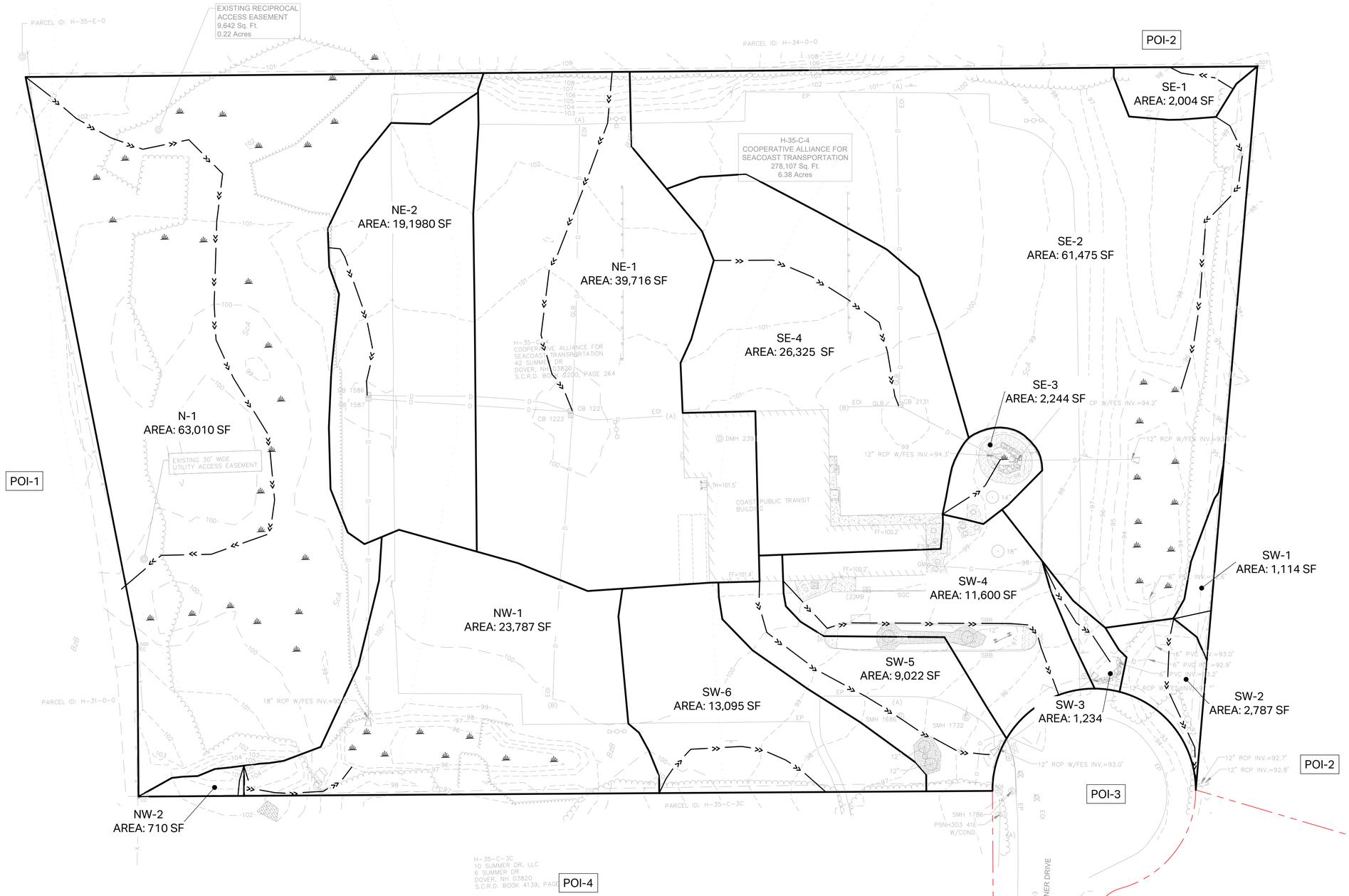
no.	revision	date	by
3	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC



SUBBASIN	S-1
POINT OF INTEREST	POI-3
SUBBASIN BOUNDARY	———
TIME OF CONCENTRATION	——» ——» ——» ——» ——» ——

no.	revision	date	by
2	Revised for City of Dover Planning Board Submittal	9/5/23	BCC
1	Revised for City of Dover TRC Comments	7/27/23	BCC

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NEW HAMPSHIRE – STATE OF – BENJAMIN C. CLARK No. 15876 – PROFESSIONAL ENGINEER

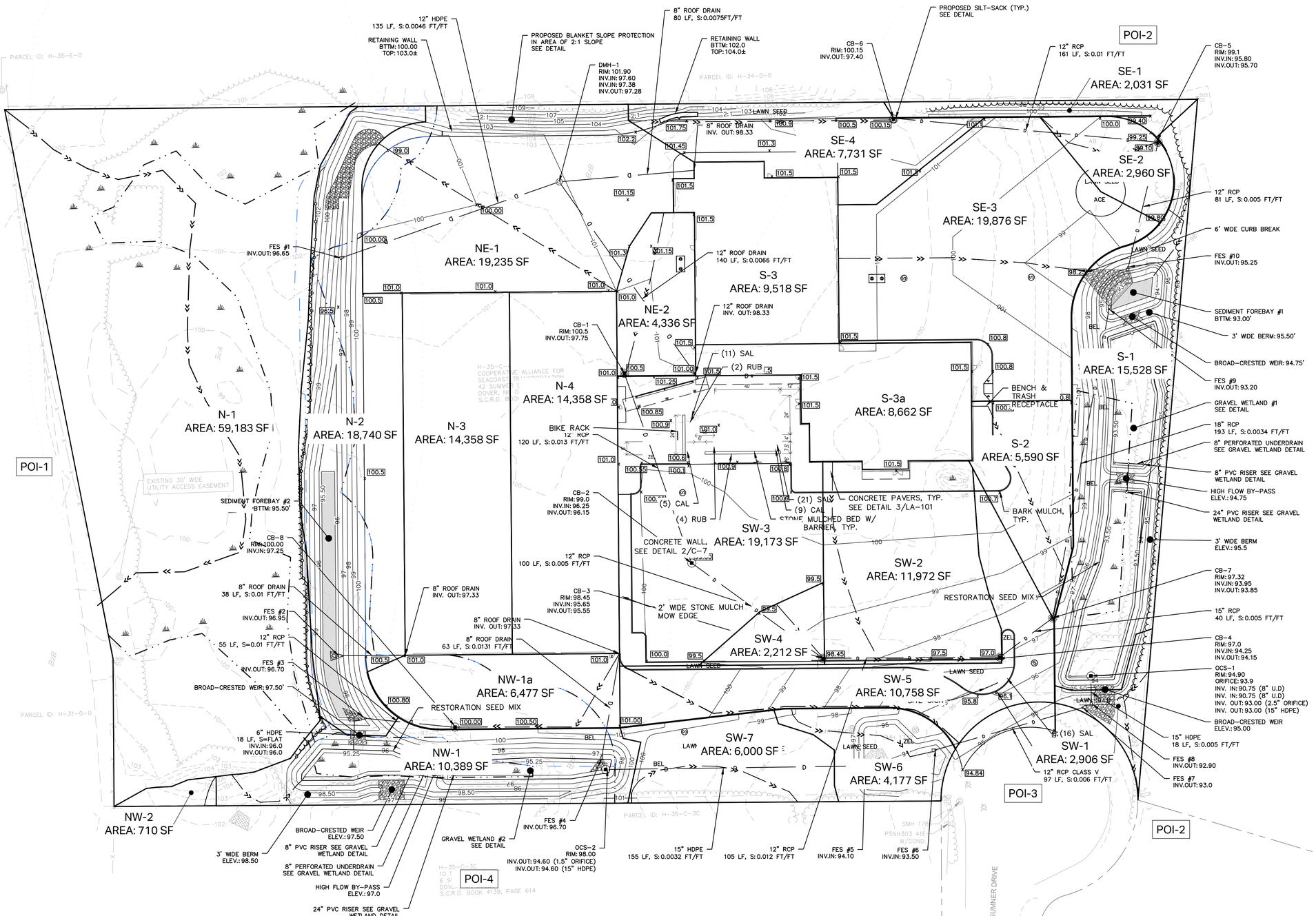
designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 1" = 20' (0, 20', 40')

Cooperative Alliance for Seacoast Transportation, Dover, NH
Operations and Maintenance Facility
42 Sumner Drive
Pre-Development Drainage Map
Dover Planning File: Site-2023-002

drawing no.
DRAIN-1

sheet: 25 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Drainage Maps.dwg Date Plotted: Sep 05, 2023 – 4:11pm Plotted By: CCHIARAMONTE



SUBBASIN	S-1
POINT OF INTEREST	POI-3
SUBBASIN BOUNDARY	———
TIME OF CONCENTRATION	——— » ——— » ——— » ——— » ——— » ———

no.	revision	date	by
2	Revised for City of Dover TRC Comments	7/27/23	BCC
1	Revised for City of Dover TRC Comments	5/31/23	BCC

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STATE OF NEW HAMPSHIRE – 12126 – CHRISTOPHER T. FISHER – LICENSED PROFESSIONAL ENGINEER

designed by: STF/RED
drawn by: CFC
approved by: PAC
date: March 16, 2023
project no: 1250
checked by: BCC
scale: 1" = 20' (0, 20, 40)

Operations and Maintenance Facility
Transportation, Dover, NH

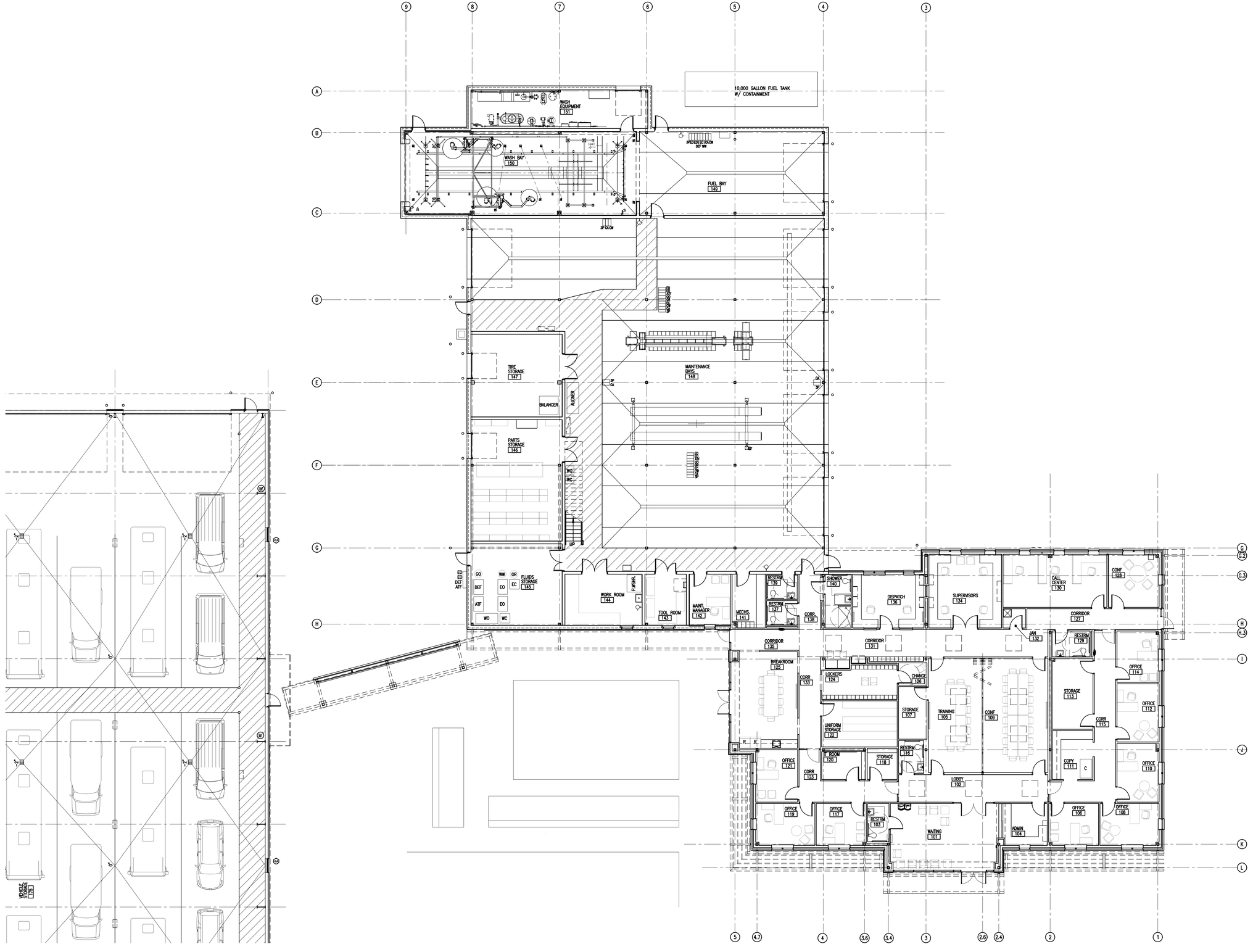
Operations and Maintenance Facility
42 Sumner Drive

Post-Development Drainage Map
Site-2023-002

drawing no.
DRAIN-2

sheet: 26 of 28

F:\CADD\PROJECTS\1250 Coast On-Call Eng Services\Production\1250-Drainage Maps.dwg Date Plotted: Jul 31, 2023 – 10:07am Plotted By: CCHIARAMONTE



1 A-100 **FLOOR PLAN**
3/32" = 1'-0"

PLAN NORTH

no.	issue	date	by

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Civil/Environmental/Structural
Portsmouth, NH Manchester, NH Portland, ME
603/431-6196 603/627-0708 207/541-4223
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Robert E. Doyle PE RA
603.738.2872
PO Box 1325, 35 Cushing Street
Dover, NH 03821-1325
rdoylepera@gmail.com

LICENSED ARCHITECT
ROBERT E. DOYLE No. 03823
STATE OF NEW HAMPSHIRE

designed by: RED
drawn by: RED
approved by: RED
date: MAR 16, 2023
project no: 0090
checked by: RED
scale: AS NOTED

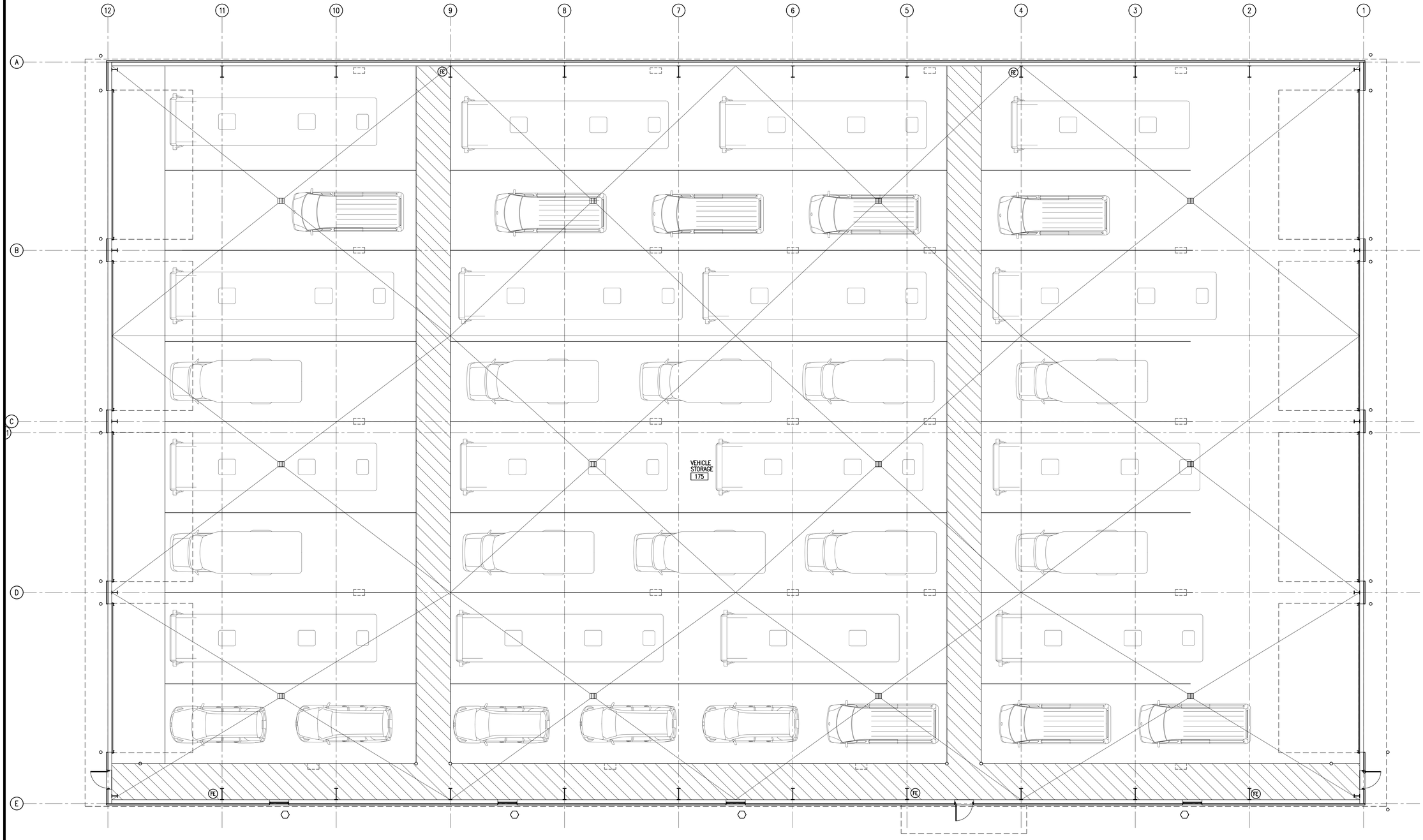
Cooperative Alliance for Seacoast Transportation (COAST)

Operations and Maintenance Facility
42 Sumner Drive, Dover, NH

FLOOR PLAN
Admin, Operations & Maintenance Bldg.

drawing no.
A-100

sheet: 27 of 28



1 A-101 **FLOOR PLAN - VEHICLE STORAGE**
1/8" = 1'-0"

PLAN NORTH

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CIVIL/ENVIRONMENTAL/STRUCTURAL
Portsmouth, NH Manchester, NH Portland, ME
603/431-6196 603/627-0708 207/541-4223
c m a e n g i n e e r s . c o m

Robert E. Doyle PE RA
PO Box 1325, 35 Cushing Street
Dover, NH 03821-1325
603.738.2872
rdoylepera@gmail.com

no.	revision	date	by

LICENSED ARCHITECT ROBERT E. DOYLE No. 03853 STATE OF NEW HAMPSHIRE

designed by: RED
drawn by: RED
approved by: RED
date: MAY 8, 2022
project no: 0090
checked by: RED
scale: AS NOTED

Cooperative Alliance for Seacoast Transportation (COAST)

Operations and Maintenance Facility
42 Sumner Drive, Dover, NH

VEHICLE STORAGE BUILDING
FLOOR PLAN

drawing no. *A-101*

sheet: 28 of 28

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #WAIV-2023-0004

Application Type:	Site Plan
Applicant(s):	John Kniphfer
Owner(s):	Kniphfer, LLC
Location:	43 Back River Road (Assessor's Map I, Lot 55-A)
Meeting Date:	September 26, 2023

INTENT: Proposal is for a daycare use and to install a second driveway to help with traffic flow at drop off and pick up with associated parking

AGENDA ITEM #: 4-C

UNITS PROPOSED: N/A

ACREAGE: 1.06± acres

ZONING DISTRICT: R-12

EXISTING LAND USE: Child care

PROPOSED LAND USE: Child care

SURROUNDING LAND USE: Commercial, Residential

ZBA ACTION: N/A

ATTACHMENTS: Application materials, Site Plan

APPLICATION IS COMPLETE: Yes

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for this meeting

PERMITS REQUIRED: Updated driveway permit

WAIVERS REQUESTED: None

TRCs: June 22, 2023 and August 3, 2023

Summary of Request and Background
The applicant purchased a building that was previously a child care use and requested a second driveway and expanded the child care use in number of students and small building addition. The expansion of child care use requires Technical Review Committee review per the definition of "CHILD CARE FACILITY" in the Zoning Ordinance.

Several staff and TRC members had concerns about a second curb cut on site and suggested partnering with Holiday Drive to use that as a second curb cut. Provided in the packet materials is the abutter on Holiday Drive's response that they were not willing to have a driveway onto Holiday Drive.

Discussions regarding on-site travel flow, stacking, pick-up, drop-off, event parking, sight distance, left turn lane, signage, and more were all discussed.

The initial design of the driveways and internal traffic flow and parking were altered during the TRC process from what was originally submitted. The applicant's engineer provided a traffic study and sight distance plan per staff's request.

The applicant has changed the traffic flow to an inbound on the southern driveway and full egress on the northern driveway and the applicant's engineer has indicated the sight distance is adequate based off the 85th percentile of the speed data provided by the Police Department.

Engineering and public safety staff are now more confident in the revised layout and one-way traffic flow and after reviewing engineered plans and studies that were submitted for review. Therefore, after several meetings with the applicant and their representatives, before the Board now is a plan that has a one-way traffic flow with two curb cuts on Back River Road via an engineered plan that indicates proper sight distance. This project scope was still one the TRC felt needed Planning Board review and approval.

The site is serviced by municipal water and sewer. The plan appeared before the TRC on June 22 and August 3, 2023 (most recent minutes attached).

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

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #WAIV-2023-0004

Application Type:	Site Plan
Applicant(s):	John Kniphfer
Owner(s):	Kniphfer, LLC
Location:	43 Back River Road (Assessor's Map I, Lot 55-A)
Meeting Date:	September 26, 2023

STAFF RECOMMENDATION:
The Planning Department recommends the Planning Board accept the application, declare no regional impact, make necessary findings and vote to on the Site Plan application. Should the Board vote to approve the request, Planning Staff suggest doing so with the following subsequent conditions as the plans meet the standards outlined:

Subsequent Conditions to Be Met Prior to Signing of Plans:

1. The applicant shall provide the Planning Department with a digital version of the final plan set.
2. Provide a CAD file to the satisfaction of the Asset Management Administrator's satisfaction.
3. The applicant shall revise the plan set to:
   3.1. Add owners' signatures
   3.2. Add all professional signatures and stamps
   3.3. Add note to plan that shrubs and plants that may hinder any sight distance will be trimmed back as needed to ensure adequate sight distance.

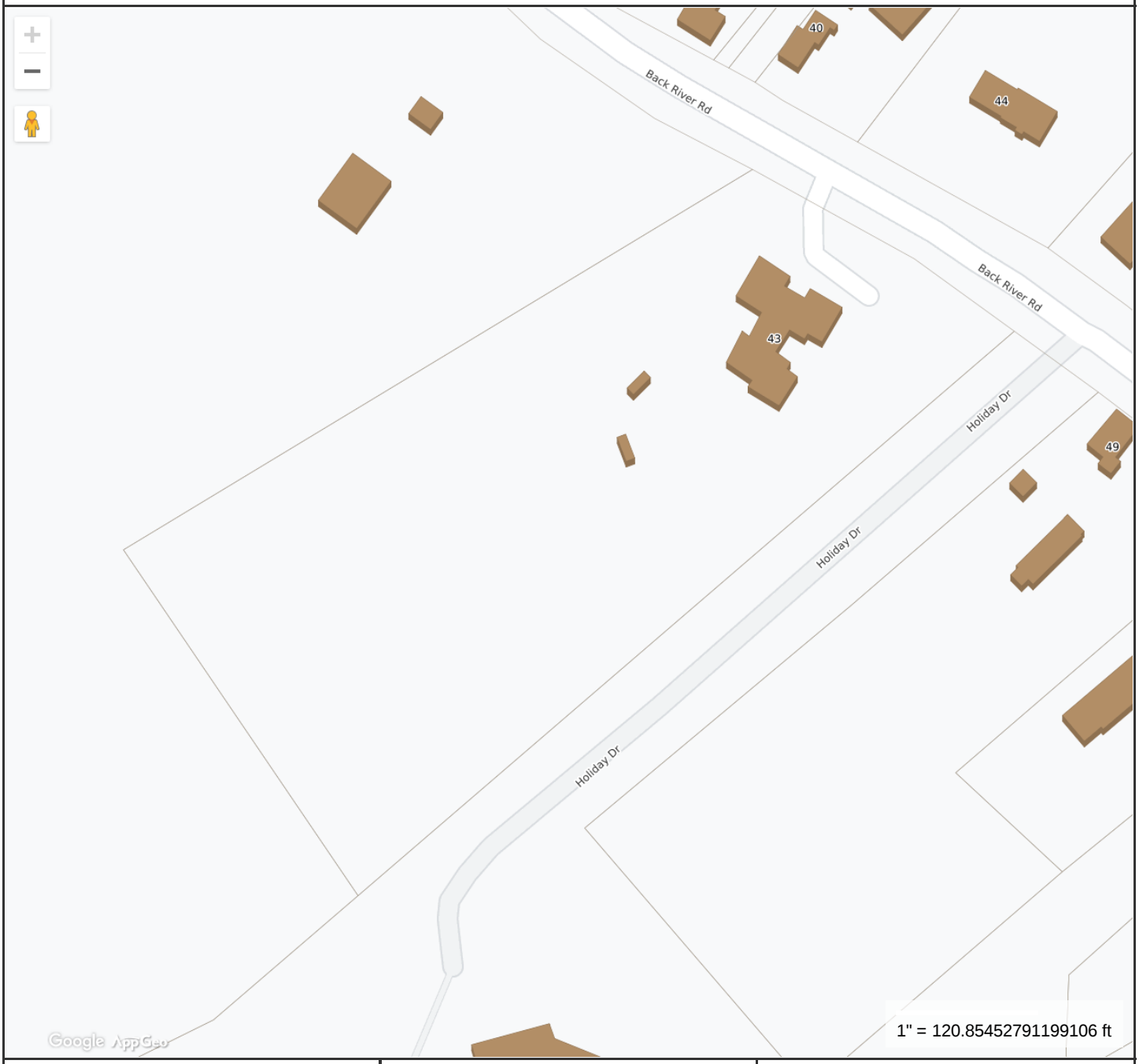
Subsequent Condition to Be Met Prior to Issuance of a Building Permit:

4. Payment of Water and Sewer Investment Fees if applicable based off expanded use;

Subsequent Conditions to Be Met Prior to Occupancy:

5. Impact fees as applicable will be invoiced through the permit portal and shall be paid.
6. The applicant shall provide a letter of credit or other form of security acceptable to the City for any unfinished work;
7. Issuance of the Certificate of Occupancy.

WAIV-2023-0004 43 Back River Road



Property Information

Property ID	H0035-C00004
Location	42 SUMNER DR
Owner	COOPERATIVE ALLIANCE FOR
Land Use	910
Zoning Code	CM

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 7/10/2023
Data updated Daily

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

PLAN SNAPSHOT REPORT WAIV-2023-0004
FOR CITY OF DOVER, N.H.

Plan Type:	Waiver / Extension / Amendment	**Project:**		**App Date:**	03/28/2023
Work Class:	Driveway	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**		**Approval Expire Date:**	

Description: Install a second Driveway to help with traffic flow at drop off and Pick up.

Parcel:	I0055-A00000 Main	**Address:**	43 Back River Rd Dover, NH Main	**Zone:**	R-12(Residential - Medium Density)

Applicant
John Kniphfer
43 Backriver
Dover, NH 03820
Business: (603) 973-3319

Plan Custom Fields

Address of Property for Waiver Assessment	43 Back River road	Parcel Map/Lot	L0055-A00000	Owner Name	Kniphferllc
Owner Phone	16035577489	Owner Address	30 Quarry Drive	Owner EMail	kniphfer@gmail.com
Waiver Request Detail	Install a second Driveway to help with traffic flow at drop off and Pick up.				

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Erin_Kniphfer_3/29/2023.jpg	03/28/2023 20:57	Kniphfer, Erin		Uploaded via CSS
WAIV-2023-0004 Email correspondence with applicant.pdf	04/11/2023 13:56	Blonigen, Rachel		
2023.06.22_PlanningTechnicalReviewCommittee_WAIV-2023-0004.pdf	07/19/2023 11:23	Blonigen, Rachel		Approved TRC Minutes
WAIV-2023-0004 Snapshot Report.pdf	07/19/2023 11:33	Blonigen, Rachel		
2023.08.03_PlanningTechnicalReviewCommittee.Agenda.pdf	07/19/2023 16:46	Blonigen, Rachel		
2023.08.03_PlanningTechnicalReviewCommittee_43BackRiverRd_WAIV-2023-0004.pdf	08/16/2023 14:20	Blonigen, Rachel		Approved TRC Minutes

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00002758	Planning Driveway Waiver Application Fee	$200.00	$200.00
	Total for Invoice INV-00002758	$200.00	$200.00
	Grand Total for Plan	**$200.00**	**$200.00**

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	06/22/2023	Technical Review Committee Meeting

Comments: Proposal is to install a second driveway to help with traffic flow at drop off and pick up

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	04/05/2023	04/05/2023	04/05/2023	Yes	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development		Requires Re-submit	04/05/2023	05/03/2023	04/05/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	04/05/2023	04/05/2023	04/05/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Requires Re-submit	04/05/2023	04/05/2023	04/05/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	Requires Re-submit	04/05/2023	05/03/2023	04/05/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Kypfer, Natasha	Requires Re-submit	04/05/2023	04/05/2023	04/05/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	Requires Re-submit	04/05/2023	04/05/2023	04/05/2023

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.2	Approved	06/27/2023	07/10/2023	08/08/2023	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Approved	06/27/2023	07/25/2023	08/08/2023

Comments: Business Development:
Prior Comments:

- Second curb cut not a good idea
- See July 2022 email from Christopher Parker
- Reduce curb cut to 24’
- Possibly need waivers from Planning Board
- Sight distance is an issue
- This scenario was contemplated in ~2004 and did not make sense
- Prioritizing parking out back
- Provide a turnaround out back
- Use existing curb cut for in and out
- Yes, we need childcare, but this site has restrictions

Revision Comments:

- Previous comments were prepared by the Deputy City Manager, who was not available to comment on the revised plan. The plan revisions and notes regarding the presence of ledge and other site limitations are acknowledged, but Business Development continues to prefer a design featuring a single driveway.
- The May 18, 2023 memo Section 5.C notes that the proposal “would not result in an increase in motorist delays or vehicle queueing over existing conditions.” Has consideration been given to the safety of relocating existing queueing to the proposed ingress location? Highest risk appears to be southbound left turn into the site causing stacking with poor visibility from the rear.
- Would relocation of queueing/deceleration to the proposed ingress location be expected to negatively impact visibility for egress traffic at the existing driveway location?
- Existing driveway (proposed for egress only) is marked as a “blind driveway” by warning sign to southbound traffic roughly 200-250 feet to the north of the driveway. Do you have information regarding the provenance of this sign? (I.e. incident-based, visibility-based, requested by landowner, etc.?)

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Approved	06/27/2023	07/10/2023	08/08/2023

Comments: Engineering:

- Previous comment:

Narrative: Sewer service is noted as being a 6-inch diameter line. As this was formally a private residence, sewer service on the lot, which is the responsibility of the facility, may be a 4 inch. Applicant shall provide inspection report for existing sewer service to confirm 6-inch diameter all the way into the building per DUC rules.
New Comment: Add note to upgrade to 6" sewer line should any changes occur in the future.

- Sheet C-1: The detail for the new pavement section indicates a 1.5" top course of pavement which conflicts with the site plan that shows 1". In addition the base and subbase materials for the new pavement section called for on the plan do not match the detail. Please coordinate the detail with the plan.
- Sheet C-1: Check the leaders pointing to the proposed signage at the driveway entrance. It is unclear where the note Proposed "Do Not Enter Sign" and "One Way" sign is pointing to. If it is the southern sign, then it is recommended that the sign be located closer to the parking.
- Sheet C-1: Check orientation of the proposed signs and the direction they are pointing.
- Sheet C-1: ADA sign and bollard appears to be in the space reducing the usable length of the parking. Can the sign be shifted to the edge of the sidewalk?
- Sheet C-1: Will the ADA ramp impact the cars' ability to park a vehicle?

Fire & Inspections Services:

- Could not locate the occupant load from designer as indicated on A&M response. Please indicate location on plans or provide.
- Inspection Services would support a turn lane if and when required.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Approved	06/27/2023	07/10/2023	08/08/2023

Comments: Fire & Inspections Services:

- Could not locate the occupant load from designer as indicated on A&M response. Please indicate location on plans or provide.
- Inspection Services would support a turn lane if and when required.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Kaspari, Jackson	Approved	06/27/2023	07/25/2023	08/08/2023

Comments: Planning:

- Potentially a left turn lane in to the site would be needed on Back River Road which was discussed at the previous unofficial TRC this past fall. Didn't see left turn lane analysis in Traffic Study.
- Reminder: Water/sewer investment fees from expansion, Impact fees
- Provide response from abutter in writing
- Label snow storage areas. (clouded areas?)
- Consider breaking off some of the layers or leader notes onto another plan sheet as parking layout plan is now rather busy
- §149.14 referenced in narrative letter, please correct to §153; Revised narrative letter was not provided with this submittal
- Discuss if 71 trips rather than 21 additional was used, how that would affect Traffic Study.
- Confirm parking lot area is screened from abutters and ROW as much as possible.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Kypfer, Natasha	Approved	06/27/2023	07/10/2023	08/08/2023

Comments: see Planning Comments

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	Approved	06/27/2023	07/10/2023	08/08/2023

Comments: Police:

- Regarding my previous comment #1 from June 22 TRC, will clarify my meaning in person as it may have been misunderstood. Positions/orientation on the updated plan are not consistent with what was suggested for use of R6-1 One Way signs.
- Traffic Memorandum: Right-Turn Bay Analysis cites 2006 peak hour volumes on Back River Road to calculate the growth rate (also note typo in line 3, two references to "southbound"). What is the source of this data?
- Traffic Memorandum: Regarding the limiting right turn volume figure (51), how did you arrive at this number? Table 1 appears to be missing contextual comparison data for the conclusion cited. (Minor clerical note: narrative refers to it as Table 2 but labeled as Table 1)

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		04/05/2023 10:08	08/08/2023 15:42

PLAN SNAPSHOT REPORT (WAIV-2023-0004)

Confirm application complete v.1	Generic Action		03/29/2023 8:06
Technical Review Committee Meeting Agenda v.1	Task	04/05/2023 10:08	04/05/2023 14:42
Land Use Plan Technical Review v.1	Receive Submittal	04/05/2023 0:00	04/05/2023 14:45
Land Use Plan Technical Review v.2	Receive Submittal	06/27/2023 0:00	08/08/2023 15:42
Technical Review Committee Meeting v.1	Hold Meeting	06/02/2023 15:16	06/02/2023 15:17
Planning Board v.1		08/18/2023 15:21	
Planning Board Agenda v.1	Task	08/18/2023 15:21	09/12/2023 11:49
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Plan Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Plan Activity		
NOD Sent to Applicant v.1	Create Report		
Final Plan v.1			
Land Use Plan Final Review v.1	Receive Submittal		
Land Use Plan Stamped and Signed v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Recording v.1	Task		
Property Info Group v.1	Generic Action		
Building Official Notifies Address v.1	Generic Action		
Pre-Con Meeting v.1	Hold Meeting		
Create/Link to Records v.1			
Create / Link to Permit - Building Complex v.1	Create Sub Permit		
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit		

City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: Kniphfer LLC Telephone #(603) 557-7489

Address of Applicant: 30 Quarry Drive Rochester, NH 03867

E-Mail Address: kniphfer@gmail.com

Name of Property Owner (*if different from applicant*): _____ Telephone #_____

Address of Property Owner: _____

PROPERTY INFORMATION

Address of Property: 43 Back River Road

Assessor's Map # I Lot(s) # 55-4

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

Size of Parcel: 60,000 sq. ft. 1.38 ac. Property Deed: Book 5051 Page: 545

Existing Use of Property: Child care facility

SITE PLAN INFORMATION

Describe Proposed Use: Child care facility

Area of Parcel to be Developed: 800 +/- sq. ft.

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

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

Number of Parking Spaces: Existing 17 Proposed 16

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

Number of Employees Total: 15 In Maximum Shift: 9

Disposition of Parcel:

Building Footprint 6,444 sq. ft.

Total Building Area 6,444 sq. ft.

Paved Area 12,852+/- (Exist) sq. ft.

12,358+/- (Prop)

Building Setbacks:

Front Yard 69.7 ft.

Rear Yard 128+/- ft.

Side Yard: Right 15.6 ft. Left 76.7 ft.

City Water? X Yes ___ No How far is city water from the property? _____

City Sewer? X Yes ___ No How far is city sewer from the property? _____

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION

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

☐ Residential ☐ Residential (reduced size) ☐ Industrial ☐ Purchase ☐ Land Preservation

Relief sought (Check All That Apply):

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

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

_____

_____

_____

BUILDING INFORMATION

Type of Building to be Built: N/A

Height of Building: Existing Finished Floor Elevation: Existing

Number of Seats (where applicable) N/A

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

WAIVER REQUESTS

Site Review Regulations section(s) to be waived: _____

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

_____

_____

_____

_____

_____

_____

_____

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) James Smith, LLS

Address Allen & Major Assoc. Inc. - 400 Harvey Rd. - Manchester, NH Telephone #: 603-627-5500

Professional License #: 908 E-mail address: jsmith@allenmajor.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Michael Malynowski, PE

Address Allen & Major Assoc. Inc. - 400 Harvey Rd. - Manchester, NH Telephone #: 603-627-5500

Professional License #: 12205 E-mail address: mmalynowski@allenmajor.com

ARCHITECT INFORMATION

Name 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: N/A 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: _____ Date: 05-16-23

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

Signature of Agent: Michael Malpravshi Date: 05-16-23

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: _____ Date: 05-16-23

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: _____ Date: 05-16-23

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: 05-16-23

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

CITY OF DOVER SITE REVIEW
LIST OF ABUTTERS

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

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
I	55-4	Kniphfer LLC	30 Quarry Drive Rochester, NH 03867

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Surveyor & Engineer	Allen & Major Assoc. Inc.	400 Harvey Road - Manchester NH 03103

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

WAIV-2023-0004 **43 BACK RIVER ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
16020-000OPN	PICNIC ROCK DR	PICNIC RIVERS PARTNERS OF DOVER LLC	TIMOTHY RAYMOND MEMBER	3 WALT COLBY DR	DOVER	NH	03820
16026-000000	34 BACK RIVER RD	CORBEIL JODIE-LYNN &	CHRISTINA BARRETT M	34 BACK RIVER RD	DOVER	NH	03820
16027-000000	36 BACK RIVER RD	PETERSON LEONARD W	PETERSON ANN C	36 BACK RIVER ROAD	DOVER	NH	03820
16027-A00000	36 A BACK RIVER RD	TRENDELL ERIC C &	TRENDELL ASHLEY S	36 A BACK RIVER RD	DOVER	NH	03820
16028-000000	40 BACK RIVER RD	WHELAN CODY	KWESELL EMILY	40 BACK RIVER RD	DOVER	NH	03820
16029-000000	38 BACK RIVER RD	SCHINDLER KENDRA &	VENABLE KYLIE	38 BACK RIVER RD	DOVER	NH	03820
I0006-A00000	50 BACK RIVER RD	PHALAK SUMIT		50 BACK RIVER RD	DOVER	NH	03820
I0006-B00000	44 BACK RIVER RD	PELCHAT WILLIAM H &	SAUCIER LINDA M	44 BACK RIVER RD	DOVER	NH	03820
I0006-C00000	46 BACK RIVER RD	TSAKIRIS NATHAN 95% &	TSAKIRIS TINA 5%	46 BACK RIVER ROAD	DOVER	NH	03820
I0006-C00DRV	RED BARN DR	RIDGESTONE BUILDERS & DEVELOPERS LLC	C/O JAMES GAURON	15 STARFISH DR	WELLS	ME	04090
I0055-000000	31 BACK RIVER RD	HOLGATE LIMITED PARTNERSHIP		130 CENTRAL AVE	DOVER	NH	03820
I0056-001000	30 HOLIDAY DR	SNR 24 DOVER OWNER LLC		55 WEST 46TH STREET STE 2204	NEW YORK	NY	10036
I0057-000000	49 BACK RIVER RD	STEVENS WALLACE B		49 BACK RIVER RD	DOVER	NH	03820
I0055-A00000	43 BACK RIVER RD	KNIPHFER LLC		30 QUARRY DR	ROCHESTER	NH	03867
		ALLEN & MAJOR ASSOC. INC.	JAMES SMITH, LLS	400 HARVEY ROAD	MANCHESTEI	NH	03101
		ALLEN & MAJOR ASSOC. INC.	MICHAEL MAYYNOWSKI, PE	400 HARVEY ROAD	MANCHESTEI	NH	03101

400 Harvey Road, Manchester, NH 03103 | T (603) 627-5500 | F (603) 627-5501
allenmajor.com

ALLEN & MAJOR ASSOCIATES, INC.

May 18, 2023 *(revised 07-05-23)*

To: Donna Benton, AICP
Director of Planning and Community Development
City of Dover, NH
288 Central Avenue
Dover, NH 03820-4169

Copy:

A&M Project #: 3188-01

Re: Site Plan Amendment for Childcare Center
Tax Map I, Lot 55-A
43 Back River Road

Dear Ms. Benton:

On behalf of Kniphfer LLC, Allen & Major Associates, Inc. (A&M) is pleased to submit the enclosed Site Review application and supporting materials for the expansion of an existing 4,524 sf child care center located at 43 Back River Road.

1. INTRODUCTION

The proposed project will memorialize the recently constructed & approved building addition along with parking lot improvements. This letter is intended to summarize the project in order to facilitate the review process.

2. EXISTING CONDITIONS

The Applicant is the current owner of the parcel of land located at 43 Back River Road and identified as Tax Map I, Lot 55-A on the City of Dover Tax Assessor Map. The 1.38+/- acre parcel is located in the Medium Density Residential (R-12) zone. The lot has 233.65 feet of frontage on Back River Road. Of the 1.38+/- acre parcel, approximately 11% of the lot is either buildings or bituminous concrete pavement. The site is services by municipal water and sewer.

The building is pre-existing, non-conforming for one zoning dimensional standards, which includes front yard setback that has changed to a variable requirement with a minimum and maximum. Based upon review of historical information it appears that the front yard set was once a minimum of 50 feet for which the existing building conforms.

3. PROJECT DESCRIPTION

The proposed redevelopment area will disturb approximately 800 square feet. This disturbance includes rehabilitation of the associated paved driveway and parking area along the front of the site. The building additions have already been constructed and inspected by the building department.

The proposed facility will utilize the existing electric, cable and telephone service. It will also utilize the existing domestic water service. Trash is provided by a private hauling company and a screened dumpster is shown on the provided site plans.

4. COMPLIANCE WITH ZONING STANDARDS

The structure is pre-existing, non-conforming for several dimensional requirements as follows:

- The front setback is 69.7 where 15 feet min. & 25 feet maximum is required,

The pre-existing, non-conforming front yard setback will remain. All other zoning standards will be met.

The proposed use and development are allowed by right. Also, the application meets all zoning and planning board requirements, therefore isn't seeking any variances or waivers.

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There are currently no prevalent demarcated existing parking spaces. It is proposed to provide 15 standard spaces and 1 handicap spaces. (16 parking spaces are required.)

5. COMPLIANCE WITH SITE PLAN REVIEW STANDARDS

Section 153 of the Dover Code ordinance presents standards that must be met in order to obtain Site Plan Review approval. These are detailed in the following subsections:

5.A. Stormwater Management, Erosion Control, and Flood Hazards

Although some upgrades to the existing parking lot are being proposed, these activities which include paint striping, removal of existing pavement and expansion of some areas does not constitute a substantial earth moving activity which would cause erosion control issues. As part of the most recent site plan amendment, the project proposes to remove some impervious surfaces. All of which is along the perimeter of the site and will increase the vegetative buffer. The site plan amendment illustrates that there is a net decrease of approximately 494 square feet in pavement surface which will be converted to green space and this reduction of impervious area will continue to lessen stormwater flows to the existing system.

5.B. Utilities

The existing facility is serviced by municipal water and municipal sewer. Although the existing childcare facility is anticipated to increase from 75 students plus 6 staff to 101 students plus 9 staff (largest shift). Per NHDES Subsurface Regulations flow data a childcare facility has a flow of 10GPD per person which for this project would be 1,100GPD which is an increase of 290 GPD. The existing sanitary sewer line is presumed to be 4" based on the original use of the building (private residence) and laid at the minimum required pitch of 2%, would have a capacity of approximately 175 gpm utilizing Manning's Formula. This would have sufficient capacity to handle the anticipated sewer loading.

Based on the City's current water and sewer investment fees, the following would be the anticipated one-time investment fee for the proposed increase:

- Water Investment Fee $10.99 Gallons Per Day * 290 GPD = $3,187.10
- Sewer Investment Fee $6.12 Gallons Per Day* 290 GPD = $1,774.80

5.C. Driveways, Accessways and Internal Roads

The existing facility is serviced from Back River Road by an existing approximately 25ft driveway along the northern frontage and historical plans indicate that a second driveway to the south also existed. The proposed modifications to the facility contemplate the re-installation of this second access way along with the conversion of the vehicle travel path to single direction along the front of the facility. A small portion of the parking area would remain bi-directional to the southwest of the facility to accommodate handicap parking and utility access. Although there were improvements proposed in 1999 specifically to the parking lot and circulation as per a plan obtained from the Dover Planning office, these improvements were not fully implemented as evident from the recent on-ground survey conducted by this office. Based on field observations, it is evident that ledge is present at or near the surface which may have precluded the full expansion of parking lot from the 1999 plans. Subsequently, these obstacles will also hinder any further expansion of the existing parking lot today.

The new single directional vehicle path would enter the site at the southern driveway and circulate through the site to the north exiting the site. This approach will allow for greater sight distance for oncoming traffic from the south along Back River Road. The proposed southern driveway would be constructed to a width of 16 feet and the existing northern driveway would be reduced to 18 feet, both of which meet current site plan requirements. The submitted plans better illustrate the sight distance parameters for this proposed configuration. To further aid in the circulation of vehicles through the site, way-finding signage will also be added to assist drivers with the new movements. To further bolster this approach a truck turning plan has been prepared to illustrate that a full-size bus and fire apparatus can maneuver through the new circulation path.

As the proposed facility is a childcare center, it is anticipated to have short duration vehicle movements during the pick-up and drop-off times. During this process, facility staff will be situated in the parking lot to assist parents and direct traffic. This current process typically sees staggered drop-offs throughout the morning between 7 and 9:30am with minimal stacking of vehicles.

The pick-up process is a bit unique whereas parents are assigned a number which is to be made visible from their vehicle. Upon arrival, the staff member located outside in the parking lot radios to the teacher inside and the student is escorted to the awaking parent vehicle. This process typically takes approximately 2-3 minutes and may produce a queue length of approximately 4-5 cars, which can be easily accommodated within the site without causing interactions with vehicles on Back River Road. Should a parent need to disembark from their vehicle and enter the facility, they would be instructed to park in a designated parking spot outside of the pick-up queuing area. Facility staff are well versed in these procedures as they are applied at their three other locations and appear to operate without issue.

Although there is anticipated to be a slight increase in vehicle traffic associated with the expansion of the childcare operations, a separate vehicle trip generation summary has been provided to illustrate that the level of impact would not result in an increase in motorist delays or vehicle queuing over existing conditions. The proposed site plan illustrates that 10 cars can be accommodated on site which exceeds the normal drop off scenario by nearly double the vehicles.

5.D. Parking

The site currently provides parking along the front of the parcel setback from the property line more than 15 feet. Although there are some existing demarcated spaces, the proposed site plan calls for the slight re-configuration of the parking spaces to aid in the updated circulation patterns on site. Based upon the current licensing of the childcare facility, there is a maximum of 101 students allowed and 9 staff per the largest shift. Per the current Dover Site Plan Regulations, the maximum number of parking spaces afforded to the site is 40 whereas 16 are provided. Although there is an increase in students and staff from what previously existed at the property, the number of parking spaces is adequate for the facility's needs and there have not been any reported shortfalls.

Staff parking will primarily be along the angle spaces at the front of the site to limit the interactions between parent drop off and arrivals.

A location for future "paper parking spaces" totaling 12 spaces has been shown on the plans should they be required by the day care.

5.E. Outdoor Lighting

The existing parking lot is lit by several pole mounted fixtures which appear to be cutoff type per observation and supplemented by several wall mounted fixtures at the building entrances. No additional lighting is proposed as part of this project.

5.F. Fire Hazards

As this facility is an active childcare center and will continue to operate as such, no contaminants are proposed to be stored or used at the facility.

5.G. Landscaping

Existing landscaping is provided along the frontage to separate parking areas from abutting streets, and to provide areas for snow disposal. Additionally, the perimeter of the parcel is naturally wooded and will remain.

5.H. Driveway Location and Spacing Standards for Non-Residential USES in the B-3, B-4, B-5, I-2,and I-4 Districts.

Not applicable as the project is not located within one of these designated districts.

5.J. Interconnections Between Parcels

In an email dated April 19, 2023, to the director of planning and community development Donna Benton, the proponent indicated that discussions had taken place with the General Manager at Maple Suites, the owner of Holiday Drive. When asked if we could connect to Holiday Drive, the abutting property, the response was "absolutely not". Subsequently, a formal letter from Maple Suites has been provided indicating that a connection would no be allowed.

5.K. Location of Parking Lots

The location of the building and the relationship of parking is existing and pre-dates the current site plan regulations. Although the parking is located along the front of the building, it's relationship to the building is better suited to the operations of the childcare center as it minimizes the conflict between vehicles and outdoor recreational areas.

5.L. Architectural Design Standards

The existing building is to remain which was originally a residential dwelling when first constructed. The recently constructed building addition is located behind the existing structure and not in view of the public street. A full set of architectural plans were submitted to the building department for approval and building permits were issued for the construction.

CONCLUSION

In conclusion, the granting of the site plan amendment to allow for the added access and memorializing the recently constructed building addition will improve the operations of the existing childcare facility will be a welcomed improvement to the parents.

We thank you in advance for your anticipated cooperation regarding this project and look forward to meeting to discuss the plans.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.

Michael A. Malynowski, PE
Senior Project Manager

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – WAIV-2023-0004

Application Type:	Site Review Amendment
Applicant(s):	Kniphfer, LLC
Owner(s):	Kniphfer, LLC
Location:	43 Back River Road (Tax Map I, Lot 55-A)
Date:	August 3, 2023

INTENT: Proposal is for a daycare use and to install a second driveway to help with traffic flow at drop-off and pick-up with associated parking.

UNITS PROPOSED: n/a

AGENDA ITEM #: 2

ACREAGE: 1.06± acres

ZONING DISTRICT: R-12

EXISTING LAND USE: Childcare

PROPOSED LAND USE: Childcare (No change)

SURROUNDING LAND USE: Commercial, Residential

PREVIOUS TRC: June 22, 2023

ZBA ACTION: None

RELIEF/PERMITS REQUIRED:
None

RELIEF/WAIVERS REQUESTED:
24' wide requirement

ATTENDANCE:
Donna Benton, Planning
Natasha Kypfer, Zoning
Tom Clark, Planning Board
James Burdin, Business Development
Jim Maxfield, Fire/Inspection Services
Ken Mavrogeorge, Engineering
Marn Speidel, Police
Other:
Michael Malynowski, Allen & Major
John Kniphfer, Kid's Culture
Erin Kniphfer, Kid's Culture

PLAN REVIEW:
Planning:

- *Potentially a left turn lane in to the site would be needed on Back River Road which was discussed at the previous unofficial TRC this past fall.* Didn't see left turn lane analysis in Traffic Study.
- Reminder: Water/sewer investment fees from expansion, Impact fees
- Provide response from abutter in writing
- Label snow storage areas. (clouded areas?)
- Consider breaking off some of the layers or leader notes onto another plan sheet as parking layout plan is now rather busy
- *§149.14 referenced in narrative letter, please correct to §153*; Revised narrative letter was not provided with this submittal
- Discuss if 71 trips rather than 21 additional was used, how that would affect Traffic Study.
- Confirm parking lot area is screened from abutters and ROW as much as possible.

Engineering:

- *Previous comment:*
  Narrative: Sewer service is noted as being a 6-inch diameter line. As this was formally a private residence, sewer service on the lot, which is the responsibility of the facility, may be a 4 inch. Applicant shall provide inspection report for existing sewer service to confirm 6-inch diameter all the way into the building per DUC rules.
  New Comment: Add note to upgrade to 6" sewer line should any changes occur in the future.
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- Sheet C-1: ADA sign and bollard appears to be in the space reducing the usable length of the parking. Can the sign be shifted to the edge of the sidewalk?

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Location:	43 Back River Road (Tax Map I, Lot 55-A)
Date:	August 3, 2023

- Sheet C-1: Will the ADA ramp impact the cars' ability to park a vehicle?

Fire & Inspections Services:

- Could not locate the occupant load from designer as indicated on A&M response. Please indicate location on plans or provide.
- Inspection Services would support a turn lane if and when required.

Police:

- Regarding my previous comment #1 from June 22 TRC, will clarify my meaning in person as it may have been misunderstood. Positions/orientation on the updated plan are not consistent with what was suggested for use of R6-1 One Way signs.
- Traffic Memorandum: Right-Turn Bay Analysis cites 2006 peak hour volumes on Back River Road to calculate the growth rate (also note typo in line 3, two references to "southbound"). What is the source of this data?
- Traffic Memorandum: Regarding the limiting right turn volume figure (51), how did you arrive at this number? Table 1 appears to be missing contextual comparison data for the conclusion cited. (Minor clerical note: narrative refers to it as Table 2 but labeled as Table 1)

Business Development:

Prior Comments:

- *Second curb cut not a good idea*
- *See July 2022 email from Christopher Parker*
- *Reduce curb cut to 24'*
- *Possibly need waivers from Planning Board*
- *Sight distance is an issue*
- *This scenario was contemplated in ~2004 and did not make sense*
- *Prioritizing parking out back*
- *Provide a turnaround out back*
- *Use existing curb cut for in and out*
- *Yes, we need childcare, but this site has restrictions*

Revision Comments:

- *Previous comments were prepared by the Deputy City Manager, who was not available to comment on the revised plan. The plan revisions and notes regarding the presence of ledge and other site limitations are acknowledged, but Business Development continues to prefer a design featuring a single driveway.*
- *The May 18, 2023 memo Section 5.C notes that the proposal "would not result in an increase in motorist delays or vehicle queueing over existing conditions." Has consideration been given to the safety of relocating existing queueing to the proposed ingress location? Highest risk appears to be southbound left turn into the site causing stacking with poor visibility from the rear.*
- *Would relocation of queueing/deceleration to the proposed ingress location be expected to negatively impact visibility for egress traffic at the existing driveway location?*
- *Existing driveway (proposed for egress only) is marked as a "blind driveway" by warning sign to southbound traffic roughly 200-250 feet to the north of the driveway. Do you have information regarding the provenance of this sign? (I.e. incident-based, visibility-based, requested by landowner, etc.?)*

Planning Board:

- Waiver needed for driveway sight distance; provide narrative

Next steps: Revise and submit for Planning Board.

Adjournment:

T. Clark moved to adjourn the meeting at 11:45 am. Seconded by K. Mavrogeorge. Vote: U/A

400 Harvey Road, Manchester, NH 03103 | T (603) 627-5500 | F (603) 627-5501
allenmajor.com

ALLEN & MAJOR ASSOCIATES, INC.

August 29, 2023

To: Donna Benton, AICP
Director of Planning and Community Development
City of Dover, NH
288 Central Avenue
Dover, NH 03820-4169

Copy:

A&M Project #: 3188-01

Re: TRC Response
Tax Map I, Lot 55-A
43 Back River Road

Dear Ms. Benton:

On behalf of Kniphfer LLC, Allen & Major Associates, Inc. (A&M) is pleased to provide the following responses to the Technical Review Committee comments dated August 3, 2023. A&M's responses are indicated in bold italic below the Committee's comments.

Planning:

- *Potentially a left turn lane in to the site would be needed on Back River Road which was discussed at the previous unofficial TRC this past fall.*

A&M Response: An analysis for the need of a designated turn lane was conducted and included in the updated traffic memo. The data shows that a separate turn lane is not warranted.

- *Water/sewer investment fees from expansion*
- *Impact fees on expansion*

A&M Response: The respective fees have been calculated based on the expanded use and noted in the updated narrative.

- *Please indicate snow storage area*

A&M Response: Snow storage area has been shown on the updated plans.

- *§149.14 referenced in narrative letter, please correct to §153*

A&M Response: The narrative letter has been updated and is attached.

- *Discuss if 71 trips rather than 21 additional was used, how that would affect Traffic Study.*

A&M Response: For the purposes of the comparing the impacts to the current traffic within the area, the change in the peak hour volume (21 trips) is utilized for these purposes. For the analysis for the need of a dedicated right turn lane, the proposed total trips (71 trips) was used to illustrated that even with the expanded use, a dedicated turn lane is not warranted.

- *Confirm parking lot area is screened from abutters and ROW as much as possible.*

A&M Response: The existing parking lot is screened from abutters and to the ROW to the maximum extent practical.

Engineering:

- *We did not see the updated narrative for the 4-inch sewer capacity. Please provide or comment on. Add note that should sewer service to be ungraded to a 6-inch service if and when the service is renewed.*

A&M Response: The updated narrative letter has been attached. Additionally, a note has been added to the plan regarding the upgrade.

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- *Sheet C-1: The detail for the new pavement section indicates a 1.5" top course of pavement which conflicts with the site plan that shows 1". In addition the base and subbase materials for the new pavement section called for on the plan do not match the detail. Please coordinate the detail with the plan.*

  A&M Response: The plans have been updated to correspond to the notes.

- *Sheet C-1: Check the leaders pointing to the proposed signage at the driveway entrance. It is unclear where the note Proposed "Do Not Enter Sign" and "One Way" sign is pointing to. If it is the southern sign, then it is recommended that the sign be located closer to the parking.*

A&M Response: The plans have been updated.

- *• Sheet C-1: Check orientation of the proposed signs and the direction they are pointing.*

A&M Response: The plans have been updated.

- *Sheet C-1: ADA sign and bollard appears to be in the space reducing the usable length of the parking. Can the sign be shifted to the edge of the sidewalk?*

A&M Response: The sign bollard has been re-positioned to be behind the sidewalk.

- *Sheet C-1: Will the ADA ramp impact the cars' ability to park a vehicle?*

A&M Response: The access aisle has been widened slightly to allow for a level area for the van space.

Police:

- *Regarding my previous comment #1 from June 22 TRC, will clarify my meaning in person as it may have been misunderstood. Positions/orientation on the updated plan are not consistent with what was suggested for use of R6-1 One Way signs.*

A&M Response: The signage has been updated per the discussions during the last TRC meeting.

- *Traffic Memorandum: Right-Turn Bay Analysis cites 2006 peak hour volumes on Back River Road to calculate the growth rate (also note typo in line 3, two references to "southbound"). What is the source of this data?*

A&M Response: The scrivener's error in the traffic memo has been corrected. The data for peak hour volumes is based upon the data provided from the Police Department as part of the initial TRC process.

- *Traffic Memorandum: Regarding the limiting right turn volume figure (51), how did you arrive at this number? Table 1 appears to be missing contextual comparison data for the conclusion cited. (Minor clerical note: narrative refers to it as Table 2 but labeled as Table 1)*

A&M Response: The limiting right turn volume is mathematically derived based on volume, turning movements, roadway type, and speed. The traffic memo has been updated to better illustrate this.

We thank you in advance for your anticipated cooperation regarding this project and look forward to meeting to discuss the plans.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.

Michael A. Malynowski, PE
Senior Project Manager

400 Harvey Road, Manchester, NH 03103 | T (603) 627-5500 | F (603) 627-5501
allenmajor.com

ALLEN & MAJOR ASSOCIATES, INC.

May 10, 2023 *(revised 08-29-23)*

To: Donna Benton, AICP
Director of Planning and Community Development
City of Dover, NH
288 Central Avenue
Dover, NH 03820-4169

A&M Project #: 3188-01

Re: Traffic Memorandum
Expanded Day Care Center
43 Back River Road
Dover, NH

Copy:

Dear Ms. Benton,

Allen & Major Associates, Inc. has prepared this memorandum to outline the anticipated traffic impacts generated by the proposed expanded daycare use located at 43 Back River Road and to compare that to what was existing. The proposed expansion consists of an approximately 1,780 square foot addition to the current child day care facility.

Trip Generation

In order to determine the traffic characteristics of the proposed Project, the trip-generation methodologies established by the ITE were used for the proposed uses at the site. ITE Land Use Code (LUC) 565, Dare Care Center [1], was used to develop the traffic characteristics of the Project, the results of which are summarized in Table 1.

The estimated existing vehicle trips are shown in the following Table 1:

Time Period	Total	Incoming	Outgoing
Average Weekday:	309	155	155
Weekday Morning Peak-Hour:	71	38	33
Weekday Evening Peak-Hour:	72	34	38

The proposed expanded day care operations are expected to generate approximately 309 vehicle trips on an average weekday with 71 vehicle trips (38 entering and 33 exiting) expected during the weekday morning peak-hour and, 72 vehicle trips (34 entering and 38 exiting) expected during the weekday evening peak-hour. As the facility is not in operation on Saturday, no comparison was generated for that time.

[1] *Trip Generation Manual, 10th Edition – Volume 1: Data – Institutional (Land Uses 500-599. Time of day distribution for this land use is per 1,000 square feet of occupied building and interpolated for the given site and not based upon the occupancy of the facility.*

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To provide a comparison, the proposed expansion was compared to the existing child day care facility on the property to aid in the evaluation of the potential impacts of the project on the existing network.

A summary of the data is in the Table 2 below.

Existing Day Care Center			
	Weekday		
	Total	IN	OUT
Daily	225	113	113
AM Peak	50	27	24
PM Peak	52	24	28

Proposed Expanded Daycare Center			
	Weekday		
	Total	IN	OUT
Daily	309	155	155
AM Peak	71	38	33
PM Peak	72	34	38

Net Difference			
	Weekday		
	Total	IN	OUT
Daily	84	42	42
AM Peak	21	11	9
PM Peak	20	10	10

Although there is an anticipated increase in the estimated daily trips for the project, with an approximate 21 trips during the peak hour or one additional vehicle every 6 to 7 minutes, a level of impact that would not result in an increase in motorist delays or vehicle queuing over existing conditions.

Right Turn Bay Analysis

In order to determine whether a right-turn bay be appropriate under current conditions, the 2006 existing peak hour traffic [2] on Back River Road was projected to 2023 using the 1% per year background growth rate. This results in 353 vehicles in the southbound direction and 246 vehicles in the northbound direction. Additional traffic generated by the expanded childcare center was added to the right-turn movements along Back River Road.

Input Explanation:

- *Major-road speed, mph:* 85th percentile speed as obtained from Dover Police Department Traffic Bureau for this length of roadway
- *Major-road volume (one direction), veh/h:* Total volume on Back River Road as obtained from Dover Police Department Traffic Bureau +Change in trips for expanded use as current use is already accounted for in volume from police department.
- *Right-turn volume, veh/h:* Based on turning movements anticipated for the expanded daycare use.

Table 3 shows the guideline for determining the need for a right-turn bay under proposed conditions.

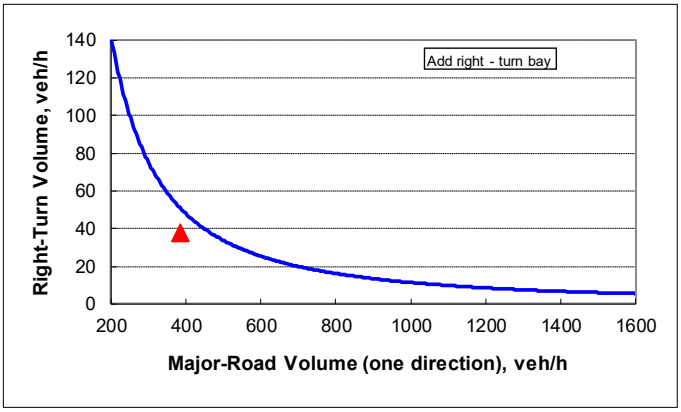
Table 3a - Right-Turn Bay Analysis - Southbound

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	47
Major-road volume (one direction), veh/h:	386
Right-turn volume, veh/h:	38

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	51
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



[2] *Data provided by Dover Police Department Traffic Bureau for Back River Road, near #78 (between Wingate and Mast)*

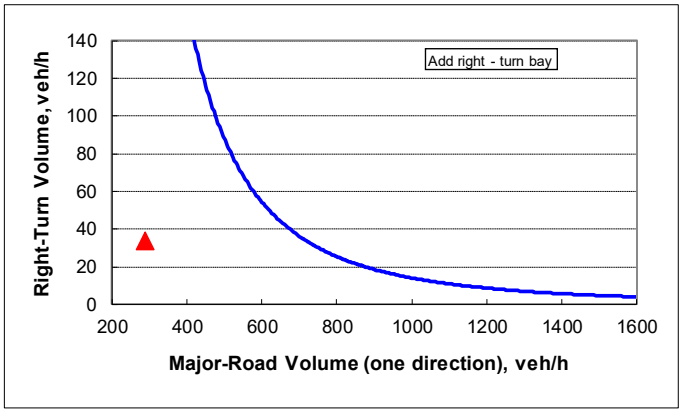
Table 3b - Right-Turn Bay Analysis – Northbound

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	40
Major-road volume (one direction), veh/h:	288
Right-turn volume, veh/h:	34

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	377
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



In the above tables, the blue line indicates the mathematical limits that would require a right turn lane and the red triangle is the calculated adjusted volume for the given parameters. As illustrated from the provided data, the need for a dedicated turn lane in both directions is not warranted.

We trust that this explanation illustrates that the proposed use changes are minor in nature as related to traffic impacts and do not require any additional mitigation.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.

Michael A. Malynowski, PE
Senior Project Manager

Day Care Center
(565)

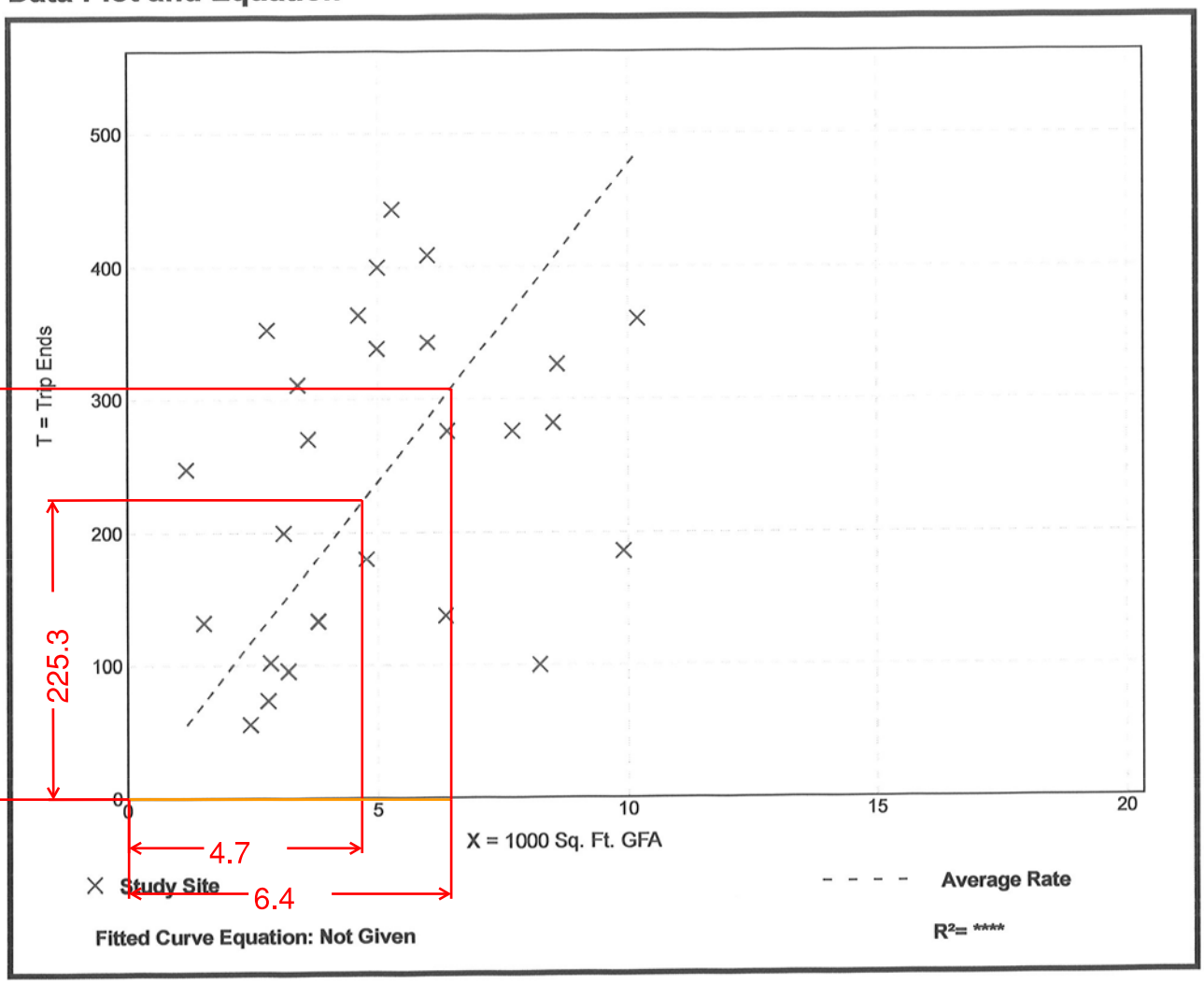
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 27
1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
47.62	12.12 - 211.06	29.78

Data Plot and Equation



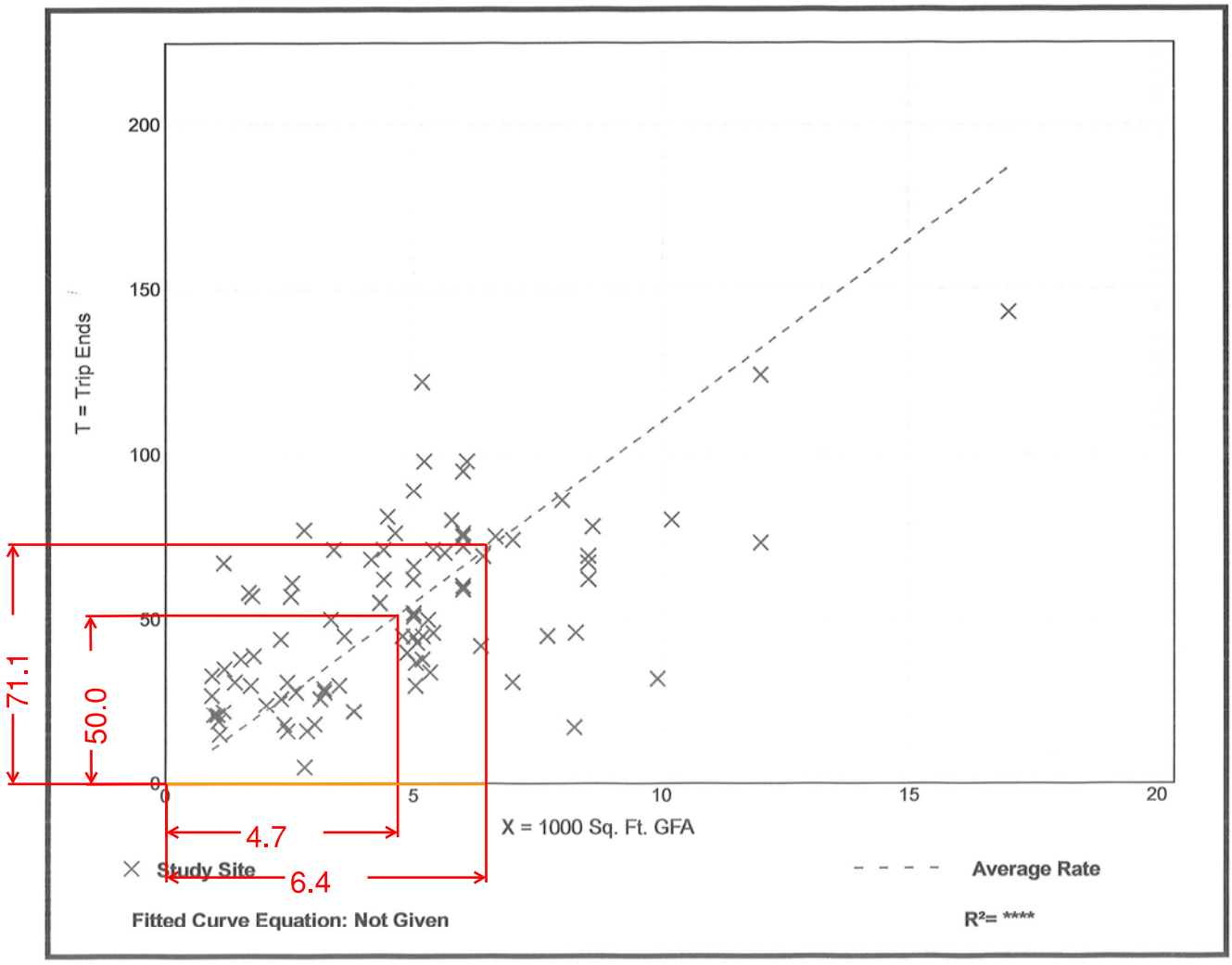
Day Care Center
(565)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 89
1000 Sq. Ft. GFA: 5
Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.00	1.79 - 57.02	6.08

Data Plot and Equation



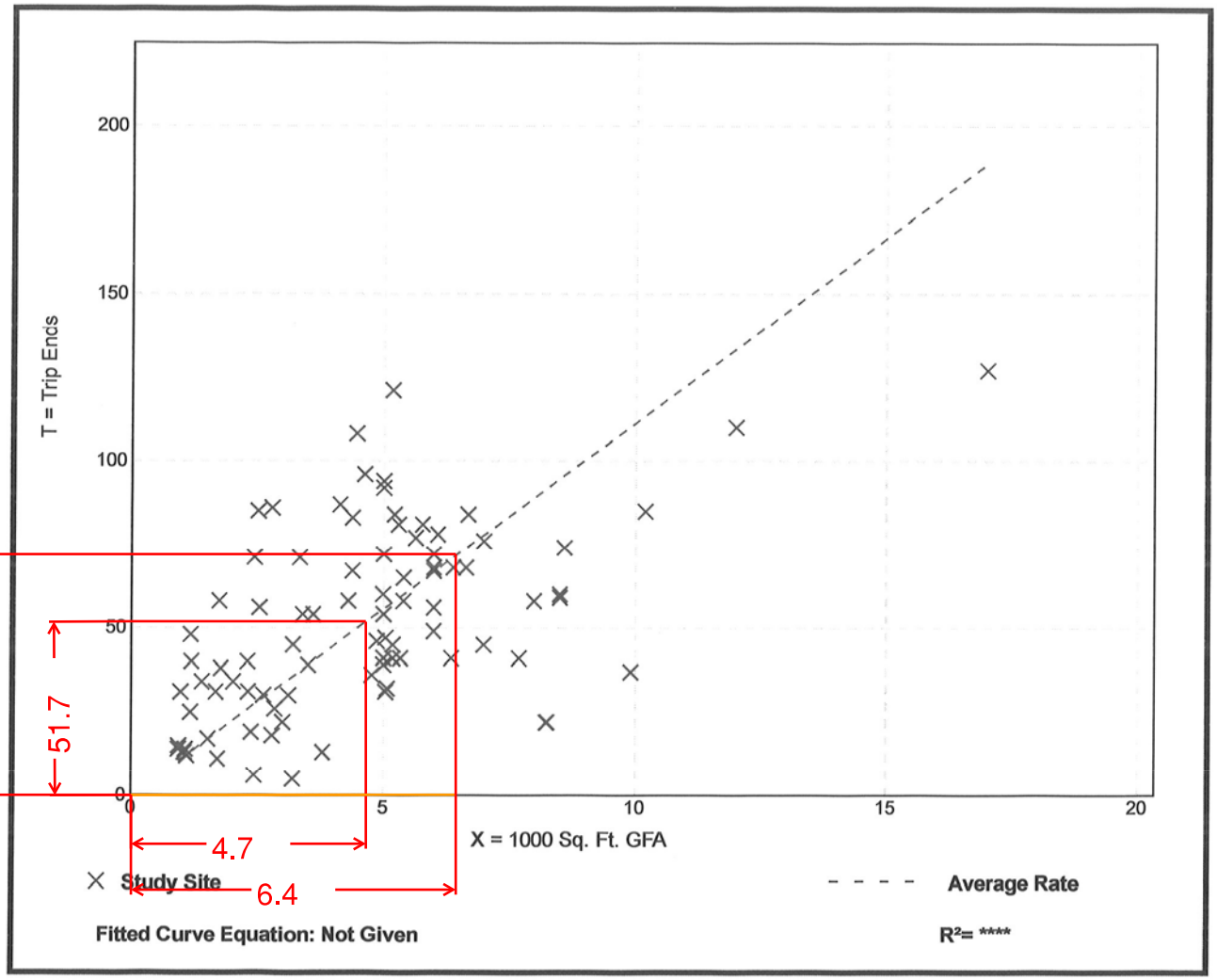
Day Care Center
(565)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	90
1000 Sq. Ft. GFA:	5
Directional Distribution:	47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.12	1.56 - 40.85	6.28

Data Plot and Equation



Dover Police Department Traffic Bureau
46 Locust Street
Dover, New Hampshire 03820
(603) 742-4646

BACK RIVER ROAD
near #78 (between Wingate and Mast)

Date Start: 27-Apr-06
Date End: 02-May-06

Southbound

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
05/02/06	0	0	0	0	1	1	2	1	0	0	0	0	0	0	5	33-42	4
01:00	1	0	0	0	2	0	3	0	0	0	0	0	0	0	6	34-43	3
02:00	0	0	0	0	2	0	1	2	0	0	0	0	0	0	5	38-47	3
03:00	0	0	0	1	0	1	2	0	0	1	0	0	0	0	5	33-42	3
04:00	1	0	0	0	2	1	3	0	0	0	0	0	0	0	7	34-43	4
05:00	2	2	0	2	3	14	12	3	1	0	0	0	0	0	39	36-45	26
06:00	1	1	1	3	7	28	42	19	4	0	0	0	0	0	106	36-45	70
07:00	**3**	3	1	2	16	**127**	**121**	23	1	1	0	0	0	0	**298**	36-45	248
08:00	2	**6**	**4**	**9**	**33**	76	105	33	5	**4**	0	0	0	0	277	36-45	181
09:00	0	0	0	0	5	45	53	18	**6**	1	0	0	0	0	128	36-45	98
10:00	2	0	0	0	8	32	61	21	3	3	0	0	0	0	130	36-45	93
11:00	2	5	2	1	4	25	78	**46**	6	3	0	0	0	0	172	41-50	124
12 PM	2	**2**	**1**	**1**	**9**	**49**	**72**	**36**	**6**	1	0	0	0	0	**179**	36-45	121
13:00	**3**	0	1	0	8	37	69	29	3	**2**	0	0	0	0	152	36-45	106
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	19	19	10	19	100	436	624	231	35	16	0	0	0	0	1509		
Percent	1.3%	1.3%	0.7%	1.3%	6.6%	28.9%	41.4%	15.3%	2.3%	1.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	08:00	08:00	08:00	07:00	07:00	11:00	09:00	08:00					07:00		
Vol.	3	6	4	9	33	127	121	46	6	4					298		
PM Peak	13:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	13:00					12:00		
Vol.	3	2	1	1	9	49	72	36	6	2					179		
Total	54	176	56	181	735	3917	7343	2645	334	142	0	0	0	0	15583		
Percent	0.3%	1.1%	0.4%	1.2%	4.7%	25.1%	47.1%	17.0%	2.1%	0.9%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	37 MPH
50th Percentile :	42 MPH
85th Percentile :	47 MPH
95th Percentile :	50 MPH

Stats

10 MPH Pace Speed :	36-45 MPH
Number in Pace :	11260
Percent in Pace :	72.3%
Number of Vehicles > 30 MPH :	15116
Percent of Vehicles > 30 MPH :	97.0%
Mean Speed(Average) :	42 MPH

Dover Police Department Traffic Bureau
46 Locust Street
Dover, New Hampshire 03820
(603) 742-4646

BACK RIVER ROAD
near #78 (between Wingate and Mast)

Date Start: 27-Apr-06
Date End: 02-May-06

Northbound

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
05/02/06	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	28-37	3
01:00	0	0	0	2	0	2	0	0	0	0	0	0	0	0	4	18-27	2
02:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	32-41	1
03:00	0	0	0	0	2	2	0	0	0	0	0	0	0	0	4	28-37	4
04:00	0	0	0	1	10	4	1	0	0	0	0	0	0	0	16	30-39	15
05:00	0	0	0	4	8	15	2	0	0	0	0	0	0	0	29	31-40	23
06:00	0	0	0	12	37	39	5	1	0	0	0	0	0	0	94	31-40	76
07:00	**1**	0	1	12	82	66	**11**	**2**	0	0	0	0	0	0	175	31-40	148
08:00	1	**1**	**3**	**21**	**106**	**68**	8	0	0	0	0	0	0	0	**208**	31-40	174
09:00	0	1	2	15	25	39	4	0	0	0	0	0	0	0	86	31-40	64
10:00	0	1	2	13	31	30	8	1	0	0	0	0	0	0	86	31-40	61
11:00	0	1	1	11	43	27	10	1	0	0	0	0	0	0	94	31-40	70
12 PM	0	0	**1**	**10**	**30**	25	7	0	0	0	0	0	0	0	73	31-40	55
13:00	0	0	1	8	23	**35**	**10**	0	0	0	0	0	0	0	**77**	31-40	58
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	2	4	11	109	398	354	67	5	0	0	0	0	0	0	950		
Percent	0.2%	0.4%	1.2%	11.5%	41.9%	37.3%	7.1%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	08:00	08:00	08:00	08:00	07:00	07:00							08:00		
Vol.	1	1	3	21	106	68	11	2							208		
PM Peak			12:00	12:00	12:00	13:00	13:00								13:00		
Vol.			1	10	30	35	10								77		
Total	48	43	102	1126	2704	2738	680	69	6	0	0	0	0	0	7516		
Percent	0.6%	0.6%	1.4%	15.0%	36.0%	36.4%	9.0%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	30 MPH
50th Percentile :	35 MPH
85th Percentile :	40 MPH
95th Percentile :	43 MPH

Stats

10 MPH Pace Speed :	31-40 MPH
Number in Pace :	5442
Percent in Pace :	72.4%
Number of Vehicles > 30 MPH :	6197
Percent of Vehicles > 30 MPH :	82.5%
Mean Speed(Average) :	35 MPH

holiday
by ATRIA
SENIOR LIVING
MAPLE SUITES

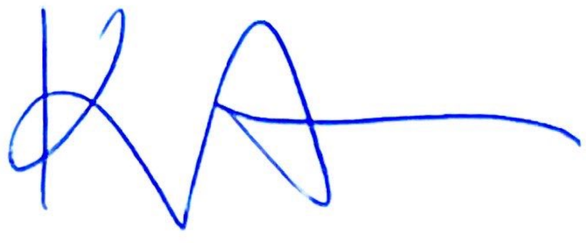
6/26/2023

To Whom It May Concern,

Holiday by Atria will not permit a second driveway on Holiday Drive for Kid's Culture.

Any questions please reach out to Khaleigh Strumlauf or Jill Ramsdell 603-742-8820.

Community Business Director



Khaleigh Strumlauf

Maple Suites
30 Holiday Dr
Dover, NH 03820
603.742.8820 | HolidaybyAtriaMapleSuites.com

Kid's Culture
Childcare & Learning Center

Signature Petition

We support the addition of the second driveway on 43 Back River Road, Dover, NH 03820.

The undersign shows support for the second driveway at 43 Back River Road, Dover, NH 03820.

Full Name	Signatured	Email/Phone
Danielle Holmes		832-614-8073
Jonathan Landry		JLandry466@gmail.com
Nadia Hayes		603-605-5232
Chris Lopes		603-534-6137
Allison Perreault		207.376.5558
Bridgette Johns		603 505 7497
Autumn Rollins		603 817 9952
Edith Shimel		423-718-3432
Anna Stamps		315-235-9060
Hanna Brown		603-748-6569
JUAN Holmes		832-905-1931
Tammy Seraiva		207-475-8526
Danielle Kennedy		603-395-0513
Elizabeth Quigley		603-819-3048
Colleen Casey		860-573-9687

Kid's Culture
Childcare & Learning Center

Signature Petition

We support the addition of the second driveway on 43 Back River Road, Dover, NH 03820.

The undersign shows support for the second driveway at 43 Back River Road, Dover, NH 03820.

Full Name	Signatured	Email/Phone
Bria Carbone	Bria Carbone	603-550-9900
Kyra Strong	Kyra Strong	603-812-8433
Asia DiBartolomeo	Asia DiBartolomeo	603-912-7138
Jasmine Couture	Jasmine Couture	207-806-7536
Jenna Ludwick	Jenna Ludwick	603-988-2655
Rebecca Wheeler	Rebecca Wheeler	603-793-4980
Jessica Galarneau		207-592-6241
Paris Pollaccia	Paris Pollaccia	949-874-2888
Lisa Carmichael	Lisa Carmichael	~~603-866-4673~~
Emma Weston	Emma Weston	9185591483
Amber Ure	Amber Ure	603-403-2745
Chris Couture	Chris Couture	207-446-8811
Patrick Mackay	Patrick Mackay	603-937-8695
Nicholle Hale	Nicholle Hale	603-~~9~~1969-1909
Tucker Bernube	Tucker Bernube	603-770-3661

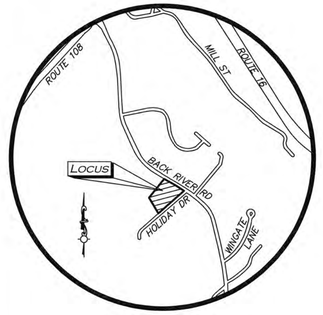
Kid's Culture
Childcare & Learning Center

Signature Petition

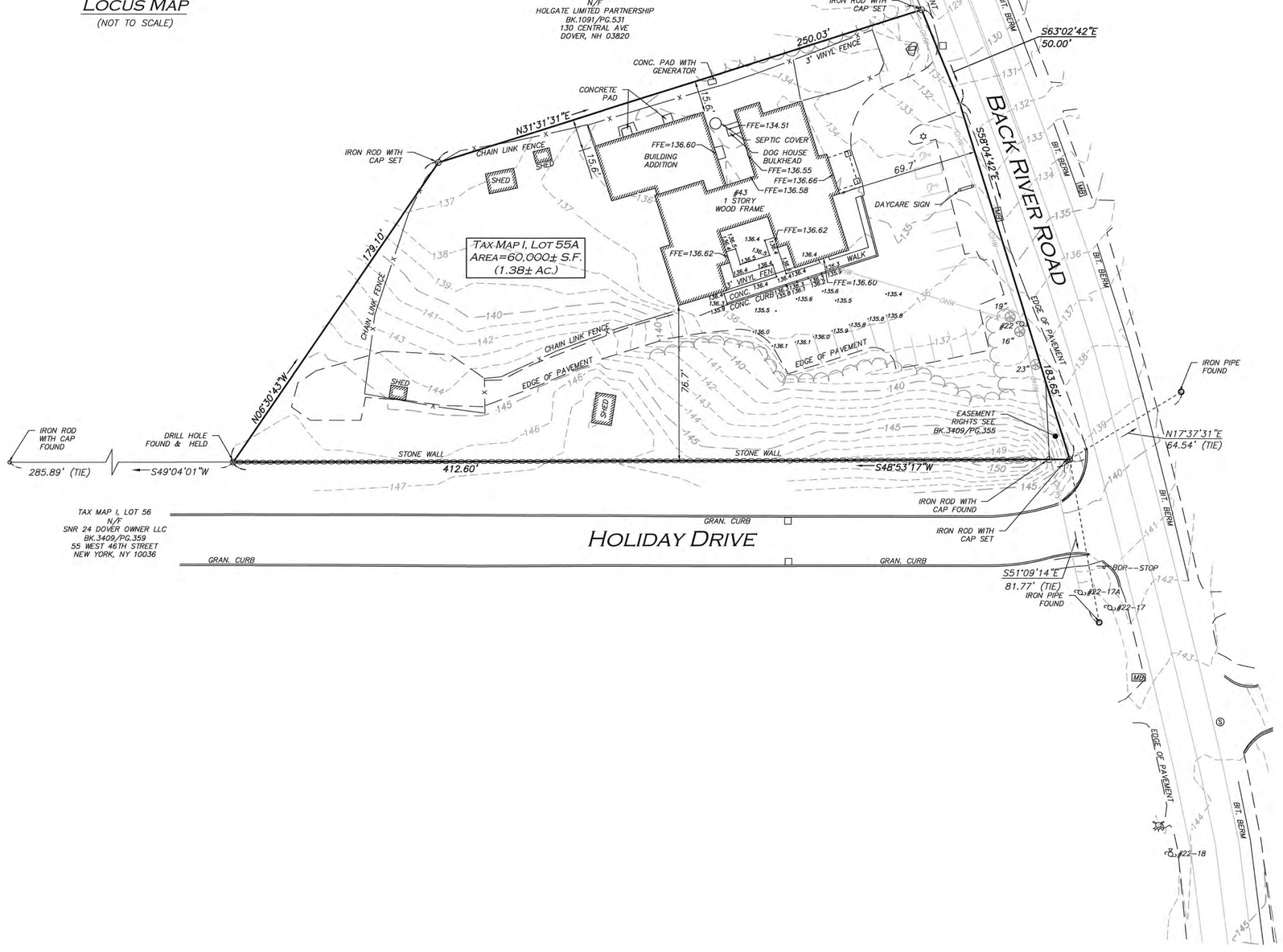
We support the addition of the second driveway on 43 Back River Road, Dover, NH 03820.

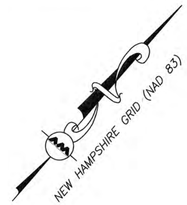
The undersign shows support for the second driveway at 43 Back River Road, Dover, NH 03820.

Full Name	Signatured	Email/Phone
Alex Farrell		9573499966
Margaux Tanguay		(603) 969-2156
Meghan Morrison	Meghan Morrison	603 205 2629
Rob in Hutchins	Robin Hutchins	6038170028
Marissa Long	Marissa Long	5013536358
Danielle Haga		603-244-0068
Timothy Perkins		978 270 0441



LOCUS MAP
(NOT TO SCALE)





LEGEND

DRILL HOLE (DH)	◉
IRON PIPE (IP)	○
IRON ROD (IR)	○
SEWER MANHOLE (SMH)	Ⓢ
CATCH BASIN (CB)	□
UTILITY POLE	
SIGN	
MAILBOX	MB
LIGHT	
WATER GATE	
PROPERTY LINE	———
ABUTTERS LINE	— — —
STONE WALL	○○○○○
EDGE OF PAVEMENT	— — —
CURB	═══
CHAIN LINK FENCE	——x——
VINYL FENCE	——n——
GAS LINE	——G——
ELECTRIC LINE	——E——
OVERHEAD WIRES	——OHW——
1' CONTOUR	— — 144 — —
5' CONTOUR	— — 145 — —
BITUMINOUS	BIT.
CONCRETE	CONC.
GRANITE	GRAN.
NOW OR FORMERLY	N/F
BOOK	BK.
PAGE	PG.

LOCUS REFERENCES

- TOWN OF DOVER TAX MAP I, LOT 55A
- S.C.R.D. BOOK 5051, PAGE 545
- PLAN ENTITLED, "PLAN OF LAND HERBERT E. MEADER DOVER, N.H.", SCALE 1"=100', DATED DECEMBER, 1949, PREPARED BY GRANT DAVIS, AND ON FILE AT THE S.C.R.D. AS PLAN 15, POCKET 3, FOLDER 1

PLAN REFERENCES

- PLAN ENTITLED, "CONDOMINIUM SITE PLAN BACK RIVER ROAD CONDOMINIUM BACK RIVER ROAD DOVER, NEW HAMPSHIRE", SCALE 1"=100', DATED DECEMBER 27, 2006, PREPARED BY TRITECH ENGINEERING CORP., AND ON FILE AT THE S.C.R.D. AS PLAN NO. 89-2.

NOTES

1. NORTH ARROW IS BASED ON NEW HAMPSHIRE GRID COORDINATE SYSTEM (NAD 83).
2. BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM THE STRAFFORD COUNTY REGISTRY OF DEEDS IN DOVER, NH.
3. VERTICAL DATUM IS NAVD 88 ESTABLISHED USING RTK GPS OBSERVATION.
4. CONTOUR INTERVAL IS ONE FOOT (1').
5. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE UNWRITTEN RIGHTS, DETERMINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

R:\PROJECTS\3188-01\SURVEY\DRAWINGS\CURRENT\3188-01 EC-STATE PLANE.DWG

THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN SEPTEMBER 29, 2022 AND JUNE 23, 2023 AND HAD AN ERROR OF CLOSURE OF NO GREATER THAN 1/10,000.

ALLEN & MAJOR ASSOCIATES, INC.

JAMES P. SMITH NH LLS #908 — 7-13-23 DATE

REV	DATE	DESCRIPTION

APPLICANT\OWNER:

KNIPHFER, LLC
30 QUARRY DRIVE
ROCHESTER, NH 03867

PROJECT:

TAX MAP I, LOT 55A
43 BACK RIVER ROAD
DOVER, NH

PROJECT NO.	3188-01	DATE:	07/13/23
SCALE:	1" = 30'	DWG. NAME:	S-3188-01-EC
DRAFTED BY:	AJR	CHECKED BY:	JPS

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
FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:	SHEET No.
EXISTING CONDITIONS	V-101

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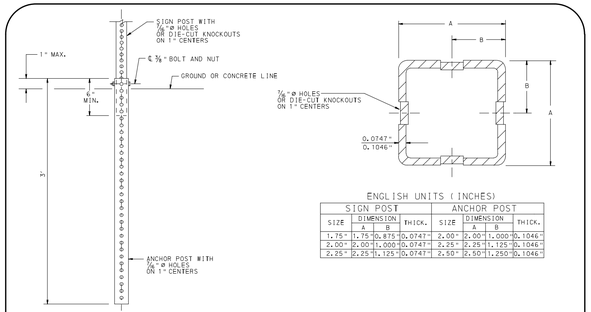
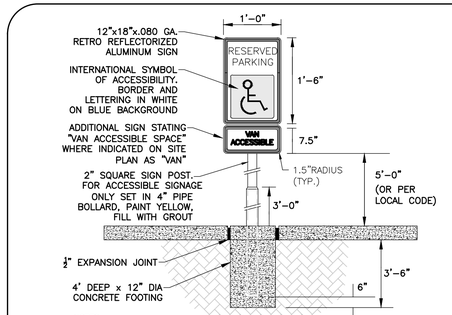


ENGLISH UNITS (INCHES)

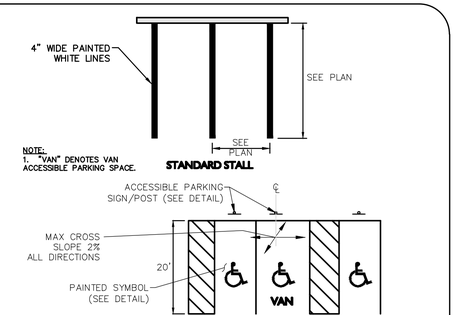
SIGN POST				ANCHOR POST			
SIZE	DIMENSION A	DIMENSION B	THICK.	SIZE	DIMENSION A	DIMENSION B	THICK.
1.75"	1.75"	0.875"	0.0747"	2.00"	2.00"	1.000"	0.1046"
2.00"	2.00"	1.000"	0.0747"	2.25"	2.25"	1.125"	0.1046"
2.25"	2.25"	1.125"	0.0747"	2.50"	2.50"	1.250"	0.1046"

SIGN POST DETAIL & SIGNAGE TABLE 1
NOT TO SCALE



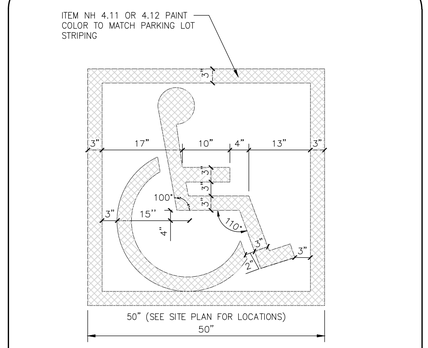
NOTES:
1. SPECIFIC CODE SHALL BE REFERENCED FOR LOCAL AND STATE REQUIREMENTS.
2. PROVIDE (1) SIGN PER ACCESSIBLE SPACE. SEE SITE PLAN FOR EXACT LOCATION.
3. EXPANSION JOINT MATERIAL NOT REQUIRED WITH FLEXIBLE PAVEMENT.

ADA ACCESSIBLE PARKING / TRAFFIC CONTROL SIGNAGE 2
NOT TO SCALE



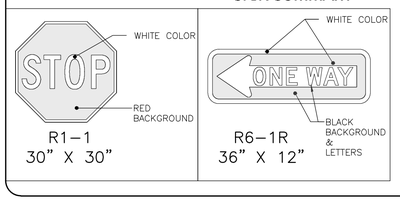
STANDARD AND VAN ACCESSIBLE PARKING SPACE

ACCESSIBLE & STANDARD PARKING STRIPING 3
NOT TO SCALE



PARKING MARKING 4
NOT TO SCALE

SIGN SUMMARY



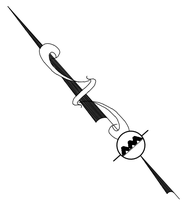
ZONING SUMMARY TABLE
MEDIUM DENSITY RESIDENTIAL (R-12) DISTRICT

ITEM	REQUIRED/ALLOWED	PROPOSED
MINIMUM LOT AREA	12,000 SF	60,000± SF
MINIMUM LOT FRONTAGE	100 FEET	233.65± LF
MINIMUM FRONT SETBACK	15' MIN 25' MAX	69.7 FT*
MAXIMUM LOT COVERAGE	30%	10.7%
MINIMUM SIDE SETBACK	15 FT	15.6 FT
MINIMUM REAR SETBACK	30 FT	128± FT
MAXIMUM BUILDING HEIGHT	35 FEET	< 35 FEET

* EXISTING NON-CONFORMING

PARKING SUMMARY TABLE

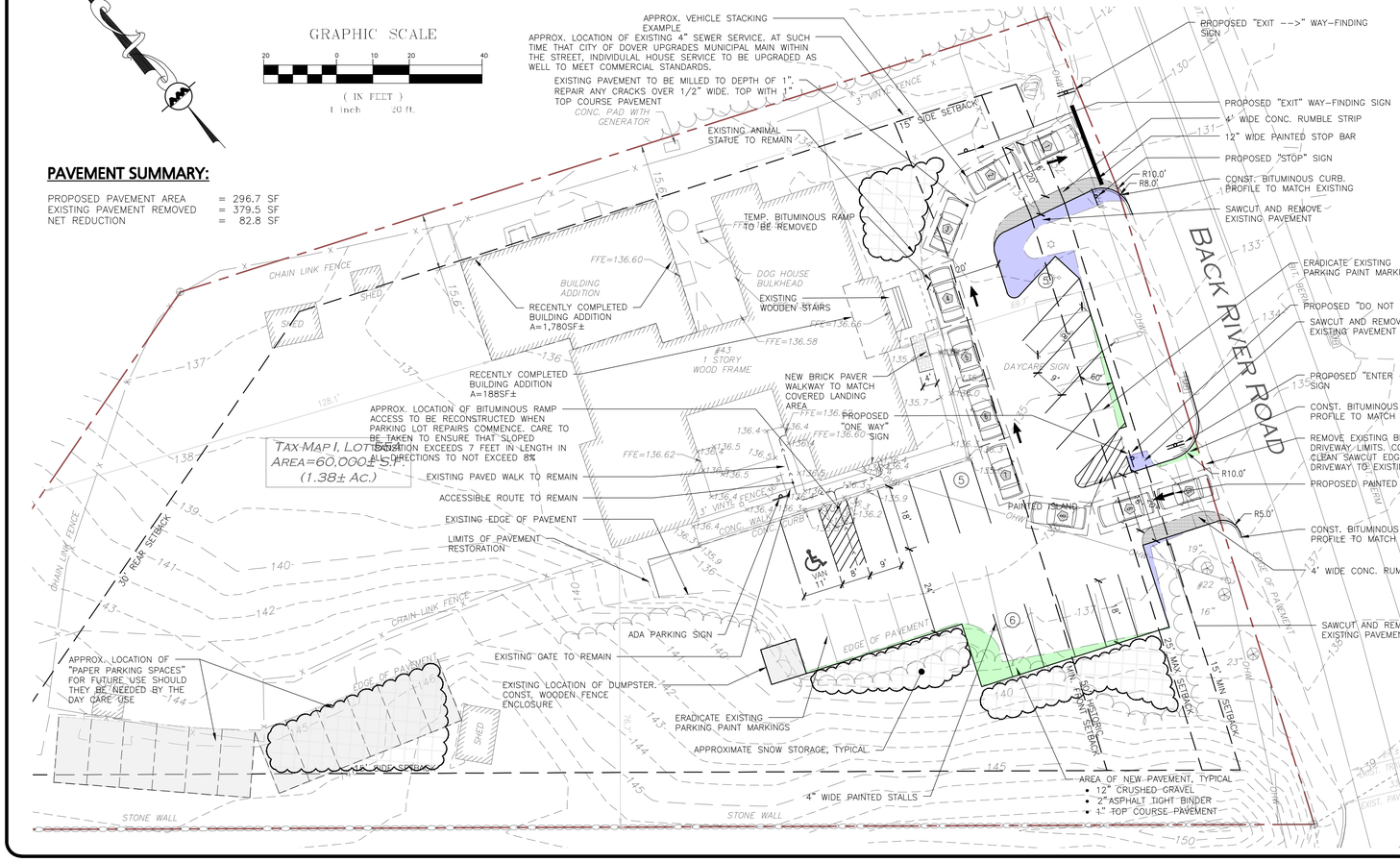
PER TABLE OF OFF-STREET PARKING REQUIREMENTS	MAXIMUM PARKING	PROPOSED PARKING
EDUCATIONAL (DAYCARE): 101 STUDENTS	31	7
0.3 SPACE PER STUDENT = 31 SPACES		
EDUCATIONAL (DAYCARE): 9 STAFF PER SHIFT	9	9
1 SPACES PER EMPLOYEE		
TOTAL PARKING PROVIDED:		16



GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

PAVEMENT SUMMARY:

PROPOSED PAVEMENT AREA	=	296.7 SF
EXISTING PAVEMENT REMOVED	=	379.5 SF
NET REDUCTION	=	82.8 SF



GENERAL 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. 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.
3. 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, INCONSISTENCES, AMBIGUITIES, OR CONFLICTS WHICH ARE DISCOVERED OR ALLEGED.
4. 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.
5. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING LOCAL, MADOT, MADEP, MUTCD, AND AASHTO.
6. 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.

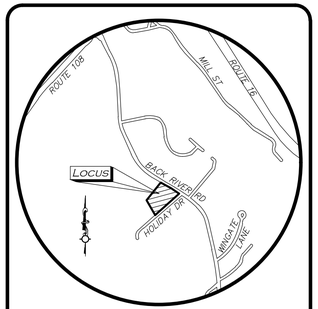
RESOURCE NOTES:

1. NO PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0320E, EFFECTIVE DATE: SEPTEMBER 30, 2015).

CITY NOTES:

1. THE PURPOSE OF THIS PLAN IS TO GAIN SITE REVIEW APPROVAL FOR A 1,968SF BUILDING ADDITION, AND ASSOCIATED PARKING LOT IMPROVEMENTS AND RE-CONSTRUCTION OF ADDITIONAL DRIVEWAY ACCESS FOR AN EXISTING CHILD CARE FACILITY.
2. THE PROPERTY IS SHOWN AS LOT 55A, ON MAP 1 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.
3. THE SUBJECT PARCEL CONTAINS 1.38 ACRES OR 60,000 SQUARE FEET AREA OF LAND.
4. TITLE REFERENCE FOR THE PROJECT PARCEL IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 5051 PAGE 545.
5. THE SUBJECT PARCEL IS SERVED BY MUNICIPAL WATER, SEWER AND ELECTRIC.
6. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
7. 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.
8. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM. NO WORK SHALL BE PERMITTED ON SATURDAY, SUNDAY, AND FEDERALLY RECOGNIZED HOLIDAYS. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR ASSISTANT CITY MANAGER.
9. THE EXISTING USE FOR THE SITE IS CHILD CARE FACILITY.
10. NO FEDERAL OR STATE PERMITS ARE REQUIRED FOR THE SUBJECT PROPERTY AT THIS TIME.
11. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
12. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
13. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
14. THE MAXIMUM PARKING SPACE CALCULATION IS **40** AND **16** SPACES ARE PROVIDED. SEE PARKING TABLE ON THIS SHEET FOR A BREAK DOWN.
15. ANY NEW EXTERIOR LIGHTING SHALL BE CUT-OFF TYPE FIXTURES PER CHAPTER 153-14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
16. TOPOGRAPHIC SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES ON OR BETWEEN *SEPTEMBER 29, 2022* AND APRIL 11, 2023
17. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.
18. AS-BUILT PLANS SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF A PROJECT. AS-BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
19. ELEVATIONS ARE BASED ON U.S.G.S NVD 1988 DATUM.

R:\PROJECTS\3188-01\CIVIL\DRAWINGS\CURRENT\C-3188-01_LAYOUT & MATERIALS.DWG



LOCUS MAP
(NOT TO SCALE)

STATE OF NEW HAMPSHIRE
MICHAEL A. MALYNOWSKI
No. 12205
LICENSED PROFESSIONAL ENGINEER

Digitally signed by Michael Malynowski
DN: cn=Michael Malynowski, o=Allen & Major Associates, Inc., ou, email=mmalynowski@allenmajor.com, c=US
Date: 2023.08.29 16:22:18 -04'00'

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
4	08-29-23	MISC. UPDATES PER CITY COMMENTS
3	07-13-23	MISC. UPDATES PER CITY COMMENTS
2	05-18-23	MISC. UPDATES PER CITY COMMENTS
1	04-14-23	UPDATE TO PARKING LAYOUT

APPLICANT\OWNER:

KNIPHFER, LLC
30 QUARRY DRIVE
ROCHESTER, NH 03867

PROJECT:

TAX MAP I, LOT 55A
43 BACK RIVER ROAD
DOVER, NH

PROJECT NO.	3188-01	DATE:	03/27/23
SCALE:	AS SHOWN	DWG.:	C3188-01_Layout & Materials
DRAFTED BY:	MM	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
FAX: (603) 627-5501
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE:	SHEET No.
PARKING LAYOUT PLAN	C-1

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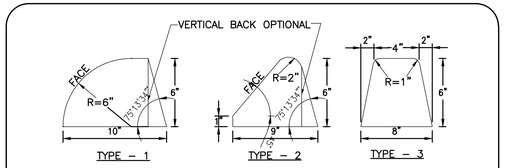
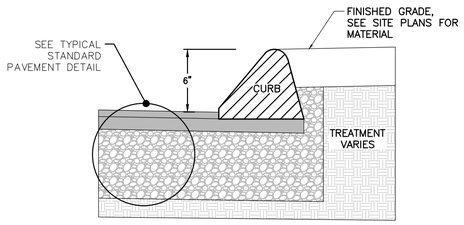
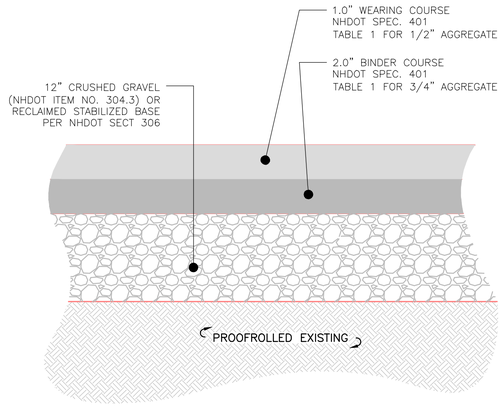
PLANNING FILE # WAIV-2023-0004





BITUMINOUS CONCRETE CURB (1)
NOT TO SCALE

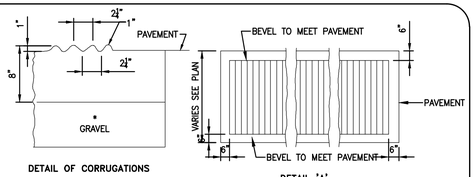


NOTES:

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.

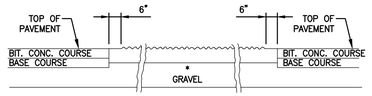
TYPICAL PAVEMENT SECTION (2)
NOT TO SCALE

NOT USED (3)
NOT TO SCALE



DETAIL OF CORRUGATIONS

DETAIL 'A'



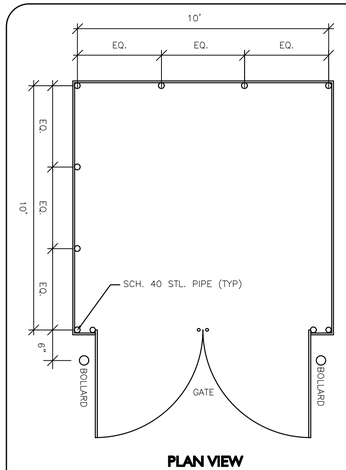
SECTION A–A

*THE DEPTH OF THE GRAVEL IS TO BE SUCH THAT ITS BOTTOM LINE MEETS THE BOTTOM OF THE GRAVEL LINE OF THE CONTIGUOUS PAVEMENT.

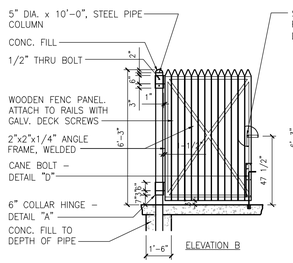
NOTES:

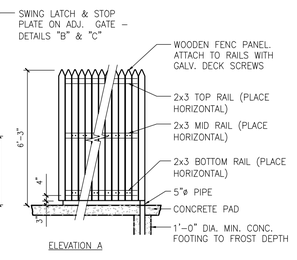
1. CONTRACTION JOINTS ARE TO BE SPACED AT A MAXIMUM OF 20' APART.
2. THE JOINTS ARE TO BE SAWED AND LOCATED IN THE DEPRESSIONS OF THE CORRUGATIONS, SEE DETAIL OF CORRUGATIONS.
3. END OF CORRUGATED RIDGES TO BE BEVELED.
4. FOR DESCRIPTION OF MATERIAL, AND CONSTRUCTION METHODS SEE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
5. SCORED CEMENT CONCRETE TO BE: 5000 PSI–3/4"–705LB/CU.YD.
6. TROUGH FLUSH W/MT OR ABOVE ADJACENT PAVEMENT FOR DRAINAGE.

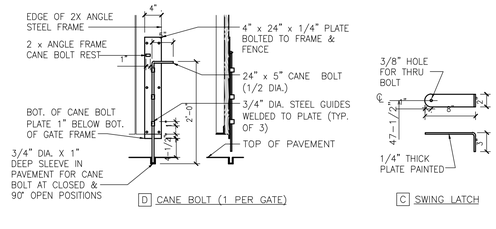
CONCRETE RUMBLE STRIP (4)
NOT TO SCALE



PLAN VIEW

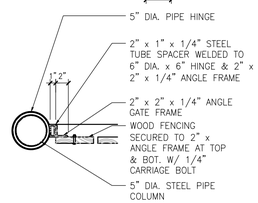




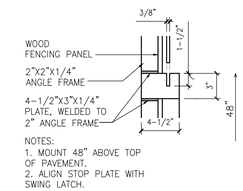


D CANE BOLT (1 PER GATE)

C SWING LATCH



A GATE HINGE DETAIL



B STOP PLATE SECTION

DUMPSTER ENCLOSURE (5)
NOT TO SCALE

R:\PROJECTS\3188-01\CIVIL\DRAWINGS\CURRENT\C-3188-01_LAYOUT & MATERIALS.DWG

STATE OF NEW HAMPSHIRE – MICHAEL A. MALYNOWSKI No. 12205 LICENSED PROFESSIONAL ENGINEER

Digitally signed by Michael Malynowski
DN: cn=Michael Malynowski, o=Allen & Major Associates, ou=Civil, email=mmalynowski@allenmajor.com, c=US
Date: 2023.08.29 16:21:58 -04'00'

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	08-29-23	MISC. UPDATES PER CITY COMMENTS
1	07-05-23	MISC. UPDATES PER CITY COMMENTS

APPLICANT\OWNER:

KNIPHFER, LLC
30 QUARRY DRIVE
ROCHESTER, NH 03867

PROJECT:

TAX MAP I, LOT 55A
43 BACK RIVER ROAD
DOVER, NH

PROJECT NO.	3188-01	DATE:	05/09/23
SCALE:	AS SHOWN	DWG.: C3188-01_Layout & Materials	
DRAFTED BY:	MM	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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FAX: (603) 627-5501
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DRAWING TITLE:

DETAILS

SHEET No.

C-2

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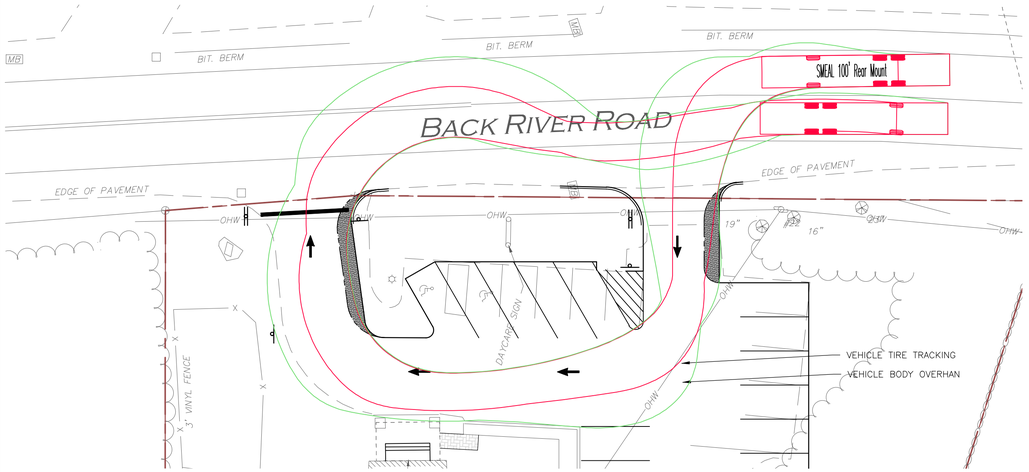
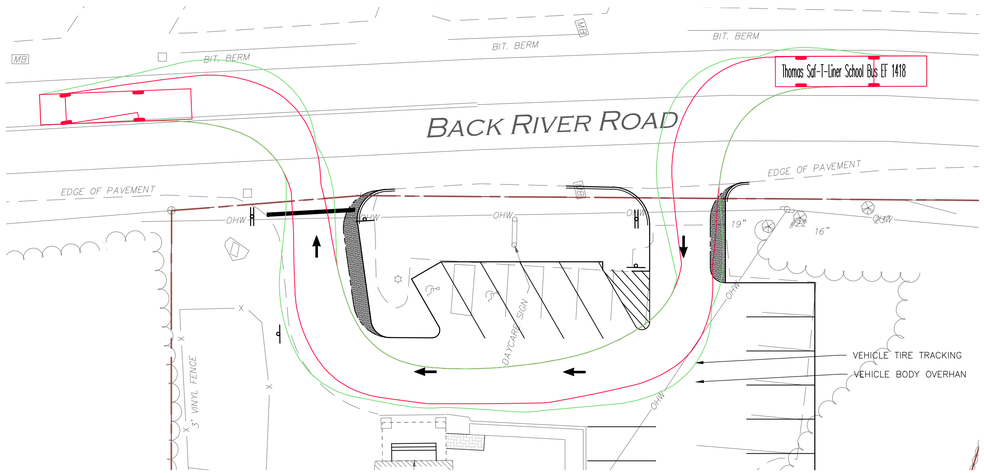
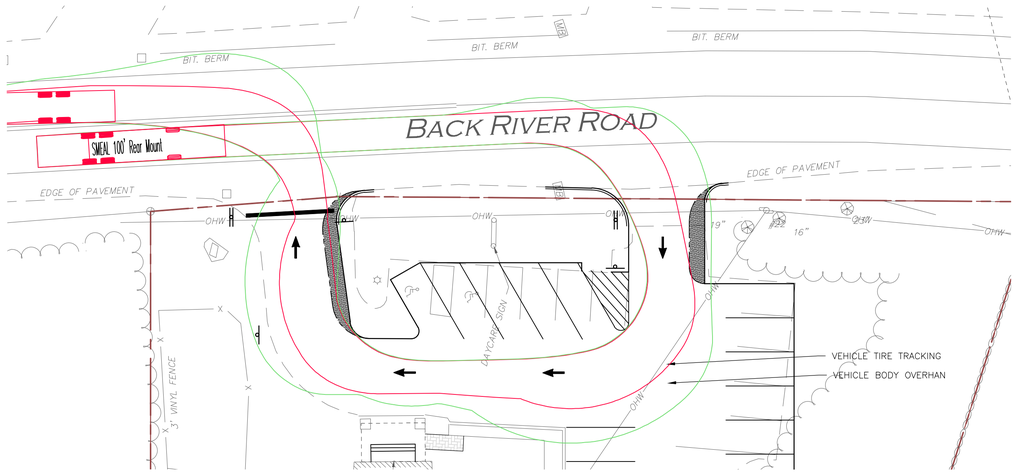
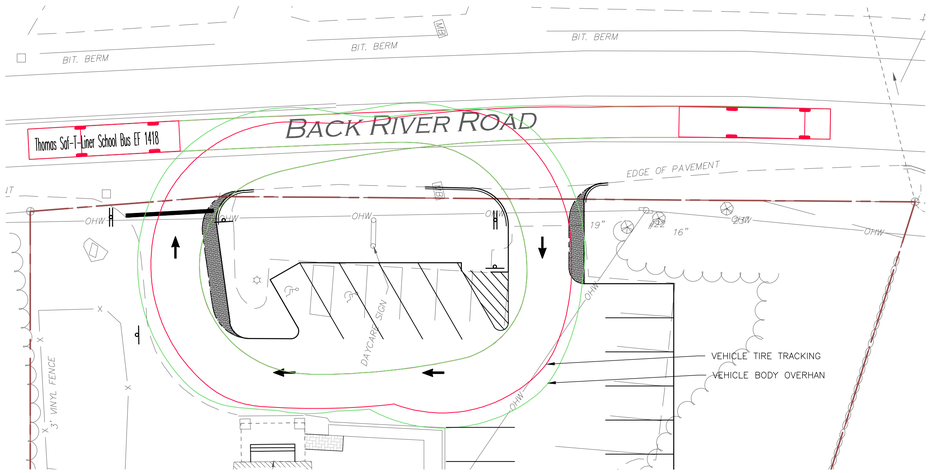
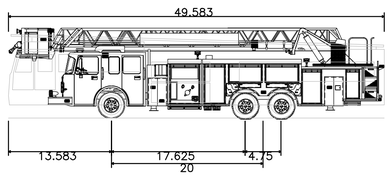




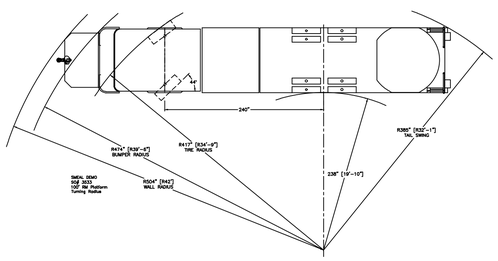


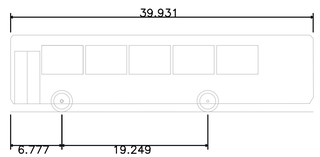




SMEAL 100' Rear Mount

Overall Length	49.583ft
Overall Width	8.333ft
Overall Body Height	11.033ft
Min Body Ground Clearance	1.718ft
Max Track Width	8.400ft
Lock-to-lock time	6.00s
Max Wheel Angle	44.00°





Thomas Saf-T-Liner School Bus EF 1418

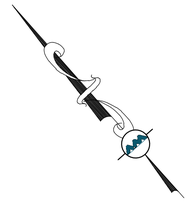
Overall Length	39.931ft
Overall Width	8.000ft
Overall Body Height	10.119ft
Min Body Ground Clearance	1.066ft
Track Width	8.000ft
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	39.333ft

GRAPHIC SCALE

0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

R:\PROJECTS\3188-01\CIVIL\DRAWINGS\CURRENT\C-3188-01_LAYOUT & MATERIALS.DWG



STATE OF NEW HAMPSHIRE
MICHAEL A. MALYNOWSKI
No. 12205
LICENSED PROFESSIONAL ENGINEER

Digitally signed by Michael Malynowski
DN: cn=Michael Malynowski, o=Allen & Major Associates, Inc., ou, email=mmalynowski@allenmajor.com, c=US
Date: 2023.08.29 16:21:36 -04'00'

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	08-29-23	MISC. UPDATES PER CITY COMMENTS
1	07-13-23	MISC. UPDATES PER CITY COMMENTS

APPLICANT\OWNER:

KNIPHFER, LLC
30 QUARRY DRIVE
ROCHESTER, NH 03867

PROJECT:

TAX MAP I, LOT 55A
43 BACK RIVER ROAD
DOVER, NH

PROJECT NO.	3188-01	DATE:	05/09/23
SCALE:	AS SHOWN	DWG.:	C3188-01_Layout & Materials
DRAFTED BY:	MM	CHECKED BY:	MAM

PREPARED BY:

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DRAWING TITLE:

VEHICLE CIRCULATION PLAN

SHEET No.

C-2

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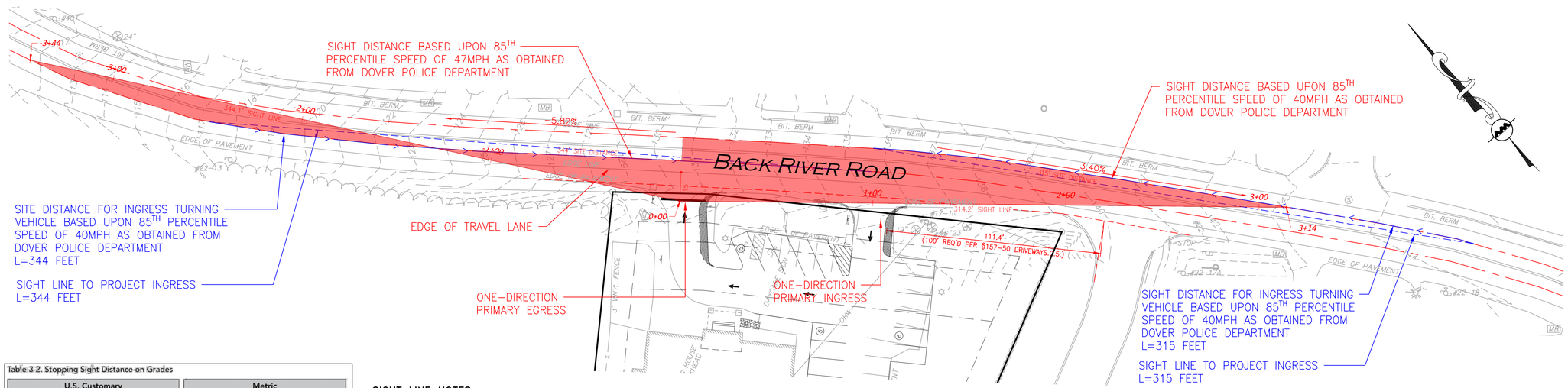


GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

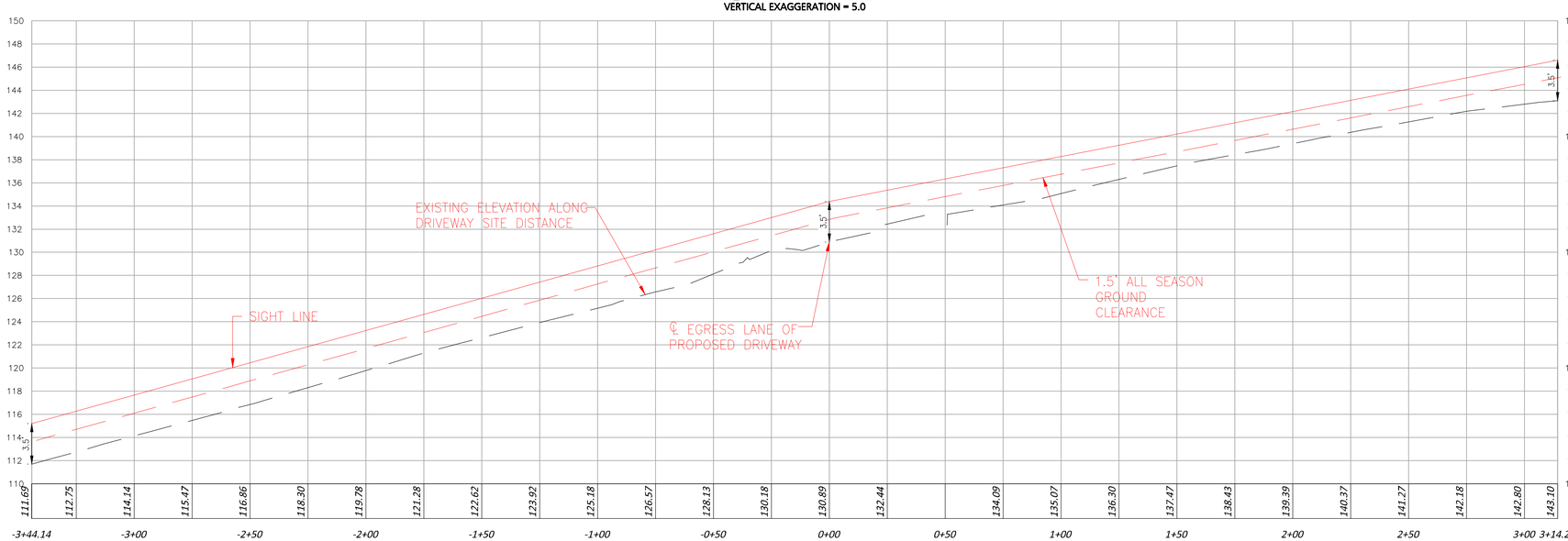
Table 3-2. Stopping Sight Distance on Grades

U.S. Customary							Metric						
Design Speed (mph)	Stopping Sight Distance (ft)						Design Speed (km/h)	Stopping Sight Distance (m)					
	Downgrades			Upgrades				Downgrades			Upgrades		
	3%	6%	9%	3%	6%	9%		3%	6%	9%	3%	6%	9%
15	80	82	85	75	74	73	20	20	20	20	19	18	18
20	116	120	126	109	107	104	30	32	35	35	31	30	29
25	158	165	173	147	143	140	40	50	50	53	45	44	43
30	205	215	227	200	184	179	50	66	70	74	61	59	58
35	257	271	287	237	229	222	60	87	92	97	80	77	75
40	315	333	354	289	278	269	70	110	116	124	100	97	93
45	378	400	427	344	331	320	80	136	144	154	123	118	114
50	446	474	507	405	388	375	90	164	174	187	148	141	136
55	520	553	593	469	450	433	100	194	207	223	174	167	160
60	598	638	686	538	515	495	110	227	243	262	203	194	186
65	682	728	785	612	584	561	120	263	281	304	234	223	214
70	771	825	891	690	658	631	130	302	323	350	267	254	243
75	866	927	1003	772	736	704	140	341	367	398	302	287	274
80	965	1035	1121	859	817	782							
85	1070	1149	1246	949	902	862							

SIGHT LINE NOTES

1. SIGHT DISTANCE BASED UPON AASHTO DESIGN GUIDELINES UTILIZING 85TH PERCENTILE SPEEDS AS OBTAINED BY DOVER NH POLICE DEPARTMENT
2. TOPOGRAPHIC INFORMATION BASED UPON ACTUAL ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES, INC. BETWEEN FEBRUARY 24 AND 27, 2023.

200_SIGHT DISTANCE LINE PROFILE
VERTICAL EXAGGERATION = 5.0



GRAPHIC SCALE

30 0 15 30 60
3 0 1.5 3 6

Horizontal: 1 inch = 30 ft.
Vertical: 1 inch = 3 ft.

R:\PROJECTS\3188-01\CIVIL\DRAWINGS\CURRENT\C-3188-01-PL-SIGHT-DIST.DWG

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	07-13-23	MISC. UPDATES PER CITY COMMENTS
1	05-09-23	MISC. UPDATES PER CITY COMMENTS

APPLICANT\OWNER:

KNIPHFER, LLC
30 QUARRY DRIVE
ROCHESTER, NH 03867

PROJECT:

TAX MAP I, LOT 55A
43 BACK RIVER ROAD
DOVER, NH

PROJECT NO.	3188-01	DATE:	03/27/23
SCALE:	1" = 30'	DWG.:	C-3188-01-PL-SIGHT-DIST
DRAFTED BY:	MM	CHECKED BY:	MAM

PREPARED BY:

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civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
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MANCHESTER, NH 03103
TEL: (603) 627-5500
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DRAWING TITLE:

SIGHT DISTANCE FIGURE

SHEET No.

C-4

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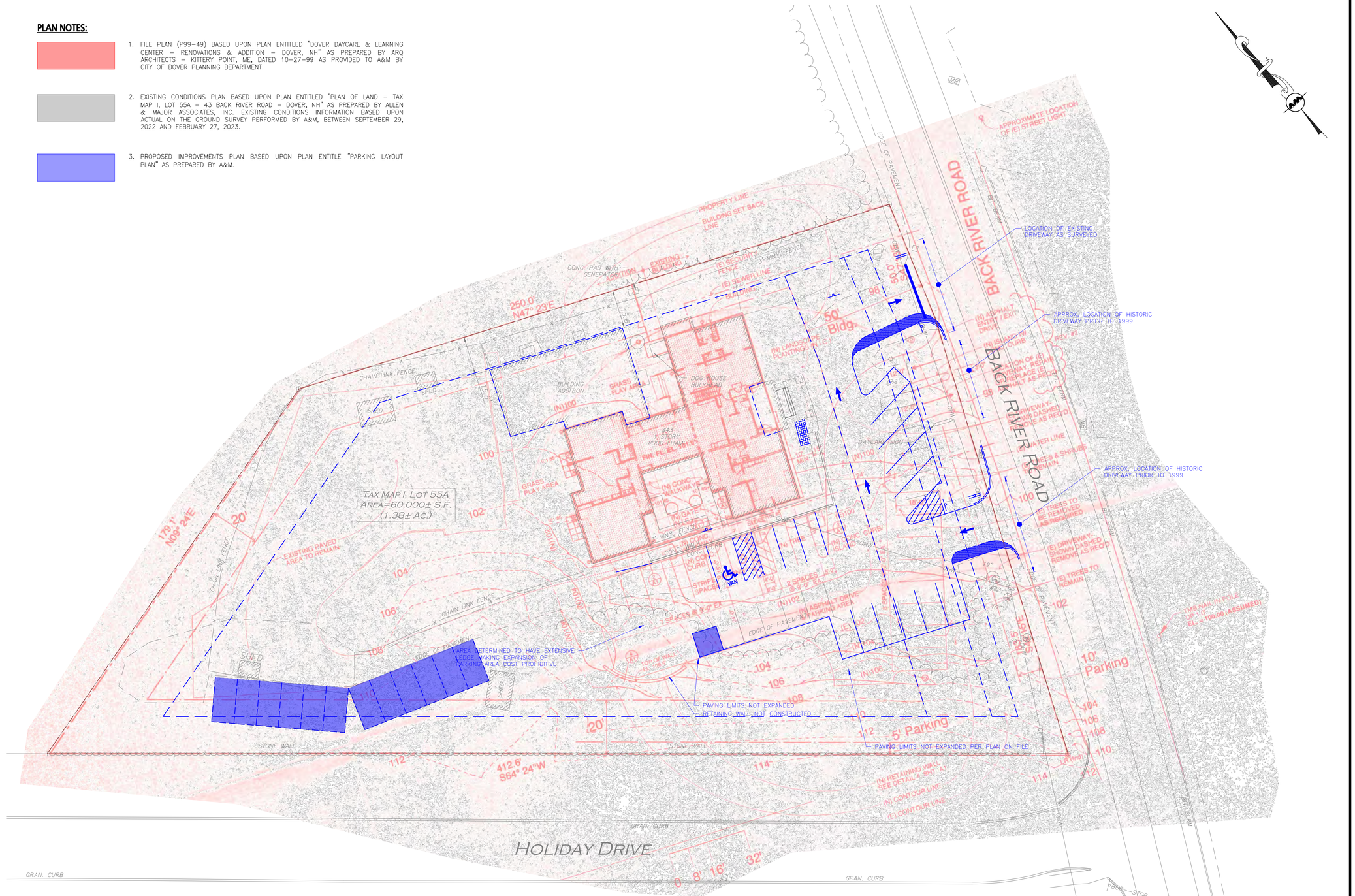
PLAN NOTES:

1. FILE PLAN (P99-49) BASED UPON PLAN ENTITLED "DOVER DAYCARE & LEARNING CENTER – RENOVATIONS & ADDITION – DOVER, NH" AS PREPARED BY ARQ ARCHITECTS – KITTERY POINT, ME, DATED 10-27-99 AS PROVIDED TO A&M BY CITY OF DOVER PLANNING DEPARTMENT.
2. EXISTING CONDITIONS PLAN BASED UPON PLAN ENTITLED "PLAN OF LAND – TAX MAP I, LOT 55A – 43 BACK RIVER ROAD – DOVER, NH" AS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC. EXISTING CONDITIONS INFORMATION BASED UPON ACTUAL ON THE GROUND SURVEY PERFORMED BY A&M, BETWEEN SEPTEMBER 29, 2022 AND FEBRUARY 27, 2023.
3. PROPOSED IMPROVEMENTS PLAN BASED UPON PLAN ENTITLE "PARKING LAYOUT PLAN" AS PREPARED BY A&M.



GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

1 inch = 20 ft.

R:\PROJECTS\3188-01\CIVIL\DRAWINGS\CURRENT\C-3188-01_COMPARISON.DWG

REV	DATE	DESCRIPTION
1	07-13-23	MISC. UPDATES PER CITY COMMENTS

APPLICANT\OWNER:

KNIPHFER, LLC
30 QUARRY DRIVE
ROCHESTER, NH 03867

PROJECT:

TAX MAP I, LOT 55A
43 BACK RIVER ROAD
DOVER, NH

PROJECT NO.	3188-01	DATE:	05/09/23
SCALE:	AS SHOWN	DWG.:	C-3188-01_Comparison
DRAFTED BY:	MM	CHECKED BY:	MAM

PREPARED BY:

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DRAWING TITLE:

COMPARISON PLAN

SHEET No.

C-5

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CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #WAIV-2023-0005

Application Type:	Site Plan Amendment
Applicant(s):	Dewberry Engineers, Inc.
Owner(s):	Giri Dover 200, Inc.
Location:	200 Sterling Way (Assessor's Map 11, Lot 2-4)
Meeting Date:	September 26, 2023

INTENT: Proposal is to install three (3) Electric Vehicle Charging Stations in parking lot, totaling twelve (12) chargers.

AGENDA ITEM #: 4-D

UNITS PROPOSED: EV Chargers

ACREAGE: 2.6± acres

ZONING DISTRICT: C

EXISTING LAND USE: Commercial

PROPOSED LAND USE: Commercial/Residential

SURROUNDING LAND USE: Commercial, Residential

ZBA ACTION: N/A

ATTACHMENTS: Application materials, Amended Site Plan

APPLICATION IS COMPLETE: Yes

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for this meeting

PERMITS REQUIRED: N/A

WAIVERS REQUESTED: 153-14(3)(c)—EVSE signage

TRCs: June 29, 2023 and August 31, 2023

Summary of Request and Background
The applicant is seeking to amend a previously approved site plan to add Electric Vehicle (EV) chargers to the existing parking lot. The proposal is to add 2 EV charging stations with a total of 12 charger ports. These chargers are proposed to be Tesla chargers and meet the requirements of our EVSE regulations, save the signage requirement.

This amendment request was reviewed by the TRC on June 29, 2023 and August 31, 2023 (most recent minutes attached).

Summary of Waiver Request:
Chapter 153-14(3)(c) explains the requirements for parking spaces containing Electric Vehicle Supply Equipment (EVSE). That section outlines the need for directional signs as well as signage at the chargers that indicate the space is for EV charging only days and hours of operations if time limits or tow-away provisions are to be enforced, and voltage and amperage levels and any time of use, fees, and important safety instructions are included. The applicant felt that Tesla chargers for Tesla customers only did not need this level of signage.

STAFF RECOMMENDATION-Waivers:
§153-21 of the Site Plan Review Regulations states the "Planning Board may waive specific provisions of these regulations. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that:

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

Planning staff finds the waiver requests for EVSE signage are supported under criterion (2) above as the applicant proposes to only provide ADA signage as shown on the plans.

Therefore, the Planning Department recommends the Planning Board accept the application, open the public hearing, and vote to approve the waiver with subsequent conditions, as the plans meet the standards outlined.

Subsequent Conditions to Be Met Prior to the Signing of the Plans:

1. A note be added that waivers for from the 153-

14(3)(c) for EVSE signage and the Board found the criteria of Chapter 153-21 have been met.

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

STAFF RECOMMENDATION:
The Planning Department recommends the Planning Board make necessary findings and vote to approve the Site Plan amendment with the following subsequent conditions as the plans meet the standards outlined:

Subsequent Conditions to Be Met Prior to Signing of Plans:

1. The applicant shall provide the Planning Department with a digital version of the final plan set.
2. Provide a CAD file to the satisfaction of the Asset Management Administrator's satisfaction.
3. The applicant shall revise the plan set to:
   3.1. Add owners' signatures;
   3.2. Add all professional signatures and stamps.
   3.3. Add note that all previous conditions still apply.
   3.4. Ensure all common notes are on the plan set.

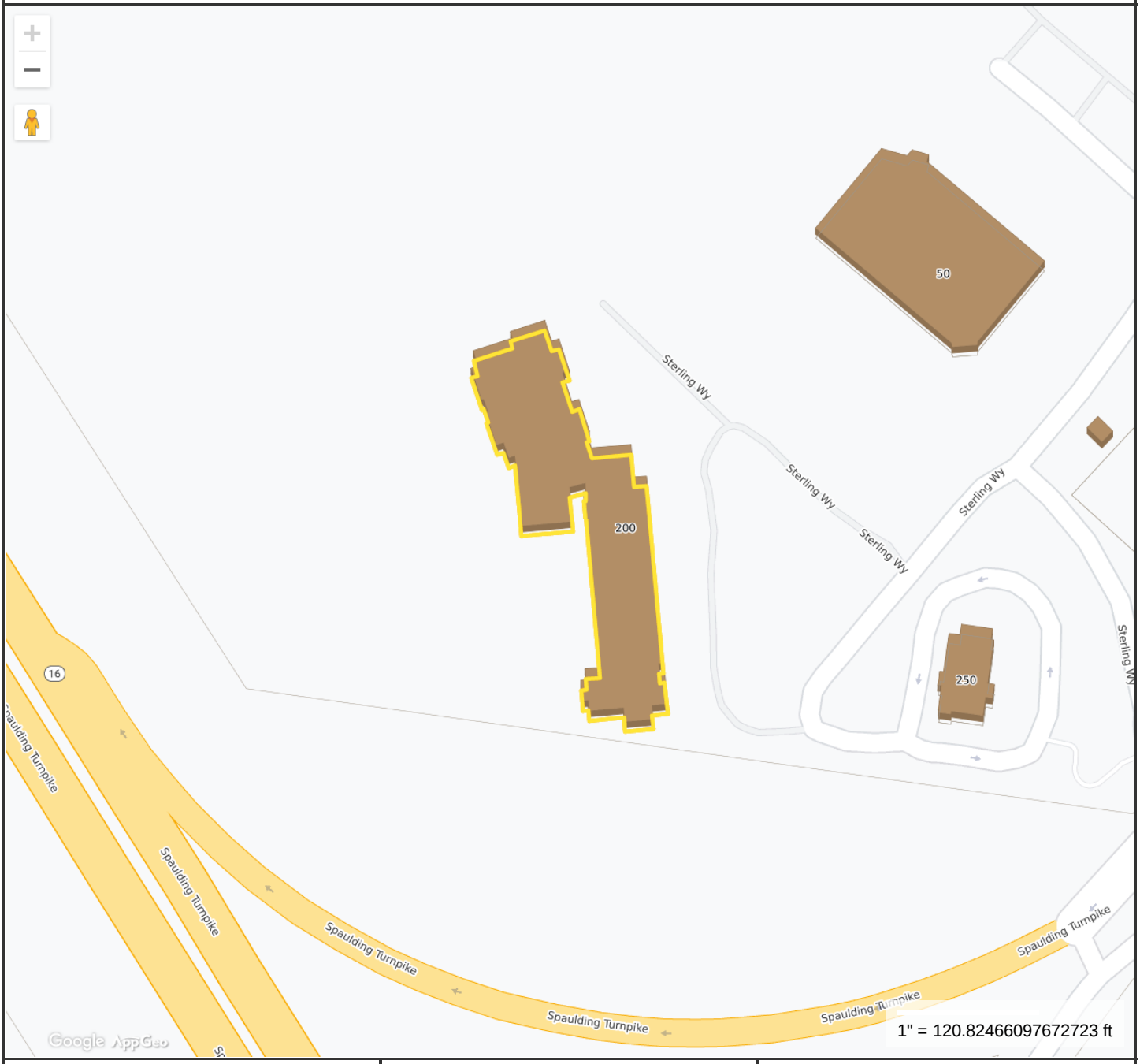
Subsequent Conditions to Be Met Prior to any Construction:

4. A site construction sign with the contact information for the general contractor must be located and approved by the City Engineer or Planning Director.

Subsequent Conditions to Be Met Prior to Completion:

5. Impact fees as applicable will be invoiced through the permit portal and shall be paid.
6. The applicant shall provide a letter of credit or other form of security acceptable to the City for any unfinished work.
7. As-builts are sent to City of Dover.
8. Issuance of the Certificate of Completion.

WAIV-2023-0005 200 Sterling Way



Property Information

Property ID	11002-000004
Location	200 STERLING WY
Owner	GIRI DOVER 200 INC
Land Use	300
Zoning Code	C

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 7/10/2023
Data updated Daily

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

PLAN SNAPSHOT REPORT WAIV-2023-0005
FOR CITY OF DOVER, N.H.

Plan Type:	Waiver / Extension / Amendment	**Project:**		**App Date:**	06/07/2023
Work Class:	Plan	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	In Review	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Blonigen, Rachel	**Approval Expire Date:**	
Description:	Electric vehicle charging station installed in parking lot				

Parcel:	11002-000000	Main	**Address:** 200 Sterling Wy Dover, 03820	Main	**Zone:** C(Non-Residential - Commercial)

Owner
Rakesh Shah
Home: (508) 369-0654
Mobile: (508) 369-0654

Applicant
Matt Tilden
Home: (617) 531-0813
Mobile: (617) 797-4528

Applicant
Robert E Glenn
600 Parsippany Road Suite
301 Suite 301
Parsippany, NJ 07054
Home: (304) 268-8125
Business: (304) 268-8125
Mobile: (304) 268-8125

Plan Custom Fields

Project Location	200 Sterling Way, Dover NH 03820	Waiver Request Type	Amendment	Project Name	Tesla EVCS TRT #32502
Owner Phone	508-369-0654	Owner Name	GIRI DOVER 200 INC	Original Plan Approval Date	Mar 22 2016 12:00AM
Owner Address	225 W Squantum Street, Ste 200, Quincy MA 02171	Owner EMail		Plan ID Number	P15-56
Plan Type	Site Plan	Extension Request Detail		Condition / Portion of Plan to be Amended	Parking lot adjacent to retail shopping building
Amendment Request Detail	Installation of Electric Vehicle Charging Station Station in parking lot, including (3) Tesla Pre-Assembled Supercharger Units (PSU) each with: (1) V3 Supercharger Cabinet and (4) Charge Posts. Installation of (1) 480V Switchgear and (1) Pad Mounted Utility Transformer	Site / Subdivision Portion of Plan to be Waived		Waiver Request Detail	

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Robert_Glenn_6/7/2023.jpg	06/07/2023 12:50	Glenn, Robert		Uploaded via CSS
WAIV-2023-0005 Snapshot report.pdf	06/08/2023 12:17	Blonigen, Rachel		
2023.06.29_PlanningTechnicalReviewCommittee_WAIV-2023-0005.pdf	07/19/2023 12:43	Blonigen, Rachel		Approved TRC Minutes
WAIV-2023-0005 Snapshot Report.pdf	08/16/2023 17:02	Blonigen, Rachel		
2023.08.31_PlanningTechnicalReviewCommittee.SterlingWay_WAIV-2023-0005.pdf	08/31/2023 14:32	Blonigen, Rachel		Draft TRC Minutes

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00003701	Planning Waiver / Extension /Amend Application Fee	$200.00	$200.00
	Total for Invoice INV-00003701	**$200.00**	**$200.00**
	Grand Total for Plan	**$200.00**	**$200.00**

PLAN SNAPSHOT REPORT (WAIV-2023-0005)

Meeting Type	Location	Scheduled Date	Subject
Technical Review Committee Meeting v.1	City Hall, Second Floor Conference Room	08/31/2023	Technical Review Committee Meeting

Meeting Custom Fields

TRC Meeting Document Posted Date	Aug 31 2023 12:00AM	TRC Meeting Next Steps	Revise and resubmit for 2nd TRC
TRC Meeting Next Steps	Update Plans and submit for PB		

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Approved	08/30/2023	09/27/2023	09/05/2023	No	Yes

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Approved	08/30/2023	09/27/2023	08/31/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Approved	08/30/2023	09/27/2023	08/31/2023

Comments: Project: P23-05 – 200 Sterling Way EV Charging Station
TRC Meeting: August 31, 2023 (Meeting #2)
Reviewer: Ken Mavrogeorge, PE – City Engineer
Checked by: Engineering Staff

- C-4:
  - Provide 7 ft of clearance below the lowest sign on a pole.
- General Comment:
  - Provide Construction Sign detail per Standard City details.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Approved	08/30/2023	09/27/2023	08/31/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	Approved	08/30/2023	09/27/2023	08/31/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Kypfer, Natasha	Approved	08/30/2023	09/27/2023	08/31/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	Approved	08/30/2023	09/27/2023	08/31/2023

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		06/08/2023 12:23	
Confirm application complete v.1	Generic Action		06/07/2023 14:44
Confirm application complete v.1	Generic Action		08/16/2023 16:57
Technical Review Committee Meeting Agenda v.1	Task	08/16/2023 16:57	08/16/2023 16:58
Technical Review Committee Meeting Agenda v.1	Task	06/08/2023 12:23	08/16/2023 16:54
Land Use Plan Technical Review v.1	Receive Submittal		08/16/2023 16:58
Land Use Plan Technical Review v.1	Receive Submittal		08/16/2023 16:55
Technical Review Committee Meeting v.1	Hold Meeting	08/16/2023 16:56	08/16/2023 16:57
Technical Review Committee Meeting v.1	Hold Meeting	08/16/2023 16:58	08/25/2023 15:13
Review v.2		08/22/2023 0:00	09/05/2023 15:11
Confirm application complete v.1	Generic Action	08/22/2023 0:00	08/30/2023 11:04
Confirm application complete v.1	Generic Action	08/30/2023 0:00	
Technical Review Committee Meeting Agenda v.1	Task	08/30/2023 11:02	08/30/2023 11:04

PLAN SNAPSHOT REPORT (WAIV-2023-0005)

Technical Review Committee Meeting Agenda v.1	Task	08/30/2023 0:00	
Land Use Plan Technical Review v.1	Receive Submittal	08/30/2023 0:00	09/05/2023 15:11
Land Use Plan Technical Review v.1	Receive Submittal	08/30/2023 0:00	
Technical Review Committee Meeting v.1	Hold Meeting	08/30/2023 0:00	
Technical Review Committee Meeting v.1	Hold Meeting	09/05/2023 15:09	09/05/2023 15:11
Planning Board v.1		09/05/2023 15:12	
Planning Board Agenda v.1	Task	09/05/2023 15:12	09/12/2023 12:35
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Plan Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Plan Activity		
NOD Sent to Applicant v.1	Create Report		
Final Plan v.1			
Land Use Plan Final Review v.1	Receive Submittal		
Land Use Plan Stamped and Signed v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Recording v.1	Task		
Property Info Group v.1	Generic Action		
Building Official Notifies Address v.1	Generic Action		
Pre-Con Meeting v.1	Hold Meeting		
Create/Link to Records v.1			
Create / Link to Permit - Building Complex v.1	Create Sub Permit		
Create / Link to Permit - Site Work, Construction v.1	Create Sub Permit		

LETTER OF AUTHORIZATION

APPLICATION FOR SITE PLAN/ZONING/USE/BUILDING PERMIT

The undersigned, **GIRI DOVER 200 INC.**, owner of the below described Property ("Owner"), does hereby appoint **Tesla Inc. (Tesla)** and/or **Dewberry Engineers Inc. (Dewberry)** and their employees, agents and contractors, as Owner's agent for the purpose of filing and completing any approval or application necessary to ensure its ability to use and/or construct improvements to the Property leased or licensed to it for the purpose of installing an electric car charging facility and for constructing or installing charging stations and related equipment on the Property as Tesla Inc. may require for its electric car charging system. I understand that the application may be denied, modified or approved with conditions and that those conditions or modifications must be complied with prior to issuance of building permits. Owner hereby authorizes the employees of the jurisdiction to enter upon the Property during normal business hours as necessary to inspect the Property for the purpose of processing this application. **Tesla and/or Dewberry** will be responsible for all costs, fees and expenses incurred in securing any approval.

Property Located at: 200 Sterling Way, Dover NH ("Property")

Owner's Name: **GIRI DOVER 200 INC.**

By _____

Printed Name: Ashish Sangani

Title: President

Date Executed: 04/27/2023

Site Name: The Garrison Hotel & Suites

Dewberry

September 5, 2023

City of Dover, NH Planning Boad
c/o Department of Planning and Community Development
288 Central Avenue
Dover, NH 03820

Re: Tesla Electric Vehicle Charging Stations
200 Sterling Way (Tax Map 11, Lot 2-4) (the "Property")
Planning File #WAIV-2023-0005
Request for Waiver

To Who It May Concern:

Dewberry Engineers Inc. as Applicant ("Dewberry"), has submitted a Site Review Amendment Application now pending under the referenced File Number.

Under the plans submitted by Dewberry for the proposed charging stations (the "Plans"), there will be no signage installed on the Property relating to the charging stations, other than ADA signage for the ADA-compliant changing post/stall.

Pursuant to the Technical Review Committee Minutes dated August 31, 2023 and Section 153-21 of the Dover City Ordinances, Dewberry is hereby requesting a waiver of certain EVSE signage requirements.

Specifically, Dewberry requests that the Planning Board waive the requirements for EVSE signage under Section 153-14(3)(c), subsections [3] and [4] of the Dover City Ordinances and allow the charging stations to be installed with only the ADA signage as shown on the Plans.

The basis for this request is that Tesla provides all required information concerning the location and operation of the electric vehicle charging stations to the EV operator via the electric vehicle itself or via an application downloaded on the user's smartphone. Supplying this information via the internet abrogates the need for the signage required under the cited ordinance sections.

Respectfully submitted,

Dewberry Engineers Inc.

By Matthew Tilden

Matthew Tilden,
Senior Associate, Project Manager

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – WAIV-2023-0005

Application Type:	Site Review Amendment
Applicant(s):	Dewberry Engineers, Inc.
Owner(s):	Giri Dover 200, Inc.
Location:	200 Sterling Way (Tax Map 11, Lot 2-4)
Date:	August 31, 2023

INTENT: Proposal is to install three (3) Electric Vehicle Charging Stations in parking lot, totaling twelve (12) chargers.

UNITS PROPOSED: n/a

AGENDA ITEM #: 2

ACREAGE: 2.6± acres

ZONING DISTRICT: C

EXISTING LAND USE: Hotel, Parking lot

PROPOSED LAND USE: Addition of EVSE in parking lot

SURROUNDING LAND USE: Commercial, Spaulding Turnpike, Residential

ZBA ACTION: None

PREVIOUS TRC: June 29, 2023

RELIEF/WAIVERS REQUESTED:
- Submit for EVSE signage waiver

ATTENDANCE:
Members:
Natasha Kypfer, Planning & Zoning
Tom Clark, Planning Board,
James Burdin, Business Development
Marn Speidel, Police
Ken Mavrogeorge, Engineering
Jim Maxfield, Fire & Inspection Services
Others:
Ed Noseworthy, Tesla

PLAN REVIEW:
Planning:
- Provide waiver request for EVSE signage
- *Lighting plan or details for new fixture* add to plan
- *Revise plan to add:*
  - *Planning File # WAIV-2023-0005* (add to title block corner on all sheets)
  - *Confirm all common notes are added*
  - Streetscape?
  - Are the stations lit?

Engineering:
- C-4:
  - Provide 7 ft of clearance below the lowest sign on a pole.
- General Comment:
  - Provide Construction Sign detail per Standard City details.

Fire & Inspections Services: N/A

Police:
- How are the parking spaces regulated in terms of use? Managed by hotel or Tesla? Towed?

Business Development:
- Response memo acknowledged. No new comments.

Planning Board:
- Clarify total number of EVSE's; see Sheet C-4 and typo

Next steps: Revise submission based on comments and submit for Planning Board.

Adjournment:
M. Speidel moved to adjourn the meeting at 11:37 am. Seconded by K. Mavrogeorge. Vote: U/A

DRAFT

Dewberry

Dewberry Engineers Inc.
99 Summer Street, Suite 700
Boston, MA 02110-1200

617.695.3400
617.695.3310 fax
www.dewberry.com

August 16, 2023

RE: Technical Review Committee Minutes – WAIV-2023-000
200 Sterling Way Tax map 11, Lot 2-4)
Proposal is to install three (3) Electric Vehicle Charging Stations in parking lot, totaling twelve (12) chargers.

To Whom It May Concern,

The following letter is in reference to the comments received at the Technical Review Committee Meeting – WAIV-2023-000, on June 29,2023. Application responses below in red.

PLAN REVIEW:

Planning:

- Provide letter to serve, Electric Utility – A letter to serve was submitted at the 6/29/23 meeting and an email copy sent.
- Confirm this meets Dover's EVSE regulations, §153-14.D.(3)(c)(4)
  - a. The electrics vehicle supply equipment meets the most current infrastructure codes and standards.
  - b. Tesla does not install signage. When open to the public, any operating information can be found on the Tesla app. Otherwise on the internal Tesla operating system. Applicant requests a waiver for this sections.
  - c. An existing light behind the charges will be used for site lighting. The light will be slightly relocated due to proximity of charging equipment.
- Lighting plan or details for new fixture - An existing light behind the charges will be used for site lighting. The light will be slightly relocated due to proximity of charging equipment.
- Revise plan to add:
  - Planning File # WAIV-2023-0005 - Completed
  - Confirm all common notes are added – Completed on sheet (4) Gn-3
- Add parking common note and discuss how this impacts parking overall - Completed on sheet (4) Gn-3. Any person can park in the Tesla EV charging spaces so the EV charging does not affect the existing parking counts.
- Utility boxes will need to be screened – Arborvitae? Completed – Arborvitae trees have been added to screen the utility transformer and the switchgear cabinet.
- Consecutive pages number – Completed

Engineering:

• GN-1:

o Site Work Notes 1.3F and 1.3G: water, sewer, and drainage utilities shall not be relocated or removed without notifying the City prior to any work. – Completed

• C-1:

o Show limits of existing subsurface drainage, and label. – Completed

• C-2:

o Label existing light, and indicate if it is to remain or be removed. – Completed

o Confirm existing curb is granite. – Completed
• C-3:
o Confirm proposed work and permanent structures will not impact existing subsurface drainage. - The revised plans have moved the existing transformer and switchgear to be behind the PSU's Additionally the PSU have been shifted Northwest. Only a very small section of one PSU will overlap the existing sub-surface drainage and should not have an impact on it.
o Recommend providing bottom of wall elevations – Completed
o Confirm if existing granite curb in front of charging units is to remain or be reset. – Granite curb in front of PSU units will remain. The granite curb in front of the ADA stall (3D) will be removed.
o Evaluate location of proposed accessible parking space. - The location of the ADA has been moved to the opposite end of the parking isle to post 3D.
o Confirm if proposed curb is to be granite to match existing, or will be concrete as noted. – Existing curb is granite and labeling on the plans was corrected to match the existing.
o Recommend showing radius of proposed curbing - Compeleted
• C-4:
o Detail 3: confirm if charging unit is to be flush as shown, or if there will be a curb reveal as shown in the elevation views and to match existing conditions. - The top of the PSU will be flush with the top of the granite curb. The standalone changer for the ADA stall will be flush with the existing pavement.
• C-5:
o Recommend accessible parking signage to meet MUTCD requirements for R7-8 and R7-8p. Clarify "Disabled Access Sign". – As discussed at the meeting the signage is so that it does not eliminate the use of the stall, but used as the last resort.
o Show/indicate where on bollard accessible signs will be placed; height of signs from pavement. – Completed on sheet (8) C-4 detasl 4 & (10) C-6 detail 2.
o Detail 7: confirm existing and proposed curb is to be granite - Existing curb is granite and labeling on the plans was corrected to match the existing.

Fire & Inspections Services:
• Submitted stamped plans shall include the standard note detail for design compliance with applicable accessible regulations and NH RSA 155-A :5 – Note added to sheet (4) Gn-3.
• Provide reach ranges on charger details – Completed on sheet (10) C-6 detail 6.
• G-1 and C-5, Clarify curb height with bituminous grade height – 6"± AGL curb height from bituminous grade height.- Completed on sheet (8) C-4 detail 1&3.
• Provide confirmation to service from Electric utility. - A letter to serve was submitted at the 6/29/23 meeting and an email copy sent.

Police: N/A

Business Development:

• Do you anticipate the primary users of the superchargers will be pass-through traffic on the Spaulding or people otherwise visiting the hotel/retail on site? –Tesla anticipates the primary users to be a mix of pass-through traffic, patrons of the hotel/retail on sit, and local users.

• Has the placement of the chargers been discussed with the businesses on site to find an appropriate balance between easy access and high visibility for charging users and relocating parking for their other customers? – Yes chargers have been discussed with businesses and have been agree too via our agreement with the property owner. Tesla does not require any visibility since the vehicle gives turn by turn directions to the site but believe they have found a nice balance of easy access to the chargers without affecting parking/operations for the businesses.

• Do you see any opportunities to incorporate information about Dover into the project to encourage pass-through chargers to explore the city beyond exit 8? (e.g. URL or QR code for a visitor landing page, etc.) - Tesla has a Findus page where all Supercharger sites can be found and all information pertaining to the site/location can be viewed. We do find that many Tesla customers end up stopping in towns where there is charging and end up exploring the town whereas they may not have had a reason to stop in that town previously.

Planning Board:

• Other vehicles besides Tesla? - Tesla has plans to open up it's entire network but when and how that happens is TBD. For right now this site will be Tesla only.

Sincerely,
Dewberry Engineers Inc.

Matthew F. Tilden

Matthew F. Tilden
Project Manager

EVERSOURCE ENERGY

June 19, 2023

1700 Lafayette Road
Portsmouth, NH 03801

Trevor S Emmons
603-332-7515
Trevor.emmons@eversource.com

Donna Benton, AICP
Director of Planning & Community Development
City of Dover NH
288 Central Ave
Dover, NH 03820

Dear Ms. Benton:

I am responding to your request to confirm the availability of electric service for the proposed 200 Sterling Way, Dover NH project being constructed for/by Tesla.

The proposed project consists of installing electric vehicle charging station for Tesla at ground level. The proposed development will be constructed in the parking lot off Sterling Way.

The developer will be responsible for the installation of all underground/overhead facilities and infrastructure required to service the new building. The proposed service will be fed new transformer connected between 3C/32T1 and 3C/32T2. The developer will work with Eversource to obtain all necessary easements and licenses for the proposed underground/overhead facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to this proposed development. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

The attached Eversource mapping shows transformer location to service the proposed project.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements For Electric Supply" (https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2).

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Rochester Office, 603-332-7515

Respectfully.

Trevor Emmons
Eastern Regional Engineer, Eversource

cc: Michael J. Busby, PE, Eastern Regional Engineering and Design Manager, Eversource
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource

WAIV-2023-0005 **200 STERLING WAY**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
11002-000000	STERLING WY	VMD EQUITIES DVR LLC	C/O VMD COMPANIES LLC	733 TURNPIKE ST RTE 114	NORTH ANDOVER	MA	01845
11002-000003	STERLING WY	VMD EQUITIES DVR LLC	C/O VMD COMPANIES LLC	733 TURNPIKE ST RTE 114	NORTH ANDOVER	MA	01845
11002-000004	200 STERLING WY	GIRI DOVER 200 INC		2300 CROWN COLONY DR STE 203	QUINCY	MA	02169-0902
		DEWBERRY ENGINEERS	ROBERT GLENN	600 PARSIPPANY ROAD SUITE 301	PARSIPPANY	NJ	07054

WAIV-2023-0005

TESLA

DOVER, NH

TRT ID: 32502

SITE ADDRESS:
200 STERLING WAY
DOVER, NH 03820

SITE INFORMATION

PROPERTY OWNER:
GIRI DOVER 200 INC,
2300 CROWN COLONY DR STE 203
QUINCY, MA 02169-0902

PARCEL ID:
APN: 11002-000004

POWER COMPANY:
EVERSOURCE
CONTACT: COUTURE, ALAN P
ALAN.COUTURE@EVERSOURCE.COM
WORK ORDER #: 11309086

COUNTY:
STAFFORD, NH

LATITUDE*:
43° 11' 20.82" N

LONGITUDE*:
70° 53' 16.09" W
*BASED ON GOOGLE EARTH

CONTACT PROJECT MANAGER:
MATTHEW TILDEN
DEWBERRY ENGINEERS INC.
(617) 531-0831
MTILDEN@DEWBERRY.COM

CONTRACTOR NOTE

CONTRACTOR SHALL COMPLETE INSTALL PER THE SIGNED AND SEALED SET OF DRAWINGS. ANY NECESSARY DEVIATIONS FROM THE DRAWINGS MUST BE SUBMITTED THROUGH AN RFI REQUEST PROCESS WITH ENGINEERING FOR AN APPROVAL PRIOR TO CONTRACTOR PROCEEDING WITH A DEVIATION OF THE SIGNED AND SEALED SET OF DRAWINGS.

APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

NEW HAMPSHIRE STATE BUILDING CODE, CONSISTENT WITH THE FOLLOWING CODES:

2018 INTERNATIONAL RESIDENTIAL CODE (IRC)
2018 INTERNATIONAL BUILDING CODE (IBC)
2018 INTERNATIONAL EXISTING BUILDING CODE (IBC)
2020 NATIONAL ELECTRICAL CODE (NEC)

IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.

PROJECT DESCRIPTION

- INSTALL (3) TESLA PRE-ASSEMBLED SUPERCHARGER UNITS (PSU) EACH WITH:
  - (1) V3 SUPERCHARGER CABINET
  - (4) CHARGE POSTS
- INSTALL (1) 480V SWITCHGEAR
- INSTALL (1) PAD MOUNTED UTILITY TRANSFORMER

ZONING INFORMATION

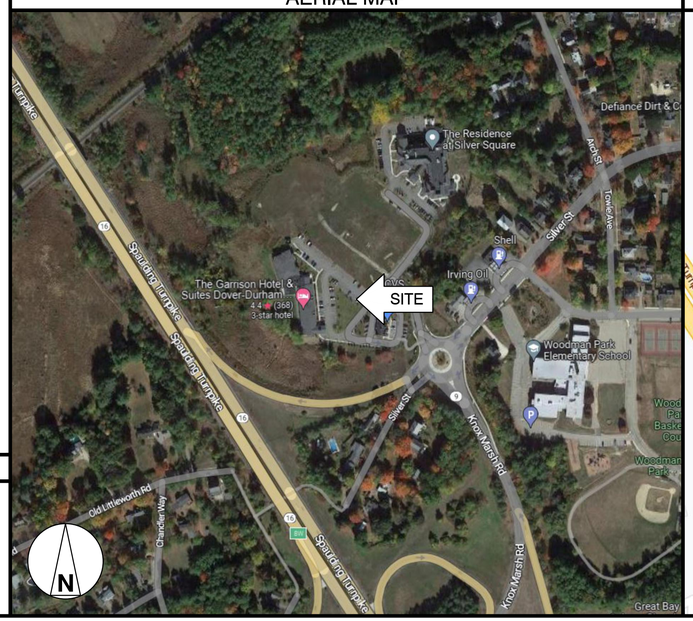
PERMITTING JURISDICTION: CITY OF DOVER, NH

ZONING DISTRICT: C (COMMERCIAL)

BUILDING SETBACKS:

FRONT:	30'
SIDE:	12'
REAR:	15'
ABUTTING STREET:	30'

AERIAL MAP



LOCATION MAP

DRAWING INDEX

SHT. NO.	SHEET TITLE
T-1	TITLE SHEET
GN-1	GENERAL NOTES I
GN-2	GENERAL NOTES II
GN-3	CITY OF DOVER COMMON SITE PLAN NOTES
C-1	SITE PLAN
C-2	EXISTING CONDITIONS & DEMO PLAN
C-3	EQUIPMENT & PARKING PLAN
C-4	CONSTRUCTION DETAILS I
C-5	CONSTRUCTION DETAILS II
C-6	CONSTRUCTION DETAILS III
C-7	CONSTRUCTION DETAILS IV
E-1	ELECTRICAL ONE-LINE DIAGRAM
E-2	UTILITY PLAN & DETAILS
G-1	GROUNDING SCHEMATIC & DETAILS

BEFORE SCALING

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE TESLA REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL BEFORE YOU DIG

811 DigSafe MA·ME·NH·RI·VT

UNDERGROUND SERVICE ALERT
UTILITY NOTIFICATION CENTER
811 OR 1-888-344-7233

3 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

WAIV-2023-0005

TESLA
3500 DEER CREEK ROAD
PALO ALTO, CA 94304
(650) 681-5000

Dewberry®
Dewberry Engineers Inc.
4835 LBJ FREEWAY
SUITE 475
DALLAS, TX 75244
TX FIRM #: F-6548
PHONE: 469.232.5200

STATE OF NEW HAMPSHIRE · BENJAMIN B. REVETTE No.13830 LICENSED PROFESSIONAL ENGINEER ·

09/05/2023

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

SUBMITTALS

REV.	DATE	DESCRIPTION
4	09/05/23	FOR CONSTRUCTION
3	08/16/23	FOR CONSTRUCTION
2	07/19/23	FOR CONSTRUCTION
1	07/17/23	FOR CONSTRUCTION
0	03/31/23	FOR CONSTRUCTION
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:
DOVER, NH
TRT ID: 32502

SITE ADDRESS:
200 STERLING WAY
DOVER, NH 03820

SHEET TITLE
TITLE SHEET

SHEET NUMBER
(1) T-1

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   GENERAL CONTRACTOR(s) OR SUB–CONTRACTOR(s) – CIVIL CONTRACTOR AND/OR ELECTRICIAN CONTRACTOR
   PROJECT OWNER/CONSTRUCTION MANAGER – TESLA
   PROJECT HOST – LEGAL PROPERTY OWNER
   ENGINEER – DEWBERRY ENGINEERS INC.

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING THE GENERAL CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT OWNER PRIOR TO THE COMMENCEMENT OF WORK.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. THE GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE THE INSTALLATION AS INDICATED ON THE DRAWINGS FOR A FULLY FUNCTIONAL CHARGING STATION AND COMPLETE PROJECT.

6. THE SUB–CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON DRAWINGS, THE GENERAL CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE PROJECT ENGINEER. ONLY WRITTEN APPROVALS SHALL BE DEEMED TO CONFIRM ANY SUCH CHANGES AS BEING APPROVED.

8. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT UNIQUE JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK.

9. THE GENERAL CONTRACTOR SHALL REVIEW ROUTING OF CONDUIT, POWER AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING PLAN DRAWING. THE GENERAL CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONSTRUCTION MANAGER AND PROJECT HOST.

10. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE PROJECT HOST. THE GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

11. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF GENERAL CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE CONSTRUCTION MANAGER IMMEDIATELY.

12. APPLICABLE BUILDING CODES:
    THE GENERAL CONTRACTORS WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    THE GENERAL CONTRACTOR WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
    MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION

13. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

14. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.

15. THE GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER GENERAL CONTRACTOR(S) AND/OR SUB–CONTRACTOR(S).

16. CONSTRUCTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE.

17. THE GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND GENERAL CONTRACTOR(S) AND/OR SUB–CONTRACTOR(S) TO THE SITE AND/OR BUILDING.

18. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

19. THE GENERAL CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

20. THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE PROJECT HOST 48 HOURS PRIOR TO COMMENCEMENT OF WORK.

21. THE GENERAL CONTRACTOR AND SUB–CONTRACTORS SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.

22. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2–A OR 2–A:10–B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.

23. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE PROJECT OWNER AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

24. GENERAL CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS–BUILT REDLINES AND ALL SPECIFIED CLOSE–OUT DOCUMENTATION TO THE PROJECT OWNER UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.

25. THE GENERAL CONTRACTOR SHALL LEAVE THE WORK AREA AND SURROUNDING PREMISES IN A CLEAN CONDITION.

26. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).

27. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.

SITE WORK NOTES:

PART 1 – GENERAL

1.1 REFERENCES:
- A. DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION–CURRENT EDITION).
- B. AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS)
- C. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS).
- D. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION).

1.2 INSPECTION AND TESTING:
- A. FIELD TESTING OF EARTHWORK COMPACTION AND CONCRETE CYLINDERS SHALL BE PERFORMED BY AN INDEPENDENT TESTING LAB. THIS WORK IS TO BE COORDINATED BY THE GENERAL CONTRACTOR.
- B. ALL WORK SHALL BE INSPECTED AND VERIFIED FOR CONFORMANCE AND RELEASED BY THE ENGINEER WHO SHALL CARRY OUT THE GENERAL INSPECTION OF THE WORK WITH SPECIFIC CONCERN TO PROPER PERFORMANCE OF THE WORK AS SPECIFIED AND/OR CALLED FOR ON THE DRAWINGS. IT IS THE GENERAL CONTRACTOR(S) RESPONSIBILITY TO REQUEST TIMELY INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

1.3 SITE MAINTENANCE AND PROTECTION:
- A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE CONTRACT.
- B. AVOID DAMAGE AND TAKE PROTECTIVE MEASURES TO THE SITE AND TO EXISTING FACILITIES, IMPROVEMENTS, STRUCTURES, PAVEMENTS, CURBS, AND LANDSCAPING DESIGNATED TO REMAIN. ANY DAMAGED PART SHALL BE REPAIRED AT SUB–CONTRACTOR(S) EXPENSE TO THE SATISFACTION OF THE PROJECT HOST.
- C. KEEP SITE FREE OF ALL PONDING OR STANDING WATER.
- D. PROVIDE EROSION CONTROL MEASURES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH STATE DOT, LOCAL PERMITTING AGENCY AND EPA REQUIREMENTS.
- E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.
- F. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUB–CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. THE GENERAL CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION. WATER, SEWER, AND DRAINAGE UTILITIES SHALL NOT BE RELOCATED OR REMOVED WITHOUT NOTIFYING THE CITY PRIOR TO ANY WORK.
- G. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE PROJECT OWNER AND/OR LOCAL UTILITIES. WATER, SEWER, AND DRAINAGE UTILITIES SHALL NOT BE RELOCATED OR REMOVED WITHOUT NOTIFYING THE CITY PRIOR TO ANY WORK.
- H. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE PROJECT HOST OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE PROJECT HOST AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.
- I. PROVIDE A MINIMUM 48–HOUR NOTICE TO THE PROJECT HOST AND RECEIVE WRITTEN NOTICE TO PROCEED BEFORE INTERRUPTING ANY UTILITY SERVICE.
- J. SOD PLANTED IN THE FALL MUST ESTABLISH ITS ROOTS BEFORE THE FIRST WINTER FROST. DETERMINE WHEN THE FIRST FROST USUALLY OCCURS, AND PLANT THE SOD NO LATER THAN ONE MONTH BEFORE THE FIRST FROST. IF THE CONSTRUCTION IS FINISHED LATER THAN ONE MONTH BEFORE THE FIRST FROST, USE STRAW UNTIL SOD CAN BE INSTALLED.
- K. THE GENERAL CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS, RUBBISH, DEBRIS, STUMPS, STICKS, AND STONES.
- L. THE GENERAL CONTRACTOR SHALL REMOVE ALL TRASH DEBRIS FROM THE SITE ON A DAILY BASIS.
- M. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS TO PROTECT TREES, VEGETATION, AND ROOT SYSTEMS DURING CONSTRUCTION.
- N. CONTRACTOR TO COORDINATE POST CONSTRUCTION LANDSCAPING FINISHES WITH OWNER AND TESLA.

PART 2 – PRODUCTS

2.1 GRANULAR BACKFILL: SHALL MEET THE FOLLOWING GRADATION:

SIEVE SIZE	TOTAL PERCENT PASSING
1–1/2 INCH	100
1 INCH	75 TO 100
3/4 INCH	80 TO 100
3/8 INCH	35 TO 75
NO. 4	30 TO 60
NO. 30	7 TO 30
NO. 200	3 TO 15

2.2 GRANULAR BEDDING AND TRENCH BACKFILL: WELL–GRADED SAND MEETING THE GRADATION REQUIREMENTS OF ASTM D2487 (SE OR SW–SM).

2.3 ALL STRUCTURAL BACKFILL AND SUBBASE UNDER SLABS SHALL BE SELECT STRUCTURAL FILL MEETING THE GRADATION AND SOUNDNESS REQUIREMENTS IN ACCORDANCE WITH THE FOLLOWING:

SIEVE SIZE	TOTAL PERCENT PASSING
4 INCH	100
NO. 40	0 TO 70
NO. 200	0 TO 40

2.4 MATERIALS SHALL BE SUBSTANTIALLY FREE OF SHALE OR OTHER SOFT, POOR DURABILITY PARTICLES. IF TESTING IS ELECTED BY PROJECT OWNER, MATERIAL WITH A MAGNESIUM SULFATE SOUNDNESS LOSS EXCEEDING 30% WILL BE REJECTED.

2.5 COARSE AGGREGATE FOR SUBBASE COURSE SHALL CONFORM TO ASTM D2940.

2.6 UNSUITABLE MATERIAL: HIGH AND MODERATELY PLASTIC SILTS AND CLAYS (LL>45). MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES IN ANY DIMENSION, AND DEBRIS AS DETERMINED BY THE ENGINEER. TYPICALLY THESE WILL BE SOILS CLASSIFIED BY ASTM AS PT, MH, CH, OH, ML, AND OL.

PART 3 – EXECUTION

3.1 GENERAL:
- A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF A RAIN EVENT, NO SEDIMENT WILL LEAVE THE WORK SITE.
- B. BEFORE ALL SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.
- C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA TO BE CLEARED.
- D. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, AND OTHER DEBRIS, BRUSH, AND REFUSE EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE, RAKE, DISK OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE TO A DEPTH OF 12 INCHES ALL ROOTS AND OTHER DEBRIS THEREBY EXPOSED.
- E. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR UNDESIRABLE MATERIALS.
- F. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION WORK COMPLETELY WITH GRANULAR FILL.
- G. REMOVE FROM THE SITE AND DISPOSE IN AN AUTHORIZED LANDFILL ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS. BURNING WILL NOT BE PERMITTED.
- H. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE ENGINEER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.
- I. SEPARATE AND STOCK PILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF–SITE IN A LEGAL MANNER.
- J. DURING EXCAVATION, THE SUB–CONTRACTOR SHALL PROVIDE SHORING, SHEETING, AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF EXCAVATION.
- K. WHEN DIRECTIONAL BORING IS REQUIRED, SUB–CONTRACTOR SHALL INSTALL A LOOSE TONING WIRE WITHIN INSTALLED CONDUIT TO ALLOW FOR IDENTIFICATION OF UNDERGROUND CONDUITS.

3.2 BACKFILL:
- A. AS SOON AS PRACTICAL, AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST–IN–PLACE CONCRETE, BACKFILL THE EXCAVATION WITH SPECIFIED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.
- B. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.
- C. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW, OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- D. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 12–INCHES LOOSE THICKNESS AND COMPACTED. WHERE HAND OPERATED COMPACTORS ARE USED, FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12–INCHES IN LOOSE DEPTH AND COMPACTED.
- E. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS ESTABLISHED BY THE STANDARD PROCTOR TEST, ASTM D 698.
- F. WHENEVER THE DENSITY TESTING INDICATES THAT THE SUB–CONTRACTOR(S) HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE CONSTRUCTION MANAGER. THE SUB–CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE MINIMUM COMPACTION REQUIREMENTS.
- G. THE SUB–CONTRACTOR SHALL OBTAIN GRAB SAMPLES OF SUFFICIENT QUANTITY TO PROVIDE TO LAB FOR PURPOSE OF DETERMINING MAX DRY DENSITY. ALL LOOSE AND/OR ORGANIC MATERIAL SHALL BE REMOVED PRIOR TO PREPARATION OF THE AREA FOR PLACEMENT OF STRUCTURAL BACKFILL. OVERALL PLAN AREA OF WORK SHALL EXTEND 3'–0" MINIMUM BEYOND THE FINAL DIMENSIONS.
- H. SCARIFY THE EXISTING SOILS TO A DEPTH OF 6" AND RE–COMPACT USING A VIBRATING PLATE OR TAMPER, ANY SOFT AREAS SHALL BE OVEREXCAVATED 12" AND BACKFILLED WITH MATERIALS AND COMPACTION REQUIREMENTS SHOWN ON THE DRAWINGS.
- I. PLACEMENT AND COMPACTION OF STRUCTURAL BACKFILL AND SUBBASE SHALL BE IN 12" LIFTS. EXCAVATE FOR THE FOOTING EDGE AS SHOWN ON THE DRAWINGS.

3.3 TRENCHING EXCAVATION:
- J. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE GENERAL CONTRACTOR. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.
- K. EXTEND THE TRENCH WIDTH A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.
- L. WHEN SOFT YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, EXCAVATE THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION, THEN BACKFILL WITH 12" OF GRANULAR MATERIAL.

3.4 TRENCHING BACKFILL:
- A. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.
- B. NOTIFY THE ENGINEER 24 HOURS IN ADVANCE OF BACKFILLING.
- C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.
- D. PLACE GRANULAR BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6–INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS AND HAUNCHES.
- E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.
- F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 12–INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.
- G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS ESTABLISHED BY THE STANDARD PROCTOR TEST, ASTM D 698.
- H. PER LOCAL REGULATORY AUTHORITY AND AS APPLICABLE, ALL TRENCHES IN PUBLIC RIGHT–OF–WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE–APPROVED BY THE LOCAL JURISDICTION.

3.5 FINISH GRADING:
- A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL MATCH SURROUNDING TOPOGRAPHY AND STRUCTURES.
- B. UTILIZE GRANULAR FILL RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.
- C. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL OR BETTER CONDITION.
- D. AREAS OF THE PROJECT HOST'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT OR PARKING/DRIVING AREAS SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.

3.6 ASPHALT PAVING ROAD:
- A. AASHTO
- B. STATE SPECIFIC ASPHALT SPECIFICATIONS FOR HIGHWAYS
- C. THE SUB–CONTRACTOR IS RESPONSIBLE FOR RE–STRIPING AND APPLYING SEALCOATING, UNLESS OTHERWISE SPECIFIED.

WAIV–2023–0005

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STATE OF NEW HAMPSHIRE · BENJAMIN B. REVETTE No.13830 · LICENSED PROFESSIONAL ENGINEER
09/05/2023

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

SUBMITTALS

REV.	DATE	DESCRIPTION
4	09/05/23	FOR CONSTRUCTION
3	08/16/23	FOR CONSTRUCTION
2	07/19/23	FOR CONSTRUCTION
1	07/17/23	FOR CONSTRUCTION
0	03/31/23	FOR CONSTRUCTION
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:
DOVER, NH
TRT ID: 32502

SITE ADDRESS:
200 STERLING WAY
DOVER, NH 03820

SHEET TITLE
GENERAL NOTES I

SHEET NUMBER
(2) GN–1

ELECTRICAL NOTES:

1. THE GENERAL CONTRACTOR SHALL SUPPLY AND INSTALL ANY/ALL ELECTRICAL WORK INDICATED. ANY/ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS. ANY/ALL APPLICABLE SPECIFICATIONS. IF ANY PROBLEMS ARE ENCOUNTERED BY COMPLYING WITH THESE REQUIREMENTS, SUB–CONTRACTOR SHALL NOTIFY THE PROJECT HOST AS SOON AS POSSIBLE, AFTER THE DISCOVERY OF THE PROBLEMS, AND SHALL NOT PROCEED WITH THAT PORTION OF WORK, UNTIL THE PROJECT HOST HAS DIRECTED THE CORRECTIVE ACTIONS TO BE TAKEN.

2. THE GENERAL CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATION INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. ALL EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC., THAT ARE PART OF THE FINAL SYSTEM, SHALL BE VERIFIED BY THE SUB–CONTRACTOR, PRIOR TO THE SUBMITTAL OF HIS BID. FAILURE TO COMPLY WITH THIS PARAGRAPH WILL IN NO WAY RELIEVE THE SUBCONTRACTOR OF PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM.

3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL CODES AND LOCAL ORDINANCES OF THE LOCAL POWER COMPANIES HAVING JURISDICTION AND SHALL INCLUDE BUT NOT BE LIMITED TO:

A. UL – UNDERWRITERS LABORATORIES
B. NEC – NATIONAL ELECTRICAL CODE
C. NEMA – NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
D. OSHA – OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
E. SBC – STANDARD BUILDING CODE
F. NFPA – NATIONAL FIRE PROTECTION ASSOCIATION

4. DO NOT SCALE ELECTRICAL DRAWINGS, REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, AND CONFIRM WITH ENGINEER ANY SIZES AND LOCATIONS WHEN NEEDED.

5. EXISTING SERVICES: THE GENERAL CONTRACTOR SHALL NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE PROJECT HOST.

6. THE GENERAL CONTRACTOR SHALL PAY FOR ANY/ALL PERMITS, FEES, INSPECTIONS AND TESTING. THE GENERAL CONTRACTOR IS TO OBTAIN PERMITS AND APPROVED SUBMITTALS PRIOR TO THE WORK BEGINNING OR ORDERING EQUIPMENT.

7. THE TERM "PROVIDE" USED IN CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, INDICATES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL, UNLESS OTHERWISE SPECIFIED BY CONSTRUCTION MANAGER OR BY PROJECT DEVELOPER.

8. THE GENERAL CONTRACTOR SHALL CONFIRM WITH LOCAL UTILITY COMPANY ANY/ALL REQUIREMENTS SUCH AS THE: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, SIZE OF TRANSFORMERS, SCHEDULED DOWNTIME FOR THE PROJECT HOST'S CONFIRMATION, ETC. ANY/ALL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER, PRIOR TO BEGINNING ANY WORK.

9. CONDUCTORS: THE CONTRACTOR SHALL USE 98% CONDUCTIVITY COPPER OR ALUMINUM WITH TYPE (THWN–2) INSULATION, 600 VOLT, COLOR CODED UNLESS SPECIFIED DIFFERENTLY ON DRAWINGS.

10. ALL (THWN–2) WIRING INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

11. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET/DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.

12. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF THE CONSTRUCTION. CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER. SUB–CONTRACTOR IS TO PROVIDE ALL ELECTRICAL EQUIPMENT UNLESS OTHERWISE DIRECTED.

13. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL SUB–CONTRACTOR IN A FIRST CLASS, WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND SUBJECT TO REGULATORY INSPECTION AND APPROVAL BY THE CONSTRUCTION MANGER.

14. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.

15. THE GENERAL CONTRACTOR SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.

16. THE CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ANY ADDITIONAL CHARGE AND SHALL INCLUDE THE REPLACEMENT OR THE REPAIR OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.

17. ADEQUATE AND REQUIRED LIABILITY INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PROPERTY DAMAGE FOR THE DURATION OF WORK.

18. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SHALL APPEAR ON THE LIST OF U.L. APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IEEE.

19. GENERAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURES CATALOG INFORMATION OF ANY/ALL LIGHTING FIXTURES, SWITCHES AND ALL OTHER ELECTRICAL ITEMS FOR APPROVAL BY THE CONSTRUCTION MANAGER PRIOR TO INSTALLATION.

20. ANY CUTTING OR PATCHING DEEMED NECESSARY FOR ELECTRICAL WORK IS THE CONTRACTOR(S) RESPONSIBILITY AND SHALL BE INCLUDED IN THE COST FOR WORK AND PERFORMED TO THE SATISFACTION OF THE CONSTRUCTION MANAGER UPON FINAL ACCEPTANCE.

21. THE SUBCONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES.

22. DISCONNECT SWITCHES SHALL BE H.P. RATED HEAVY–DUTY, QUICK–MAKE AND QUICK–BREAK ENCLOSURES, AS REQUIRED BY EXPOSURE TYPE.

23. ALL CONNECTIONS SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANTI–OXIDE COMPOUND SUCH AS "NOALOX" BY IDEAL INDUSTRIAL INC. COAT ALL WIRE SURFACES BEFORE CONNECTING. EXPOSED ALUMINUM & COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TREATED – NO SUBSTITUTIONS.

24. ALL EXTERIOR AND INTERIOR ABOVE GROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL UNLESS SPECIFIED OTHERWISE. RACEWAYS: ALL CONDUITS SHALL BE SCHEDULE 40 EMT MEETING OR EXCEEDING NEMA TC2 – 1990 UNLESS SPECIFIED OTHERWISE. THE SUB–CONTRACTOR SHALL PLUG AND CAP EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL STRINGS – 200 LBS TEST POLYETHYLENE CORD. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 3 FT. RADIUS. EMT CONDUITS WHEN SPECIFIED, SHALL MEET UL–6 FOR GALVANIZED STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIGID CONDUIT. COAT ALL THREADS WITH 'BRITE ZINC' OR 'GOLD GALV'.

25. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.

26. CONNECTORS FOR POWER CONDUCTORS: SUB–CONTRACTOR SHALL USE PRESSURE TYPE INSULATED TWIST–ON CONNECTORS FOR NO. 10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AWG AND LARGER.

27. THE SUB–CONTRACTOR SHALL PLACE TWO LENGTHS OF WARNING TAPE AT A DEPTH OF 12" BELOW GROUND AND DIRECTLY ABOVE ELECTRICAL SERVICE CONDUITS. CAUTIONS TAPE TO READ "CAUTION BURIED ELECTRIC".

28. WHEN DIRECTIONAL BORING IS REQUIRED, SUB–CONTRACTOR SHALL INSTALL A LOOSE TONING WIRE WITHIN INSTALLED CONDUIT TO ALLOW FOR IDENTIFICATION OF UNDERGROUND CONDUITS.

29. ALL BOLTS SHALL BE STAINLESS STEEL.

30. ALL MATERIALS AND EQUIPMENT SUPPLIED AND INSTALLED BY THE SUBCONTRACTOR SHOULD BE NEW AND UNUSED.

31. PER NEC 625.22 – THE USER INTERFACE (CHARGE POST) IS CONTROLLED BY THE ELECTRICAL EQUIPMENT (SUPERCHARGER CABINET) AND THE FOLLOWING PRECAUTIONS HAVE BEEN TAKEN TO ENSURE THE SAFETY OF CUSTOMERS AND THOSE AROUND THE EQUIPMENT. BEFORE ANY VOLTAGE OR CURRENT IS APPLIED TO THE CHARGE POST, THE CABINET MUST COMMUNICATE WITH THE TESLA VEHICLE. THERE IS A 'HANDSHAKE' BETWEEN THE CAR AND THE CABINET CONFIRMING THAT THE VEHICLE IS ACTUALLY A TESLA AND THAT THE VEHICLE CAN HANDLE THE SUPERCHARGING. VOLTAGE IS THEN APPLIED TO THE POWER SOCKETS IN THE CHARGE POST AND ONCE THE VOLTAGE READING FROM THE CAR IS VERIFIED AS THE SAME IN THE CHARGING CABINET, THEN CURRENT BEGINS TO FLOW. IF AT ANY POINT IN THIS PROCESS A FAULT IS DETECTED, THE CHARGING WILL STOP IMMEDIATELY, WITHIN A MATTER OF MILLISECONDS. DURING THE NORMAL CHARGING CYCLE, IF ANY FAULT OR IRREGULARITY IS DETECTED, THE CHARGING WILL AGAIN STOP WITHIN MILLISECONDS OF DETECTION. BEYOND THIS LOGIC PROTECTION, THERE IS PHYSICAL PROTECTION FROM OVER–CURRENT OR OVER–VOLTAGE WITHIN EACH OF THE CHARGERS. BEYOND THAT, FAST ACTING FUSES ALSO PROTECT THE VEHICLE OUTPUTS FROM OUTPUTTING TOO HIGH OF A CURRENT.

REINFORCED CONCRETE NOTES:

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING APPLICABLE CODES: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"; ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".

2. DO NOT USE RETEMPERED CONCRETE, OR ADD WATER TO READY–MIX CONCRETE AT THE JOB SITE. MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE.

3. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR–ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

4. MAXIMUM AGGREGATE SIZE SHALL BE 3/4".

5. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:	ASTM C 150, TYPE I
REINFORCEMENT:	ASTM A 615, GRADE 60
NORMAL WEIGHT AGGREGATE:	ASTM C 33
WATER:	DRINKABLE
ADMIXTURES:	NON–CHLORIDE CONTAINING

6. REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH "DETAILING MANUAL–2004 PUBLICATION SP–66" AND "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI–318–08.

7. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B"; ALL HOOKS SHALL BE STANDARD, UNO.

8. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

CONCRETE CAST AGAINST EARTH:	3 IN.	
CONCRETE EXPOSED TO EARTH OR WEATHER:	#6 AND LARGER	2 IN.
	#5 AND SMALLER & WWF	1–1/2 IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:	SLAB AND WALL	3/4 IN.
	BEAMS AND COLUMNS	1–1/2 IN.

9. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

10. INSTALLATION OF CONCRETE ANCHOR, SHALL BE PER MANUFACTURERS WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE.

11. CURING COMPOUNDS SHALL CONFORM TO ASTM C–309.

12. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI–301.

13. DO NOT WELD OR TACKWELD REINFORCING STEEL.

14. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.

15. LOCATE ADDITIONAL EXPANSION JOINTS REQUIRED TO FACILITATE CONSTRUCTION AS ACCEPTABLE TO ENGINEER. PLACE REINFORCEMENT CONTINUOUSLY THROUGH JOINT.

16. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.

17. PLACE CONCRETE IN A UNIFORM MANNER TO PREVENT THE FORMATION OF COLD JOINTS AND OTHER PLANES OF WEAKNESS. VIBRATE THE CONCRETE TO FULLY EMBED REINFORCING. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE THROUGH CHUTES OR FORMWORK.

18. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.

19. DO NOT ALLOW CONCRETE SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 14 DAYS AFTER PLACEMENT.

20. MAINTAIN TEMPERATURE OF CAST IN PLACE CONCRETE BETWEEN 50 DEGREES AND 90 DEGREES FAHRENHEIT. FOR COLD–WEATHER AND HOT–WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS MINIMUM.

21. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, REINFORCEMENT SPLICES SHALL MEET CLASS B, TENSION LAP REQUIREMENTS IN ACCORDANCE WITH ALL PROVISIONS OF ACI 318 LATEST EDITION, UNLESS NOTED OTHERWISE.

22. PROVIDE ACCESSORIES NECESSARY TO PROPERLY SUPPORT REINFORCING.

HORIZONTAL DIRECT DRILLING NOTES:

1. THE WORK SPECIFIED IN THIS SECTION CONSISTS OF FURNISHING AND INSTALLING UNDERGROUND UTILITIES USING THE DIRECTIONAL BORING (HORIZONTAL DIRECTIONAL DRILLING, HDD) METHOD OF INSTALLATION, ALSO COMMONLY REFERRED TO AS GUIDED HORIZONTAL BORING. THIS WORK SHALL INCLUDE ALL SERVICES, EQUIPMENT, MATERIALS, AND LABOR FOR THE COMPLETE AND PROPER INSTALLATION, TESTING, RESTORATION OF UNDERGROUND UTILITIES AND ENVIRONMENTAL PROTECTION AND RESTORATION.

2. WORK PLAN: PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST SUBMIT TO THE ENGINEER A GENERAL WORK PLAN OUTLINING THE PROCEDURE AND SCHEDULE TO BE USED TO EXECUTE THE PROJECT. PLAN SHOULD DOCUMENT THE THOUGHTFUL PLANNING REQUIRED TO SUCCESSFULLY COMPLETE THE PROJECT.

3. ENVIRONMENTAL PROTECTION: CONTRACTOR SHALL PLACE SILT FENCE BETWEEN ALL BORING OPERATIONS AND ANY DRAINAGE, WETLAND, WATERWAY OR OTHER AREA DESIGNATED FOR SUCH PROTECTION BY CONTRACT DOCUMENTS, STATE, FEDERAL AND LOCAL REGULATIONS. ADDITIONAL ENVIRONMENTAL PROTECTION NECESSARY TO CONTAIN ANY HYDRAULIC OR BORING FLUID SPILLS SHALL BE PUT IN PLACE, INCLUDING BERMS, LINERS, TURBIDITY CURTAINS AND OTHER MEASURES. CONTRACTOR SHALL ADHERE TO ALL APPLICABLE ENVIRONMENTAL REGULATIONS. FUEL OR OIL MAY NOT BE STORED IN BULK CONTAINERS WITHIN 200' OF ANY WATER–BODY OR WET–LAND.

4. UTILITY LOCATES: CONTRACTOR SHALL NOTIFY ALL COMPANIES WITH UNDERGROUND UTILITIES IN THE WORK AREA VIA THE STATE OR LOCAL "ONE–CALL" TO OBTAIN UTILITY LOCATES. ONCE THE UTILITIES HAVE BEEN LOCATED CONTRACTOR SHALL PHYSICALLY IDENTIFY THE EXACT LOCATION OF THE UTILITIES BY VACUUM OR HAND EXCAVATION, WHEN POSSIBLE, IN ORDER TO DETERMINE THE ACTUAL LOCATION AND PATH OF ANY UNDERGROUND UTILITIES WHICH MIGHT BE WITHIN 20 FEET OF THE BORE PATH. CONTRACTOR SHALL NOT COMMENCE BORING OPERATIONS UNTIL THE LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE WORK AREA HAVE BEEN VERIFIED.

5. SAFETY: CONTRACTOR SHALL ADHERE TO ALL APPLICABLE STATE, FEDERAL AND LOCAL SAFETY REGULATIONS AND ALL OPERATIONS SHALL BE CONDUCTED IN A SAFE MANNER. SAFETY MEETINGS SHALL BE CONDUCTED AT LEAST WEEKLY WITH A WRITTEN RECORD OF ATTENDANCE AND TOPIC SUBMITTED TO ENGINEER.

6. SITE RESTORATION: FOLLOWING BORING OPERATIONS, CONTRACTOR WILL DE–MOBILIZE EQUIPMENT AND RESTORE THE WORK–SITE TO ORIGINAL CONDITION. ALL EXCAVATIONS WILL BE BACKFILLED AND COMPACTED TO 95% OF ORIGINAL DENSITY. LANDSCAPING WILL BE RESTORED TO ORIGINAL.

7. RECORD KEEPING: CONTRACTOR SHALL MAINTAIN A DAILY PROJECT LOG OF BORING OPERATIONS AND A GUIDANCE SYSTEM LOG WITH A COPY GIVEN TO ENGINEER AT COMPLETION OF PROJECT. AS–BUILT DRAWINGS SHALL BE CERTIFIED AS TO ACCURACY BY CONTRACTOR.

TRAFFIC MANAGEMENT NOTES:

1. ALL TEMPORARY CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.

2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.

3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.

4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.

5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).

6. CONTRACTORS SHALL NOTIFY THE OWNER AND ALL TENANTS OF THIS PROPERTY AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.

7. THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.

8. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.

9. MINIMUM LANE WIDTH IS TO BE 11 FEET (3.3m) UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.

10. EXISTING PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES THROUGH A COMBINATION OF PEDESTRIAN DETOURS OR PROTECTED SAFE ROUTES. ALL PEDESTRIAN ROUTES SHALL MEET APPLICABLE ACCESSIBILITY REQUIREMENTS.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT CONSTRUCTION AT THIS LOCATION. THE CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC SIGNS, DRUMS, CONES, OR OTHER TRAFFIC CONTROL DEVICES TO DIRECT VEHICLES AND PEDESTRIANS AROUND THE WORK ZONE.

WAIV–2023–0005

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(650) 681–5000

Dewberry
Dewberry Engineers Inc.
4835 LBJ FREEWAY
SUITE 475
DALLAS, TX 75244
TX FIRM #: F-6548
PHONE: 469.232.5200

STATE OF NEW HAMPSHIRE · BENJAMIN B. REVETTE No.13830 · LICENSED PROFESSIONAL ENGINEER

09/05/2023

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

SUBMITTALS

REV.	DATE	DESCRIPTION
4	09/05/23	FOR CONSTRUCTION
3	08/16/23	FOR CONSTRUCTION
2	07/19/23	FOR CONSTRUCTION
1	07/17/23	FOR CONSTRUCTION
0	03/31/23	FOR CONSTRUCTION
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:

DOVER, NH
TRT ID: 32502

SITE ADDRESS:

200 STERLING WAY
DOVER, NH 03820

SHEET TITLE

GENERAL NOTES II

SHEET NUMBER

(3) GN–2

CITY OF DOVER PLANNING DEPARTMENT
REVISED NOVEMBER 28, 2022

APPLICANT: DEWBERRY ENGINEERS INC ON BEHALF OF TESLA INC.
FILE NUMBER: WAIV–2023–0005

LIST OF COMMON SITE PLAN NOTES

THE FOLLOWING LIST OF COMMONLY REQUIRED NOTES IS INTENDED TO BE USED AS A GUIDE TO APPLICANTS AND SHOULD NOT BE CONSTRUED AS A COMPREHENSIVE NOTE REQUIREMENT LIST FOR ALL PROJECTS. A PREAPPLICATION CONFERENCE WITH THE PLANNING DEPARTMENT IS SUGGESTED TO HELP DETERMINE THE ACTUAL NOTES THAT MAY BE REQUIRED.

1. THE INTENT OF THIS PLAN IS TO INSTALL (3) PRE–ASSEMBLED SUPERCHARGER UNITS FOR ELECTRIC VEHICLE CHARGING IN THE PARKING LOT, TOTALING (12) CHARGERS.

2. OWNERS OF RECORD ARE: GIRI DOVER 200, INC.
2300 CROWN COLONY DR. STE 203
QUINCY, MA 02169–0902

3. THE PARCEL(S) IS (ARE) SHOWN AS LOT NO. 2–4, MAP 11 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.
4. THE SUBJECT PARCEL(S) CONTAINS 2.6± ACRES OF LAND.
5. TITLE REFERENCE FOR THE PROJECT PARCEL(S) IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 4434, PAGE NO. 0728.
6. REFERENCE PLANS: SITE DEVELOPMENT PLANS FORD SILVER SQUARE, 181 SILVER STREET, DOVER, NEW HAMPSHIRE.
7. ALL APPLICABLE RIGHT–OF–WAY, CONSERVATION, SLOPE, CONSTRUCTION, POWER LINE, CROSS TRAVEL, OR OTHER EASEMENTS SHALL BE REFERENCED IN A NOTE.
8. CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS IN EFFECT ARE AS FOLLOWS:

REQUIRED:	PROVIDED:
a. ZONING DISTRICT (C) COMMERCIAL S	
b. MINIMUM LOT SIZE: 20,000 SQ. FT.	NO CHANGE
c. MINIMUM LOT FRONTAGE: 125 FT.	NO CHANGE
d. MINIMUM YARD SETBACKS/BUILD–TO–LINES (OUTBUILDING/ACCESSORY USE):	
FRONT 50 FT.	280'±
SIDE 10 FT.	160'±
REAR 10 FT.	501'±
ABUT–A–STREET 50 FT.	160'±
e. MAXIMUM/MINIMUM LOT COVERAGE 50 %	NO CHANGE
f. MINIMUM/MAXIMUM BLDG. HEIGHT 40 FT.	8'–4"± FOR PSU

9. LIST ANY VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPOSED USE OR STRUCTURE, INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS.
10. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY CLARK LAND SURVEYING INC. ON 01/12/2023.
11. SUBJECT PARCEL IS (IS NOT) LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0XXXD, EFFECTIVE DATE: SEPTEMBER 30, 2015).
12. WETLANDS WERE DELINEATED BY _____, CERTIFIED WETLANDS SCIENTIST, CERTIFICATION NUMBER _____, IN ACCORDANCE WITH CHAPTER 170–27.1 OF THE ZONING ORDINANCE, ON _____, 20___. (NO WETLAND DELINEATION WAS DONE AS PART OF THIS PROJECT)
13. AS–BUILT PLANS OF THE SUBDIVISION SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT AUTOCAD DWG, AUTOCAD DXF OR ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT IF A STREET IS PROPOSED FOR CITY ACCEPTANCE. AS–BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO–REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
14. THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
15. THE SUBJECT PARCEL(S) IS (ARE) SERVED BY MUNICIPAL WATER AND SEWER (OR IS SERVED BY ON–SITE WELL AND SEPTIC SYSTEM).
16. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
17. 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.
18. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS.
19. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
20. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED, AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
21. A PRE–CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
22. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7 AM–6 PM, SATURDAY AND SUNDAY 9 AM–4 PM. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR PLANNING DIRECTOR.
23. BUILDING ADDRESSES (INCLUDING APT/UNIT NUMBERS IF APPLICABLE) SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
24. THE PROPOSED USE FOR THE SITE (STRUCTURE) IS A TESLA ELECTRIC VEHICLE CHARGING STATION IN THE PARKING LOT AT 200 STERLING WAY. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY: (LIST PERMIT TYPE, NUMBER AND DATE OF ISSUANCE.)
25. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
26. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
27. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
28. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL. HTTPS://WWW.UNH.EDU/UNHSC/PTAPP
29. THE OWNER OF RECORD SHALL RECORD AT THE REGISTRY OF DEEDS DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.
30. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
31. THE MAXIMUM PARKING SPACE CALCULATION IS _____ (BROKEN DOWN) AND _____ SPACES ARE PROVIDED. (SEE PARKING NOTES BELOW)
32. EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 153–14–E AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.
33. TOPOGRAPHIC SURVEY PERFORMED BY CLARK LAND SURVEYING INC. ON 01/12/2023.
34. ELEVATIONS ARE BASED ON U.S.G.S. NVD 1988 DATUM.
35. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45–2 OF THE CODE OF THE CITY OF DOVER. (IF A BUSINESS ESTABLISHMENT OR MULTI–FAMILY DWELLING CONTAINED IN A NEW, ALTERED OR STRUCTURE) REPAIRED
36. APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
37. THE (EXISTING OR PROPOSED) STRUCTURE SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED BY CHAPTER 81–OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES. 30
38. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.
39. FIRE DEPARTMENT CONNECTION(S) SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
40. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL BE ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI–117.1) AND NH RSA 155–A:5.

PARKING NOTES

PARKING:	GENERAL:	ADA:	EV:	TOTAL:
EXISTING*	62	2	3	67
PROPOSED**	49	3	15	67
NET CHANGE	–13	+1	+12	0

* BASED ON SURVEY BY CLARK SURVEYING INC AND ONLINE GIS AERIAL IMAGE DATED 2023. PARKING SPACES OF EXISTING HOTEL AND DO NOT INCLUDE CVS PARKING.
** TESLA EV CHARGING SPACES ARE OPEN TO ALL CARS

WAIV–2023–0005

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TX FIRM #: F-6548
PHONE: 469.232.5200

STATE OF NEW HAMPSHIRE · BENJAMIN B. REVETTE No.13830 LICENSED PROFESSIONAL ENGINEER
09/05/2023

DRAWN BY: FG
CHECKED BY: SES
APPROVED BY: MCS
PROJECT #: 50123704
JOB #: 50159146

SUBMITTALS

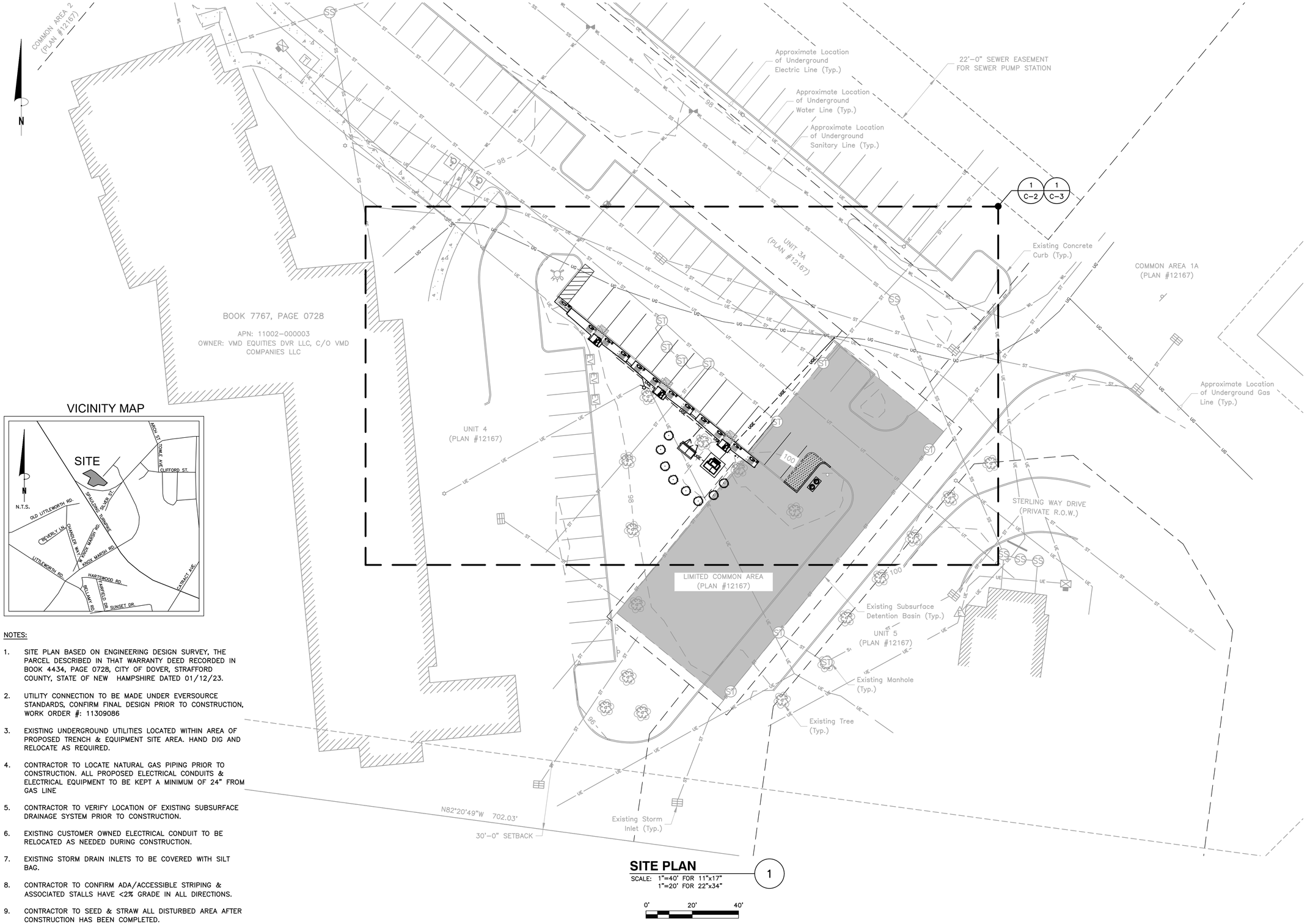
REV.	DATE	DESCRIPTION
4	09/05/23	FOR CONSTRUCTION
3	08/16/23	FOR CONSTRUCTION
2	07/19/23	FOR CONSTRUCTION
1	07/17/23	FOR CONSTRUCTION
0	03/31/23	FOR CONSTRUCTION
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:
DOVER, NH
TRT ID: 32502

SITE ADDRESS:
200 STERLING WAY
DOVER, NH 03820

SHEET TITLE
CITY OF DOVER COMMON SITE PLAN NOTES

SHEET NUMBER
(4) GN–3



VICINITY MAP

NOTES:

1. SITE PLAN BASED ON ENGINEERING DESIGN SURVEY, THE PARCEL DESCRIBED IN THAT WARRANTY DEED RECORDED IN BOOK 4434, PAGE 0728, CITY OF DOVER, STRAFFORD COUNTY, STATE OF NEW HAMPSHIRE DATED 01/12/23.
2. UTILITY CONNECTION TO BE MADE UNDER EVERSOURCE STANDARDS, CONFIRM FINAL DESIGN PRIOR TO CONSTRUCTION, WORK ORDER #: 11309086
3. EXISTING UNDERGROUND UTILITIES LOCATED WITHIN AREA OF PROPOSED TRENCH & EQUIPMENT SITE AREA. HAND DIG AND RELOCATE AS REQUIRED.
4. CONTRACTOR TO LOCATE NATURAL GAS PIPING PRIOR TO CONSTRUCTION. ALL PROPOSED ELECTRICAL CONDUITS & ELECTRICAL EQUIPMENT TO BE KEPT A MINIMUM OF 24" FROM GAS LINE
5. CONTRACTOR TO VERIFY LOCATION OF EXISTING SUBSURFACE DRAINAGE SYSTEM PRIOR TO CONSTRUCTION.
6. EXISTING CUSTOMER OWNED ELECTRICAL CONDUIT TO BE RELOCATED AS NEEDED DURING CONSTRUCTION.
7. EXISTING STORM DRAIN INLETS TO BE COVERED WITH SILT BAG.
8. CONTRACTOR TO CONFIRM ADA/ACCESSIBLE STRIPING & ASSOCIATED STALLS HAVE <2% GRADE IN ALL DIRECTIONS.
9. CONTRACTOR TO SEED & STRAW ALL DISTURBED AREA AFTER CONSTRUCTION HAS BEEN COMPLETED.

SITE PLAN

1

SCALE: 1"=40' FOR 11"x17"
1"=20' FOR 22"x34"

0' 20' 40'

WAIV-2023-0005

TESLA
3500 DEER CREEK ROAD
PALO ALTO, CA 94304
(650) 681-5000

Dewberry
Dewberry Engineers Inc.
4835 LBJ FREEWAY
SUITE 475
DALLAS, TX 75244
TX FIRM #: F-6548
PHONE: 469.232.5200

STATE OF NEW HAMPSHIRE
BENJAMIN B. REVETTE
No.13830
LICENSED PROFESSIONAL ENGINEER
09/05/2023

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

SUBMITTALS

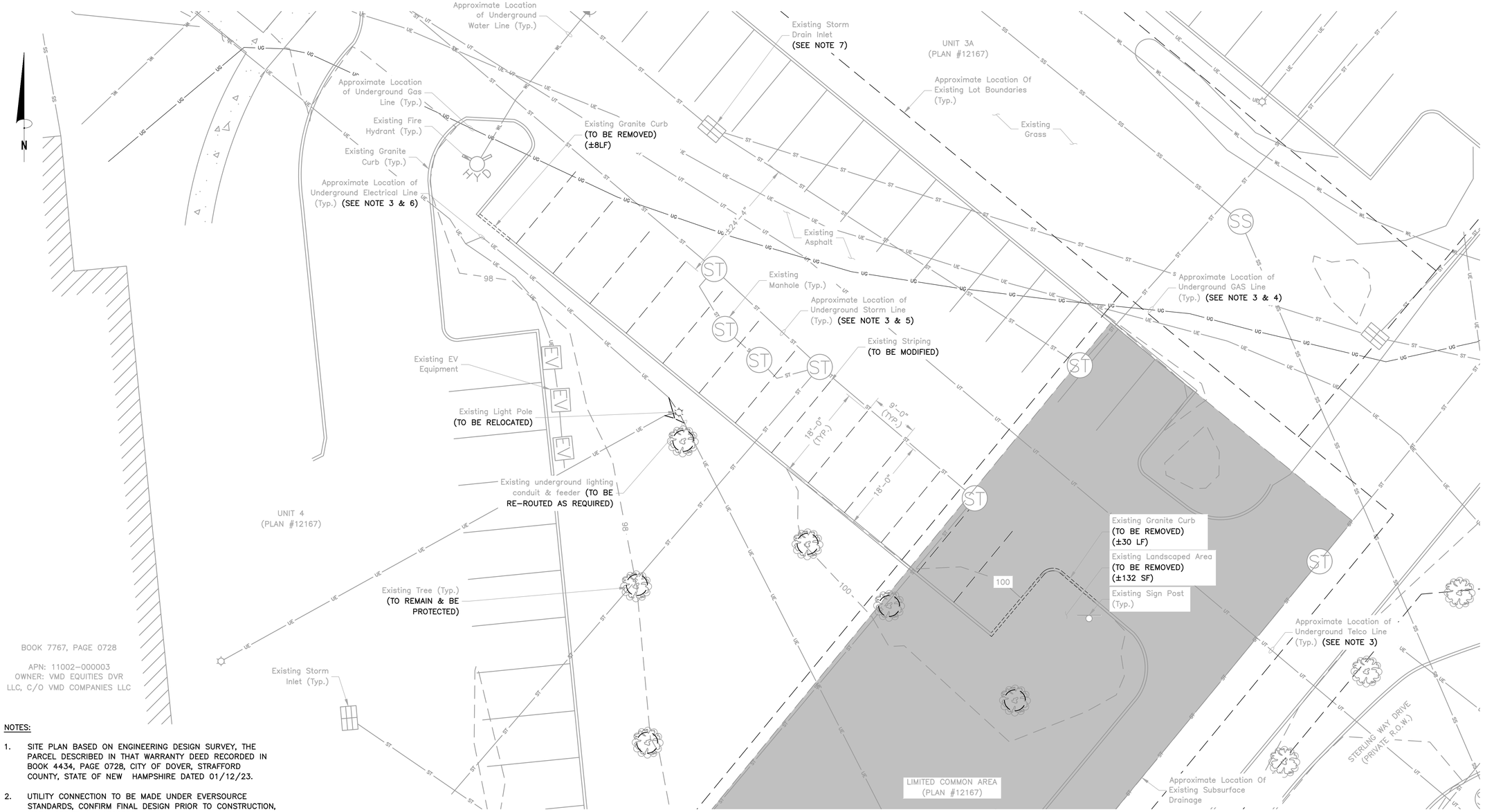
REV.	DATE	DESCRIPTION
4	09/05/23	FOR CONSTRUCTION
3	08/16/23	FOR CONSTRUCTION
2	07/19/23	FOR CONSTRUCTION
1	07/17/23	FOR CONSTRUCTION
0	03/31/23	FOR CONSTRUCTION
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:
DOVER, NH
TRT ID: 32502

SITE ADDRESS:
200 STERLING WAY
DOVER, NH 03820

SHEET TITLE
SITE PLAN

SHEET NUMBER
(5) C-1



EXISTING CONDITIONS PLAN 1

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

0' 10' 20'

NOTES:

1. SITE PLAN BASED ON ENGINEERING DESIGN SURVEY, THE PARCEL DESCRIBED IN THAT WARRANTY DEED RECORDED IN BOOK 4434, PAGE 0728, CITY OF DOVER, STRAFFORD COUNTY, STATE OF NEW HAMPSHIRE DATED 01/12/23.
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9. CONTRACTOR TO SEED & STRAW ALL DISTURBED AREA AFTER CONSTRUCTION HAS BEEN COMPLETED.

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DALLAS, TX 75244
TX FIRM #: F-6548
PHONE: 469.232.5200

STATE OF NEW HAMPSHIRE
BENJAMIN B. REVETTE
No.13830
LICENSED PROFESSIONAL ENGINEER
09/05/2023

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

SUBMITTALS

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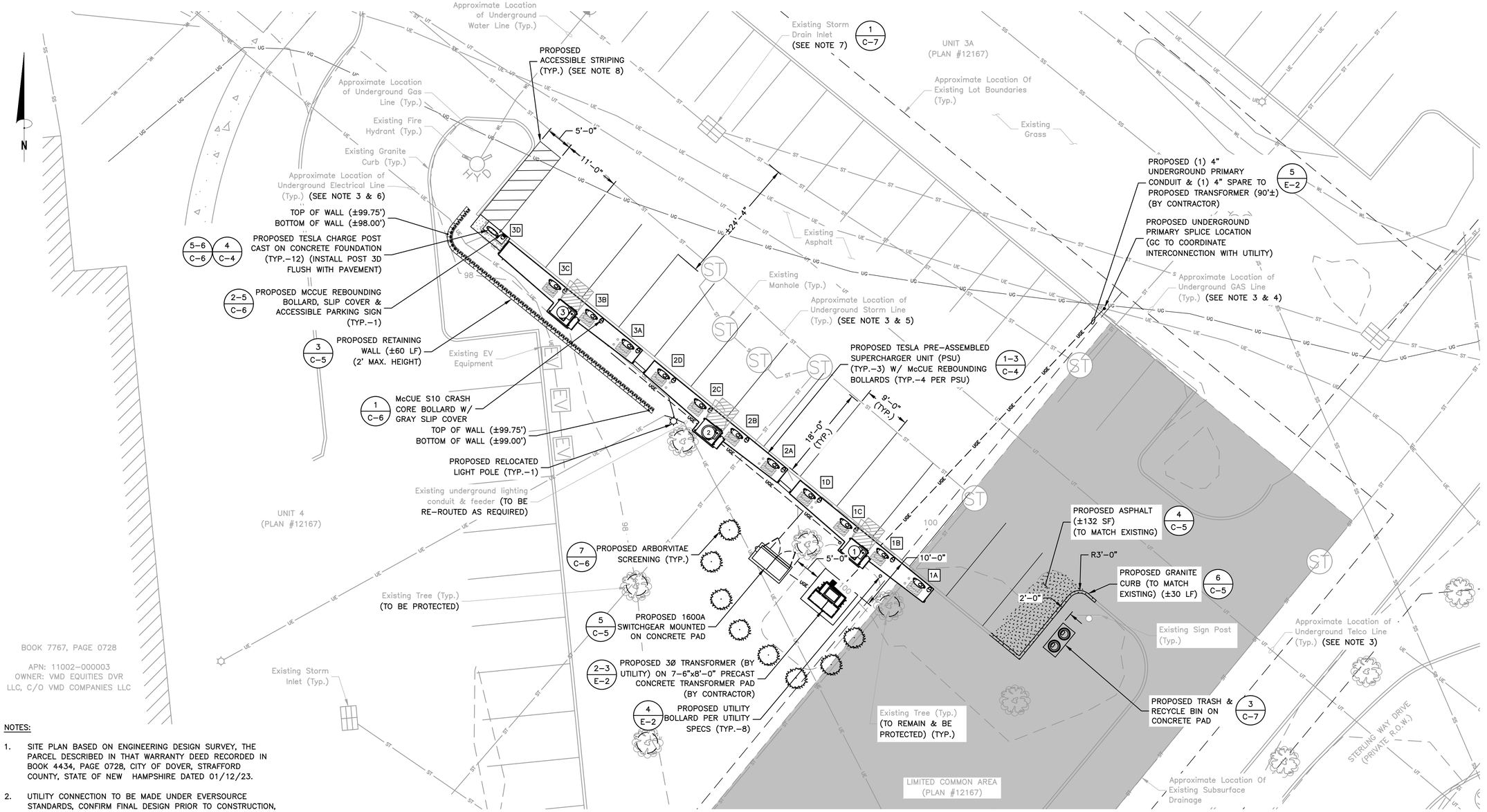
1	07/17/23	FOR CONSTRUCTION
0	03/31/23	FOR CONSTRUCTION
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:
DOVER, NH
TRT ID: 32502

SITE ADDRESS:
200 STERLING WAY
DOVER, NH 03820

SHEET TITLE
EXISTING CONDITIONS & DEMO PLAN

SHEET NUMBER
(6) C-2



NOTES:

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EQUIPMENT/PARKING PLAN (1)

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

0' 10' 20'

LEGEND	
(#)	TESLA SUPERCHARGER #
(2)	TESLA 'STAR-CENTER' MASTER CABINET #
1A	TESLA V3 CHARGE POST

WAIV-2023-0005

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3500 DEER CREEK ROAD
PALO ALTO, CA 94304
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DALLAS, TX 75244
TX FIRM #: F-6548
PHONE: 469.232.5200

STATE OF NEW HAMPSHIRE · BENJAMIN B. REVETTE No.13830 LICENSED PROFESSIONAL ENGINEER ·
09/05/2023

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

SUBMITTALS

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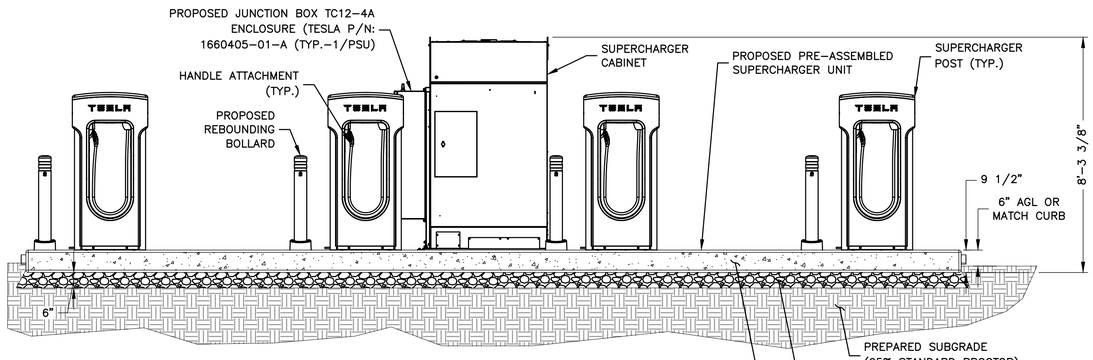
1	07/17/23	FOR CONSTRUCTION
0	03/31/23	FOR CONSTRUCTION
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:
DOVER, NH
TRT ID: 32502

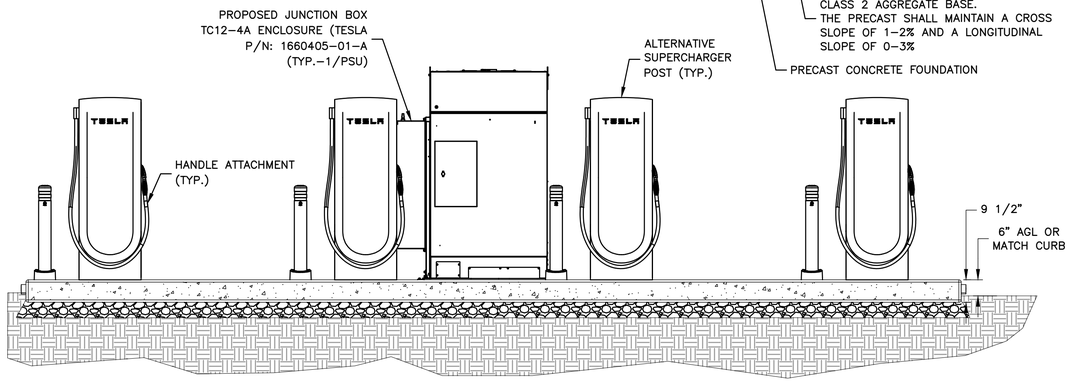
SITE ADDRESS:
200 STERLING WAY
DOVER, NH 03820

SHEET TITLE
EQUIPMENT & PARKING PLAN

SHEET NUMBER
(7) C-3



OPTION #1: V3 CHARGE POST CONFIGURATION



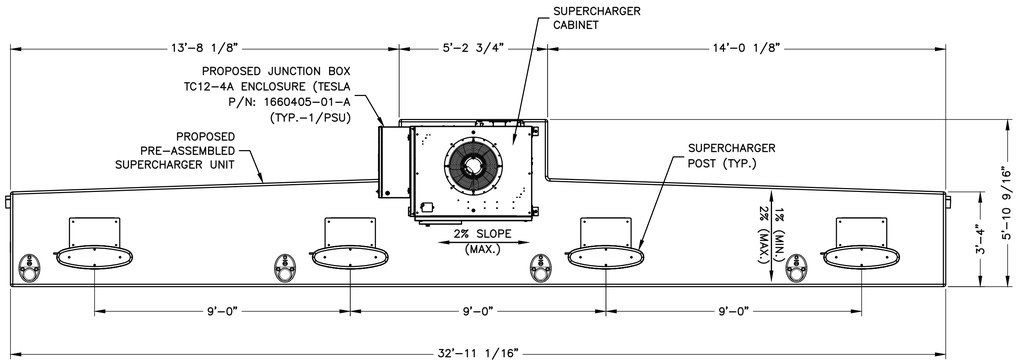
OPTION #2: ALTERNATIVE CHARGE POST CONFIGURATION

NOTE:

1. FINAL CHARGE POST CONFIGURATION SELECTION DETERMINED BY TESLA DESIGN MANAGER BASED ON AVAILABILITY AT TIME OF CONSTRUCTION.

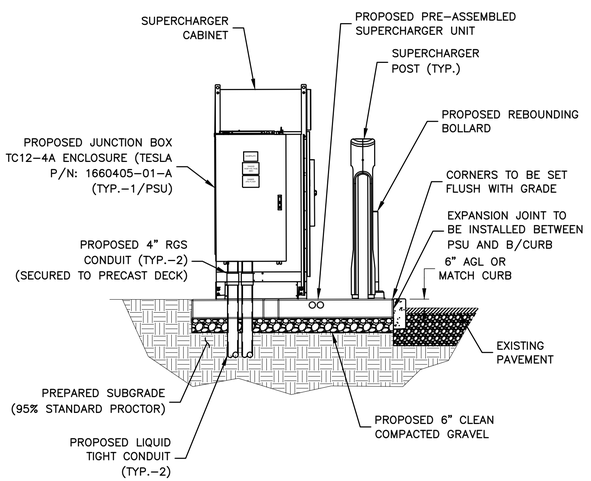
PSU ELEVATIONS 1

SCALE: N.T.S.



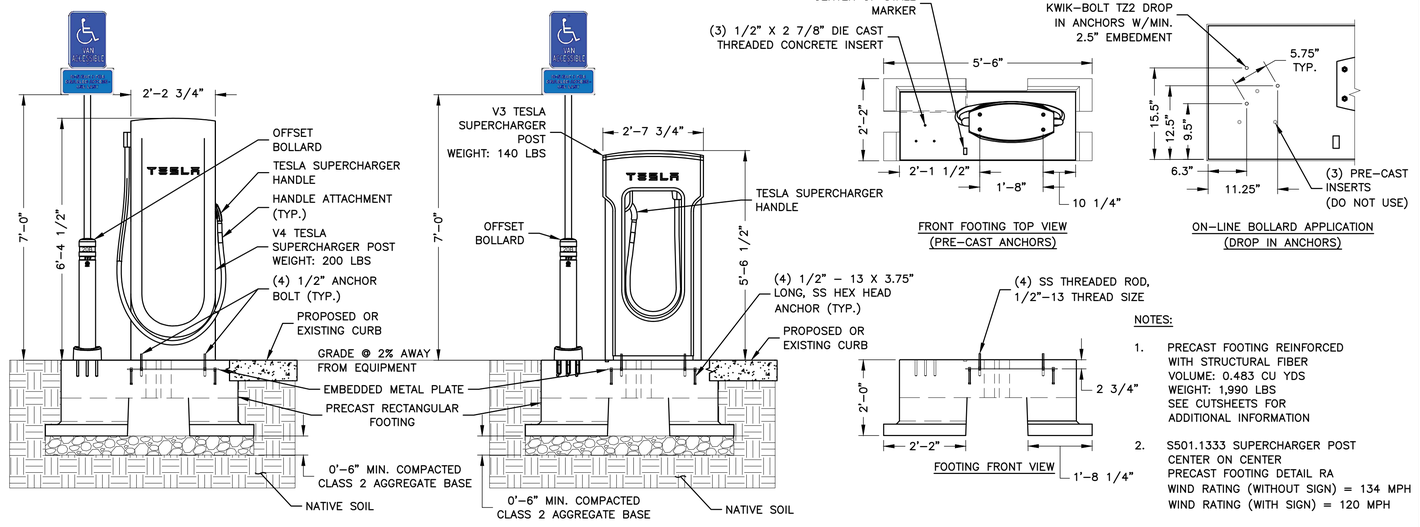
PSU PLAN VIEW 2

SCALE: N.T.S.



PSU SIDE VIEW 3

SCALE: N.T.S.



TESLA SUPERCHARGER POST PRECAST FOUNDATION DETAIL 4

SCALE: N.T.S.

NOTES:

1. PRECAST FOOTING REINFORCED WITH STRUCTURAL FIBER VOLUME: 0.483 CU YDS WEIGHT: 1,990 LBS SEE CUTSHEETS FOR ADDITIONAL INFORMATION
2. S501.1333 SUPERCHARGER POST CENTER ON CENTER PRECAST FOOTING DETAIL RA WIND RATING (WITHOUT SIGN) = 134 MPH WIND RATING (WITH SIGN) = 120 MPH

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STATE OF NEW HAMPSHIRE · BENJAMIN B. REVETTE No.13830 LICENSED PROFESSIONAL ENGINEER ·
09/05/2023

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

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SITE NAME:

DOVER, NH
TRT ID: 32502

SITE ADDRESS:

200 STERLING WAY
DOVER, NH 03820

SHEET TITLE

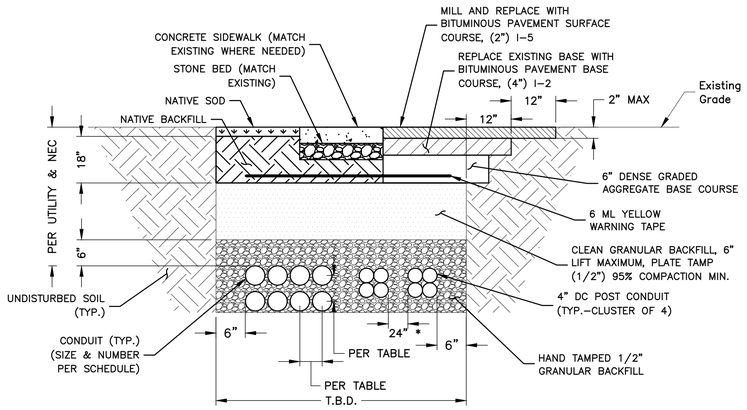
CONSTRUCTION DETAILS I

SHEET NUMBER

(8) C-4

MINIMUM CENTER TO CENTER CONDUIT SPACING	
(SWITCHGEAR TO CABINETS)	7.5" O.C.
DC (BUSS)	7.5" O.C.
DC (POST) * (CLUSTER OF 4 CONDUITS)	24" EDGE TO EDGE *

* 6" OF SEPARATION IS ALLOWED WHEN A FLUIDIZED THERMAL BACKFILL WITH A RHO OF 60 °C-cm/W OR LESS WITH A MINIMUM HEIGHT OF 12" ABOVE THE CONDUIT IS UTILIZED.



NOTES:

1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
2. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.
4. ANY PAVEMENT DAMAGE DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO PRE CONSTRUCTION CONDITIONS OR BETTER.
5. MAINTAIN 12" SEPARATION MIN. BETWEEN AC OR DC CONDUCTORS AND COMMUNICATION CABLES.
6. CONFIRM ALL DEPTHS W/UTILITY & NEC PRIOR TO CONSTRUCTION.
7. CONTRACTOR TO PROVIDE PULL BOXES AS REQUIRED BY NEC AND SITE CONDITIONS.

TYP. BURIED CONDUIT TRENCH DETAILS (1)

SCALE: N.T.S.

TÜVRheinland®
Precisely Right.

Letter Report

TUV Rheinland of North America, Inc.
295 Foster St. #100
Littleton, MA 01460, USA
www.tuv.com

11/19/2021

Report No. 32195766.001
Project No. 234176170

Mr. Mark Edwards
Tesla, Inc.
3500 Deer Creek Rd
Palo Alto, CA 94304, USA

Tel: (678) 438 9475
Email: Markedwards@tesla.com

Subject: Duraline Conduits 2", 3" and 4" Testing

Dear Mr. Mark Edwards:

This letter report is to present the results of testing results of Duraline flexible conduit for Tesla supercharger station installation in accordance with the following standards:

- *ANSI/CAN/UL1660 Liquid-tight Flexible Nonmetallic Conduit, 6th Ed. dated 01/30/2019*
- *UL 651A Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit, 5th Ed. dated 03/10/2017*
- *UL 1990 Nonmetallic Underground Conduit with Conductors, 3rd Ed. dated 01/20/2017*

The project was authorized by the signed PO #4900294467, dated 08/07/2021 for the project proposal # 234041515, the following tests have been completed by 11/02/2021 in the Duraline lab on Knoxville TN.

The following table lists completed tests in accordance with the standards UL 1990, UL 651A and UL 1660.

No.	UL 1990 Clause	UL 651A Clause	UL 1660 Clause	Test description	Test Result
1	10	11.3	--	Water absorption test	Pass
2	11	9.3	--	Low temperature handling test	Pass
3	--	--	5.6	Tension	Pass
4	--	--	5.5	Deflection test	Pass
5	--	--	5.4	Cold Impact	Pass
6	15	11.2	5.11	Moisture penetration	Pass
8	17	--	5.16	Direct burial crush test	Note

Note

- As discussed with Duraline engineers, conduit stiffness varies with wall thickness per Table 5 in the standard ASTM F2160 – 16 Solid Wall High Density Polyethylene (HDPE) Conduit based on Controlled Outside Diameter (OD). The stiffness calculated for conduit 2", 3" and 4" are 101+/22 psi, 92+/-2 psi

MS0009914 Attachment 1 Page 1 of 2 Rev. 0

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Precisely Right.

Letter Report

TUV Rheinland of North America, Inc.
295 Foster St. #100
Littleton, MA 01460, USA
www.tuv.com

and 61+/-2 psi. The test has been performed per ASTM 2412 as required by both UL 1990 and UL 1660. All samples were visually inspected and no any cracks observed on samples after the test. Those stiffness test data are reference for Tesla engineers to determine conduit burial depth for Tesla supercharger station installation.

The Duraline conduit test report is enclosed.

The above Duraline conduits can be used in the field installation of charge post CS-350-A2 per NEC with adequate depth calculation.

If there are any questions regarding the results contained in this report, or any of the other services offered by TUV Rheinland of North America, Inc., please do not hesitate to contact the undersigned.

Please note, this letter report does not represent authorization for the use of any TUV Rheinland certification marks.

Evaluated by:

Zhiyong Hu
Principal Test Engineer
Email:zhu@us.tuv.com

Reviewed by:

Howard Liu
Manager, Power Electronics Segment – Americas
Email:hliu@ut.tuv.com

MS0009914 Attachment 1 Page 2 of 2 Rev. 0

DURALINE CONDUIT TUV CERTIFICATION (2)

SCALE: N.T.S.

SPECIALTY

SMOOTH-COR FLEX

- Flexible: Reduces/eliminates the need for sweeps and bends
- Crush resistant: Equivalent to Schedule 40 PVC
- Lightweight: Easier installation, 40% lighter than PVC
- Compatibility: Easily adapts to other conduit materials
- Glueless coupling: Safe, quick assembly
- Gasketed: Air and watertight
- Low COF: Longer cable pulls with lower cable stress

INSTALLATION TYPES
Underground
Direct Bury
Concrete Encasement

SIZE RANGE AVAILABLE
2.0"
3.0"
4.0"

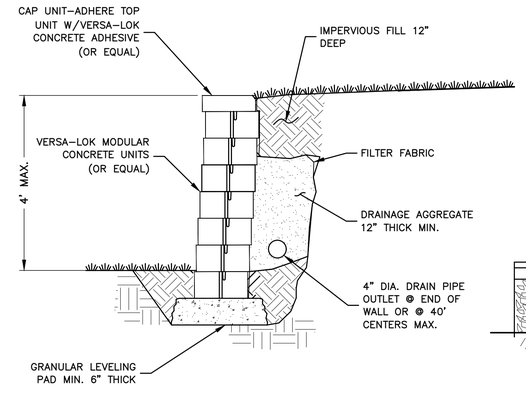
STANDARD COLORS
Outer Wall:
Inner Wall:

FEATURES

STANDARD
DETAILS
SPECIFICATIONS All Smooth-Cor Flex dimensions meet or exceed one or more of the following: ASTM D-3350, ASTM D-638, ASTM D-792, ASTM D-1238, ASTM D-1693
CONDUIT MARKINGS Permanent marking along conduit includes: material, relevant standards, production info, and sequential feet or meter markings.
CO-EXTRUDED LINING Corrugated exterior with a smooth, co-extruded inner layer
PRE-INSTALLED TAPE Factory pre-installed Bull-Line™ 1250lb Pull Tape comes standard in Smooth-Cor Flex on steel reels. Smooth-Cor Flex coils are only available as empty.
OPTIONS
PACKAGING Available on steel reels or 250' coils

dura-line +1 800 847 7661 WWW.DURALINE.COM TLG(MX) orbia

DL-SMOOTH-COR-FLEX-T-2022

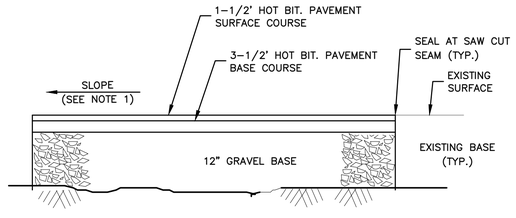


NOTE:

1. RETAINING WALL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.
2. CONTRACTOR TO DOCUMENT & VERIFY RETAINING WALL MATERIAL & CONSTRUCTION METHODS ARE IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.

RETAINING WALL (3)

SCALE: N.T.S.

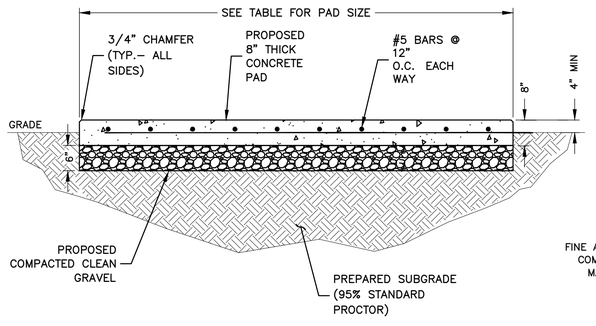


NOTE:

1. CONTRACTOR TO VERIFY ADA/ACCESSIBLE STRIPING AND ASSOCIATED STALLS HAVE <2% GRADE IN ALL DIRECTION. CONTRACTOR TO REMOVE AND REPLACE PAVEMENT AS REQUIRED FOR COMPLIANCE.

BITUMINOUS PAVEMENT DETAIL (4)

SCALE: N.T.S.



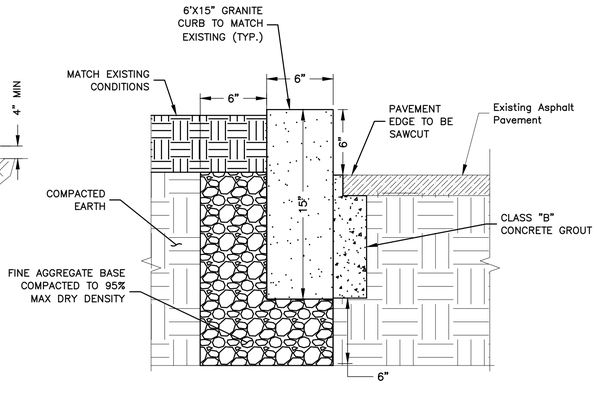
CONCRETE PAD DIMENSIONS					
PAD TYPE	CONCRETE	L	W	t (THICKNESS)	AREA
CONCRETE PAD	4000 PSI	7'-6"	4'-0"	8"	30.00 S.F.

NOTE:

1. SEE CONCRETE NOTES ON SHEET GN-1.

CONCRETE PAD DETAIL (5)

SCALE: N.T.S.



NOTES:

1. SAW CUT AREA TO BE REPAIRED/REPLACED. DISPOSE OF DEBRIS PROPERLY OFF SITE.
2. INSTALL FORMS AS NECESSARY.
3. COMPACT EXISTING SUBGRADE MATERIAL TO ACHIEVE 95% COMPACTION.

GRANITE CURB DETAIL (6)

SCALE: N.T.S.

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3500 DEER CREEK ROAD
PALO ALTO, CA 94304
(650) 681-5000

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DALLAS, TX 75244
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PHONE: 469.232.5200

STATE OF NEW HAMPSHIRE · BENJAMIN B. REVETTE No.13830 · LICENSED PROFESSIONAL ENGINEER
09/05/2023

DRAWN BY: FG
CHECKED BY: SES
APPROVED BY: MCS
PROJECT #: 50123704
JOB #: 50159146

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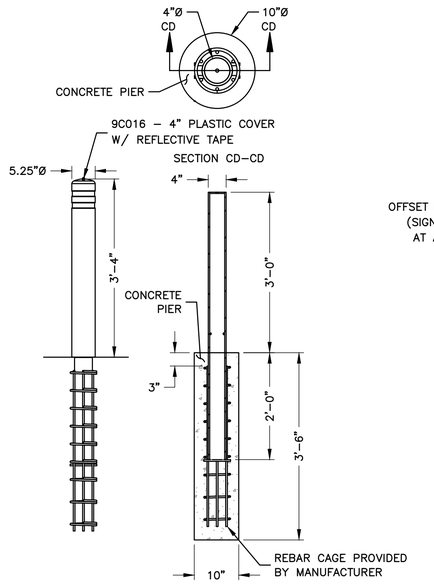
SITE NAME:
DOVER, NH
TRT ID: 32502

SITE ADDRESS:
200 STERLING WAY
DOVER, NH 03820

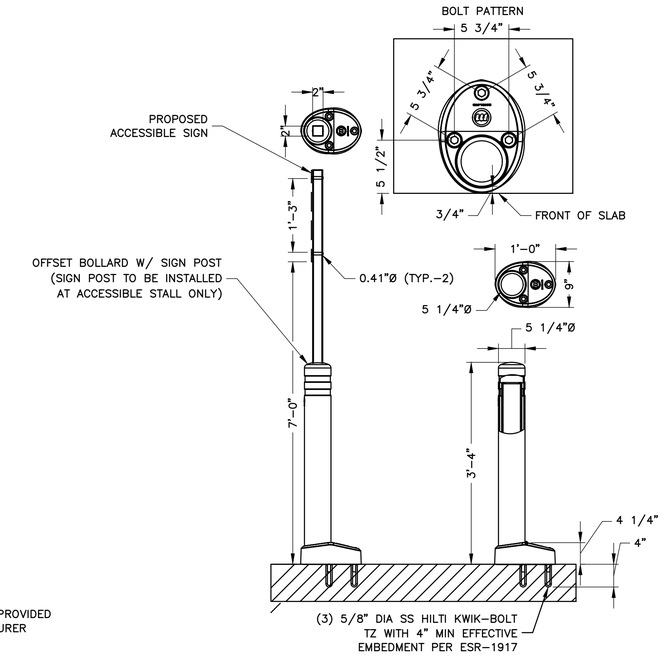
SHEET TITLE
CONSTRUCTION DETAILS II

SHEET NUMBER
(9) C-5



McCUE CRASH CORE DETAIL 1

SCALE: N.T.S.



McCUE REBOUNDING BOLLARD & SIGN 2

SCALE: N.T.S.

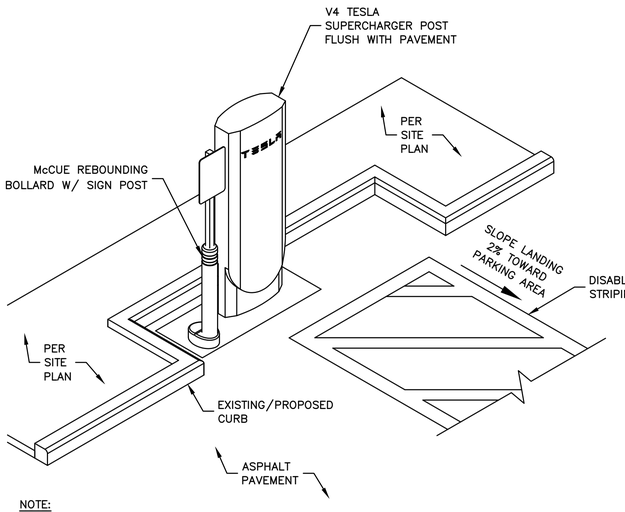
ACCESSIBLE–VAN

ACCESSIBLE SIGNAGE DETAIL 3

SCALE: N.T.S.

DISABLED ACCESS SIGN 4

SCALE: N.T.S.



NOTE:

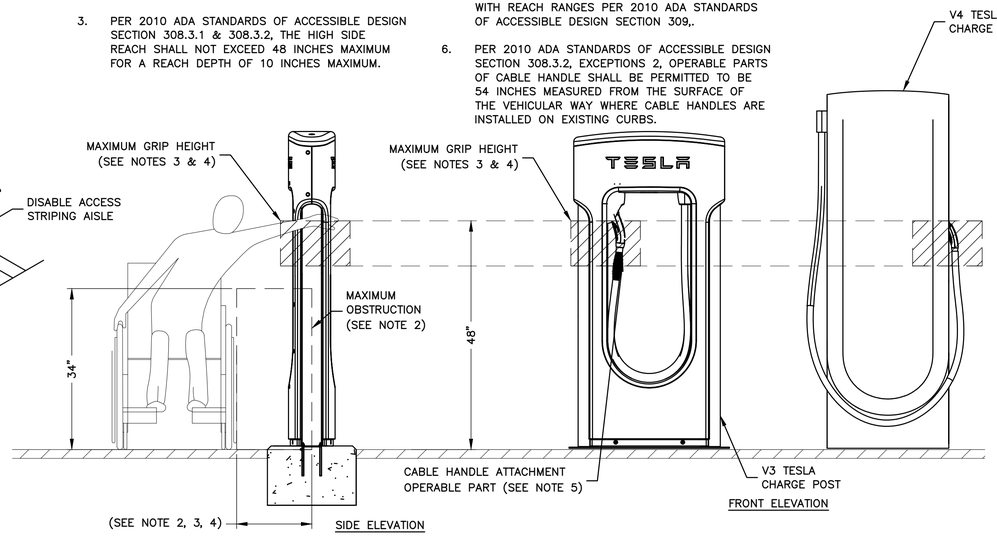
1. 48" MAX HEIGHT OF SUPERCHARGER HANDLE AT ACCESSIBLE CHARGE POSTS FROM SURFACE OF VEHICULAR WAY WHEN INSTALLED ON EXISTING CURBS.
2. V4 CABLE TERMINUS TO BE CENTERED ON THE STALL.

ACCESSIBILITY LAYOUT DETAIL 5

SCALE: N.T.S.

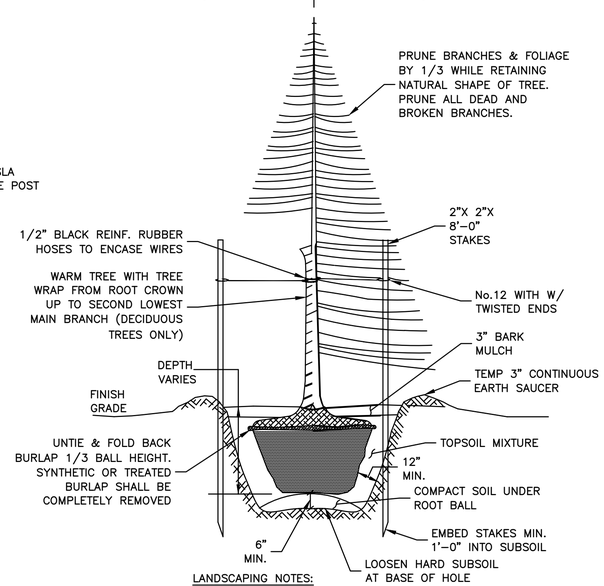
NOTES:

1. DETAIL IS IN REFERENCE TO 2010 ADA STANDARDS OF ACCESSIBLE DESIGN.
2. PER 2010 ADA STANDARDS OF ACCESSIBLE DESIGN SECTION 308.3.1 & 308.3.2, MAXIMUM OBSTRUCTION TO BE NO LARGER THAN 24 INCHES IN WIDTH AND 34 INCHES IN HEIGHT.
3. PER 2010 ADA STANDARDS OF ACCESSIBLE DESIGN SECTION 308.3.1 & 308.3.2, THE HIGH SIDE REACH SHALL NOT EXCEED 48 INCHES MAXIMUM FOR A REACH DEPTH OF 10 INCHES MAXIMUM.
4. PER 2010 ADA STANDARDS OF ACCESSIBLE DESIGN SECTION 308.3.1 & 308.3.2, WHERE THE REACH DEPTH EXCEEDS 10 INCHES, THE HIGH SIDE REACH SHALL NOT EXCEED 46 INCHES MAXIMUM FOR A REACH DEPTH OF 24 INCHES MAXIMUM.
5. OPERABLE PART OF CABLE HANDLE COMPLIES WITH REACH RANGES PER 2010 ADA STANDARDS OF ACCESSIBLE DESIGN SECTION 309,.
6. PER 2010 ADA STANDARDS OF ACCESSIBLE DESIGN SECTION 308.3.2, EXCEPTIONS 2, OPERABLE PARTS OF CABLE HANDLE SHALL BE PERMITTED TO BE 54 INCHES MEASURED FROM THE SURFACE OF THE VEHICULAR WAY WHERE CABLE HANDLES ARE INSTALLED ON EXISTING CURBS.



GRAB HEIGHT DETAIL 6

SCALE: N.T.S.



LANDSCAPING NOTES:

1. LANDSCAPE TREES SHALL BE A MINIMUM OF 7'–0" IN HEIGHT WHEN PLANTED.
2. FINAL DESIGN PENDING TOWNSHIP REVIEW. CONTRACTOR TO CONFIRM LANDSCAPE DESIGN W/TESLA PM PRIOR TO CONSTRUCTION.

TREE PLANTING DETAIL 7

SCALE: N.T.S.

WAIV–2023–0005

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3500 DEER CREEK ROAD
PALO ALTO, CA 94304
(650) 681-5000

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Dewberry Engineers Inc.
4835 LBJ FREEWAY
SUITE 475
DALLAS, TX 75244
TX FIRM #: F-6548
PHONE: 469.232.5200

STATE OF NEW HAMPSHIRE · BENJAMIN B. REVETTE No.13830 · LICENSED PROFESSIONAL ENGINEER ·

09/05/2023

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

SUBMITTALS

REV.	DATE	DESCRIPTION
4	09/05/23	FOR CONSTRUCTION
3	08/16/23	FOR CONSTRUCTION
2	07/19/23	FOR CONSTRUCTION
1	07/17/23	FOR CONSTRUCTION
0	03/31/23	FOR CONSTRUCTION
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:

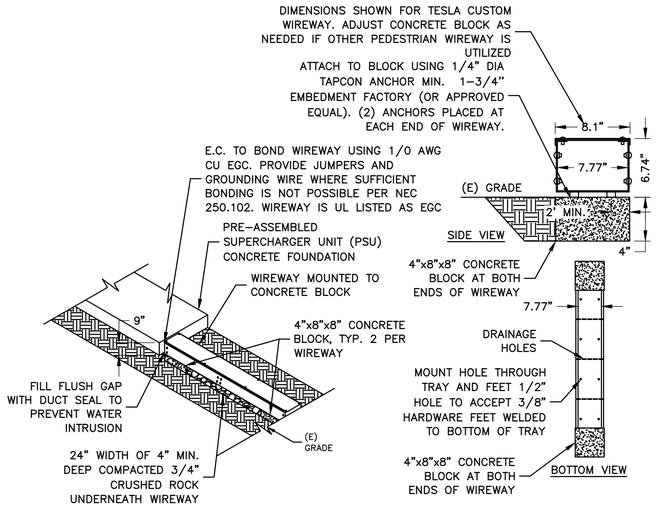
DOVER, NH
TRT ID: 32502

SITE ADDRESS:

200 STERLING WAY
DOVER, NH 03820

SHEET TITLE
CONSTRUCTION
DETAILS III

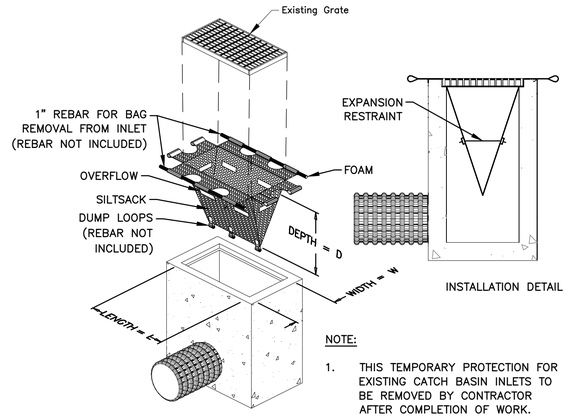
SHEET NUMBER
(10) C–6



WIREWAY TROUGH DETAIL

SCALE: N.T.S.

1



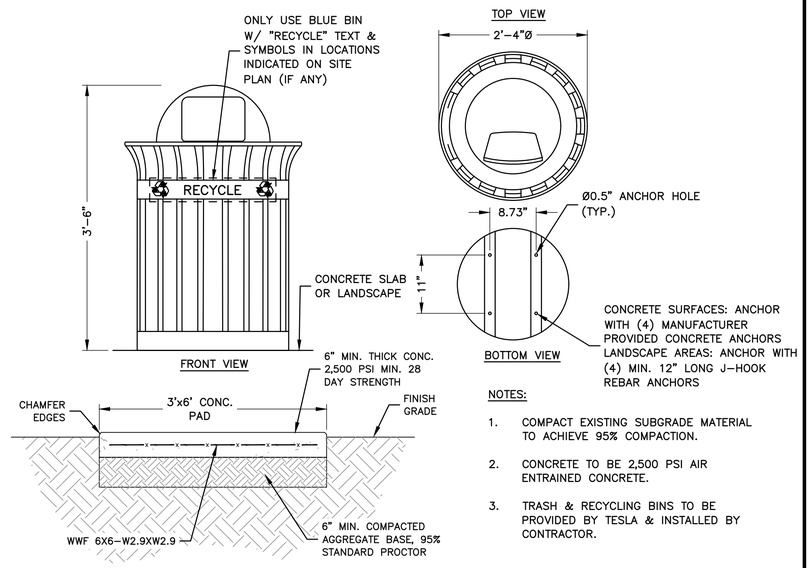
NOTE:

1. THIS TEMPORARY PROTECTION FOR EXISTING CATCH BASIN INLETS TO BE REMOVED BY CONTRACTOR AFTER COMPLETION OF WORK.
2. DETAIL SIMILAR FOR ROUND INLET.

CATCH BASIN INLET PROTECTION DETAIL

SCALE: N.T.S.

2



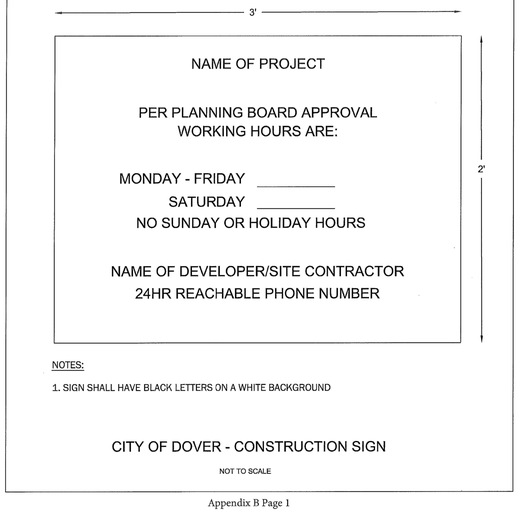
NOTES:

1. COMPACT EXISTING SUBGRADE MATERIAL TO ACHIEVE 95% COMPACTION.
2. CONCRETE TO BE 2,500 PSI AIR ENTRAINED CONCRETE.
3. TRASH & RECYCLING BINS TO BE PROVIDED BY TESLA & INSTALLED BY CONTRACTOR.

WASTE MANAGEMENT BIN & PAD DETAIL

SCALE: N.T.S.

3



NOTES:

1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND

CITY OF DOVER - CONSTRUCTION SIGN

NOT TO SCALE

Appendix B Page 1

NOTE:

1. CITY OF DOVER – CONSTRUCTION SIGN TO BE ON SITE PER CITY OF DOVER, NEW HAMPSHIRE DEPARTMENT OF COMMUNITY SERVICES – CONSTRUCTION GUIDELINES, PERMITS, RULES, AND REGULATIONS

DOVER NH CONSTRUCTION SIGN DETAIL

SCALE: N.T.S.

4

WAIV–2023–0005

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STATE OF NEW HAMPSHIRE · BENJAMIN B. REVETTE No.13830 · LICENSED PROFESSIONAL ENGINEER ·

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A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:

DOVER, NH
TRT ID: 32502

SITE ADDRESS:

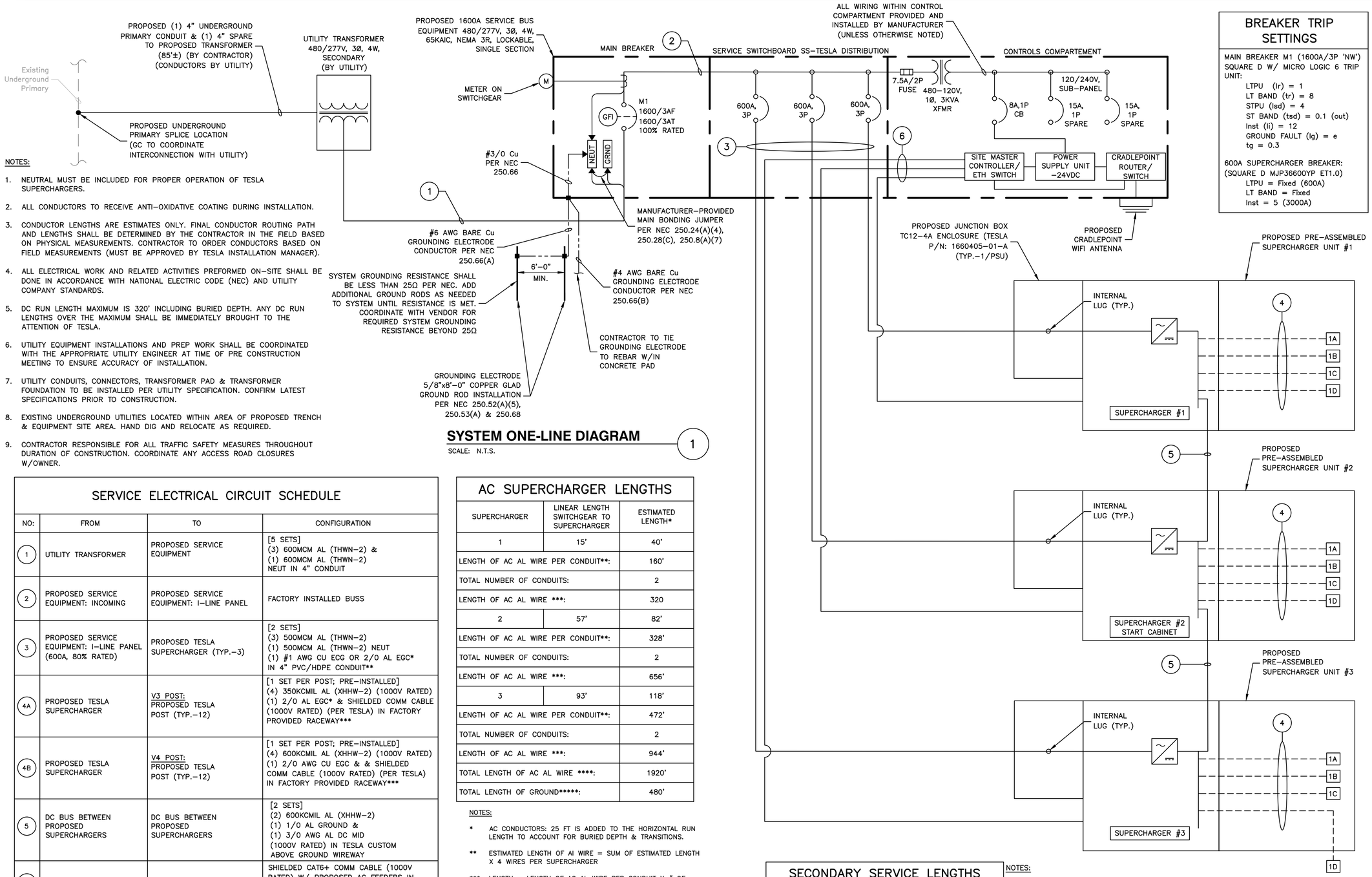
200 STERLING WAY
DOVER, NH 03820

SHEET TITLE

CONSTRUCTION DETAILS IV

SHEET NUMBER

(11) C–7



NOTES:

1. NEUTRAL MUST BE INCLUDED FOR PROPER OPERATION OF TESLA SUPERCHARGERS.
2. ALL CONDUCTORS TO RECEIVE ANTI-OXIDATIVE COATING DURING INSTALLATION.
3. CONDUCTOR LENGTHS ARE ESTIMATES ONLY. FINAL CONDUCTOR ROUTING PATH AND LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD BASED ON PHYSICAL MEASUREMENTS. CONTRACTOR TO ORDER CONDUCTORS BASED ON FIELD MEASUREMENTS (MUST BE APPROVED BY TESLA INSTALLATION MANAGER).
4. ALL ELECTRICAL WORK AND RELATED ACTIVITIES PREFORMED ON-SITE SHALL BE DONE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE (NEC) AND UTILITY COMPANY STANDARDS.
5. DC RUN LENGTH MAXIMUM IS 320' INCLUDING BURIED DEPTH. ANY DC RUN LENGTHS OVER THE MAXIMUM SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF TESLA.
6. UTILITY EQUIPMENT INSTALLATIONS AND PREP WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY ENGINEER AT TIME OF PRE CONSTRUCTION MEETING TO ENSURE ACCURACY OF INSTALLATION.
7. UTILITY CONDUITS, CONNECTORS, TRANSFORMER PAD & TRANSFORMER FOUNDATION TO BE INSTALLED PER UTILITY SPECIFICATION. CONFIRM LATEST SPECIFICATIONS PRIOR TO CONSTRUCTION.
8. EXISTING UNDERGROUND UTILITIES LOCATED WITHIN AREA OF PROPOSED TRENCH & EQUIPMENT SITE AREA. HAND DIG AND RELOCATE AS REQUIRED.
9. CONTRACTOR RESPONSIBLE FOR ALL TRAFFIC SAFETY MEASURES THROUGHOUT DURATION OF CONSTRUCTION. COORDINATE ANY ACCESS ROAD CLOSURES W/OWNER.

SYSTEM ONE-LINE DIAGRAM (1)

SCALE: N.T.S.

BREAKER TRIP SETTINGS

MAIN BREAKER M1 (1600A/3P 'NW') SQUARE D W/ MICRO LOGIC 6 TRIP UNIT:
- LTPU (Ir) = 1
- LT BAND (tr) = 8
- STPU (Isd) = 4
- ST BAND (tsd) = 0.1 (out)
- Inst (Ii) = 12
- GROUND FAULT (Ig) = e
- tg = 0.3

600A SUPERCHARGER BREAKER: (SQUARE D MJP36600YP ET1.0)
- LTPU = Fixed (600A)
- LT BAND = Fixed
- Inst = 5 (3000A)

SERVICE ELECTRICAL CIRCUIT SCHEDULE

NO:	FROM	TO	CONFIGURATION
(1)	UTILITY TRANSFORMER	PROPOSED SERVICE EQUIPMENT	[5 SETS] (3) 600MCM AL (THWN-2) & (1) 600MCM AL (THWN-2) NEUT IN 4" CONDUIT
(2)	PROPOSED SERVICE EQUIPMENT: INCOMING	PROPOSED SERVICE EQUIPMENT: I-LINE PANEL	FACTORY INSTALLED BUSS
(3)	PROPOSED SERVICE EQUIPMENT: I-LINE PANEL (600A, 80% RATED)	PROPOSED TESLA SUPERCHARGER (TYP.-3)	[2 SETS] (3) 500MCM AL (THWN-2) (1) 500MCM AL (THWN-2) NEUT (1) #1 AWG CU ECG OR 2/0 AL EGC* IN 4" PVC/HDPE CONDUIT**
(4A)	PROPOSED TESLA SUPERCHARGER	V3 POST: PROPOSED TESLA POST (TYP.-12)	[1 SET PER POST; PRE-INSTALLED] (4) 350KCMIL AL (XHHW-2) (1000V RATED) (1) 2/0 AL EGC* & SHIELDED COMM CABLE (1000V RATED) (PER TESLA) IN FACTORY PROVIDED RACEWAY***
(4B)	PROPOSED TESLA SUPERCHARGER	V4 POST: PROPOSED TESLA POST (TYP.-12)	[1 SET PER POST; PRE-INSTALLED] (4) 600KCMIL AL (XHHW-2) (1000V RATED) (1) 2/0 AWG CU EGC & & SHIELDED COMM CABLE (1000V RATED) (PER TESLA) IN FACTORY PROVIDED RACEWAY***
(5)	DC BUS BETWEEN PROPOSED SUPERCHARGERS	DC BUS BETWEEN PROPOSED SUPERCHARGERS	[2 SETS] (2) 600KCMIL AL (XHHW-2) (1) 1/0 AL GROUND & (1) 3/0 AWG AL DC MID (1000V RATED) IN TESLA CUSTOM ABOVE GROUND WIREWAY
(6)	SITE CONTROLLER	SUPERCHARGER (TYP.)	SHIELDED CAT6+ COMM CABLE (1000V RATED) W/ PROPOSED AC FEEDERS IN 4" PVC/HDPE CONDUIT** (SEE FEEDER SCHEDULE #3)

* MODIFIED PER NEC 250364(A)(2)
** PER UL LISTED HDPE CONDUIT PERMITTED. CONTRACTOR TO CONFIRM WITH TESLA CM.
*** INSTALL APPLICABLE WIRING CONFIGURATION CORRESPONDING WITH CHARGE POST VERSION INSTALLED.

AC SUPERCHARGER LENGTHS

SUPERCHARGER	LINEAR LENGTH SWITCHGEAR TO SUPERCHARGER	ESTIMATED LENGTH*
1	15'	40'
LENGTH OF AC AL WIRE PER CONDUIT**:		160'
TOTAL NUMBER OF CONDUITS:		2
LENGTH OF AC AL WIRE ***:		320
2	57'	82'
LENGTH OF AC AL WIRE PER CONDUIT**:		328'
TOTAL NUMBER OF CONDUITS:		2
LENGTH OF AC AL WIRE ***:		656'
3	93'	118'
LENGTH OF AC AL WIRE PER CONDUIT**:		472'
TOTAL NUMBER OF CONDUITS:		2
LENGTH OF AC AL WIRE ***:		944'
TOTAL LENGTH OF AC AL WIRE ****:		1920'
TOTAL LENGTH OF GROUND*****:		480'

NOTES:

* AC CONDUCTORS: 25 FT IS ADDED TO THE HORIZONTAL RUN LENGTH TO ACCOUNT FOR BURIED DEPTH & TRANSITIONS.

** ESTIMATED LENGTH OF AI WIRE = SUM OF ESTIMATED LENGTH X 4 WIRES PER SUPERCHARGER

*** LENGTH = LENGTH OF AC AL WIRE PER CONDUIT X # OF CONDUITS

**** TOTAL LENGTH = SUM OF AC LENGTHS

***** TOTAL LENGTH OF EGC = LENGTH X # SETS

SECONDARY SERVICE LENGTHS

	LINEAR LENGTH	ESTIMATED LENGTH*
TRANSFORMER TO SWITHGEAR	11'	36'
TOTAL LENGTH OF AL WIRE**:		144'
NUMBER OF WIRE FILLED CONDUITS:		5
TOTAL LENGTH OF AC AL WIRE***:		720'

NOTES:

1. SEE SHEET E-1 FOR WIRE CONFIGURATION.

* AC CONDUCTORS: 25 FT IS ADDED TO THE HORIZONTAL RUN LENGTH TO ACCOUNT FOR BURIED DEPTH & TRANSITIONS.

** ESTIMATED LENGTH OF AI WIRE = SUM OF ESTIMATED LENGTH X 4 WIRES PER SET

*** LENGTH OF AL WIRE PER DISCONNECT = ESTIMATED TOTAL LENGTH OF AL WIRE X # WIRE SETS

WAIV-2023-0005

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STATE OF NEW HAMPSHIRE - PROFESSIONAL ENGINEER
JOSEPH GIGANTIELLO
No. 15821
LICENSED
9-5-23

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

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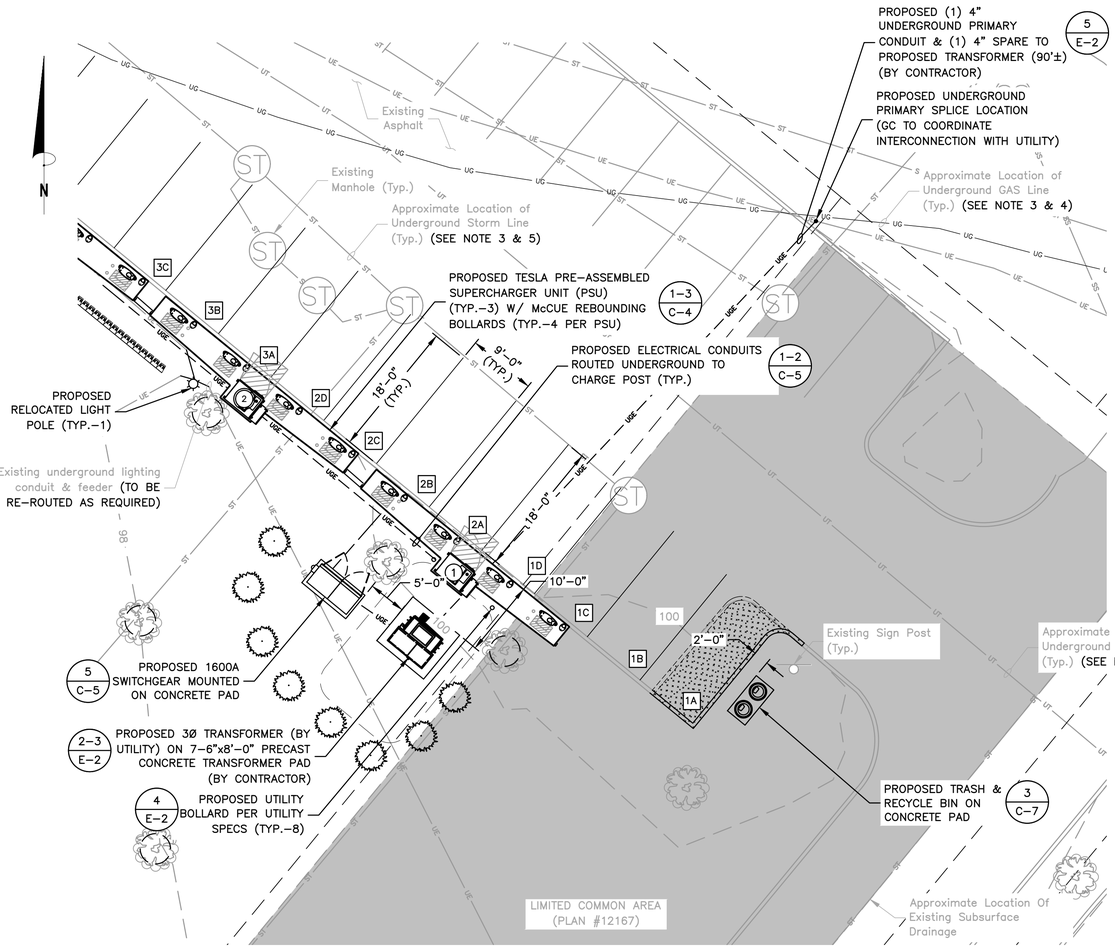
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:
DOVER, NH
TRT ID: 32502

SITE ADDRESS:
200 STERLING WAY
DOVER, NH 03820

SHEET TITLE
ELECTRICAL ONE-LINE DIAGRAM

SHEET NUMBER
(12) E-1



UTILITY PLAN

SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"

1

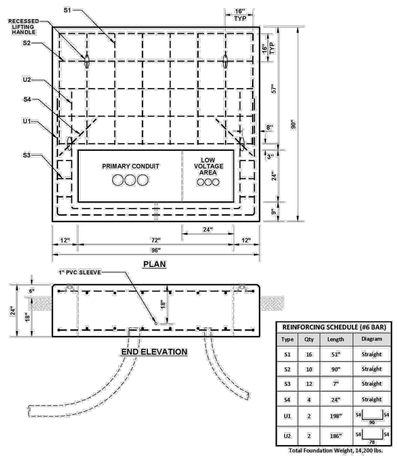
0' 10' 20'

UTILITY S.O.W. RESPONSIBILITIES	
SCOPE OF WORK	BY
SPLICE INTO EXISTING UNDERGROUND PRIMARY	UTILITY'S CONTRACTOR
PROVIDE UTILITY TRANSFORMER	UTILITY
PROVIDE & INSTALL PRIMARY CONDUCTORS	UTILITY
MAKE PRIMARY & SECONDARY CONNECTIONS INTO TRANSFORMER	UTILITY
PROVIDE & INSTALL PRIMARY TRENCHING & CONDUITS	CONTRACTOR
INSTALL UTILITY TRANSFORMER PAD , ASSOCIATED GROUNDING & BOLLARDS	CONTRACTOR
PROVIDE & INSTALL SECONDARY TRENCHING, CONDUITS & PULL BOXES (AS REQUIRED)	CONTRACTOR
PROVIDE & INSTALL SECONDARY CONDUCTORS	CONTRACTOR

NOTE:

1. DETAILS FROM 'REQUIREMENTS FOR ELECTRIC SERVICE CONNECTIONS, INFORMATION AND REQUIREMENT FOR ELECTRIC SUPPLY', NH 2021 EDITION. CONTRACTOR TO VERIFY FINAL DETAILS & REQUIREMENTS WITH EVERSOURCE PRIOR TO CONSTRUCTION.

3 Phase Padmounted Transformer Slab 15KV 750-2500 KVA Dead Front
34KV 75-2500 KVA Dead Front



REINFORCING SCHEDULE (#6 BAR)			
Type	Qty	Length	Diagram
S1	16	53"	Straight
S2	10	90"	Straight
S3	12	7"	Straight
S4	8	24"	Straight
U1	2	198"	54 / 90 / 54
U2	2	186"	54 / 78 / 54

Total Foundation Weight, 14,200 lbs.

EVERSOURCE INTERNAL REFERENCE 53.116

Refer to **Installation Requirements for Padmounted Transformer and Sector Cabinets** for additional details.

35

TRANSFORMER PAD

SCALE: N.T.S.

2

Installation Requirements For Padmounted Transformers & Sector Cabinets

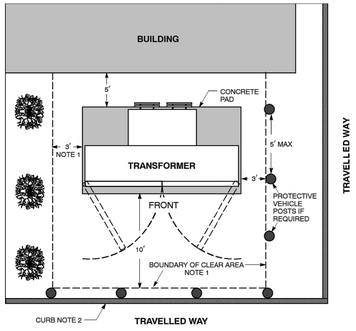
1. Foundations shall be procured from a precast concrete manufacturer.
2. Reinforcing bars shall meet ASTM A615 Grade 60 specifications.
3. Reinforcing bar shall have a minimum 2" of concrete clear cover. Provide a 1" chamfer on all exposed slab edges.
4. All lifting handles will be recessed below the concrete surface.
5. One-inch PVC conduit sleeves shall be incorporated into the foundation to allow ground grid leads to enter pit openings per the details. Post-drilled holes are not acceptable.
6. Concrete shall have a minimum 28-day compressive strength of 4000 psi with 5-7% air entrainment. The top surface of the slab shall receive a wood float finish.
7. Slab shall be placed on undisturbed existing soil overlain **by a 12" minimum layer of ¾" crushed stone or well compacted gravel backfill.** If unsuitable bearing materials exist at this subgrade, remove and replace with additional stone or compacted gravel. Do not place concrete on a frozen subgrade.
8. Conduit pit is typically located on the roadway side. Refer to **Pad Mounted Transformers Location to Buildings and Roadway** and **Pad Mounted Oil Insulated Equipment Location and Mechanical Protection** for specific location and clearance requirements.
9. Schedule 40 PVC conduits shall be installed a minimum of 36" deep (30" for secondaries) and be surrounded with sand. Install an indicator tape 12" below finish grade along the conduit run beyond the slab. Refer to **Primary/Secondary Cable Installation** for details.
10. Conduit quantities and sizes shall be per specific project specifications (typically primary conduits are 5" and low voltage are 3").
11. Conduit elbows shall extend a maximum of 4" above the bottom of slab into the conduit pit. Cut if necessary (grind off sharp edges) and install a protective cap bushing.
12. Exposed steel conduits in the entrance pit shall be bonded to the ground grid. Refer to **Pad Mount Equipment Grounding**.

TRANSFORMER NOTES

SCALE: N.T.S.

3

Pad-Mounted Transformers Location To Buildings and Roadways



EVERSOURCE INTERNAL REFERENCE 42.047

NOTES

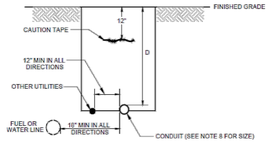
1. To inspect, provide access, operate elbow connectors, and ventilate the transformer, the above specified clear area distances to buildings or shrubs shall be maintained. The distance from the building is to the concrete transformer pad. Property line shall be considered an obstruction since fences, shrubs, etc. may be installed at a future date by adjacent property owners. Because of the possibility of cooling fins overhanging the pad, side clearances to be increased to 5' for transformers 1000 kVA and larger.
2. If no curb exists or transformer is located closer than 10' to the traveled way, protective vehicle posts shall be installed. Refer to **Pad Mounted Oil Insulated Equipment Location and Mechanical Protection**.
3. The top of the concrete transformer pad shall be installed 6" above final grade.
4. Transformer shall not be located on steep grades where access to or elbow operation is made difficult.
5. Transformer shall meet the minimum distances to doors, windows, fire escapes, air intakes and walls. Refer to **Pad Mounted Oil Insulated Equipment Location and Mechanical Protection**.
6. Transformer is not to be located with its doors facing the building.
7. Refer to **Oil Detention for Pad Mounted Transformers and Environmental Considerations** for information on environmental considerations.

BOLLARD LAYOUT DETAIL

SCALE: N.T.S.

4

Primary/Secondary Cable Installation



D = 36 inches for primary voltage cable
30 inches for secondary cables

EVERSOURCE INTERNAL REFERENCE 50.102

NOTES

1. All non-metallic conduit and fittings shall be electrical grade, schedule 40 PVC, shall conform to the applicable sections of NEMA and be UL Listed. **Only gray-colored conduit will be accepted.** Any PVC conduit not having the proper NEMA and UL markings will not be accepted. All steel conduits shall conform to ASTM A120 and be rigid galvanized steel. All PVC conduit joints must be cemented. Steel fittings shall be sealed with compound.
2. All 90-degree sweeps will be made using rigid galvanized steel with a minimum radius of 24" for 3" conduit, 36" for 4" conduit and 5" conduit, and 48" for 6" conduit. **All steel sweeps within 18" of surface shall be properly grounded.**
3. A 10' horizontal section of rigid galvanized steel conduit will be required at each sweep for primary.
4. The conduit should cross paved areas at approximately 90 degrees.
5. Backfill may be made with excavated material or comparable; unless material is deemed unsuitable by the Company. Backfill shall be free of frozen lumps, rocks or stones 2" maximum in dimension, debris, and rubbish. Organic material shall not be used as backfill. Backfill shall be thoroughly compacted in six-inch layers.
6. **A suitable pulling string, capable of 200 pounds of pull, must be installed in the conduit before the Company is notified to install cable**. The string should be blown into the conduit after the run is assembled to avoid bonding the string to the conduit.
7. Routing of the conduit and inspection prior to backfill will be provided by the Company. Installation of the conduit will be done by the contractor. **A Company Representative must be notified two business days prior to backfilling the trench**. If a cable cannot be successfully pulled through the completed conduit system due to a construction error, it will be the contractor's responsibility to locate and repair the involved conduit. **The contractor will be responsible for all resulting expenses.**
8. Normal conduit sizes for the Company are 3" for single phase primary and secondary voltage cables, 4" for three phase secondary, and 5" for three phase primary.
9. All conduit installations must conform to the National Electrical Safety Code, state and local codes and ordinances, and where applicable, the National Electrical Code.
10. Other utilities shall maintain a minimum distance of 12" in all directions from the Company conduit.

TRENCH DETAIL

SCALE: N.T.S.

5

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STATE OF NEW HAMPSHIRE
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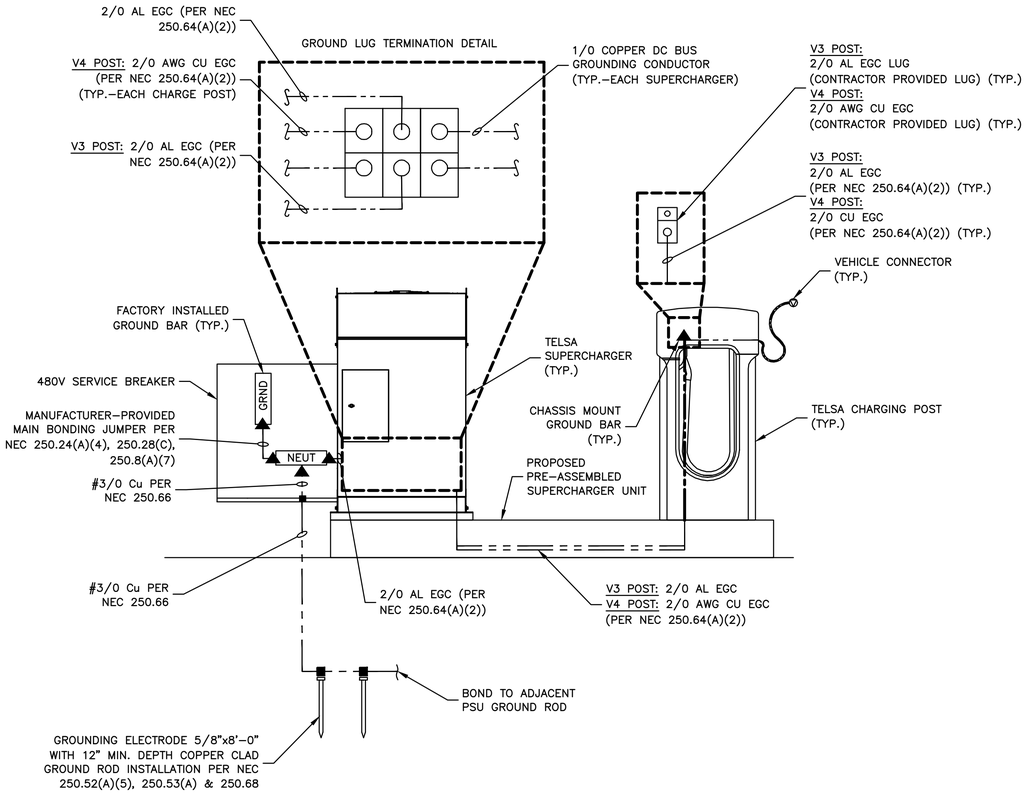
DOVER, NH 03820

SHEET TITLE

UTILITY PLAN & DETAILS

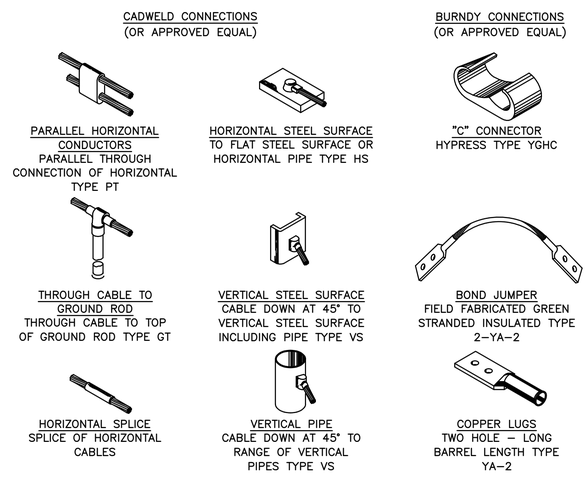
SHEET NUMBER

(13) E–2



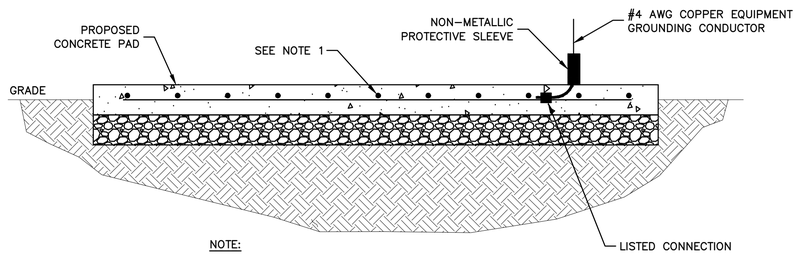
GROUNDING SCHEMATIC 1

SCALE: N.T.S.



GROUND CONNECTION DETAILS 2

SCALE: N.T.S.



NOTE:

1. REBAR BONDED TOGETHER WITH STEEL TIE WIRES.

CONCRETE ENCASED ELECTRODE DETAIL 3

SCALE: N.T.S.

WAIV–2023–0005

3500 DEER CREEK ROAD
PALO ALTO, CA 94304
(650) 681-5000

Dewberry®
Dewberry Engineers Inc.
4835 LBJ FREEWAY
SUITE 475
DALLAS, TX 75244
TX FIRM #: F-6548
PHONE: 469.232.5200

STATE OF NEW HAMPSHIRE
JOSEPH GIGANTIELLO
No. 15821
LICENSED PROFESSIONAL ENGINEER
9-5-23

DRAWN BY:	FG
CHECKED BY:	SES
APPROVED BY:	MCS
PROJECT #:	50123704
JOB #:	50159146

SUBMITTALS

REV.	DATE	DESCRIPTION
4	09/05/23	FOR CONSTRUCTION
3	08/16/23	FOR CONSTRUCTION
2	07/19/23	FOR CONSTRUCTION
1	07/17/23	FOR CONSTRUCTION
0	03/31/23	FOR CONSTRUCTION
A	02/09/23	ISSUED FOR 90% REVIEW

SITE NAME:

DOVER, NH
TRT ID: 32502

SITE ADDRESS:

200 STERLING WAY
DOVER, NH 03820

SHEET TITLE

GROUNDING SCHEMATIC & DETAILS

SHEET NUMBER

(14) G–1

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2023-0055

Application Type:	Conditional Use Permit
Applicant(s):	David A. Laroche and Mihaela Nicoleta Laroche
Owner(s):	David A. Laroche and Mihaela Nicoleta Laroche
Location:	7 Fieldstone (Tax Map A, Lot 39-2)
Meeting Date:	September 26, 2023

INTENT: To obtain a Conditional Use Permit to replace an existing failed septic system with another within 75' of a wetland

LOTS PROPOSED: N/A

AGENDA ITEM #: 4-E

ACREAGE: 3.6 acres

ZONING DISTRICT: R-40

EXISTING USE: Residential

PROPOSED USE: Residential

SURROUNDING: Residential

ZBA ACTION: N/A

ATTACHMENTS: Planning application, materials, CC minutes

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for this meeting

PERMITS REQUIRED: CUP

WAIVERS REQUESTED:

- N/A for this case

Summary of Request and Background

The applicant is requesting a Conditional Use Permit to allow for a new septic system to replace an existing failing septic system which is already within 75' of a wetland.

The Conservation Commission endorsed this application at their September 11 2023 meeting.

Consistency with Land Use Regulations

The Conservation District ordinance §170.27.1- G(2) states no septic systems can be placed within 75' of a wetland and §170.27.1-F provides for conditional use permits to be granted to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

Planning Staff feels that the applicant and property owner is replacing a failing septic system and has met the criteria of practical alternative, avoidance, minimization, and mitigation and propose to create minimal additional wetland disturbance to the extent possible and is working with NHDES to ensure the wetlands are not impacted by this new septic system.

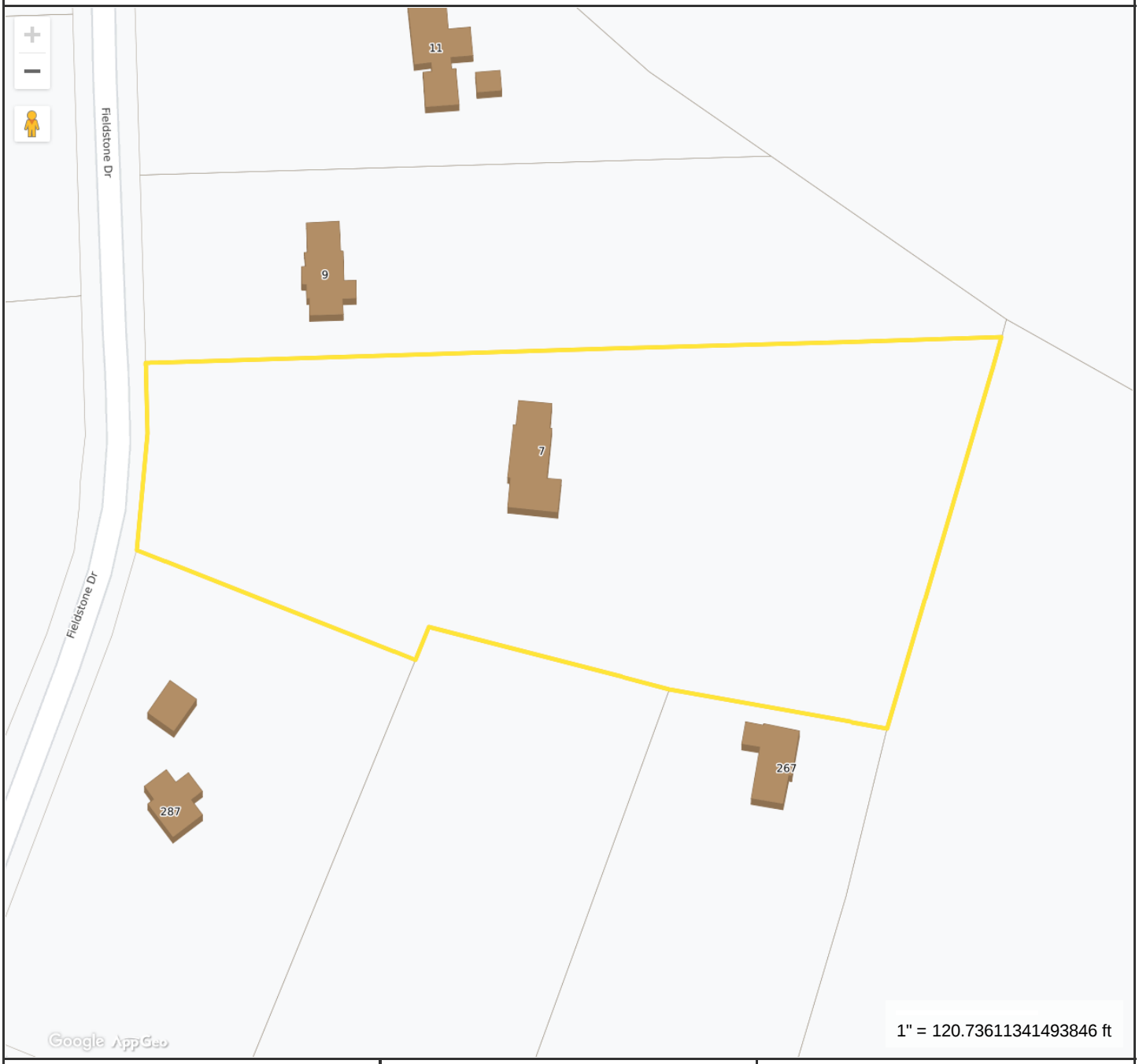
STAFF RECOMMENDATION:

The Planning Department recommends the Planning Board accept the item for review, hold the public hearing, make findings and vote to grant the Conditional Use Permit with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to the Issuance of the Conditional Use Permit:

1. The owner shall sign the final plans before Planning Board signature.
2. State permits are issued.
3. Revise plans to show a new culvert to be installed beneath the driveway to resolve the outstanding water entering the city right-of-way issue. Plans shall also show culvert location and inverts to ensure drainage flows towards culvert south of the existing driveway.

COND-2023-0055 7 Fieldstone Drive



Property Information

Property ID	A0039-002000
Location	7 FIELDSTONE DR
Owner	LAROCHE DAVID A &
Land Use	101
Zoning Code	R-40

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 7/10/2023
Data updated Daily

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

PERMIT SNAPSHOT REPORT COND-2023-0055
FOR CITY OF DOVER, N.H.

Permit Type	Conditional Use	**Project:**		**App Date:**	08/31/2023
Work Class:	Environmental	**District:**	None	**Exp Date:**	NOT AVAILABLE
Status:	Submitted - Online	**Square Feet:**	0.00	**Completed:**	NOT COMPLETED
Valuation:	$0.00	**Assigned To:**	Glidden, Jean	**Approval Expire Date:**	

Description: Conditional use permit to replace a failed septic system.

Parcel:	**Address:**	**Zone:**
A0039-002000 Main	7 Fieldstone Dr Main Dover, NH	

Plan Preparer	Applicant	Owner
Joseph P Nichols	Joseph P Nichols	David Laroche
102 Chester Road	102 Chester Road	Home: (603) 234-3228
Fremont, NH 03044	Fremont, NH 03044	
Business: (160) 323-4322 x8	Business: (160) 323-4322 x8	
Mobile: (603) 234-3228	Mobile: (603) 234-3228	

Permit Custom Fields

General Purpose	Alteration / Addition	Project Zone	Residential	Select Permit Type(s):	Conservation District, Wetland Protection District
Work	A conditional use permit for Zoning Article 170-27.1. Wetland Protection District (G. Specific provisions (2)) is required to replace the failed septic system in the same location as the previous state and local approved system. The lot was created in 1986 prior to the Wetland Protection District current regulation. The original septic design was approved by the town in 1997 on an abutting lot. In 2003 a new septic plan was applied for to install a leach field on the subject lot. A letter was included in the application stating that the lot was created prior to the regulations, and that it was to be considered "Grandfathered", and that the plan met the States required 50' setback for poorly drained wetlands. This plan was granted town and state approval with the 50' setback. We are requesting that the town grant a Conditional Use Permit to install the leach field in the same location that is 50' from a poorly drained wetland. Due to onsite conditions this is the most feasible		location. The proposed replacement system has been approved by the NHDES.	What is the parcel zoned?	R-40

PERMIT SNAPSHOT REPORT (COND-2023-0055)

permitstatefed	NHDES Construction Approval - Approved ISDS_eCA2023081126_Approved_Plan ISDS_eCA2023081126_Construction_Approval

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Joseph_Nichols_8/31/2023.jpg	08/31/2023 10:08	Nichols, Joseph		Uploaded via CSS

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00004884	Planning General Application Fee	$200.00	$0.00
	Total for Invoice INV-00004884	**$200.00**	**$0.00**
	Grand Total for Permit	**$200.00**	**$0.00**

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1			
Confirm application complete v.1	Generic Action		
Conditional Use Review v.1	Receive Submittal		
Technical Review Committee Meeting v.1	Hold Meeting		
Planning Board v.1			
Planning Board Agenda v.1	Task		
Invoice for Notices v.1	Task		
Send Notices v.1	Task		
Planner Creates Staff Recommendations v.1	Plan Activity		
Distribute Planning Board Materials v.1	Task		
Planning Board Hearing v.1	Hold Hearing		
Planning Board Decision v.1	Permit Activity		
NOD Sent to Applicant v.1	Create Report		
Issue Permit v.1			
Verify Fees Prior to Permit v.1	Generic Action		
Issue and Review Permit v.1	Generic Action		
Print and Email Permit v.1	Generic Action		
Plans uploaded to Treeno v.1	Generic Action		
Property Info Group v.1	Generic Action		
Recording v.1	Task		

dotloop signature verification: dtlp.us/v21p-zUNy-MGW7

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

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

Property Owner Name: David A. Laroche

Signature(s) of Property Owner(s): David A. LaRoche dotloop verified 08/29/23 7:34 PM EDT AYRS-EWUY-MRR8-QOFT Date: 2023-08-29

Signature of Applicant: Joseph Paul Nichols Date: 2023-08-29
if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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

Property Owner Name: David A. Laroche

Signature(s) of Property Owner(s): David A. LaRoche dotloop verified 08/29/23 7:34 PM EDT XP52-7UKL-UHIJ-ETUD Date: 2023-08-29

Signature of Applicant: Joseph Paul Nichols Date: 2023-08-29
if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

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

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

Address of Sign Location: _____

Sign Permit Application Type:
(check one)

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

COND-2023-0055 **7 FIELDSTONE DRIVE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
A0018-D00000	221 LONG HILL RD	GREEK ORTHODOX CHURCH		93 LOCUST ST	DOVER	NH	03820
A0037-000000	VARNEY RD	PAOLINI DAVID TRUSTEE	LONG HILL TRUST	242 CENTRAL AVE	DOVER	NH	03820
A0039-001000	267 LONG HILL RD	LISBON SHAWN M &	LISBON NICOLE M	267 LONG HILL RD	DOVER	NH	03820
A0039-003000	9 FIELDSTONE DR	PUFFER JOSEPH M JR &	PUFFER CAROL L	9 FIELDSTONE DRIVE	DOVER	NH	03820
A0039-004000	11 FIELDSTONE DR	BRISSETTE JEFFREY L &	BRISSETTE ELENA M	11 FIELDSTONE DR	DOVER	NH	03820
A0039-037000	48 FIELDSTONE DR	KNIGHT JOSHUA D		48 FIELDSTONE DR	DOVER	NH	03820
A0039-040000	4 FIELDSTONE DR	PIERCE BRIAN J &	PIERCE KATHLEEN A	4 FIELDSTONE DR	DOVER	NH	03820
A0039-E00000	287 LONG HILL RD	WHITNEY MARK E & NANCY J TRUSTEES	WHITNEY FAMILY REVOCABLE TRUST	287 LONGHILL RD	DOVER	NH	03820
A0039-G00000	287 LONG HILL RD	WHITNEY MARK E & NANCY J TRUSTEES	WHITNEY FAMILY REVOCABLE TRUST	287 LONGHILL RD	DOVER	NH	03820
A0039-002000	7 FIELDSTONE DR	LAROCHE DAVID A &	LAROCHE MIHAELA NICOLETA	7 FIELDSTONE DR	DOVER	NH	03820

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday, September 11, 2023
Meeting Time:	**5:30 pm**

MEMBERS PRESENT: Bill Hunt (Chair), Steve Fellows (Vice Chair), Jay Aube, Amy Kramer-Perry, Kristen Murphy, Bruce Batchelder (Alternate), Abigail Lyon
Absent (Excused): Robert Atwood (Secretary), Jake Geddes (Alternate)
STAFF PRESENT: Jackson Kaspari – Resilience Manager
OTHERS PRESENT: Ben Clark, Rad Nichols, Ryan Kaplan

A. Kramer-Perry arrived at 5:40 pm.

1. **CALL TO ORDER AND ROLL CALL**
   The meeting was convened at 5:30 PM.

2. **CITIZENS' FORUM**
   None

3. **APPROVAL OF THE PRIOR MEETING MINUTES** – August 14, 202
   S. Fellows moved to approve the minutes of August 14th as submitted. B. Batchelder seconded. Vote: 4 yes with J. Aube and A. Lyon abstaining.

4. **OLD BUSINESS:**
   None

5. **NEW BUSINESS:**

   A. City of Dover Conditional Use Permit for David Laroche, (Agent: Nichols Environmental, LLC.), Assessor's Map A, Lot 39-2, zoned R-40, located at 7 Fieldstone Drive. Proposal is to allow a septic system to be constructed within 75 feet of wetlands.

   Ryan Kaplan represented the item and explained when the house was built, the regulations were 50'. Since then, the lot has been subdivided into two lots and in March of 2003 a note was added to the file that although the State regulations remain 50', the City changed to 75', but this property was given exception as being 'grandfathered in'. However, a CUP wasn't pulled at that time, so it is being sought now as a replacement in kind with no changes. The plan has been submitted and approved by the state.

   He walked the board through the site and described the proposed plan and confirmed the existing system has failed. There is no change in size for the proposed new system. He answered specific questions about the proposed system specs.

   J. Kaspari noted the Planning Department wanted to be sure the proper procedures were followed for CUP. They are comfortable with the proposal.

   S. Fellows moved to endorse the proposal as presented. K. Murphy seconded. Vote: 6 yes with A. Kramer Perry abstaining (due to late arrival).

DRAFT

B. City of Dover Conditional Use Permit for Cooperative Alliance for Seacoast Transportation, (Agent: CMA Engineers, Inc.), Assessor's Map H, Lot 35-C-4, zoned CM, located at 42 Sumner Drive. Proposal is to allow grading, placement of impervious surfaces and a stormwater management system, creating 14,479 square feet of temporary impact and 5,862 square feet of permanent impact to the 50-foot wetland buffer.

Ben Clark represented the item and explained the proposal for work on site at the COAST headquarters. The goal is to get all operations on one site, so the proposal includes an admin and maintenance building as well as bus storage.

The proposal includes roughly the same amount of impervious area which he described along with details of storm water and drainage.

He answered questions and gave further details about drainage, storm water, impervious areas, green areas, snow storage and invasive species.

J. Kaspari noted the applicant has been good at responding to Planning Department requests throughout the process and they have been through TRC. Staff is satisfied with the proposal due to the reduction of impervious areas and use of an existing site.

A. Lyon moved to endorse the proposal as presented. A. Kramer Perry seconded. Vote: 7 yes.

6. REPORT FROM THE CHAIR

A. Review of Correspondence Received from NH Department of Environmental Services

J. Kaspari noted the receipt of a request for more information on a standard wetlands dredge and fill permit that was filed with the state.

7. OTHER BUSINESS

A. Update from Forest Management Subcommittee

S. Fellows reported the subcommittee met and discussed the pocket forest and issues with the high school site. Other options were discussed.

J. Kaspari has been in touch with folks at the elementary school and they would love to see this happen. Staff will work on getting the proposal together and submitted for funding which would come from SUGI, an international organization.

A certified arborist was also in attendance and educated the subcommittee on several interesting topics and details.

J. Kaspari gave a few more details about the meeting. Discussion occurred on a set of ash trees in the CBD.

Discussion occurred about updates regarding the storm water proposal.

J. Kaspari extended an invitation to the Commission members to the installation of a pergola at the Dover Community Garden this Sunday.

DRAFT

A. Lyon reported grant results for natural resource inventory should come in soon. Also, Coastal Conservation Commission round table information was emailed out to all members. The next meeting will present and discuss flood disclosure laws and proposed legislation at the state level. The meeting/ presentation can be viewed virtually. She also highlighted Great Bay 2030 and a project they are funding called changemaker bootcamp.

8. ADJOURNMENT

S. Fellows motioned to adjourn. A. Lyon seconded. Vote: 7 yes.
The meeting was adjourned at 6:27 PM.

DRAFT

APPROVAL FOR OPERATION

N.H. DEPARTMENT OF ENVIRONMENTAL SERVICES
SUBSURFACE SYSTEMS BUREAU
P.O. BOX 95, 6 HAZEN DRIVE, CONCORD, NH 03302-0095

CA2003050352 APPROVAL NO. CA2003050352

AMENDED DUE TO:

OWNER:

RAYMOND/SUSAN MASSE
7 FIELDSTONE DR
DOVER NH 03820-

2003.03.07
A0039-002000
7 Fieldstone

COPY SENT TO:

CITY ENGINEER
288 CENTRAL AVE
DOVER NH 03820

Map No./Lot No.: A/39-2 / 2
Subd. Appvl. No.: SA1996000361
Subd. Name: FIELDSTONE
County: STRAFFORD
Registry Book No.: 2452
Registry Page No.: 0686
Probate Docket No.: (If Applicable)
Type of System: O
4 BR
600 GPD
Town/City Location: DOVER
Street Location: FIELDSTONE DRIVE

Subsurface waste disposal systems must be operated and maintained in a manner so as to prevent nuisance or health hazard due to system failure. (RSA 485-A:37)

It is unlawful to discharge any hazardous chemicals or substances into subsurface waste disposal systems. Included are paints, thinners, gasoline and chlorinated hydrocarbon solvents such as TCE, sometimes used to clean failed septic systems and auto parts. (Env-Ws 1503.04)

Installer D Dionne Permit No. 1995

☐ Owner Installed For His/Her Domicile

Was Inspected On (Date) 3/7/03

Before Covering And Is Hereby Approved For Use.

Date Approved: 3/7/03

By: Dan W Plante

Authorized Agent Of N.H. Department of Environmental Services

REVISED 8/01

(OVER)

200300742 TOWNS

APPROVAL FOR CONSTRUCTION

CA2003050352

N.H. DEPARTMENT OF ENVIRONMENTAL SERVICES
SUBSURFACE SYSTEMS BUREAU
P.O. BOX 95, 6 HAZEN DRIVE, CONCORD, NH 03302-0095

APPROVAL NO. CA2003050352

THE PLANS AND SPECIFICATIONS FOR SEWAGE OR WASTE DISPOSAL SYSTEM SUBMITTED FOR:

OWNER:

RAYMOND/SUSAN MASSE
7 FIELDSTONE DR
DOVER NH 03820-

2003.03.07
A0039-002000
7 Fieldstone

COPY SENT TO:

CITY ENGINEER
288 CENTRAL AVE
DOVER NH 03820

BY APPLICANT: PERMIT NO. 00834

CAREX ECOSYSTEM SCIENCES
538 CENTRAL AVE STE B
DOVER NH 03820-

Map No./Lot No.:	A/39-2 / 2
Subd. Appvl. No.:	SA1996000361
Subd. Name:	FIELDSTONE
County:	STRAFFORD
Registry Book No.:	2452
Registry Page No.:	0686
Probate Docket No.: (If Applicable)	
Type of System:	4 BR 600 GPD
Town/City Location:	DOVER
Street Location:	FIELDSTONE DRIVE

Subsurface waste disposal systems must be operated and maintained in a manner so as to prevent nuisance or health hazard due to system failure. (RSA 485-A:37)

It is unlawful to discharge any hazardous chemicals or substances into subsurface waste disposal systems. Included are paints, thinners, gasoline and chlorinated hydrocarbon solvents such as TCE, sometimes used to clean failed septic systems and auto parts. (Env-Ws 1503.04)

ADVISE YOUR CONTRACTOR OF REQUIRED CHANGES IN PLANS AS INDICATED BELOW CONDITIONS

1. ALTHOUGH THE SEPTIC SYSTEM AS APPROVED HEREIN MEETS ALL ENV-WS 1000 RULES AS SUBMITTED, PLEASE BE ADVISED THAT CONSTRUCTION ON THIS LOT MAY INVOLVE DREDGING AND FILLING A JURISDICTIONAL WETLAND, AND IF SO, SHALL REQUIRE WETLANDS BUREAU APPROVAL PRIOR TO CONSTRUCTION.

Approved this date: 02/07/2003

By: JEFFREY D MARCOUX
N.H. Department of Environmental Services Staff

Date amended: _____

Amended by: _____

(OVER)

REVISED 8/01

TOWNS

200300742

State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Subsurface Systems Bureau
6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
603-271-3501 FAX 603-271-6683
TDD Access: Relay NH 1-800-735-2964

APPLICATION FOR INDIVIDUAL SEWAGE DISPOSAL SYSTEM APPROVAL

COPY

FOR OFFICE USE ONLY FEE $90.00
Fee Paid_____ Date Received_____ Failed System/Replacement_____ Expedite _____
Check No._____ Waiver Request_____ Holding Tank

RECEIVED MAY 21 2002 By Eng

PLEASE PRINT OR WRITE LEGIBLY, COMPLETE ENTIRE FORM

1. System Location:
CITY/TOWN: **DOVER** CITY/TOWN APPROVAL OBTAINED: IF YES/DATE
STREET/LOCATION **FIELDSTONE** LOT NO: **15** TAX MAP NO: **A / 39-29**
SUBDIVISION NAME: **FIELDSTONE** REGISTRY BOOK NO: **2452** PAGE NO: **0686**
STATE APPROVAL NO. **1985 23016** COUNTY: **STRAFFORD** PROBATE NO. (If Applicable)

2. Water Supply:
MUNICIPAL WATER SUPPLY ☐ COMMUNITY ☐ WELL ON LOT ☒ OTHER ☐

3. Lot OWNER'S Name: **SOUTHERN NH BANK AND TRUST CO** STREET: **31 PELHAM RD**
CITY/TOWN: **SALEM** STATE: **NH** ZIP: **03079** TEL.NO: **603-894-5700**

4. APPLICANT'S Name: **CAREX ECOSYSTEM SCIENCES** STREET: **538 CENTRAL AVE, STE B**
CITY/TOWN: **DOVER** STATE: **NH** ZIP: **03820** TEL.NO: **603-742-6665**
Designer's Name: **LEONARD LORD** Permit No: **834** P.E.:
(P.E. required if more than 2,500 GPD)

5. Amended Plan Revised Plan Previous Construction Approval No.

THE STATEMENT BELOW MUST BE SIGNED AND DATED BY THE APPLICANT AND OWNER[S]

Owner(s):
THE UNDERSIGNED CERTIFY THAT THEY ARE THE PRESENT OWNERS OF THE PROPERTY BEING APPLIED FOR AND THAT THEY HAVE SEEN THE PLANS AND THEY ARE IN ACCORDANCE WITH THEIR NEEDS AND DESIRES. THE UNDERSIGNED FULLY UNDERSTANDS THAT SHOULD THIS PLAN BE APPROVED, NO WAIVERS TO THE CONSTRUCTION APPROVAL WILL BE ALLOWED. ANY CHANGES WILL REQUIRE A NEW SUBMISSION (WITH FEE), REVIEW AND APPROVAL.

Date: 5/21/02 Signed: _____ (AGENT)
Owner(s)

Applicant:
To the best of my knowledge, the data and information which I have submitted to obtain approval for construction from the New Hampshire Department of Environmental Services is true and correct. I understand that an approval based upon incorrect data may be subject to revocation. I also understand that NO CONSTRUCTION OF ANY STRUCTURE SERVICED BY THE PROPOSED SYSTEM, NOR THE SYSTEM ITSELF, MAY COMMENCE WITHOUT PRIOR WRITTEN DEPARTMENT APPROVAL. I HAVE COMPLIED WITH ALL LOCAL REGULATIONS OR ORDINANCES RELATIVE TO CONSTRUCTION OF SEWAGE DISPOSAL SYSTEMS AND HAVE OBTAINED ALL OTHER APPROVALS THAT MAY BE REQUIRED FOR OTHER WORK RELATED TO CONSTRUCT ION OF THE SEWAGE DISPOSAL SYSTEM. The applicant herewith certifies, where applicable, that the approved off-site, municipal or community, water supply is available at the lot line.

Date 5/21/02 Signed: _____

Shoreland Protection Certification

Introduction
The New Hampshire Shoreland Protection Act (RSA 483-B) requires that applicants for environmental permits which involve work in the protected shoreland "demonstrate to the satisfaction of the department (of environmental services) that the proposal meets or exceeds the development standards of this chapter." The certification contained herein is an acceptable vehicle for such a demonstration.

The protected shoreland is defined to be all land located within 250 feet of a reference line. The reference line means:
(a) For natural fresh water bodies without artificial impoundments, the natural mean high water level as determined by the Department of Environmental Services.
(b) For artificially impounded fresh water bodies with established flowage rights, the limit of the flowage rights, and for water bodies without established flowage rights, the waterline at full pond as determined by the elevation of the spillway crest.
(c) For coastal waters, the highest observable tide line, which means a line defining the furthest landward limit of tidal flow, not including storm events, which can be recognized by indicators such as the presence of a strand line of flotsam and debris, the land ward margin of salt tolerant vegetation, or a physical barrier that blocks further flow of the tide.
(d) For rivers, the ordinary high water mark.

In the case of rivers, the law applies to all fourth order or higher streams of the state with the exception of rivers or river segments designated for management and protection under RSA 483 prior to January 1, 1993. Lists of fourth order and higher streams and river segments designated under RSA 483 are available at no cost from the Department of Environmental Services.

Pd 5/21/02 Cb#2243 To DES 5/23/02

1) Will the project for which a permit is hereby requested involve construction, land clearing, or other development within the protected shoreland as defined above?

Answer yes or no. Answer **NO**

2) If the project involves construction, land clearing, or other development within the protected shoreland, will it meet or exceed the development standards of RSA 483-B? Answer yes, or not applicable. Answer

If not applicable, state why

(Note, the development standards are not applicable in only three situations: (1) the project is not located in the protected shoreland, (2) the activities are exempted under section 483-B:9.V or section 483-B:19, of the Act, or (3) the Commissioner of the Department of Environmental Services has granted a variance from a specific standard.)

Certification

As owner or agent for the owner of the subject property, by my signature below, I certify that:

(a) My responses to questions 1 and 2 above are correct to the best of my knowledge,

(b) I am familiar with the requirements of RSA 483-B and have knowledge of the development activities which will be undertaken,

(c) The plans and other information submitted with this permit application provide a complete description of the project and demonstrate how compliance will be accomplished, and

(d) I understand that false information given in this certification may result in revocation of any permit granted by the Department of Environmental Services as a result of this application, liability for remediation or restoration of the land affected, fines up to $20,000 for each day of continuing violation, imprisonment or other penalties.

Certified by_____ Date

Name (print or type) owner or agent (circle one)

YOU MUST SUBMIT THE FOLLOWING INFORMATION (Put all information on plans)

6. Two (2) sets of scale plans (one inch = 20 feet) (3 sets if designer wants a return copy of plan) showing all lot dimensions and indicating the distance to and location of existing and proposed buildings wells and waste disposal systems. If the proposed system or well is closer than seventy-five (75) feet to a boundary, you will need to indicate what is on the adjoining lot. If the lot is so large that it cannot be scaled 1"= 20' on your drawing, two copies of a scale plan with a larger scale must also be submitted. The 1:20 scale plan must also contain pertinent elevation data and location of test pits and percolation test holes . All plans must be folded to 82≅ x 11". Show areas of exposed ledge or boulders greater than 6' in diameter within 75' of proposed system.

7. Specific directions so that inspector may easily drive to and find the site. Include mileage referenced from intersections or landmarks to this site. This shall be indicated on a USGS quadrangle map or other suitable location plan.

8. Distance and location of nearest surface water in relation to disposal system (must be a minimum of 75' from all lakes streams, ponds and swamps whether intermittent or year round). If nearest surface water is greater than 75' away a statement to that effect is required.

9. a. Location of proposed and existing drinking water supply lines. Soil Data (to be determined in leaching area for each system indicate where and when tests were taken). Percolation test data including rate and depth of test.

b. Test Pit Log:

! Show depth from original ground surface to the observed water table.

! Show depth to seasonal high water table (springtime). This may be an estimate based on mottling, NRCS data, etc., (water table must be four (4) feet below the bed during all seasons of the year).

! Show depth from original ground surface to impermeable substratum (i.e. clay or ledge). Clay and hardpan will be considered impermeable unless proven otherwise. Bottom of effluent disposal area (EDA) must be four (4) feet above any bedrock or any impermeable substratum. P.E. required for ledge lots where system will be greater than 600 GPD or for disposal systems greater than 2,500 GPD.

! Soil description of the predominant soil layers including color notations from the Munsell Soil Color book.

c. Soil survey data for the lot. This information is available at the Local Soil Conservation District office. When taken from current soil map, a copy design.

10. Where fill is required, filled area must extend a minimum of five (5) feet in all directions beyond the edge of the bed at same elevation as top of the bed before tapering off at a 3:1 slope (3 horizontal to 1 vertical). There shall be a minimum of 3" of loam suitable for seeding and proper stabilization of the slope. All topsoil, roots and organic matter under the leaching system must be removed before fill is placed. Show fill details and material specification on cross section.

11. Number of bedrooms or estimated sewage load in gallons per day.

12. Ground surface elevations for the lot showing the slope of the land at two foot contour intervals. Sufficient spot elevations are required to verify level lots . Show original and proposed contours. Reference contours to a benchmark located near the proposed systems. This topographical information must appear on the 1:20 scale plan.

13. Liquid capacity of septic tank, details and materials of construction.

14. Scale plan of leaching system with construction details and dimensions. Show sill elevations, invert elevations at building exit, inlet and outlet from septic tank, inlet and outlet from distribution box, invert of effluent disposal lines and bottom elevation of effluent disposal area. Inverts must be referenced to your benchmark. Invert may be best indicated on your cross section or profile sections.

15. Make, type and capacity of sewage pump, pump well, discharge line, siphons, siphon chambers, etc. (when used).

16. Number of outlets and name of manufacturer of distribution box (all laterals must be directly connected to distribution box, i.e., no tees in the middle of the bed or field will be allowed).

17. Cross section of leaching trench, leaching bed, or dry well showing all construction details (in leach bed, lines should be uniformly spaced from 3 to 5 feet on center and half of that distance in from the edge of the bed: present requirements for dry wells are 6" minimum of stone around sides of dry well and 1 foot minimum of stone under dry well). Show all fill details on cross section.

18. Type and size of stone. Must be clean and meet septic stone specifications.

19. Type, size and manufacturer of effluent disposal pipe.

20. Type of effluent disposal pipe joints for perforated pipes. (Leach lines shall be interconnected or capped at the end.)

21. Statement that effluent disposal pipes and bottom of effluent disposal area will be laid as level as possible.

22. Show a suitable area for a replacement system where available or state that the system may have to be rebuilt in place, if failure occurs.

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CAREX ECOSYSTEM SCIENCES
538 CENTRAL AVENUE, SUITE B
DOVER, NH 03820

603-742-6665 PHONE/FAX
CAREX@WORLDPATH.NET

Transmittal

To: ALAN DEW'S Date: 5/21/02

From: LENNY LORO

Re: SEPTIC DESIGNS, FIELDSTONE DR, LOTS 29 & 40A

Item	Pages
FOR EA LOT: CHECK TO CITY OF DOVER	
CHECK TO NHDES	
STATE SEPTIC APPLICATION	
STATE SEPTIC DESIGN (4 COPIES EA)	
STAMPED, ADDRESSED ENVELOPE TO NHDES	

Message

ALAN -

LOT #29 WAS CREATED IN 1985, PRIOR TO THE CURRENT WETLAND REGULATIONS (CREATED 9/14/88). I COULD NOT MEET THE ~~TOWN~~ CURRENT WETLAND SETBACK OF 75', BUT CAN MEET THE STATE SETBACK OF 50'. IT IS MY UNDERSTANDING THAT WE WOULD NOT NEED TO MEET THE TOWN SEPTIC SYSTEM SETBACK TO WETLANDS BECAUSE LOT #29 WAS A LOT OF RECORD WHEN THE REGULATIONS WERE ADOPTED. PLEASE CALL IF YOU HAVE ANY QUESTIONS. IF ALL LOOKS GOOD, PLEASE MAIL TO THE STATE IN THE ENVELOPES PROVIDED.

OL DEAN - GRANDFATHERED

THANKS

LENNY

APPROVAL FOR OPERATION

N.H. DEPARTMENT OF ENVIRONMENTAL SERVICES
SUBSURFACE SYSTEMS BUREAU
P.O. BOX 95, 6 HAZEN DRIVE, CONCORD, NH 03302-0095

CA20030050352 APPROVAL NO. CA20030050352

AMENDED DUE TO:

OWNER:

RAYMOND/SUSAN MASSE
7 FIELDSTONE DR
DOVER NH 03820

COPY SENT TO:

CITY ENGINEER
288 CENTRAL AVE
DOVER NH 03820

Map No./Lot No.: A/39-2 / 3
Subd. Appvl. No.: SA1996000361
Subd. Name: FIELDSTONE
County: STRAFFORD
Registry Book No.: 2452
Registry Page No.: 0686
Probate Docket No.: (If Applicable)
Type of System: C
4 BR
600 GPD
Town/City Location: DOVER
Street Location: FIELDSTONE DRIVE

Installer: D Dionne Permit No. 1995

Subsurface waste disposal systems must be operated and maintained in a manner so as to prevent nuisance or health hazard due to system failure. (RSA 485-A:37)

It is unlawful to discharge any hazardous chemicals or substances into subsurface waste disposal systems. Included are paints, thinners, gasoline and chlorinated hydrocarbon solvents such as TCE, sometimes used to clean failed septic systems and auto parts. (Env-Ws 1503.04)

☐ Owner Installed For His/Her Domicile

Was Inspected On (Date) 3/7/03
Before Covering And Is Hereby Approved For Use.

Date Approved: 3/7/03

By: [signature]
Authorized Agent Of N.H. Department of Environmental Services

(OVER

REVISED 8/01

OWNER'S

CAREX ECOSYSTEM SCIENCES
Natural Resource
Assessment & Management

603-742-6665 PHONE/FAX

538 CENTRAL AVE, SUITE B
DOVER, NEW HAMPSHIRE 03820

Memo

To: Alan Dews

From: Leonard A. Lord **Date:** 12/3/02

Re: Septic System Plans, Dover Tax Map A, Lots 39-1 & 39-2

The original owner of these lots (PMJ Construction) had intended to sell Lots 1 & 2 together and so put the septic system for Lot 2 mostly onto Lot 1. That company went out of business and the lots were repossessed by Southern NH Bank and Trust Company. The bank then sold the lots separately. We have designed a new system for Lot 2 and designed a reconfiguration of the existing leaching area that is mostly on Lot 1 to accommodate a new home on that lot. An easement allowing a portion of the existing system for Lot 1 to exist on Lot 2 has been drawn up and is attached. The existing leaching system has only been in use for approximately two years and appears to be in good shape. Please call if you have any questions or concerns.

State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Subsurface Systems Bureau
6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
603-271-3501 FAX 603-271-6683
TDD Access: Relay NH 1-800-735-2964

APPLICATION FOR INDIVIDUAL SEWAGE DISPOSAL SYSTEM APPROVAL

FOR OFFICE USE ONLY FEE $90.00
Fee Paid_____ Date Received_____ Failed System/Replacement_____ Expedite _____
Check No._____ Waiver Request_____ Holding Tank

PLEASE PRINT OR WRITE LEGIBLY, COMPLETE ENTIRE FORM

1. System Location:
   CITY/TOWN: **DOVER** CITY/TOWN APPROVAL OBTAINED: **YES** IF YES/DATE
   STREET/LOCATION **FIELDSTONE** LOT NO: **2** TAX MAP NO: **A / 39-2**
   SUBDIVISION NAME: **FIELDSTONE** REGISTRY BOOK NO: **2452** PAGE NO: **0686**
   STATE APPROVAL NO. **1996 000361** COUNTY: **STRAFFORD** PROBATE NO. (If Applicable)
2. Water Supply:
   MUNICIPAL WATER SUPPLY ☐ COMMUNITY ☐ WELL ON LOT ☒ OTHER ☐
3. Lot OWNER'S Name: **RAYMOND & SUSAN MASSE** STREET: **7 FIELDSTONE DR.**
   CITY/TOWN: **DOVER** STATE: **NH** ZIP: **03820** TEL.NO: **603-749-1702**
4. APPLICANT'S Name: **CAREX ECOSYSTEM SCIENCES** STREET: **538 CENTRAL AVE, STE B**
   CITY/TOWN: **DOVER** STATE: **NH** ZIP: **03820** TEL.NO: **603-742-6665**
   Designer's Name: **LEONARD LORD** Permit No: **834** P.E.:
   (P.E. required if more than 2,500 GPD)
5. Amended Plan Revised Plan **YES** Previous Construction Approval No. **CA1997004262**

COPY

THE STATEMENT BELOW MUST BE SIGNED AND DATED BY THE APPLICANT AND OWNER[S]

Owner(s):
THE UNDERSIGNED CERTIFY THAT THEY ARE THE PRESENT OWNERS OF THE PROPERTY BEING APPLIED FOR AND THAT THEY HAVE SEEN THE PLANS AND THEY ARE IN ACCORDANCE WITH THEIR NEEDS AND DESIRES. THE UNDERSIGNED FULLY UNDERSTANDS THAT SHOULD THIS PLAN BE APPROVED, NO WAIVERS TO THE CONSTRUCTION APPROVAL WILL BE ALLOWED. ANY CHANGES WILL REQUIRE A NEW SUBMISSION (WITH FEE), REVIEW AND APPROVAL.

Date: 12/12/02 Signed: _____ (LEONARD LORD - CAREX ECOSYSTEM SCIENCES - AGENT)
Owner(s)

Applicant:
To the best of my knowledge, the data and information which I have submitted to obtain approval for construction from the New Hampshire Department of Environmental Services is true and correct. I understand that an approval based upon incorrect data may be subject to revocation. I also understand that NO CONSTRUCTION OF ANY STRUCTURE SERVICED BY THE PROPOSED SYSTEM, NOR THE SYSTEM ITSELF, MAY COMMENCE WITHOUT PRIOR WRITTEN DEPARTMENT APPROVAL. I HAVE COMPLIED WITH ALL LOCAL REGULATIONS OR ORDINANCES RELATIVE TO CONSTRUCTION OF SEWAGE DISPOSAL SYSTEMS AND HAVE OBTAINED ALL OTHER APPROVALS THAT MAY BE REQUIRED FOR OTHER WORK RELATED TO CONSTRUCT ION OF THE SEWAGE DISPOSAL SYSTEM. The applicant herewith certifies, where applicable, that the approved off-site, municipal or community, water supply is available at the lot line.

Date 12/12/02 Signed: _____ (LEONARD LORD - CAREX ECOSYSTEM SCIENCES - AGENT)

Shoreland Protection Certification

Introduction
The New Hampshire Shoreland Protection Act (RSA 483-B) requires that applicants for environmental permits which involve work in the protected shoreland "demonstrate to the satisfaction of the department (of environmental services) that the proposal meets or exceeds the development standards of this chapter." The certification contained herein is an acceptable vehicle for such a demonstration.

The protected shoreland is defined to be all land located within 250 feet of a reference line, The reference line means:
(a) For natural fresh water bodies without artificial impoundments, the natural mean high water level as determined by the Department of Environmental Services.
(b) For artificially impounded fresh water bodies with established flowage rights, the limit of the flowage rights, and for water bodies without established flowage rights, the waterline at full pond as determined by the elevation of the spillway crest.
(c) For coastal waters, the highest observable tide line, which means a line defining the furthest landward limit of tidal flow, not including storm events, which can be recognized by indicators such as the presence of a strand line of flotsam and debris, the land ward margin of salt tolerant vegetation, or a physical barrier that blocks further flow of the tide.
(d) For rivers, the ordinary high water mark.

In the case of rivers, the law applies to all fourth order or higher streams of the state with the exception of rivers or river segments designated for management and protection under RSA 483 prior to January 1, 1993. Lists of fourth order and higher streams and river segments designated under RSA 483 are available at no cost from the Department of Environmental Services.

1) Will the project for which a permit is hereby requested involve construction, land clearing, or other development within the protected shoreland as defined above?

Answer yes or no. Answer **NO**

2) If the project involves construction, land clearing, or other development within the protected shoreland, will it meet or exceed the development standards of RSA 483-B? Answer yes, or not applicable. Answer

If not applicable, state why

(Note, the development standards are not applicable in only three situations: (1) the project is not located in the protected shoreland, (2) the activities are exempted under section 483-B:9.V or section 483-B:19, of the Act, or (3) the Commissioner of the Department of Environmental Services has granted a variance from a specific standard.)

Certification

As owner or agent for the owner of the subject property, by my signature below, I certify that:

(a) My responses to questions 1 and 2 above are correct to the best of my knowledge,

(b) I am familiar with the requirements of RSA 483-B and have knowledge of the development activities which will be undertaken,

(c) The plans and other information submitted with this permit application provide a complete description of the project and demonstrate how compliance will be accomplished, and

(d) I understand that false information given in this certification may result in revocation of any permit granted by the Department of Environmental Services as a result of this application, liability for remediation or restoration of the land affected, fines up to $20,000 for each day of continuing violation, imprisonment or other penalties.

Certified by_____ Date 12/12/02

LEONARDO LORO

Name (print or type) owner or agent (circle one)

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6. Two (2) sets of scale plans (one inch = 20 feet) (3 sets if designer wants a return copy of plan) showing all lot dimensions and indicating the distance to and location of existing and proposed buildings wells and waste disposal systems. If the proposed system or well is closer than seventy-five (75) feet to a boundary, you will need to indicate what is on the adjoining lot. If the lot is so large that it cannot be scaled 1"= 20' on your drawing, two copies of a scale plan with a larger scale must also be submitted. The 1:20 scale plan must also contain pertinent elevation data and location of test pits and percolation test holes . All plans must be folded to 8½ x 11". Show areas of exposed ledge or boulders greater than 6' in diameter within 75' of proposed system.
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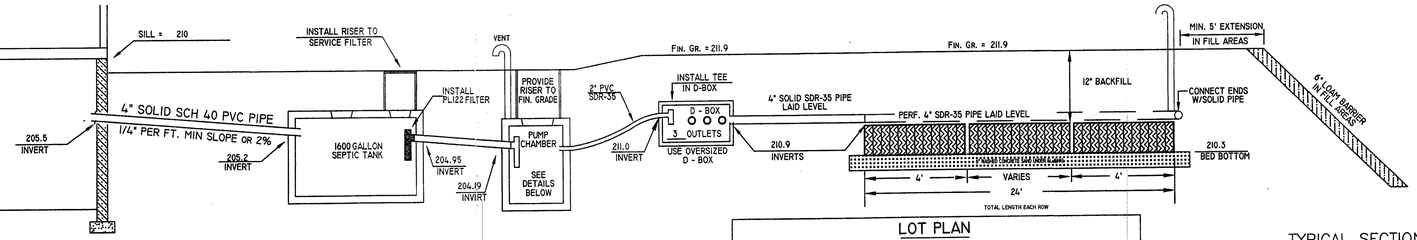
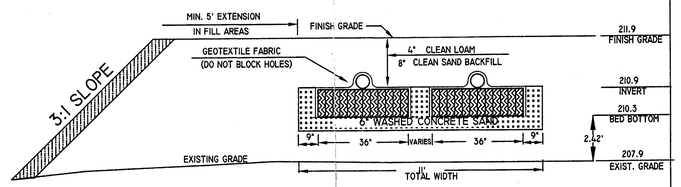
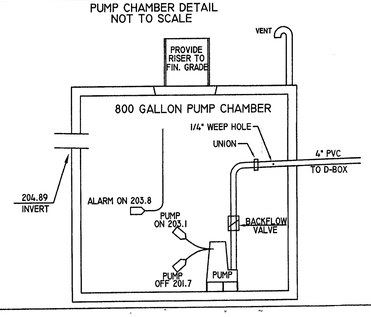


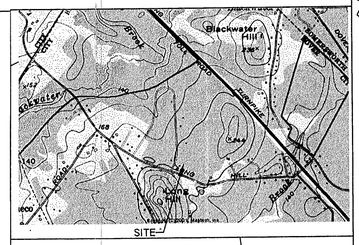


TYPICAL SECTION OF PROPOSED SANITARY SYSTEM

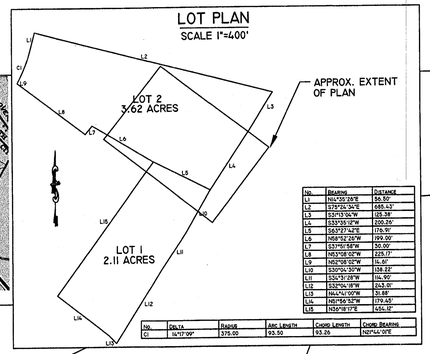
NOT TO SCALE

PUMP CHAMBER DETAIL
NOT TO SCALE





LOT PLAN
SCALE 1"=400'



No.	Bearing	Distance
L1	N41°55'28"E	56.51'
L2	S75°04'34"E	685.43'
L3	S37°13'06"W	123.38'
L4	S53°35'12"W	200.26'
L5	S63°27'42"E	176.91'
L6	N58°52'26"W	199.00'
L7	S37°10'58"W	50.00'
L8	N53°08'02"W	225.17'
L9	N52°28'02"W	14.87'
L10	S39°04'39"W	138.23'
L11	S26°13'28"W	114.99'
L12	S39°04'18"W	263.01'
L13	N44°41'00"W	31.88'
L14	N61°58'52"W	179.45'
L15	N56°18'12"E	454.12'

No.	Delta	Radius	Arc Length	Chord Length	Chord Bearing
C1	14°17'09"	375.00	93.50	93.26	N32°41'05"E

Test Pit: 2-1		Date: 02/14/2002			
Depth (in)	Color	Texture	Structure	Consistence	Additional
0-19	10YR 4/4 dark yellowish brown	fine sandy loam	granular	friable	
19-27	2.5Y 5/6 light olive brown	loamy sand	blocky	friable	redox concentrations and depletions
27-67	2.5Y 4/4 olive brown	stratified fine sand & fine sandy loam	massive	firm	redox concentrations and depletions

Obs. Water: none | Seasonal High Water: 19 | Restrictive: 27 | Bedrock/Refusal: none

Soil Series: Sutton (approx.) | NHDES Soil Group: 3 | Hydrologic Soil Group: C

Notes: Percolation rate: 8 min./in. @ 19"

NRCS SOIL DATA:
NRCS STRAFFORD COUNTY SOIL SURVEY, SHEET 23, SOIL UNIT: LEDCESTER (LeB)

DESIGN INTENT:

BOTTOM OF IN-DRAIN EDS, (EFFLUENT DISPOSAL SYSTEM) SHALL BE AT 210.3 ELEVATION THIS IS APPROX. 2.42 FEET ABOVE ORIGINAL GROUND AT THE HIGH CONTOUR OF THE EFFLUENT DISPOSAL SYSTEM

DESIGN DATA:

4 BEDROOM HOME, AND OR, 600 GALLON/ DAY DESIGN FLOW
8 MIN/ INCH PERC RATE.

TYPE B IN-DRAINS REQ.=[3.5 +(0.125 x PERC RATE)]x DESIGN FLOW/150 = 18 UNITS
TYPE B IN-DRAINS REQ BY TABLE 1 OF ELJEN DESIGN MANUAL EQUALS 18 UNITS
PROPOSED ARE 18 TYPE B UNITS

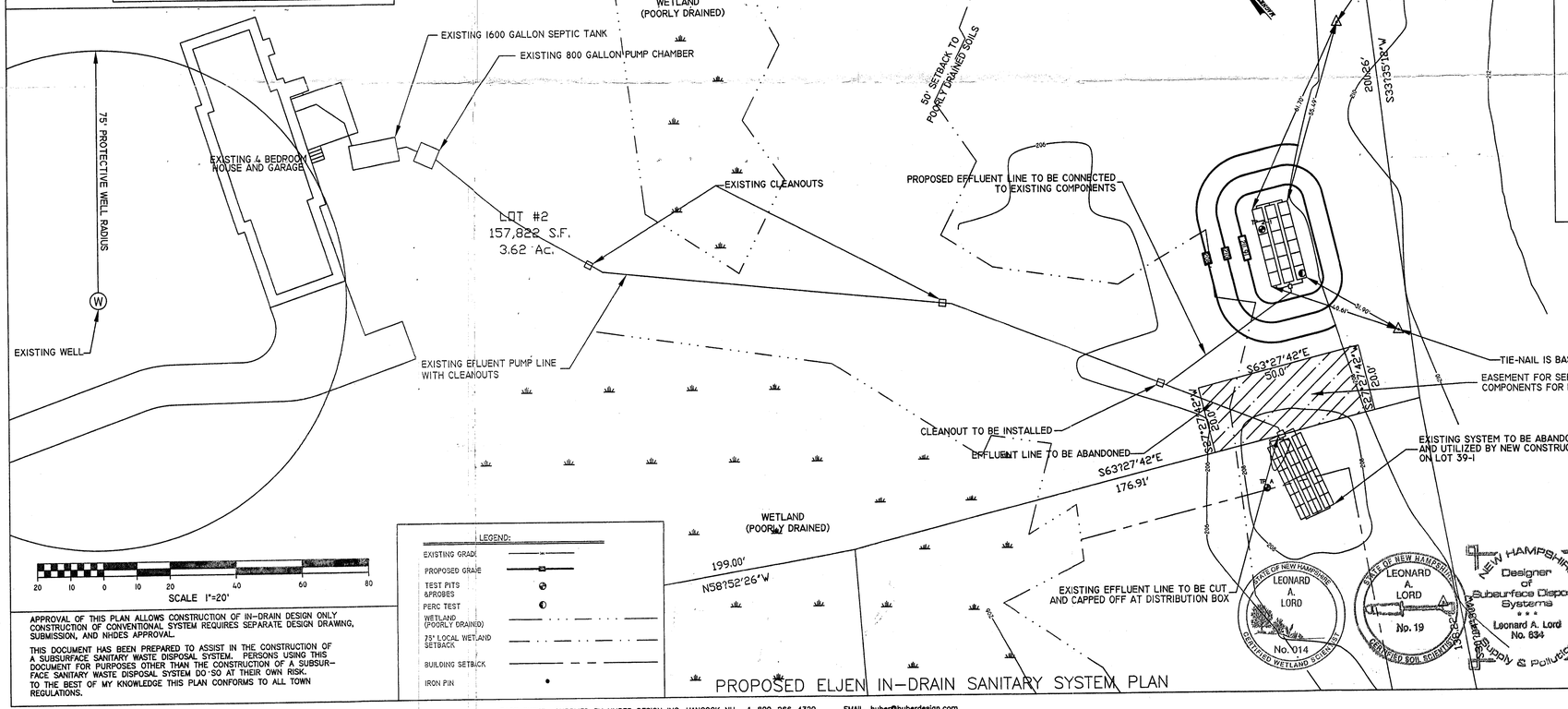
PROPERTY DATA ;

TOWN TAX MAP #A LOT# 39-2
COUNTY REGISTRY STRAFFORD VOLUME/BOOK # 2452 PAGE # 0686
SUBDIVISION APPROVAL NO. 23016 DATED: 6-11-85
PREVIOUS CONSTRUCTION APPROVAL NO. #CAI997004262 DATED: 9-02-97

NOTES
1. INLET AND OUTLET JOINTS TO SEPTIC TANK AND D BOX TO BE SEALED W/ NON SHRINK MORTAR OR POLYLOK SEALS.
2. ALL INVERT ELEVATIONS AND GRADES TO BE REFERENCED FROM BENCHMARKS.
3. INSTALL POLYLOK FLOW EQUALIZERS IN OUTLET LINES. (GRAVITY SYSTEMS ONLY).
4. IN-DRAIN UNITS TO BE SUPPLIED BY HUBER DESIGN INC. HANCOCK NH 1-800-266-4320.
5. IN THE EVENT OF SYSTEM FAILURE, CONTACT DESINGER,INSTALLER AND HUBER DESIGN INC., FOR ASSISTANCE IN DETERMINING THE CAUSE OF THE FAILURE. IF NECESSARY, REBUILD SYSTEM IN PLACE, IN KIND, OR SUBMIT NEW PLANS FOR NHDES APPROVAL.
6. DESIGNER MUST BE NOTIFIED OF SITE CONDITIONS CONTRARY TO THOSE DEPICTED ON THE PLAN. NO CHANGES FROM THE PLAN MAY BE MADE WITHOUT CONSULTING THE DESIGNER.
7. THE DESIGNER ASSUMES NO RESPONSIBILITY IF THE SYSTEM IS NOT INSTALLED EXACTLY PER PLAN.
8. THIS SEPTIC SYSTEM IS NOT DESIGNED TO ACCOMMODATE THE USE OF A GARBAGE DISPOSAL.
9. DO NOT DISCHARGE WATER SOFTENER OR TREATMENT BACKWASH INTO THE SEPTIC SYSTEM.
10. DOUBLE TANKING AND WASTE WATER FILTERS ARE RECOMMENDED FOR HOMES WITH OVERSIZED,"JACUZZI" TYPE TUBS.
11. DO NOT DRIVE VEHICLES OVER EDA, (EFFLUENT DISPOSAL AREA) UNLESS THE EDA WAS DESIGNED FOR WHEEL LOAD.
12. THERE ARE NO WELLS WITHIN 75 FT OF SYSTEM COMPONENTS OR WETLANDS WITHIN 50 FT.
13. ELEVATIONS AND LOCATIONS OF EXISTING COMPONENTS PROVIDED BY MCENEANEY SURVEY ASSOCIATES, INC.

MATERIAL SPECIFICATIONS

SEPTIC TANK: 1500 GALLON CONCRETE
PROVIDED BY: RICHARD GENEST, INC.
DISTRIBUTION BOX: 3 OUTLET CONCRETE
PROVIDED BY: RICHARD GENEST, INC.
PIPE PENETRATION SEALANT TO BE THICK PLASTIC CEMENT, OTHER MATERIALS MAY BE SUBSTITUTED PROVIDED MINIMUM SPECIFICATIONS ARE MET (ALL SUBSTITUTIONS ARE SUBJECT TO APPROVAL BY THE STATE OF NH W.S.P.C.C.)



LEGEND:

EXISTING GRADE
PROPOSED GRADE
TEST PITS &PROBES
PERC TEST
WETLAND (POORLY DRAINED)
75' LOCAL WETLAND SETBACK
BUILDING SETBACK
IRON PIN

APPROVAL OF THIS PLAN ALLOWS CONSTRUCTION OF IN-DRAIN DESIGN ONLY. CONSTRUCTION OF CONVENTIONAL SYSTEM REQUIRES SEPARATE DESIGN DRAWING, SUBMISSION, AND NHDES APPROVAL.

THIS DOCUMENT HAS BEEN PREPARED TO ASSIST IN THE CONSTRUCTION OF A SUBSURFACE SANITARY WASTE DISPOSAL SYSTEM. PERSONS USING THIS DOCUMENT FOR PURPOSES OTHER THAN THE CONSTRUCTION OF A SUBSURFACE SANITARY WASTE DISPOSAL SYSTEM DO SO AT THEIR OWN RISK. TO THE BEST OF MY KNOWLEDGE THIS PLAN CONFORMS TO ALL TOWN REGULATIONS.

PROPOSED ELJEN IN-DRAIN SANITARY SYSTEM PLAN

BASE SHEET SUPPLIED BY HUBER DESIGN INC. HANCOCK NH. 1-800-266-4320 EMAIL: huber@huberdesign.com

Approved DEC 13 2002
Town of Dover
Dover A. Dunn

TOWN APPROVAL & STAMP | STATE APPROVAL & STAMP

OWNER: RAYMOND & SUSAN MASSE

APPLICANT: CAREX ECOSYSTEM SCIENCES (OWNER: LEONARD A. LORD)

NO.	DATE	REVISION	BY

NEW HAMPSHIRE SEPTIC SYSTEM DESIGN

FOR
TAX MAP A, LOT 39-2
FIELDSTONE DRIVE, DOVER

OWNER
RAYMOND & SUSAN MASSE
7 FIELDSTONE DRIVE DOVER, NH 03820

DRAWN BY: PD | DATE: 11-15-02 | CAREX #: B802

CAREX ECOSYSTEM SCIENCES
538 CENTRAL AVE., SUITE B
DOVER NH, 03820

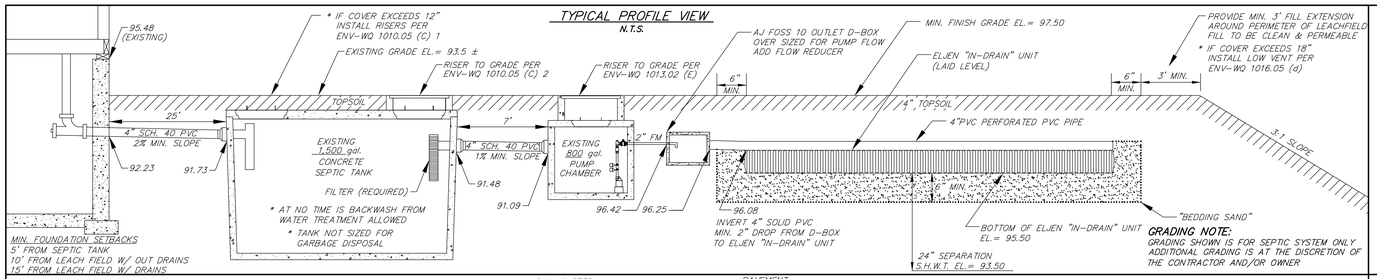
STATE OF NEW HAMPSHIRE LEONARD A. LORD No. 014 CERTIFIED WETLAND SCIENTIST

STATE OF NEW HAMPSHIRE LEONARD A. LORD No. 19 CERTIFIED SOIL SCIENTIST

NEW HAMPSHIRE Designer of Subsurface Disposal Systems Leonard A. Lord No. 834 Water Supply & Pollution Control

RECEIVED DEC 13 2002 By

TYPICAL PROFILE VIEW
N.T.S.



GRADING NOTE:
GRADING SHOWN IS FOR SEPTIC SYSTEM ONLY ADDITIONAL GRADING IS AT THE DISCRETION OF THE CONTRACTOR AND/OR OWNER

TEST PIT LOGS:

Test Pit # 1

0" – 3" 10YR 3/3 Dark Brown, Fine Sandy Loam, Granular, Friable

3" – 78" 2.5Y 6/4 Light Yellowish Brown, Medium Sand Massive, Friable

78" – 84" 2.5Y 5/3 Light Olive Brown, Fine Loamy Sand Massive, Friable W/ Redox

ESHWT = 78 Inches
Roots to 78
Observed Ground Water – None
Restrictive – None
Refusal – None
Perc Rate = 4 min/inch @ 20"

THIS PLAN IS NOT A SURVEY

GENERAL NOTES:

1. THE BUILDER/SITE CONTRACTOR IS RESPONSIBLE TO CONFIRM THE ZONING DIMENSIONAL REQUIREMENTS, PROPERTY LINES, AND SETBACK LINES REQUIREMENTS PRIOR TO INITIATING CONSTRUCTION OF THE PROPOSED HOUSE AND SEPTIC SYSTEM. THE ZONING ORDINANCE OF THE MUNICIPALITY ARE TO BE COMPLIED WITH. THE BUILDER/SITE CONTRACTOR IS ALSO RESPONSIBLE TO CONTACT THE MUNICIPALITY REGARDING INSPECTIONS PRIOR TO AND DURING CONSTRUCTION, I.E. LOCATION AND BED–BOTTOM INSPECTIONS. THIS PLAN IS NOT INTENDED TO BE USED A BOUNDARY PLAN. ANY DESCREPANCIES BETWEEN THIS PLANS AND THE APPARENT FIELD CONDITIONS TO BE REPORTED TO THE DESIGNER PRIOR TO CONSTRUCTION.
2. PROPOSED SEPTIC TANK'S AND D–BOX TO BE SUPPLIED BY: AJ FOSS OF FARMINGTON OR EQUAL
3. NO VEHICULAR TRAFFIC, LIVESTOCK, IRRIGATION, OR SNOW REMOVAL ALLOWED IN AREA OF SYSTEM.
4. RECOMMENDED CLEANING SEPTIC TANK AT LEAST ONCE EVERY 2 YEARS.
5. CONCRETE STRUCTURE TO BE WATER TIGHT. ALL CONNECTIONS BETWEEN THE SEPTIC TANK AND THE PIPES LEADING TO AND EXITING FROM THE SEPTIC TANK SHALL BE SEALED WITH A WATER TIGHT, FLEXABLE JOINT
5. 4 INCH GRAVITY SEWER TO BE SDR 35 OR SCHEDULE 40 PVC. WHERE WELL IS <75' FROM SEPTIC TANK, 4" GRAVITY SEWER TO BE SDR 26, SCHEDULE 40 PVC, OR POLYETHYLENE PIPE ("POLY PIPE") 100–150 PSI RATING.
6. EFFLUENT DISPOSAL AREA MAY BE REBUILT IN PLACE, SHOULD FAILURE OCCUR, PROVIDED THAT THE REQUIREMENTS OF ADMINISTRATIVE RULES FOR ENV.WQ 1000 ARE MET.

PREPARATION AND FILL NOTES:

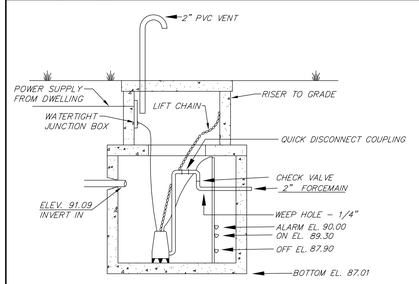
1. CHECK DESIGN INTENT AND VERIFY THE ELEVATION OF EXISTING GROUND (UPSLOPE SIDE) BEFORE DISTURBING SITE. THE "DESIGN INTENT" MUST BE MAINTAINED. THE BUILDER/SITE CONTRACTOR IS RESPONSIBLE TO CONFIRM THE ZONING DIMENSIONAL REQUIREMENTS AND SETBACK LINE REQUIREMENTS PRIOR TO INITIATING CONSTRUCTION OF THE PROPOSED HOUSE AND SEPTIC SYSTEM. THE ZONING ORDINANCE OF THE MUNICIPALITY IS TO BE COMPLIED WITH. THE BUILDER/SITE CONTRACTOR IS ALSO RESPONSIBLE TO CONTACT THE MUNICIPALITY REGARDING INSPECTIONS PRIOR TO AND DURING CONSTRUCTION, I.E. LOCATION AND BED– BOTTOM INSPECTIONS. THIS PLAN IS NOT INTENDED TO BE USED AS A SITE PLAN
2. REMOVE ALL TREES, BRUSH, BOULDERS, AND DEBRIS FROM THE AREA TO BE FILLED. STUMPS NOT TO BE BURIED WITHIN 75' OF EFFLUENT DISPOSAL AREA, UNLESS UPSLOPE (35' MIN.).
3. REMOVE TOPSOIL. LEAVE SUBSOIL IN PLACE. DO NOT COMPACT SUBSOIL WITH MACHINERY. SCARIFY WITH TEETH OF EXCAVATOR BEFORE PLACING FILL. SCARIFY PARALLEL WITH CONTOURS, WORKING FROM THE CENTER OUTWARD. SOIL MUST BE DRY PRIOR TO PREPARATION.
4. MATERIAL SPECIFICATIONS:
   - TOPSOIL: MIN. 4" OF CLEAN SIFTED LOAM TO BE PLACED AS BLANKET ON TOP AND SIDE SLOPES.
   - CLEAN FILL: PERMEABLE SOIL FREE OF ROOTS, DEBRIS, ORGANICS, AND STONES GREATER THAN 3".
   - BACKFILL: A WELL-GRADED SANDY FILL WITH A MAXIMUM OF 10% PASSING A #200 SIEVE, AND IS CLEAN, POROUS AND DEVOID OF LARGE ROCKS.
   - SEPTIC SAND: FILL TO EXTEND BED BOTTOM PAST ORIGINAL GRADE AND FOR THE SIDE SLOPES TO MEET THE FOLLOWING SPECIFICATION: MEDIUM TO COARSE TEXTURED SAND, NO GREATER THAN 5% PASSING THE NUMBER 200 SIEVE, AND NO PARTICLES LARGER THAN 3".
   - BEDDING SAND: USE WASHED CONCRETE SAND OR CLEAN MEDIUM TO COARSE SAND WITH PARTICLE SIZE OF 0.25 mm to 2.0 mm. A MINIMUM OF 6" OF SAND UNDER UNITS, BETWEEN ROWS, AND AROUND THE PERIMETER OF THE "ELJEN" UNITS.
5. SAND FILL TO BE PUSHED ONTO PREPARED SURFACE FROM THE SIDE. DO NOT ALLOW EQUIPMENT ON THE SCARIFIED SOIL SURFACE. FILL BETWEEN UNITS TO BE CAREFULLY PLACED WITH EXCAVATOR.
6. WHEN FILL IS REQUIRED TO EXTEND BED BOTTOM BEYOND ORIGINAL GRADE, PLACE FILL IN 12" LOOSE LAYERS USING A TRACK TYPE TRACTOR WITH BLADE. ALWAYS KEEP A MINIMUM OF 9" OF FILL MATERIAL BENEATH TRACKS OF TRACTOR TO MINIMIZE COMPACTION OF NATURAL SOIL. EACH LAYER TO BE SPREAD IN UNIFORM THICKNESS PRIOR TO PLACING NEXT LAYER. CONTINUOUS GRADING AND SHAPING SHALL BE CARRIED OUT TO ASSURE UNIFORM DENSITY THROUGHOUT EACH LAYER.
7. ENTIRE FILLED AREA SHOULD BE COVERED WITH TOPSOIL, SEEDED, AND MULCHED IMMEDIATELY AFTER BACKFILLING TO PREVENT EROSION.
8. BACKFILL DEPTH OVER SYSTEM TO BE 12"–24". CROWN 2% MIN. TO PROVIDE RUNOFF. SYSTEM 8. BACKFILLED WITH MORE THAN 18" MUST BE VENTED.

SITE NOTES:

1. GRADING SHOWN IS FOR PERMITTING ONLY. ADDITIONAL GRADING IS AT THE DISCRETION OF THE CONTRACTOR AND/OR OWNER.
2. BEST MANAGEMENT PRACTICES ARE TO BE FOLLOWED DURING ALL CONSTRUCTION TO PREVENT SITE ALTERATION THAT MAY CAUSE EROSION AND/OR DRAINAGE ISSUES.
3. PER ENV–WQ 1003.13 (A)(3) THERE ARE NO KNOWN CEMETERIES LOCATED WITH IN 100' OF ANY PART OF THE EFFLUENT DISPOSAL SYSTEM.

WETLAND NOTES:

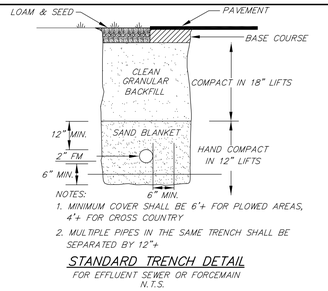
WETLANDS HAVE BEEN DELINEATED IN ACCORDANCE WITH ENV–WQ 1014.06 BY JOSEPH NICHOLS



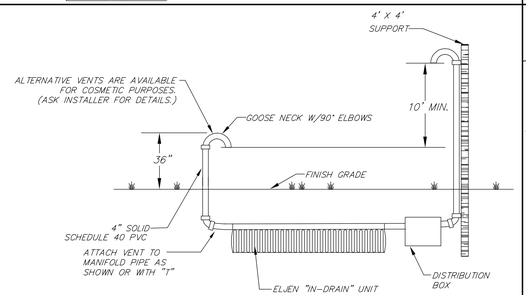
PUMP DETAIL
PER CA200305035Z AD DATED 3/7/2003

DOSE PER ORIGINAL DESIGN OF 200 GALS./CYCLE.
PUMP TO BE CAPABLE OF 40 GPM AT A TOTAL HEAD OF 16.9 FEET MYERS ME3F PUMP PER ORIGINAL DESIGN WITH FLOAT CONTROLS AND ALARM OR EQUAL. APPROX. RUNNING TIME WITH PUMP SPECIFIED TO = 5 MINS.

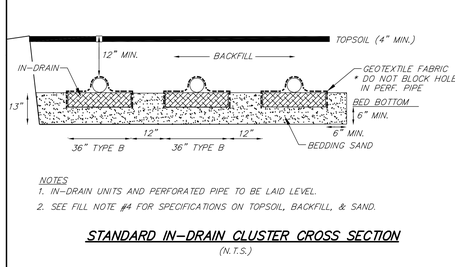
PUMP TO HAVE SEPARATE ON/OFF FLOATS SET AS SPECIFIED. ALARM TO BE ON SEPARATE CIRCUIT FROM PUMP.



STANDARD TRENCH DETAIL
FOR EFFLUENT SEWER OR FORCEMAIN
N.T.S.



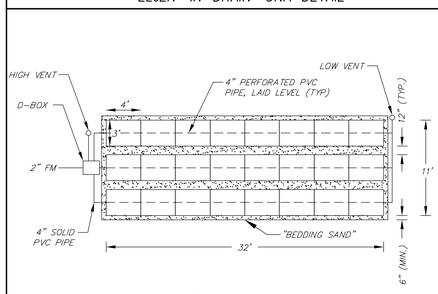
DIFFERENTIAL VENTING DETAIL
N.T.S.
REFER TO MANUFACTURERS GUIDELINES



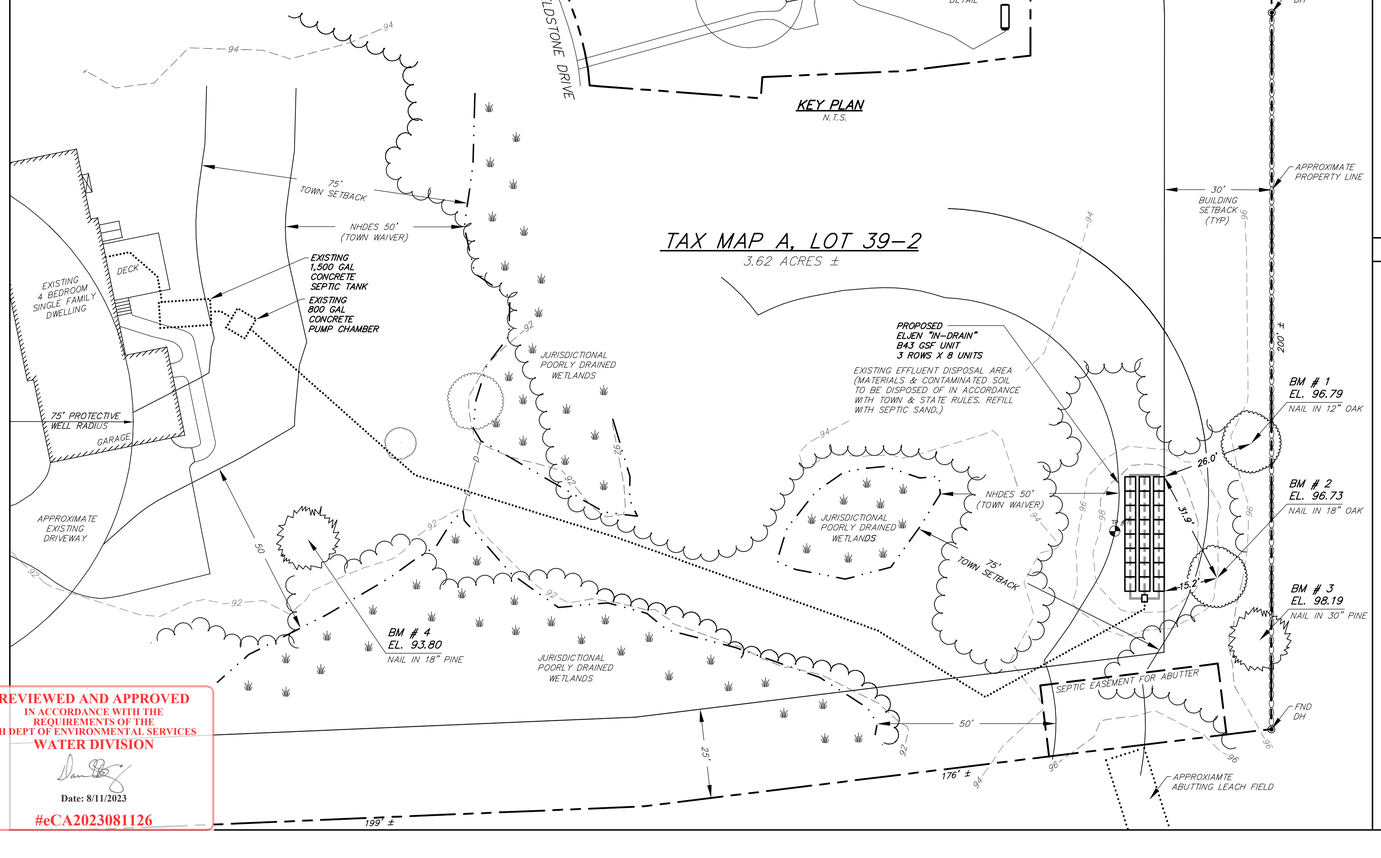
NOTES
1. IN–DRAIN UNITS AND PERFORATED PIPE TO BE LAID LEVEL.
2. SEE FILL NOTE #4 FOR SPECIFICATIONS ON TOPSOIL, BACKFILL, & SAND.

STANDARD IN–DRAIN CLUSTER CROSS SECTION
(N.T.S.)

ELJEN "IN–DRAIN" UNIT DETAIL



LEACH FIELD LAYOUT
24 ELJEN B43 GSF UNITS
(N.T.S.)



TYPICAL PLAN VIEW

DESIGN NOTES:

TEST PIT PERC RATE: 4 MIN/IN
DEPTH: 20 INCHES

DESIGN PERC RATE: 6 MIN/IN

HYDRAULIC LOADING:
4 BEDROOMS
600 GPD

EFFLUENT DISPOSAL AREA:
REQUIRED: 23 ELJEN "IN–DRAIN" UNITS
PROVIDED: 24 ELJEN "IN–DRAIN" UNITS

NEAREST ABUTTING WELL: 75' +

NEAREST SURFACE WATER: 75' +

NEAREST POORLY DRAINED WETLAND: 50' +

NEAREST VERY POORLY DRAINED WETLAND: 75' +

USSCS SOIL CLASSIFICATION:
CrB – CHARLTON
WEB SOIL SURVEY

BENCH MARKS: AS SHOWN

DESIGN INTENT:
THE BOTTOM OF THE EFFLUENT DISPOSAL SYSTEM SHALL BE CONSTRUCTED AT EL. 95.50

THIS IS APPROXIMATELY 54 INCHES (4.5') BELOW THE ORIGINAL GROUND ON THE HIGH CONTOUR OF THE EFFLUENT DISPOSAL SYSTEM, EL. 100.00

DIMENSIONS – EFFLUENT DISPOSAL AREA:
WIDTH = 11.0'
LENGTH = 32.0'
DIAGONAL = 33.8'

20 0 10 20 40 60

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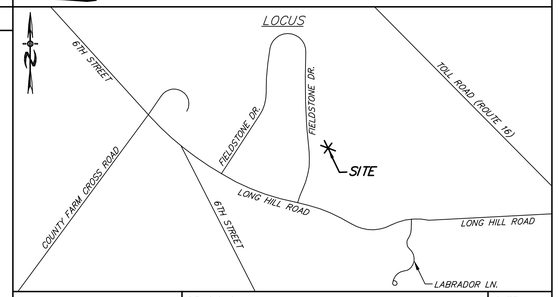

REVISIONS:	DATE:

OWNER OF RECORD
DAVID A. LAROCHE
MIHAELA NICOLETA LAROCHE
7 FIELDSTONE DRIVE
DOVER, NH 03820
BK 2239, PG 672

SITE LOCATION
7 FIELDSTONE DRIVE
TAX MAP A, LOT 39–2
DOVER, NH

NHDES SUBDIVISION APPROVAL #1996000361
NHDES SUBDIVISION NAME: FIELDSTONE

DATE: 8/3/2023 JOB NUMBER: 23–078

DESIGNER STAMP
NEW HAMPSHIRE Designer of Subsurface Disposal Systems
Joseph P. Nichols No. 1451
Department of Environmental Services

REVIEWED AND APPROVED
IN ACCORDANCE WITH THE REQUIREMENTS OF THE NH DEPT OF ENVIRONMENTAL SERVICES
WATER DIVISION
Date: 8/11/2023
#eCA2023081126