

CITY OF DOVER

PLANNING TECHNICAL REVIEW COMMITTEE –AGENDA

Meeting Type: Regular Meeting
Meeting Location: Council Conference Room, City Hall, 288 Central Ave, Dover NH 03820
Meeting Date: **Thursday, November 2, 2023**
Meeting Time: **10:30 AM**

1. 10:30 AM - 11:00 AM: Site Review for Stonefield Engineering & Design (Owners: Dover Retail Management, LLC & R W Realty Inc.), Assessor's Map 38, Lots 15-A and 15-B zoned Commercial, located at 1-3 Webb Place and 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-2023-0011 & COND-2023-0054) *[This item was previously heard by the Planning Technical Review Committee on August 31, 2023]*
2. 11:00 AM – 12:00 PM: Site Review for Jared Lusk (Owners: Lionel R Jr & Kristina L Paradis), Assessor's Map F, Lot 2, zoned IT and R-40, located at 180 Tolend Road.
(Proposal is to construct and operate a 104' wireless telecommunications facility) (SITE-2023-0012) *[This item was previously heard by the Planning Technical Review Committee on September 7, 2023]*



PLAN SNAPSHOT REPORT SITE-2023-0011 FOR CITY OF DOVER, N.H.

Plan Type: Site Plan - Major
Work Class: New Construction
Status: In Review
Valuation: \$0.00
Description: Proposed 3,300 sq ft - Bank with Drive-Up ATM

Project:
District: None
Square Feet: 0.00
Assigned To:

App Date: 08/10/2023
Exp Date: 10/14/2023
Completed: NOT COMPLETED
Approval Expire Date:

Parcel: 38015-A00000	Main	Address: 1-3 Webb Pl Dover, NH	Main	Zone:
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Architect Jose Sanchez Home: (314) 270-5085 Business: (314) 270-5085 Mobile: (314) 270-5085	Applicant Todd Samms Home: (614) 580-2613 Business: (614) 580-2613 Mobile: (614) 580-2613	Applicant Joshua Kline 120 Washington Street Suite 201 Suite 201 Salem, MA 01970 Business: (617) 203-2076 Mobile: (607) 624-0415	Owner Samantha Burgner Home: (413) 464-2267 Mobile: (413) 464-2267
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Plan Custom Fields

Total	0	Total2	0	Total3	0
Total4	0	Total5	0	Total6	0
Total7	0	Total8	0	Total9	0
Street Classification Type	Municipal	Net Change in # Parking Spaces (+/-)	17	Water Service	Municipal
Recording Number		Sewer Service	Municipal	Total Acres (GIS)	0.99
Deed Book		Total SQFT	43124.4	Deed Page	
Deed Date		Proposed Property Use	Bank with Drive-Up ATM	Area of Parcel to be Developed (SQFT)	43125
Number of Parking Spaces Existing	45	Number of Parking Spaces Proposed	28	Number of Employees Total	12
Number of Employees in Max Shift	6	Distance to City Water	75	Distance to City Sewer	150
Type of Building to be Built	Bank	Estimated Construction Value	2800000.00	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	TotalImpactFeeADUTO	0.00	TotalImpactFeeAONRT OD	0.00
TotalImpactFeeAR55TC	0.00	TotalImpactFeeAR62TC	0.00	Sub Total Residential	0.00
TotalImpactFeeRIRCTO	0.00	TotalImpactFeeOCSTO	0.00	TotalImpactFeeITWCTO	0.00
TotalImpactFeeNHALT	0.00	TotalImpactFeeOIUTOD	0.00	TotalImpactFeeAFAOT	0.00
Sub Total	0.00	Total of Impact Fees to be Assessed	0.00		
Non-Residential					

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Joshua_Kline_8/10/2023.jpg	08/10/2023 12:02	Kline, Joshua		Uploaded via CSS
2023.08.31_PlanningTechnicalReviewC ommittee.WebbPlace_SITE-2023-0011.p df	08/31/2023 14:47	Blonigen, Rachel		Draft TRC Minutes

PLAN SNAPSHOT REPORT (SITE-2023-0011)

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00004629	Planning General Application Fee	\$200.00	\$200.00
Total for Invoice INV-00004629		\$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	08/31/2023	Technical Review Committee Meeting

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	08/30/2023	09/27/2023	08/31/2023	No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	08/30/2023	09/27/2023	10/16/2023

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	In Review	10/16/2023	11/13/2023		No	No

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City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	08/30/2023	09/27/2023	10/16/2023

PLAN SNAPSHOT REPORT (SITE-2023-0011)

Comments: Project: SITE-2023-0011: Proposed Bank (1-3 Webb Place)

TRC Meeting: August 31, 2023

Reviewer: Ken Mavrogeorge, PE – City Engineer

Checked by: Engineering Staff

Comments:

Reviewer should group comments be plan sheet if possible and if the comment applies to multiple sheets then it should be noted as a General Comment.

- General Comment:

o 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>

o Survey plans show additional right of way lines and NHDOT easements from a formal lot configuration prior to NHDOT work in the area (circa 1997-99). Applicant to coordinate with NHDOT and City to confirm ROW transfer is finalized and that NHDOT does not have ownership of portions of the subject property or have jurisdiction over the number of access points to Webb Place.

o Coordinate with Community Services (Engineering Department) for latest version of the City's Standard Details. It is not the intent for the applicant to copy the details onto the set but to use them as a minimum standard to meet.

o Add note that Design Engineer shall provide signed letter to City Engineer certifying that the stormwater management system has been installed in accordance with approved plans.

o Recommend providing 1 sf of snow storage per 10 sf of pavement to be cleared. Verify snow storage meets or exceeds this recommendation or provide note to remove excess snow when storage areas are filled.

o Provide detail for Construction Sign that conforms to the City of Dover standard details and as noted in the Dover standard notes.

o Applicant shall review the section 153-14 of the Dover Code and clarify how the design meets the City's requirements. In particular the applicant should address stormwater standards.

o Work within the City right of way and roadways will required excavation permit. Note that Central Ave was paved in 2021 and the City has pavement damage escalation costs for roads paved within 5 years.

o Applicant should upgrade existing sidewalks along the northern and eastern property lines especially if they are disturbed to removed curbing (northern sidewalk) and construct utilities (eastern). If northern sidewalk is reconstructed it should be located within the City ROW to avoid encroachment.

o Change "Township" references to "City" throughout documents.

o Please provide a test pit in the proposed infiltration basin location and include the depth of ESHWT.

o Engineering requests a letter certifying the tie in locations or discharge points for all sump pumps and roof leaders for existing and proposed structures on the property.

o Provide drainage analysis that complies with requirements of Dover Code 153-14.

- ALTA Survey (Sheet 1 of 2):

o Plan shows internal property lines that cross into the City's right of way. Please clarify why these are crossing over and if they are proposed to be abandoned or modified.

o Existing NHDOT easements are shown. Applicant to clarify if these will be modified or discontinued. If so, applicant to provided updated deed showing easements are removed/modified.

o There is a note about asphalt encroachment from the sidewalk on the northeast side of the property. It appears that this sidewalk is located in a City right of way but the linetypes make it hard to decipher.

- Sheet C-4:

o Provide ADA access to electric vehicle charging.

o Provide vehicle turning exhibits showing fire and trash vehicles maneuvering around the site.

o Move stop bars near intersections closer to travel way.

o Dumpster pad seems like it could be difficult to access by a vehicle if the dumpsters and totes are not wheeled out into the aisle.

o Remove depressed concrete curb from the right of way. If you wish to use the depressed curb elsewhere, provide detail.

o Off-street Parking Table mentions a maximum of 12 spaces which contradicts the narrative.

o Clarify how traffic will flow at the southern entrance. There are no stop signs for any of the three legs and conflicts could be an issue.

o Will location of southern entrance cause vehicles to stack into the public right of way?

o Recommend making the southern entrance perpendicular to Webb Place.

o Where will delivery vehicles load and unload?

o Provide sidewalk on southern edge of Webb Place to connect to the signalized intersection.

o Adding crosswalk on northeast corner connecting adjacent property to the proposed bank and new sidewalk along Webb Place.

- Sheet C-5:

o Provide pretreatment for stormwater basin. Recommend offline catch basins with deep sumps and oil separator hoods.

o Provide a minimum 3 feet of cover on all storm drainage pipe.

o Grades of driveways exceed 13% in some areas. Recommend keeping grades below 3% within 75 feet of intersections.

o Drop off from parking area is over 5 feet. Clarify if guardrail is required.

o Provide calculations and details for rip rap apron in stormwater basin.

o Show existing structure labels that align with City GIS labels (coordinate with GI department).

- Sheet C-6:

o Water is shown at 1.5" type K copper. See standard City details about types of services and sizes.

o Water meter is to be installed inside the building not externally as called out.

o Is the building to be sprinkled? If so, a fire line should be run directly into the building with a domestic line stubbed off of the fire service. Separate shut offs should be provided for domestic and fire.

o Gate valves should be located at the anchor tees.

PLAN SNAPSHOT REPORT (SITE-2023-0011)

- o Electric services appears to be coming off an existing pole. If required to install a standalone transformer, where would one be located?
- o External cleanouts are not permitted. Applicant should speak as to why the sanitary service cannot run directly into the northern side of the building.
- o Applicant should inspect existing sewer lateral and provide report and video on existing condition. Applicant is reminded that they own from the building to the sewer main.
- o Existing sewer runs across adjacent property. Applicant should engage with abutter to discuss a sewer easement if one does not exist.
- o Sewer in adjacent parking lot has two conflicting sizes noted (6" unk and 12" steel). Applicant should clarify how this data was determined and which is correct.
- o 4-inch sewer should have a minimum 2% slope for sewer not 1.08% as noted on the plan.
- Sheet C-7:
- o Lighting is spilling across the property lines. Please provide light shields.
- Sheet C-8:
- o Two stabilized construction entrances are called out but only one is shown. Please clarify.
- Sheet C-12:
- o Detail 14 should be revised to show a minimum 1.5" milled asphalt key per City standard details.
- o Provide a minimum of 12-inch slab for dumpster pad.
- o Curb ramps in City right of way should comply with City standard details (no flush curb between pavement and ramp and minimum 4 inches of concrete around the ADA detectable warning panel).
- o Clear distance below signage should be 7 feet.
- o Remove references to Massachusetts on Accessible Parking Signage. Is this additional penalty to be enforced by the bank?
- o Curbing in City right of way shall be granite.
- Sheet C-13:
- o Provide minimum frost depth on detail no. 8.
- o Provide details on foundation for clearance bar. Notes appear to be scanned and are not legible.
- Sheet C-14:
- o All valves and hydrants shall open left (counterclockwise)
- o Locate water services to eliminate the need for insulation and bends in water line.
- o Minimum of 5' of cover is required for water lines.
- o Sewer and drainage manhole covers shall be Liftmate R-1743-LM or approved equal with 90 deg hinge
- o Storm Drain Utility Trench Section – crushed stone shall extend 12" above top of pipe. See City standard for minimums.
- o Utility Trench Section
- ☐ Crushed stone shall extend 12" above top of sewer pipe.
- ☐ Sand shall extend 12" above top of water pipe.
- ☐ See City standard for minimums and required materials.
- o Sewer minimum cover shall be 4 feet below non paved areas and 6 feet under pavement unless insulation is provided.
- o Water Service Connection: curb box shall be Erie-style
- o Water Service Connection: tapping sleeve shall be stainless steel if required.
- o Type B Catch basin inlet grate is the City standard.
- o Drain Manhole should have 30 inch clear opening. Catch basins may have 24 inch diameter opening.
- o Storm basin detail should show ESHWT to ensure it complies with NHDES recommendations.
- o Infiltration rates for designing groundwater recharge practices shall be determined in accordance with Section Env-Wq 1504.14 and summarized in a drainage report.
- o Where is detail 9 (Curb break and rip rap detail) to be used?
- o Detail 10: How will crushed stone be placed in gap below concrete outlet

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	In Review	10/16/2023	11/13/2023		No	No
Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	In Review	10/16/2023	11/13/2023	
Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	08/30/2023	09/27/2023	08/31/2023	No	No
Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Requires Re-submit	08/30/2023	09/27/2023	10/16/2023
Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	In Review	10/16/2023	11/13/2023		No	No
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PLAN SNAPSHOT REPORT (SITE-2023-0011)

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	In Review	10/16/2023	11/13/2023	
Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	08/30/2023	09/27/2023	08/31/2023	No	No
Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Kaspari, Jackson	Requires Re-submit	08/30/2023	09/27/2023	10/16/2023
Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning		Requires Re-submit	08/30/2023	09/27/2023	10/16/2023
Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	In Review	10/16/2023	11/13/2023		No	No
Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Benton, Donna	In Review	10/16/2023	11/13/2023	
Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	In Review	10/16/2023	11/13/2023	
Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	08/30/2023	09/27/2023	08/31/2023	No	No
Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	Requires Re-submit	08/30/2023	09/27/2023	10/16/2023

Workflow Step / Action Name	Action Type	Start Date	End Date
Review v.1		08/11/2023 11:16	
Confirm application complete v.1	Generic Action		08/10/2023 13:16
Confirm application complete v.1	Generic Action		10/16/2023 10:44
Technical Review Committee Meeting Agenda v.1	Task	10/16/2023 10:44	10/16/2023 11:57
Technical Review Committee Meeting Agenda v.1	Task	08/11/2023 11:16	08/11/2023 11:16
Land Use Plan Technical Review v.1	Receive Submittal	08/30/2023 0:00	
Land Use Plan Technical Review v.1	Receive Submittal	10/16/2023 0:00	
Technical Review Committee Meeting v.1	Hold Meeting		
Technical Review Committee Meeting v.1	Hold Meeting	08/11/2023 11:16	10/16/2023 10:43

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	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

PLAN SNAPSHOT REPORT (SITE-2023-0011)

Building Official Notifies Address v.1

Generic Action

Pre-Con Meeting v.1

Hold Meeting

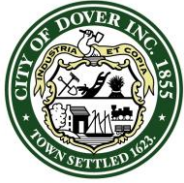
Create/Link to Records v.1

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

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2023-0011

**Initial Minutes of Recording Not Available due to Technical Mistake*

Application Type: Site Review
Applicant(s): Stonefield Engineering & Design / R.W. Realty Inc c/o Karen Arkwell
Owner(s): Dover Retail Management, LLC
Location: 1-3 Webb Place (Tax Map 38, Lot 15-A & 15-B)
Date: August 31, 2023

INTENT: 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 CUP application would also appear before the PB (COND-2023-0054).

UNITS PROPOSED: One (1) Bank

AGENDA ITEM #: 1

ACREAGE: Total = 0.98± ac. / 42,879± sq. ft.
Parcel A = 26,376± sq. ft.
Parcel B = 16,503± sq. ft.

ZONING DISTRICT: C

EXISTING LAND USE: Multi-tenant Comm. Bldg

PROPOSED LAND USE: Commercial (Bank)

SURROUNDING LAND USE: Commercial, Residential, City of Dover land

ZBA ACTION:

- Z94-17, Variance granted for signage
- Z99-05A, Appeal of Admin. Det. for signage

PERMITS REQUIRED:

- CUP for §153-14.(D)(5), Off-Street Parking & Loading

WAIVERS REQUESTED:

- §153-14.(D)(6)(b), One-way accessways
- §153-14.(E)(2)(b), Parking area lighting
- §153-14.(G)(2)(C), Interior landscaping
- §153-14.(H)(I) Driveway spacing from intersection (public st.)
- §170-12.(B), Parking area setback on C table

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:

Josh Kline, Stonefield Engineering & Design

Approval of minutes from August 17, 2023:

T. Clark moved to approve the August 17, 2023 minutes. Seconded by J. Burdin.

Vote: U/A.

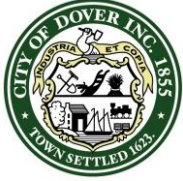
PLAN REVIEW:

Planning:

- Reminder: Impact fees, Water & Sewer investment fees
- Provide letters to serve
- Lot Merger for Parcels A and B?
- Drive-up ATM hours?
- A lot of relief is being sought. Try to limit requests more
- Confirm EVSE and CUP for parking criteria has been met. Provide narrative and a more detailed request
- This is in the Secondary Groundwater Protection District. Review regulations and ensure compliance.
- PE stamp and signature needed on TIA
- Two entrances need CS Director approval. Why the need for two?
- How will dumpster truck work? Pick up?
- Provide more justification as to why that amount of parking is needed.
- Revise plans:
 - Owner's signatures on the final plans
 - Professional stamps on the final plans
 - Confirm inclusion of all common notes
 - Add consecutive page numbers to entire plan set
 - Reduce lighting and meet lighting standards
 - Note Secondary Groundwater Protection District
 - Remove business signage from application package
 - Combine architectural renderings into plan set
 - Indicate materials on elevations
 - Landscape plan to be signed/stamped by NH Licensed Landscape Architect
 - Reduce parking
 - Add site-specific streetscape
 - Confirm bike rack location

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.
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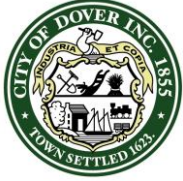
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existing and proposed structures on the property.

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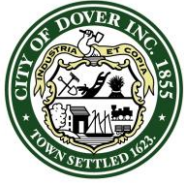
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 - Existing sewer runs across adjacent property. Applicant should engage with abutter to discuss a sewer easement if one does not exist.
 - Sewer in adjacent parking lot has two conflicting sizes noted (6" unk and 12" steel). Applicant should clarify how this data was determined and which is correct.
 - 4-inch sewer should have a minimum 2% slope for sewer not 1.08% as noted on the plan.
- Sheet C-7:
 - Lighting is spilling across the property lines. Please provide light shields.
- Sheet C-8:
 - Two stabilized construction entrances are called out but only one is shown. Please clarify.
- Sheet C-12:
 - Detail 14 should be revised to show a minimum 1.5" milled asphalt key per City standard details.
 - Provide a minimum of 12-inch slab for dumpster pad.
 - Curb ramps in City right of way should comply with City standard details (no flush curb between pavement and ramp and minimum 4 inches of concrete around the ADA detectable warning panel).
 - Clear distance below signage should be 7 feet.
 - Remove references to Massachusetts on Accessible Parking Signage. Is this additional penalty to be enforced by the bank?
 - Curbing in City right of way shall be granite.
- Sheet C-13:
 - Provide minimum frost depth on detail no. 8.
 - Provide details on foundation for clearance bar. Notes appear to be scanned and are not legible.
- Sheet C-14:
 - All valves and hydrants shall open left (counterclockwise)
 - Locate water services to eliminate the need for insulation and bends in water line.
 - Minimum of 5' of cover is required for water lines.
 - Sewer and drainage manhole covers shall be Liftmate R-1743-LM or approved equal with 90 deg hinge
 - Storm Drain Utility Trench Section – crushed stone shall extend 12" above top of pipe. See City standard for minimums.
 - Utility Trench Section
 - Crushed stone shall extend 12" above top of sewer pipe.
 - Sand shall extend 12" above top of water pipe.
 - See City standard for minimums and required materials.
 - Sewer minimum cover shall be 4 feet below non paved areas and 6 feet under pavement unless insulation is provided.
 - Water Service Connection: curb box shall be Erie-style
 - Water Service Connection: tapping sleeve shall be stainless steel if required.
 - Type B Catch basin inlet grate is the City standard.
 - Drain Manhole should have 30 inch clear opening. Catch basins may have 24 inch diameter opening.
 - Storm basin detail should show ESHWT to ensure it complies with NHDES recommendations.
 - Infiltration rates for designing groundwater recharge practices shall be determined in accordance with Section Env-Wq 1504.14 and summarized in a drainage report.
 - Where is detail 9 (Curb break and rip rap detail) to be used?
 - Detail 10: How will crushed stone be placed in gap below concrete outlet structure.

Police:

- Would the site still be viable with the second proposed driveway as an in-only instead of full service?



CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2023-0011

**Initial Minutes of Recording Not Available due to Technical Mistake*

Application Type: Site Review
Applicant(s): Stonefield Engineering & Design / R.W. Realty Inc c/o Karen Arkwell
Owner(s): Dover Retail Management, LLC
Location: 1-3 Webb Place (Tax Map 38, Lot 15-A & 15-B)
Date: August 31, 2023

- Provide a fair share contribution toward extending the sidewalk along Webb Place, instead of - or in addition to - your site's own direct connection to the Central Avenue sidewalk
- Can you reconfigure or relocate the ATM to achieve a queue of greater than 3 vehicles? Concerned about bypass lane choke point at the northeast corner.
- Traffic and Parking Assessment Report:
 - Page 2: NHDOT data cited for Webb Place AADT of 524. This is surprisingly low and likely inaccurate. What year was the NHDOT data?
 - Page 2: second paragraph, Weeks Lane approach lane description is inaccurate. This is likely from an outdated Google Earth image. It probably doesn't affect your conclusions, but just FYI.
 - Page 4: Where proposed development provides more than twice the City's maximum per regulations, can you provide more narrative to justify the 28 spaces? Only justification provided is "based on observations at similarly sized existing Chase bank locations with drive-up ATM". For example, how many employees per shift? Any retail teller activity? Does this site handle real estate closings? Note: 2 parking spaces are within the 25 foot setback requiring a waiver. Could this site be viable if you reduced to 26 spaces to eliminate that waiver request?

Fire/Inspection Services:

- Provide a T-1 turning template for the site access. Drive thru lane appears to be approximately 15' wide.
- Discuss dumpster location and adequate maneuverability
- Clarify EV charging is public or private
- Discuss accessibility of EV chargers
- Provide plan note indicating design compliance with accessibility regulations (I.E. ANSI 117.1) and NH RSA 155-A:5
- Provide a site specific street color rendering of the proposed structure
- Confirm design compliance with Architectural requirements.
- Sidewalk extension suggested
- Does architecture meet required standards?

Business Development:

- Please elaborate on the need for a waiver to the parking maximum – while some relief to this standard may be reasonable, more information may be needed to justify the full extent of the relief requested:
 - This site is immediately across Webb Place from another bank branch location of comparable square footage that was approved in 2017 with 20 parking spaces, and aerial imagery appears to indicate only 13 spaces are currently installed.
 - The 28 parking spaces proposed exceed the 85th percentile demand per ITE by 40%, suggesting this number is targeting an even less likely scenario (90-95th percentile?) and that many spaces are likely to be underutilized under normal circumstances. Have you explored other options such as an agreement with the abutting property owner to use the row of parking along the northern property line in overflow situations?
 - The narrative identifies an average maximum parking demand of 8.09 vehicles for Chase branches of similar size. Does this figure also control for other factors such traffic volumes on adjoining roads, population density of the market area, etc.?
 - The requested parking spaces also exceed the figure generated by this calculation (28 vs. 27), again suggesting that the parking layout is designed to accommodate 90th percentile or higher demand scenarios. This appears to contradict the purpose of the adopted parking maximum. Do you have more information about this site, the Dover market, or how Chase branches operate compared to other banks that would indicate that this location is likely to generate this level of demand?
- Is the existing driveway inadequate for the anticipated trip generation and/or circulation pattern? More information about why a second driveway is necessary would support the request for a waiver from the intersection separation requirement.
- Do you have an anticipated timeline for redevelopment and has it been shared with the existing tenants? Business Development can be a resource if they need assistance finding new locations.
- Clarify existing structure's floor levels as there is an inconsistency between Existing Conditions Plan page and Sheet C-3

Planning Board:

- Revise street name on Sheet C-1 to Indian Brook Drive
- Elaborate within narratives for CUP and waiver requests

Next Steps: Revise and add to materials, resubmit with narrative outlining how each comment was addressed for another TRC.

Pause TRC at: 11:22 am

STONEFIELD

September 29, 2023

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

**RE: Conditional Use & Site Plan Review Submission
Proposed Chase Bank with Drive-Thru ATM
Map: 38, Lots 15A & 15B
1-3 Webb Place
City of Dover, Strafford County, New Hampshire**

Board Members:

Our office is submitting documents on behalf of the Applicant to address the outstanding conditions of the Board's Resolution including comments contained within the latest Board Professional's review letters. Please find the following items enclosed:

ITEM DESCRIPTION	DATED	COPIES	PREPARED BY
Site Plan Set (24 x 36)	9-29-2023	5	Stonefield Engineering & Design
Traffic and Parking Assessment Report	9-29-2023	5	Stonefield Engineering & Design
Parking Operations Memorandum	9-29-2023	5	Stonefield Engineering & Design
Stormwater Management Report	9-29-2023	5	Stonefield Engineering & Design
Vehicle Movement Exhibit	9-29-2023	5	Stonefield Engineering & Design
Will Serve Letter - Communications	6-22-2023	1	Consolidated Communications

The following is an itemized response to the comments contained within the City of Dover Technical Review Committee Review Letter dated August 31, 2023. For the sake of brevity, any comments that are statements of fact or have been previously addressed are not included in the response below:

Planning:

1. *Reminder: Impact fees, Water & Sewer investment fees*

Acknowledged.

2. *Provide letters to serve*

Please see the included will serve letter for communications. The remainder of the will serve letters will be provided upon receipt.

3. *Lot Merger for Parcels A and B?*

A lot merger will be provided as required.

STONEFIELDENG.COM

120 WASHINGTON STREET, SUITE 201, SALEM, MA 01970 617.203.2076 T.

4. *Drive-up ATM hours?*

The ATM will be open 24 hours a day.

5. *A lot of relief is being sought. Try to limit requests more.*

Acknowledged.

6. *Confirm EVSE and CUP for parking criteria has been met. Provide narrative and a more detailed request.*

The traffic and parking assessment report has been revised to provide additional support for the requested parking.

7. *This is in the Secondary Groundwater Protection District. Review regulations and ensure compliance.*

Acknowledged.

8. *PE stamp and signature needed on TIA.*

A PE stamp has been provided on the revised Traffic and Parking Assessment Report.

9. *Two entrances need CS Director approval. Why the need for two?*

Testimony will be provided to support the second entrance. Please note the southerly entrance has been modified to be a right-ingress / right-egress only configuration.

10. *How will dumpster truck work? Pick up?*

Trash is expected to be picked up by a front-loading trash truck. The angle of the trash enclosure has been modified for easier approach by the truck.

11. *Provide more justification as to why that amount of parking is needed.*

Please refer to the revised Traffic and Parking Assessment Report for additional justification of the requested parking.

12. *Revise plans:*

- *Owner's signatures on the final plans*

Please see the revised plans.

- *Professional stamps on the final plans*

Please see the revised plans.

- *Confirm inclusion of all common notes*

The plans have been revised to include common notes.

- *Add consecutive page numbers to entire plan set*

Please see the revised plans.

- *Reduce lighting and meet lighting standards*

The lighting plan has been designed to meet municipal lighting standards to the greatest extent practical while complying with the lighting security requirements for the proposed ATMs.

- *Note Secondary Groundwater Protection District*

Acknowledged.

- *Remove business signage from application package*

Business signage is not included in this resubmission.

- *Combine architectural renderings into plan set*

Revised architectural drawings are not included in this submission; They will be provided under separate cover as required.

- *Indicate materials on elevations*

Please see above.

- *Landscape plan to be signed/stamped by NH Licensed Landscape Architect*

Please see above.

- *Reduce parking.*

Parking has been reduced, as requested.

- *Add site-specific streetscape*

Please refer to the revised site plan and landscape plan.

- *Confirm bike rack location*

A bike rack is proposed near the bank's front entrance.

Engineering:

General Comment:

- I. 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/I form/community-services/engineering/engineering-documents/Construction%20Guidelines.pdf](https://www.dover.nh.gov/Assets/government/city-operations/I%20form/community-services/engineering/engineering-documents/Construction%20Guidelines.pdf)

The applicant agrees to review the Guidelines and schedule a Preconstruction Meeting with the City prior to start of construction.

2. *Survey plans show additional right of way lines and NHDOT easements from a formal lot configuration prior to NHDOT work in the area (circa 1997-99). Applicant to coordinate with NHDOT and City to confirm ROW transfer is finalized and that NHDOT does not have ownership of portions of the subject property or have jurisdiction over the number of access points to Webb Place.*

The applicant is currently in the process of resolving the status of the easements and right-of-way line with NHDOT.

3. *Coordinate with Community Services (Engineering Department) for latest version of the City's Standard Details. It is not the intent for the applicant to copy the details onto the set but to use them as a minimum standard to meet.*

Acknowledged. The details sheets have been revised to reference the City's Standard Details.

4. *Add note that Design Engineer shall provide signed letter to City Engineer certifying that the stormwater management system has been installed in accordance with approved plans.*

A note has been provided on the Grading & Drainage Plan (sheet C-5).

5. *Recommend providing 1 sf of snow storage per 10 sf of pavement to be cleared. Verify snow storage meets or exceeds this recommendation or provide note to remove excess snow when storage areas are filled.*

A calculation has been added to the site plan showing compliance with the snow storage requirement.

6. *Provide detail for Construction Sign that conforms to the City of Dover standard details and as noted in the Dover standard notes.*

A detail for the construction sign has been added to the plans.

7. *Applicant shall review the section 153-14 of the Dover Code and clarify how the design meets the City's requirements. In particular the applicant should address stormwater standards.*

The stormwater report has been revised to clarify compliance with the City's stormwater requirements.

8. *Work within the City right of way and roadways will require an excavation permit. Note that Central Ave was paved in 2021 and the City has pavement damage escalation costs for roads paved within 5 years.*

Acknowledged.

9. *Applicant should upgrade existing sidewalks along the northern and eastern property lines especially if they are disturbed to removed curbing (northern sidewalk) and construct utilities (eastern). If northern sidewalk is reconstructed it should be located within the City ROW to avoid encroachment.*

The applicant has provided a connection to the existing shared sidewalk. The sidewalk is to remain and to be protected during construction.

10. *Change "Township" references to "City" throughout documents.*

The plan has been revised to remove any references to townships.

11. *Please provide a test pit in the proposed infiltration basin location and include the depth of ESHWT.*

A geotechnical investigation with test pits in the area of the proposed basin is currently being performed. Copies of the findings will be provided to the City upon receipt.

12. *Engineering requests a letter certifying the tie in locations or discharge points for all sump pumps and roof leaders for existing and proposed structures on the property.*

A letter will be provided, as required.

13. *Provide drainage analysis that complies with requirements of Dover Code 153-14.*

The stormwater management report has been revised to show compliance with the requirements of the code.

ALTA Survey (Sheet 1 of 2):

1. *Plan shows internal property lines that cross into the City's right of way. Please clarify why these are crossing over and if they are proposed to be abandoned or modified.*

The applicant is currently in the process of resolving the status of the easements and right-of-way line with NHDOT.

2. *Existing NHDOT easements are shown. Applicant to clarify if these will be modified or discontinued. If so, applicant to provide updated deed showing easements are removed/modified.*

Please see above.

3. *There is a note about asphalt encroachment from the sidewalk on the northeast side of the property. It appears that this sidewalk is located in a City right of way but the linetypes make it hard to decipher.*

The existing asphalt sidewalk runs along the property line and extends on to both sides of the line. The sidewalk is to remain and be protected during construction.

Sheet C-4:

1. *Provide ADA access to electric vehicle charging.*

An ADA parking space is provided at the accessible charging location.

2. *Provide vehicle turning exhibits showing fire and trash vehicles maneuvering around the site.*

A vehicle movement exhibit is included for review.

3. *Move stop bars near intersections closer to travel way.*

The intersections and driveways have been revised.

4. *Dumpster pad seems like it could be difficult to access by a vehicle if the dumpsters and totes are not wheeled out into the aisle.*

The angle of the dumpster pad has been revised for vehicle access.

5. *Remove depressed concrete curb from the right of way. If you wish to use the depressed curb elsewhere, provide detail.*

The depressed concrete curb is no longer proposed at the driveways.

6. *Off-street Parking Table mentions a maximum of 12 spaces which contradicts the narrative.*

The narrative has been revised to correct the contradiction.

7. *Clarify how traffic will flow at the southern entrance. There are no stop signs for any of the three legs and conflicts could be an issue.*

The southern entrance has been revised to right-ingress / right-egress movement. A stop sign and stop bar has been added to the internal intersection.

8. *Will location of southern entrance cause vehicles to stack into the public right of way?*

Testimony will be provided with respect to the vehicle stacking for the revised driveway geometry.

9. *Recommend making the southern entrance perpendicular to Webb Place.*

The geometry of the driveway has been modified to approach Webb Place perpendicular.

10. *Where will delivery vehicles load and unload?*

Testimony on site operations will be provided.

11. *Provide sidewalk on southern edge of Webb Place to connect to the signalized intersection.*

A sidewalk is not provided along Webb Place at this time as it is noted that no sidewalk or crossing currently exists at that location. Pedestrian access is provided instead by existing sidewalks along the north and east lot lines and the plan has been revised to provide pedestrian access to the site from both directions.

12. *Adding crosswalk on northeast corner connecting adjacent property to the proposed bank and new sidewalk along Webb Place.*

An additional crosswalk and sidewalk connection is proposed near the drive-thru location.

Sheet C-5:

1. *Provide pretreatment for stormwater basin. Recommend offline catch basins with deep sumps and oil separator hoods.*

Catch basins with deep sumps and oil separator hoods will be provided.

2. *Provide a minimum 3 feet of cover on all storm drainage pipe.*

The plan has been revised to provide 3 feet of cover to storm drainage.

3. *Grades of driveways exceed 13% in some areas. Recommend keeping grades below 3% within 75 feet of intersections.*

The driveways have been revised to reduce driveway slopes.

4. *Drop off from parking area is over 5 feet. Clarify if guardrail is required.*

A guiderail is not currently proposed as the slopes behind the curb are less than 3-on-1.

5. *Provide calculations and details for rip rap apron in stormwater basin.*

A calculation for the rip-rap apron has been added to the stormwater management report.

6. *Show existing structure labels that align with City GIS labels (coordinate with GI department).*

The applicant agrees to provide City GIS labels on final plans as required.

Sheet C-6:

1. *Water is shown at 1.5" type K copper. See standard City details about types of services and sizes.*

It's the applicant's understanding that type K copper water service is acceptable per the City requirements.

2. *Water meter is to be installed inside the building not externally as called out.*

The water meter will be installed inside the building as required. The plan has been revised to show the water meter location is within the building.

3. *Is the building to be sprinkled? If so, a fire line should be run directly into the building with a domestic line stubbed off of the fire service. Separate shut offs should be provided for domestic and fire.*

Sprinklers are not proposed for the building at this time.

4. *Gate valves should be located at the anchor tees.*

Gate valves will be provided where required.

5. *Electric services appears to be coming off an existing pole. If required to install a standalone transformer, where would one be located?*

Requirement for a pad mounted transformer will be confirmed with the utility provider prior to construction. A location for a pad mounted transformer is shown on the revised plan to the southwest of the building.

6. *External cleanouts are not permitted. Applicant should speak as to why the sanitary service cannot run directly into the northern side of the building.*

The sanitary connection has been revised to eliminate the need for an external cleanout.

7. *Applicant should inspect existing sewer lateral and provide report and video on existing condition. Applicant is reminded that they own from the building to the sewer main.*

A video inspection of the existing sanitary sewer will be performed prior to construction.

8. *Existing sewer runs across adjacent property. Applicant should engage with abutter to discuss a sewer easement if one does not exist.*

Acknowledged.

9. Sewer in adjacent parking lot has two conflicting sizes noted (6" unk and 12" steel). Applicant should clarify how this data was determined and which is correct.

The data shown was provided by the survey. Clarification on the existing sewer line sizes and materials will be provided to the City following a video inspection.

10. 4-inch sewer should have a minimum 2% slope for sewer not 1.08% as noted on the plan.

A 2% minimum slope will be provided for the sewer lateral.

Sheet C-7:

1. Lighting is spilling across the property lines. Please provide light shields

Shields will be provided for the proposed area lights.

Sheet C-8:

1. Two stabilized construction entrances are called out but only one is shown. Please clarify.

The callout has been corrected to show only one construction entrance.

Sheet C-12:

1. Detail 14 should be revised to show a minimum 1.5" milled asphalt key per City standard details.

A milled key has been added to the detail as requested.

2. Provide a minimum of 12-inch slab for dumpster pad.

The detail has been revised as requested.

3. Curb ramps in City right of way should comply with City standard details (no flush curb between pavement and ramp and minimum 4 inches of concrete around the ADA detectable warning panel).

The installation of curb ramps will comply with the City requirements. The detail has been revised accordingly.

4. Clear distance below signage should be 7 feet.

The detail for the sign has been revised.

5. Remove references to Massachusetts on Accessible Parking Signage. Is this additional penalty to be enforced by the bank?

The reference has been removed. No additional penalties are proposed.

6. Curbing in City right of way shall be granite.

Acknowledged. Curbing within the rights-of-way will be granite.

Sheet C-13:

1. *Provide minimum frost depth on detail no. 8.*

The detail has been revised as required.

2. *Provide details on foundation for clearance bar. Notes appear to be scanned and are not legible.*

The detail has been revised to show foundation and legible notes.

Sheet C-14:

1. *All valves and hydrants shall open left (counterclockwise)*

Acknowledged.

2. *Locate water services to eliminate the need for insulation and bends in water line.*

The water service has been revised.

3. *Minimum of 5' of cover is required for water lines.*

Acknowledged. Five feet of cover will be provided.

4. *Sewer and drainage manhole covers shall be Liftmate R-1743-LM or approved equal with 90 deg hinge.*

Manhole covers will be provided as requested.

5. *Storm Drain Utility Trench Section – crushed stone shall extend 12" above top of pipe. See City standard for minimums.*

The detail has been revised as requested.

6. *Utility Trench Section*

- *Crushed stone shall extend 12" above top of sewer pipe.*

The detail has been revised as requested.

- *Sand shall extend 12" above top of water pipe.*

See above.

- *See City standard for minimums and required materials.*

See above.

7. *Sewer minimum cover shall be 4 feet below non paved areas and 6 feet under pavement unless insulation is provided.*

Acknowledged.

8. *Water Service Connection: curb box shall be Erie-style*

Acknowledged.

9. *Water Service Connection: tapping sleeve shall be stainless steel if required.*

Stainless steel tapping sleeve will be provided.

10. *Type B Catch basin inlet grate is the City standard.*

City standard catch basin grates will be provided.

11. *Drain Manhole should have 30 inch clear opening. Catch basins may have 24 inch diameter opening.*

30 inch clear openings will be provided for proposed manholes.

12. *Storm basin detail should show ESHWT to ensure it complies with NHDES recommendations.*

Estimated seasonal high water table will be provided upon completion of geotechnical investigation to ensure it complies with NHDES requirements.

13. *Infiltration rates for designing groundwater recharge practices shall be determined in accordance with Section Env-Wq 1504.14 and summarized in a drainage report.*

The drainage report has been revised to clarify the design infiltration rates used.

14. *Where is detail 9 (Curb break and rip rap detail) to be used?*

The detail is not applicable and has been removed.

15. *Detail 10: How will crushed stone be placed in gap below concrete outlet structure.*

The detail has been revised to show a flat bottom on the outlet structure.

Police:

1. *Would the site still be viable with the second proposed driveway as an in-only instead of full service?*

Testimony will be provided regarding the second driveway.

2. *Provide a fair share contribution toward extending the sidewalk along Webb Place, instead of - or in addition to - your site's own direct connection to the Central Avenue sidewalk*

The applicant agrees to provide the required contribution.

3. *Can you reconfigure or relocate the ATM to achieve a queue of greater than 3 vehicles? Concerned about bypass lane choke point at the northeast corner.*

Based on historical observations at similarly operating Chase Bank facilities, a maximum queue of three (3) vehicles was observed during typical peak hours, with on average one (1) to two (2) queued vehicles observed in the ATM lane at a given time. As such, the proposed drive-through lane design would be sufficient to support the anticipated demand without impacting on-site circulation and maneuverability.

4. *Traffic and Parking Assessment Report:*

- *Page 2: NHDOT data cited for Webb Place AADT of 524. This is surprisingly low and likely inaccurate. What year was the NHDOT data?*

The cited AADT of 524 vehicles was obtained through the NHDOT's "Roads and Projects" Interactive Map. However, as the cited AADT could not be verified through traffic count data published within NHDOT's "Transportation Data Management System" Interactive Map, this information has been omitted from the revised Traffic and Parking Assessment Report.

- *Page 2: second paragraph, Weeks Lane approach lane description is inaccurate. This is likely from an outdated Google Earth image. It probably doesn't affect your conclusions, but just FYI.*

The enclosed Traffic and Parking Assessment Report was revised to reflect the current Weeks Lane approach configuration.

- *Page 4: Where proposed development provides more than twice the City's maximum per regulations, can you provide more narrative to justify the 28 spaces? Only justification provided is "based on observations at similarly sized existing Chase bank locations with drive-up ATM". For example, how many employees per shift? Any retail teller activity? Does this site handle real estate closings? Note: 2 parking spaces are within the 25 foot setback requiring a waiver. Could this site be viable if you reduced to 26 spaces to eliminate that waiver request?*

The proposed parking supply has been reduced to 26 spaces per the latest Site Plan Set, which is reflected in the revised Traffic and Parking Assessment Report. Please refer to the enclosed Parking Operations Memorandum detailing the typical parking supplies and demands for approved and operating Chase Banks of comparable size, layout, and location to that of the proposed development.

Fire/Inspection Services:

1. *Provide a T-I turning template for the site access. Drive thru lane appears to be approximately 15' wide.*

Testimony will be provided with respect to the drive thru lane.

2. *Discuss dumpster location and adequate maneuverability*

The angle of the dumpster has been revised to improve access for the trash truck.

3. *Clarify EV charging is public or private*

The proposed EV charging locations are usable by the public.

4. *Discuss accessibility of EV chargers*

An accessible parking space is proposed at the charger locations.

5. *Provide plan note indicating design compliance with accessibility regulations (I.E. ANSI 117.1) and NH RSA 155-A:5*

A note has been added to the ADA Notes on the Grading & Drainage Plan as requested.

6. *Provide a site specific street color rendering of the proposed structure*

Revised architectural plans will be provided under separate cover.

7. *Confirm design compliance with Architectural requirements.*

Please see above.

8. *Sidewalk extension suggested*

The plan has been revised to provide the requested sidewalk extension.

9. *Does architecture meet required standards?*

Please see above.

Business Development:

1. *Please elaborate on the need for a waiver to the parking maximum – while some relief to this standard may be reasonable, more information may be needed to justify the full extent of the relief requested:*

- *This site is immediately across Webb Place from another bank branch location of comparable square footage that was approved in 2017 with 20 parking spaces, and aerial imagery appears to indicate only 13 spaces are currently installed.*

Acknowledged.

- *The 28 parking spaces proposed exceed the 85th percentile demand per ITE by 40%, suggesting this number is targeting an even less likely scenario (90-95th percentile?) and that many spaces are likely to be underutilized under normal circumstances. Have you explored other options such as an agreement with the abutting property owner to use the row of parking along the northern property line in overflow situations?*

Note the proposed parking supply has been reduced to 26 spaces per the latest Site Plan Set. Please refer to the enclosed Parking Operations Memorandum detailing the typical parking supplies and demands for approved and operating Chase Banks of comparable size, layout, and location to that of the proposed development.

- *The narrative identifies an average maximum parking demand of 8.09 vehicles for Chase branches of similar size. Does this figure also control for other factors such traffic volumes on adjoining roads, population density of the market area, etc.?*

The Chase branches considered for the calculated average maximum parking demand are similarly located in the northeast U.S. region, situated adjacent to major thoroughfares, and surrounded by other commercial uses. Additionally, the study locations operate with drive-up ATM lanes and are comparable in size to the proposed site. As such, the traffic and parking operations observed at the study locations would be generally consistent with the anticipated operations for the proposed location.

- *The requested parking spaces also exceed the figure generated by this calculation (28 vs. 27), again suggesting that the parking layout is designed to accommodate 90th percentile or higher demand scenarios. This appears to contradict the purpose of the adopted parking maximum. Do you have more information about this site, the Dover market, or how Chase branches operate compared to other banks that would indicate that this location is likely to generate this level of demand?*

Note the proposed parking supply has been reduced to 26 spaces per the latest Site Plan Set. Please refer to the enclosed Parking Operations Memorandum detailing the typical

parking supplies and demands for approved and operating Chase Banks of comparable size, layout, and location to that of the proposed development.

2. *Is the existing driveway inadequate for the anticipated trip generation and/or circulation pattern? More information about why a second driveway is necessary would support the request for a waiver from the intersection separation requirement.*

The driveway locations have been revised to afford greater separation to the intersection.

3. *Do you have an anticipated timeline for redevelopment and has it been shared with the existing tenants? Business Development can be a resource if they need assistance finding new locations.*

Acknowledged. A timeline will be provided to the City prior to start of construction.

4. *Clarify existing structure's floor levels as there is an inconsistency between Existing Conditions Plan page and Sheet C-3*

The Demolition Plan has been revised to correctly reflect the existing building is two stories.

Planning Board:

1. *Revise street name on Sheet C-1 to Indian Brook Drive*

The cover sheet has been revised as requested.

2. *Elaborate within narratives for CUP and waiver requests*

Please see the revised Traffic Impact Assessment.

Next Steps:

1. *Revise and add to materials, resubmit with narrative outlining how each comment was addressed for another TRC.*

Acknowledged.

Should you have any questions regarding the submission items or responses above please do not hesitate to contact our office.

Regards,



Joshua H. Kline, PE
Stonefield Engineering and Design, LLC

Via FedEx

CC:

STONEFIELD

June 16, 2023

Revised: September 29, 2023

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

**RE: Traffic & Parking Assessment Report
Proposed Chase Bank with Drive-Up ATM
1-3 Webb Place
Map 38, Lots 15A & 15B
City of Dover, Strafford County, New Hampshire
SE&D Job No.: BOS-220137**

Dear Board Members:

Stonefield Engineering and Design, LLC ("Stonefield") has prepared this analysis to examine the potential traffic and parking impacts of the proposed bank with drive-up ATM on the adjacent roadway network. The subject property is located at the northwesterly quadrant of the intersection of Central Avenue (NH Route 9) and Webb Place in the City of Dover, Strafford County, New Hampshire. The subject property is designated as Map 38, Lots 15A and 15B as depicted on the City of Dover Tax Map. The site has approximately 160 feet of frontage along Central Avenue and approximately 390 feet of frontage along Webb Place. The existing site contains a one (1)-story building operating with various office and personal service uses. The existing access is provided via one (1) full-movement driveway on Webb Place.

Under the proposed development program, the existing structure would be razed and an approximate 3,330-square-foot Chase bank with drive-up ATM would be constructed on the subject property. The existing full-movement driveway on Webb Place would be maintained and improved upon redevelopment, and one (1) additional right-in/right-out driveway is proposed on Webb Place along the southerly property extent.

Existing Conditions

The subject property is located at the northwesterly quadrant of the intersection of Central Avenue (NH Route 9) and Webb Place in the City of Dover, Strafford County, New Hampshire. The subject property is designated as Map 38, Lots 15A and 15B as depicted on the City of Dover Tax Map. The site has approximately 160 feet of frontage along Central Avenue and approximately 390 feet of frontage along Webb Place. Land uses in the area are primarily commercial and residential.

Central Avenue (NH Route 9) is classified as a minor arterial roadway and is under the jurisdiction of the City of Dover. The roadway generally provides two (2) lanes in each direction of travel, intermittently divided by concrete medians or two (2)-way left turn lanes, has an Average Annual Daily Traffic (AADT) of approximately 22,429 vehicles (Source: NHDOT), and has a posted speed limit of 30 mph. Along the site frontage, curb and sidewalk are provided along both sides of the roadway, shoulders are provided along both sides of the roadway, and on-street parking is not permitted along either side of the roadway. Central Avenue provides mobility throughout the City of Dover and connection to major thoroughfares such as NH Route 108 for primarily commercial and residential uses along its length.

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Webb Place is a local roadway under the jurisdiction of the City of Dover. Along the site frontage, the roadway provides one (1) lane of travel in each direction and does not have a posted speed limit. Along the site frontage, curbs are provided intermittently along both sides of the roadway, sidewalk is provided intermittently along the southerly side of the roadway, shoulders are not provided along either side of the roadway, and on-street parking is not permitted along either side of the roadway. Webb Place provides connection to the Central Avenue roadway network for the various commercial, residential, and office uses along its length.

Central Avenue and Webb Place intersect to form a signalized four (4)-leg intersection. The northbound approach of Central Avenue provides one (1) exclusive left-turn lane, three (3) exclusive through lanes, and one (1) exclusive right turn lane, and the southbound approach of Central Avenue provides one (1) exclusive left-turn lane, two (2) exclusive through lanes, and one (1) exclusive right-turn lane. The eastbound approach of Webb Place provides one (1) exclusive left-turn lane and one (1) shared through/right-turn lane. The westbound approach of the intersection, which is designated as Weeks Lane, provides one (1) exclusive left-turn lane and one (1) shared left-turn/through/right-turn lane. Crosswalks, pedestrian ramps, and pedestrian signals with pushbuttons are provided across all legs of the intersection.

The COAST Bus system provides several bus routes that offer public transportation opportunities throughout the City of Dover, including the Route 12 service line for which a bus stop is located approximately one (1) quarter mile from the subject site at the intersection of New Rochester Road (NH Route 108) and Willand Pond Road. The Route 12 line is a regional service that provides connections throughout the City of Dover and the neighboring cities of Somersworth and Rochester. Additional routes run proximate to the site, including the Route 1 and Route 33 service lines; however, bus stops for these lines are not provided within one (1) quarter mile radius of the subject site. Please note that given the characteristics of the proposed development, it is anticipated that the majority of site-generated trips will be comprised of vehicle trips. As such, the analysis contained herein conservatively assumes all vehicle trip generation to and from the site would be vehicular.

Trip Generation

Trip generation projections for the proposed development were prepared utilizing ITE's Trip Generation Manual, 11th Edition. Trip generation rates associated with Land Use 912 "Drive-in Bank" were cited for the 3,330-square-foot bank with drive-up ATM. **Table 1** provides the typical weekday morning peak hour, weekday evening peak hour, Saturday midday peak hour, and weekday daily trip generation volumes associated with the proposed development.

TABLE 1 – PROPOSED TRIP GENERATION

Land Use	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour			Weekday Daily		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
3,330 SF Drive-in Bank ITE Land Use 912	19	14	33	35	35	70	45	43	88	167	167	334

It is important to note that the subject site is developed with a one (1)-story building containing various office and personal service uses which presently generate traffic to and from the site. Therefore, it is reasonable to consider the net trip generation impacts associated with the property based on the existing and proposed uses. Accordingly, trip generation estimates for the existing approximately 6,444-square-foot building were prepared utilizing ITE data for Land Use 710 "General Office Building." **Table 2** shows the net vehicular trip generation of the existing development and proposed development for the typical weekday and during the weekday morning, weekday evening, and Saturday midday peak hours.

TABLE 2 – NET TRIP GENERATION

Land Use	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour			Weekday Daily		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Existing 6,444 SF General Office Building <i>ITE Land Use 710</i>	14	2	16	3	14	17	2	1	3	53	54	107
Proposed 3,330 SF Drive-in Bank <i>ITE Land Use 912</i>	19	14	33	35	35	70	45	43	88	167	167	334
NET TOTAL	5	12	17	32	21	53	43	42	85	114	113	227

As shown in **Table 2**, the proposed redevelopment is expected to result in a marginal increase in site-generated trips throughout the typical weekday and during the study peak hours. Please note that net trip generation credits were not applied herein to provide a conservative analysis.

As stated within Chapter 10 of ITE's Trip Generation Handbook, 3rd Edition, there are instances when the total number of trips generated by a site is different from the amount of new traffic added to the street system by the generator. Drive-in banks are specifically located on or adjacent to busy streets to attract motorists already on the roadway. Therefore, the proposed bank development would be expected to attract a portion of its trips from the traffic passing the site on the way from an origin to an ultimate destination. These trips do not add new traffic to the adjacent roadway system and are referred to as "pass-by" trips.

Based upon the published ITE data for Land Use 912 "Drive-in Bank" 29%, 35%, and 38% of the site-generated traffic during the weekday morning, weekday evening, and Saturday midday peak hours, respectively, is comprised of pass-by traffic. **Table 3** shows the additional site generated traffic for the proposed development in terms of new and pass-by traffic.

TABLE 3 – PROPOSED TRIP GENERATION – NEW & PASS-BY TRIPS

	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
"New" Trips	15	10	25	23	23	46	29	27	56
"Pass-By" Trips	4	4	8	12	12	24	16	16	32
TOTAL	19	14	33	35	35	70	45	43	88

As shown in **Table 3**, the proposed development is expected to generate 33, 77, and 88 total trips during the weekday morning, weekday evening, and Saturday midday peak hours, respectively, inclusive of pass-by trips. Based on Transportation Impact Analysis for Site Development published by ITE, a trip increase of less than 100 vehicle trips would likely not change the level of service of the adjacent roadway system or appreciably increase the volume-to-capacity ratio of an intersection approach. Further, based on a review of the existing traffic volumes along Central Avenue proximate to the subject site, the proposed development would result in an approximate 1.5-2% increase in traffic volumes during typical weekday peak hours, which is a marginal increase that is not anticipated to be perceptible to motorists traversing the roadway network. As such, the proposed development is not anticipated to significantly impact the operations of the adjacent roadway network.

Based on a review of existing traffic patterns along the adjacent roadway network and the access management plan for the development, vehicle trips are anticipated to access the site under the following distributions:

- ◆ Approximately 18% destined to/from north via New Rochester Road
- ◆ Approximately 24% destined to/from south via Central Avenue
- ◆ Approximately 26% destined to/from east via High Street
- ◆ Approximately 32% destined to/from west via Indian Brook Road

Given that the site-generated trips are expected to be distributed along several high-traffic-volume thoroughfares, the proposed development is not anticipated to have a significant adverse impact on the operations of the adjacent roadway network.

Site Circulation/Parking Supply

A review was conducted of the proposed Chase Bank with a drive-up ATM using the Site Plan prepared by Stonefield, dated September 29, 2023. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

Vehicular access to the site will be provided via one (1) existing full-movement driveway and one (1) new right-in/right-out driveway along Webb Place. The bank building will be situated on the central portion of the property with a drive-up ATM located along the northerly building facade. Counterclockwise vehicular circulation through the drive-up ATM will be facilitated via a nine (9)-foot-wide drive-through lane and a 14-foot-wide bypass lane. The drive-through lane will provide storage space for three (3) vehicles without impacting on-site circulation, which is sufficient to support the anticipated demand. Off-street parking will be provided along the westerly and southerly building frontages. Two (2)-way vehicular circulation will be facilitated on site via 24-foot-wide drive aisles.

Regarding sight lines, the City of Dover Land Subdivision Regulations state that an all-season sight distance of 400 feet in each direction should be accommodated at each driveway. It is important to note that the existing driveway along Webb Place will be maintained and therefore will continue to operate adequately. The sight lines at the proposed additional site driveway along Webb Place would meet the 400-foot requirement between the site driveway and Central Avenue, where the majority of conflicting traffic would be approaching from, and would be sufficient to support the site. It is important to note that as the proposed development is located adjacent to the signalized intersection of Central Avenue and Webb Place, motorists exiting the site to return to Central Avenue and connecting thoroughfares would complete their turning movements under a protected signal phase, thereby improving safety of access.

Regarding parking requirements, the City of Dover Site Review Regulations require a maximum of one (1) parking space per 275 square feet of gross leasable area for retail/service uses. For the proposed 3,330-square-foot development, this equates to a maximum of 12 spaces. The proposed development would provide 26 spaces, inclusive of two (2) ADA-accessible parking spaces, which exceeds the City's parking requirement. However, it is important to note that the maximum parking requirements cited within the Site Review Regulations are intended to serve as a guide for the Director of Planning and Community Development, who will determine the appropriate minimum and maximum parking requirements based on the characteristics and needs of each development.

The parking supply was evaluated with respect to data published within the ITE's Parking Generation, 5th Edition, for Land Use 912 "Drive-in Bank." The 85th percentile parking demand rate during the peak weekday period for Land Use 912 "Drive-in Bank" is 6.0 vehicles per 1,000 square feet of gross floor area. For the 3,330-square-foot bank development, this equates to 20 vehicles. As such, the maximum requirement of 12 spaces is not expected to be adequate to support the proposed development. Further, based on observations at similarly

sized existing Chase bank locations with drive-up ATM, maximum observed parking demand was on average 8.09 vehicles per 1,000 square feet, which equates to an anticipated demand of 27 vehicles for the proposed 3,330-square-foot Chase bank with drive-up ATM. Therefore, the proposed parking supply of 26 spaces is appropriate for the development and would be sufficient to support the anticipated parking demand of the site.

Conclusions

This report was prepared to examine the potential traffic impact of the proposed bank with drive-up ATM. The analysis findings, which have been based on industry standard guidelines, indicate that the proposed development would not have a significant impact on the traffic operations of the adjacent roadway network. The site driveways and on-site layout have been designed to provide for effective access to and from the subject property, and the parking supply would be sufficient to support this project.

Please do not hesitate to contact our office if there are any questions.

Best regards,



Joshua H. Kline, PE
Stonefield Engineering and Design, LLC



Victoria E. Epstein
Stonefield Engineering and Design, LLC

STONEFIELD

STORMWATER MANAGEMENT REPORT

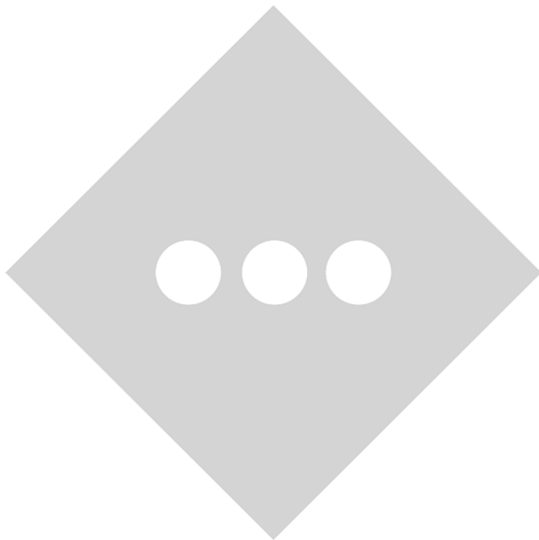


**PROPOSED BANK WITH DRIVE-THRU ATM
TAX MAP 38, LOTS 15A & 15B
1 – 3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE**

**PREPARED FOR:
TPG ARCHITECTURE, LLP**

**PREPARED BY:
STONEFIELD ENGINEERING & DESIGN, LLC
120 WASHINGTON STREET, SUITE 201
SALEM, MASSACHUSETTS**

**REPORT DATE: JULY 31, 2023
REVISED: SEPTEMBER 29, 2023**



**JOSHUA H. KLINE, PE
NH PE LICENSE #16530**

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1.0 PROJECT DESCRIPTION

TPG Architecture, LLP is proposing to redevelop Tax Map 38, Lots 15A & 15B, commonly known as 1 – 3 Webb Place, located at the corner of Webb Place and Central Avenue (herein referred to as the “project site”) for construction of a proposed Chase Bank. Additional improvements include a proposed parking lot, lighting, landscaping, utility services, stormwater management and conveyance systems.

The property is located within Zone C (Commercial District). The proposed development is bounded by other existing commercial uses to all sides, including retail, restaurants, a bank and hotels. The site will be accessed via two full-movement driveways on Webb Place. Refer to **APPENDIX A** for project maps of the project site.

The project site is 42,879 SF (0.98 acres) and the extent of land disturbance is 43,327 SF (0.99 acres). The existing site contains 31,923 SF of impervious surfaces; The proposed development will contain 23,243 SF of impervious surfaces, resulting in a net decrease of 8,680 SF of impervious surfaces within the site. The overall drainage area was modeled as 46,239 SF (1.06 acres).

This Report has been prepared to analyze the potential stormwater runoff impacts of the proposed project site and outline proposed measures to conform to the stormwater management regulations set forth by the City of Dover and the New Hampshire Department of Environmental Services.

2.0 EXISTING CONDITIONS

EXISTING SITE DEVELOPMENT

The project site has frontage on Webb Place to the south and west, and Central Avenue (Route 9) to the northeast. The existing development on site currently has a 6,444 SF commercial building and an appurtenant parking lot. These features are to be removed as part of the proposed redevelopment. An Aerial Map depicting the existing site conditions can be found in **APPENDIX A**.

EXISTING TOPOGRAPHY

The high point of the project site is at the northern corner of the lot along the Central Avenue frontage. On-site topography slopes generally to the south and west, toward Webb Place. Grades on site generally range from 2% to 10% within the previously developed areas. Stormwater runoff from the site drains overland to the existing storm inlets and conveyance system within Webb Place.

PROJECT SITE SOILS

Soil mapping was obtained from the National Resource Conservation Service (NRCS) for the project site and immediate area. Generally, the project site is underlain with soils from the Hinckley group, a loamey sand. The soils are considered excessively drained per NRCS, and runoff flows overland to the southwest of the site and the Webb Place frontage. The table below provides a summary of soils for the project site:

TABLE 1: NRCS SOIL MAPPING RESULTS

Soil Unit Code	Soil Description	Approximate Project Coverage	Drainage Class	Hydrologic Soil Group
HaB	Hinckley Loamey Sand 3% to 8% Slopes	59.0%	Excessively drained	A
HbE	Hinckley Loamey Sand 15% to 60% Slopes	41.0%	Excessively drained	A

Additional information regarding the NRCS soil mapping can be found in **APPENDIX B**.

A report entitled “Report of Geotechnical Investigation” was performed by Whitestone Associates, Inc., dated 3/21/2023. Seven borings were performed as part of the investigation. The soils onsite primarily consisted of silty sand and gravel fill associated with prior development ranging from depths of 3.5 to 10.5 feet below grade.

Beneath the surface and fill materials, the native soils generally consisted of silt, sand and gravel to a depth of 12.0 to 22.0 feet below grade. Water was not noted in any of the borings performed.

EXISTING ENVIRONMENTAL INVENTORY

Based on the effective FEMA flood insurance rate mapping (FEMA Map #33017C0310E issued September 30, 2015), the entirety of the site is not located within the 100-year flood plain. The FEMA Map can be found in **APPENDIX A** of this Report.

There are no federal (US Army Corps of Engineers) and/or state (NHDES) regulated freshwater wetlands within the project site. Impacts to nearby freshwater wetlands are not anticipated with the proposed development. No records of endangered or threatened species sightings / suitable habitats are located within the vicinity of the proposed improvements. In addition, the project proposes to disturb less than 1 acre of land for the entirety of the project.

3.0 PROPOSED CONDITIONS

PROPOSED SITE DEVELOPMENT

The proposed redevelopment will consist of construction of a bank with drive-thru and appurtenant parking areas. Additional improvements include landscaping and stormwater management improvements including catch basins, piping, and a proposed infiltration basin. The site will be accessed via two driveways on Webb Place. Refer to **APPENDIX A** for a half-size Overall Site Plan depicting the proposed project improvements.

PROPOSED TOPOGRAPHY

Project site topography and drainage patterns will generally remain similar to existing conditions; however, due to the need for more commercially friendly, ADA compliant grades, regrading of the parking areas and sidewalks will be implemented through the project to change grades in the improved areas.

ANTICIPATED ENVIRONMENTAL INVENTORY IMPACTS

The proposed redevelopment will not disturb land within environmentally regulated areas. All proposed improvements are located within existing disturbed areas. The City of Dover will remain apprised of the NHDES permitting status as the project moves forward.

4.0 STORMWATER MANAGEMENT METHODOLOGY & PARAMETERS

HYDROLOGIC METHODOLOGY

The analysis program “HydroCAD” Version 10.20 by HydroCAD Software Solutions was utilized to calculate and plot the runoff hydrographs. The program incorporates the time of concentration, C values, rainfall data, and project drainage areas to calculate the runoff characteristics. The existing and proposed drainage areas have been analyzed utilizing the rainfall data for New Hampshire as provided in Appendix A of the New Hampshire Stormwater Manual for the project area. Additional key variables utilized in the analysis include:

TABLE 2: HYDROCAD DESIGN VARIABLES

Variable	Input	Variable	Input
Runoff Calculation Method	SCS TR-20	NRCS Rainfall Frequency Data Set	Dover
Pervious/Impervious CN Calculations	Separate	Storm Intervals (Year Events)	2, 10, 50
Stage-Storage Relationship	Dynamic	Storm Duration	24 Hours
Minimum time of concentration	6 minutes	Storm Curve	Type III

Additional information regarding the hydrologic calculations can be found in **APPENDIX C**.

HYDRAULIC METHODOLOGY

The analysis program “HydraFlow Storm Sewers” Version 2020 by Autodesk was utilized to generate hydraulic grade lines through the proposed conveyance system model based on various pipe / junction losses and the runoff tributary to each inlet or discharge structure. Additional key variables utilized in the analysis include:

TABLE 3: HYDRAFLOW DESIGN VARIABLES

Variable	Input	Variable	Input
Runoff Calculation Method	Rational	Pipe Conveyance Method	Std. Step
C-value for impervious surfaces	0.95	Initial Hydraulic Grade Line	Normalized
C-value for pervious surfaces	0.35	Inlet Drainage Area Delineation	Surveyed
Minimum time of concentration	6 minutes	Inlet Geometry & Capacity	NHDOT Std.

Additional information regarding the hydrologic calculations can be found in **APPENDIX C**.

5.0 STORMWATER ANALYSIS

EXISTING DRAINAGE AREAS

Under current conditions, the project site is modeled as one drainage area. The point of interest (POI) is located along the property frontage on Webb Place. This POI was chosen as the existing stormwater runoff from the site flows overland to the south and west to Webb Place, where it is collected by catch basins in that right-of-way. See below for a short summary:

TABLE 4: SUMMARY OF EXISTING DRAINAGE AREAS

Drainage Area	Description	Area Extents	Impervious Area	Time of Concentration
E-I	Existing Overland Drainage to Webb Place	46,239 SF	32,363 SF	6.0 Minutes *

*The minimum time of concentration was utilized due to the high level of impervious coverage and proximity to the point of interest.

The existing drainage area was delineated based on field surveying data. Hydrologic calculations and parameters for each drainage area can be found in **APPENDIX C**; specific drainage area delineations and land cover can be found in **APPENDIX E**.

PROPOSED DRAINAGE AREAS

Under proposed conditions, the general drainage patterns and ultimate point of interest will be maintained. The intent behind the proposed delineations is to reduce the amount of direct runoff to the Municipal Stormwater Conveyance system in Webb Place. The diverted area is proposed to be collected by a conveyance system in the proposed parking area and sent to an Infiltration Basin (B-1) to meet the New Hampshire Department of Environmental Services Stormwater Management Regulations as outlined in the next Report section. See below for a short summary of each area:

TABLE 5: SUMMARY OF PROPOSED DRAINAGE AREAS

Drainage Area	Description	Area Extents	Impervious Area	Time of Concentration
P-1	Drainage to Proposed SWM Basin	31,097 SF	19,543 SF	6.0 Minutes *
P-2	Bypass Drainage to Webb Place	15,142 SF	4,424 SF	6.0 Minutes *

***The minimum time of concentration was utilized due to the high level of impervious coverage / land disturbance and proximity to the point of interest and proposed stormwater pipe conveyance systems.**

All proposed drainage areas were delineated based on the proposed grading design overlain on field survey data. Hydrologic calculations and parameters for each drainage area can be found in **APPENDIX C**; specific drainage area delineations and land cover can be found in **APPENDIX E**.

STORMWATER MANAGEMENT DESIGN PARAMETERS

The extent of development proposes to disturb less than an acre of the existing site; as such, it is subject to all Stormwater Design Criteria as defined in the City of Dover Ordinances and the New Hampshire Stormwater Manual Volumes 1 and 2. See below for a summary of each design parameter and compliance requirements:

TABLE 6: STORMWATER DESIGN STANDARDS SUMMARY

Design Criteria	Design Target for Compliance
<i>Stormwater Runoff Quality</i>	Stormwater management measures shall be designed to reduce the post-construction load of total suspended solids (TSS) in stormwater runoff generated from the water quality storm to be less than pre-development conditions.
<i>Groundwater Recharge</i>	Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measure maintain 100% of the average annual pre-construction groundwater recharge volume for the site.
<i>Channel Protection</i>	Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, the post-construction peak runoff rate for the 2-year storm event does not exceed the pre-construction peak runoff rate.
<i>Peak Runoff Control</i>	Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction peak runoff rates for the 10- and 50-year storm events do not exceed the pre-construction peak runoff rates for the same storm events.

STORMWATER RUNOFF QUALITY

For all developments, stormwater measurements shall be used to reduce the post-construction load of Total Suspended Solids (TSS) to the level of pre-construction conditions. The discharge point of the proposed project site stormwater is the existing stormwater conveyance system in the right-of-way of Webb Place.

A required water quality volume of 1.0 inches times the percentage of impervious cover draining to the structure times the unitless runoff coefficient (R_v), reduced by 50% for the existing impervious areas gives a total volume of 998 CF to be treated. An infiltration basin is proposed to provide the required removal with a volume of 1,431 CF.

As outlined in the New Hampshire Stormwater Manual Volume 2, Chapter 4.3, the proposed infiltration basin qualifies for water quality volume treatment as the BMP volume is greater than the required water quality volume exclusive of sediment forebay capacity and infiltration. Detailed basin calculations for water quality can be found in

APPENDIX C.

The proposed treatment design will exceed the regulatory requirements for stormwater runoff quality and ensure that runoff discharged into the unnamed tributary will not have any adverse effects on downstream waterways and environs. The Water Quality Weighted Average Map can be found in **APPENDIX E.**

GROUNDWATER RECHARGE

Groundwater recharge is required as the infiltration rates of the soils were found to be greater than 0.50 in/hour and the site is located within an acceptable area. Groundwater recharge is met through the implementation of an infiltration basin which provides a total recharge volume of 2,816 CF. A separation of at least three (3) feet has been provided from the bottom of the BMP to the seasonal high water table elevation as the site is not within a protection area.

The required recharge volume was calculated by multiplying the total impervious area, 23,697 SF, by 0.40 inches due to the hydrologic rating of A soils which yields a required recharge volume of 790 CF. The proposed BMP provides a recharge volume of 2,816 CF in the two-year storm which exceeds this requirement by 2,026 CF. The dynamic method was utilized and can be found in **APPENDIX C**.

CHANNEL PROTECTION

Stormwater runoff is controlled by the implementation of roof drains, storm inlets and piping which ultimately discharge to the infiltration basin on-site. The proposed reduction in the overall impervious surfaces on-site will control the runoff by reducing the peak and volume discharges natural. The two-year storm event peak and volume discharges do not increase as shown in the following tables:

TABLE 7: TWO-YEAR EVENT RUNOFF VOLUMES

Point of Interest	Pre-Construction Runoff Volume	Post-Construction Runoff Volume (pre-treatment)	Post-Construction Runoff Volume	Difference in Volume
POI-I	7,466 CF	2,554 CF	2,554 CF	4,912 CF

PEAK RUNOFF CONTROL

An infiltration basin is proposed in the southwest corner of the site to attenuate peak stormwater runoff rates for the 10- and 50-year storm events to the mandated regulatory levels. The tables below summarize the various drainage areas in relation to flow rates during regulatory storm events:

TABLE 8: STORMWATER RUNOFF QUANTITY COMPLIANCE SUMMARY

Rainfall Event	Existing Flow Rate	Proposed Flow Rate	Proposed % Reduction
10-Year Storm	3.11 CFS	2.11 CFS	32.1%
50-Year Storm	4.14 CFS	2.85 CFS	31.1%

The proposed infiltration basin provides sufficient flow rate attenuation to ensure that no adverse impacts are anticipated downstream of the project site. Detailed hydrologic calculations for each drainage area can be found in **APPENDIX C**.

EROSION, SEDIMENTATION, AND POLLUTION PREVENTION PLAN

A Soil Erosion & Sediment Control Plan has been prepared in accordance with the latest edition of Volume 3 of the New Hampshire Stormwater Manual - Erosion and Sediment Controls During Construction. This plan can be found within the site plan prepared by Stonefield in conjunction with this Report. Proposed temporary measures during construction include silt fencing, temporary storm drain inlet protection, temporary construction access, dust control, soil stockpiles, temporary vegetation and permanent vegetation. No land disturbance will occur until certification and permits have been obtained. Details for all proposed control measures have also been provided.

STORMWATER FACILITY OPERATIONS AND MAINTENANCE

A Stormwater Operations & Maintenance Manual has been included in this Report. Any necessary easements or covenants associated with the stormwater improvements will be recorded prior to the start of construction.

ILLICIT DISCHARGES

The proposed stormwater management system discharges are entirely comprised of stormwater. Firefighting, water line flushing, landscape irrigation, uncontaminated groundwater, potable water sources, foundation drains, air conditioning condensation, footing drains, and water for street washing are prohibited to discharge onsite and will therefore not result in an illicit discharge.

6.0 EROSION, SEDIMENTATION, AND POLLUTION PREVENTION

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

Under proposed conditions, erosion and sediment controls will be utilized to limit the potential effects due to construction of the proposed development. Refer to the Soil Erosion and Sediment Control Plans in **APPENDIX A** of this report. The following includes the temporary sediment controls proposed for this project:

Construction Entrance – To provide a stable entrance and exit from a construction site and keep mud and sediment off public roads, a temporary stone-stabilized pad located at points of vehicular ingress and egress on a construction site. If the action of the vehicle traveling over the gravel pad is not sufficient to remove the majority of the mud, then the tires must be washed before the vehicle enters a public road. If washing is used, provisions must be made to intercept the wash water and trap sediment before it is carried off-site.

Dust Control – To reduce surface and air movement of dust from exposed soil surfaces during land disturbing, demolition, and construction activities, preventative measures must be taken. Sprinkling or other approved methods must be used to reduce dust generated on the site. Dust control shall be provided by the general contractor to a degree acceptable to the owner/operator, and in compliance with the applicable local and state dust control requirements.

Inlet Protection – A sediment filter or an excavated impounding area around a storm drain, drop inlet, or curb inlet must be used to prevent sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area. During construction, the inlet protection measures shall be replaced as needed to ensure proper function of the structure.

Sediment Fence – A temporary sediment barrier consisting of a filter fabric stretched across and attached to supporting posts and entrenched must be established along the perimeter of areas to be disturbed before initiation of and during construction. The sediment fence is constructed of stakes and synthetic filter fabric with a rigid wire fence backing where necessary for support. Sediment fence can be purchased with pockets pre-sewn to accept use of steel fence posts. Silt fences should be inspected immediately after each rainfall and at least daily during prolonged rainfall. Repair as necessary. If the fabric tears, decomposes, or in any way becomes ineffective, replace it immediately. Replace burlap used in sediment fences after no more than 60 days.

Temporary Seeding – Disturbed areas that will not be brought to final grade for a period of more than 30 working days or in a season not suitable for permanent seeding shall be temporarily seeded to minimize erosion and sediment loss. Other stabilization methods may be used and shall be in conformance with the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas*, latest edition.

Temporary Soil Stockpile – Locate the topsoil stockpile so that it does not interfere with work on the site. Side slopes of the stockpile should not exceed 2:1. Surround all topsoil stockpiles with an interceptor dike with gravel outlet and silt fence. Either seed or cover stockpiles with clear plastic or other mulching materials within 7 days of the formation of the stockpile. Topsoil should not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or when conditions exist that may otherwise be detrimental to proper grading or proposed sodding or seeding. Do not place topsoil on slopes steeper than 2:1. Maintain protective cover on stockpiles until needed.

PERMANENT EROSION AND SEDIMENT CONTROL MEASURES

Permanent Seeding – Permanent seeding of grass and planting trees and shrubs shall be established on any graded or cleared area where long-lived plant cover is needed to stabilize the soil in accordance with the

accompanying plans. Areas which will not be brought to final grade for a year or more shall also be seeded permanently. Inspect seeded areas for failure and make necessary repairs and reseed immediately. Conduct or follow-up survey after one year and replace failed plants where necessary.

Riprap – A permanent, erosion-resistant ground cover of large, loose, angular stone must be installed in accordance with the accompanying plans to protect slopes, streambanks, channels, or areas subject to erosion by wave action. Riprap should be checked at least annually and after every major storm for displaced stones, slumping, and erosion at edges, especially downstream or downslope. If the riprap has been damaged, it should be repaired immediately before further damage can take place.

CONSTRUCTION PHASING PLAN AND SEQUENCE OF OPERATIONS

The Soil Erosion & Sediment Control Plans have been phased in order to effectively control erosion and sedimentation and minimize impacts due to seasonal changes. Please refer to **APPENDIX A** for half size Soil Erosion & Sediment Control Plans for detailed construction sequencing.

FINAL SITE STABILIZATION

Recommended practices for final surface stabilization include surface roughening, terrace, topsoiling, permanent seeding, sodding, trees and shrub planting, mulching, and riprap. The stabilization measures shall be in conformance with the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas*, latest edition.

7.0 STORMWATER FACILITY OPERATIONS AND MAINTENANCE

Operation and maintenance of the permanent stormwater control Best Management Practices (BMPs) shall be the responsibility of the operator of the project site at the time that the applicable maintenance is required. The current owner and responsible agent of the project is:

Vallarie Bhuthongkum
JPMorgan Chase & Co.
vallarie.bhuthongkum@chase.com
443-627-0024

A copy of this report shall be kept on-site at all times both during and after construction. Upon reviewing agency approval, the title and date of the maintenance plan as well as the contact information of the current agent responsible for maintaining the stormwater management measures for the project shall be recorded on the deed of the property on which the measures are located. Any future change in this information such as change in property ownership shall also be recorded on the deed.

The current responsible agent shall evaluate the maintenance plan for effectiveness at least annually and revise the plan as necessary. A detailed, written log of all preventative and corrective maintenance performed for each stormwater management measure must be kept, including a record of all inspections and copies of maintenance-related work orders. Upon request from a public entity with jurisdiction over the project area the responsible agent shall make available the maintenance plan and associate logs and other records for review.

MAINTENANCE EQUIPMENT AND PERSONNEL

The current responsible agent shall ensure that adequate equipment and training is provided to maintenance personnel to perform the required maintenance tasks. Confined Space Entry Certification shall be required by personnel entering underground structures and pipes. The material and equipment necessary for inspection and maintenance activities shall include, but not be limited to, the following:

- *Infiltration Basins:* Instruments to perform visual inspection of underground pipes and outlet structures, equipment to pump stormwater from the basin in the event of maintenance, vacuum truck and hose for removal of sediment from basin bottom, and necessary safety equipment
- *Landscape Areas:* Material and equipment customary in landscape maintenance practices.
- *Street Sweeping:* Litter vacuum or leaf/litter blower to collect sediment from asphalt surface, brooms, and disposal bags.
- *Hood and Sump Equipment:* Vacuum truck and hose to pump out stormwater for disposal.

The estimated operation and maintenance budget is estimated to be approximately \$8,000 per year. Approximate breakdown of yearly routine maintenance budget noted below (excludes structural repairs):

TABLE 9: OPERATION AND MAINTENANCE BUDGET

Basin Inspection and Maintenance	\$3,000per year
Landscape Areas	\$2,000 per year
Sediment Debris and Trash Removal	\$2,000 per year
Street Sweeping	\$1,000 per year

GENERAL MAINTENANCE – STREETS AND PARKING AREAS

Roadways with curbs and catch basins must be swept at a minimum of once per year. Roadways with curbs and catch basins that discharge to nitrogen or phosphorus impaired waters or their tributaries are swept at a minimum of twice per year, once in the spring and once in the fall. Sweeping on rural uncurbed roads and parking lots with no catch basins must be conducted on an as-needed basis. All street sweepings collected must be disposed of. The responsible party may temporarily store street sweepings in labor yards, but street sweepings must be disposed of offsite in a reasonable timeframe. Street sweepings may not be disposed of on parking lots or lands.

The following street and parking lot sweeping procedures shall be performed to reduce the discharge of pollutants:

Sweeping

- Street sweeping will be conducted in dry weather. Sweeping will not be conducted during or immediately after rainstorms.
- Dry cleaning methods will be used whenever possible with the exception of very fine water spray for dust control. Avoid wet cleaning or flushing of the pavement.
- When necessary, parking bans will be enacted to facilitate sweeping on busy streets
- Sweeping will be conducted in a manner that avoids depositing debris into storm drains.
- Sweeping equipment (mechanical, regenerative air, vacuum filter, tandem sweeping) will be selected depending on the level of debris. Brush alignment, sweeper speed, rotation rate, and sweeping patterns will be set to optimate levels to manage debris.
- Sweeping equipment will be routinely inspected and maintained to reduce the potential for leaks.

Disposal

- The reuse of sweepings is recommended by NHDES. If street sweepings are reused, e.g. as anti-skid material or fill in parking lots), they will be properly filtered to remove solid waste, such as paper or

trash, in accordance with their intended reuse. All reuse and/or disposal of street sweeping swill be managed in accordance with current NHDES policies and regulations.

- Street sweepings can be stored for up to one year in approved temporary storage areas. Storage areas will be protected to prevent erosion and runoff and should be located away from wetland resource areas and buffer zones, surface water, or groundwater.
- Sweepings are classified as solid waste and are disposed of at solid waste disposal sites.

GENERAL MAINTENANCE – WINTER ROAD MAINTENANCE

The following winter maintenance procedures shall be performed to reduce the discharge of pollutants:

- Minimize the use and optimize the application of sodium chloride and other salt (while maintaining public safety) and consider opportunities for use of alternative methods.
- Optimize sand and/or chemical application rates through the use, where practicable, of automated application equipment (e.g. zero velocity spreaders), anti-icing and pre-wetting techniques. Implementation of pavement management systems, and alternate chemicals. Maintain records of the application of sand, anti-icing and/or de-icing chemicals to document the reduction of chemicals to meet established goals.
- Prevent exposure of de-icing product (salt, sand, or alternative products) storage piles to precipitation by enclosing or covering the storage piles. Implement good housekeeping, diversions, containment, or other measures to minimize exposure resulting from adding to or removing materials from the pile. Store piles in such a manner as not to impact surface water resources, groundwater resources, recharge areas, and wells.
- The MS4 permit prohibits snow disposal into waters of the United States. Snow disposal activities, including selection of appropriate snow disposal sites, will
- NHDES Snow Disposal Guidance for ice melting operations and skating rinks shall be followed.

GENERAL MAINTENANCE – STRUCTURAL STORMWATER BMPs

In order to function properly and provide associated stormwater benefits, structural stormwater BMPs must be kept in good working order. Structural stormwater BMPs shall be inspected annually at a minimum. During inspections, the following BMP components will be reviewed for signs of potential issues, as listed below:

Deep Sump Catch Basins with Hoods – Ensure that the trapped sedimentation levels are not greater than 50% of the sump volume with inspections and cleaning at least four times per year and that all inlet and outlet pipes are functioning as expected.

Infiltration Basins – Ensure that the flow is dispersed evenly throughout the BMP, inlet and outlet pipes are functioning as expected, vegetation is well established without invasive species present, standing water is not present within the infiltration BMP 72 hours after a rain event, there are no signs of illicit discharges or vandalism, there is no subsidence, erosion, or cracking or tree growth on the embankment, there is no damage to the to the emergency spillway, there are no signs of erosion and rutting on the side slopes, there is no leakage through the embankments, the riprap is in an acceptable condition, and evaluate the level of sedimentation and trash accumulation for acceptable levels.

Catch Basins, and Outlet Structures – Ensure that the flow paths are not blocked, the contributing areas are reaching the correct BMP areas, there are no signs of erosion, inlet and outlet pipes are functioning as designed, the outlet structures are not clogged and have acceptable outflow release velocities, there is no subsidence, erosion, or cracking, and evaluate the level of sedimentation and trash accumulation for acceptable levels.

During inspection, assign a level of service to each item reviewed. Areas where follow up maintenance is warranted will be indicated. The following maintenance activities will occur at structural BMPs based on condition determined during annual inspections: remove excess sediment, trash, and debris; re-establish vegetation; remove invasive vegetation; re-grade areas as necessary to ensure proper flow patterns; stabilize eroded areas via vegetation establishment, placement of stone, or other energy dissipation measures.

TABLE 10: BMP MAINTENANCE SCHEDULE

Activity	Responsible Party	Time of Year	Frequency
General			
Mow	Operations or contracted services	Spring through Fall	As needed, annually minimum
Remove dead vegetation	Operations	Fall and Spring	Bi-annually
Remove invasive vegetation	Operations or contracted services	Spring or Fall	Annually
Prune	Operations	Spring or Fall	Annually
If Identified During Inspections (As Needed)			
Replace dead vegetation	Engineering	Spring	As needed
Stabilize eroded areas	Engineering	Spring through Fall	As needed
Re-grade areas to ensure proper flow patterns	Engineering	Spring through Fall	As needed
Remove excess sediment, trash, and debris	Engineering	Spring through Fall	As needed
Repair structural damage	Engineering	Spring through Fall	As needed
Vegetated BMPs			

Mulch void areas	Operations or contracted services	Spring	Annually
Replace all media and vegetation and repair as needed	Engineering or contracted services	Late Spring / Early Summer	As needed
Aboveground BMPs			
Mow / rake buffer area, side slopes, and basin bottom	Operations or contracted services	Fall and Spring	Bi-annually
Remove trash, debris, and organic matter	Engineering	Fall and Spring	Bi-annually

STORMWATER CORRECTIVE MAINTENANCE ACTIONS

Depending on many factors, such as the performance of preventative maintenance actions, weather, or unexpected incidents. Corrective requirements may not be precisely anticipated; however, a list of potential corrective maintenance actions may assist the responsible party in planning and estimating costs in advance.

Potential Corrective Maintenance Actions	Stormwater Management Measures
- Repair/replacement of eroded or damaged riprap apron - Repair/replacement of missing or damaged trash racks - Repair/replacement of damaged inlet/outlet pipes - Revegetation of eroded side slope, aquatic bench, marsh, basin bottom, grass swales, etc.	Infiltration Basin
- Repair/replacement of damaged inlet/outlet pipes - Replace parts / system as deemed necessary by manufacturer	Catch Basins and Outlet Structures

INSPECTION AND LOGS OF ALL PREVENTATIVE AND CORRECTIVE MEASURES

The person responsible for maintenance shall maintain a detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-related work orders.

A maintenance plan shall include a schedule of regular inspections and tasks, and detailed logs of all preventative and corrective maintenance performed on the stormwater management measure, including all maintenance-related work orders. The person with maintenance responsibility must retain and, upon request, make available the maintenance plan and associated logs and other records for review by a public entity with administrative, health,

environmental, or safety authority over the site. Inspection Checklists in the Field Manual for the stormwater management measures on this site include:

- Appendix E-1: General Inspection Checklist Log
- Appendix E-2: General Preventative Maintenance Log
- Appendix E-3: General Corrective Maintenance Log
- Appendix E-4: Annual Evaluation Records

All inspection and maintenance activities shall be recorded to document frequency of inspection and maintenance, and implementation of corrective action. All regularly scheduled inspections, inspections following one (1) inch of precipitation, maintenance activities, and repairs shall be recorded. Refer to **APPENDIX E** of this Manual for the BMP Inspection & Maintenance Log for this facility. This log shall be considered a minimum standard for recording purposes, the Operator and Inspection/Maintenance Personnel are encouraged to supplement the Log with additional notes and photos.

ANNUAL EVALUATION OF THE EFFECTIVENESS OF THE PLAN

The person responsible for maintenance shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed. The responsible party should evaluate the effectiveness of the maintenance plan by comparing the maintenance plan with the actual performance of the maintenance. The items to evaluate may include, but not limited to:

- Whether the inspections have been performed as scheduled;
- Whether the preventive maintenance has been performed as scheduled;
- Whether the frequency of preventative maintenance needs to increase or decrease;
- Whether the planned resources were enough to perform the maintenance;
- Whether the repairs were completed on time;
- Whether the actual cost was consistent with the estimated cost;
- Whether the inspection, maintenance, and repair records have been kept.

If actual performance of those items has been deviated from the maintenance plan, the responsible party should find the causes and implement solutions in a revised maintenance plan.

8.0 CONCLUSIONS

As demonstrated in this Report, the runoff flow rate and volume generated by the proposed redevelopment will be reduced by the decrease in impervious surfaces on site and revegetation of existing disturbed areas. In addition, an on-site stormwater conveyance system will be constructed with deep sump catch basins with hoods. Runoff water quality will be managed by introduction of an infiltration basin which will provide treatment to remove total suspended solids to a satisfactory regulatory level. Groundwater recharge also will be increased due to the reduction of impervious surfaces and the function of the proposed infiltration basin. This will provide groundwater recharge equal to or greater than recharge under existing conditions.

The proposed project complies with all applicable stormwater management regulations of the City of Dover 153-14, and NHDES. As such, the project is not anticipated to have any adverse drainage impacts on neighboring properties, downstream watercourses, or adjoining conveyance systems.

9.0 REFERENCES

1. Massachusetts Stormwater Handbook and Stormwater Standards, last amended January 2, 2008
<https://www.mass.gov/guides/massachusetts-stormwater-handbook-and-stormwater-standards>
2. Massachusetts Complete Erosion and Sedimentation Control Guidelines for Urban and Suburban Areas: A Guide for Planners, Designers, and Municipal Officials, last amended May 2003
<https://www.mass.gov/doc/complete-erosion-and-sedimentation-control-guidelines-a-guide-for-planners-designers-and/download>
3. Zoning Code of the City of Dover, NH.
[https://www.dover.nh.gov/Assets/government/city-operations/2document/planning/Regulations/Zoning 2018.pdf](https://www.dover.nh.gov/Assets/government/city-operations/2document/planning/Regulations/Zoning%2018.pdf)

APPENDIX A

PROJECT FIGURES

INVENTORY

FIGURE 1: USGS LOCATION MAP

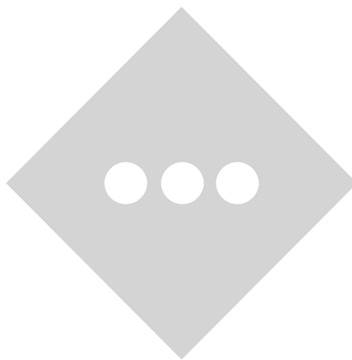
FIGURE 2: AERIAL MAP

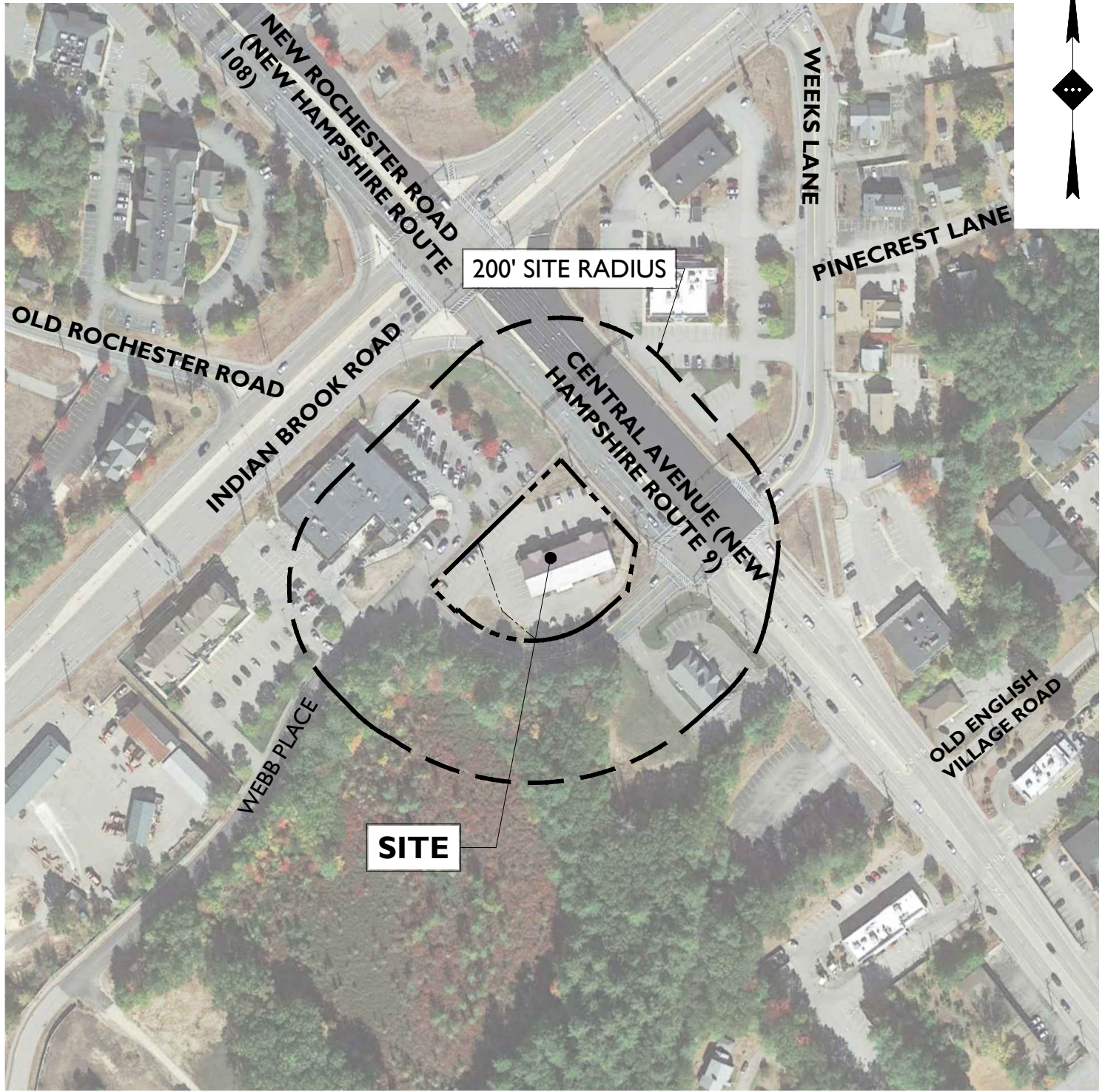
FIGURE 3: TAX & ZONING MAP

FIGURE 4: FEMA MAP

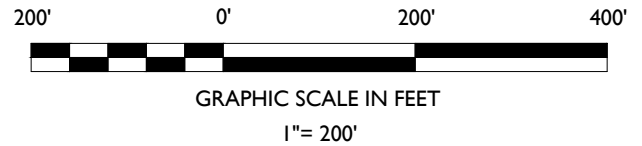
FIGURE 5: OVERALL SITE PLAN (NOT TO SCALE)

FIGURE 6: SESC PLAN (NOT TO SCALE)





AERIAL MAP



SOURCE: GOOGLE EARTH PRO. IMAGE DATED 07/22/2022

CHASE

PROPOSED BANK WITH DRIVE-THRU ATM

TAX MAP 38, LOTS 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

DRAWN BY:

LMR

CHECKED BY:

MM

DATE:

06/08/2023

SCALE:

1"=200'

PROJECT ID:

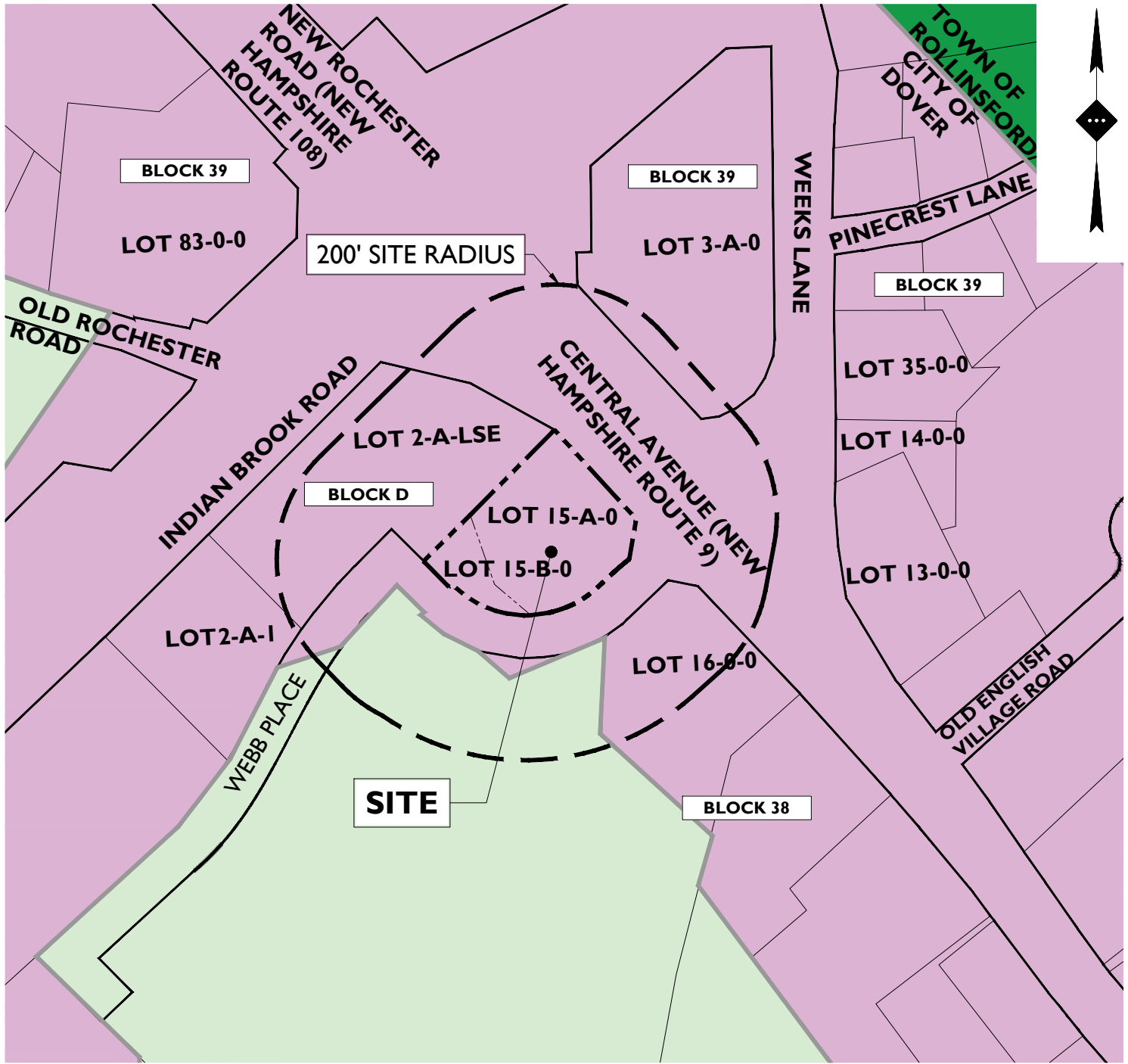
BOS-220137



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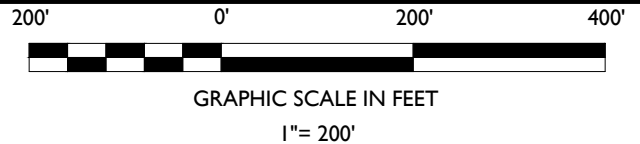
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Phone 617.203.2076



ZONING LEGEND

DOVER:  ZONE C COMERCIAL  ZONE R-12 MEDIUM-DENSITY RESIDENTIAL ROLLINSFORD:  ZONE U/R URBAN RESIDENTIAL



TAX & ZONING MAP

SOURCE: TOWN OF ROLLINSFORD TAX MAP DATED 4/1/2021 AND TOWN OF ROLLINSFORD ZONING MAP DATED 11/24/2021, CITY OF DOVER ZONING MAP DATED 11/24/2021 AND CITY OF DOVER INDEX MAP DATED 3/21/2018, CITY OF SOMERSWORTH ZONING MAP DATED 12/1/2021 AND CITY OF SOMERSWORTH TAX PARCELS MAP DATED 9/1/2022



PROPOSED BANK WITH DRIVE-THRU ATM

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1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

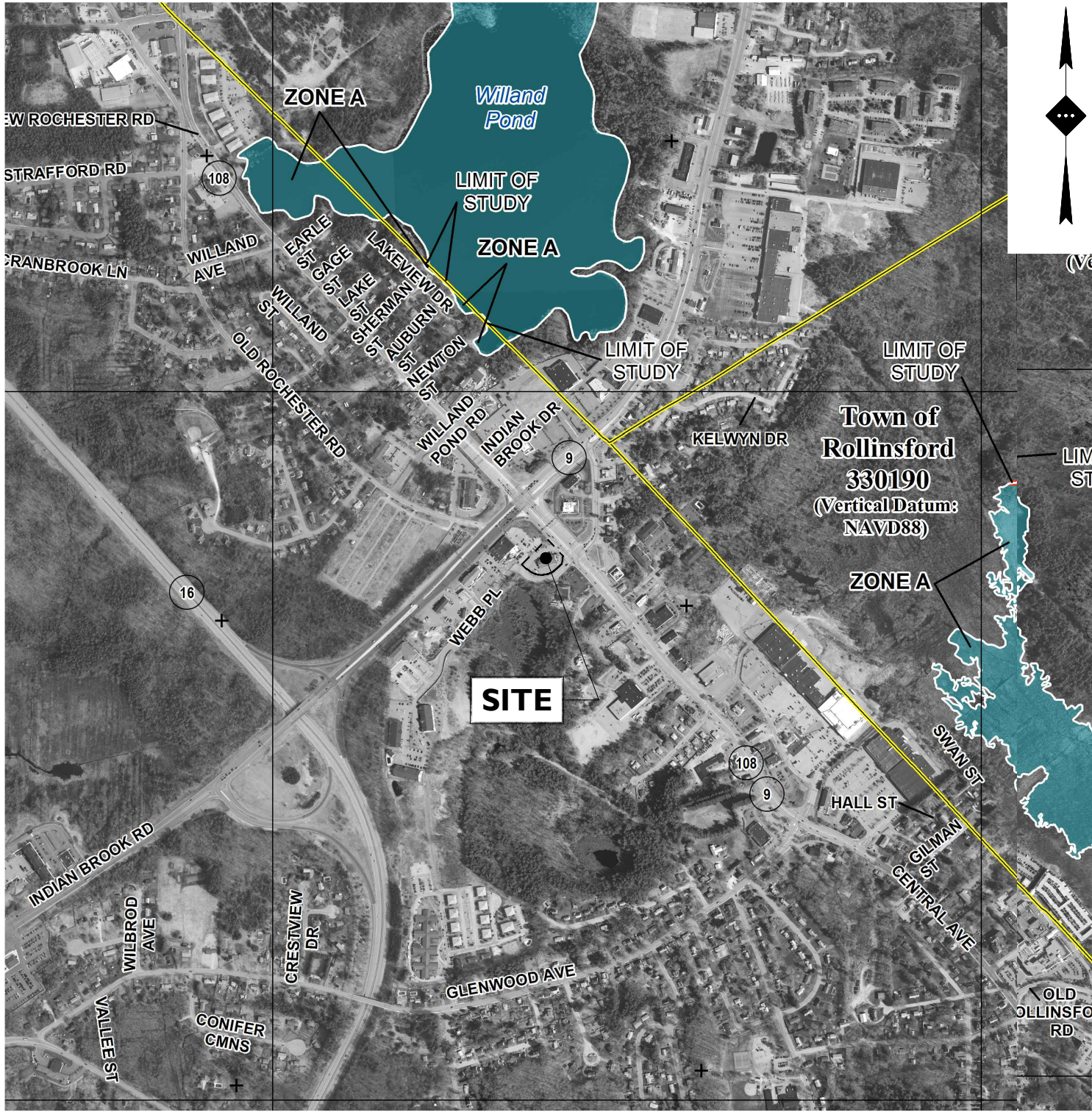
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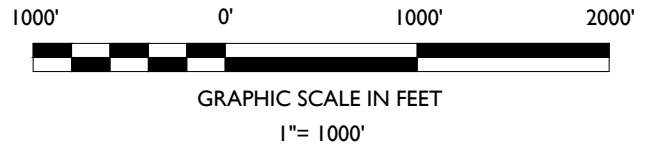
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FEMA EFFECTIVE MAP



SOURCE: FLOOD INSURANCE RATE MAP, TOWN OF ROLLINSFORD AND CITY OF DOVER, NEW HAMPSHIRE, 33017C0310E & 33017C0330E, DATED 9/30/2015



PROPOSED BANK WITH DRIVE-THRU ATM

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1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

DRAWN BY:

LMR

CHECKED BY:

MM

DATE:

06/08/2023

SCALE:

1"=1000'

PROJECT ID:

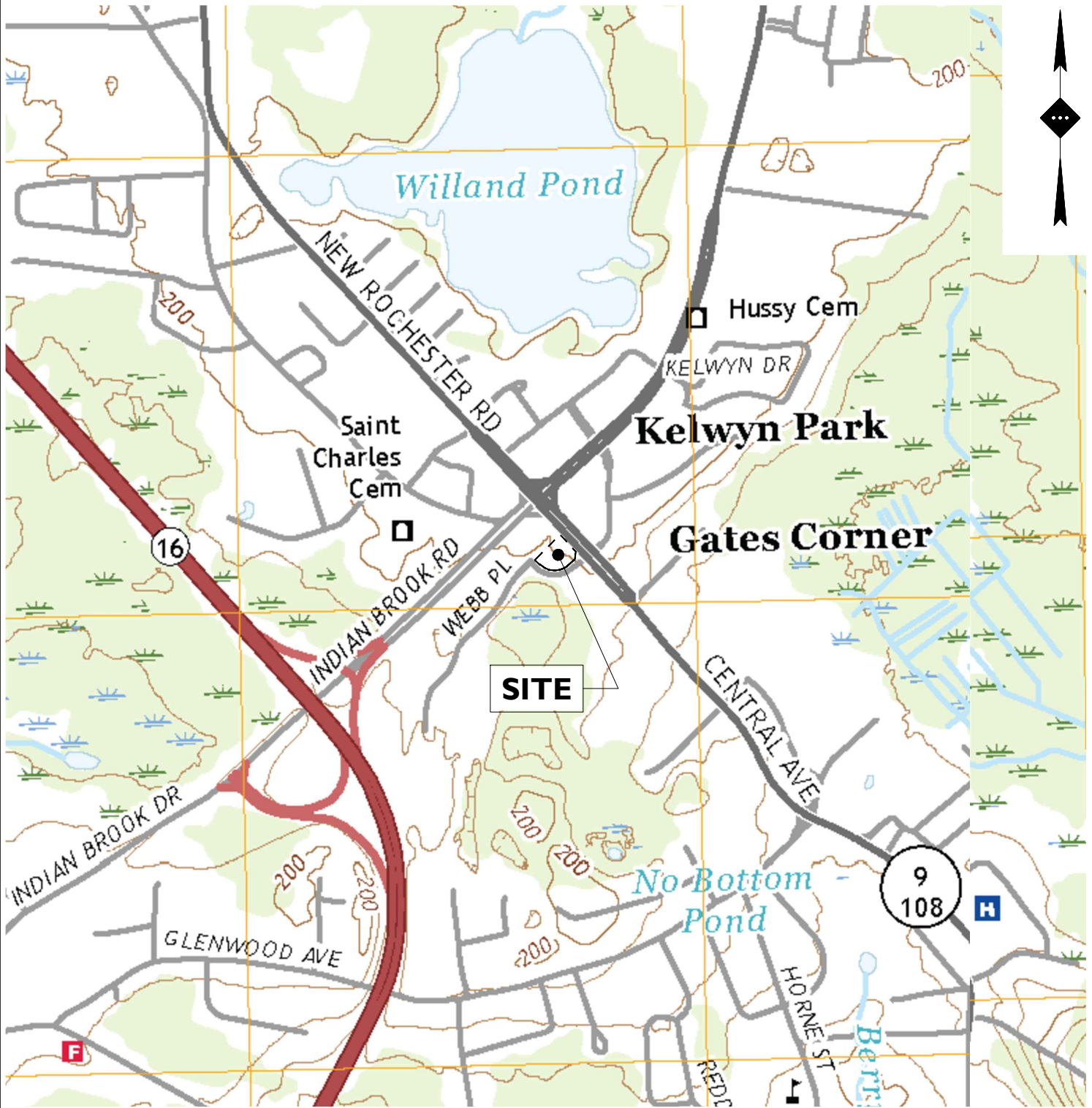
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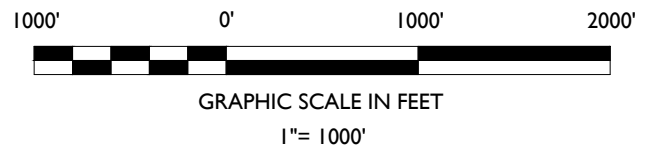
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USGS QUADRANGLE MAP



SOURCE: UNITED STATES GEOLOGICAL SURVEY MAP, DOVER EAST QUADRANGLE & DOVER WEST QUADRANGLE, NEW HAMPSHIRE, 7.5 MINUTE SERIES, DATED 2021



PROPOSED BANK WITH DRIVE-THRU ATM

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1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

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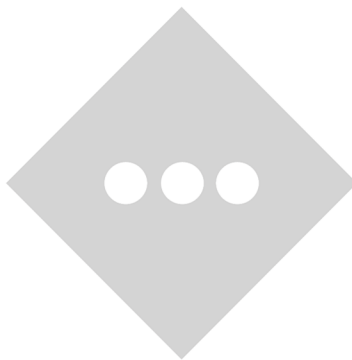
APPENDIX B

PROJECT SOILS

INVENTORY

B-1: NRCS SOILS REPORT

B-2: GEOTECHNICAL REPORT





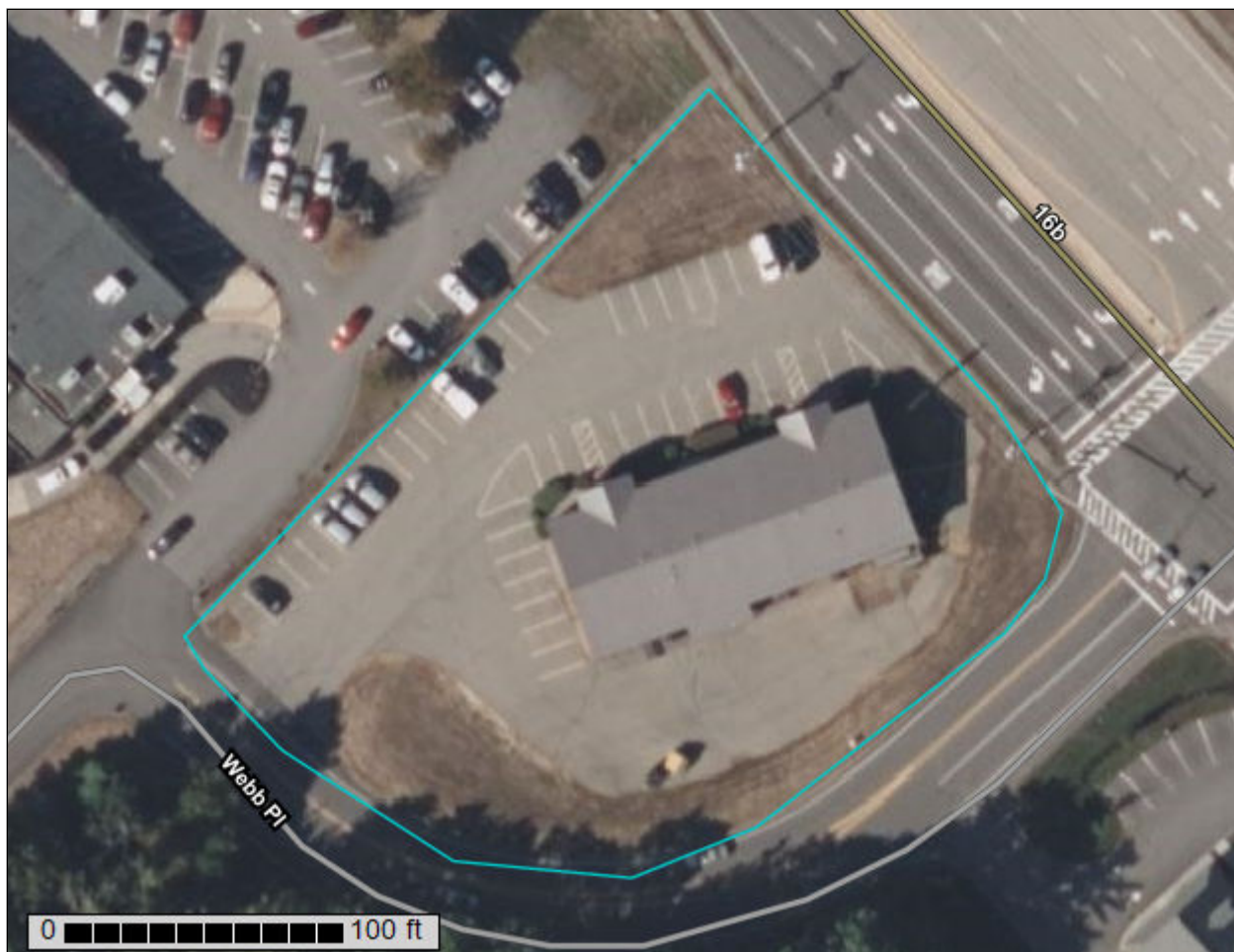
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Strafford County, New Hampshire



July 3, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HaB	Hinckley loamy sand, 3 to 8 percent slopes	0.7	59.0%
HbE	Hinckley loamy sand, 15 to 60 percent slopes	0.5	41.0%
Totals for Area of Interest		1.2	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Strafford County, New Hampshire

HaB—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8

Elevation: 0 to 1,430 feet

Mean annual precipitation: 36 to 53 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 250 days

Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, moraines, kames, outwash plains, kame terraces, eskers

Landform position (two-dimensional): Summit, shoulder, backslope, footslope

Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 8 inches: loamy sand

Bw1 - 8 to 11 inches: gravelly loamy sand

Bw2 - 11 to 16 inches: gravelly loamy sand

BC - 16 to 19 inches: very gravelly loamy sand

C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

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Ecological site: F144AY022MA - Dry Outwash

Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent

Landform: Outwash deltas, outwash terraces, moraines, kames, outwash plains, kame terraces, eskers

Landform position (two-dimensional): Summit, shoulder, backslope, footslope

Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent

Landform: Outwash deltas, outwash terraces, moraines, outwash plains, kame terraces

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Head slope, side slope, base slope, tread

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Hydric soil rating: No

Agawam

Percent of map unit: 2 percent

Landform: Outwash deltas, outwash terraces, moraines, kames, outwash plains, kame terraces, eskers

Landform position (two-dimensional): Summit, shoulder, backslope, footslope

Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

HbE—Hinckley loamy sand, 15 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2svmh

Elevation: 0 to 890 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 145 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 85 percent

Minor components: 15 percent

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Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, moraines, kames, outwash plains, kame terraces, eskers

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 8 inches: loamy sand

Bw1 - 8 to 11 inches: gravelly loamy sand

Bw2 - 11 to 16 inches: gravelly loamy sand

BC - 16 to 19 inches: very gravelly loamy sand

C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 15 to 60 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: F144AY022MA - Dry Outwash

Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 10 percent

Landform: Outwash deltas, outwash terraces, kames, outwash plains, kame terraces, eskers, moraines

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

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Merrimac

Percent of map unit: 5 percent

Landform: Outwash terraces, moraines, kames, outwash plains, eskers

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope, crest, head slope, nose slope, riser

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

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APPENDIX C

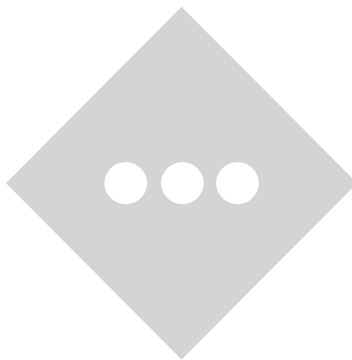
HYDROLOGIC & HYDRAULIC CALCULATIONS

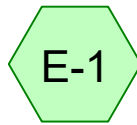
INVENTORY

C-1: HYDROCAD NODE SCHEMATIC DIAGRAM

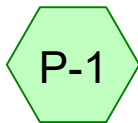
C-2: HYDROCAD HYDROLOGIC CALCULATIONS

C-3: OUTLET PROTECTION CALCULATION

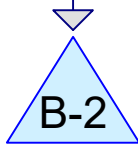




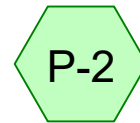
Existing Site Drainage



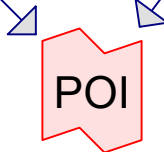
Proposed Drainage to
Bioretention Basin



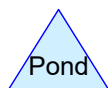
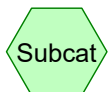
Proposed Infiltration
Basin



Proposed Bypass
Drainage



Proposed Drainage Site
Overall



Routing Diagram for 2023-07-31_HydroCAD Calcs

Prepared by Microsoft

HydroCAD® 10.00-22 s/n 10626 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment E-1: Existing Site Drainage

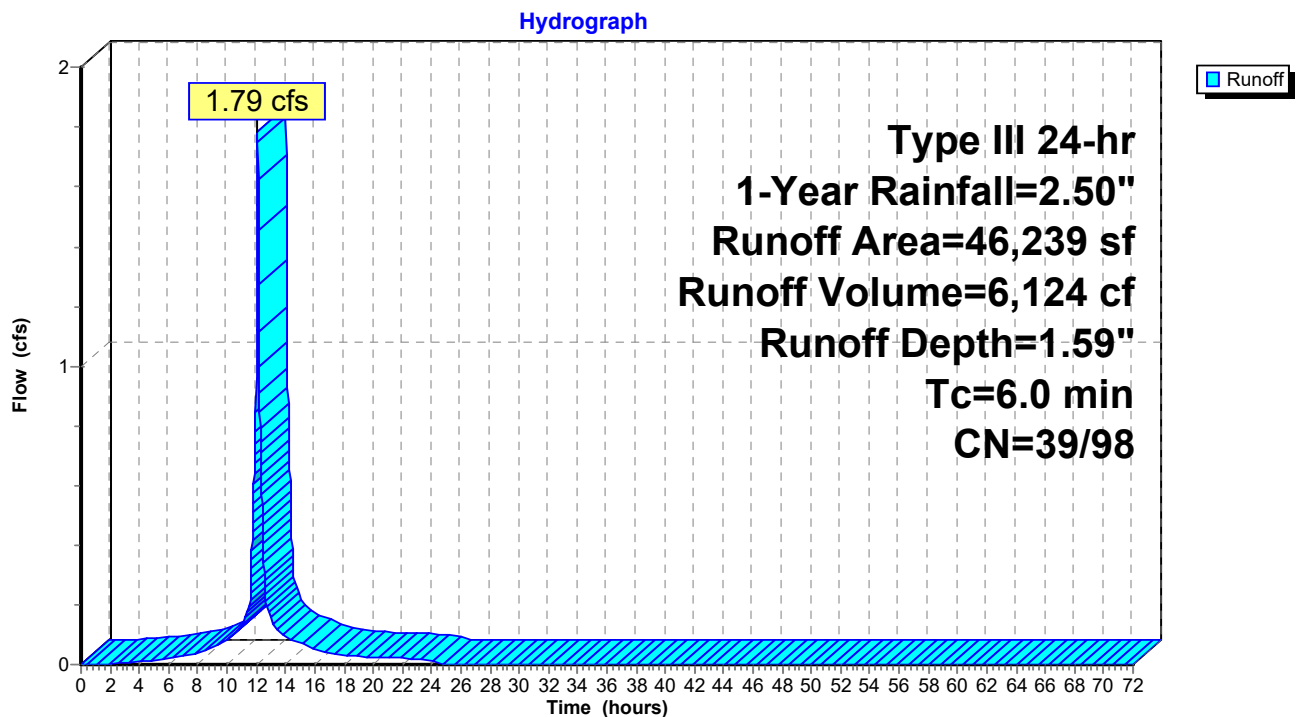
Runoff = 1.79 cfs @ 12.08 hrs, Volume= 6,124 cf, Depth= 1.59"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-Year Rainfall=2.50"

	Area (sf)	CN	Description
*	32,363	98	Impervious Areas
	13,876	39	>75% Grass cover, Good, HSG A
	46,239	80	Weighted Average
	13,876	39	30.01% Pervious Area
	32,363	98	69.99% Impervious Area

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

Subcatchment E-1: Existing Site Drainage



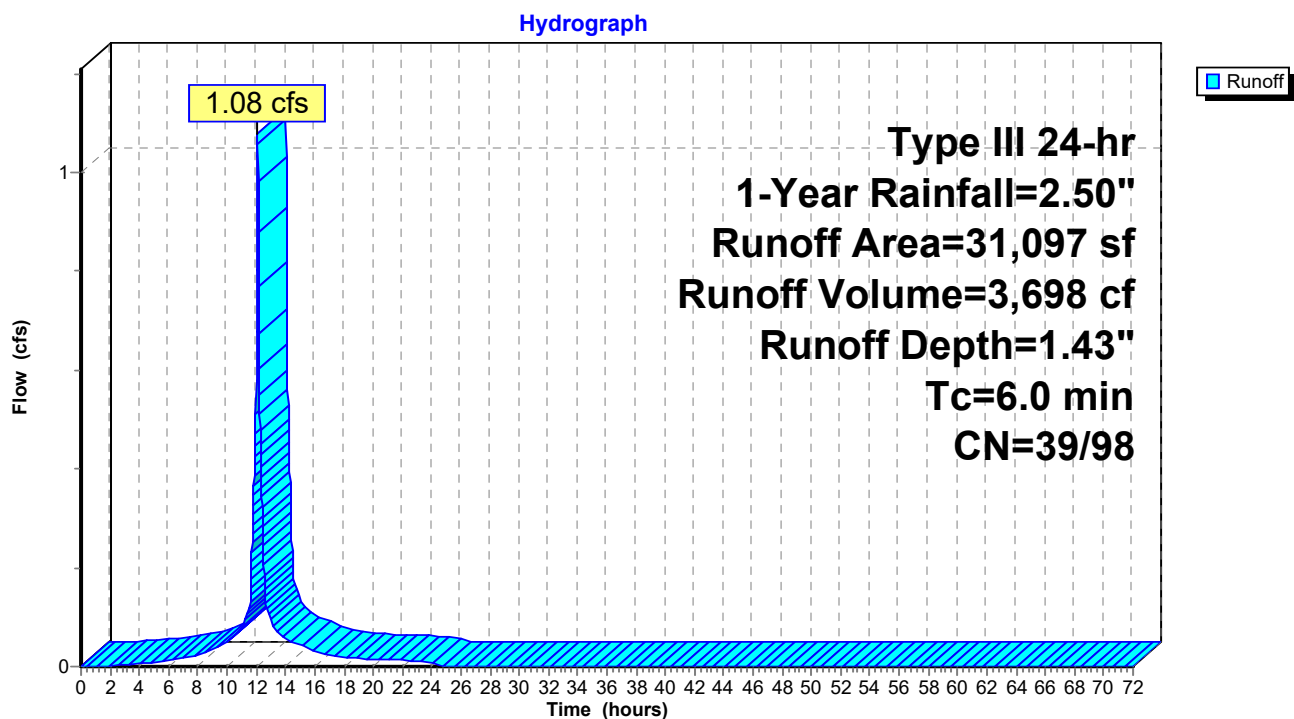
Summary for Subcatchment P-1: Proposed Drainage to Bioretention Basin

Runoff = 1.08 cfs @ 12.08 hrs, Volume= 3,698 cf, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-Year Rainfall=2.50"

	Area (sf)	CN	Description
*	19,543	98	Impervious Areas
	11,554	39	>75% Grass cover, Good, HSG A
	31,097	76	Weighted Average
	11,554	39	37.15% Pervious Area
	19,543	98	62.85% Impervious Area

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

Subcatchment P-1: Proposed Drainage to Bioretention Basin

Summary for Subcatchment P-2: Proposed Bypass Drainage

Runoff = 0.24 cfs @ 12.08 hrs, Volume= 837 cf, Depth= 0.66"

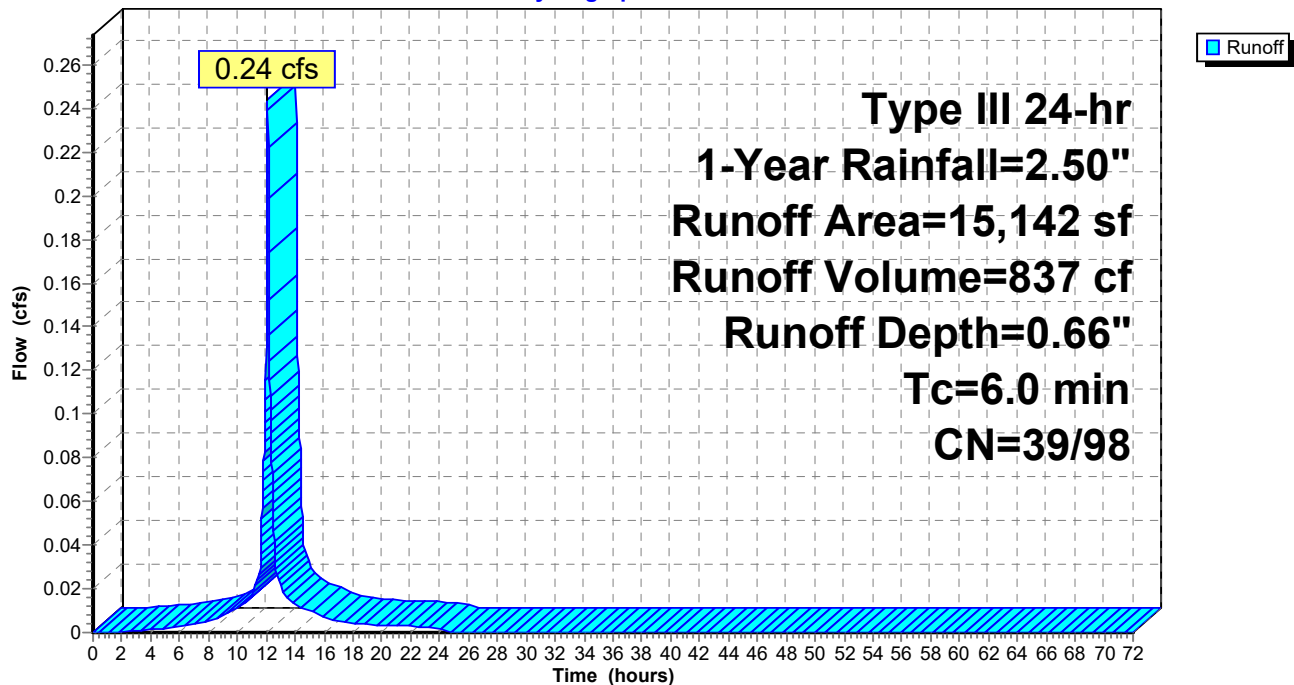
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-Year Rainfall=2.50"

	Area (sf)	CN	Description
*	4,424	98	Impervious Areas
	10,718	39	>75% Grass cover, Good, HSG A
	15,142	56	Weighted Average
	10,718	39	70.78% Pervious Area
	4,424	98	29.22% Impervious Area

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

Subcatchment P-2: Proposed Bypass Drainage

Hydrograph



Summary for Pond B-2: Proposed Infiltration Basin

Inflow Area = 31,097 sf, 62.85% Impervious, Inflow Depth = 1.43" for 1-Year event
 Inflow = 1.08 cfs @ 12.08 hrs, Volume= 3,698 cf
 Outflow = 0.46 cfs @ 12.27 hrs, Volume= 3,698 cf, Atten= 57%, Lag= 11.4 min
 Discarded = 0.03 cfs @ 12.27 hrs, Volume= 2,816 cf
 Primary = 0.43 cfs @ 12.27 hrs, Volume= 882 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
 Peak Elev= 195.59' @ 12.27 hrs Surf.Area= 1,349 sf Storage= 1,553 cf

Plug-Flow detention time= 371.9 min calculated for 3,697 cf (100% of inflow)
 Center-of-Mass det. time= 372.0 min (1,133.9 - 761.9)

Volume	Invert	Avail.Storage	Storage Description
#1	194.00'	2,993 cf	Basin (Irregular) Listed below (Recalc)

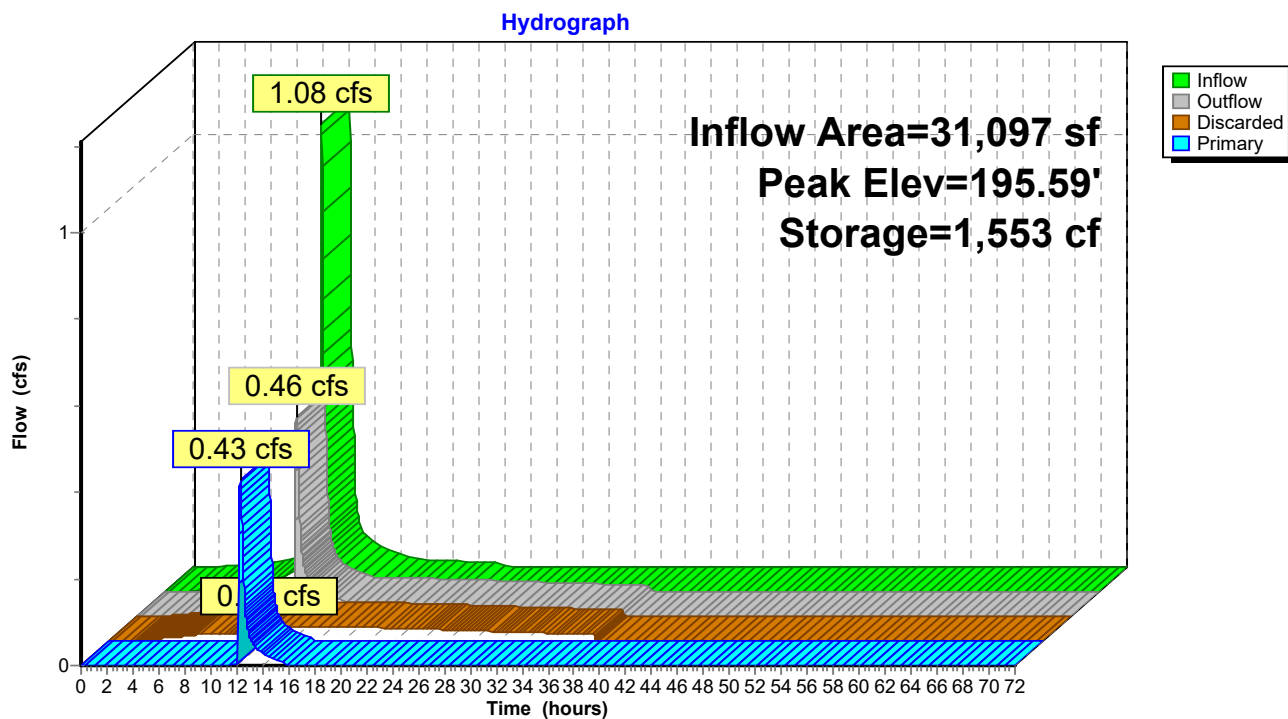
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
194.00	630	118.2	0	0	630
195.00	1,068	151.5	839	839	1,357
196.00	1,562	171.4	1,307	2,147	1,894
196.50	1,826	181.2	846	2,993	2,182

Device	Routing	Invert	Outlet Devices
#1	Discarded	194.00'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 180.00' Phase-In= 0.01'
#2	Primary	195.50'	18.0" Horiz. Overflow Riser C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.27 hrs HW=195.59' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.43 cfs @ 12.27 hrs HW=195.59' TW=0.00' (Dynamic Tailwater)
 ↑ **2=Overflow Riser** (Weir Controls 0.43 cfs @ 0.99 fps)

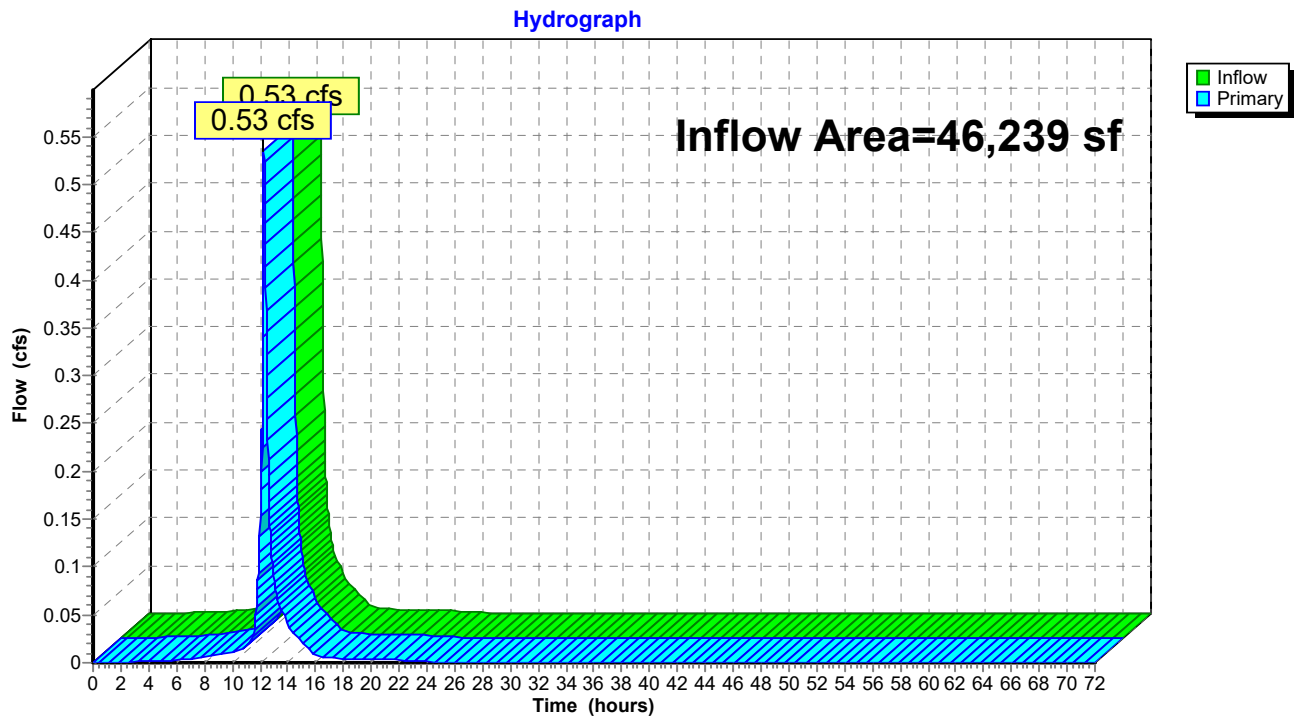
Pond B-2: Proposed Infiltration Basin



Summary for Link POI: Proposed Drainage Site Overall

Inflow Area = 46,239 sf, 51.83% Impervious, Inflow Depth = 0.45" for 1-Year event
Inflow = 0.53 cfs @ 12.26 hrs, Volume= 1,719 cf
Primary = 0.53 cfs @ 12.26 hrs, Volume= 1,719 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link POI: Proposed Drainage Site Overall

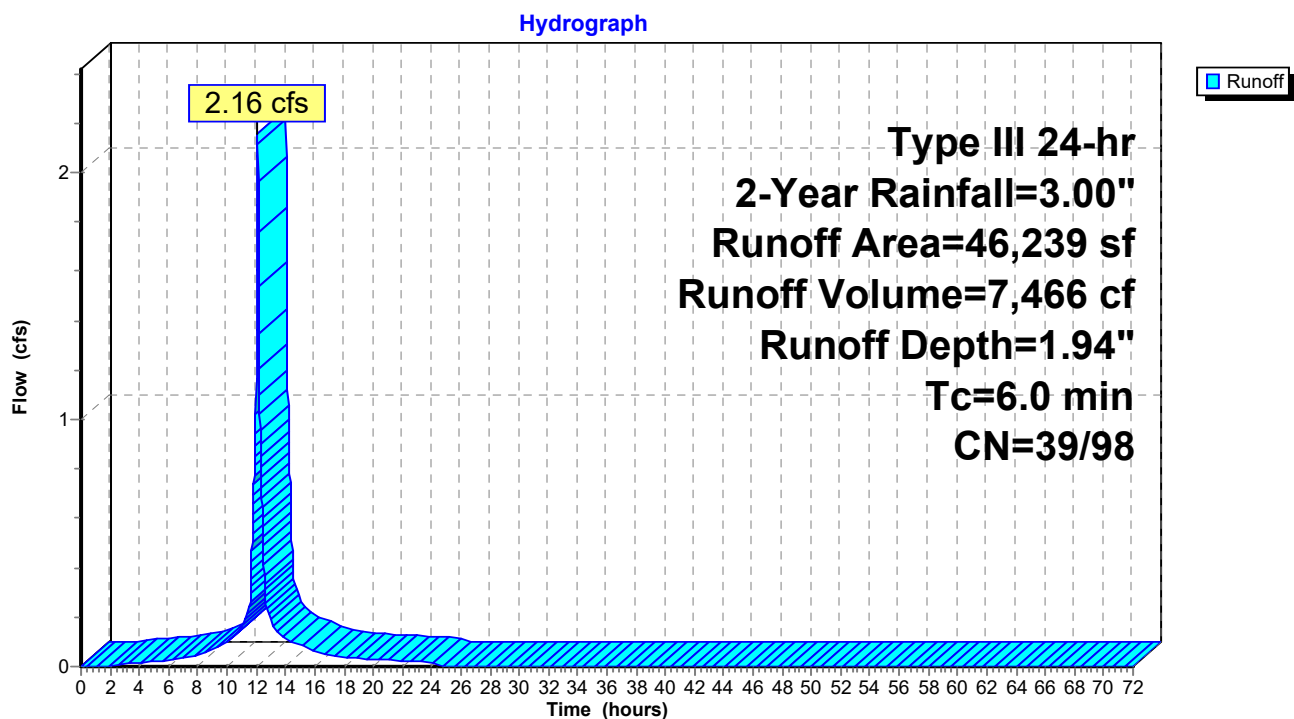
Summary for Subcatchment E-1: Existing Site Drainage

Runoff = 2.16 cfs @ 12.08 hrs, Volume= 7,466 cf, Depth= 1.94"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.00"

	Area (sf)	CN	Description
*	32,363	98	Impervious Areas
	13,876	39	>75% Grass cover, Good, HSG A
	46,239	80	Weighted Average
	13,876	39	30.01% Pervious Area
	32,363	98	69.99% Impervious Area

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

Subcatchment E-1: Existing Site Drainage

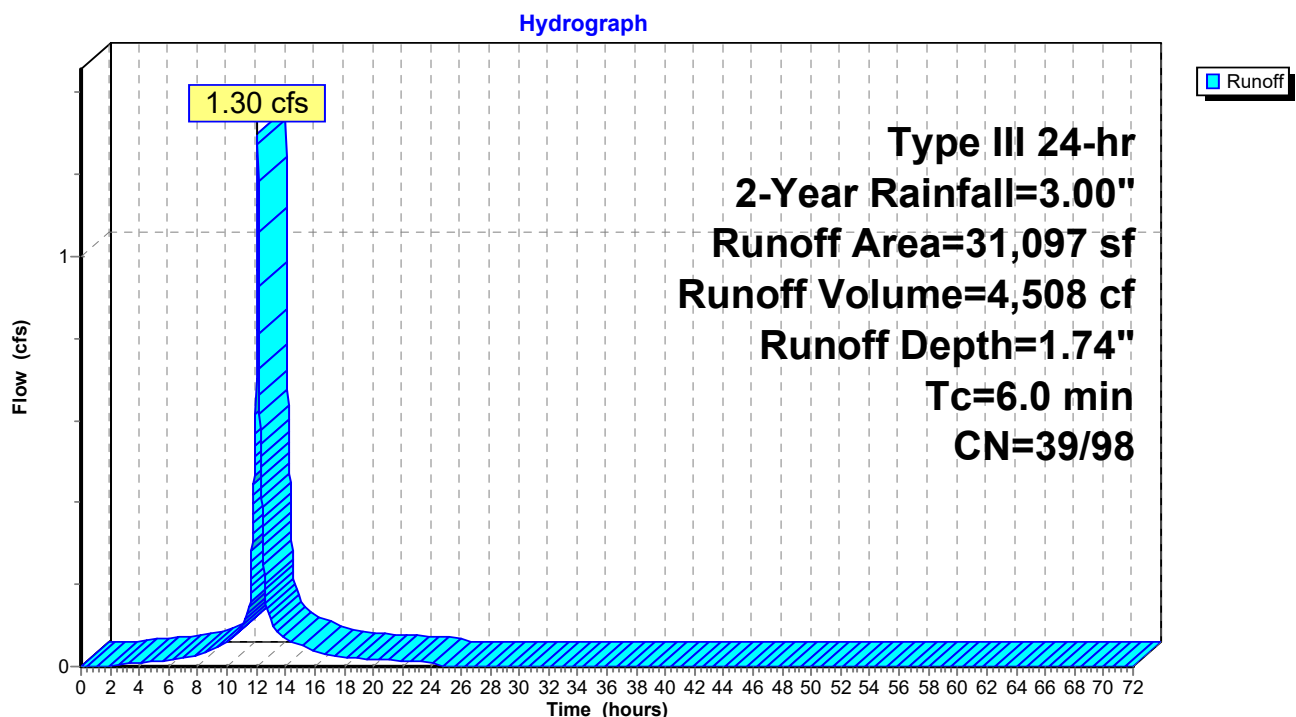
Summary for Subcatchment P-1: Proposed Drainage to Bioretention Basin

Runoff = 1.30 cfs @ 12.08 hrs, Volume= 4,508 cf, Depth= 1.74"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.00"

	Area (sf)	CN	Description
*	19,543	98	Impervious Areas
	11,554	39	>75% Grass cover, Good, HSG A
	31,097	76	Weighted Average
	11,554	39	37.15% Pervious Area
	19,543	98	62.85% Impervious Area

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

Subcatchment P-1: Proposed Drainage to Bioretention Basin

Summary for Subcatchment P-2: Proposed Bypass Drainage

Runoff = 0.29 cfs @ 12.08 hrs, Volume= 1,021 cf, Depth= 0.81"

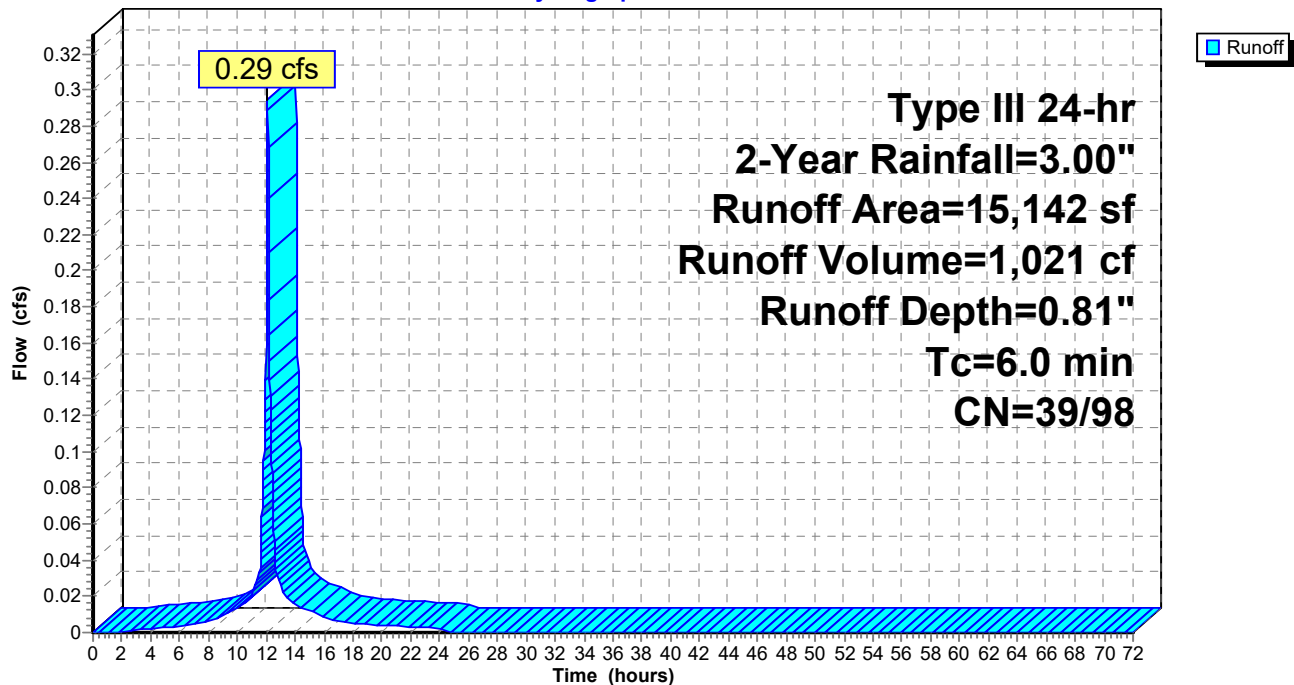
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.00"

	Area (sf)	CN	Description
*	4,424	98	Impervious Areas
	10,718	39	>75% Grass cover, Good, HSG A
	15,142	56	Weighted Average
	10,718	39	70.78% Pervious Area
	4,424	98	29.22% Impervious Area

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

Subcatchment P-2: Proposed Bypass Drainage

Hydrograph



Summary for Pond B-2: Proposed Infiltration Basin

Inflow Area = 31,097 sf, 62.85% Impervious, Inflow Depth = 1.74" for 2-Year event
 Inflow = 1.30 cfs @ 12.08 hrs, Volume= 4,508 cf
 Outflow = 0.95 cfs @ 12.16 hrs, Volume= 4,508 cf, Atten= 27%, Lag= 4.5 min
 Discarded = 0.03 cfs @ 12.16 hrs, Volume= 2,975 cf
 Primary = 0.92 cfs @ 12.16 hrs, Volume= 1,534 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
 Peak Elev= 195.65' @ 12.16 hrs Surf.Area= 1,380 sf Storage= 1,636 cf

Plug-Flow detention time= 327.4 min calculated for 4,507 cf (100% of inflow)
 Center-of-Mass det. time= 327.6 min (1,085.4 - 757.8)

Volume	Invert	Avail.Storage	Storage Description
#1	194.00'	2,993 cf	Basin (Irregular) Listed below (Recalc)

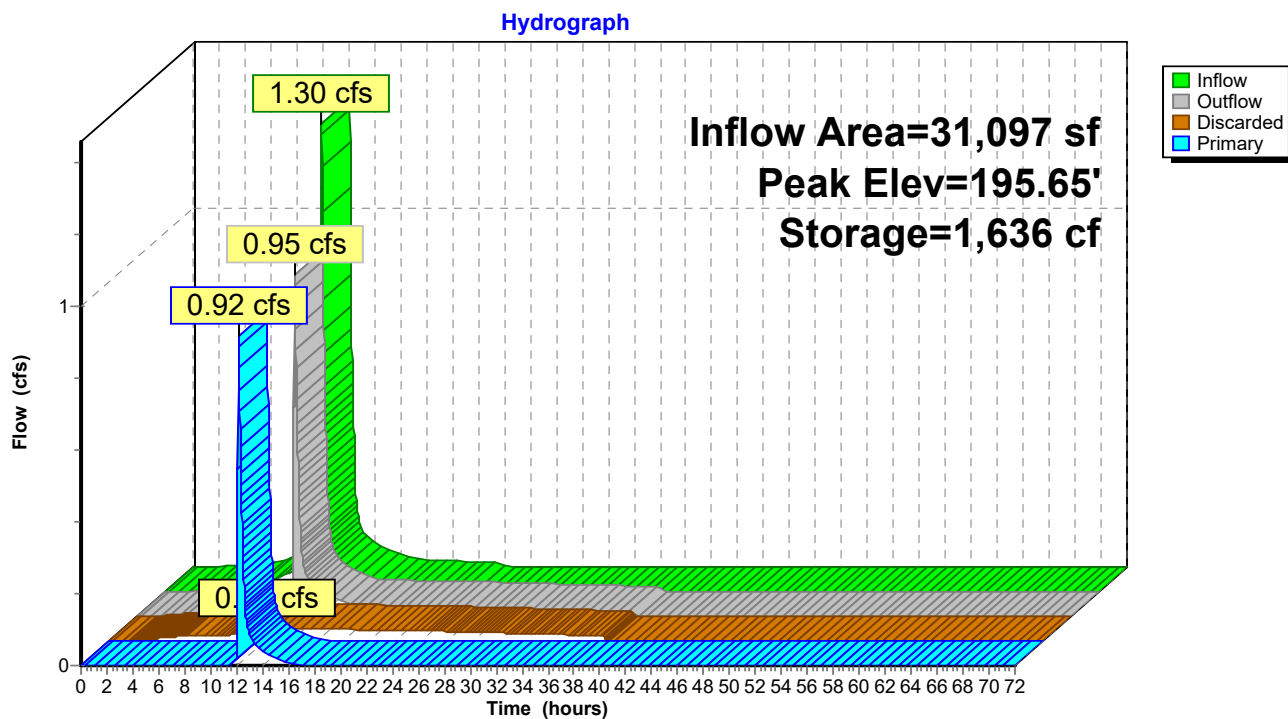
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
194.00	630	118.2	0	0	630
195.00	1,068	151.5	839	839	1,357
196.00	1,562	171.4	1,307	2,147	1,894
196.50	1,826	181.2	846	2,993	2,182

Device	Routing	Invert	Outlet Devices
#1	Discarded	194.00'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 180.00' Phase-In= 0.01'
#2	Primary	195.50'	18.0" Horiz. Overflow Riser C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 12.16 hrs HW=195.65' (Free Discharge)
 ↑**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.92 cfs @ 12.16 hrs HW=195.65' TW=0.00' (Dynamic Tailwater)
 ↑**2=Overflow Riser** (Weir Controls 0.92 cfs @ 1.28 fps)

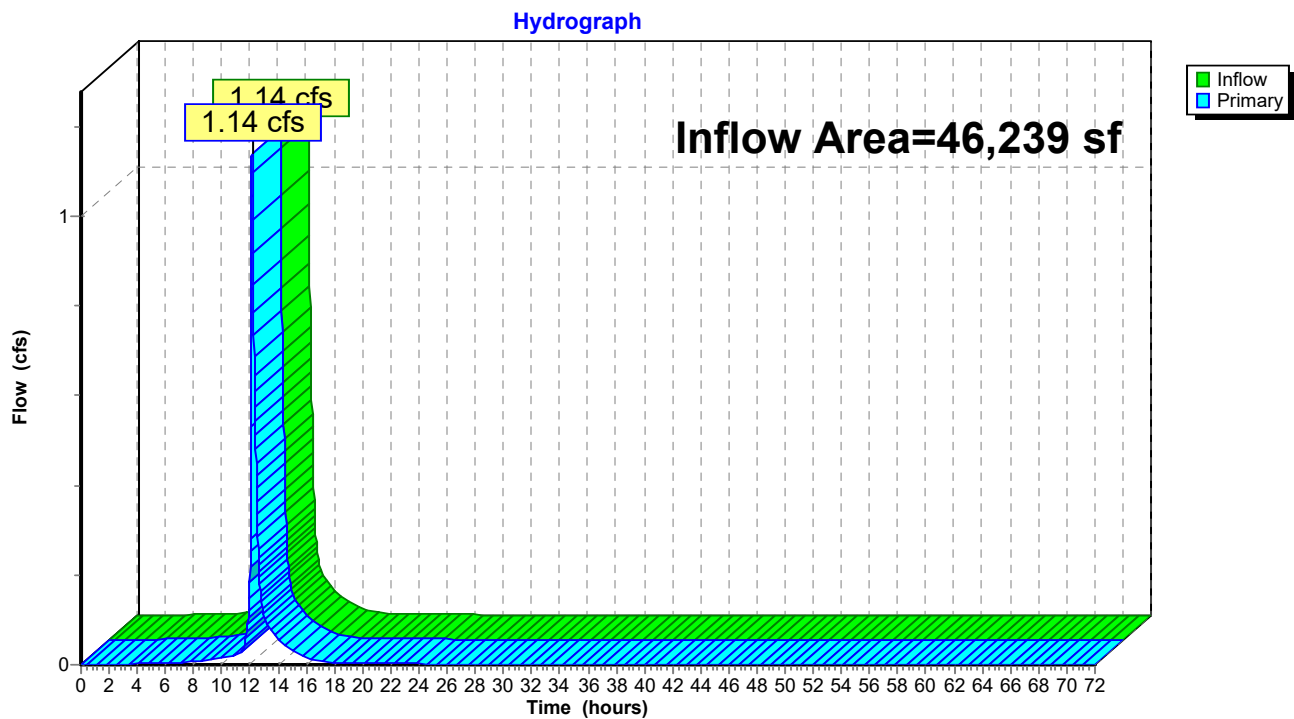
Pond B-2: Proposed Infiltration Basin



Summary for Link POI: Proposed Drainage Site Overall

Inflow Area = 46,239 sf, 51.83% Impervious, Inflow Depth = 0.66" for 2-Year event
Inflow = 1.14 cfs @ 12.15 hrs, Volume= 2,554 cf
Primary = 1.14 cfs @ 12.15 hrs, Volume= 2,554 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link POI: Proposed Drainage Site Overall

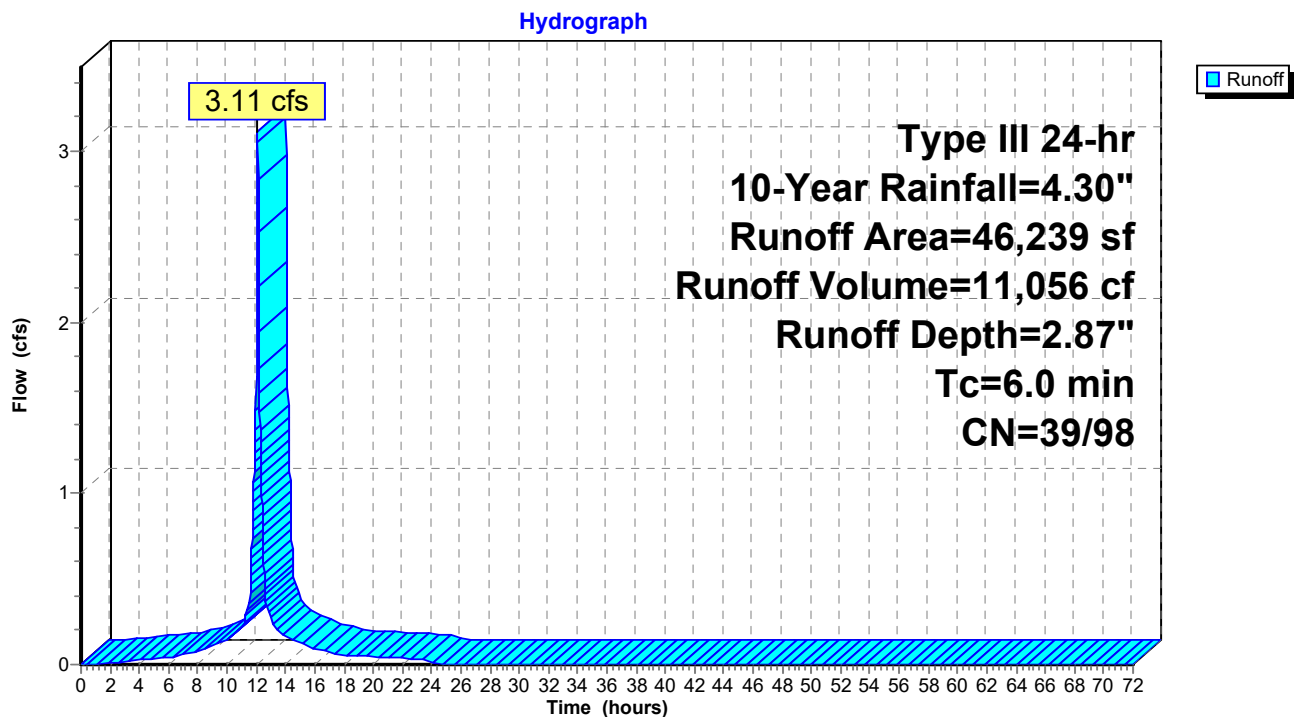
Summary for Subcatchment E-1: Existing Site Drainage

Runoff = 3.11 cfs @ 12.08 hrs, Volume= 11,056 cf, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

	Area (sf)	CN	Description
*	32,363	98	Impervious Areas
	13,876	39	>75% Grass cover, Good, HSG A
	46,239	80	Weighted Average
	13,876	39	30.01% Pervious Area
	32,363	98	69.99% Impervious Area

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

Subcatchment E-1: Existing Site Drainage

Summary for Subcatchment P-1: Proposed Drainage to Bioretention Basin

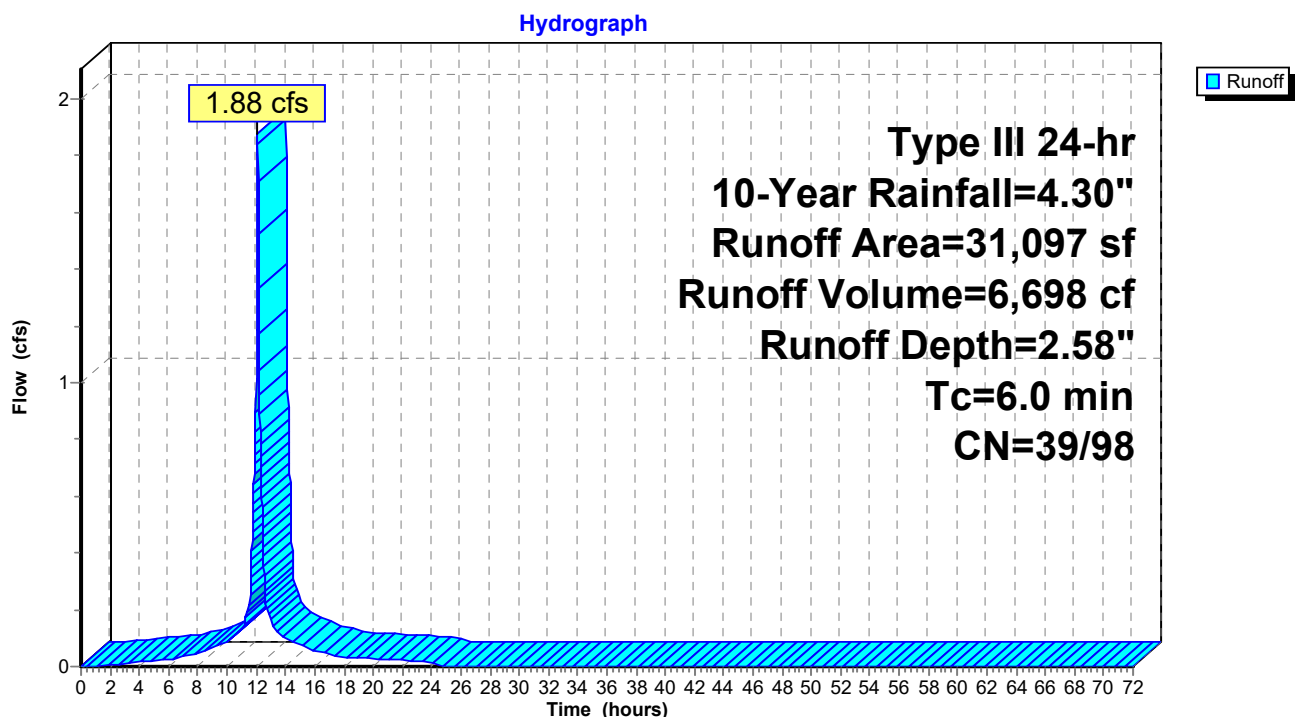
Runoff = 1.88 cfs @ 12.08 hrs, Volume= 6,698 cf, Depth= 2.58"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

	Area (sf)	CN	Description
*	19,543	98	Impervious Areas
	11,554	39	>75% Grass cover, Good, HSG A
	31,097	76	Weighted Average
	11,554	39	37.15% Pervious Area
	19,543	98	62.85% Impervious Area

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

Subcatchment P-1: Proposed Drainage to Bioretention Basin



Summary for Subcatchment P-2: Proposed Bypass Drainage

Runoff = 0.43 cfs @ 12.08 hrs, Volume= 1,571 cf, Depth= 1.25"

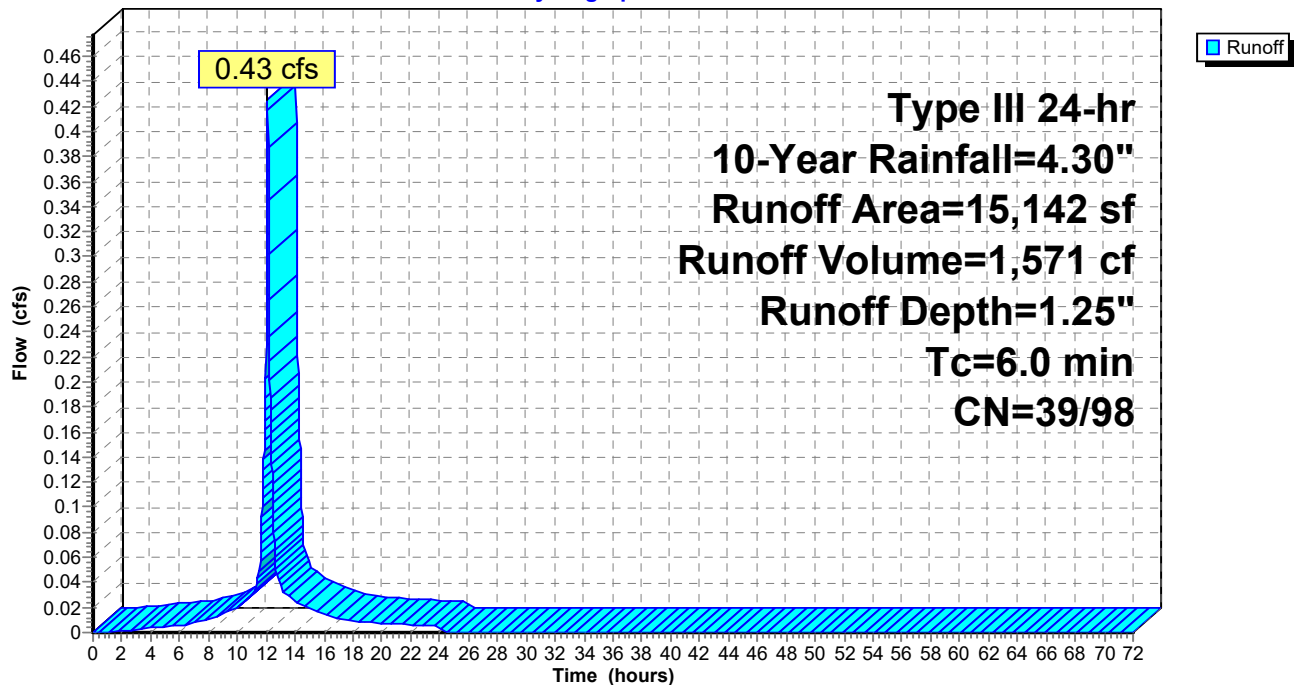
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.30"

	Area (sf)	CN	Description
*	4,424	98	Impervious Areas
	10,718	39	>75% Grass cover, Good, HSG A
	15,142	56	Weighted Average
	10,718	39	70.78% Pervious Area
	4,424	98	29.22% Impervious Area

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

Subcatchment P-2: Proposed Bypass Drainage

Hydrograph



Summary for Pond B-2: Proposed Infiltration Basin

Inflow Area = 31,097 sf, 62.85% Impervious, Inflow Depth = 2.58" for 10-Year event
 Inflow = 1.88 cfs @ 12.08 hrs, Volume= 6,698 cf
 Outflow = 1.75 cfs @ 12.12 hrs, Volume= 6,698 cf, Atten= 7%, Lag= 2.0 min
 Discarded = 0.04 cfs @ 12.12 hrs, Volume= 3,333 cf
 Primary = 1.71 cfs @ 12.12 hrs, Volume= 3,365 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
 Peak Elev= 195.73' @ 12.12 hrs Surf.Area= 1,420 sf Storage= 1,746 cf

Plug-Flow detention time= 259.2 min calculated for 6,696 cf (100% of inflow)
 Center-of-Mass det. time= 259.4 min (1,013.8 - 754.5)

Volume	Invert	Avail.Storage	Storage Description
#1	194.00'	2,993 cf	Basin (Irregular) Listed below (Recalc)

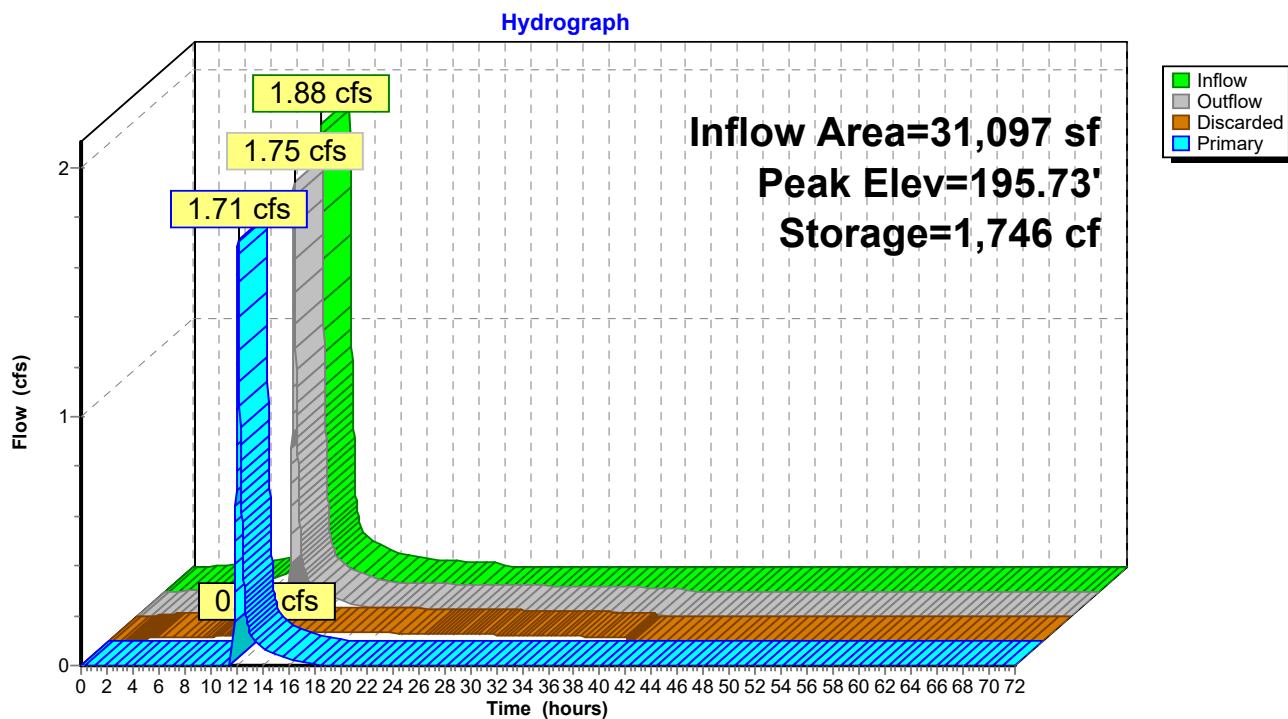
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
194.00	630	118.2	0	0	630
195.00	1,068	151.5	839	839	1,357
196.00	1,562	171.4	1,307	2,147	1,894
196.50	1,826	181.2	846	2,993	2,182

Device	Routing	Invert	Outlet Devices
#1	Discarded	194.00'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 180.00' Phase-In= 0.01'
#2	Primary	195.50'	18.0" Horiz. Overflow Riser C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.12 hrs HW=195.73' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=1.70 cfs @ 12.12 hrs HW=195.73' TW=0.00' (Dynamic Tailwater)
 ↑ **2=Overflow Riser** (Weir Controls 1.70 cfs @ 1.57 fps)

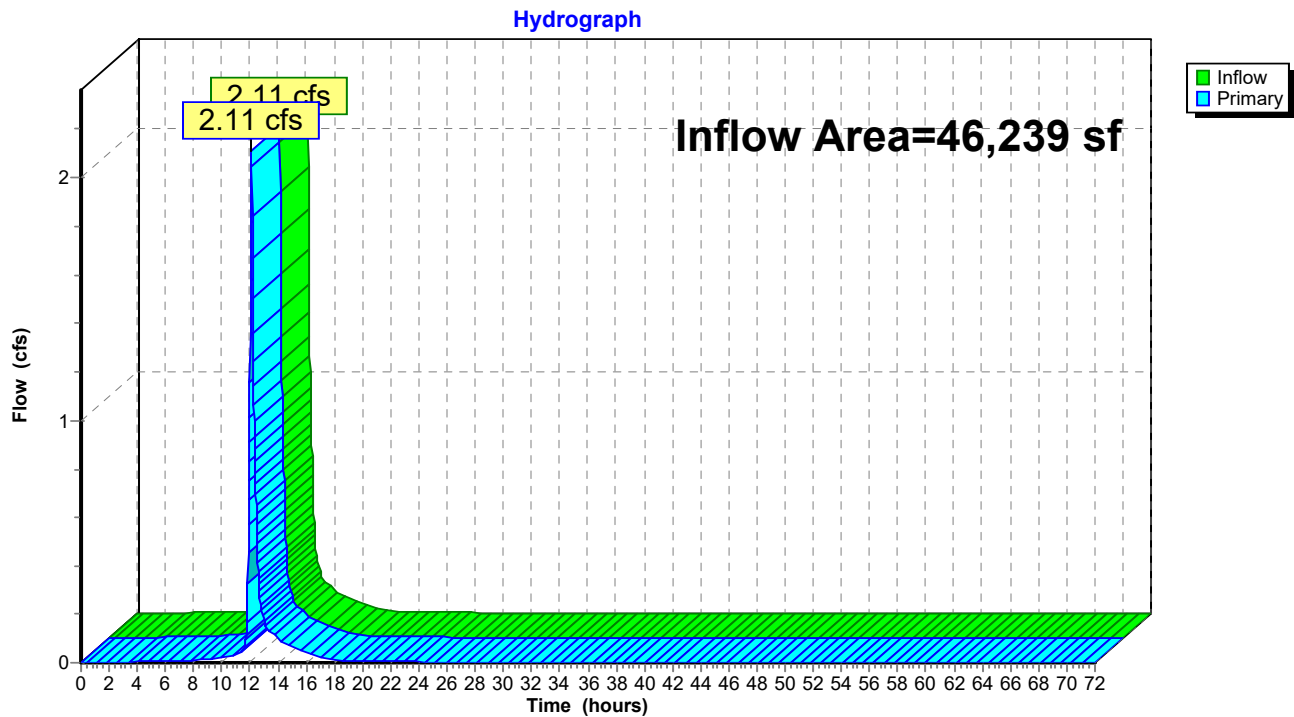
Pond B-2: Proposed Infiltration Basin



Summary for Link POI: Proposed Drainage Site Overall

Inflow Area = 46,239 sf, 51.83% Impervious, Inflow Depth = 1.28" for 10-Year event
Inflow = 2.11 cfs @ 12.11 hrs, Volume= 4,936 cf
Primary = 2.11 cfs @ 12.11 hrs, Volume= 4,936 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link POI: Proposed Drainage Site Overall

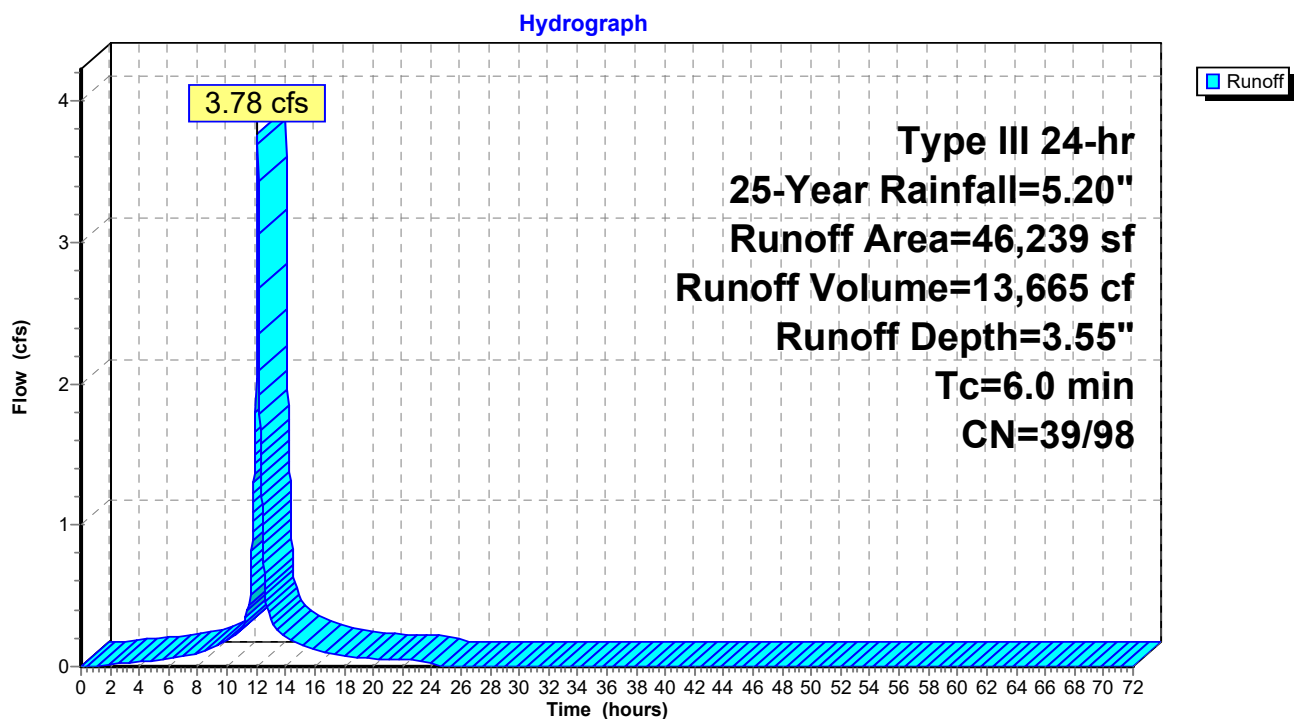
Summary for Subcatchment E-1: Existing Site Drainage

Runoff = 3.78 cfs @ 12.08 hrs, Volume= 13,665 cf, Depth= 3.55"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
*	32,363	98	Impervious Areas
	13,876	39	>75% Grass cover, Good, HSG A
	46,239	80	Weighted Average
	13,876	39	30.01% Pervious Area
	32,363	98	69.99% Impervious Area

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

Subcatchment E-1: Existing Site Drainage

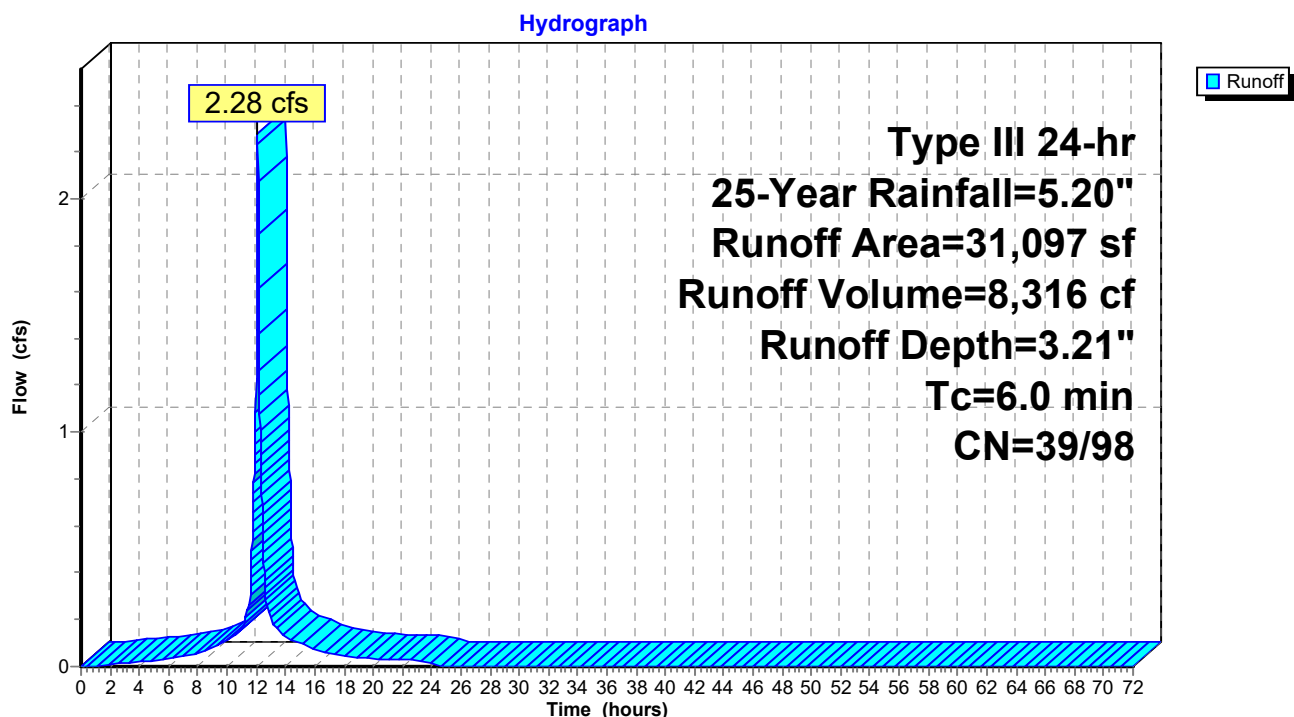
Summary for Subcatchment P-1: Proposed Drainage to Bioretention Basin

Runoff = 2.28 cfs @ 12.08 hrs, Volume= 8,316 cf, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
*	19,543	98	Impervious Areas
	11,554	39	>75% Grass cover, Good, HSG A
	31,097	76	Weighted Average
	11,554	39	37.15% Pervious Area
	19,543	98	62.85% Impervious Area

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

Subcatchment P-1: Proposed Drainage to Bioretention Basin

Summary for Subcatchment P-2: Proposed Bypass Drainage

Runoff = 0.52 cfs @ 12.08 hrs, Volume= 2,046 cf, Depth= 1.62"

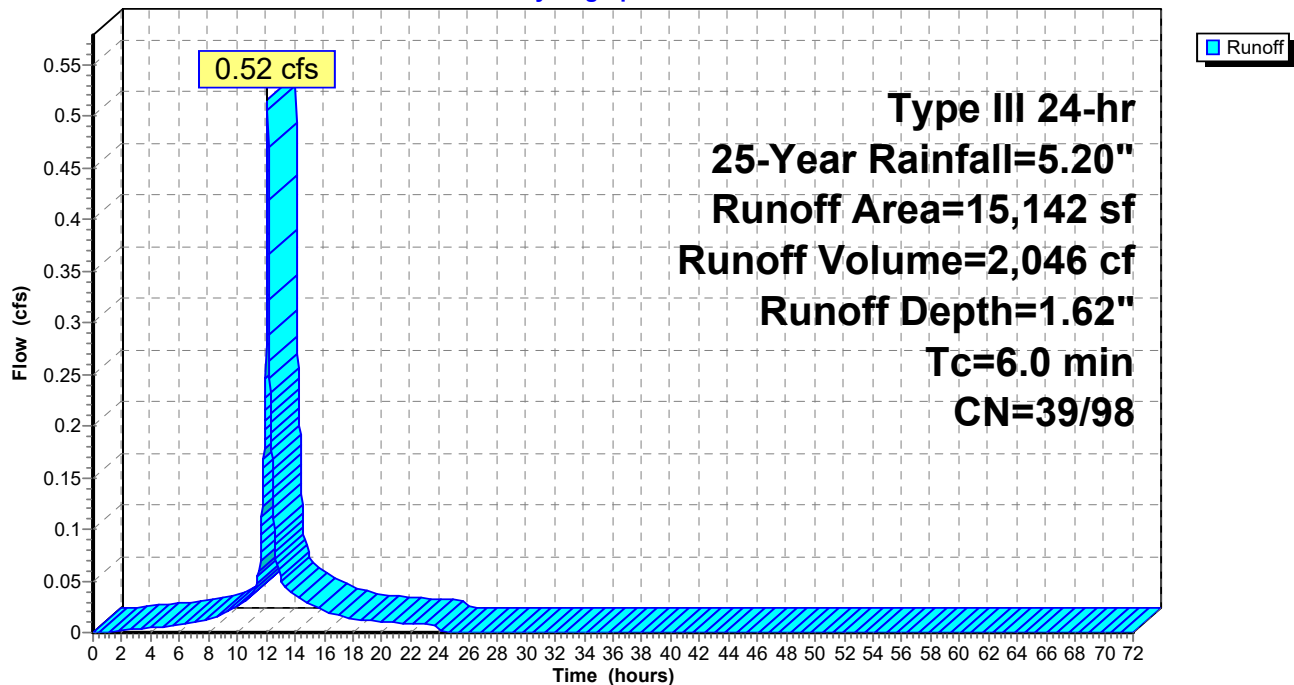
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
*	4,424	98	Impervious Areas
	10,718	39	>75% Grass cover, Good, HSG A
	15,142	56	Weighted Average
	10,718	39	70.78% Pervious Area
	4,424	98	29.22% Impervious Area

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

Subcatchment P-2: Proposed Bypass Drainage

Hydrograph



Summary for Pond B-2: Proposed Infiltration Basin

Inflow Area = 31,097 sf, 62.85% Impervious, Inflow Depth = 3.21" for 25-Year event
 Inflow = 2.28 cfs @ 12.08 hrs, Volume= 8,316 cf
 Outflow = 2.13 cfs @ 12.11 hrs, Volume= 8,316 cf, Atten= 7%, Lag= 1.9 min
 Discarded = 0.04 cfs @ 12.11 hrs, Volume= 3,514 cf
 Primary = 2.09 cfs @ 12.11 hrs, Volume= 4,802 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
 Peak Elev= 195.76' @ 12.11 hrs Surf.Area= 1,437 sf Storage= 1,793 cf

Plug-Flow detention time= 226.3 min calculated for 8,313 cf (100% of inflow)
 Center-of-Mass det. time= 226.6 min (981.0 - 754.4)

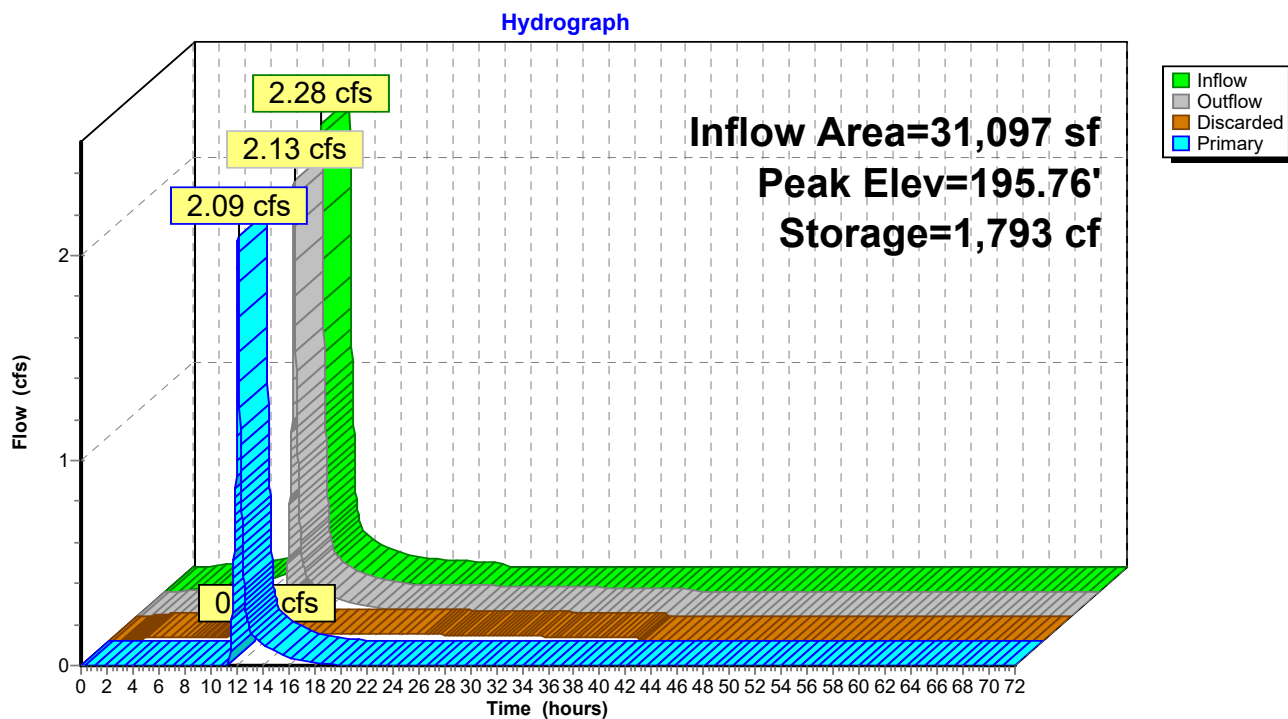
Volume	Invert	Avail.Storage	Storage Description
#1	194.00'	2,993 cf	Basin (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
194.00	630	118.2	0	0	630
195.00	1,068	151.5	839	839	1,357
196.00	1,562	171.4	1,307	2,147	1,894
196.50	1,826	181.2	846	2,993	2,182

Device	Routing	Invert	Outlet Devices
#1	Discarded	194.00'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 180.00' Phase-In= 0.01'
#2	Primary	195.50'	18.0" Horiz. Overflow Riser C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.11 hrs HW=195.76' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.04 cfs)

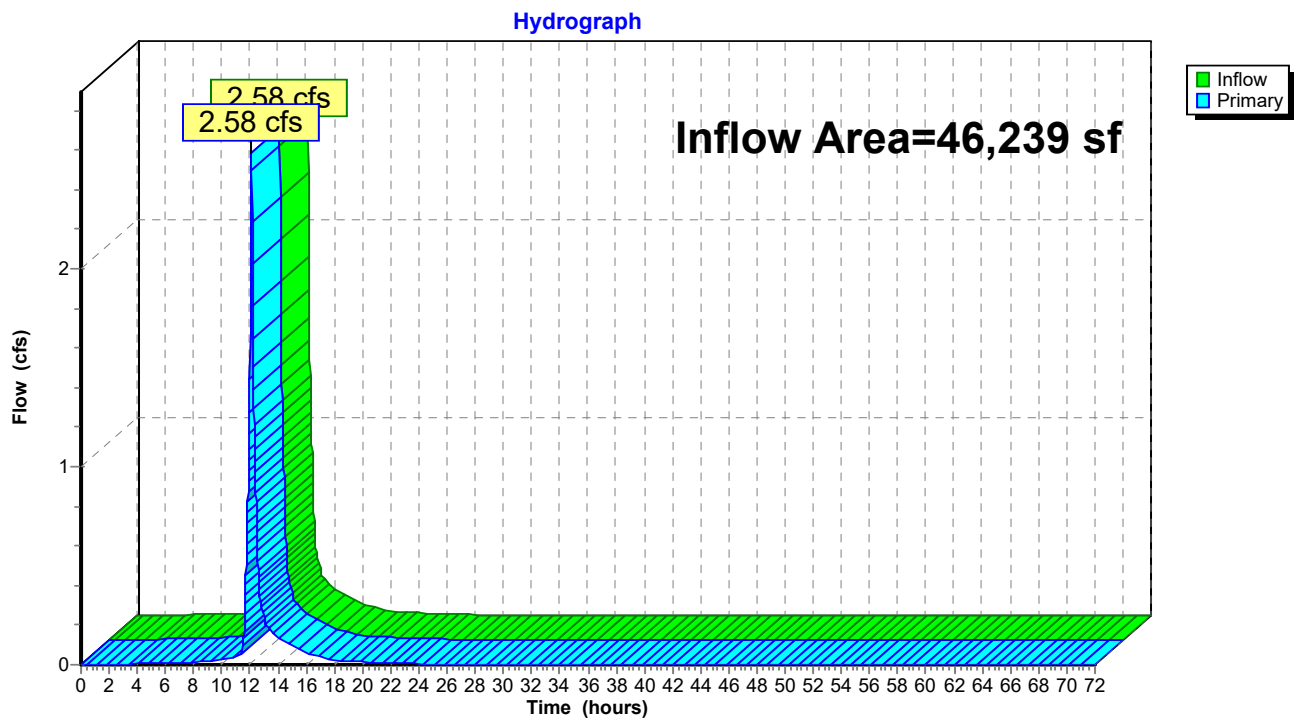
Primary OutFlow Max=2.08 cfs @ 12.11 hrs HW=195.76' TW=0.00' (Dynamic Tailwater)
 ↑ **2=Overflow Riser** (Weir Controls 2.08 cfs @ 1.68 fps)

Pond B-2: Proposed Infiltration Basin

Summary for Link POI: Proposed Drainage Site Overall

Inflow Area = 46,239 sf, 51.83% Impervious, Inflow Depth = 1.78" for 25-Year event
Inflow = 2.58 cfs @ 12.11 hrs, Volume= 6,848 cf
Primary = 2.58 cfs @ 12.11 hrs, Volume= 6,848 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link POI: Proposed Drainage Site Overall

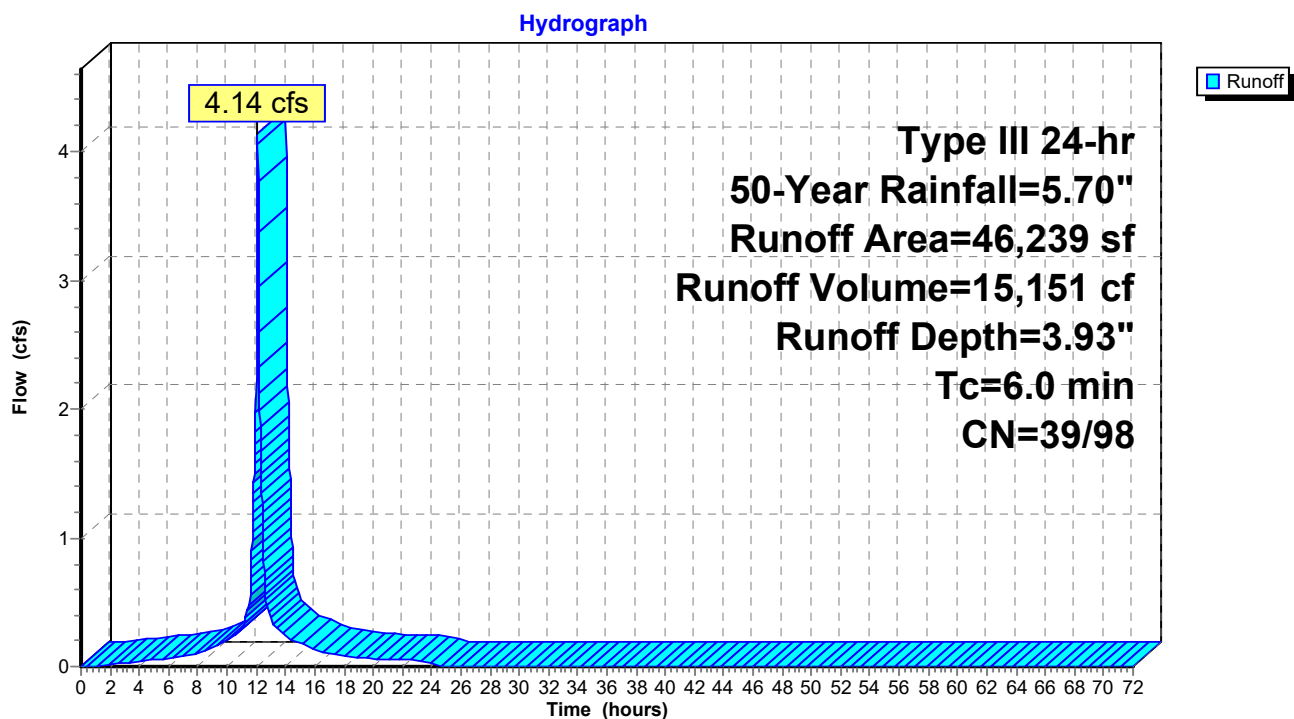
Summary for Subcatchment E-1: Existing Site Drainage

Runoff = 4.14 cfs @ 12.08 hrs, Volume= 15,151 cf, Depth= 3.93"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	32,363	98	Impervious Areas
	13,876	39	>75% Grass cover, Good, HSG A
	46,239	80	Weighted Average
	13,876	39	30.01% Pervious Area
	32,363	98	69.99% Impervious Area

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

Subcatchment E-1: Existing Site Drainage

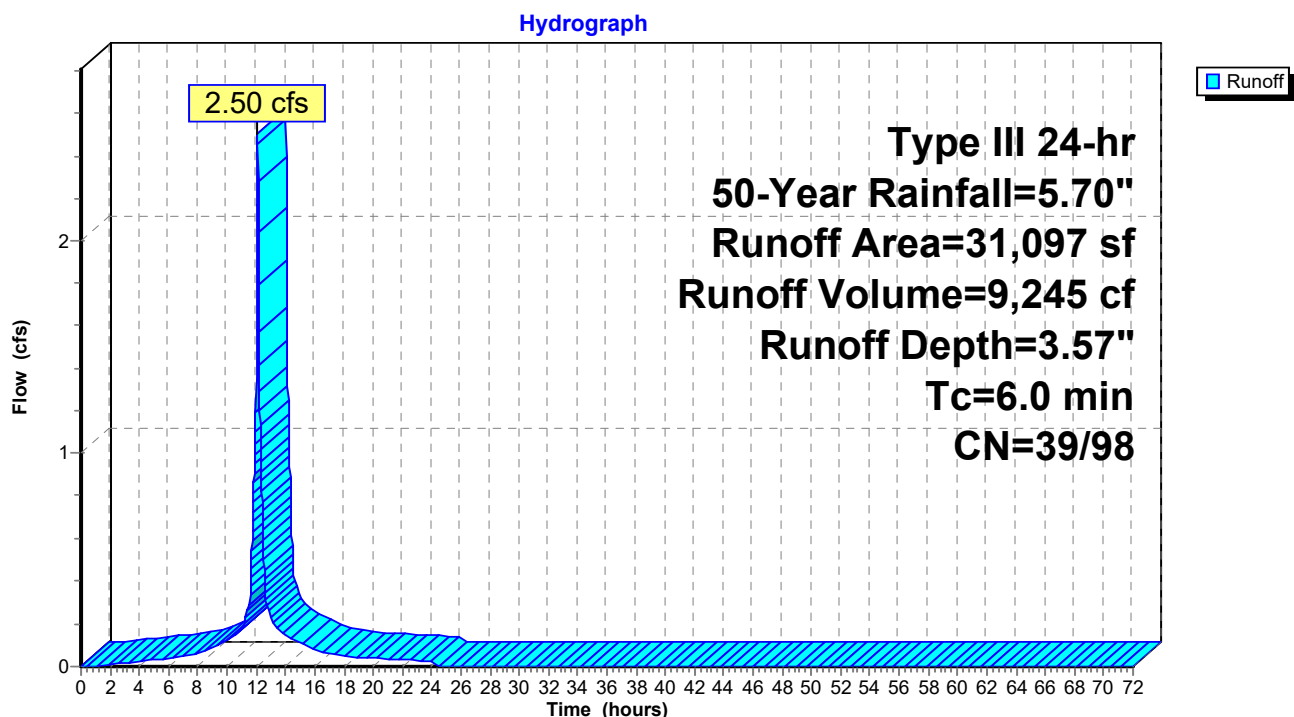
Summary for Subcatchment P-1: Proposed Drainage to Bioretention Basin

Runoff = 2.50 cfs @ 12.08 hrs, Volume= 9,245 cf, Depth= 3.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	19,543	98	Impervious Areas
	11,554	39	>75% Grass cover, Good, HSG A
	31,097	76	Weighted Average
	11,554	39	37.15% Pervious Area
	19,543	98	62.85% Impervious Area

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

Subcatchment P-1: Proposed Drainage to Bioretention Basin

Summary for Subcatchment P-2: Proposed Bypass Drainage

Runoff = 0.57 cfs @ 12.08 hrs, Volume= 2,338 cf, Depth= 1.85"

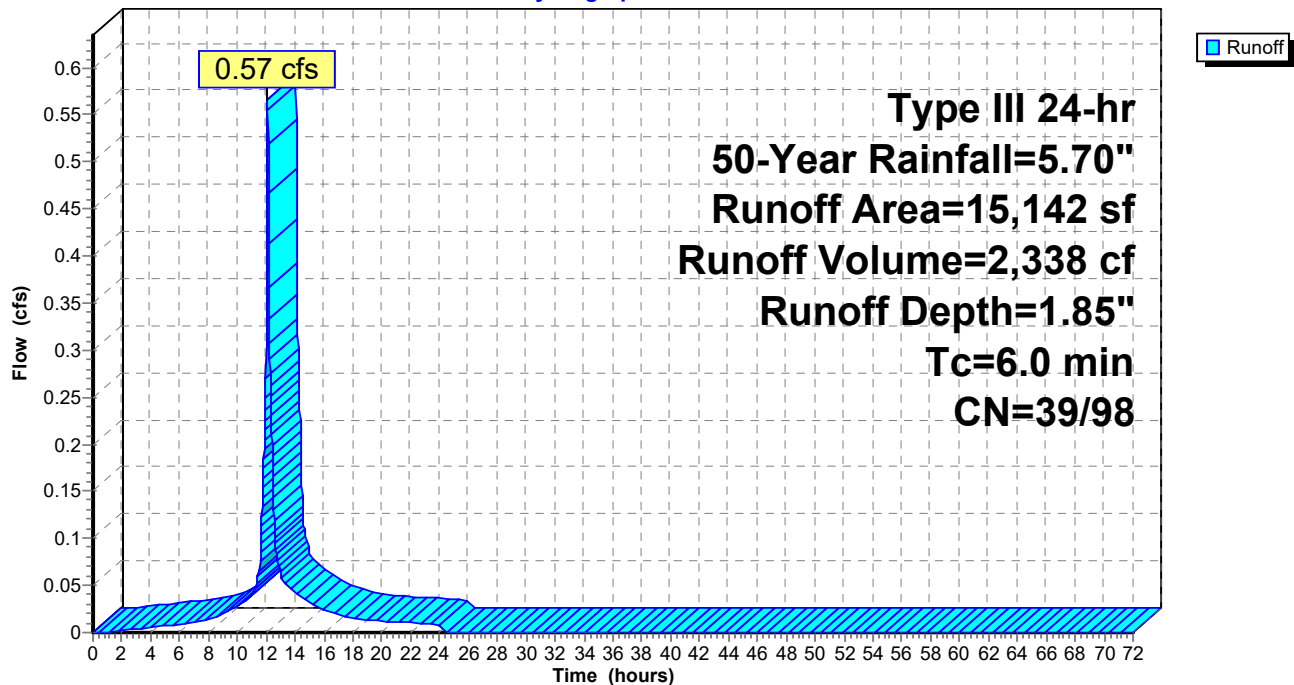
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Type III 24-hr 50-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	4,424	98	Impervious Areas
	10,718	39	>75% Grass cover, Good, HSG A
	15,142	56	Weighted Average
	10,718	39	70.78% Pervious Area
	4,424	98	29.22% Impervious Area

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

Subcatchment P-2: Proposed Bypass Drainage

Hydrograph



Summary for Pond B-2: Proposed Infiltration Basin

Inflow Area = 31,097 sf, 62.85% Impervious, Inflow Depth = 3.57" for 50-Year event
 Inflow = 2.50 cfs @ 12.08 hrs, Volume= 9,245 cf
 Outflow = 2.34 cfs @ 12.11 hrs, Volume= 9,245 cf, Atten= 6%, Lag= 1.8 min
 Discarded = 0.04 cfs @ 12.11 hrs, Volume= 3,585 cf
 Primary = 2.31 cfs @ 12.11 hrs, Volume= 5,660 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
 Peak Elev= 195.78' @ 12.11 hrs Surf.Area= 1,446 sf Storage= 1,819 cf

Plug-Flow detention time= 210.2 min calculated for 9,243 cf (100% of inflow)
 Center-of-Mass det. time= 210.4 min (964.9 - 754.5)

Volume	Invert	Avail.Storage	Storage Description
#1	194.00'	2,993 cf	Basin (Irregular) Listed below (Recalc)

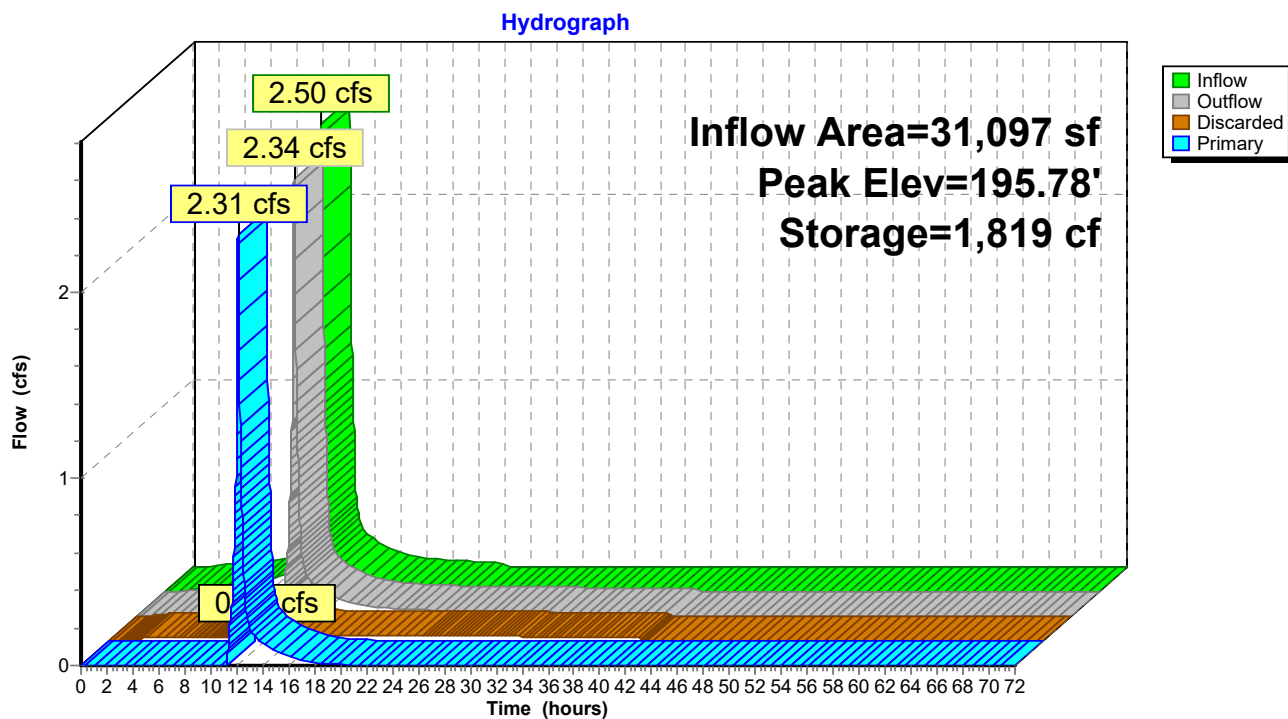
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
194.00	630	118.2	0	0	630
195.00	1,068	151.5	839	839	1,357
196.00	1,562	171.4	1,307	2,147	1,894
196.50	1,826	181.2	846	2,993	2,182

Device	Routing	Invert	Outlet Devices
#1	Discarded	194.00'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 180.00' Phase-In= 0.01'
#2	Primary	195.50'	18.0" Horiz. Overflow Riser C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.11 hrs HW=195.78' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=2.30 cfs @ 12.11 hrs HW=195.78' TW=0.00' (Dynamic Tailwater)
 ↑ **2=Overflow Riser** (Weir Controls 2.30 cfs @ 1.73 fps)

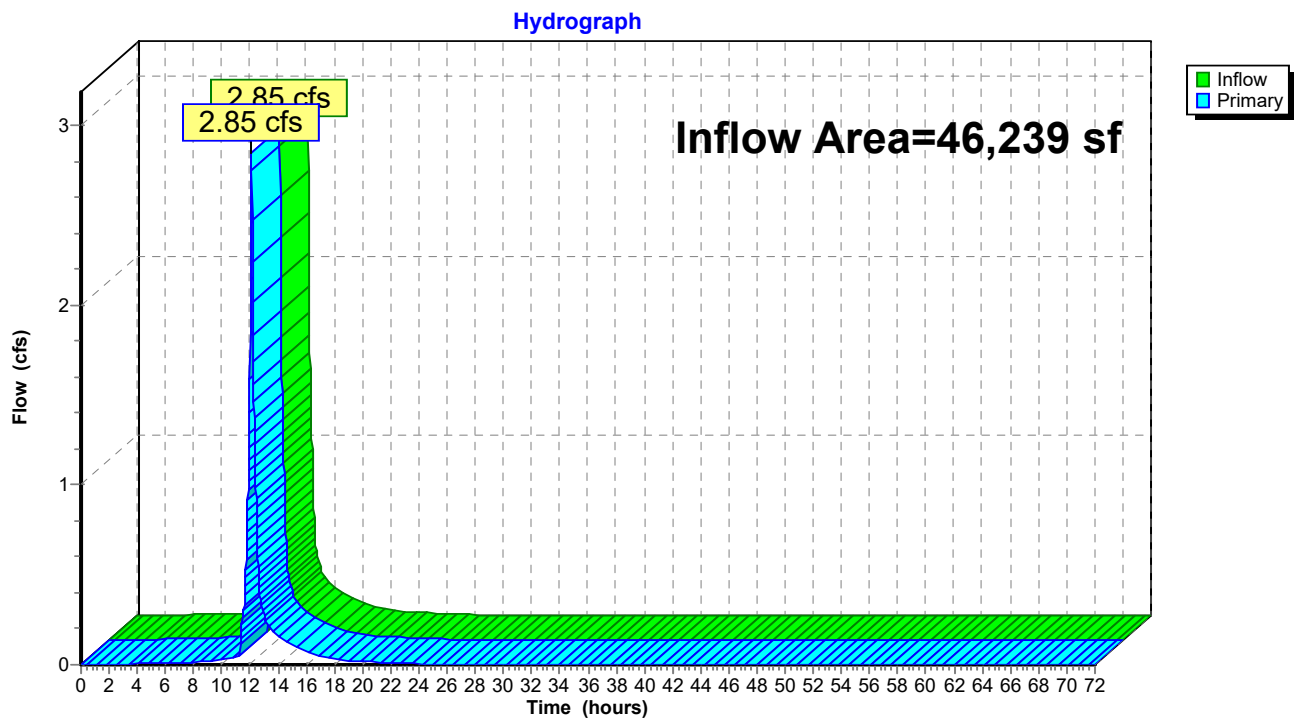
Pond B-2: Proposed Infiltration Basin



Summary for Link POI: Proposed Drainage Site Overall

Inflow Area = 46,239 sf, 51.83% Impervious, Inflow Depth = 2.08" for 50-Year event
Inflow = 2.85 cfs @ 12.11 hrs, Volume= 7,998 cf
Primary = 2.85 cfs @ 12.11 hrs, Volume= 7,998 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link POI: Proposed Drainage Site Overall

CONDUIT OUTLET PROTECTION CALCULATION

PREFORMED SCOUR HOLE (D100)

OUTLET PARAMETERS

OPENING WIDTH (W_o): 1.50 FT OPENING HEIGHT (D_o): 1.50 FT

FLOW AT OUTLET ($Q_{25\text{ yr}}$): 2.25 CFS UNIT DISCHARGE (q): 1.50 CFS/FT

TAILWATER DEPTH (TW): 0.00 FT

SCOUR HOLE DEPTH (Y): $Y = 0.5 D_o$

SCOUR HOLE DIMENSIONS

LENGTH: 4.50 FT RIPRAP SIZE (d_{50}): 0.86 IN*
(6-inch minimum)

WIDTH: 3.00 FT

WIDTH AT OUTLET (W_o): 1.50 FT SCOUR HOLE DEPTH (Y): 0.75 FT

SCOUR HOLE SIZING CHART					
ID#	L (FT)	W ₁ (FT)	W ₂ (FT)	Y (FT)	D ₅₀ (IN)
SC-1	5.00	4.00	4.00	0.75	6.00

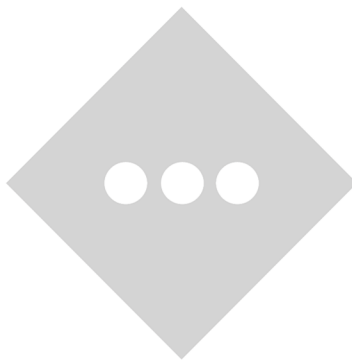
APPENDIX D

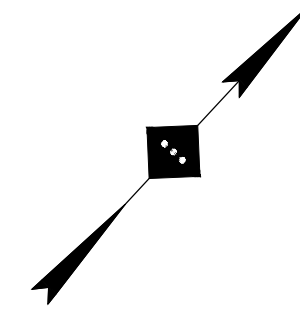
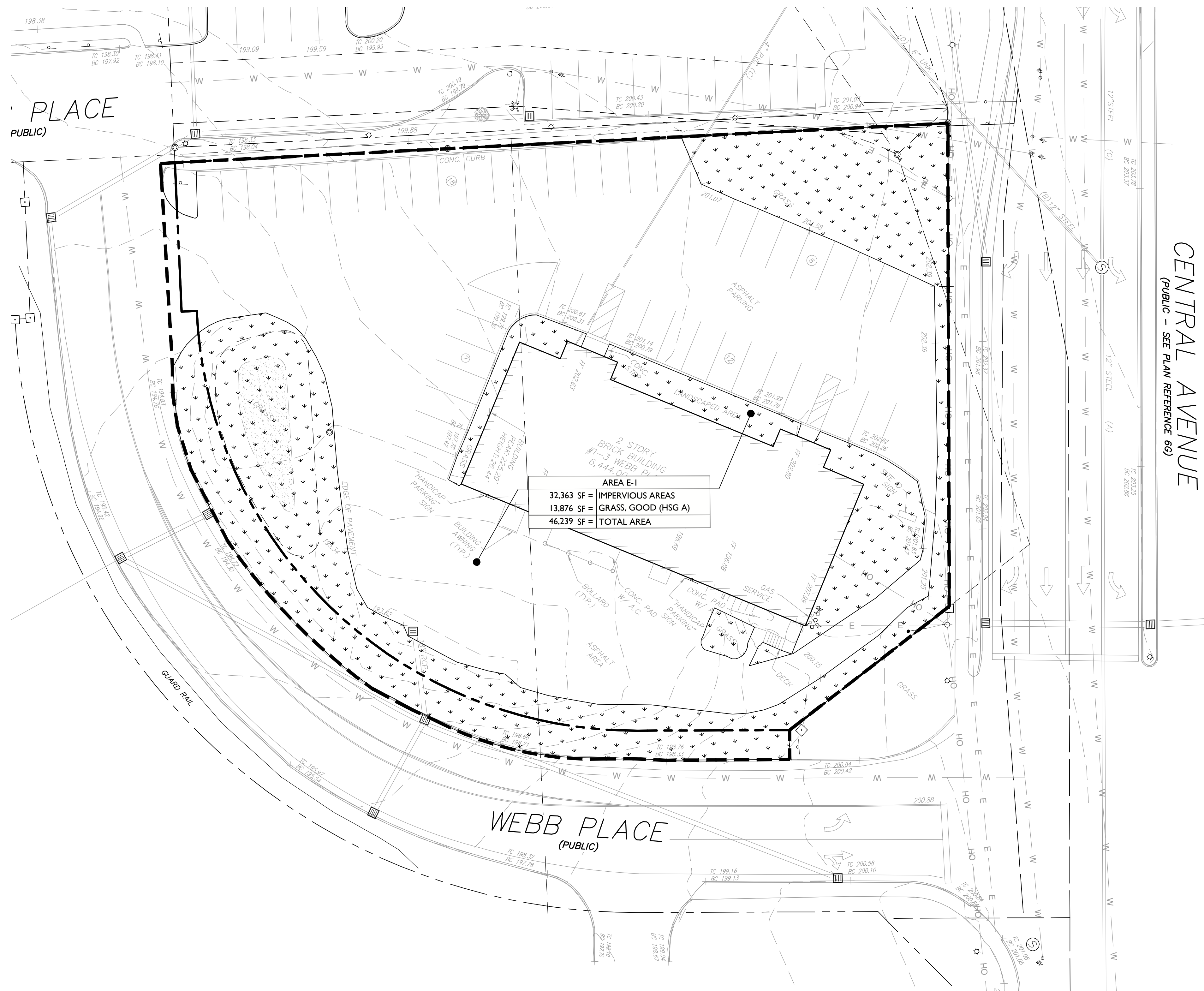
DRAINAGE AREA MAPS

INVENTORY

SHEET 1 OF 2: EXISTING DRAINAGE AREA MAP

SHEET 2 OF 2: PROPOSED DRAINAGE AREA MAP





DESCRIPTION

PROPERTY LINE

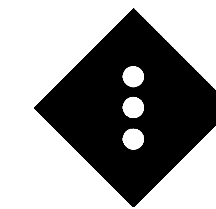
AREA OF DRAINAGE ANALYSIS

EXISTING DRAINAGE AREA

EXISTING TIME OF CONCENTRATION

EXISTING GRASS AREA

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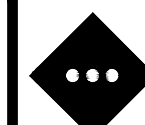
Phone 617.203.2076

DRAINAGE AREA MAPS



**TAX MAP: 38, LOTS: 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STAFFORD COUNTY, NEW HAMPSHIRE**

JOSHUA H. KLINE, P.E.
NEW HAMPSHIRE LICENSE No. 16530
LICENSED PROFESSIONAL ENGINEER



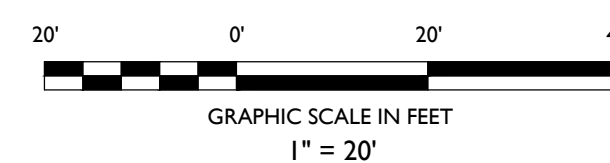
SCALE:	1" = 20'	PROJECT ID: BOS-220137
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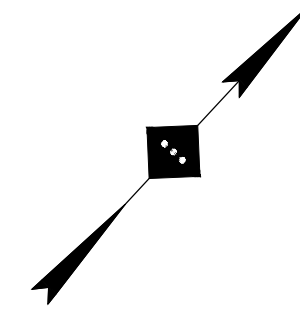
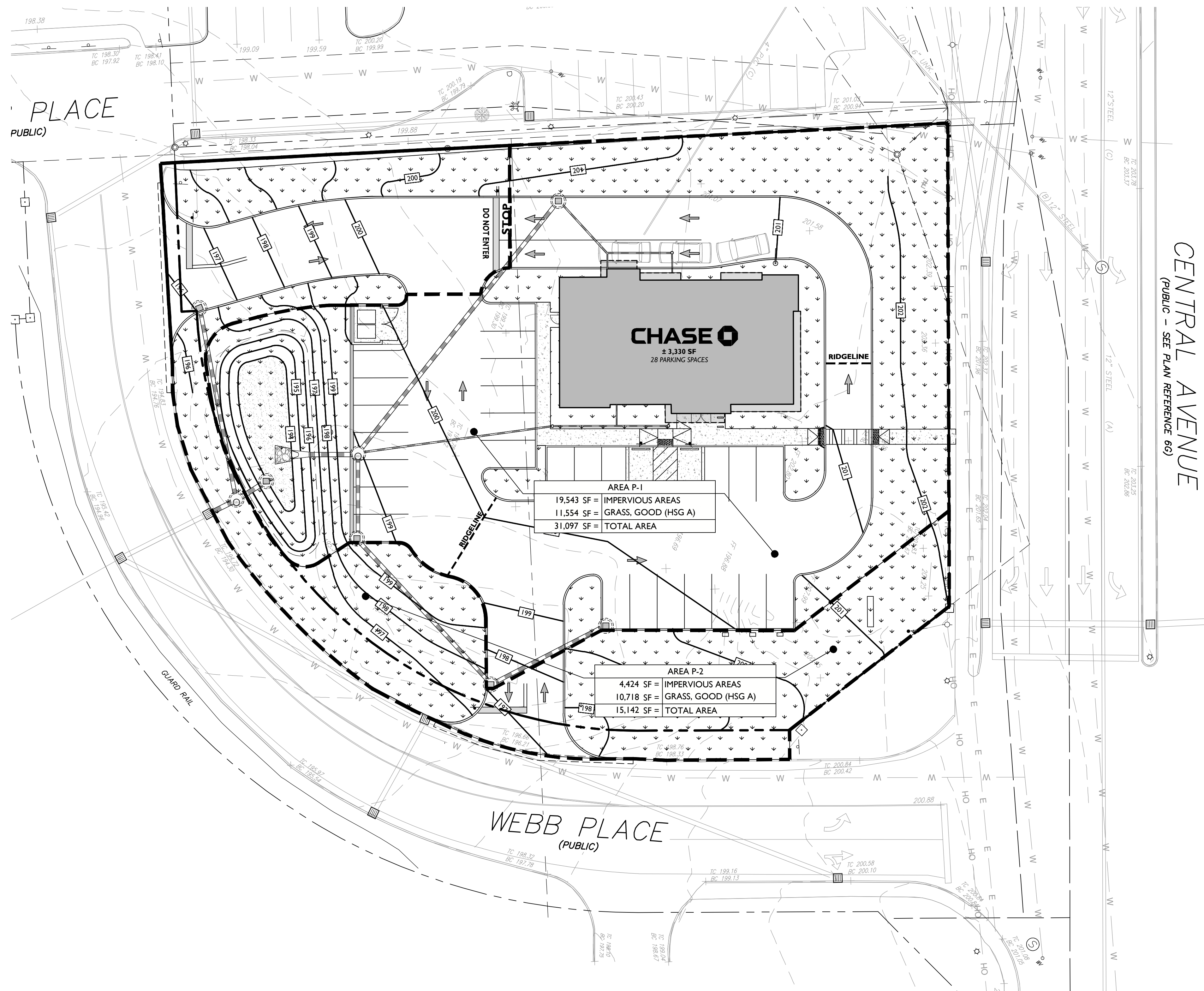
TITLE:

**EXISTING DRAINAGE
AREA**

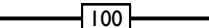
DRAWING:

1 OF 2





DESCRIPTION

	PROPERTY LINE
	PROPOSED GRADING CONTOUR
	PROPOSED GRADING RIDGELINE
	PROPOSED STORMWATER STRUCTURES
	PROPOSED STORMWATER PIPING
	AREA OF DRAINAGE ANALYSIS
	PROPOSED DRAINAGE AREA
	PROPOSED PERVIOUS AREA

PROPOSED GRADING CONTOUR

PROPOSED GRADING RIDGELINE

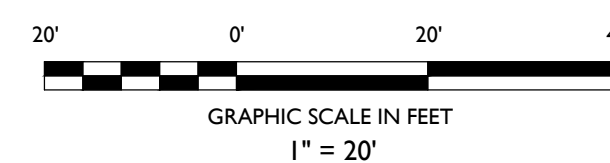
PROPOSED STORMWATER STRUCTURES

PROPOSED STORMWATER PIPING

AREA OF DRAINAGE ANALYSIS

PROPOSED DRAINAGE AREA

PROPOSED PERVIOUS AREA



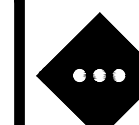
DRAINAGE AREA MAPS



PROPOSED BANK DRIVE-UP ATM

TAX MAP: 38, LOTS: 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STAFFORD COUNTY, NEW HAMPSHIRE

JOSHUA H. KLINE, P.E.
NEW HAMPSHIRE LICENSE No. 16530
LICENSED PROFESSIONAL ENGINEER



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SCALE:	1" = 20'	PROJECT ID: BOS-220137
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TITLE:

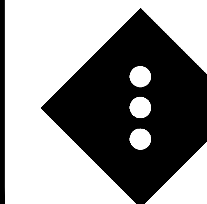
**PROPOSED DRAINAGE
AREA**

DRAWING:

2 OF 2

[illegible]

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APPENDIX E

INSPECTION CHECKLISTS

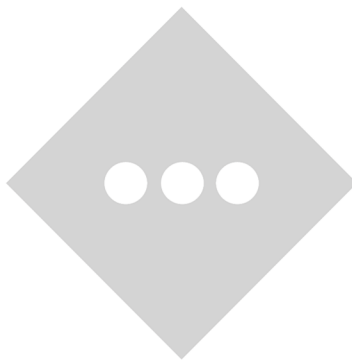
INVENTORY

E-1: GENERAL INSPECTION CHECKLIST LOG

E-2: GENERAL PREVENTATIVE MAINTENANCE LOG

E-3: GENERAL CORRECTIVE MAINTENANCE LOG

E-4: ANNUAL EVALUATION LOG



STONEFIELD

September 29, 2023

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

**RE: Chase Bank Parking Operations Memorandum
1-3 Webb Place
Map 38, Lots 15A & 15B
City of Dover, Strafford County, New Hampshire
SE&D Job No.: BOS-220137**

Dear Board Members:

Stonefield Engineering and Design ("Stonefield") has prepared this assessment in connection with the proposed 3,330-square-foot Chase bank with drive-up ATM to identify typical parking supplies for Chase banks. The City of Dover requires a maximum of one (1) parking space per 275 square feet of gross leasable area for retail/service uses. For the proposed 3,330-square-foot Chase bank, this equates to a maximum of 12 required parking spaces. However, it is important to note that the maximum parking requirements cited within the Site Review Regulations are intended to serve as a guide for the Director of Planning and Community Development, who will determine the appropriate minimum and maximum parking requirements based on the characteristics and needs of each development. The site would provide 26 total parking spaces, inclusive of two (2) ADA-accessible parking spaces, and therefore the development is seeking a variance of 14 parking spaces in excess of the maximum parking requirement.

Parking Supply for Typical Chase Bank Locations

To examine the subject application with respect to the proposed parking supply, various Chase bank locations that Stonefield has consulted on were reviewed. Based on the review, the proposed parking supply is typical in comparison to other Chase bank locations in the general New England region. **Table I** provides a summary of the location, size, and parking supply of several Chase bank developments in New England and upstate New York which are currently under review, approved, under construction, or completed and fully operational.

TABLE I – CHASE BANK PARKING SUPPLIES

Chase Bank Address	Municipality / State	Building Size (SF)	Parking Supply	Parking Supply Rate (Per 1,000 SF)
520 Main Street (U.S. Route 1)	Saco / ME	4,048	35	8.65
9 West Road	Orleans / MA	3,468	31	7.55
20 Park Avenue	Clifton Park / NY	4,104	31	7.78
190 Buckland Road	Windsor / CT	3,470	27	7.49
1151 Silas Deane Highway	Wethersfield / CT	3,470	26	9.47
217 Chauncy Street	Mansfield / MA	3,347	37	11.05
2 Plattekill Avenue	New Paltz / NY	2,550	25	9.80
333 NY-303	Orangeburg / NY	4,750	45	8.94
Average of Existing Chase Bank Locations		3,651	32	8.84
Proposed Chase Bank		3,330	26	7.81

As shown in **Table I**, the review of Chase bank locations in New England and upstate New York shows that Chase bank locations typically provide a minimum supply of 25 parking spaces, with as many as 45 parking

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spaces provided. An average parking supply of 32 spaces was calculated for the reviewed Chase Bank locations of comparable size, which equates to an average parking supply rate of 8.84 spaces per 1,000 square feet of gross floor area. Applying this rate to the proposed 3,330-square-foot development yields a parking supply of 29 spaces. Therefore, the proposed parking supply of 26 parking spaces for the subject application is generally comparable with or lower than the parking supply typically provided for similar existing operations.

Parking Utilization at Study Chase Bank Locations

In order to project the parking demand of the proposed Chase bank, parking utilization counts and observations were performed at existing Chase banks at the following locations:

1. New Paltz, New York: An approximately 2,550-square-foot Chase bank with 25 off-street parking spaces
2. Orangeburg, New York: An approximately 4,750-square-foot Chase bank with 45 off-street parking spaces

The parking utilization counts were conducted at both locations on Friday, September 6, 2019, from 10:00 a.m. to 1:00 p.m. and 2:00 p.m. to 6:00 p.m. which is when the existing banks are experiencing peak traffic conditions. The parking utilization data was collected in 15-minute intervals and analyzed to identify the peak parking utilization during the study period. It should be noted that both locations studied had drive-through lanes similar to the proposed Chase bank.

Based on a review of the parking utilization data, the critical existing peak parking demand at the New Paltz location occurred during the weekday evening time period at 3:45 p.m. with a total of 23 parked vehicles. The critical existing peak parking demand at the Orangeburg location occurred during the evening peak time period at 3:30 p.m. with a total of 34 parked vehicles. The capacity and utilization observed at each study location during the critical peak period is summarized in **Table 2**.

TABLE 2 – OBSERVED EXISTING PEAK PARKING UTILIZATION

	Parking Supply	Peak Parking Demand	Peak Utilization	Reserve Capacity
Chase New Paltz Weekday Evening Peak Period (3:45 p.m.)	25	23	92%	2
Chase Orangeburg Weekday Evening Peak Period (3:30 p.m.)	45	34	76%	11

The peak parking utilization observed at the 2,550-square-foot New Paltz location yields a parking demand rate of 9.02 vehicles per 1,000 square feet of gross floor area, and the peak parking utilization observed at the 4,750-square-foot Orangeburg location yields a parking demand rate of 7.16 vehicles per 1,000 square feet of gross floor area. These rates were used to project the parking demand of the proposed 3330-square-foot Chase bank and compared to the parking rate associated with the proposed parking supply and the City of Dover parking requirement. These projections are summarized in **Table 3**.

TABLE 3 – PARKING DEMAND COMPARISON

	Parking Demand Rate (Per 1,000 SF of GFA)	Projected Peak Parking Demand
Observed Peak Parking Demand at New Paltz Chase Bank Location	9.02	30
Observed Peak Parking Demand at Orangeburg Chase Bank Location	7.16	24
Average of Observed Peak Parking Demand at Study Chase Bank Locations	8.09	27
City of Dover Maximum Parking Requirement	3.60	12

As shown in **Table 3**, the proposed 3,330-square-foot Chase bank would be expected to generate a peak parking demand of 24 to 30 vehicles. As such, the peak observed parking demand at the study locations is generally consistent with the proposed parking supply of 26 spaces for the subject Chase bank, and both the peak observed parking demand and the parking rate associated with the proposed parking supply presented in **Table 1** are significantly greater than the parking rate per the City of Dover's maximum parking requirement. Therefore, the parking utilization data supports the need to provide a parking supply that exceeds the maximum as outlined in the City of Dover Zoning Ordinance, and the parking supply provided is generally consistent with the anticipated peak demand.

Conclusion

This report was prepared to evaluate the parking supply of the proposed Chase bank with drive-up ATM as compared to approved and/or operating Chase bank developments. Based on typical Chase bank operations, the proposed parking supply of 26 parking spaces is within the range typically provided for Chase banks of comparable size and would be necessary to support the parking demand of their customer base. The parking utilization data support the need to provide a parking supply that exceeds the maximum as outlined in the City of Dover Zoning Ordinance, and the parking supply provided is generally consistent with the anticipated peak demand.

Best regards,



Joshua H. Kline, PE
Stonefield Engineering and Design



Victoria E. Epstein
Stonefield Engineering and Design



June 22, 2023

I-3 Webb Place, Map 38, Lots 15A & 15B, Dover NH

ATT: Megan Ryser-Oatman
584 Broadway Suite 310. New York, NY 10012

RE: "Will Serve Letter: I-3 Webb Place, Map 38, Lots 15A & 15B, Dover NH"

Ms. Megan Ryser-Oatman,

Consolidated Communications of Northern New England Company, LLC has agreed to provide communications service to this property subject to the Tariffs and terms of NHPUC.

Please note that a payment may be required from the customer requesting service as described in NH PUC Tariff.

You may review these documents at: (copy & paste link into browser)

<http://www.tariffs.net/tariffs/100115qwzx/tempNH%20Catalog%20CCNNE%20WDUTP%20FINAL%202021-09-27.pdf>

Subsequent to the customer responsibilities being satisfied, Consolidated will process with construction of the services requested.

Should you have any questions, please feel free to contact me.

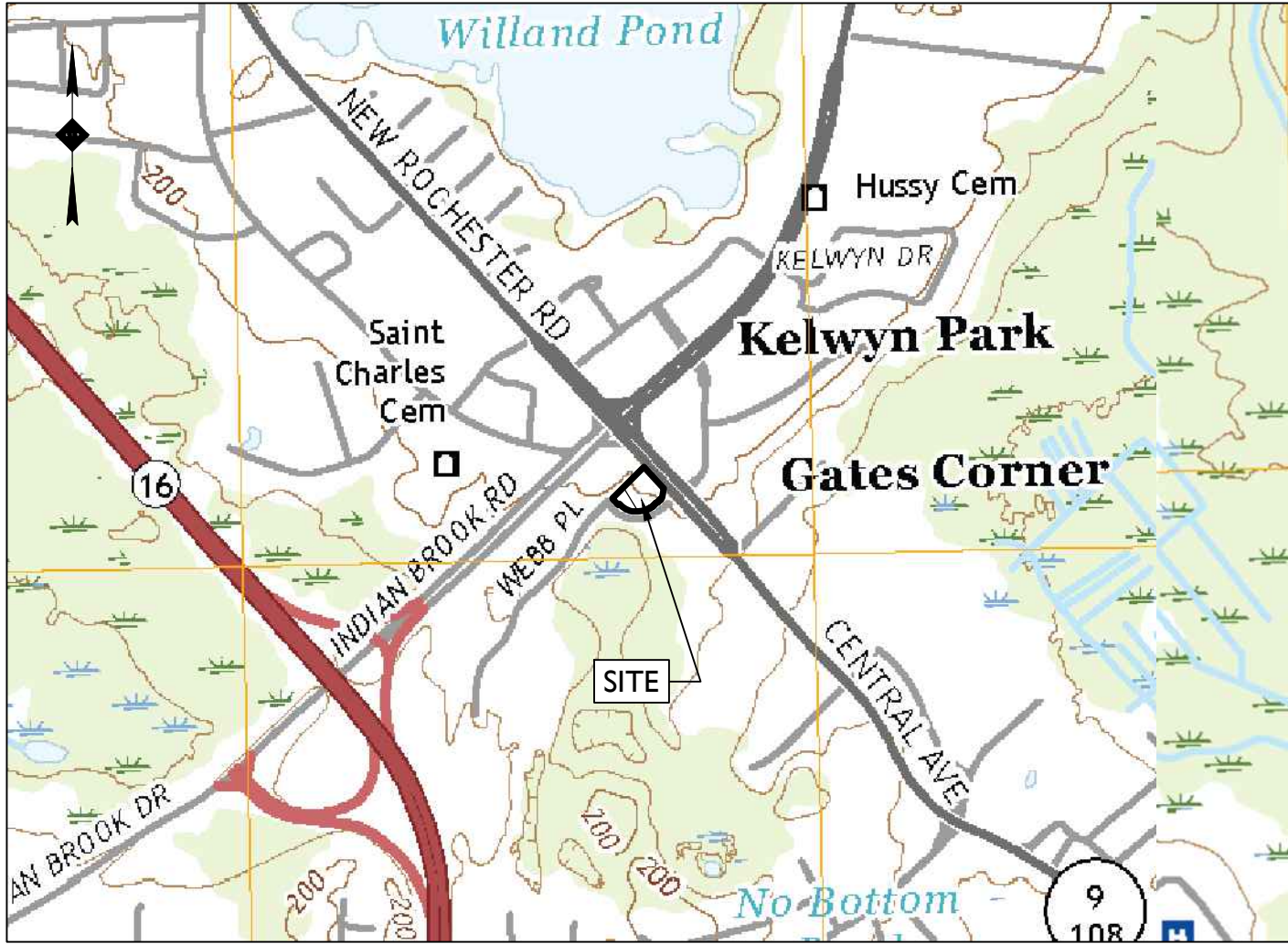
All the best with your project,

Craig Hollingsworth | OSP Engineer II

C:603-393-0785

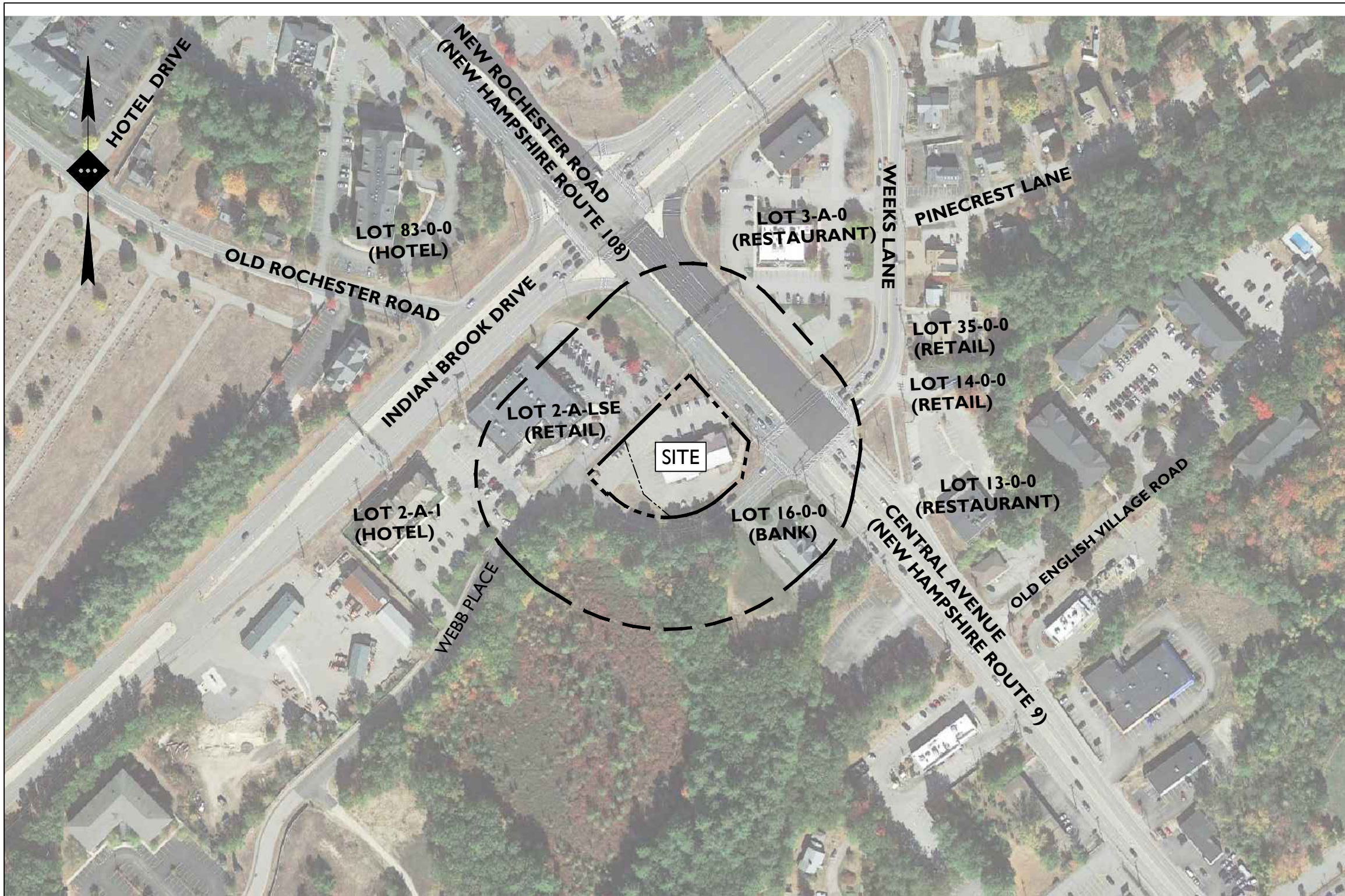
Craig.Hollingsworth@consolidated.com

<http://www.consolidated.com/> | NASDAQ: CNSL



LOCATION MAP

SCALE: 1" = 1000'±



AERIAL MAP

SCALE: 1" = 200'±

CITY DOVER 200' PROPERTY OWNERS LIST			
TAX MAP	LOT	OWNER	OWNER'S ADDRESS
D	2-A-LSE	CENTERCO DOVER LLC	11 17 WEBB PLACE, DOVER, NEW HAMPSHIRE, 03820
39	3-A-0	SOURMAIDS CHARLES & SOURMAIDS MARIA	18 20 WEEKS LANE, DOVER, NEW HAMPSHIRE, 03820
D0002-A00LSE		CITY OF DOVER	40 42 SMITH WELL ROAD, DOVER, NEW HAMPSHIRE, 03820
D	2-A-1	EMPIRE NORTH PROPERTIES LLC	31 WEBB PLACE, DOVER, NEW HAMPSHIRE, 03820
38	16-0-0	P P D ORAZIO LLC	920 CENTRAL AVENUE, DOVER, NEW HAMPSHIRE, 03820

PLAN REFERENCE MATERIALS:

- THIS PLAN SET REFERENCES THE FOLLOWING DOCUMENTS INCLUDING, BUT NOT LIMITED TO:
 - ALTA / NSPS LAND TITLE SURVEY PREPARED BY COLLIER ENGINEERING & DESIGN FOR THE SUBJECT PROPERTY, DATED 12/23/2022
 - ARCHITECTURAL PLANS OBTAINED FROM CORE STATES, DATED 4/20/2023
 - ARIEL OBTAINED FROM GOOGLE EARTH PRO, DATED 07/22/2022
 - TAX AND ZONING MAPS OBTAINED FROM TOWN OF ROLLINSFORD TAX MAP DATED 4/1/2021 AND TOWN OF ROLLINSFORD ZONING MAP DATED 11/24/2021, CITY OF DOVER ZONING MAP DATED 11/24/2021 AND CITY OF DOVER INDEX MAP DATED 3/21/2018, CITY OF SOMERSWORTH ZONING MAP DATED 12/1/2021 AND CITY OF SOMERSWORTH TAX PARCELS MAP DATED 9/1/2022
 - LOCATION MAP OBTAINED FROM UNITED STATES GEOLOGICAL SURVEY MAP, DOVER EAST QUADRANGLE & DOVER WEST QUADRANGLE, NEW HAMPSHIRE, 7.5 MINUTE SERIES, DATED 2021
- ALL REFERENCE MATERIAL LISTED ABOVE SHALL BE CONSIDERED A PART OF THIS PLAN SET AND ALL INFORMATION CONTAINED WITHIN THESE MATERIALS SHALL BE UTILIZED IN CONJUNCTION WITH THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF EACH REFERENCE AND REVIEW IT THOROUGHLY PRIOR TO THE START OF CONSTRUCTION.

SITE PLAN SET FOR CHASE

PROPOSED BANK WITH DRIVE-THRU ATM

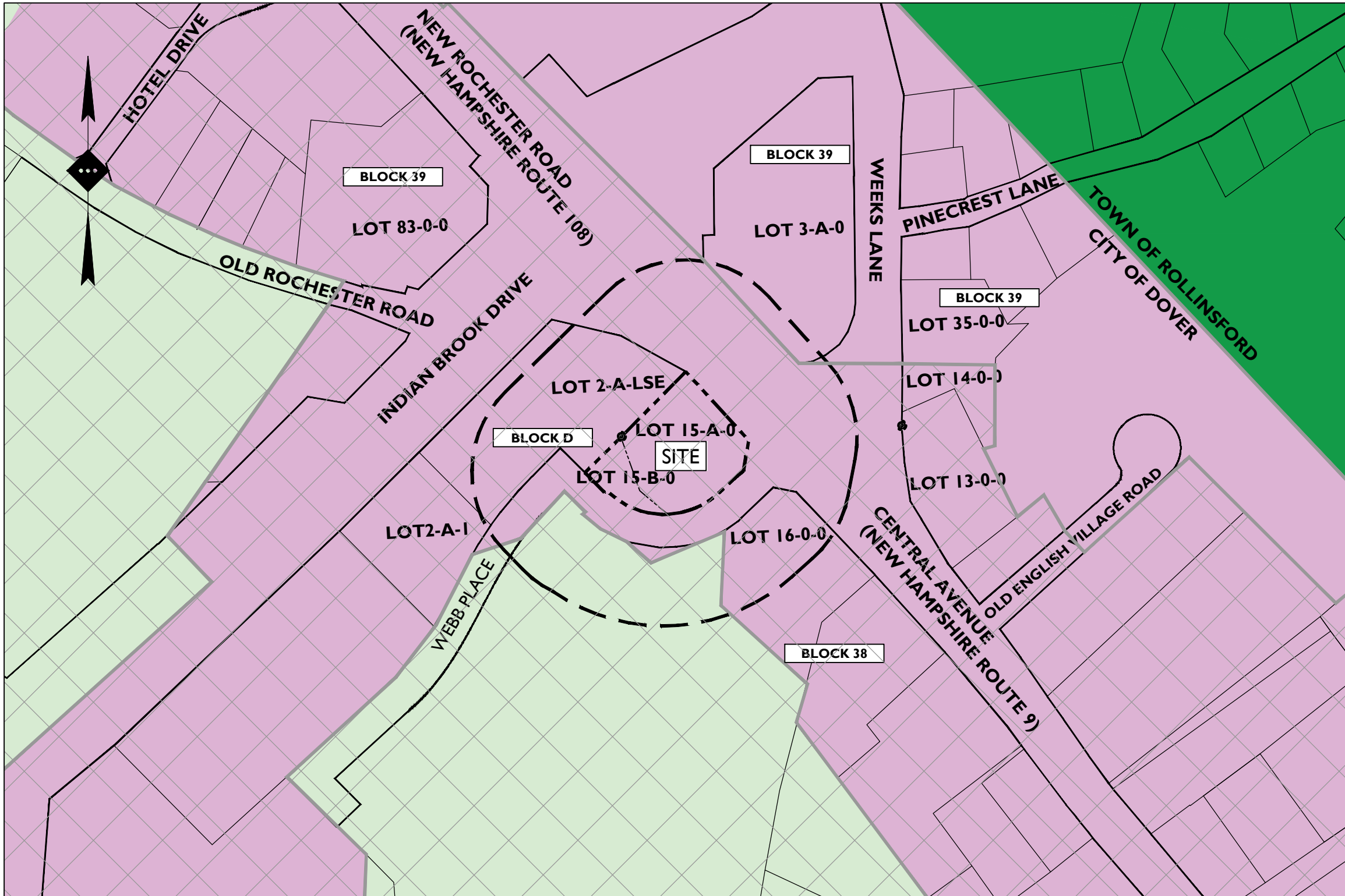
TAX MAP 38, LOTS 15A & 15B
1 - 3 WEBB PLACE
CITY OF DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE



Know what's **below**
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APPLICANT
CORE STATES GROUP
201 S. MAPLE AVENUE, AMBLER, PA 19002
C/O STONEFIELD ENGINEERING & DESIGN
120 WASHINGTON STREET, SUITE 201
SALEM, MA 01970
(617) 203-2076
JKLINE@STONEFIELDENG.COM

OWNER
DOVER RETAIL MANAGEMENT LLC
30200 TELEGRAPH ROAD
BINGHAM FARMS, MICHIGAN, 48025



TAX / ZONING MAP

SCALE: 1" = 200'±

ZONING LEGEND:

DOVER: ZONE C - COMERCIAL ZONE R-12 MEDIUM-DENSITY RESIDENTIAL SECONDARY GROUNDWATER PROTECTION DISTRICT

ROLLINSFORD: ZONE U/R - URBAN RESIDENTIAL

SHEET INDEX	
DRAWING TITLE	SHEET #
COVER SHEET	C-1
EXISTING CONDITIONS PLAN	C-2
DEMOLITION PLAN	C-3
SITE PLAN	C-4
GRADING PLAN	C-5
UTILITY PLAN	C-6
LIGHTING PLAN	C-7 - C-8
SOIL EROSION & SEDIMENT CONTROL PLAN	C-9 - C-10
LANDSCAPING PLAN	C-11 - C-12
CONSTRUCTION DETAILS	C-13 - C-15

OWNER APPROVAL	
I CONSENT TO THE FILING OF THIS APPLICATION	
PROPERTY OWNER	DATE

CITY APPROVAL	
APPROVED BY THE CITY OF DOVER, NEW HAMPSHIRE PLANNING BOARD	
CHAIRMAN	DATE
SECRETARY OF THE BOARD	DATE
CITY ENGINEER	DATE

PLANS PREPARED BY:



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SITE PLAN SET
CHASE
PROPOSED BANK WITH
DRIVE-THRU ATM

TAX MAP 38, LOTS 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

JOSHUA H. KLINE, P.E.
NEW HAMPSHIRE LICENSE No. 16330
LICENSED PROFESSIONAL ENGINEER

STONEFIELD
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SCALE: AS SHOWN PROJECT ID: BOS-220137

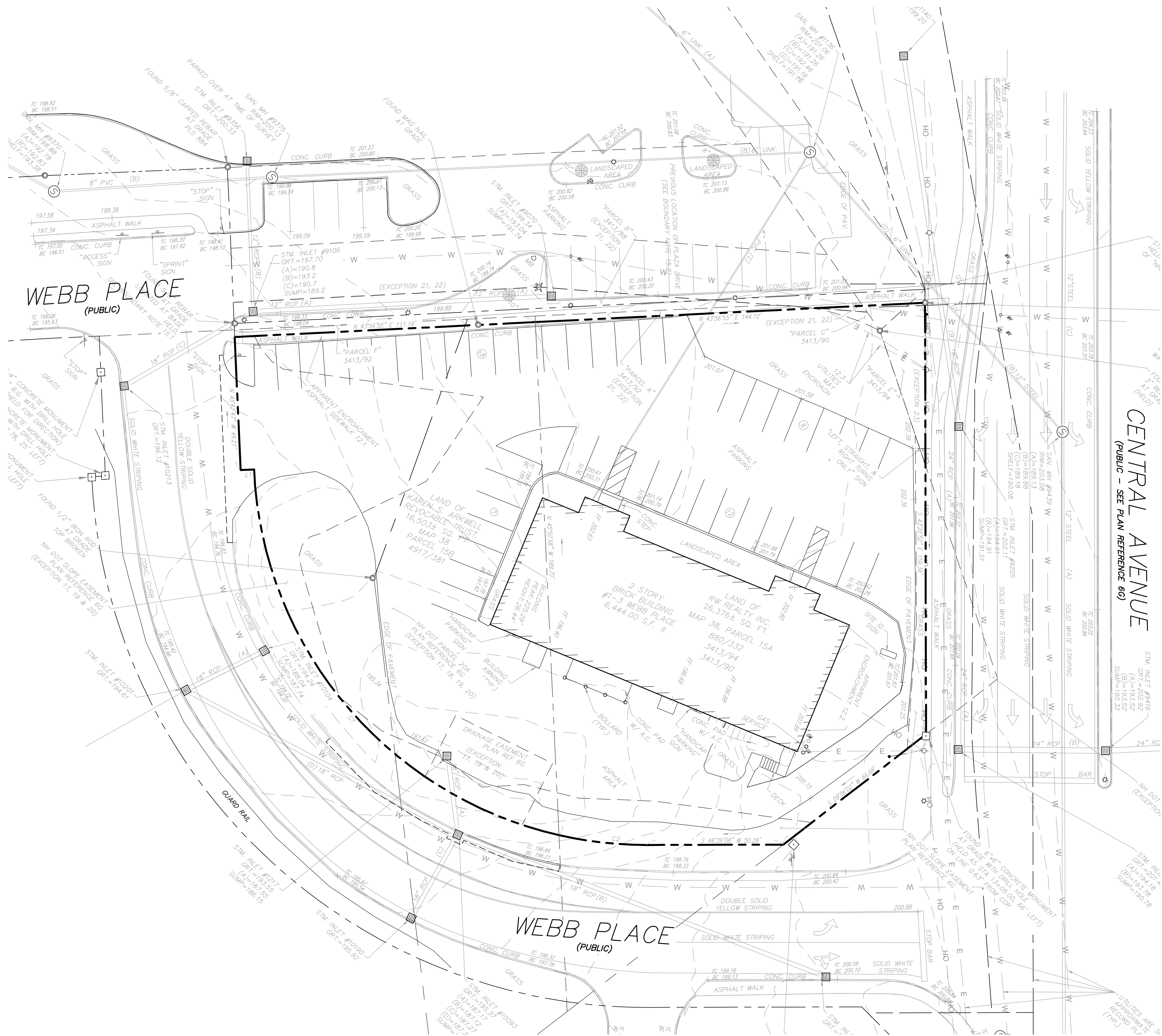
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COVER SHEET

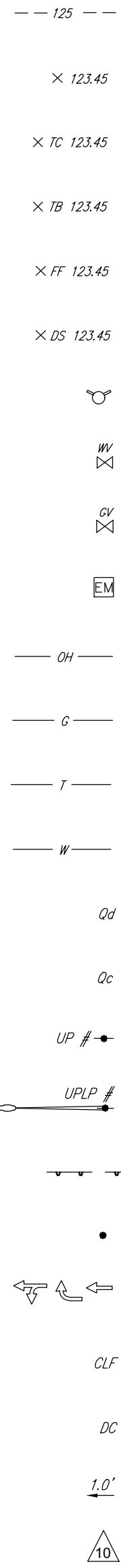
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C-1

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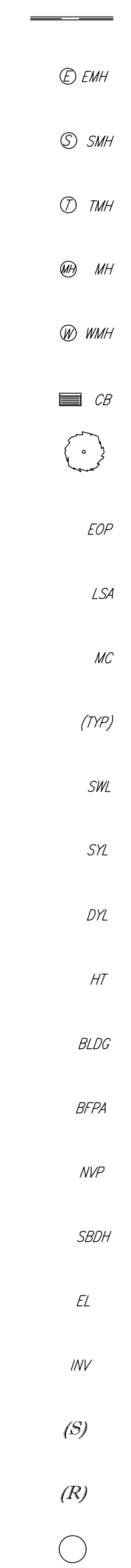
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DESCRIPTION

EXISTING CONTOUR
EXISTING SPOT ELEVATION
EXISTING TOP OF CURB ELEVATION
EXISTING BOTTOM OF CURB ELEVATION
EXISTING FINISHED DOOR ELEVATION
EXISTING DOOR SILL ELEVATION
HYDRANT
WATER VALVE
GAS VALVE
ELECTRIC METER
OVERHEAD WIRES
APPROX. LOC. UNDERGROUND GAS LINE
APPROX. LOC. UNDERGROUND TELE LINE
APPROX. LOC. UNDERGROUND WATER LINE
QUALITY LEVEL D
QUALITY LEVEL C
UTILITY POLE
UTILITY POLE/LIGHT POLE
SIGN
BOLLARD
PAINTED ARROWS
CHAIN LINK FENCE
DEPRESSED CURB
OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE
PARKING SPACE COUNT

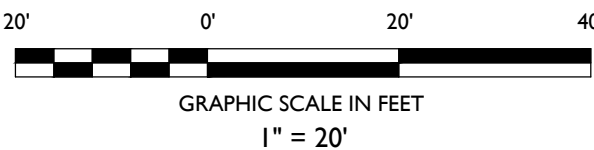
SYMBOL



DESCRIPTION

DEPRESSED CURB
ELECTRIC MANHOLE
SANITARY/SEWER MANHOLE
TELEPHONE MANHOLE
UNKNOWN MANHOLE
WATER MANHOLE
CATCH BASIN OR INLET
TREE & TRUNK SIZE
EDGE OF PAVEMENT
LANDSCAPED AREA
METAL COVER
TYPICAL
SOLID WHITE LINE
SOLID YELLOW LINE
DOUBLE YELLOW LINE
HEIGHT
BUILDING
BUILDING FOOTPRINT AREA
NO VISIBLE PIPE
STONE BOUND w/ DRILL HOLE
ELEVATION
INVERT ELEVATION
SURVEY DIMENSION
RECORD DIMENSION
TITLE REPORT EXCEPTION

SURVEY NOTE:
THE SURVEY LISTED WITHIN THE PLAN REFERENCES ON THE COVER SHEET SHALL BE CONSIDERED A PART OF THIS PLAN SET AND ALL INFORMATION CONTAINED WITHIN THE SURVEY AND ASSOCIATED DOCUMENTS SHALL BE UTILIZED IN CONJUNCTION WITH THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF THE SURVEY AND REVIEW IT THOROUGHLY PRIOR TO THE START OF CONSTRUCTION.



SITE PLAN SET

CHASE
PROPOSED BANK WITH
DRIVE-THRU ATM

TAX MAP 38, LOTS 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

JOSHUA H. KLINE, P.E.
NEW HAMPSHIRE LICENSE No. 16330
LICENSED PROFESSIONAL ENGINEER

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SCALE: 1" = 20' PROJECT ID: BOS-220137

TITLE:
**EXISTING CONDITIONS
PLAN**

DRAWING:

C-2

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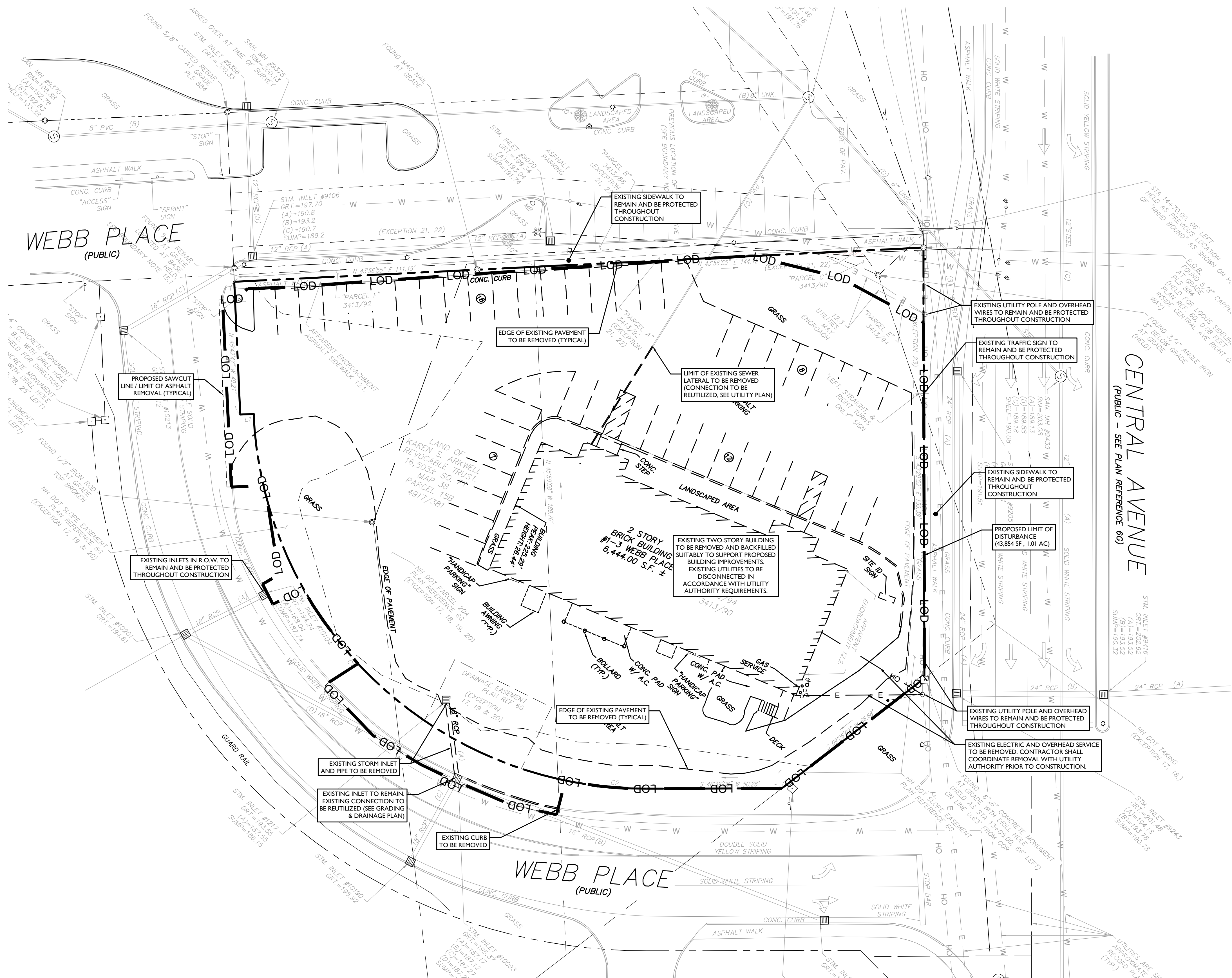
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Phone 617.203.2076

NOT APPROVED FOR CONSTRUCTION

PER TECHNICAL REVIEW	COMMITTEE COMMENTS	ISSUED FOR REVIEW	DATE	BY	DESCRIPTION
2	9/15/2023	JJR	7/31/2023	ISSUE	

Z:\PROJECTS\2022\220137\CONCRETE\1-3 WEBB PLACE DOVER, NH\CDR\CDR101.DWG

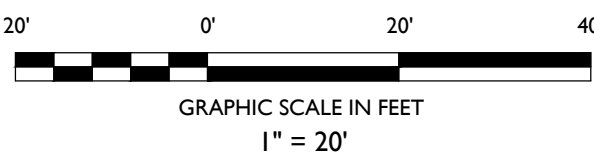


ALL SITE FEATURES WITHIN THE LIMIT OF DISTURBANCE INDICATED ON THIS PLAN ARE TO BE REMOVED / DEMOLISHED UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IF SIGNIFICANT DISCREPANCIES ARE DISCERNED BETWEEN THIS PLAN AND FIELD CONDITIONS



Know what's below
Call before you dig.

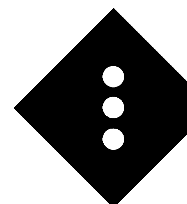
- DEMOLITION NOTES**
1. THE WORK REFLECTED ON THE DEMOLITION PLAN IS TO PROVIDE GENERAL INFORMATION TOWARDS THE EXISTING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR IS RESPONSIBLE TO REVIEW THE ENTIRE PLAN SET AND ASSOCIATED REPORTS/REFERENCE DOCUMENTS, INCLUDING ALL DEMOLITION ACTIVITIES AND INCIDENTAL TASKS NECESSARY TO COMPLETE THE SITE IMPROVEMENTS.
 2. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF DEMOLITION ACTIVITIES.
 3. EXPLOSIVES SHALL NOT BE USED UNLESS WRITTEN CONSENT FROM BOTH THE OWNER AND ANY APPLICABLE GOVERNING AGENCY IS OBTAINED. BEFORE THE START OF ANY EXPLOSIVE PROGRAM, THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL LOCAL, STATE, AND FEDERAL PERMITS. ADDITIONALLY, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL SEISMIC TESTING AS REQUIRED AND ANY DAMAGES AS THE RESULT OF SAID DEMOLITION PRACTICES.
 4. ALL DEMOLITION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL CODES. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL UTILITIES ARE DISCONNECTED IN ACCORDANCE WITH THE UTILITY AUTHORITY'S REQUIREMENTS PRIOR TO STARTING THE DEMOLITION OF ANY STRUCTURE. ALL EXCAVATIONS ASSOCIATED WITH DEMOLISHED STRUCTURES OR REMOVED TANKS SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO SUPPORT SITE AND BUILDING IMPROVEMENTS. A GEOTECHNICAL ENGINEER SHOULD BE PRESENT DURING BACKFILLING ACTIVITIES TO OBSERVE AND CERTIFY THAT BACKFILL MATERIAL WAS COMPACTED TO A SUITABLE CONDITION.
 5. DEMOLISHED DEBRIS SHALL NOT BE BURIED ON SITE. ALL WASTE/DEBRIS GENERATED FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL RECORDS OF THE DISPOSAL TO DEMONSTRATE COMPLIANCE WITH THE ABOVE REGULATIONS.



SYMBOL	DESCRIPTION
---	FEATURE TO BE REMOVED / DEMOLISHED
---	LOD
---	LIMIT OF DISTURBANCE

NOT APPROVED FOR CONSTRUCTION

STONEFIELD
engineering & design



Rutherford, NJ • New York, NY • Salem, MA
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www.stonefielddesign.com

120 Washington Street, Suite 201, Salem, MA 01970
Phone 617.203.2976

SITE PLAN SET

CHASE
PROPOSED BANK WITH
DRIVE-THRU ATM

TAX MAP 38, LOTS 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

JOSHUA H. KLINE, P.E.
NEW HAMPSHIRE LICENSE No. 16330
LICENSED PROFESSIONAL ENGINEER

STONEFIELD
engineering & design

SCALE: 1" = 20' PROJECT ID: BOS-220137

TITLE:

DEMOLITION PLAN

DRAWING:

C-3

PER TECHNICAL REVIEW	ISSUED FOR REVIEW	DATE	BY	DESCRIPTION
2	9/15/2023	JJR		
1	7/17/2023	JJR		

LAND USE AND ZONING			
TAX MAP 38, LOTS 15A & 15B			
COMMERCIAL DISTRICT (C)			
PROPOSED USE			
BANK	PERMITTED USE		
ZONING REQUIREMENT	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT AREA	20,000 SF	42,879 SF (0.98 AC)	42,879 SF (0.98 AC)
MAXIMUM COVERAGE	50%	15.0% (6,445 SF)	7.8% (3,330 SF)
MINIMUM FRONTAGE	125 FT	552.3 FT	552.3 FT
MINIMUM FRONT YARD SETBACK	30 FT	28.2 FT (EN)	49.5 FT
MINIMUM ABUT A STREET SETBACK	30 FT	24.0 FT (EN)	99.1 FT
MINIMUM SIDE YARD SETBACK	12 FT	N/A	N/A
MINIMUM REAR YARD SETBACK	15 FT	65.0 FT	44.5 FT
MINIMUM ACCESSORY SETBACK	10 FT	N/A	49.7 FT
MINIMUM PRINCIPAL BUILDING HEIGHT	40 FT	< 40 FT	< 40 FT
MINIMUM PARKING SETBACK	25 FT	3.8 FT (EN)	25.0 FT

(EN) EXISTING NON-CONFORMITY
(V) VARIANCE REQUESTED

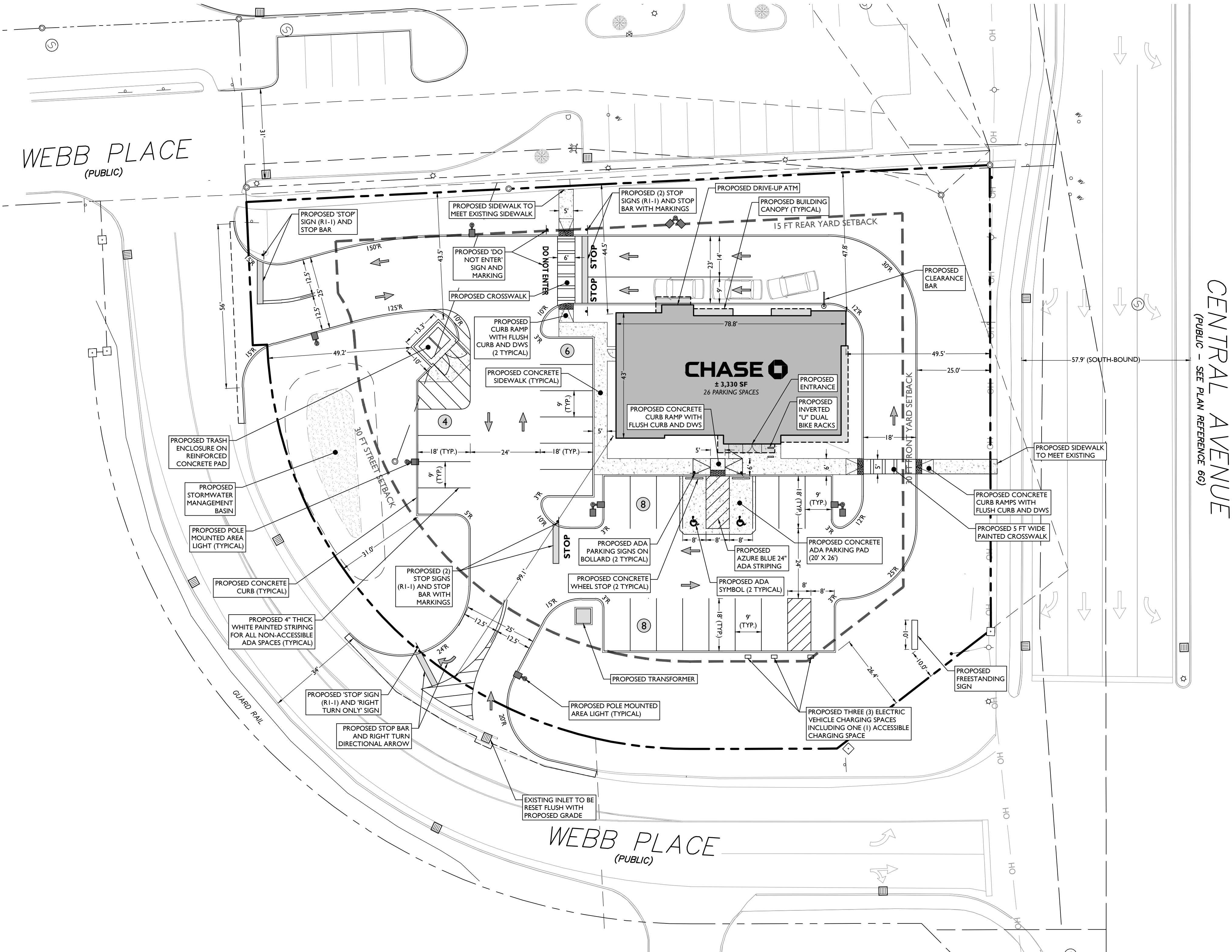
OFF-STREET PARKING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 153-14.D.(1)	MAXIMUM NUMBER OF PARKING SPACES: RETAIL/SERVICE USE: 1 SPACE PER 275 SF OF GLA = = (3,330 SF x 1 / 275) = 12 SPACES	26 SPACES *
§ 153-14.D.(2)	MINIMUM NUMBER OF BICYCLE RACKS = 5% OF MAXIMUM PARKING SPACES PER TABLE = 1 RACK	2 BIKE RACKS
§ 153-14.D.(3) & § 153-14.D.(5)	MINIMUM NUMBER OF ELECTRIC VEHICLE CHARGING SPACES = 2% OF NEW PARKING SPACES + 2 FOR LOTS WHERE A CONDITIONAL USE PERMIT IS REQUESTED = 3 EV CHARGING SPACES	3 EV SPACES
§ 153-14.D.(6).(a)	PARKING AREA DIMENSIONAL REQUIREMENTS: MINIMUM STALL WIDTH = 9 FT MINIMUM STALL LENGTH = 18 FT MINIMUM AISLE WIDTH = 22 FT	9 FT 18 FT 24 FT
§ 153-14.D.(6).(b)	MINIMUM WIDTH OF ACCESS AISLES = 24 FT	24 FT

(*) A CONDITIONAL USE PERMIT IS REQUESTED FOR THE INCREASE IN PARKING SPACES, PER 153-14.D.(5).

SIGNAGE REQUIREMENTS		
SECTION	REQUIRED (C DISTRICT)	PROPOSED
FOR ALL SIGNS	TOTAL NUMBER OF SIGNS PERMITTED = 2 SIGNS TOTAL SIGN AREA PERMITTED: 2 SF PER FOOT OF FRONTAGE = (2 x 552 LF) = 1,104 SF	3 SIGNS * (V) 164.2 SF
FREESTANDING SIGNS	MAXIMUM SIZE = 60 SF MAXIMUM NUMBER = 1 SIGN FREESTANDING SIGNS SHALL BE MONUMENT SIGNS OR MOUNTED ON LOW PLANTER WALLS PROPERTY SETBACK = 10 FT	36.7 SF 1 SIGN 10 FT
WALL SIGNS	MAXIMUM SIZE = 1 SF PER FOOT OF BUILDING FRONTAGE = 78.8 SF	36.9 SF

(V) VARIANCE
(*) EXCLUDES DIRECTIONAL SIGNS

SNOW STORAGE CALCULATION	
• PROPOSED PARKING LOT AREA = 18,712 SF	
• REQUIRED SNOW STORAGE AREA = (18,712 SF x 0.10) = 1,872 SF	
• PROPOSED SNOW STORAGE AREA = 2,300 SF	
EXCESS SNOW TO BE REMOVED FROM SITE IF ON-SITE STORAGE AREAS ARE FILLED.	



CITY OF DOVER NOTES

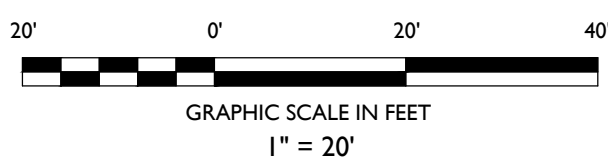
- THE INTENT OF THIS PLAN IS TO CONSTRUCT A PROPOSED BANK ON THE SUBJECT PROPERTY.
- OWNERS OF RECORD ARE:
DOVER RETAIL MANAGEMENT LLC
30200 TELEGRAPH ROAD
BINGHAM FARM, MICHIGAN 48015
- THE PARCELS ARE SHOWN AS LOTS NO. 15A & 15B, MAP 38 OF THE CITY OF DOVER TAX ASSESSOR'S MAPS.
- THE SUBJECT PARCELS CONTAIN 0.98 ACRES OR 42,879 SQ. FT. AREA OF LAND.
- TITLE REFERENCES FOR THE PROJECT PARCELS IS THE STRAFFORD COUNTY REGISTRY OF DEEDS, BOOK NO. 880, PAGE NO. 332; BOOK NO. 4917, PAGE NO. 381; BOOK NO. 3413, PAGE NO. 90; AND BOOK NO. 3413, PAGE NO. 94.
- PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY COLLIER'S ENGINEERING DATED 12/23/2022.
- REFER TO SURVEY REFERENCED ABOVE FOR APPLICABLE RIGHT-OF-WAY, CONSERVATION, SLOPE, CONSTRUCTION, POWER LINE CROSS TRAVEL, OR OTHER EASEMENTS.
- REFER TO THE TABLE OF LAND USE & ZONING HEREON FOR CURRENT ZONING DIMENSIONAL AND DENSITY REQUIREMENTS.
- SUBJECT PARCEL IS NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0310E, EFFECTIVE DATE: SEPTEMBER 30, 2015).
- AS-BUILT PLANS OF THE PROPOSED IMPROVEMENTS SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT (AUTOCAD DWG, AUTOCAD DXF OR ERII FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT).
- THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE FOR WHICH DEVELOPMENT IS PROPOSED.
- THE SUBJECT PARCELS ARE SERVED BY MUNICIPAL WATER AND SEWER.
- 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.
- ALL EROSION CONTROL SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.
- THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR ANY EARTH DISTURBING ACTIVITY OCCURS.
- ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
- 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.
- 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.
- 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.
- BUILDING ADDRESSES SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
- THE PROPOSED USE FOR THE SITE IS A BANK WITH A DRIVE-THRU ATM.
- COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
- ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
- 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](https://www.unh.edu/unhsc/ptapp)
- 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.
- ELEVATIONS ARE BASED ON U.S.G.S. NVD 1988 DATUM.
- A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 153:14-E AND SHALL PROVIDE LIGHTING DIRECTED ON-SITE ONLY.
- APPROVED BACKFLOW PREVENTERS SHALL BE PROVIDED FOR BOTH FIRE AND DOMESTIC WATER LINES.
- FIRE DEPARTMENT CONNECTIONS 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.
- 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.

SYMBOL

---	PROPERTY LINE
---	SETBACK LINE
---	SAWCUT LINE
---	PROPOSED CURB
---	PROPOSED DEPRESSED CURB
---	PROPOSED FLUSH CURB
---	PROPOSED SIGNS / BOLLARDS
---	PROPOSED BUILDING
---	PROPOSED CONCRETE
---	PROPOSED AREA LIGHT
---	PROPOSED RETAINING WALL
---	PROPOSED BUILDING DOORS

GENERAL NOTES

- THE CONTRACTOR SHALL VERIFY AND FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS AND THE PROPOSED SCOPE OF WORK (INCLUDING DIMENSIONS, LAYOUT, ETC.) PRIOR TO INITIATING THE IMPROVEMENTS IDENTIFIED WITHIN THESE DOCUMENTS. SHOULD ANY DISCREPANCY BE FOUND BETWEEN THE EXISTING SITE CONDITIONS AND THE PROPOSED WORK, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC, PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ENSURE THAT ALL REQUIRED APPROVALS HAVE BEEN OBTAINED PRIOR TO THE START OF CONSTRUCTION. COPIES OF ALL REQUIRED PERMITS AND APPROVALS SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.
- ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS STONEFIELD ENGINEERING & DESIGN, LLC, AND ITS SUB-CONSULTANTS FROM AND AGAINST ANY DAMAGES AND LIABILITIES INCLUDING ATTORNEY'S FEES ARISING OUT OF CLAIMS BY EMPLOYEES OF THE CONTRACTOR IN ADDITION TO CLAIMS CONNECTED TO THE PROJECT AS A RESULT OF NOT CARRYING THE PROPER INSURANCE FOR WORKERS' COMPENSATION, LIABILITY INSURANCE, AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE.
- THE CONTRACTOR SHALL NOT DEVIATE FROM THE PROPOSED IMPROVEMENTS IDENTIFIED WITHIN THIS PLAN SET UNLESS APPROVAL IS PROVIDED IN WRITING BY STONEFIELD ENGINEERING & DESIGN, LLC.
- THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOT PERFORM ANY WORK OR CAUSE DISTURBANCE ON A PRIVATE PROPERTY NOT CONTROLLED BY THE PERSON OR ENTITY WHO HAS AUTHORIZED THE WORK WITHOUT PRIOR WRITTEN CONSENT FROM THE OWNER OF THE PRIVATE PROPERTY.
- THE CONTRACTOR IS RESPONSIBLE TO RESTORE ANY DAMAGED OR UNDERMINED STRUCTURE OR SITE FEATURE THAT IS IDENTIFIED TO REMAIN ON THE PLAN SET. ALL REPAIRS SHALL USE NEW MATERIALS TO RESTORE THE FEATURE TO ITS EXISTING CONDITION AT THE CONTRACTORS EXPENSE.
- CONTRACTOR IS RESPONSIBLE TO PROVIDE THE APPROPRIATE SHOP DRAWINGS, PRODUCT DATA, AND OTHER REQUIRED SUBMITTALS FOR REVIEW. STONEFIELD ENGINEERING & DESIGN, LLC, WILL REVIEW THE SUBMITTALS IN ACCORDANCE WITH THE DESIGN INTENT AS REFLECTED WITHIN THE PLAN SET.
- THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
- THE CONTRACTOR IS REQUIRED TO PERFORM ALL WORK IN THE PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH THE APPROPRIATE GOVERNING AUTHORITY AND SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF STREET OPENING PERMITS.
- THE CONTRACTOR IS REQUIRED TO RETAIN AN OSHA CERTIFIED SAFETY INSPECTOR TO BE PRESENT ON SITE AT ALL TIMES DURING CONSTRUCTION AND DEMOLITION ACTIVITIES.
- SHOULD AN EMPLOYEE OF STONEFIELD ENGINEERING & DESIGN, LLC, BE PRESENT ON SITE AT ANY TIME DURING CONSTRUCTION, IT DOES NOT RELIEVE THE CONTRACTOR OF ANY OF THE RESPONSIBILITIES AND REQUIREMENTS LISTED IN THE NOTES WITHIN THIS PLAN SET.



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PER TECHNICAL REVIEW COMMITTEE COMMENTS			
ISSUED FOR REVIEW			
DESCRIPTION			
BY	DATE	ISSUE	
JJR	9/15/2023	1	
JJR	7/31/2023	2	

NOT APPROVED FOR CONSTRUCTION

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Phone 617.203.2076

CHASE
PROPOSED BANK WITH
DRIVE-THRU ATM

SITE PLAN SET

TAX MAP 38, LOTS 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STAFFORD COUNTY, NEW HAMPSHIRE

JOSHUA H. KLINE, P.E.
NEW HAMPSHIRE LICENSE NO. 16330
LICENSED PROFESSIONAL ENGINEER

STONEFIELD
engineering & design

SCALE: 1" = 20' PROJECT ID: BOS-220137

TITLE:

SITE PLAN

DRAWING:

C-4

DRAINAGE AND UTILITY NOTES

1. THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR STORMWATER IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING.
2. CONTRACTOR SHALL START CONSTRUCTION OF STORM LINES AT THE LOWEST INVERT AND WORK UP GRADIENT.
3. THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IMMEDIATELY IN WRITING.
4. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.

EXCAVATION, SOIL PREPARATION, AND DEWATERING NOTES

1. THE CONTRACTOR IS REQUIRED TO REVIEW THE REFERENCED GEOTECHNICAL DOCUMENTS PRIOR TO CONSTRUCTION, THESE DOCUMENTS SHALL BE CONSIDERED A PART OF THE PLAN SET.
2. THE CONTRACTOR IS REQUIRED TO PREPARE SUBGRADE SOILS BENEATH ALL PROPOSED IMPROVEMENTS AND BACKFILL ALL EXCAVATIONS IN ACCORDANCE WITH RECOMMENDATIONS BY THE GEOTECHNICAL ENGINEER OF RECORD.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SHORING FOR ALL EXCAVATIONS AS REQUIRED. CONTRACTOR SHALL HAVE THE SHORING DESIGN PREPARED BY A QUALIFIED PROFESSIONAL SHORING DESIGNS SHALL BE SUBMITTED TO STONEFIELD ENGINEERING & DESIGN, LLC. AND THE OWNER PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL OPEN EXCAVATIONS ARE PERFORMED AND PROTECTED IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR ANY DEWATERING DESIGN AND OPERATIONS, AS REQUIRED, TO CONSTRUCT THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS FOR DEWATERING OPERATIONS AND GROUNDWATER DISPOSAL.

STORMWATER INFILTRATION BMP CONSTRUCTION NOTES

1. PRIOR TO THE START OF CONSTRUCTION, ANY AREA DESIGNATED TO BE USED FOR AN INFILTRATION BMP (E.G. BASIN, BIOTENTION AREA, ETC.) SHALL BE FENCED OFF AND SHALL NOT BE UTILIZED AS STORAGE FOR CONSTRUCTION EQUIPMENT OR AS A STOCKPILE AREA FOR CONSTRUCTION MATERIALS. NO ACTIVITY SHALL BE PERMITTED WITHIN THE INFILTRATION BASIN AREA UNLESS RELATED TO THE CONSTRUCTION OF THE INFILTRATION BASIN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ALL SUBCONTRACTORS OF BASIN AREA RESTRICTIONS.
2. THE CONTRACTOR SHALL MAKE EVERY EFFORT, WHERE PRACTICAL, TO AVOID SUBGRADE SOIL COMPACTION IN THE AREAS DESIGNATED TO BE USED FOR AN INFILTRATION BMP.
3. ALL EXCAVATION WITHIN THE LIMITS OF ANY INFILTRATION BMP SHALL BE PERFORMED WITH THE LIGHTEST PRACTICAL EXCAVATION EQUIPMENT. ALL EXCAVATION EQUIPMENT SHALL BE PLACED OUTSIDE THE LIMITS OF THE BASIN WHERE FEASIBLE. EQUIPMENT OF LIGHT-WEIGHT, RUBBER-TIRED EQUIPMENT (LESS THAN 8 PSI APPLIED TO THE GROUND SURFACE) IS RECOMMENDED WITHIN THE BASIN LIMITS.
4. THE SEQUENCE OF SITE CONSTRUCTION SHALL BE COORDINATED WITH BASIN CONSTRUCTION TO ADHERE TO SEQUENCING LIMITATIONS.
5. DURING THE FINAL GRADING OF AN INFILTRATION BASIN, THE BOTTOM OF THE BASIN SHALL BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW AND THEN SMOOTHED OUT WITH A LEVELING DRAW OR EQUIVALENT GRADING EQUIPMENT. ALL GRADING EQUIPMENT SHALL BE LOCATED OUTSIDE OF THE BASIN BOTTOM WHERE FEASIBLE.
6. FOLLOWING CONSTRUCTION OF AN INFILTRATION BASIN, SOIL INFILTRATION TESTING BY A LICENSED GEOTECHNICAL ENGINEER IS REQUIRED TO CERTIFY COMPLIANCE WITH THE DESIGN INFILTRATION RATES IN ACCORDANCE WITH THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION'S STORMWATER HANDBOOK, LATEST EDITION. IF THE FIELD INFILTRATION RATES ARE LOWER THAN THE RATE USED DURING DESIGN, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING IMMEDIATELY TO DETERMINE THE APPROPRIATE COURSE OF ACTION.
7. THE CONTRACTOR SHALL NOTIFY THE MUNICIPALITY TO DETERMINE IF WITNESS TESTING IS REQUIRED DURING INFILTRATION BASIN EXCAVATION AND/OR SOIL INFILTRATION TESTING.

STORMWATER UNDERGROUND BMP CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL INSTALL AND BACKFILL THE UNDERGROUND BMP IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
2. UNDERGROUND BASINS SHALL UTILIZE A STONE BACKFILL WITH A MINIMUM VOID RATIO OF 40%.
3. NO CONSTRUCTION LOADING OVER UNDERGROUND BASINS IS PERMITTED UNTIL BACKFILL IS COMPLETE PER THE MANUFACTURER'S SPECIFICATIONS. NO VEHICLES SHALL BE STAGED OR OPERATE FROM A FIXED POSITION OVER THE BASIN.

GRADING NOTES

1. ALL SOIL AND MATERIAL REMOVED FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. ANY GROUNDWATER DE-WATERING PRACTICES SHALL BE PERFORMED UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FOR THE DISCHARGE OF DE-WATERED GROUNDWATER. ALL SOIL IMPORTED TO THE SITE SHALL BE CERTIFIED CLEAN FILL. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL FILL MATERIALS BROUGHT TO THE SITE.
2. THE CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY AND/OR PERMANENT SHORING WHERE REQUIRED DURING EXCAVATION ACTIVITIES, INCLUDING BUT NOT LIMITED TO UTILITY TRENCHES TO ENSURE THE STRUCTURAL INTEGRITY OF NEARBY STRUCTURES AND STABILITY OF THE SURROUNDING SOILS.
3. PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 4 INCHES TO 7 INCHES ABOVE EXISTING GRADES UNLESS OTHERWISE NOTED. THE CONTRACTOR WILL SUPPLY ALL STAKEOUT CURB GRADE SHEETS TO STONEFIELD ENGINEERING & DESIGN, LLC. FOR REVIEW AND APPROVAL PRIOR TO POURING CURBS.
4. THE CONTRACTOR IS RESPONSIBLE TO SET ALL PROPOSED UTILITY COVERS AND RESET ALL EXISTING UTILITY COVERS WITHIN THE PROJECT LIMITS TO PROPOSED GRADE IN ACCORDANCE WITH ANY APPLICABLE MUNICIPAL, COUNTY, STATE AND/OR UTILITY AUTHORITY REGULATIONS.
5. MINIMUM SLOPE REQUIREMENTS TO PREVENT PONDING SHALL BE AS FOLLOWS:
 - CURB GUTTER: 0.50%
 - CONCRETE SURFACES: 1.00%
 - ASPHALT SURFACES: 1.00%
5. A MINIMUM SLOPE OF 1.00% SHALL BE PROVIDED AWAY FROM ALL BUILDINGS. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FROM THE BUILDING IS ACHIEVED AND SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IF THIS CONDITION CANNOT BE MET.
6. FOR PROJECTS WHERE BASEMENTS ARE PROPOSED, THE DEVELOPER IS RESPONSIBLE TO DETERMINE THE DEPTH TO GROUNDWATER AT THE LOCATION OF THE PROPOSED STRUCTURE. IF GROUNDWATER IS ENCOUNTERED WITHIN THE BASEMENT AREA, SPECIAL CONSTRUCTION METHODS SHALL BE UTILIZED AND REVIEWED/APPROVED BY THE CONSTRUCTION CODE OFFICIAL. IF SUMP PUMPS ARE UTILIZED, ALL DISCHARGES SHALL BE CONNECTED DIRECTLY TO THE PUBLIC STORM SEWER SYSTEM WITH APPROVAL FROM THE GOVERNING STORM SEWER SYSTEM AUTHORITY.

ADA NOTES

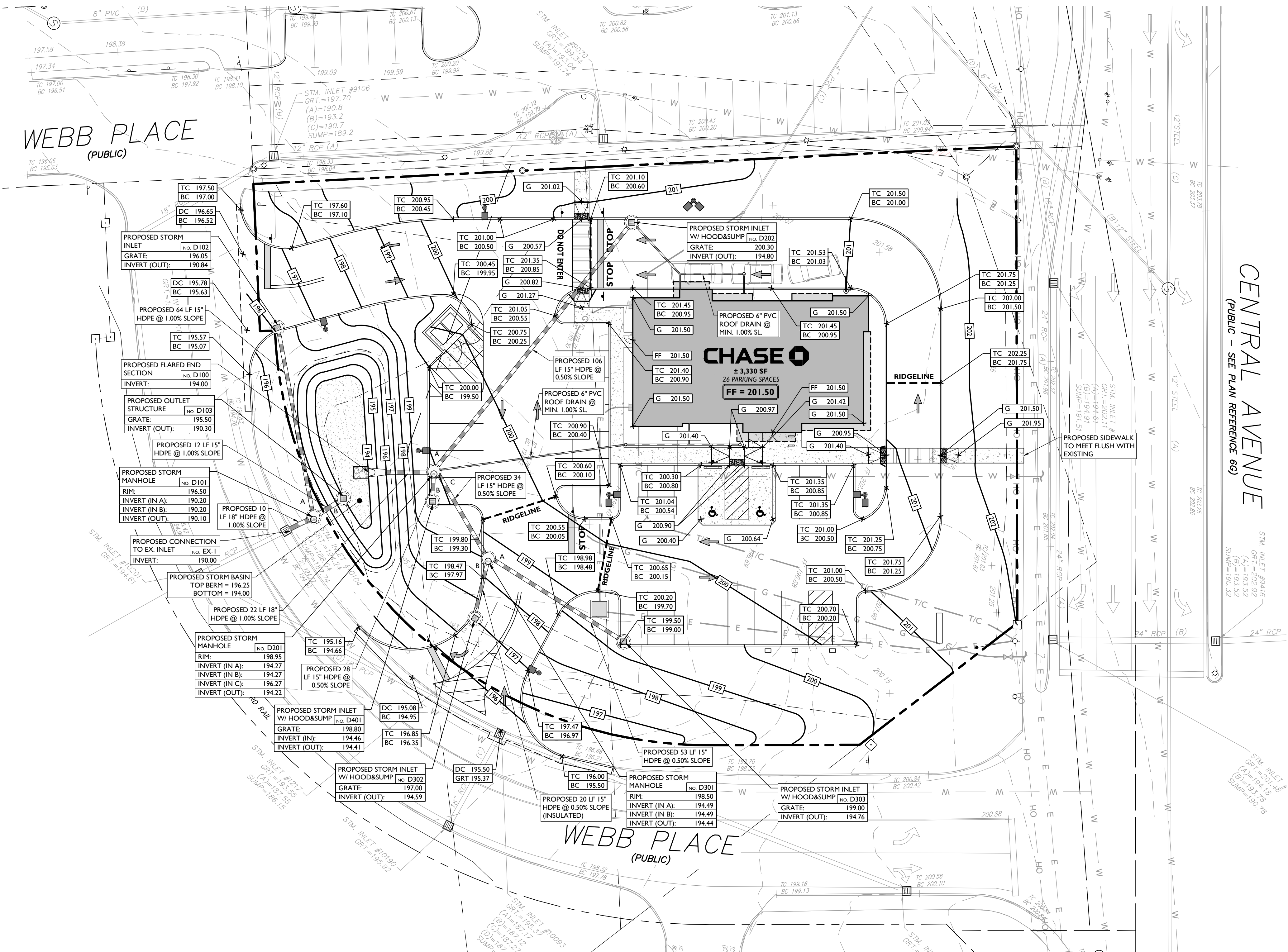
1. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION WITHIN THE ADA PARKING SPACES AND ACCESS AISLES.
2. THE CONTRACTOR SHALL PROVIDE COMPLIANT SIGNAGE AT ALL ADA PARKING AREAS IN ACCORDANCE WITH STATE GUIDELINES.
3. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 5.00% RUNNING SLOPE AND A MAXIMUM OF 2.00% CROSS SLOPE ALONG WALKWAYS WITHIN THE ACCESSIBLE PATH OF TRAVEL (SEE THE SITE PLAN FOR THE LOCATION OF THE ACCESSIBLE PATH). THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE ACCESSIBLE PATH OF TRAVEL IS 36 INCHES WIDE OR GREATER UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
4. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION AT ALL LANDINGS. LANDINGS INCLUDE, BUT ARE NOT LIMITED TO, THE TOP AND BOTTOM OF AN ACCESSIBLE RAMP, AT ACCESSIBLE BUILDING ENTRANCES, AT AN AREA IN FRONT OF A WALK-UP ATM, AND AT TURNING SPACES ALONG THE ACCESSIBLE PATH OF TRAVEL. THE LANDING AREA SHALL HAVE A MINIMUM CLEAR AREA OF 60 INCHES BY 60 INCHES UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
5. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 8.33% RUNNING SLOPE AND A MAXIMUM 2.00% CROSS SLOPE ON ANY CURB RAMPS ALONG THE ACCESSIBLE PATH OF TRAVEL. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 10.00% IF A LANDING AREA IS PROVIDED AT THE TOP OF THE RAMP. FOR ALTERATIONS, A CURB RAMP FLARE SHALL NOT HAVE A SLOPE GREATER THAN 8.33% IF A LANDING AREA IS NOT PROVIDED AT THE TOP OF THE RAMP. CURBS RAMPS SHALL NOT RISE MORE THAN 6 INCHES IN ELEVATION WITHOUT A HANDRAIL. THE CLEAR WIDTH OF A CURB RAMP SHALL BE NO LESS THAN 36 INCHES WIDE.
6. ACCESSIBLE RAMPS WITH A RISE GREATER THAN 6 INCHES SHALL CONTAIN COMPLIANT HANDRAILS ON BOTH SIDES OF THE RAMP AND SHALL NOT RISE MORE THAN 30" IN ELEVATION WITHOUT A LANDING AREA IN BETWEEN RAMP RUNS. LANDING AREAS SHALL ALSO BE PROVIDED AT THE TOP AND BOTTOM OF THE RAMP.
7. A SLIP RESISTANT SURFACE SHALL BE CONSTRUCTED ALONG THE ACCESSIBLE PATH AND WITHIN ADA PARKING AREAS.
8. THE CONTRACTOR SHALL ENSURE A MAXIMUM OF 1/4 INCHES VERTICAL CHANGE IN LEVEL ALONG THE ACCESSIBLE PATH. WHERE A CHANGE IN LEVEL BETWEEN 1/4 INCHES AND 1/2 INCHES EXISTS, CONTRACTOR SHALL ENSURE THAT THE TOP 1/4 INCH CHANGE IN LEVEL IS BEVELED WITH A SLOPE NOT STEEPER THAN 1 UNIT VERTICAL AND 2 UNITS HORIZONTAL (2:1 SLOPE).
9. THE CONTRACTOR SHALL ENSURE THAT ANY OPENINGS (GAPS OR HORIZONTAL SEPARATION) ALONG THE ACCESSIBLE PATH SHALL NOT ALLOW PASSAGE OF A SPHERE GREATER THAN 1/2 INCH.
10. ACCESSIBLE IMPROVEMENTS SHALL COMPLY WITH APPLICABLE REGULATIONS INCLUDING ANSI 117.1 AND NH RSA 155-A:3.

SYMBOL

- PROPERTY LINE
- 100 PROPOSED GRADING CONTOUR
- RIDGELINE ---
- PROPOSED DIRECTION OF DRAINAGE FLOW
- X G 100.00 PROPOSED GRADE SPOT SHOT
- X TC 100.50 BC 100.00 PROPOSED TOP OF CURB / BOTTOM OF CURB SPOT SHOT
- X FC 100.00 PROPOSED FLUSH CURB SPOT SHOT
- X DC 100.12 BC 100.00 PROPOSED DEPRESSED CURB / BOTTOM OF CURB SPOT SHOT
- X TW 102.00 BW 100.00 PROPOSED TOP OF WALL / BOTTOM OF WALL SPOT SHOT

STORMWATER CERTIFICATION NOTE

AFTER CONSTRUCTION, THE DESIGN ENGINEER SHALL PROVIDE SIGNED LETTER TO THE CITY ENGINEER CERTIFYING THAT THE STORMWATER SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS.



NOT APPROVED FOR CONSTRUCTION

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SITE PLAN SET

CHASE
PROPOSED BANK WITH
DRIVE-THRU ATM

TAX MAP 38, LOTS 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

JOSHUA H. KLINE, P.E.
NEW HAMPSHIRE LICENSE NO. 16330
LICENSED PROFESSIONAL ENGINEER

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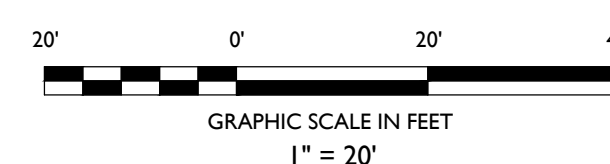
SCALE: 1" = 20' PROJECT ID: BOS-220137

TITLE:

**GRADING &
DRAINAGE PLAN**

DRAWING:

C-5

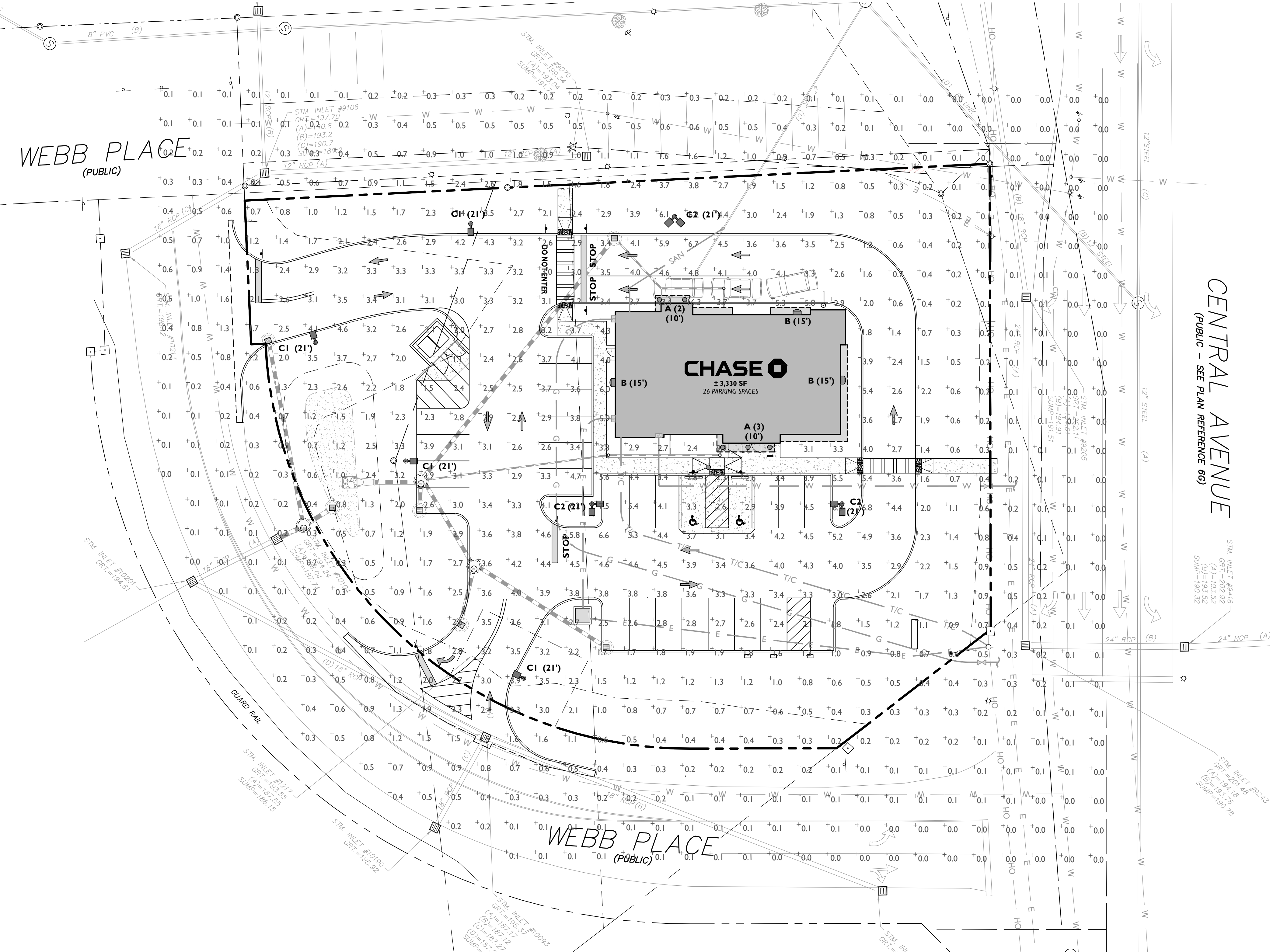


C-6

LIGHTING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 153-14.E(2).a)	ALL LIGHTING IN PARKING LOTS SHALL BE CUTOFF FIXTURES	COMPLIES
§ 153-14.E(2).b)	MAXIMUM MOUNTING HEIGHT = 25 FT	21 FT
§ 153-14.E(2).b)	MINIMUM ILLUMINATION IN PARKING AREA = NO LESS THAN 0.3 FC, NO MORE THAN 0.5 FC	0.5 FC
§ 153-14.E(2).b)	AVERAGE : MINIMUM UNIFORMITY RATIO = 6:1	7.0 : 1 (W)

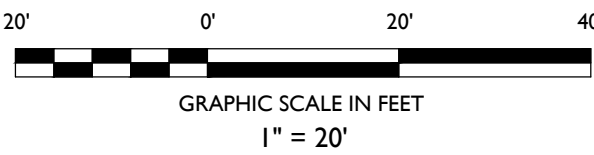
(W) WAIVER

PROPOSED LUMINAIRE SCHEDULE						
SYMBOL	LABEL	QUANTITY	SECURITY LIGHTING	DISTRIBUTION	LLF	MANUFACTURER
	A	5	OUTDOOR RECESSED FIXED DOWNLIGHT	DL	0.9	BULLET
	B	3	C-LITE CUTOFF LED WALL PACK	RDC	0.9	C-LITE
	C1	4	MRM MIRADA SHIELDED POLE MOUNTED AREA LIGHT	FT	0.9	LSI
	C2	3	MRM MIRADA SHIELDED POLE MOUNTED AREA LIGHT (DOUBLE AREA LIGHT @ 90°)	FT	0.9	LSI



SYMBOL	DESCRIPTION
---	PROPOSED CALCULATION AREA
---	PROPOSED ISOMETRIC LINE
A (XX')	PROPOSED LIGHTING FIXTURE (MOUNTING HEIGHT)
+XX	PROPOSED LIGHTING INTENSITY (FOOT CANDLES)
	PROPOSED AREA LIGHT
	PROPOSED BUILDING MOUNTED LIGHT

- GENERAL LIGHTING NOTES**
- THE LIGHTING LEVELS DEPICTED WITHIN THE PLAN SET ARE CALCULATED UTILIZING DATA OBTAINED FROM THE LISTED MANUFACTURER. ACTUAL ILLUMINATION LEVELS AND PERFORMANCE OF ANY PROPOSED LIGHTING FIXTURE MAY VARY DUE TO UNCONTROLLABLE VARIABLES SUCH AS WEATHER, VOLTAGE SUPPLY, LAMP TOLERANCE, EQUIPMENT SERVICE LIFE AND OTHER VARIABLE FIELD CONDITIONS.
 - WHERE APPLICABLE, THE EXISTING LIGHT LEVELS DEPICTED WITHIN THE PLAN SET SHALL BE CONSIDERED APPROXIMATE. THE EXISTING LIGHT LEVELS ARE BASED ON FIELD OBSERVATIONS AND THE MANUFACTURER'S DATA OF THE ASSUMED OR MOST SIMILAR LIGHTING FIXTURE MODEL.
 - UNLESS NOTED ELSEWHERE WITHIN THIS PLAN SET, THE LIGHT LOSS FACTORS USED IN THE LIGHTING ANALYSIS ARE AS FOLLOWS:
 - LIGHT EMITTING DIODES (LED): 0.90
 - HIGH PRESSURE SODIUM: 0.72
 - METAL HALIDE: 0.72
 - THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING, PRIOR TO THE START OF CONSTRUCTION, OF ANY PROPOSED LIGHTING LOCATIONS THAT CONFLICT WITH EXISTING PROPOSED DRAINAGE, UTILITY, OR OTHER IMPROVEMENTS.
 - THE CONTRACTOR IS RESPONSIBLE TO PREPARE A WIRING PLAN AND PROVIDE ELECTRIC SERVICE TO ALL PROPOSED LIGHTING FIXTURES. THE CONTRACTOR IS REQUIRED TO PREPARE AN AS-BUILT PLAN OF WIRING AND PROVIDE COPIES TO THE OWNER AND STONEFIELD ENGINEERING & DESIGN, LLC.
- ATM LIGHTING NOTES:**
- THE CONTRACTOR SHALL REPLACE LAMP COVERS, RE-LAMP AND RE-BALLAST EXISTING LIGHT FIXTURES AS INDICATED WITHIN THE PLAN SET. THE EXISTING FIXTURE HEIGHT SHALL BE MAINTAINED UNLESS INDICATED OTHERWISE. THE LIGHTING DESIGN IS SUBJECT TO CHANGE IF THE EXISTING LIGHT FIXTURES ARE NOT GREATER THAN OR EQUAL TO THE FOLLOWING WATTAGE:
FIXTURE 'X' = MINIMUM X WATTS
 - PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING IF THE EXISTING LIGHT FIXTURES ARE NOT THE MINIMUM WATTAGE SPECIFIED WITHIN THE PLAN SET.
 - THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY EXISTING LIGHT POLES IDENTIFIED FOR REUSE WITH A PROPOSED LIGHT FIXTURE(S) SHALL BE IN ACCEPTABLE WORKING CONDITION AND HAVE THE CAPACITY TO SUPPORT THE PROPOSED LIGHT FIXTURE(S). ANY MOUNTING EQUIPMENT REQUIRED TO ATTACH THE PROPOSED LIGHTING FIXTURE TO THE EXISTING LIGHT POLE SHALL BE PROVIDED BY THE CONTRACTOR.
 - THE CONTRACTOR SHALL CONFIRM THAT THE LOCATION OF ANY PROPOSED BUILDING MOUNTED LIGHTING FIXTURE WILL NOT CONFLICT WITH ANY EXISTING OR PROPOSED STRUCTURAL ELEMENT (E.G. CANOPY SUPPORT BEAMS). THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC IN WRITING OF ANY FIXTURE CONFLICT PRIOR TO THE START OF CONSTRUCTION.
 - ALL EXISTING TREE LIMBS WITHIN THE 60 FOOT ATM RADIUS SHOWN IN THE PLAN SET SHALL BE TRIMMED TO A MINIMUM OF 6 FEET ABOVE GRADE. ALL SHRUBS WITHIN THE 60 FOOT ATM RADIUS SHALL BE TRIMMED TO A MINIMUM OF 36 INCHES ABOVE GRADE. ALL BRUSH SHALL BE REMOVED. THE CONTRACTOR SHALL CONSIDER ALL FUTURE GROWTH AND FULL BLOOM WHEN TRIMMING LANDSCAPING. EXISTING TREE LIMBS ADJACENT TO LIGHTING FIXTURES SHALL BE TRIMMED AS REQUIRED TO PREVENT LIGHT INTERFERENCE.
 - PRIOR TO BID, CONTRACTOR SHALL VERIFY EXISTING EXTERIOR LIGHTING CONDITIONS AFTER DUSK AND NOTIFY THE DEVELOPER/OWNER AND STONEFIELD ENGINEERING & DESIGN, LLC OF DAMAGED OR INOPERABLE LIGHTS. THE CONTRACTOR SHALL REPAIR ALL INOPERABLE LIGHTS UNLESS OTHERWISE NOTED WITHIN THIS PLAN SET.
 - THE ILLUMINATION LEVELS DEPICTED WITHIN THE PLAN SET ARE BASED ON REGULATORY STATE STANDARDS FOR SAFETY LIGHTING AND ON CLIENT STANDARDS.
 - ALL LIGHTING FIXTURES, UNLESS OTHERWISE NOTED WITHIN THIS PLAN SET, HAVE THE PHOTOCYCLE OPTION ENABLED.
 - EXISTING LIGHTING FIXTURES CONTROLLED BY OUTSIDE ENTITIES (E.G. LANDLORD) HAVE BEEN EXCLUDED FROM THE LIGHTING ANALYSIS REFLECTED WITHIN THE PLAN SET. THE PROPOSED LIGHT LEVELS HAVE BEEN DESIGNED TO COMPLY WITH ALL APPLICABLE ATM AND SAFETY LIGHTING REQUIREMENTS INDEPENDENT OF ANY UNCONTROLLED LIGHT FIXTURES.



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120 Washington Street, Suite 201, Salem, MA 01970
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CHASE
PROPOSED BANK WITH
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TAX MAP 38, LOTS 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
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JOSHUA H. KLINE, P.E.
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STONEFIELD
engineering & design

SCALE: 1" = 20' PROJECT ID: BOS-220137

TITLE:

LIGHTING PLAN

DRAWING:

C-7

1.A. TEMPORARY SEEDING AND MULCHING:
TIME OF PLANTING - PLANTING SHOULD PREFERABLY BE DONE BETWEEN APRIL, 1 AND JUNE 30, AND SEPTEMBER 1 THROUGH SEPTEMBER 30. IF PLANTING IS DONE IN THE MONTHS OF JULY AND AUGUST, IRRIGATION MAY BE REQUIRED. IF PLANTING IS DONE BETWEEN OCTOBER 1 AND MARCH 31, MULCH SHOULD BE APPLIED IMMEDIATELY AFTER PLANTING. IF SEEDING IS DONE DURING THE SUMMER MONTHS, IRRIGATION OF SOME SORT WILL PROBABLY BE NECESSARY.
SITE PREPARATION - BEFORE SEEDING, INSTALL NEARBY SURFACE RUNOFF CONTROL MEASURES SUCH AS GRADIENT TERRACES, INTERCEPTOR DIKEWAYS, LEVEL SPREADERS, AND SEDIMENT BASINS.
SEEDS - PREPARE THE SEEDS TO BE SEEDS WITH A FAIRLY FINE SUEFACE. PERFORM ALL CULTURAL OPERATIONS ACCROSS OR AT RIGHT ANGLES TO THE SLOPE.
LIMING AND FERTILIZATION - APPLY UNIFORMLY 2 TONS OF GROUND LIMESTONE PER ACRE (100 LBS. PER 1,000 SQ. FT.) OR ACCORDING TO SOIL TEST. APPLY UNIFORMLY 10-10-10 ANALYSIS FERTILIZER AT THE RATE OF 400 LBS. PER ACRE (4 LBS. PER 1,000 SQ. FT.) OR AS INDICATED BY SOIL TEST. THE RATE OF NITROGEN SHOULD BE IN ORGANIC FORM. WORK IN LIMES AND FERTILIZER TO A DEPTH OF 4 INCHES USING ANY SUITABLE EQUIPMENT.
SEEDING - SELECT ADAPTED SPECIES FROM THE ACCOMPANYING TABLE IN THE MA SEC HANDBOOK. APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED IN THE TABLE BY BROADCASTING, DRILLING OR HYDRAULIC APPLICATION. COVER SEEDS WITH SUITABLE MULCH.
MULCH - USE AN EFFECTIVE MULCH, SUCH AS CLEAN GRAIN STRAW, TACKED AND/OR TIED DOWN WITH NETTING TO PROTECT SEEDS AND ENCOURAGE PLANT GROWTH.

[illegible]

LIME AND FERTILIZER - APPLY LIME AND FERTILIZER ACCORDING TO SOIL TEST AND CURRENT EXTENSION SERVICE RECOMMENDATIONS. IN ABSENCE OF A SOIL TEST, APPLY LIME (A PH OF 5.5 - 6.0 IS DESIRED) AT A RATE OF 2.5 TONS PER ACRE AND 10-20-20 ANALYSIS FERTILIZER AT A RATE OF 500 POUNDS PER ACRE (40% OF 5-0-20 TO BE IN AN ORGANIC OR SLOW RELEASE FORM). INCORPORATE LIME AND FERTILIZER INTO THE TOP 2-3 INCHES OF SOIL. SEEDING DATES - SEEDING OPERATIONS SHOULD BE PERFORMED WITHIN ONE OF THE FOLLOWING PERIODS:

- APRIL 1 - MAY 31
- AUGUST 1 - SEPTEMBER 10
- NOVEMBER 1 - DECEMBER 15 AS A DORMANT SEEDING (SEEDING RATES SHALL BE INCREASED BY 50% FOR DORMANT SEEDINGS)

- DRILL SEEDINGS (DE-AWNED OR DE-BEARED SEED SHOULD BE USED UNLESS THE DRILL IS EQUIPPED WITH SPECIAL FEATURES TO ACCEPT AWNED SEED).
- BROADCAST SEEDING WITH SUBSEQUENT ROLLING, CULTIPACKING OR TRACKING THE SEEDING WITH SMALL TRACK CONSTRUCTION EQUIPMENT. TRACKING SHOULD BE ORIENTED UP AND DOWN THE SLOPE.
- HYDROSEEDING WITH SUBSEQUENT TRACKING. IF WOOD FIBER MULCH IS USED, IT SHOULD BE APPLIED AS A SEPARATE OPERATION AFTER SEEDING AND TRACKING TO ASSURE GOOD SEED TO SOIL CONTACT.

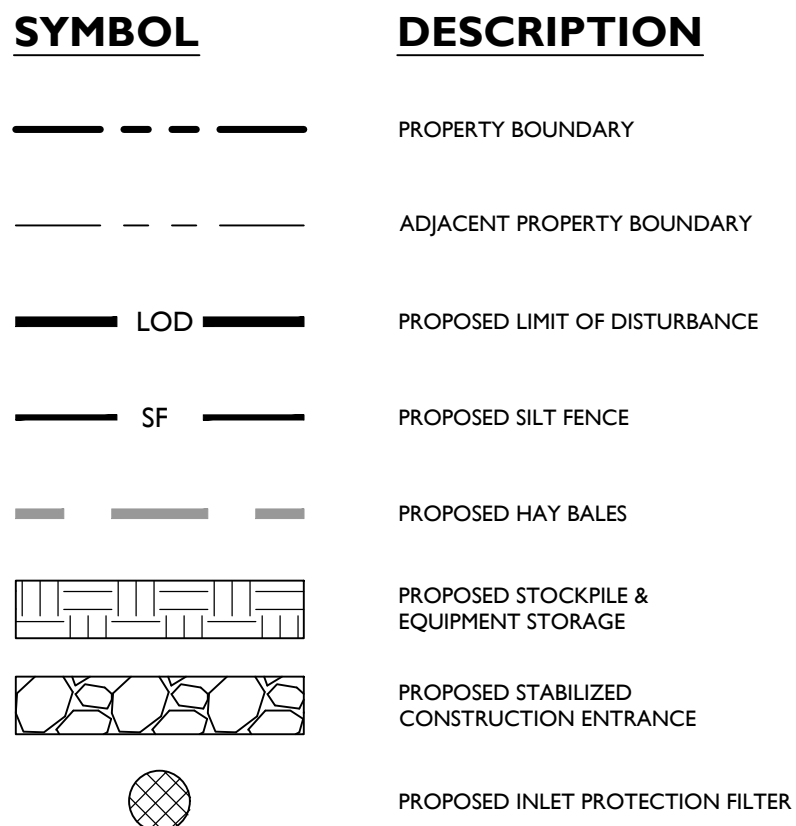
MULCH - MULCH THE SEEDINGS WITH STRAW APPLIED AT THE RATE OF 1/2 TONS PER ACRE.

ANCHOR THE MULCH WITH EROSION CONTROL, NETTING OR FABRIC ON SLOPING AREAS.

- RECOMMENDED MIXTURES FOR PERMANENT SEEDING CONDITIONS ON THE TABLE IN THE M4 SEED HANDBOOK. SELECTED MIXTURES WHICH ARE SUITED TO THE SITE CONDITIONS AND PLANNED USES, SOIL MOISTURE CONDITIONS, AND THE MATING AND SEED FACTOR, ARE USUALLY CLASSIFIED AS FOLLOWS:
- DRY - SANDS AND GRAVELS TO SANDY LOAMS; NO EFFECTIVE MOISTURE SUPPLY FROM SEEPAGE OR A HIGH WATER TABLE.
- MOIST - WELL DRAINED TO MODERATELY WELL DRAINED SANDY LOAMS, LOAMS, AND FINER, OR COARSER TEXTURED MATERIAL WITH MODERATE INFLUENCE ON ROOT ZONE FROM SEEPAGE OR A HIGH WATER TABLE.
- WET - HEAVILY TEXTURED MATERIALS WITH VERY NEAR THE SOIL SURFACE, OR WITH ENDURING SEEPAGE, WHEN OTHER FACTORS STRONGLY INFLUENCE SITE CONDITIONS, THE PLANTS SELECTED MUST ALSO BE TOLERANT OF THESE CONDITIONS.

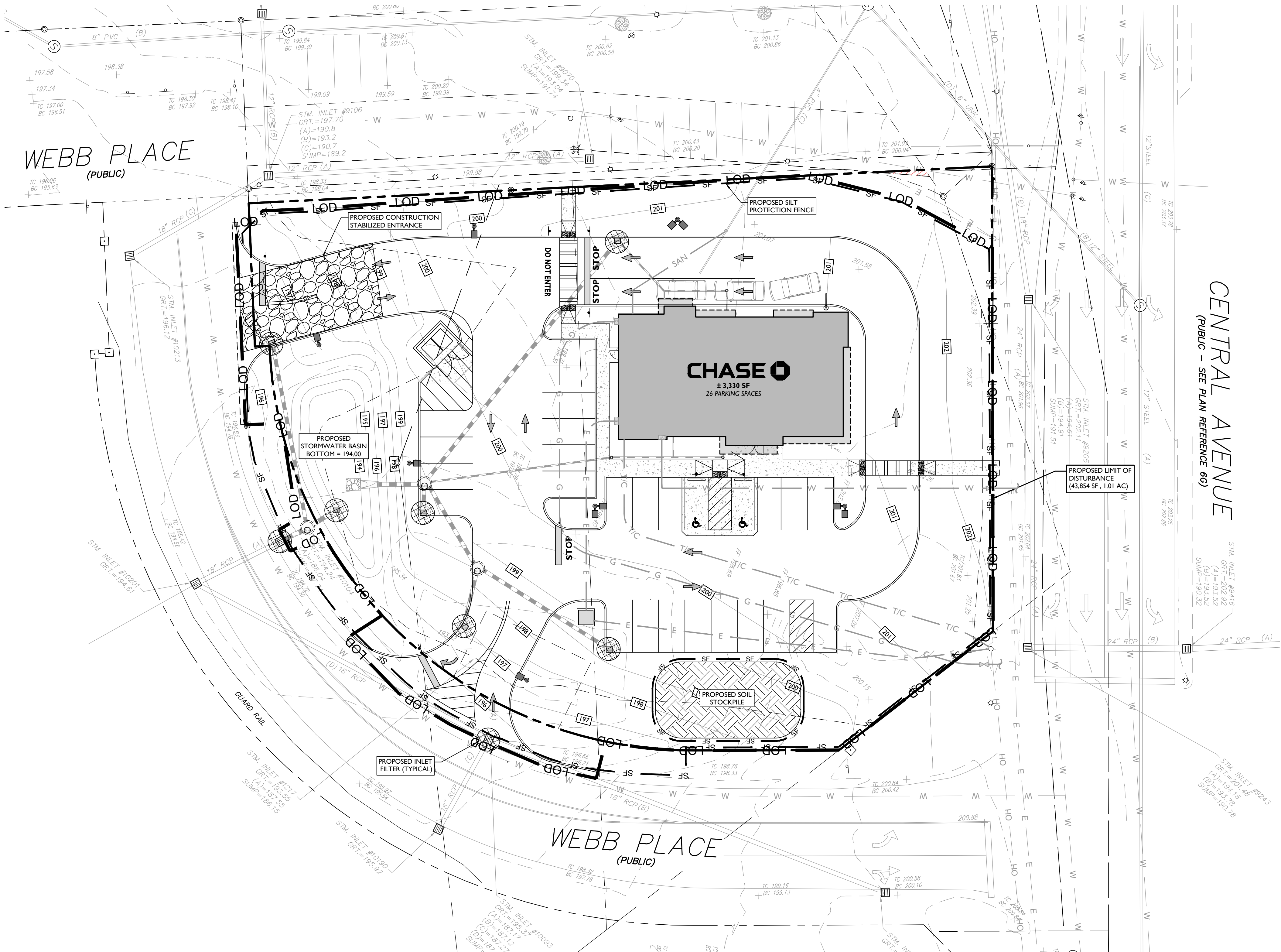
1. INSTALL CONTROL MEASURES IDENTIFYING LIMITS OF DISTURBANCE AND AREAS INTERNAL TO THE SITE THAT REQUIRE PROTECTION BEFORE START OF LAND DISTURBANCE.
2. PERFORM EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY POLLUTION PREVENTION MEASURES THAT ARE REQUIRED TO BE IN PLACE AND FUNCTIONAL BEFORE ANY EARTHWORK BEGINS. THIS SHALL BE DONE IN ACCORDANCE WITH THE MA SSC HANDBOOK AND/OR THE MA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (AS AMENDED), UPON ACCEPTABLE COMPLETION OF SITE PREPARATION AND INSTALLATION OF EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY POLLUTION PREVENTION MEASURES, SITE CONSTRUCTION ACTIVITIES MAY COMMENCE.
3. CONSTRUCTION ACTIVITIES:
 - 3.1 DEMOLISH EXISTING SITE FEATURES (1 WEEK).
 - 3.2 ROUGH GRADING AND TEMPORARY SEEDING (2 WEEKS).
 - 3.3 EXCAVATE AND INSTALL UTILITY IMPROVEMENTS IN ACCORDANCE WITH LOCAL UTILITY AUTHORITY REQUIREMENTS (3 WEEKS).
 - 3.4 BUILDING CONSTRUCTION AND SITE IMPROVEMENTS (12 WEEKS).
 - 3.5 CONSTRUCT RIGHT-OF-WAY IMPROVEMENTS (2 WEEKS).
 - 3.6 LANDSCAPING IMPROVEMENTS AND FINAL SEEDING (1 WEEK).
4. UPON COMPLETION OF SITE CONSTRUCTION ACTIVITIES, CONTRACTOR SHALL INITIATE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED.
5. PERFORM ROUTINE INSPECTIONS AND MAINTENANCE AND/OR MODIFICATION OF EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY POLLUTION PREVENTION MEASURES WHILE EARTHWORK IS ONGOING AS REQUIRED.
6. PERFORM FINAL SITE STABILIZATION OF ALL DISTURBED AREAS AFTER EARTHWORK HAS BEEN COMPLETED.
7. REMOVE OF TEMPORARY EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY POLLUTION PREVENTION MEASURES.

NOTE: TIME DURATIONS ARE APPROXIMATE AND ARE INTENDED TO ACT AS A GENERAL GUIDE TO THE CONSTRUCTION TIMELINE. ALL DURATIONS ARE SUBJECT TO CHANGE BY CONTRACTOR. CONTRACTOR SHALL SUBMIT CONSTRUCTION SCHEDULE TO CITY AND ENGINEER. CONTRACTOR SHALL PHASE CONSTRUCTION ACCORDINGLY



1. THE CONTRACTOR IS RESPONSIBLE FOR SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL AIR QUALITY STANDARDS.
3. THE CONTRACTOR IS RESPONSIBLE TO INSPECT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES WEEKLY AND AFTER A PRECIPITATION EVENT GREATER THAN 1 INCH. THE CONTRACTOR SHALL INITIATE AN INSPECTION LOG ON SITE AND DOCUMENT CORRECTIVE ACTION TAKEN THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED.

1. **VEGETATIVE COVER** - FOR DISTURBED AREAS NOT SUBJECT TO FLOODING, VEGETATION PROVIDES THE MOST PRACTICAL METHOD.
2. **MULCH (INCLUDING GRAVEL MULCH)** - WHEN PROPERLY APPLIED, MULCH OFFERS A FAST, EFFECTIVE MEANS OF CONTROLLING DUST.
3. **EMULSIONS** - LATEX EMULSIONS OR RESIN IN WATER CAN BE SPRAYED ONTO MINERAL SOIL TO PREVENT PARTICLES FROM BLOWING AWAY.
4. **HYDRAULIC LIME** - CALCIUM CHLORIDE MAY BE APPLIED BY MECHANICAL SPREADER AS LOOSE, DRY GRANULES OR FLAKES AT A RATE THAT KEEPS THE SURFACE MOIST BUT NOT SO HIGH AS TO CAUSE WATER POLLUTION OR PLANT DAMAGE.
5. **WET SPRINKLING** - WHEN THE SURFACE OF THE ROAD SURFACE IS WET, SPRINKLING IS ESPECIALLY EFFECTIVE FOR DUST CONTROL ON HAUL ROADS AND OTHER TRAFFIC ROUTES.
6. **WIND BREAKS** - PLANTING TREES OR BUSHES ALONG ROADS CAN ALSO BE EFFECTIVE FOR DUST CONTROL.
7. **BARRIERS** - A BOARD FENCE, WIND FENCE, SEDIMENT FENCE, OR A SIMILAR BARRIER CAN CONTROL AIR CURRENTS AND BLOWING DUST. BARRIERS CAN BE CONSTRUCTED OF WOOD AND THEY PREVENT EROSION BY OBSTRUCTING THE WIND NEAR THE GROUND AND REDUCING THE VELOCITY OF THE WIND. BARRIERS GENERALLY PROTECT SOIL DOWNWARD FOR A DISTANCE OF 10 TIMES THE HEIGHT OF THE BARRIER. BARRIERS ARE LESS EFFECTIVE IF STANDS OF EXISTING TREES MAY ALSO SERVE AS WIND BARRIERS.



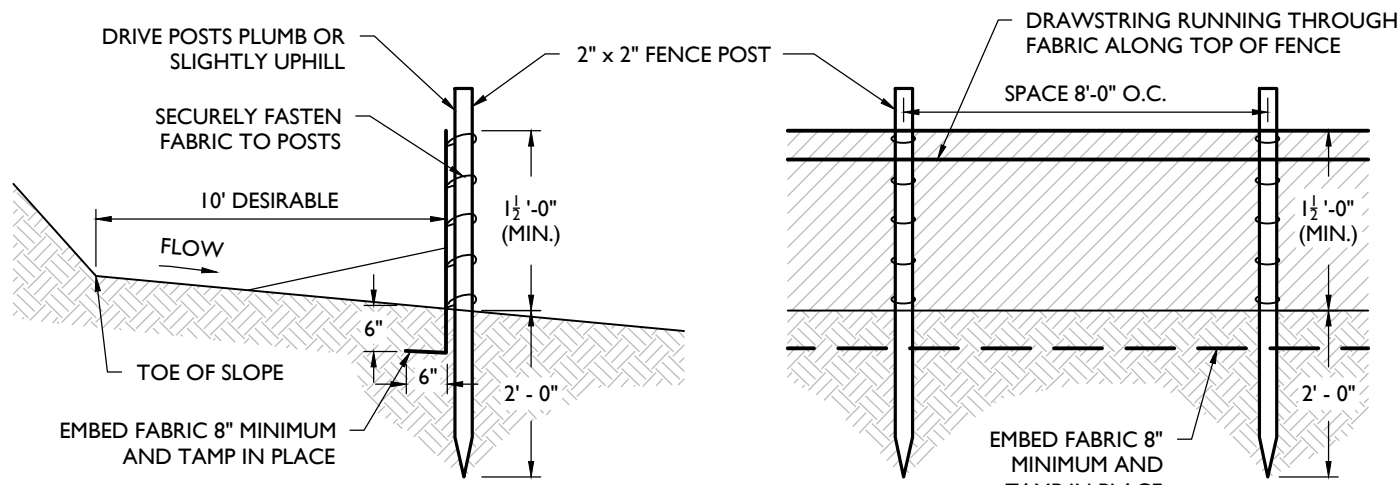
20' 0' 20' 40'

GRAPHIC SCALE IN FEET

1" = 20'

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Z:\MOTION\052102\052102137 CONCRETE\1-3 WEBB PLACE DOVER, NH\CD\NOTHING\05-08-04\NSC.DWG

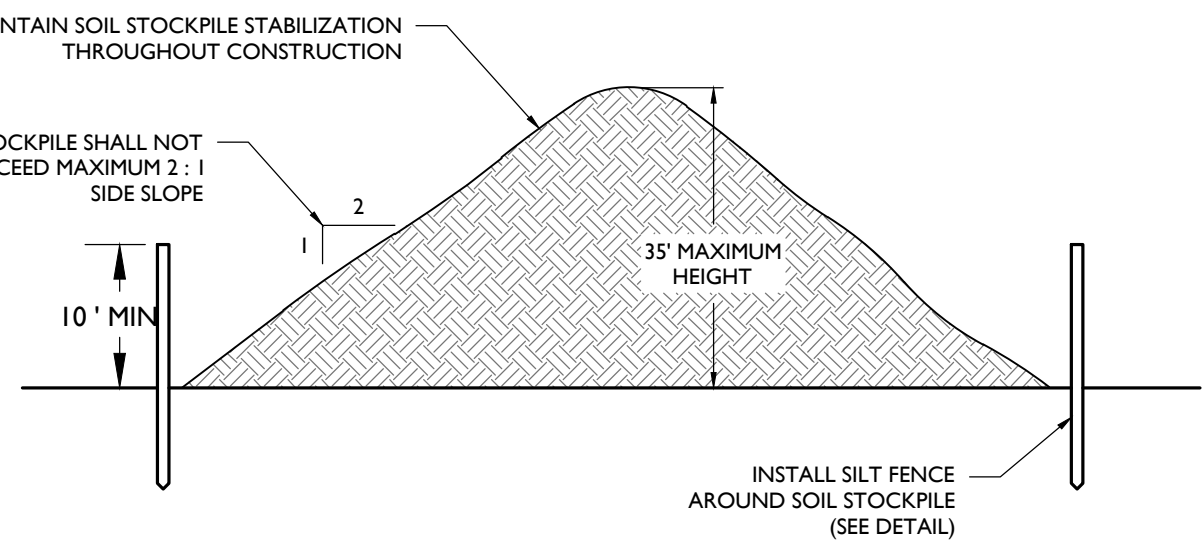


- NOTES:
1. SECURELY FASTEN GEOTEXTILE TO FENCE POST BY USE OF WIRE TIES, HOG RINGS, STAPLES OR POCKETS. FOUR TO SIX FASTENERS PER POST.
 2. GEOTEXTILE FABRIC TO BE EMBEDDED 8" (MIN.) AND TAMP IN PLACE.
 3. SECURELY FASTEN ENDS OF INDIVIDUAL ROLLS OF GEOTEXTILE TO A POST BY WRAPPING EACH END OF THE GEOTEXTILE AROUND THE POST TWICE AND ATTACHING AS SPECIFIED IN NOTE 1 ABOVE. SPLICING OF INDIVIDUAL ROLLS SHALL NOT OCCUR AT LOW POINTS.
 4. SET SILT FENCE WITHIN PROJECT LIMITS. 10'-0" IS DESIRABLE.

SILT FENCE DETAIL

NOT TO SCALE

1

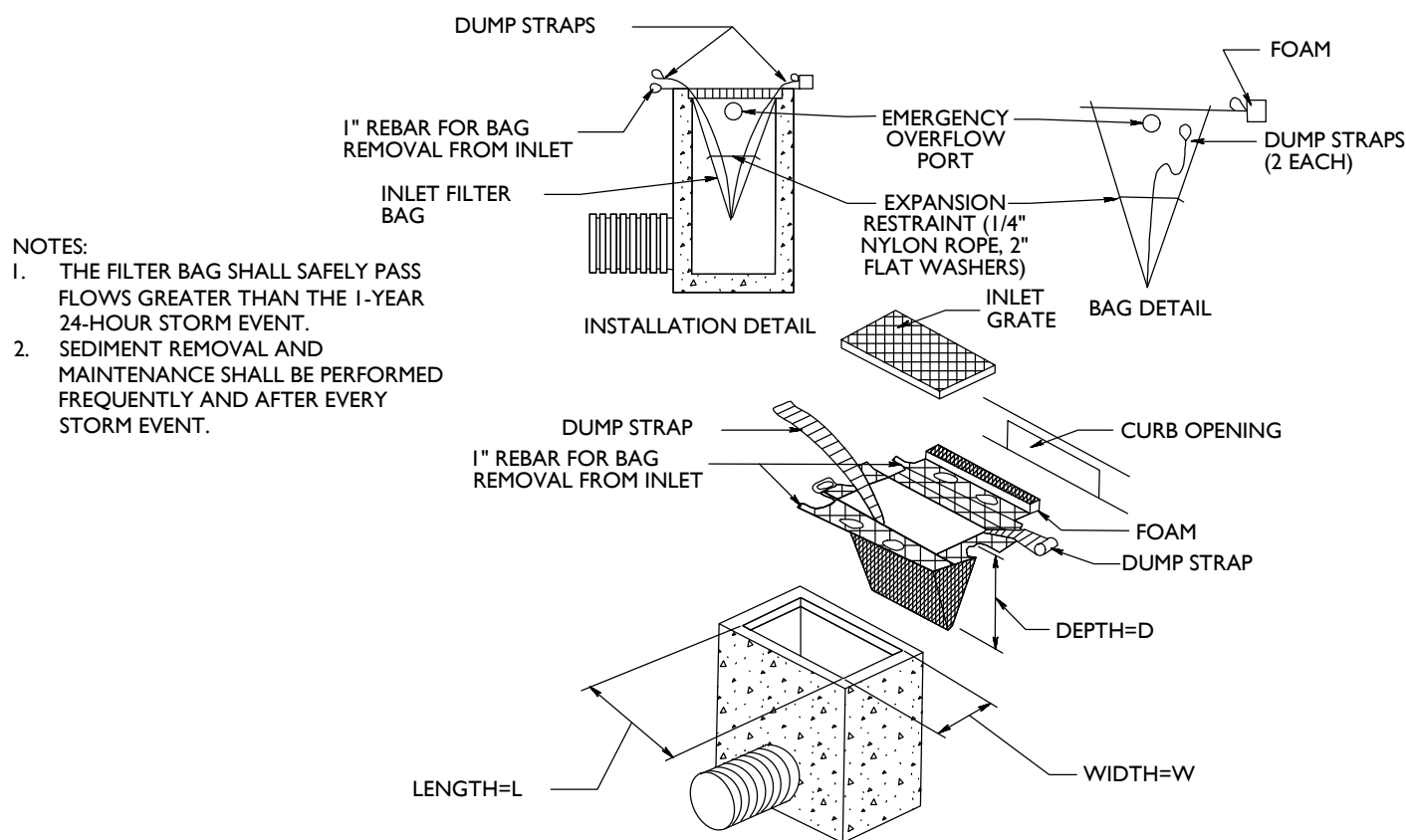


- NOTES:
1. LOCATE THE TOPSOIL STOCKPILE SO THAT IT DOES NOT INTERFERE WITH WORK ON THE SITE.
 2. SURROUND ALL TOPSOIL STOCKPILES WITH AN INTERCEPTOR DIKE WITH GRAVEL OUTLET AND SILT FENCE.
 3. EITHER SEED OR COVER STOCKPILES WITH CLEAR PLASTIC OR OTHER MULCHING MATERIALS WITHIN 7 DAYS OF THE FORMATION OF THE STOCKPILE.

SOIL STOCKPILE DETAIL

NOT TO SCALE

4

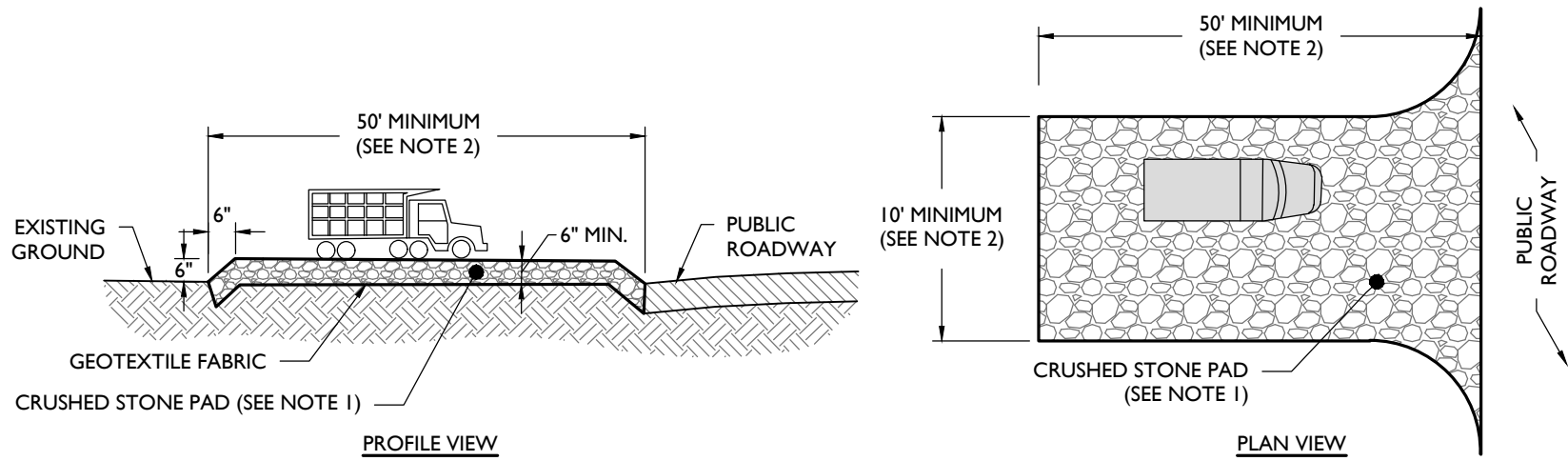


- NOTES:
1. THE FILTER BAG SHALL SAFELY PASS FLOWS GREATER THAN THE 1-YEAR 24-HOUR STORM EVENT.
 2. SEDIMENT REMOVAL AND MAINTENANCE SHALL BE PERFORMED FREQUENTLY AND AFTER EVERY STORM EVENT.

INLET FILTER BAG DETAIL

NOT TO SCALE

2

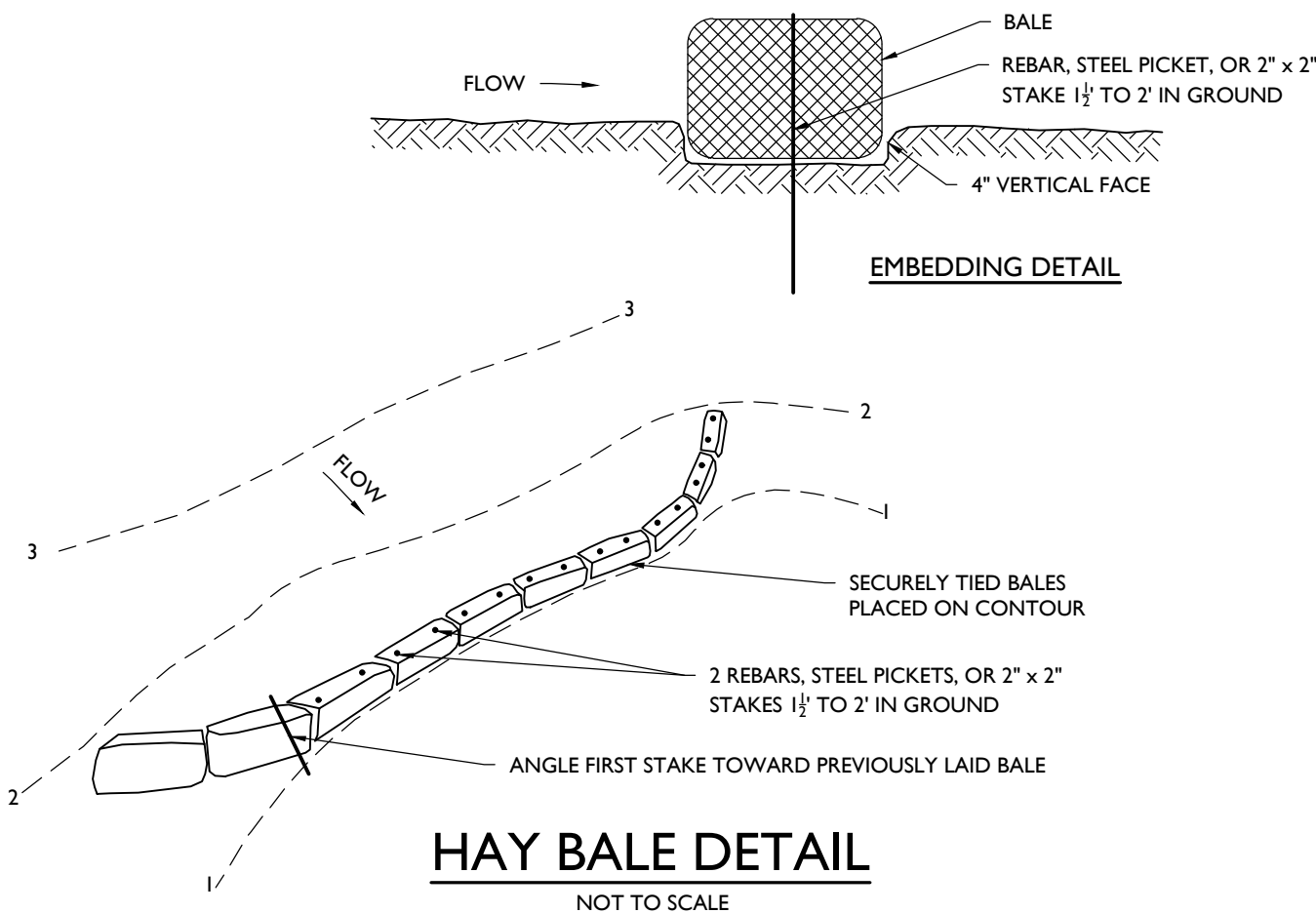


- NOTES:
1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 3-INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT PLACED ON A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
 2. THE MINIMUM LENGTH OF THE GRAVEL PAD SHALL BE 50 FEET. EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH MAY BE USED. THE WIDTH SHALL BE 10' MINIMUM OR THE FULL WIDTH OF THE ACCESS POINT, WHICHEVER IS GREATER.
 3. GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STONE FILL AND THE EARTH SURFACE BELOW THE PAD TO REDUCE THE MIGRATION OF SOIL PARTICLES FROM THE UNDERLYING SOIL INTO THE STONE AND VICE VERSA. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
 4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6 TO 8 INCHES HIGH WITH 3:1 SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
 5. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHOULD BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
 6. WASHING: IF THE SITE CONDITIONS ARE SUCH THAT THE MAJORITY OF MUD IS NOT REMOVED FROM THE VEHICLE TIRES BY THE GRAVEL PAD, THEN THE TIRES SHOULD BE WASHED BEFORE THE VEHICLE ENTERS THE ROAD OR STREET. THE WASH AREA SHOULD BE A LEVEL AREA WITH 3-INCH WASHED STONE MINIMUM, OR A COMMERCIAL RACK. WASH WATER SHOULD BE DIRECTED INTO A SEDIMENT TRAP, A VEGETATED FILTER STRIP, OR OTHER APPROVED SEDIMENT TRAPPING DEVICE. SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY WATERCOURSES.
 7. A FILTER FABRIC FENCE SHOULD BE INSTALLED DOWN-GRADIENT FROM THE CONSTRUCTION ENTRANCE IN ORDER TO CONTAIN ANY SEDIMENT-LADEN RUNOFF FROM THE ENTRANCE.

STABILIZED CONSTRUCTION ACCESS DETAIL

NOT TO SCALE

3



HAY BALE DETAIL

NOT TO SCALE

5

NOT APPROVED FOR CONSTRUCTION



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SITE PLAN SET

CHASE
PROPOSED BANK WITH
DRIVE-THRU ATM

TAX MAP 38, LOTS 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

JOSHUA H. KLINE, P.E.
NEW HAMPSHIRE LICENSE No. 16530
LICENSED PROFESSIONAL ENGINEER

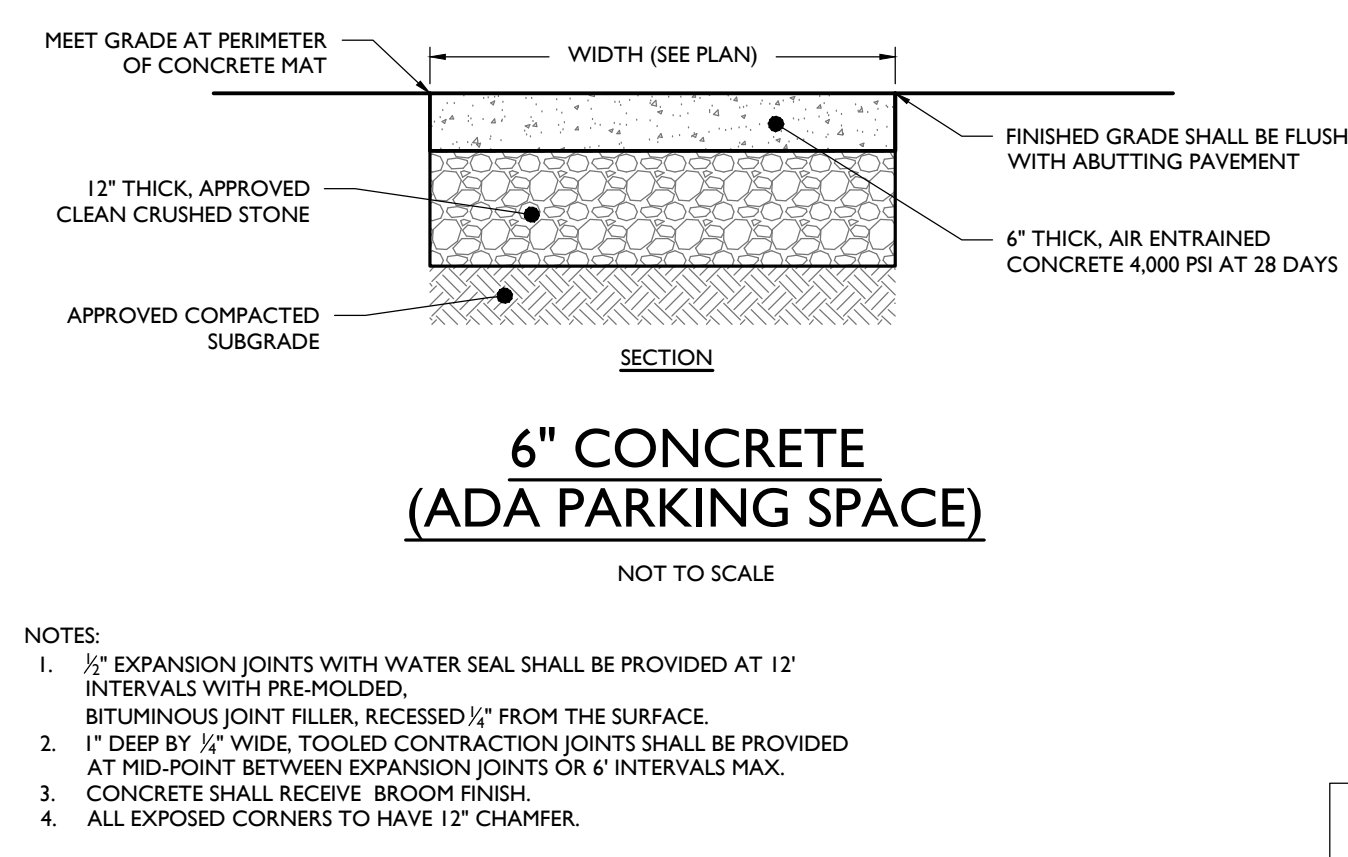
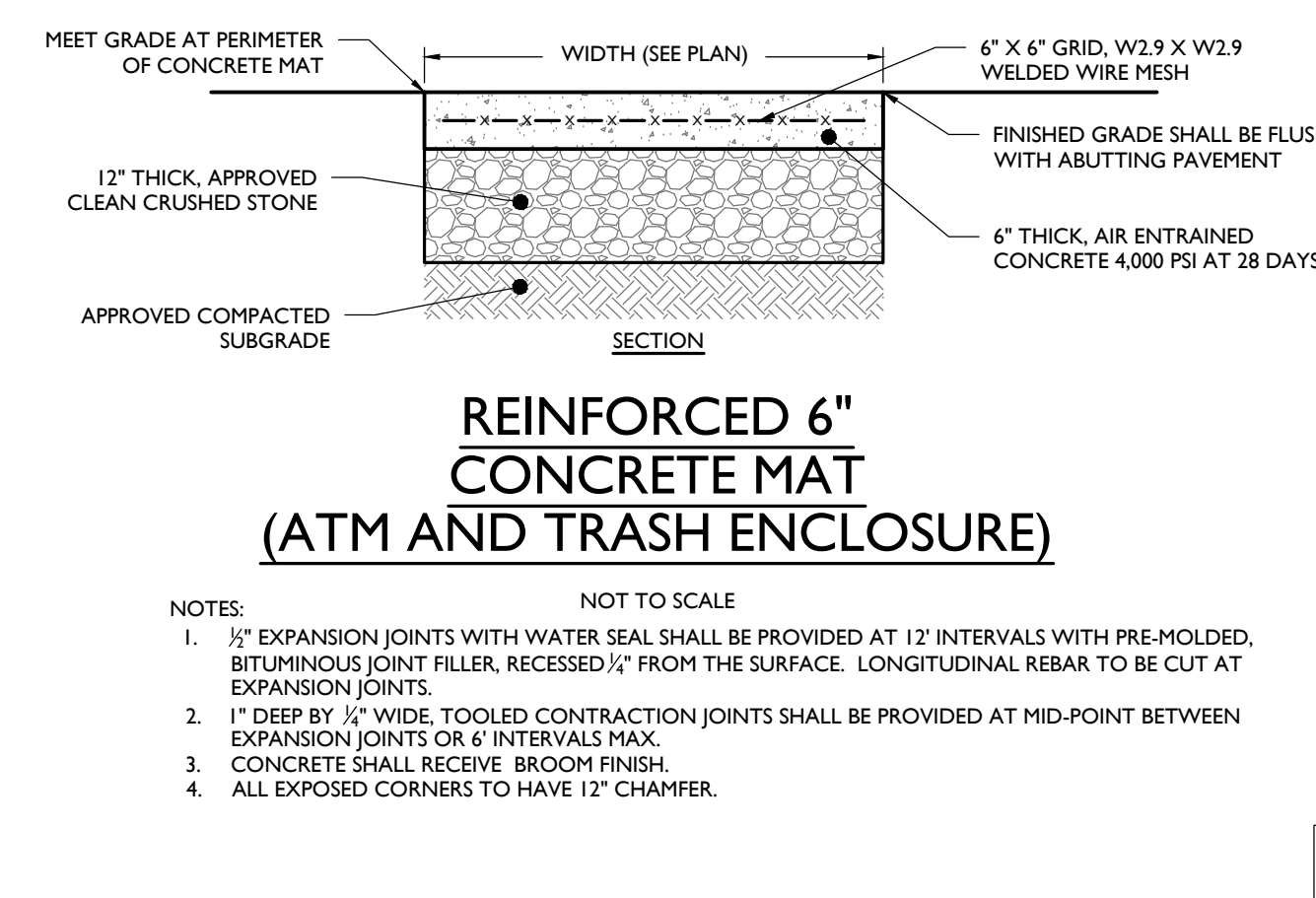
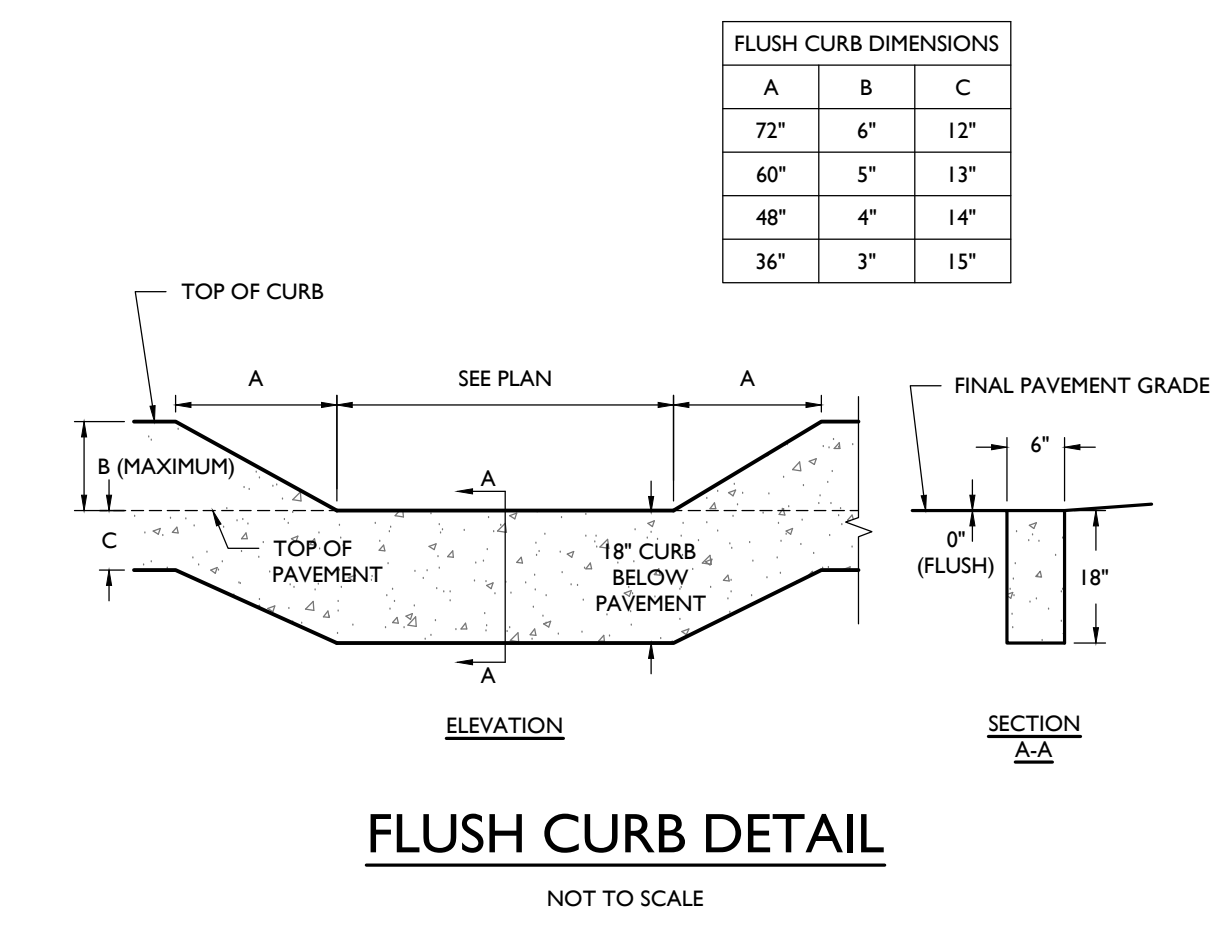
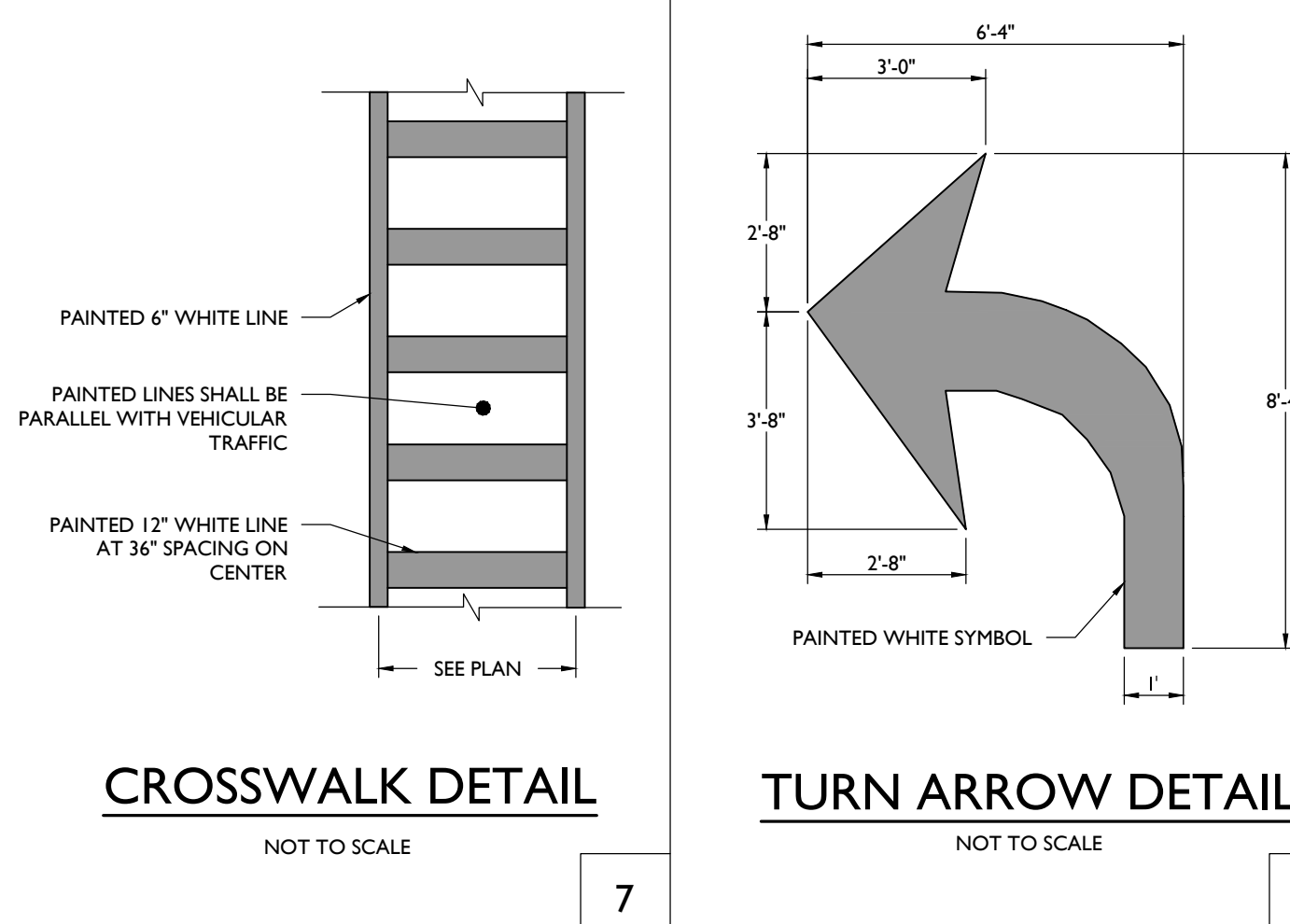
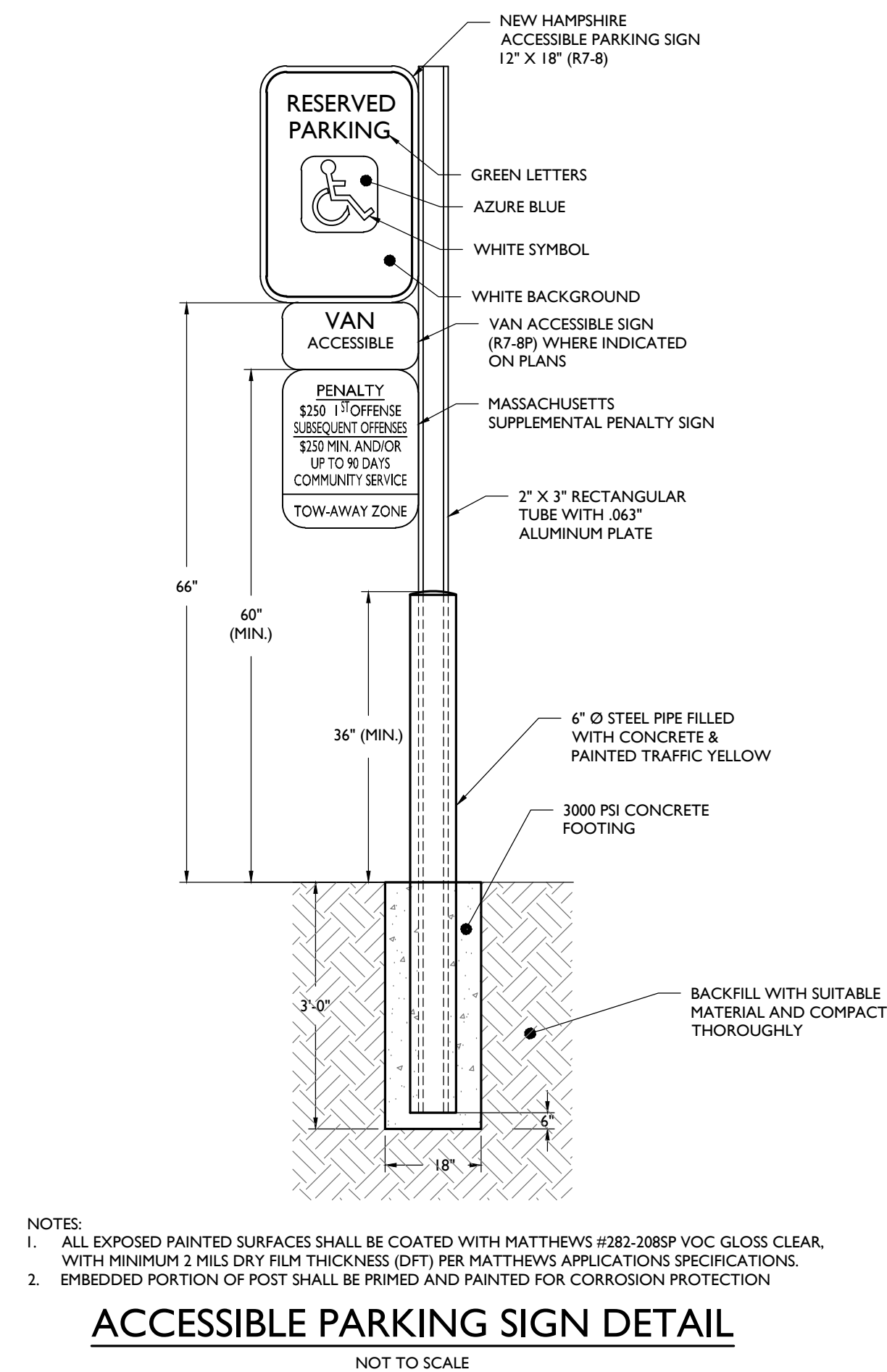
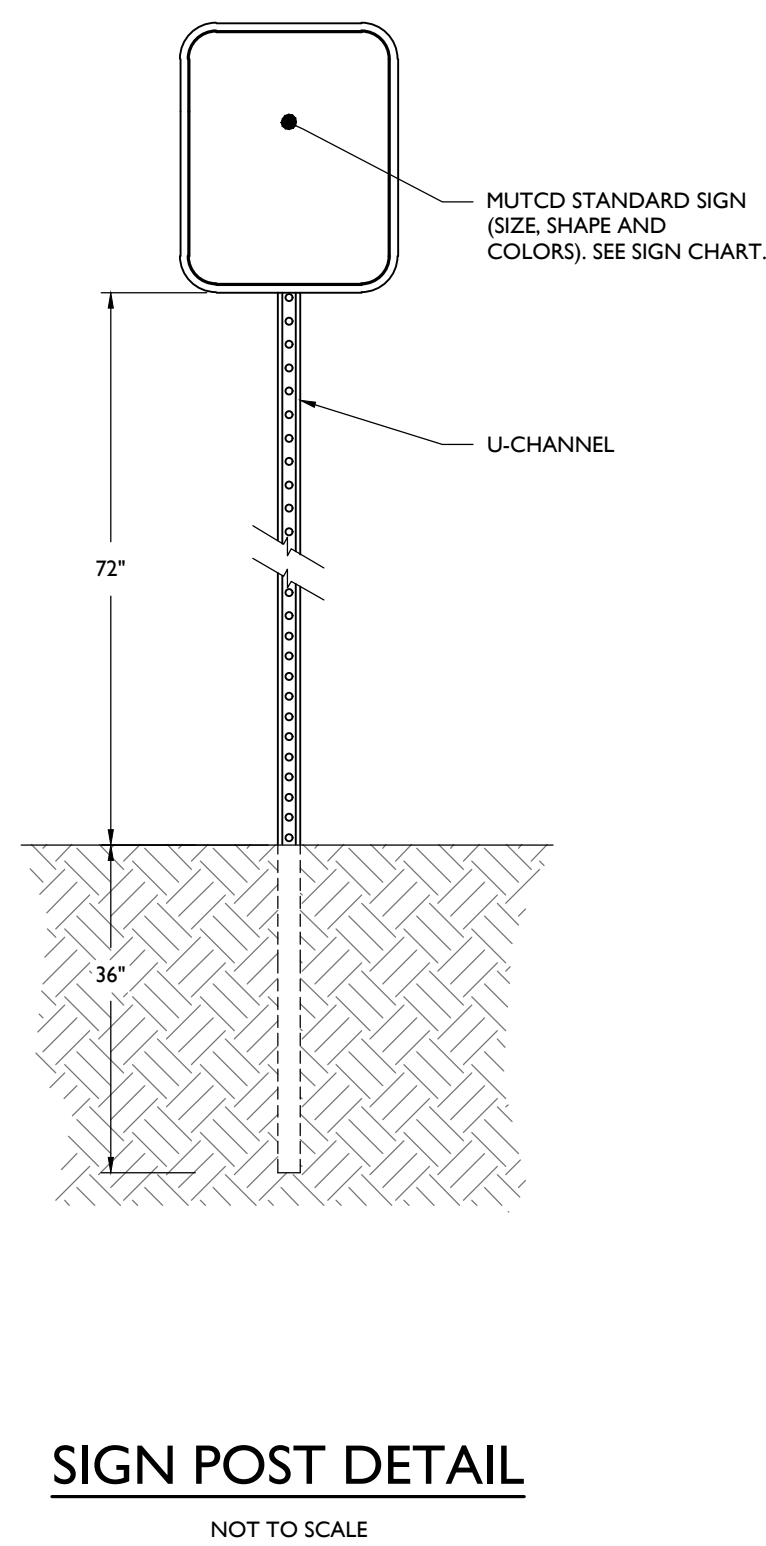
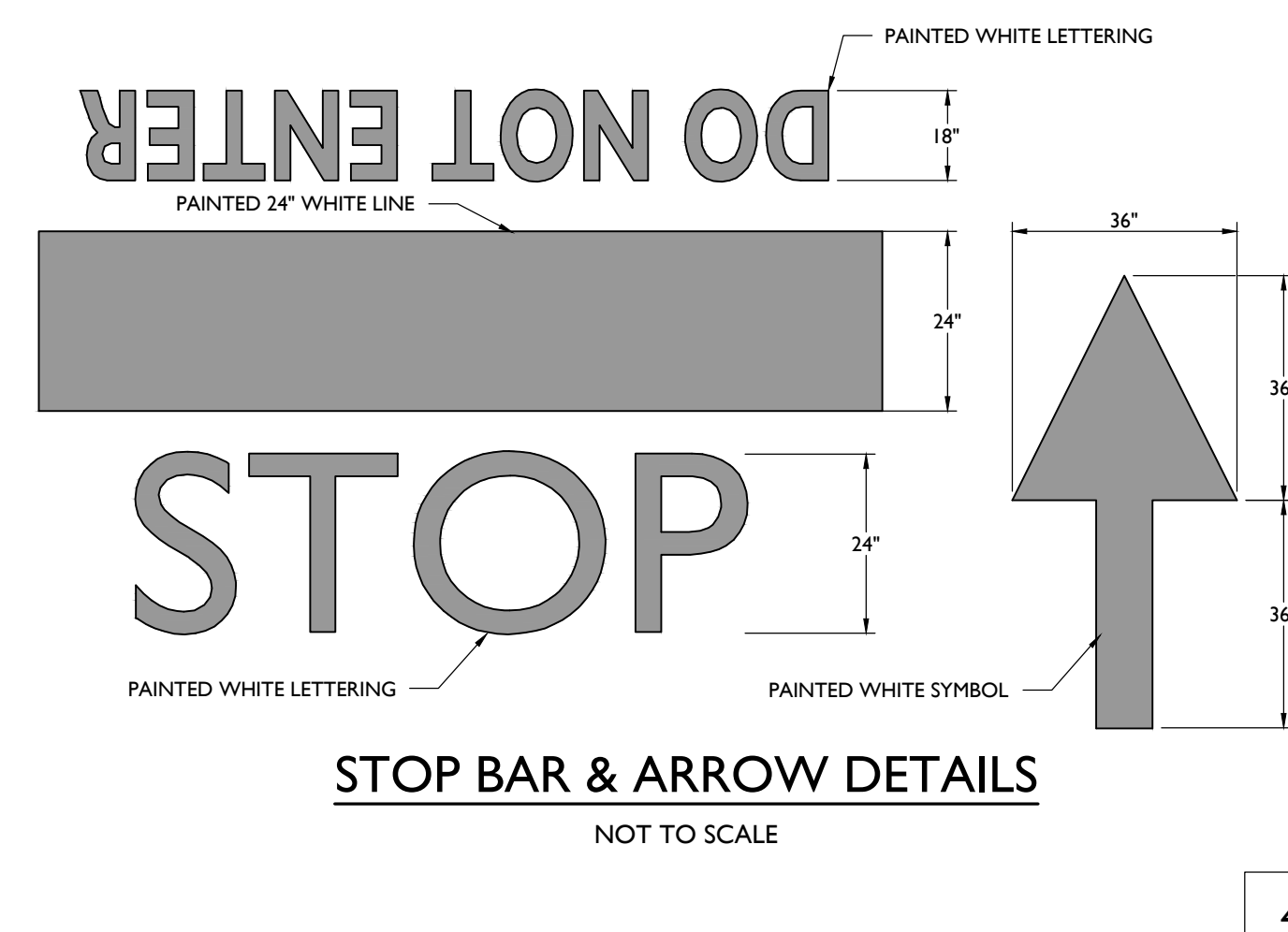
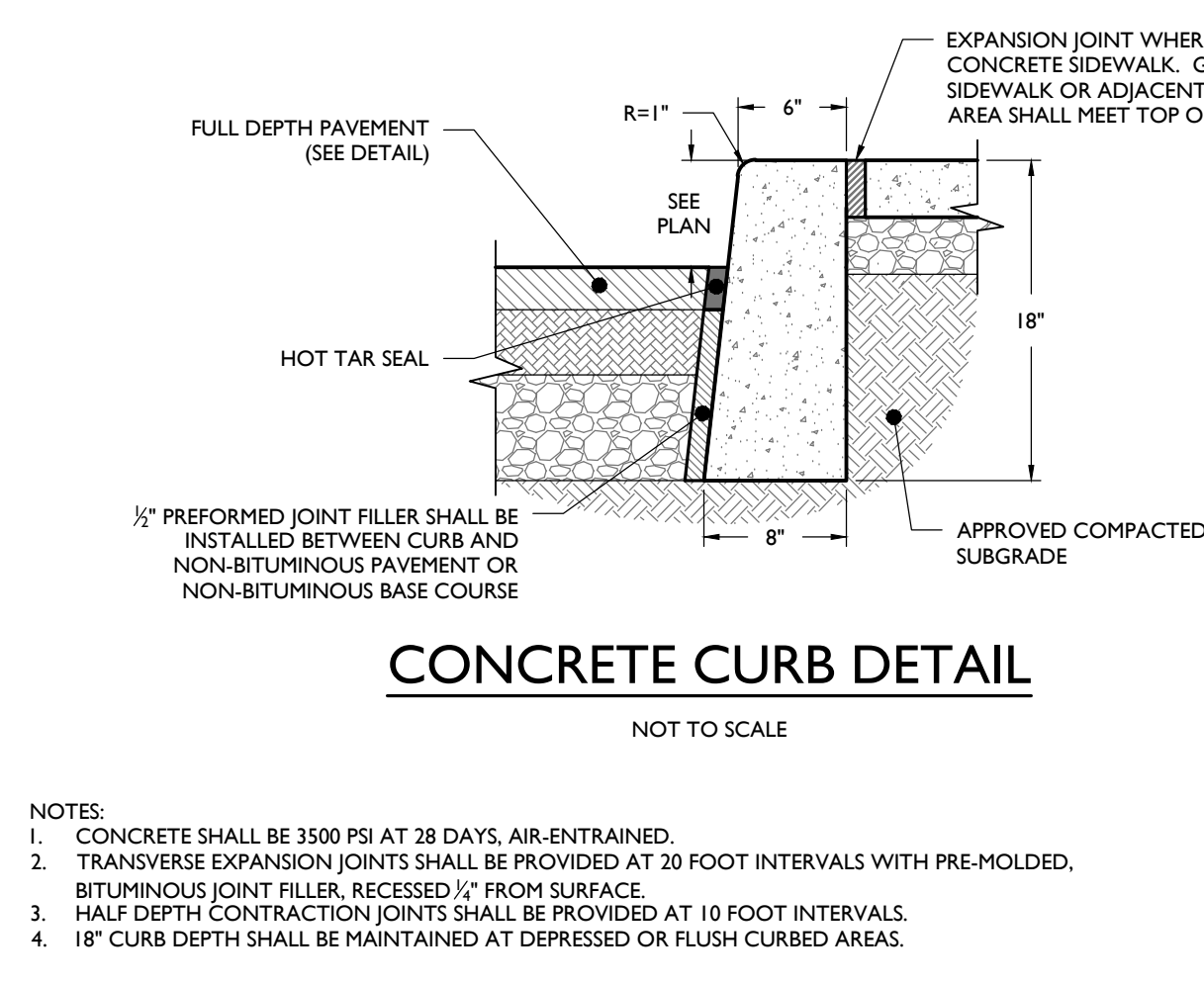
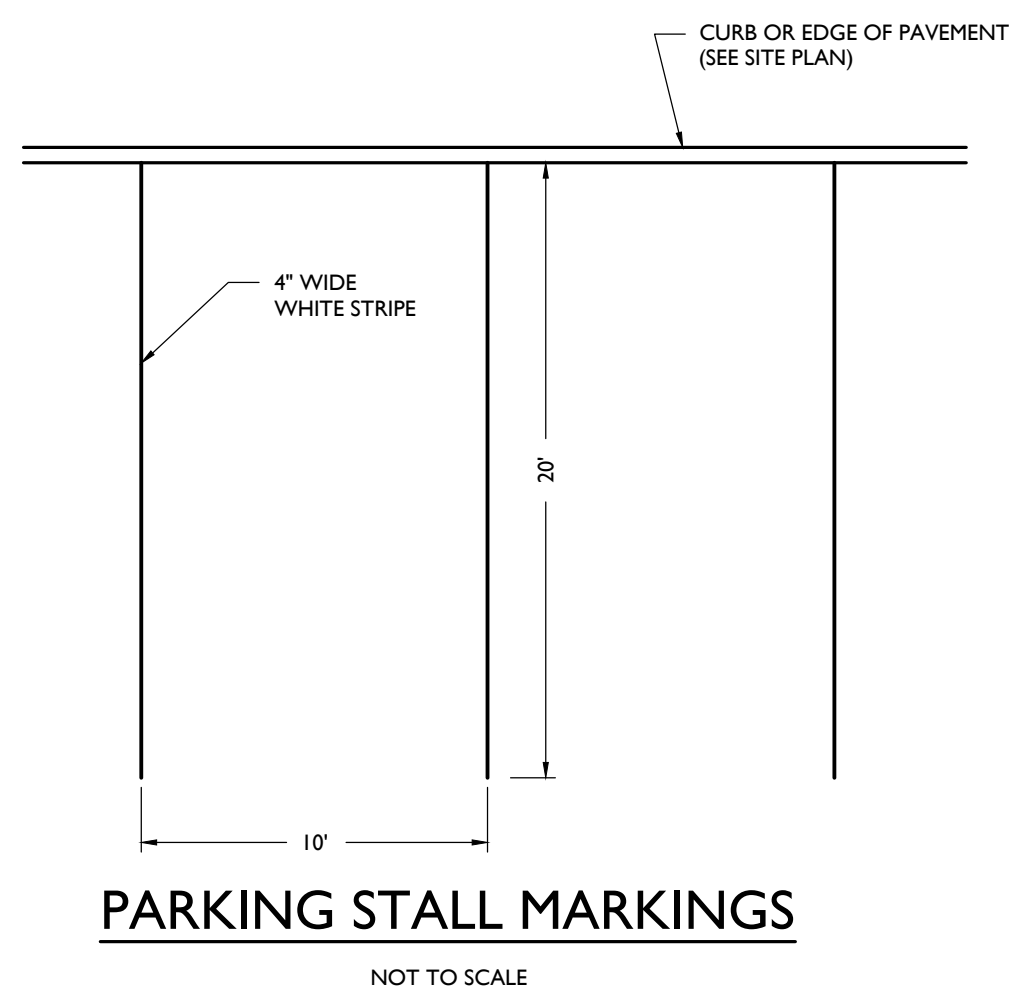
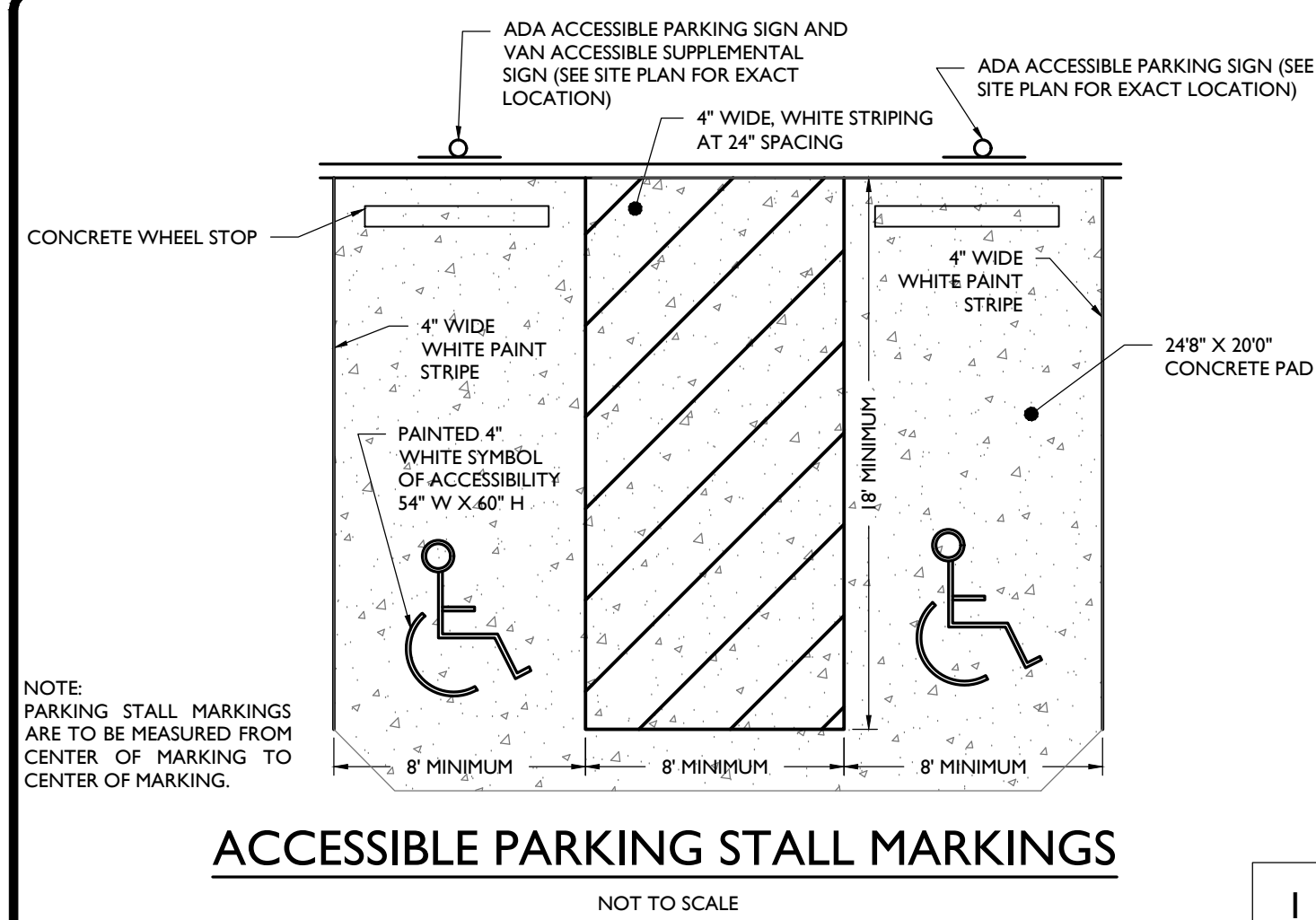


SCALE: NO SCALE PROJECT ID: BOS-220137

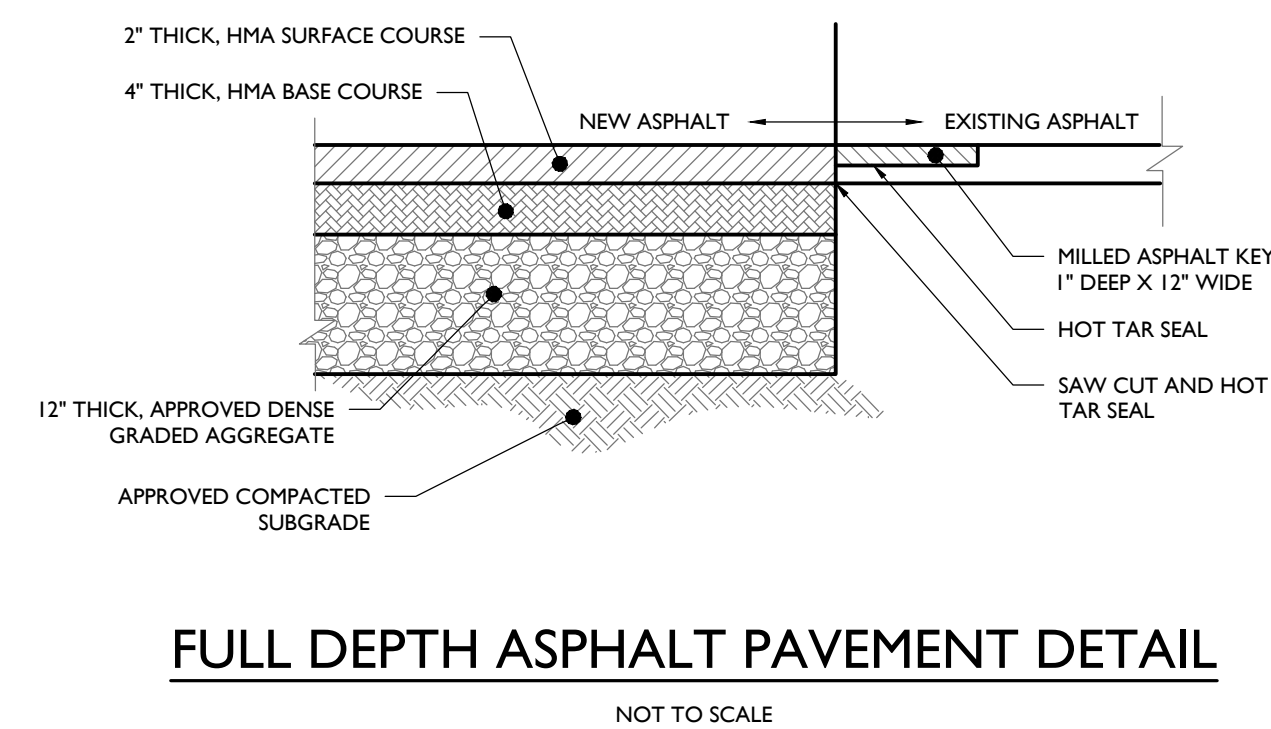
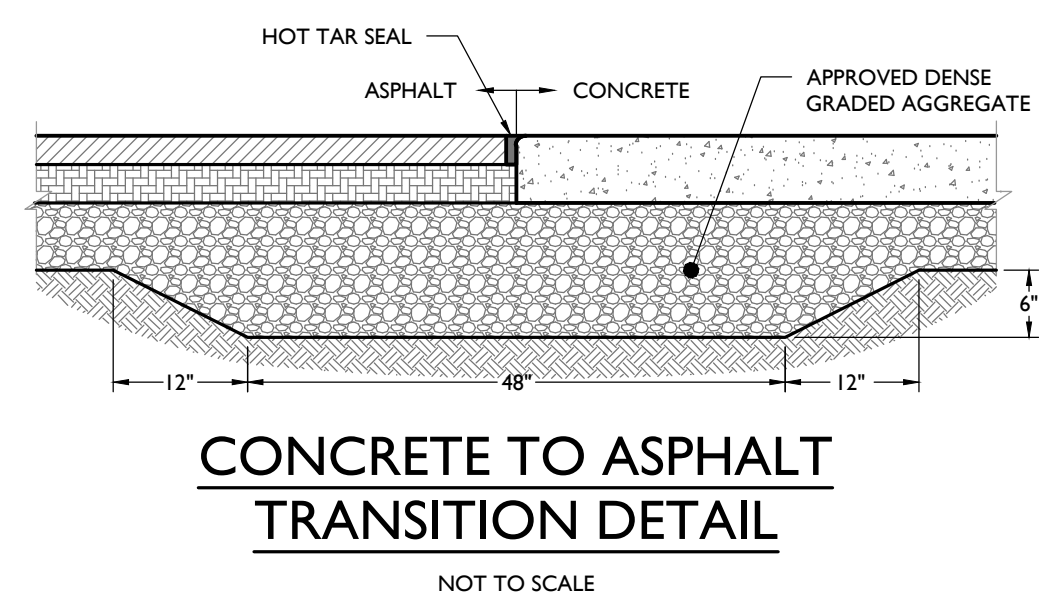
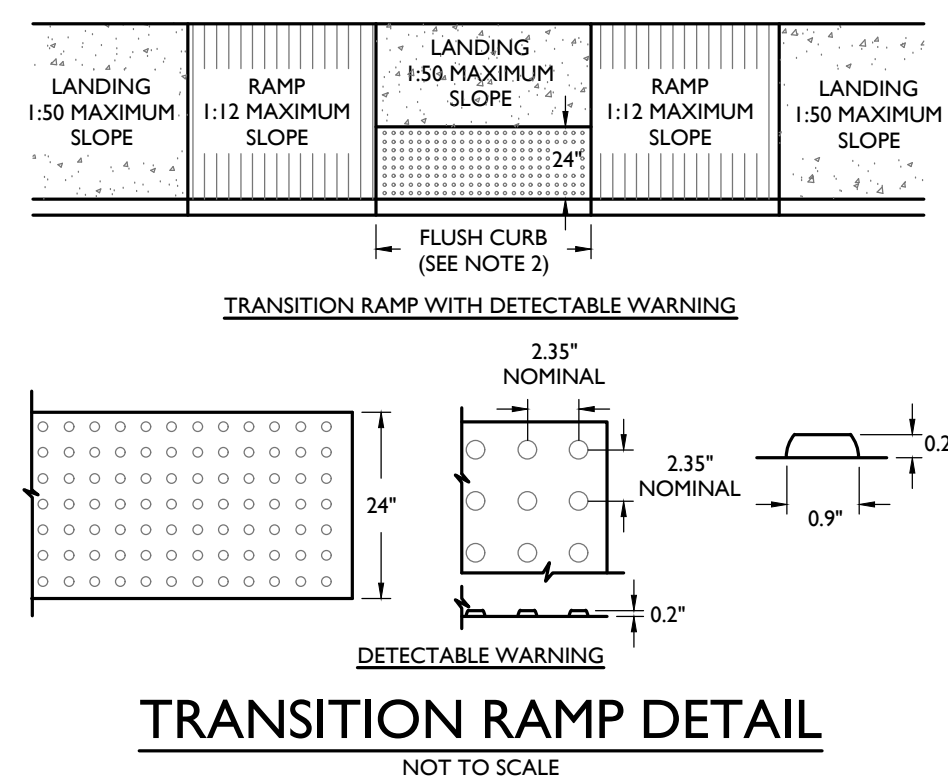
TITLE: **SOIL EROSION &
SEDIMENT CONTROL
DETAILS**

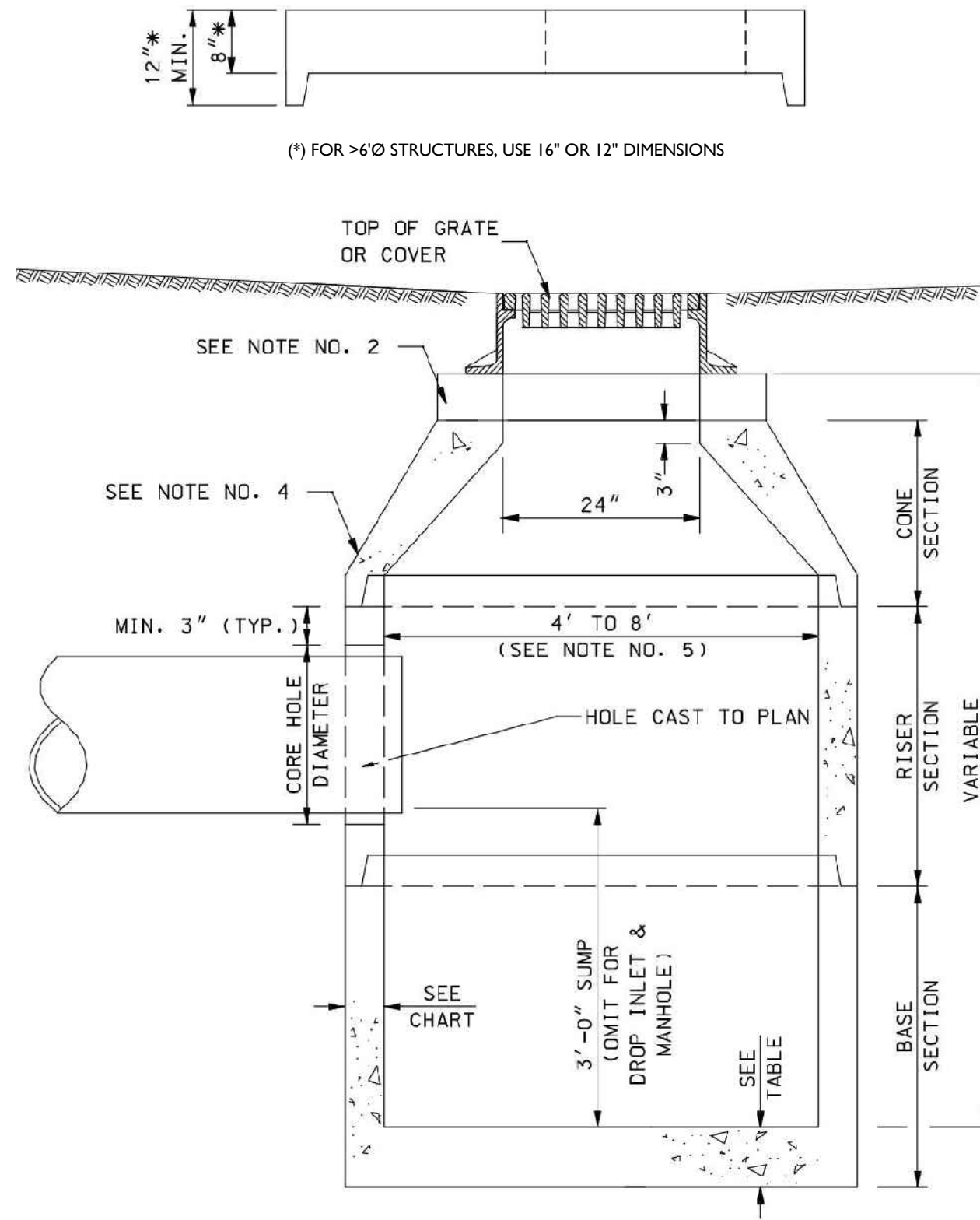
DRAWING:

C-10



M.U.T.C.D. NUMBER	TEXT	COLOR		SIZE OF SIGN (WIDTH X HEIGHT)	TYPE OF MOUNT
		LEGEND	BACKGROUND		
STOP SIGN (R1-1)		RED	WHITE	36"x36"	GROUND
NO LEFT TURN (R3-2)		CIRCLE AND DIAGONAL: RED LEGEND: BLACK	WHITE	24"x24"	GROUND
DO NOT ENTER (R5-1)		RED	WHITE	30"x30"	GROUND



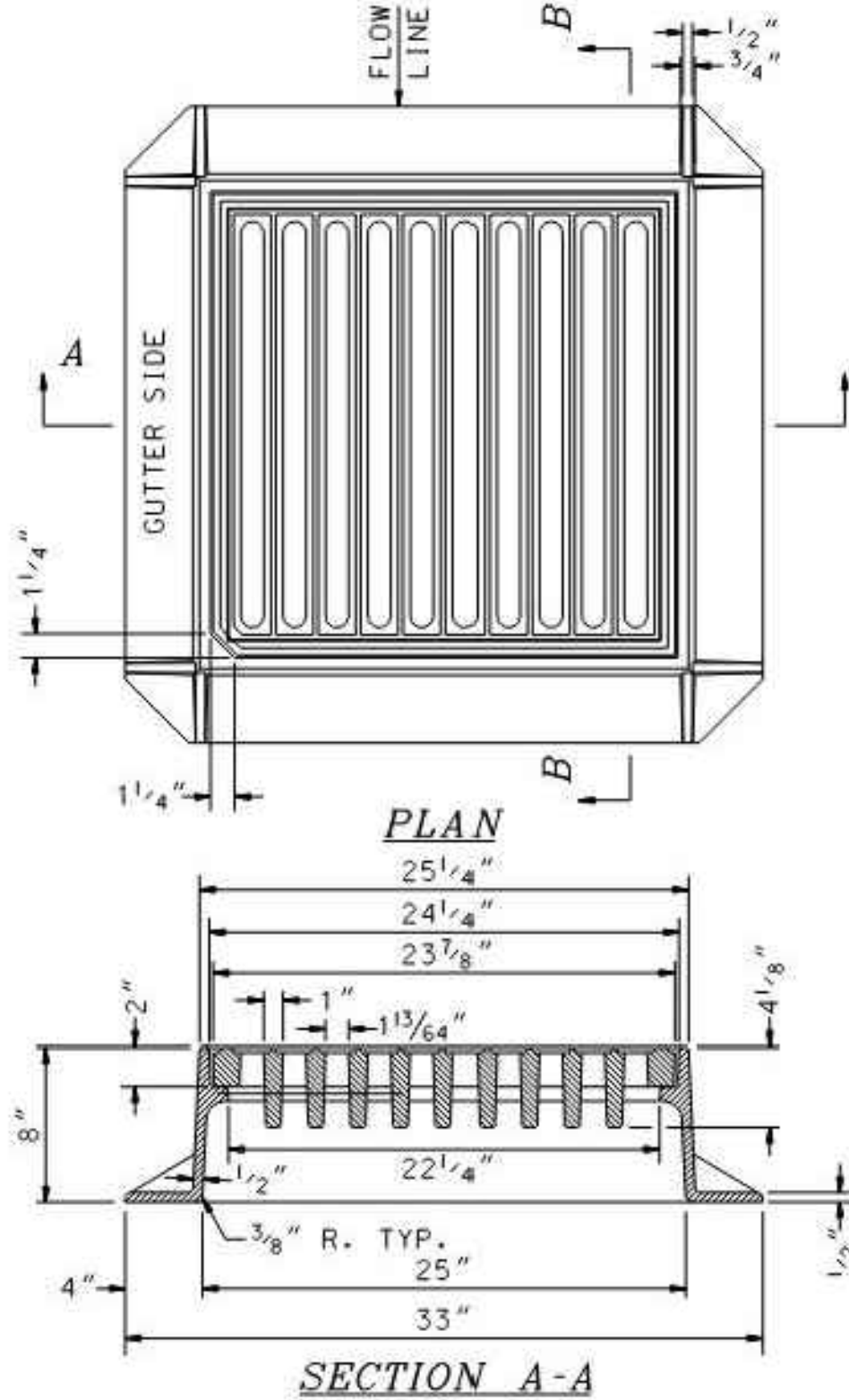


PRE-CAST MANHOLE AND CATCH BASIN DETAIL

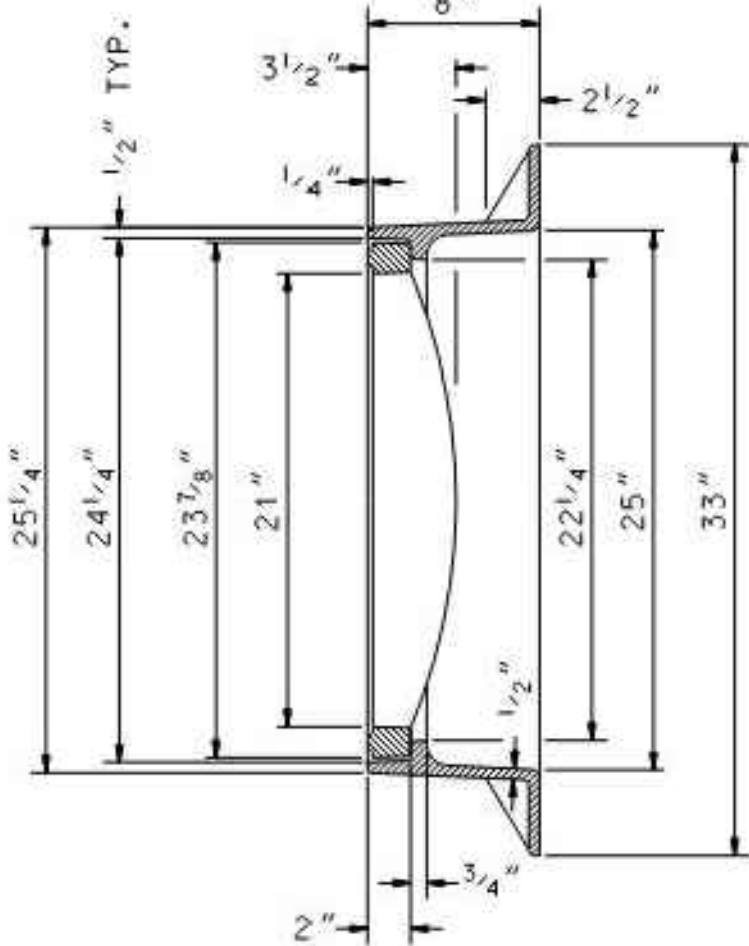
CORE HOLE SIZE				
PIPE SIZE	RCP CORE HOLE DIA.		PLASTIC CORE HOLE DIA.	
INCHES	INCHES	FEET	INCHES	FEET
6	18	1.5	18	1.5
12	22	1.8	20	1.7
18	26	2.2	24	2.0
24	34	2.8	32	2.7
30	42	3.5	42	3.5
36	48	4.0	48	4.0
42	54	4.5	54	4.5
48	64	5.3	64	5.3
54	72	6.0		
60	78	6.5		

DIAMETER	WALL THICKNESS (MIN.)	FLOOR THICKNESS (MIN.)
4'	5"	6"
5'	6"	8"
6'	7"	8"
8'	9"	10"

- NOTES:
- ITEM NUMBERS: C.C. = 604.1XXX, D.I. = 604.2XXX, M.H. = 604.32XX
 - FITTING FRAME TO GRADE MAY BE DONE WITH PREFABRICATED ADJUSTMENT RINGS OR CLAY BRICKS (2 COURSES MAX).
 - CB & DI GRATES IN PAVED AREAS SHALL BE SET ACCORDING TO THE PAVEMENT DEPRESSION DETAIL SHOWN ON PLATE 4 OF STANDARD NO. DR-2.
 - CONE SECTIONS MAY BE EITHER CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
 - FOR STRUCTURES WITH DIAMETERS GREATER THAN 4', THE DIAMETER MAY BE CONSTANT FROM TOP TO BOTTOM WITH A FLAT SLAB TOP OR A RISER SECTION THAT TRANSITIONS FROM A STANDARD 4' CONE SECTION TO THE LARGER DIAMETER RISER OR BASE SECTION MAY BE USED.
 - PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
 - OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND THE INSIDE WALL OF THE STRUCTURE.
 - PRECAST STRUCTURES SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
 - 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.

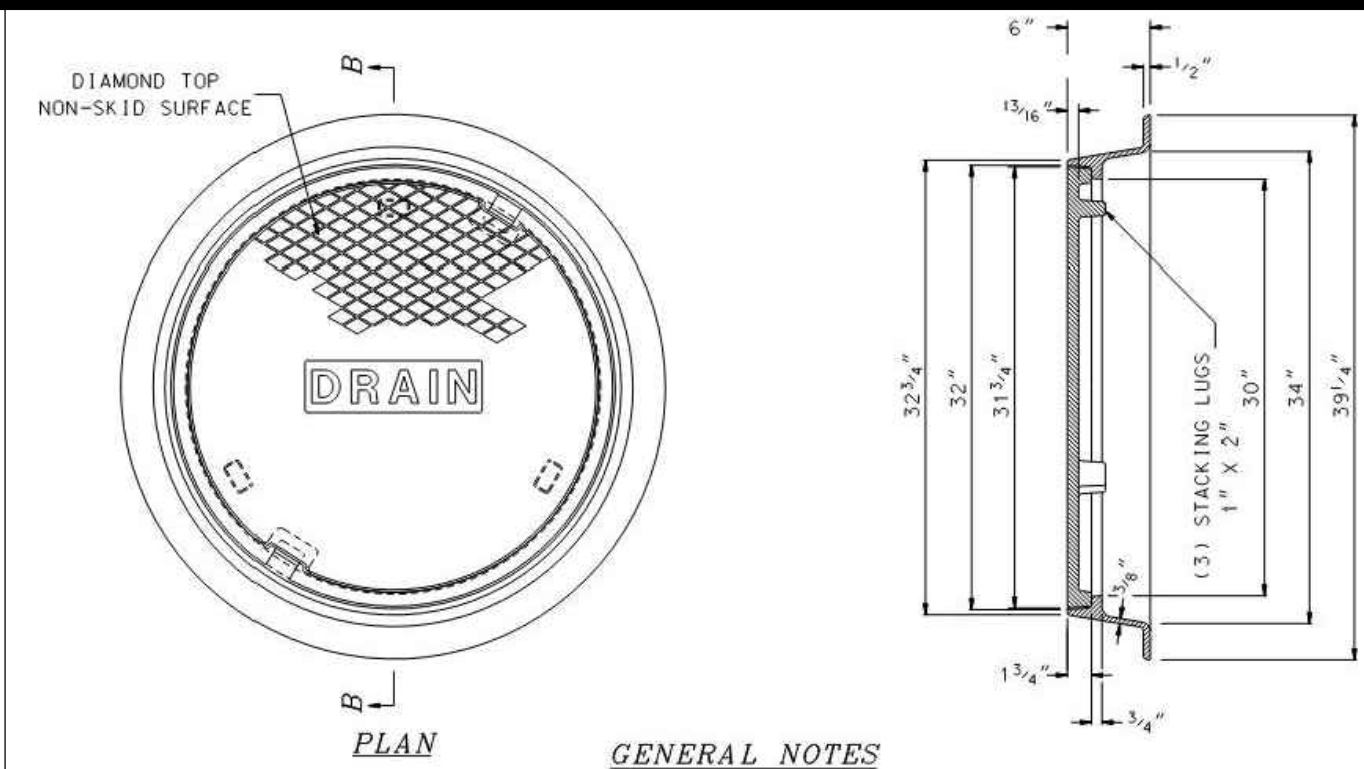


TYPE 'A' INLET GRATE & FRAME DETAIL



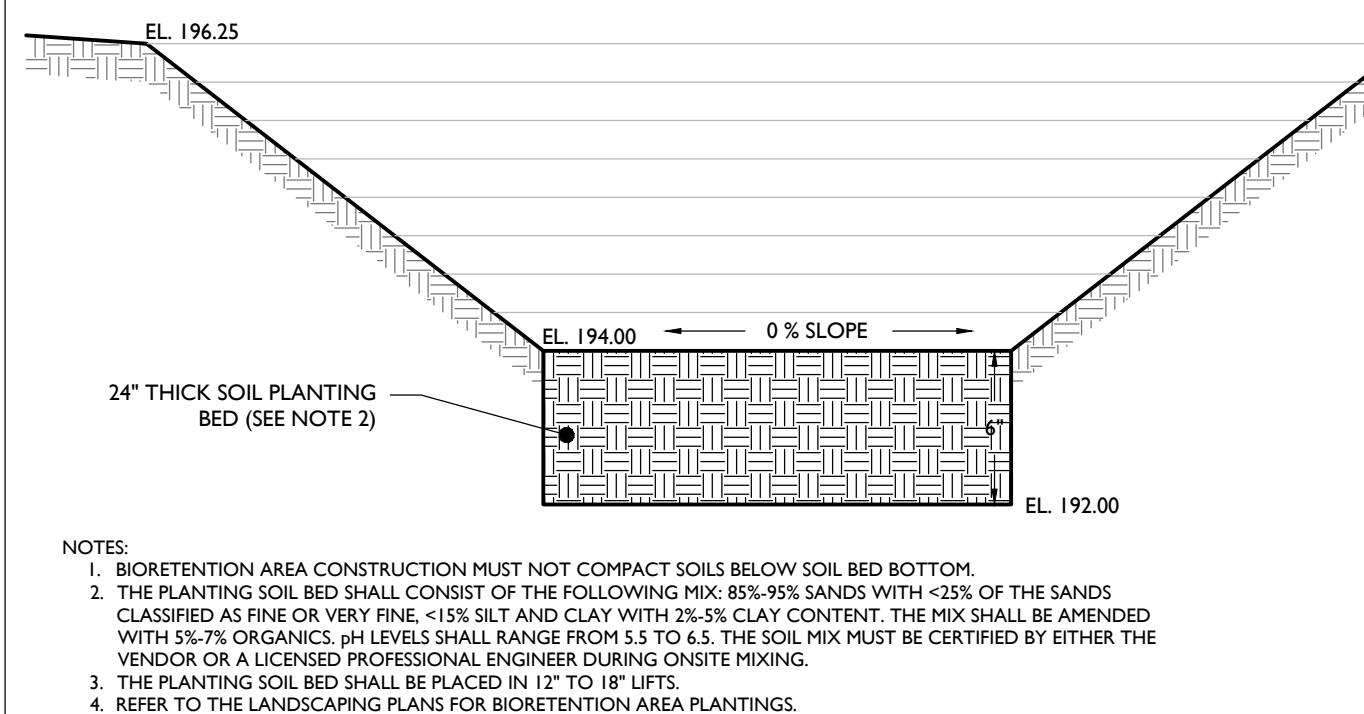
STORM BASIN DETAIL

- GENERAL NOTES
- ALL DIMENSIONS ARE NOMINAL.
 - FREE OPEN AREA = 1.73 S.F.
 - NOT TO BE USED WHEN BICYCLE TRAFFIC IS ANTICIPATED.
 - USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.

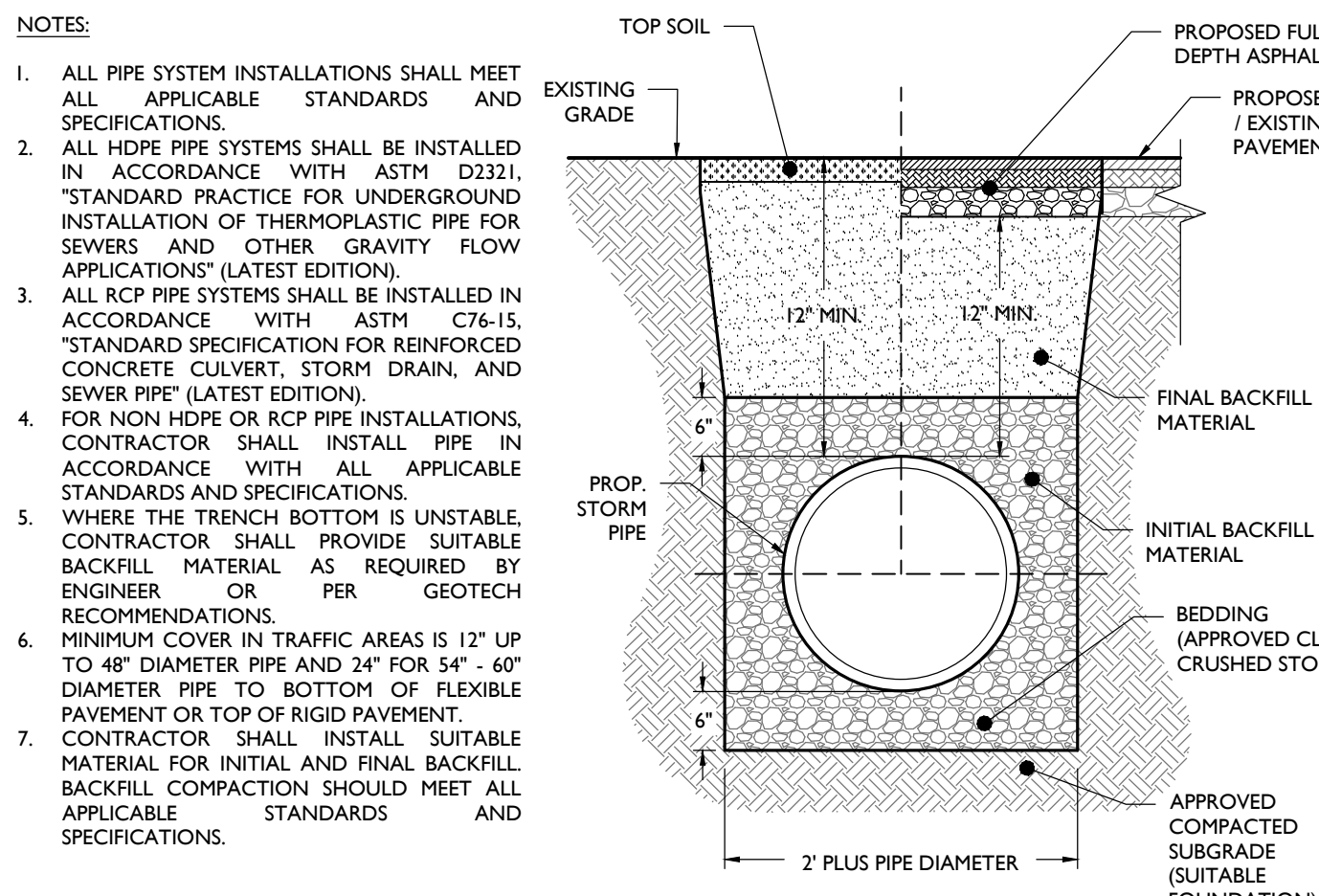


MANHOLE COVER & FRAME DETAIL

- GENERAL NOTES
- ALL DIMENSIONS ARE NOMINAL.
 - FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
 - A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
 - B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
 - C. ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
 - LABEL TYPE OF MANHOLE WITH 3" HIGH LETTERS IN THE CENTER OF THE COVER.

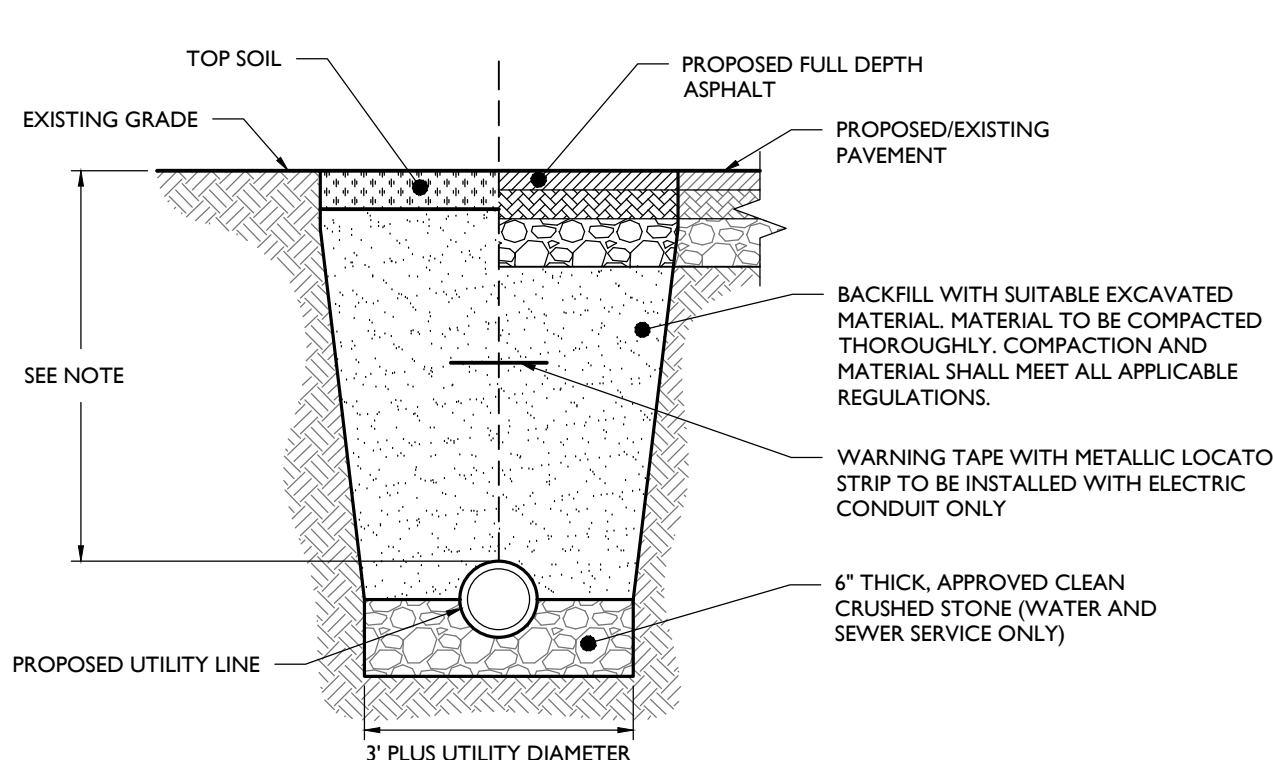


- NOTES:
- BIORETENTION AREA CONSTRUCTION MUST NOT COMPACT SOILS BELOW SOIL BED BOTTOM.
 - THE PLANTING SOIL BED SHALL CONSIST OF THE FOLLOWING MIX: 85%-95% SANDS WITH <25% OF THE SANDS CLASSIFIED AS FINE OR VERY FINE <15% SILT AND CLAY WITH 25-5% CLAY CONTENT. THE MIX SHALL BE AMENDED WITH 5%-7% ORGANICS. pH LEVELS SHALL RANGE FROM 5.5 TO 6.5. THE SOIL MIX MUST BE CERTIFIED BY EITHER THE VENDOR OR A LICENSED PROFESSIONAL ENGINEER DURING ONSITE MIXING.
 - THE PLANTING SOIL BED SHALL BE PLACED IN 12" TO 18" LIFTS.
 - REFER TO THE LANDSCAPING PLANS FOR BIORETENTION AREA PLANTINGS.



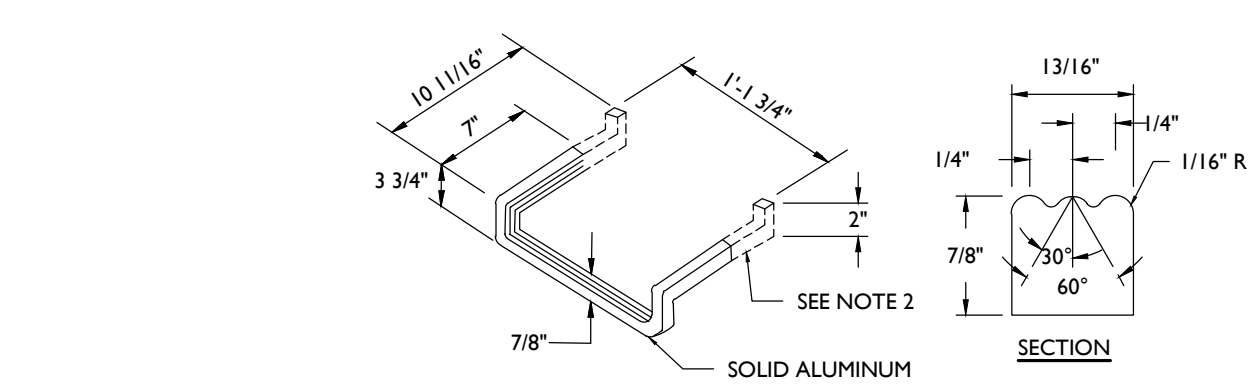
STORM TRENCH DETAIL

- NOTES:
- ALL PIPE SYSTEM INSTALLATIONS SHALL MEET ALL APPLICABLE STANDARDS AND SPECIFICATIONS.
 - ALL HDPE PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS" AND OTHER "GRAVITY FLOW APPLICATIONS" (LATEST EDITION).
 - ALL RCP PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C76-15, "STANDARD SPECIFICATION FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE" (LATEST EDITION).
 - FOR NON-HDPE OR RCP PIPE INSTALLATIONS, CONTRACTOR SHALL INSTALL PIPE IN ACCORDANCE WITH ALL APPLICABLE STANDARDS AND SPECIFICATIONS.
 - WHERE THE TRENCH BOTTOM IS UNSTABLE, CONTRACTOR SHALL PROVIDE SUITABLE BACKFILL MATERIAL AS REQUIRED BY ENGINEER OR PER GEOTECH RECOMMENDATIONS.
 - MINIMUM COVER IN TRAFFIC AREAS IS 12" UP TO 48" DIAMETER PIPE AND 24" FOR 54" - 60" DIAMETER PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.
 - CONTRACTOR SHALL INSTALL SUITABLE MATERIAL FOR INITIAL AND FINAL BACKFILL. BACKFILL COMPACTION SHOULD MEET ALL APPLICABLE STANDARDS AND SPECIFICATIONS.



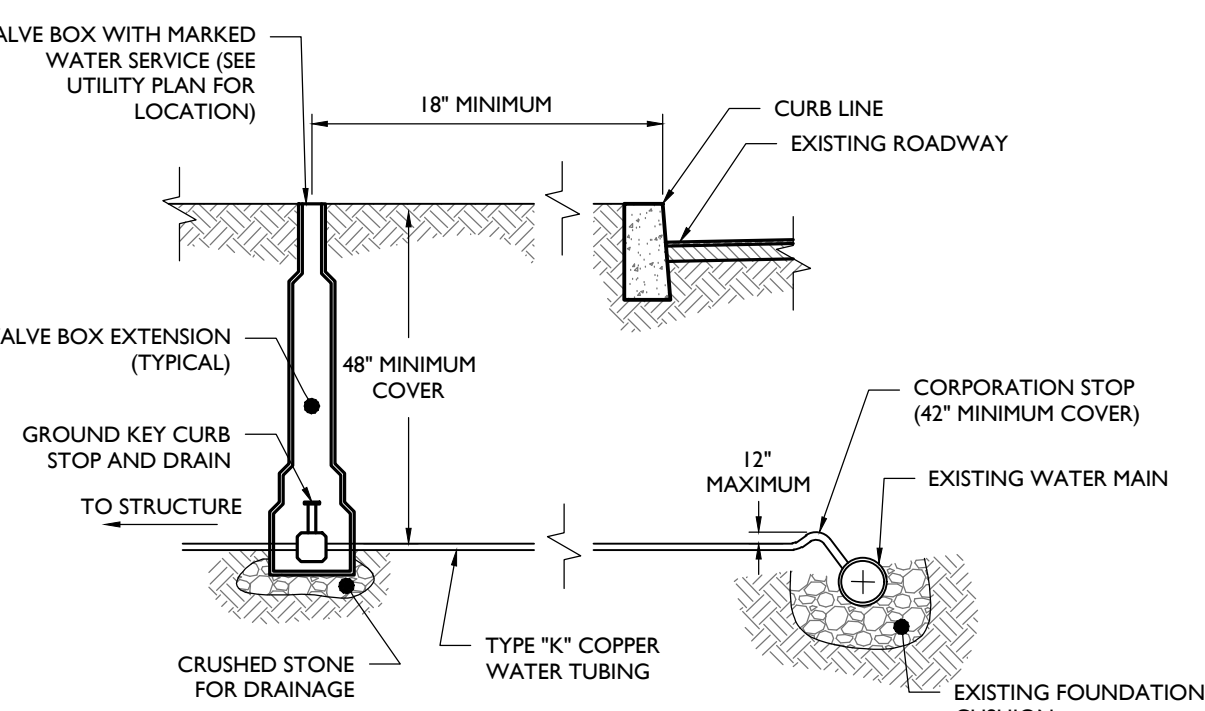
UTILITY TRENCH DETAIL

- NOTE:
- MINIMUM PIPE COVER SHALL BE AS FOLLOWS:
- ELECTRIC SERVICE - PER APPLICABLE UTILITY AUTHORITY
 - GAS SERVICE - PER APPLICABLE UTILITY AUTHORITY
 - SEWER SERVICE - 36" MINIMUM
 - WATER SERVICE - 48" MINIMUM



MANHOLE STEP

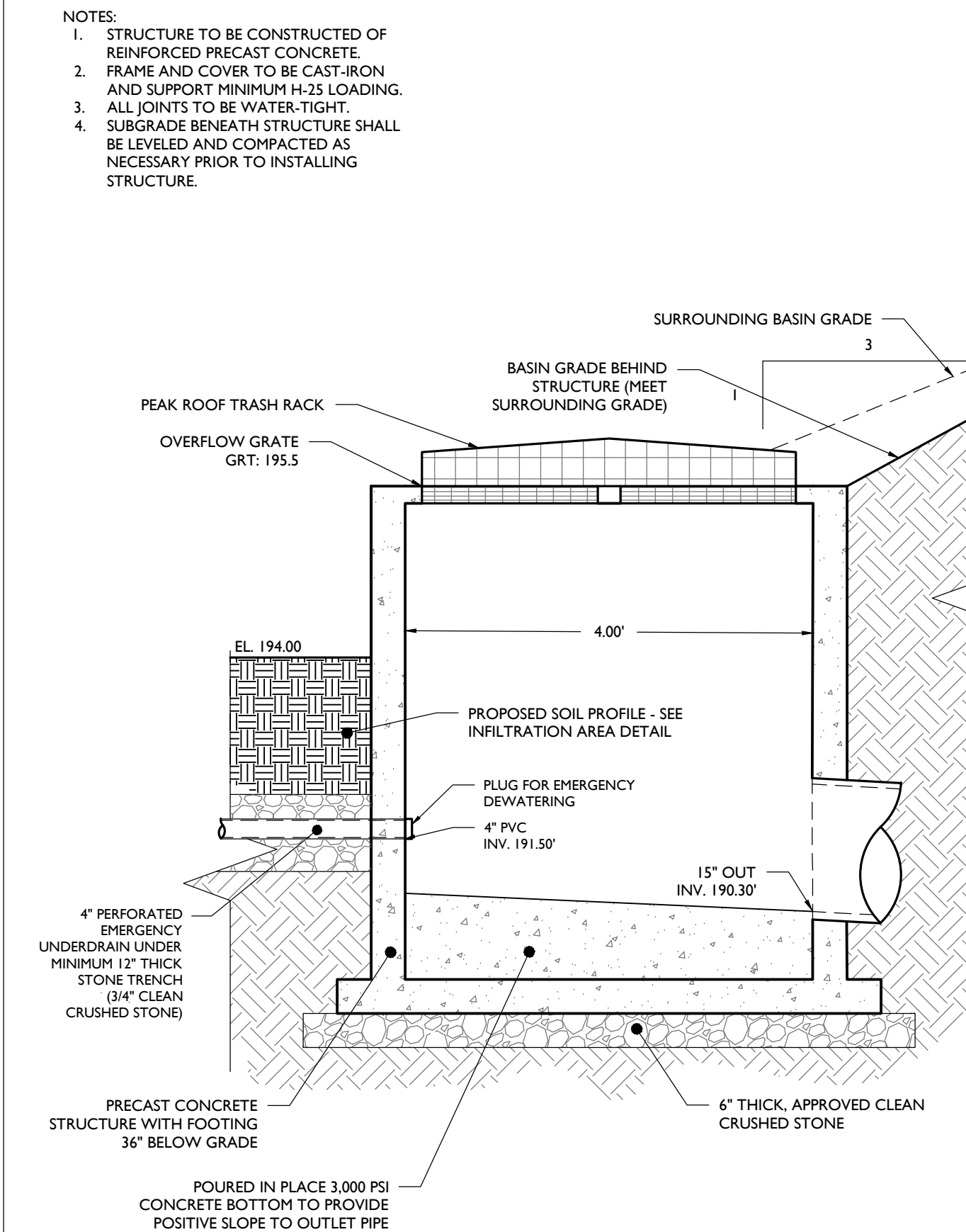
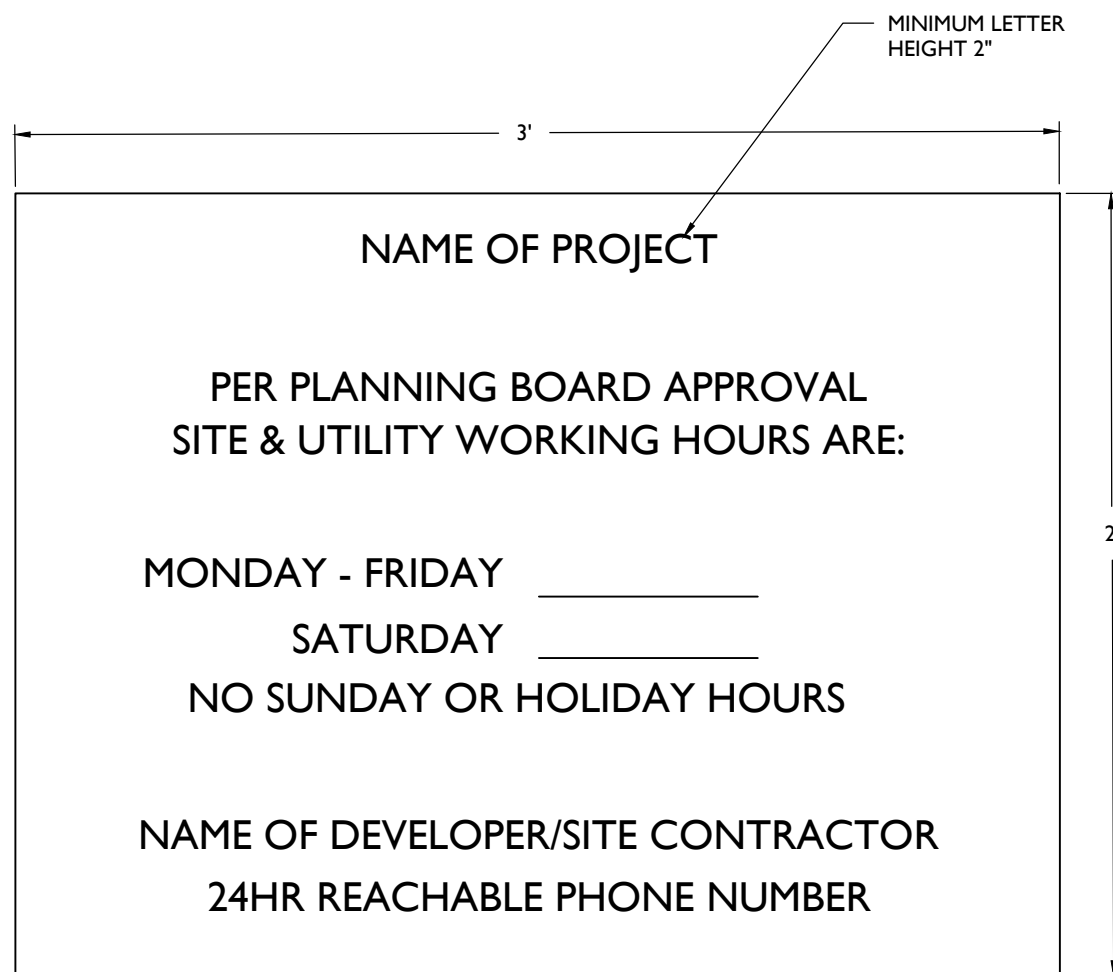
- NOTES:
- ALUMINUM STEP SHALL BE EXTRUDED ALUMINUM 6061-T6 ALLOW DROP FRONT DESIGN OR APPROVED EQUAL.
 - THE PORTION TO BE IMBEDDED IN THE CONCRETE SHALL BE COATED WITH COAL TAR PITCH OR OTHER APPROVED MATERIAL AND SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARD.
 - LADDER RUNGS SHALL BE ALIGNED AND INSTALLED BETWEEN ALL PRECAST MANHOLE SECTIONS.



WATER CONNECTION DETAIL

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

CONSTRUCTION SIGN DETAIL



OUTLET STRUCTURE (OS-I) DETAIL

- NOTES:
- STRUCTURE TO BE CONSTRUCTED OF REINFORCED PRECAST CONCRETE.
 - FRAME AND COVER TO BE CAST-IRON AND SUPPORT MINIMUM H-25 LOADING.
 - ALL JOINTS TO BE WATER-TIGHT.
 - SUBGRADE BENEATH STRUCTURE SHALL BE LEVELED AND COMPACTED AS NECESSARY PRIOR TO INSTALLING STRUCTURE.

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CHASE
PROPOSED BANK WITH
DRIVE-THRU ATM

TAX MAP 38, LOTS 15A & 15B
1-3 WEBB PLACE
CITY OF DOVER
STRAFFORD COUNTY, NEW HAMPSHIRE

JOSHUA H. KLINE, P.E.
NEW HAMPSHIRE LICENSE No. 16330
LICENSED PROFESSIONAL ENGINEER

STONEFIELD
engineering & design

SCALE: AS SHOWN PROJECT ID: BOS-220137

TITLE:

**CONSTRUCTION
DETAILS**

DRAWING:

C-15



PLAN SNAPSHOT REPORT SITE-2023-0012 FOR CITY OF DOVER, N.H.

Plan Type: Site Plan - Major
Work Class: New Construction
Status: In Review
Valuation: \$0.00

Project:
District: None
Square Feet: 0.00
Assigned To: Blonigen, Rachel

App Date: 08/11/2023
Exp Date: 10/15/2023
Completed: NOT COMPLETED
Approval Expire Date:

Description: Construction and operation of a 104' wireless telecommunications facility.

Parcel: F0002-000000	Main	Address: 180 Tolend Rd Dover, 03820	Zone: IT(Non-Residential - Innovative Technology) R-40(Residential - Rural)
		Dover, NH	

Applicant
Mark Beaudoin
Business: (603) 628-4025

Applicant
Jared Lusk
1300 Clinton Square
Rochester, NY 14604
Business: (585) 263-1140
Mobile: (585) 730-2562

Plan Custom Fields

Total	0	Total2	0	Total3	0
Total4	0	Total5	0	Total6	0
Total7	0	Total8	360	Total9	0
Street Classification Type	Municipal	Net Change in # Parking Spaces (+/-)		Water Service	Not Applicable
Recording Number		Sewer Service	Not Applicable	Total Acres (GIS)	55.95
Deed Book	1868	Total SQFT	2.43718e+006	Deed Page	382
Deed Date	19960613	Proposed Property Use	Wireless telecommunications facility.	Area of Parcel to be Developed (SQFT)	360
Number of Parking Spaces Existing	0	Number of Parking Spaces Proposed	2	Number of Employees Total	0
Number of Employees in Max Shift	0	Type of Building to be Built	Telecommunication Tower	Estimated Construction Value	150000.00
Refuse Removal	Private	Existing Conservation Easement Details		TotalImpactFeeSDTOD	0.00
TotalImpactFeeTHTOD	0.00	TotalImpactFee23FTOD	0.00	TotalImpactFeeA4TOD	0.00
TotalImpactFeeMHTOD	0.00	TotalImpactFeeADUTO	0.00	TotalImpactFeeAONRT	0.00
TotalImpactFeeAR55TC	0.00	TotalImpactFeeAR62TC	0.00	Sub Total Residential	0.00
TotalImpactFeeRIRCTO	0.00	TotalImpactFeeOCSTO	0.00	TotalImpactFeeITWCTO	0.00
TotalImpactFeeNHALT	0.00	TotalImpactFeeOIUTOD	0.00	TotalImpactFeeAFAOT	0.00
Sub Total	0.00	Total of Impact Fees to be Assessed	0.00		
Non-Residential					

Attachment File Name	Added On	Added By	Attachment Group	Notes
Signature_Jared_Lusk_8/11/2023.jpg	08/11/2023 13:18	Lusk, Jared		Uploaded via CSS
SITE-2023-0012 Snapshot Report.pdf	08/16/2023 12:27	Blonigen, Rachel		
2023.09.07_PlanningTechnicalReviewCommittee.Agenda.pdf	08/22/2023 17:11	Blonigen, Rachel		
2023.09.07_PlanningTechnicalReviewCommittee.TolendRdTower_SITE-2023-0012.pdf	09/11/2023 12:15	Blonigen, Rachel		DRAFT TRC MINUTES

PLAN SNAPSHOT REPORT (SITE-2023-0012)

Note	Created By	Date and Time Created
1. Emailed applicant for 4 more copies of the application for TRC-RLB	Rachel Blonigen	08/31/2023 15:07

Invoice No.	Fee	Fee Amount	Amount Paid
INV-00004636	Planning General Application Fee	\$200.00	\$200.00
Total for Invoice INV-00004636		\$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	09/07/2023	Technical Review Committee Meeting

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.1	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023	Yes	Yes
Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023

Comments: Our comments for the telecommunications tower:

- The proposed location does not appear to negatively impact business operations and appears to close an important coverage gap.
- Business Development has received public testimony in support of this application.

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Kypfer, Natasha	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	Requires Re-submit	08/31/2023	09/28/2023	09/11/2023

Submittal Name	Status	Received Date	Due Date	Complete Date	Resubmit	Completed
Land Use Plan Technical Review v.2	In Review	10/18/2023	10/31/2023		No	No

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Business Development	Business Development	Burdin, James	In Review	10/18/2023	11/15/2023	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
City Engineer	Community Services - Engineering	Mavrogeorge, Kenneth	In Review	10/18/2023	10/31/2023	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
IS Building Official	Fire / Inspection Services	Maxfield, Jim	In Review	10/18/2023	10/31/2023	

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Planning	Planning	Benton, Donna	In Review	10/18/2023	11/15/2023	

PLAN SNAPSHOT REPORT (SITE-2023-0012)

Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Zoning Administrator	Planning	Benton, Donna	In Review	10/18/2023	10/31/2023	
Item Review Name	Department	Assigned User	Status	Assigned Date	Due Date	Completed Date
Traffic Bureau	Police	Speidel, Marn	In Review	10/18/2023	10/31/2023	
Workflow Step / Action Name			Action Type	Start Date	End Date	
Review v.1				08/16/2023	12:35	
Confirm application complete v.1			Generic Action		08/16/2023	12:35
Technical Review Committee Meeting Agenda v.1			Task	08/16/2023	12:38	08/28/2023 10:19
Land Use Plan Technical Review v.1			Receive Submittal	08/31/2023	0:00	09/11/2023 12:21
Land Use Plan Technical Review v.2			Receive Submittal	10/18/2023	0:00	
Technical Review Committee Meeting v.1			Hold Meeting	10/18/2023	12:55	
Technical Review Committee Meeting v.1			Hold Meeting	10/18/2023	12:54	10/18/2023 12:55
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			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-2023-0012

Date Received:

Amount Paid:

Time Received:

APPLICANT AND OWNER INFORMATION

Name of Applicant: Cellco Partnership d/b/a Verizon Wireless Telephone # (585) 263-1140 (Jared Lusk, Esq.)

Address of Applicant: 900 Chelmsford Street, Tower 2, Floor 5, Lowell, MA 01851

E-Mail Address: jlusk@nixonpeabody.com

Lionel R. Paradis, Jr.

Name of Property Owner (if different from applicant): & Kristina L. Paradis Telephone # _____

Address of Property Owner: 180 Tolend Road, Dover, NH 03820

PROPERTY INFORMATION

Address of Property: 180 Tolend Road, Dover, NH 03820

Assessor's Map # F-2-0-0

Lot(s) # _____

Zoning District(s) IT

Overlay District(s) N/A

Size of Parcel: _____ sq. ft. 55.96 ac. Property Deed: Book 1868 Page: 382

Existing Use of Property: Agriculture

SITE PLAN INFORMATION

Describe Proposed Use: Construction and operation of a 104' wireless telecommunication facility.

Area of Parcel to be Developed: 3600 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 P Proposed 1-2

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

Number of Employees Total: N/A In Maximum Shift: _____

Disposition of Parcel:

Building Setbacks:

Building Footprint N/A sq. ft.

Front Yard N/A ft.

Total Building Area 3600 sq. ft.

Rear Yard N/A ft.

Paved Area 0 sq. ft.

Side Yard: Right N/A ft. Left N/A ft.

City Water? ___ Yes X No How far is city water from the property? _____City Sewer? ___ Yes X 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:

Not applicable.**BUILDING INFORMATION**Type of Building to be Built: N/AHeight of Building: N/A Finished Floor Elevation: N/ANumber of Seats (where applicable) N/A

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

WAIVER REQUESTSSite Review Regulations section(s) to be waived: N/AJustification for waiver request(s) (*attach additional sheets as needed*):

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Northeast Survey Consultants

Address 3 Ferry Street, Studio 1, East Hampton, MA Telephone #: (413) 203-5144

Professional License #: 489 E-mail address: _____

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) ProTerra Design Group, LLC

Address 4 Bay Road, Building A, Suite 200, Hadley, MA 010353 Telephone #: (413) 320-4918

Professional License #: _____ E-mail address: _____

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: See Exhibit A and Exhibit F 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: See Exhibit A and Exhibit F 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: See Exhibit A and Exhibit F 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: See Exhibit A and Exhibit F Date: _____

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

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

See Exhibit L



City of Dover, New Hampshire SITE PLAN REVIEW SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

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

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

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

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

APPLICANT: Cellco Partnership d/b/a Verizon Wireless File Number: _____

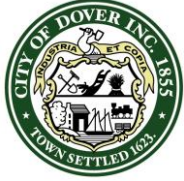
PROJECT TITLE: Verizon Wireless' Dover W NH Site

PROPERTY LOCATION: 180 Tolend Road Tax Map: F-2-0-0 Lot: _____

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

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	N/A	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	Sheet A-1	
Existing and proposed topographic information at two foot intervals	Sheet C-2	
Existing and proposed buildings and structure locations	Sheets C-1/C-2	
Minimum building setbacks or build to lines on all lots	N/A	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	Sheets C-1/A-1	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	N/A	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	N/A	
Existing and proposed stormwater lines and facilities	N/A	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	Sheet D-2	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	Sheet A-1	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	Sheet A-1	
Existing natural features and/or significant vegetation on property	Sheet A-1	
Depict existing contours up to 100 ft. beyond project limits	Sheet C-2	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	Sheet A-2	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	Sheet A-2	
Location, material and size of existing and proposed pavement area	N/A	
Location of proposed fire lanes	Sheet A-1	
Specify finished floor elevations of buildings	N/A	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	N/A	
Depict all service, storage, loading bays and utility areas	Sheet A-2	
All applicable Dover Common Site Plan notes	Sheet A-1	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	Sheets EC-1 and EC-2	
Stormwater Management System Operation and Maintenance Plan	TBD	
Letter to Serve from Public and Private Utilities	TBD	
Erosion and Sedimentation Control Plan	Sheets EC-1 and EC-2	
Landscape Operation and Maintenance Plan		
Proposed restrictive covenants or homeowners association documents	N/A	
Dates and permit numbers of all required state and federal permits	N/A	
If wetland buffer, indicate placards locations, as applicable	N/A	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	Sheets EC-1 and EC-2	
Location of proposed drive-in facilities	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	TBD	

REVIEWED BY: _____ DATE _____ TRC DATE _____



CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2023-0012

Application Type: Site Review
Applicant(s): Jared Lusk, Nixon Peabody LLP / Verizon Wireless
Owner(s): Lionel R. Jr. & Kristina L. Paradis
Location: 180 Tolend Road (Tax Map F, Lot 2)
Date: September 7, 2023

INTENT: Proposal is to construct and operate a 104' wireless telecommunications facility at the subject property.

UNITS PROPOSED: 1 Telecommunication Tower

AGENDA ITEM #: 1

ACREAGE: 55.96± ac.

ZONING DISTRICT: IT, R-40

EXISTING LAND USE: Residential, Farmland

PROPOSED LAND USE: Addition of 1 Telecommunications Tower

SURROUNDING LAND USE: Residential

ZBA ACTION:

- ZONE-2023-0035, Variance granted for location of tower

PERMITS REQUIRED:

- FCC License

WAIVERS REQUESTED: n/a

ATTENDANCE:

Members:

Donna Benton, Planning
Natasha Kypfer, Zoning
Tom Clark, Planning Board
Marn Speidel, Police
James Burdin, Business Development
Ken Mavrogeorge, Engineering

Others:

Jared Lusk, Nixon Peabody LLP *Virtual
Chip Freddette, Verizon Wireless *Virtual

Approval of minutes from August 31, 2023:

J. Burdin moved to approve the August 31, 2023 minutes. Seconded by T. Clark. Vote: U/A.

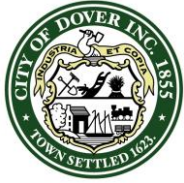
PLAN REVIEW:

Planning:

- Provide copy of license to Planning staff.
- Provide letter to serve from electric company
- Double side materials next submission
- Public safety impact fee will be invoiced
- Confirm no wetlands within 100' radius
- Revise plans:
 - Owner's signatures on the final plans
 - Professional stamps on the final plans
 - Add file number to plan set, SITE-2023-0012
 - Confirm inclusion of all common notes
 - Add dates and numbers of federal permits
 - Reference ZBA Case on plan
 - Provide rendering of tower
 - Add label for underground electric

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>
 - Provide detail for Construction site signage per the Construction guidelines.
 - Recommend providing 1 sf of snow storage per 10 sf of pavement to be cleared. Verify snow storage meets or exceeds this recommendation or provide note to remove excess snow when storage areas are filled.
 - There are locations on the pole for future antenna to be attached. Do you have entities reserved for those spaces? If not, would you be willing to discuss, with the City, attaching an antenna for City services?
 - Project appears to disturb more than 20,000 sf of area and result in more than 4,000 sf of new impervious area and thus would require a stormwater management plan (153-14.2.a.2). Materials did not include a drainage study to review.
 - Provide drainage study that shows compliance with 153-14.A.3.b



CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – SITE-2023-0012

Application Type: Site Review
Applicant(s): Jared Lusk, Nixon Peabody LLP / Verizon Wireless
Owner(s): Lionel R. Jr. & Kristina L. Paradis
Location: 180 Tolend Road (Tax Map F, Lot 2)
Date: September 7, 2023

- What is the condition of the existing gravel driveway and will it be improved for emergency access?
 - Is any lighting around the base of the tower proposed?
- Sheet T-1:
 - General Note 7: A driveway off of Tolend Road would need a driveway permit from the City of Dover not the NHDOT. Is a second driveway being permitted?
- Sheet A-1:
 - Has a wetland scientist visited the site to delineate wetlands?
- Sheet A-2:
 - Is the compound surface sufficient for vehicle access?
 - What types of landscaping are proposed? We could not find the types of plants on the plan sheets.

Business Development:

- The proposed location does not appear to negatively impact business operations and appears to close an important coverage gap.
- Business Development has received public testimony in support of this application.

Planning Board:

- The application indicates the area of parcel to be 60' x 60'; i.e. 3,600 sq. ft. rather than 360 sq. ft. – Please correct

Next Steps:

Revise and add to materials, resubmit with narrative outlining how each comment was addressed for another TRC.

Adjournment:

K. Mavrogeorge moved to adjourn the meeting at 11:12 am. Seconded by M. Speidel. Vote: U/A

Police:

- The police department supports this project for the anticipated improvements to public safety in telecommunication coverage
- Confirming no illuminated beacon at top of tower?
- Amend final paragraph of Exhibit B project description to comment on any potential visual impact to abutters. Description states, "*Project will not create any detriment to adjoining properties or change the character of the neighborhood.*" But there is no information pertaining to visibility. Will the 104' pole be visible from Ezras Way, Susannah Drive, Columbus Avenue, Tolend Road, or Littleworth Road?

Fire/Inspection Services:

- Provide supporting information to show compliance with Fire Dept. access.
- Provide a turning template for T-1
- Detail for underground electric?
- All season, all weather access



Nixon Peabody LLP
1300 Clinton Square
Rochester, NY 14604-1792

Jared C. Lusk
Partner

Attorneys at Law
nixonpeabody.com
@NixonPeabodyLLP

T / 585.263.1140
F / 866.402.1491
jlusk@nixonpeabody.com

October 17, 2023

VIA ELECTRONIC MAIL

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

RE: Cellco Partnership d/b/a Verizon Wireless' application (the "Application") to the City of Dover for site plan approval to construct and operate a 104' wireless telecommunications facility at 180 Tolend Road (Tax Map # F-2-0-0) in the City of Dover, Strafford County, New Hampshire (Verizon Wireless' "Dover West" cell)

Dear Members of the Planning Board:

By application dated August 11, 2023 Cellco Partnership d/b/a Verizon Wireless ("Verizon Wireless") submitted application (the "Application") for the above-referenced project (the "Project").

Thereafter, by correspondence dated September 7, 2023 we received comments/questions from City of Dover Technical Review Committee (the "TRC Comments"). Below are the TRC Comments in bold italicized type, followed by Verizon Wireless' responses in regular type.

PLAN REVIEW:

Planning:

- ***Provide copy of license to Planning staff.***

A copy of the Memorandum of Lease is enclosed as Exhibit N (lettered to follow Exhibits A-M submitted with the August 11, 2023 Application).

- ***Provide letter to serve from electric company***

Verizon Wireless will provide this to the Codes Office with the building permit application.

- ***Double side materials next submission***

This submission is double-sided, as requested.

- ***Public safety impact fee will be invoiced***

No response necessary.

- ***Confirm no wetlands within 100' radius***

See Note 11 on Sheet C-1 of the revised project plans enclosed as Exhibit O (the “**Revised Plans**”).

- ***Revise plans:***

- ***Owner’s signatures on the final plans***

Verizon will seek the owner’s signature on the final plans. A signature block has been added on Sheet T-1 of the Revised Plans.

- ***Professional stamps on the final plans***

Proterra will provide the requested professional stamps on the final plans.

- ***Add file number to plan set, SITE-2023-0012***

The file number has been added to Sheet T-1 of the Revised Plans.

- ***Confirm inclusion of all common notes***

The Common Notes are included on Sheets T-1 (General Notes, Scope of Work and Project Notes), C-1 (Survey Notes) and A-1 (Zoning Summary and References), EC-1, EC-2, P-1 and D-2 of the Revised Plans.

- ***Add dates and numbers of federal permits***

Other than the issuance of the required FCC license, we are unaware of any other federal permits.

- ***Reference ZBA Case on plan***

The required ZBA Case 2023-0035 has been added to Sheet A-1 (Zoning Summary) of the Revised Plans.

- ***Provide rendering of tower***

A rendering of the proposed tower is included on Sheet A-2 of the Revised Plans, as well as in the Photographic Simulations enclosed in Exhibit P.

- ***Add label for underground electric***

The requested note has been added to Sheet A-1 of the Revised Plans.

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>

Verizon Wireless and its contractors will so comply.

- ***Provide detail for Construction site signage per the Construction guidelines.***

The requested detail has been added to Sheet EC-2 of the Revised Plans.

- ***Recommend providing 1 sf of snow storage per 10 sf of pavement to be cleared. Verify snow storage meets or exceeds this recommendation or provide note to remove excess snow when storage areas are filled.***

No portion of the Site will be paved, so it is unclear whether this provision is applicable since no pavement is proposed. Nevertheless, Verizon Wireless does not generally plow its facilities in the winter. Should access be required, snow plowing is unlikely as access will be provided by foot from the existing farm driveway. In the unlikely event that plowing is warranted, more than adequate snow storage is provided along the existing farm driveway.

- ***There are locations on the pole for future antenna to be attached. Do you have entities reserved for those spaces? If not, would you be willing to discuss, with the City, attaching an antenna for City services?***

Verizon Wireless has designed the facility to accommodate co-location. None of the space has been reserved and Verizon Wireless routinely makes space available on its towers for municipal purposes. Verizon Wireless utilizes a third-party vendor to manage such co-locations.

- ***Project appears to disturb more than 20,000 sf of area and result in more than 4,000 sf of new impervious area and thus would require a stormwater management plan (153-14.2.a.2). Materials did not include a drainage study to review.***

As outlined in Sheet EC-1 of the Revised Plans, the Project disturbs less than 20,000 sf of area. Erosion control details are included on Sheets EC-1 and EC-2 of the Revised Plans.

- ***Provide drainage study that shows compliance with 153-14.A.3.b***

Based on the total disturbance outlined on Sheet EC-1, a formal drainage study is not required. See § 149-14(A)(2) of the Code.

- ***What is the condition of the existing gravel driveway and will it be improved for emergency access?***

The access driveway has been designed to be more than a traditional farm driveway. As the City may be aware, Mr. Paradis operates a wood processing facility near the Site. Currently, logging and other 18-wheeled trucks utilize the current “driveway” to access the wood processing facility. Mr. Paradis previously received federal funding to improve the “driveway” to NRCS standards for access roads. The applicable standard is attached at Exhibit Q. The access road includes 3-3½ feet of either reclaimed brick or concrete. Given the current design of the access drive, Mr. Paradis and Verizon Wireless are confident the access drive is sufficient for emergency access. Mr. Paradis welcomes a visit from appropriate City officials to review the roadway if necessary.

- ***Is any lighting around the base of the tower proposed?***

As depicted in detail 4 on Sheet D-2 of the Revised Plans, a single, manually-operated work light is proposed on the top of the equipment cabinets for use by maintenance technicians in low-light conditions. The switch is a timer switch to eliminate the possibility of it remaining a powered on, beyond 30 minutes.

- ***Sheet T-1:***

- ***General Note 7: A driveway off of Tolend Road would need a driveway permit from the City of Dover not the NHDOT. Is a second driveway being permitted?***

Verizon Wireless will utilize the existing access road and will obtain a City driveway permit as required.

- ***Sheet A-1:***

- ***Has a wetland scientist visited the site to delineate wetlands?***

See Note 11 under the Survey Notes on Sheet C-1 of the Revised Plans.

- ***Sheet A-2:***

- ***Is the compound surface sufficient for vehicle access?***

See Detail 2 on Sheet D-1 regarding the proposed compound surface. It has been designed to accommodate vehicular access.

- ***What types of landscaping are proposed? We could not find the types of plants on the plan sheets.***

See Detail 9 on Sheet D-1 of the Revised Plans.

Police:

- ***The police department supports this project for the anticipated improvements to public safety in telecommunication coverage***

No response necessary.

- ***Confirming no illuminated beacon at top of tower?***

Confirmed; no lighting is proposed.

- ***Amend final paragraph of Exhibit B project description to comment on any potential visual impact to abutters. Description states, "Project will not create any detriment to adjoining properties or change the character of the neighborhood." But there is no information pertaining to visibility. Will the 104' pole be visible from Ezras Way, Susannah Drive, Columbus Avenue, Tolend Road, or Littleworth Road?***

As shown in the viewshed mapping and photographic simulation package enclosed as Exhibit P, the tower will be visible from only two (2) locations on Tolend Road (in the immediate vicinity of the Paradis farm) and partially visible from a third location (along Columbus Avenue). It will not be visible from twenty-four (24) locations in the vicinity, including along other sections of Tolend Road, Susannah's Crossing, Emerald Lane, Upper Factory Road, Wallace Drive, Lucy Lane, Ezra's Way, Watson Road, other sections of Columbus Avenue, Littleworth Road, Westward Circle, Grandview Drive, Crosby Road and Whittier Street. Based on this analysis, the tower will be visible in only 2.09% of the total 41.9 acre viewshed area. As such, Verizon Wireless confirms its prior statement that the Project will not have an adverse visual impact on the neighborhood as it is 97.9% invisible within the viewshed area.

Fire/Inspection Services:

- ***Provide supporting information to show compliance with Fire Dept. access.***

See the response above regarding the design of the access road.

- ***Provide a turning template for T-1***

See Sheet M-1 of the Revised Plans.

- ***Detail for underground electric?***

The requested detail is located on Sheet D-3 of the Revised Plans.

- ***All season, all weather access***

See the response regarding the access drive above.

Business Development:

- *The proposed location does not appear to negatively impact business operations and appears to close an important coverage gap.*

No response necessary.

- *Business Development has received public testimony in support of this application.*

No response necessary.

Planning Board:

- *The application indicates the area of parcel to be 60' x 60'; i.e. 3,600 sq. ft. rather than 360 sq. ft. – Please correct*

A revised site review application is enclosed as Exhibit R.

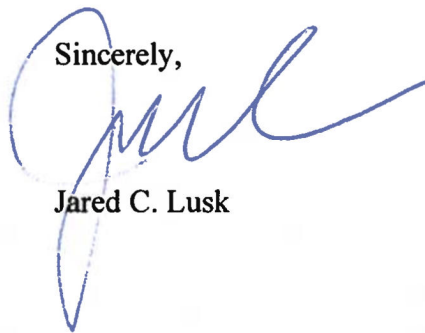
Next Steps:

Revise and add to materials, resubmit with narrative outlining how each comment was addressed for another TRC.

This correspondence is intended to serve this purpose.

Should you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,



Jared C. Lusk

JCL/mkv
Enclosures
cc: Chip Fredette
Mark Beaudoin

Site Name: Dover West NH

Location Code: 721391

Doc # 230003353 03/27/2023 12:08:09 PM
Book 5101 Page 84 Page 1 of 5

Catherine A. Berube
Register of Deeds, Strafford County

MEMORANDUM OF LEASE

3166465 BY AND BETWEEN

LIONEL R. PARADIS, JR. and KRISTINA L. PARADIS
having an address at
180 Tolend Road
Dover, New Hampshire 03820
(jointly and severally, "Lessor"),

AND

CELLCO PARTNERSHIP
d/b/a Verizon Wireless
having an address at
c/o Verizon Wireless
One Verizon Way, Mail Stop 4AW100
Basking Ridge, New Jersey 07920
("Lessee")

WITH RESPECT TO THE PROPERTY LOCATED AT:

STREET ADDRESS: 180 Tolend Road, Dover, New Hampshire
COUNTY: Strafford
MAP/LOT: F-2-0-0

THIS INSTRUMENT SHOULD BE RECORDED AND RETURNED TO:

SNYDER & SNYDER, LLP
94 White Plains Road
Tarrytown, NY 10591
ATTN: LESLIE J. SNYDER

Return to: Rae Bodonyi / LRS
5455 Detroit Rd, STE 8
Sheffield Village, Ohio 44054
440-716-1820

MEMORANDUM OF LEASE

This MEMORANDUM OF LEASE made as of this 2 day of February, ²⁰²³~~2022~~ (the "Memorandum") by and between LIONEL R. PARADIS, JR. and KRISTINA L. PARADIS, husband and wife, individuals whose mailing address is 180 Tolend Road, Dover, New Hampshire 03820, hereinafter jointly and severally designated as "LESSOR", and CELLCO PARTNERSHIP d/b/a Verizon Wireless, a Delaware general partnership with its principal offices at c/o Verizon Wireless, One Verizon Way, Mail Stop 4AW100, Basking Ridge, New Jersey 07920-1097, hereinafter designated as "LESSEE".

WITNESSETH:

1. Lessor is the owner of the property known as 180 Tolend Road, Dover, Strafford County, New Hampshire and referred to as Map/Lot F-2-0-0 on the tax map of the Town of Dover, County of Strafford (hereinafter the term "Property" shall refer to the property together with all improvements thereon). Except as otherwise specified in this Memorandum, all capitalized terms used herein shall have the meanings as defined in the Lease.

2. By Lease dated as of January 12, ²⁰²³~~2022~~ (the "Lease"), Lessor has leased to Lessee the Premises, together with the Easement, which are generally shown on Exhibit "B" of the Lease.

3. The Initial Term of the Lease is for five (5) years, expiring five (5) years after the Commencement Date. The Initial Term is estimated on the date hereof to expire on September 30, 2028. The Lease also has four (4) extension terms of five (5) years each unless the Lessee terminates it at the end of the then current term by giving Lessor written notice of the intent to terminate at least three (3) months prior to the end of the then current term. In addition, Lessee has a right of first refusal under the Lease.

4. The terms, covenants and provisions of the Lease, the terms of which are hereby incorporated by reference into this Memorandum, shall extend to and be binding upon the respective executors, administrators, heirs, successors and assigns of Lessor and Lessee.

5. The rights, obligations and remedies of Lessor and Lessee, respectively, with reference to each other and the Premises shall be fixed, determined and governed solely by the terms of the Lease, this being a Memorandum of Lease executed by the parties hereto solely for the purpose of providing an instrument for recording in lieu of recording the Lease. The parties hereto have executed and delivered this Memorandum of Lease for the purpose of giving notice of the Lease to whomsoever it may concern. For a statement of the rights, privileges and obligations created under and by the Lease and of the terms, covenants and conditions therein, reference should be made to the Lease and in the event the terms of this Memorandum conflict with the terms of the Lease, the terms of the Lease shall be controlling.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals as of the date set forth above.

LESSOR:

Lionel R. Paradis, Jr.
LIONEL R. PARADIS, JR.
Date: 11/10/22

Courtney Petri
Witness

Kristina L. Paradis
KRISTINA L. PARADIS
Date: 11/10/22

Courtney Petri
Witness

LESSEE:

CELLCO PARTNERSHIP
d/b/a Verizon Wireless

BY: K. Murray
Name: Kathy Murray
Title: Director Network Field Engineering
Dated: 2-2-22

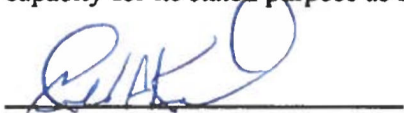
A. T. [Signature]
Witness

STATE OF NEW HAMPSHIRE)

: SS. :

COUNTY OF STRAFFORD)

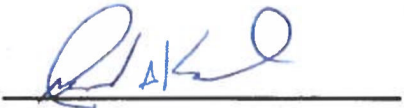
On this 10 day of November, 2022, before me, the undersigned personally appeared LIONEL R. PARADIS, JR., proved to me through satisfactory evidence of identification, which were New Hampshire License NH 1495867, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily in his capacity for its stated purpose as his own free act and deed.



Signature and Office of Individual
Taking Acknowledgment



On this 10 day of November, 2022, before me, the undersigned personally appeared KRISTINA L. PARADIS, proved to me through satisfactory evidence of identification, which were New Hampshire License NH 1422377, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that she signed it voluntarily in her capacity for its stated purpose as her own free act and deed.



Signature and Office of Individual
Taking Acknowledgment

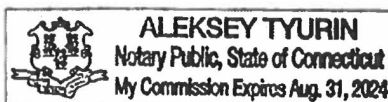


State of Connecticut
COMMONWEALTH OF MASSACHUSETTS)

: ss.: Wallingford
COUNTY OF New Haven

On this 2nd day of Feb, 2022³, before me, the undersigned personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, that by his signature on the instrument, the individual, or the entity, **CELLCO PARTNERSHIP d/b/a Verizon Wireless**, upon behalf of which the individual acted, executed the instrument, and that such individual made such appearance before the undersigned in the City/Town of Wallingford, County of New Haven, ~~Commonwealth of Massachusetts~~ State of Connecticut

A. Tyurin
Signature and Office of Individual
Taking Acknowledgment





Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

ACCESS ROAD

CODE 560

(ft)

DEFINITION

An access road is an established route for equipment and vehicles.

PURPOSE

This practice is used to accomplish one or more of the following purposes:

- To provide a fixed route for vehicular travel for resource activities involving the management of conservation forestry operations, livestock, agriculture, wildlife habitat, and other conservation enterprises

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where access is needed from a private or public road or highway to a land use enterprise or conservation measure, or where access is needed in a planned land use area.

Access roads range from single-purpose, seasonal-use roads, designed for low speed and rough driving conditions, to all-purpose, all-weather roads. Single-purpose roads provide access to areas such as forest fire lines, forest management activities, remote recreation areas, or for maintenance of facilities.

This practice does not apply to temporary or infrequently used trails used for logging. Use NRCS Conservation Practice Standard (CPS) Forest Trails and Landings (Code 655) to meet this need. Trails and walkways used for animals, pedestrians, or off-road vehicles are addressed in NRCS CPS Trails and Walkways (Code 575).

CRITERIA

General Criteria Applicable to All Purposes

Design the access road to serve the enterprise or planned use with the expected vehicular or equipment traffic. Factors in the design include the type of vehicle or equipment and the speed, loads, soils, climate, turning radius, and other conditions under which vehicles and equipment are expected to operate.

Location

Locate the access road to serve the purpose intended, to facilitate the control and disposal of surface and subsurface water, to control or reduce erosion, and to make the best use of topographic features. Design the layout of the road to follow natural contours and slopes to minimize disturbance of drainage patterns. Locate the access road where it can be maintained and where water management problems are not created. To reduce potential pollution, position the road as far as possible from water bodies and watercourses. To the extent possible, do not impede overland flow.

Alignment

Adapt the gradient and horizontal alignment to the intensity of use, the mode of travel, the type of equipment and load weights, and the level of development.

Grades normally should not exceed 10 percent except for short lengths. A maximum grade of 15 percent should only be exceeded if necessary for special uses such as field access roads or fire protection roads.

Width

The minimum width of the roadbed for an all-purpose road is 14 feet for one-way traffic and 20 feet for two-way traffic. The roadbed width includes a tread-width of 10 feet for one-way traffic or 16 feet for two-way traffic and 2 feet of shoulder width on each side. Increase the two-way traffic width by a minimum of 4 feet for trailer traffic. Single-purpose roads will have a minimum width of 10 feet with greater widths at curves and turnouts. Use vegetation or other measures to protect the shoulders from erosion.

Use turnouts on single lane roads where vehicles travel in both directions on a limited basis. Design the turnout to accommodate the anticipated vehicle use.

Provide a turnaround at the end of dead end roads. Size the turnaround for the anticipated vehicle type that will be using the road.

Provide parking space as needed to keep vehicles from parking on the shoulder or other undesirable locations.

Side slopes

Design all cuts and fills to have stable slopes that are a minimum of 2 horizontal to 1 vertical. For short lengths, rock areas, or very steep hillsides, steeper slopes may be permitted if soil conditions warrant and special stabilization measures are installed. Where possible, design slopes to a minimum of 4 horizontal to 1 vertical to improve establishment and maintenance of turf.

Where possible, avoid areas with geological conditions and soils that are subject to slides. When the area cannot be avoided, treat the area to prevent slides.

Drainage

The type of drainage structures used will depend on the intended use and runoff conditions. Provide a culvert, bridge, ford, or surface cross drain for water management at every natural drainageway. The capacity and design of the drainage feature must be consistent with sound engineering principles and must be adequate for the class of vehicle, road type, land use in the watershed, and intensity of use.

When a culvert or bridge is installed in a drainageway, it must have a minimum capacity that is sufficient to convey the design storm runoff without causing erosion or road overtopping. Table 1 lists minimum design storm frequencies for various road types.

Table 1: Minimum design storm frequencies

Road Intensity and Usage	Storm Frequency
Intermittent; single-purpose or farm use	2 year - 24 Hour
Frequent; farm headquarters, livestock access, isolated recreation areas	10 year - 24 Hour
High intensity; residential or public access	25 year - 24 Hour

For public access roads, design storm frequencies must also meet local standards.

Use NRCS CPSs Stream Crossing (Code 578), or Aquatic Organism Passage (Code 396) when aquatic species are present, to design stream crossings.

An erosion-resistant low point or overflow area may be constructed across the access road to supplement the culvert capacity on nonpublic-use roads.

Surface cross drains, such as broad-based or rolling dips, may be used to control and direct water flow off the road surface on low-intensity-use forest, ranch, or similar roads. Protect the outlets of drainage measures to limit erosion. On steep grades where water could run down the road, use a broad-based dip or other similar feature to divert runoff. The surface cross drain must be constructed of materials that are compatible with the use and maintenance of the road surface. The discharge area for a surface cross drain must be well-vegetated or have other erosion resistant materials (see fig. 1). Reduce separation distances as needed to account for local hydrologic conditions.

Design a minimum cross slope to direct precipitation off of the roadway. Cross slopes range from 1.5 to 2 percent for paved surfaces and 2 to 6 percent for unpaved surfaces.

Provide ditches, as needed, to move water away from the road. Maintain unobstructed flow into the ditches to prevent flows from causing roadside erosion. The capacity of a roadside ditch must be adequate to carry the drainage from the road surface. Design ditch channels to have stable grades and side slopes. Provide a stable outlet for the ditch. Protection may include riprap or other similar materials. Use NRCS CPSs Structure for Water Control (Code 587), Lined Waterway or Outlet (Code 468), or Grade Stabilization Structure (Code 410), if needed.

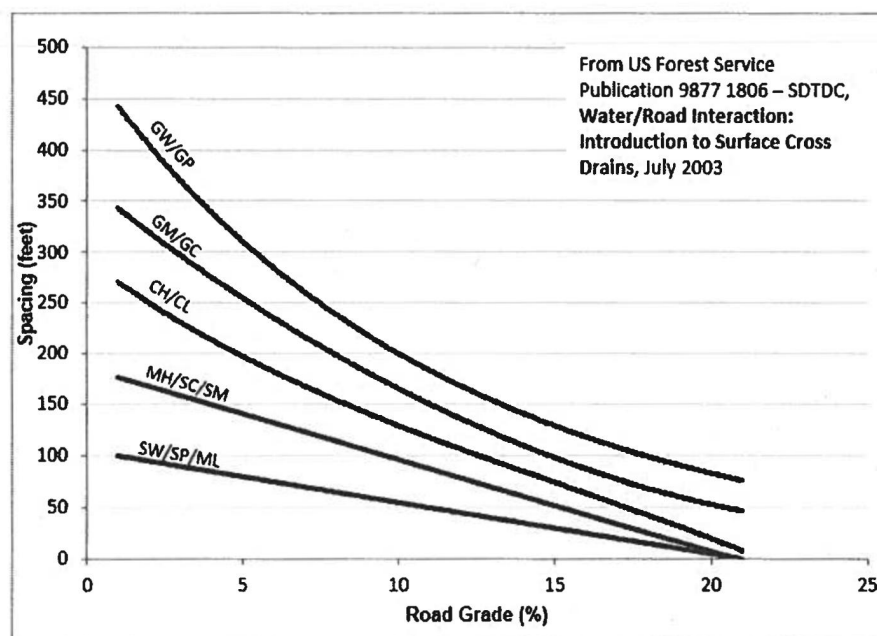


Figure 1. Recommended spacing of surface cross drains based on soil types

Surfacing

Install a wearing course or surface treatment on the access road if required by traffic needs, soil, climate, erosion control, particulate matter emission control, or other site condition. If none of these factors apply, no special treatment of the surface is required.

When a treatment is used, the type of treatment will depend on local conditions, available materials, and the existing road base. On roads made of soils with weak bearing capacity, such as silts, organics, and clays, or where it is necessary to separate the surfacing material from the foundation material, place a geotextile material specifically designed for road stabilization applications under the surface treatment. Use the criteria in NRCS CPS Heavy Use Area Protection (Code 561) to design the surface treatment. Do not use toxic and acid-forming materials to build the road.

If dust control is needed, use NRCS CPS Dust Control on Unpaved Roads and Surfaces (Code 373).

Safety

Provide passing lanes, turnouts, guardrails, signs, and other facilities as needed for safe traffic flow. Design an intersection to a public highway to meet applicable Federal, State, and local criteria.

Erosion control

Use the criteria in NRCS CPS Critical Area Planting (Code 342) or the NRCS State-approved seeding specification to vegetate road banks and disturbed areas as soon as soil and climatic conditions are favorable. If permanent vegetation cannot be established in a timely manner, use appropriate temporary measures to control erosion. If the use of vegetation is precluded and protection against erosion is needed, use the criteria in NRCS CPS Mulching (Code 484) to provide surface protection.

During and after construction, use erosion and sediment control measures to minimize offsite damages.

CONSIDERATIONS

Consider visual resources and environmental values during planning and design of the road system.

Consider locating roads outside of the active floodplain to reduce bank erosion potential and the effects on stream hydrology.

Limiting the number of vehicles and vehicle speed will reduce the potential for generation of particulate matter and decrease safety and air quality concerns.

Consider using additional conservation practices, such as NRCS CPSs Dust Control on Unpaved Roads and Surfaces (Code 373) or Windbreak/Shelterbelt Establishment (Code 380), to reduce the potential for generation and transport of particulate matter emissions.

During adverse weather, some roads may become unsafe or may be damaged by use. Consider restricting access to the road at that time.

When revegetation is needed, consider revegetating using species or diverse mixes that are native or adapted to the site and have multiple benefits. In addition, where appropriate, consider a diverse mixture of forbs and wildflowers to support pollinator and other wildlife habitat.

Consideration should be given to—

- Effects on downstream flows, wetlands, or aquifers that would affect other water uses or users.
- Effects on wildlife habitats that would be associated with the practice.
- Utilizing buffers where possible to protect surface water.
- Short-term and construction-related effects of this practice.

PLANS AND SPECIFICATIONS

Provide plans and specifications that describe the requirements for applying the practice to achieve its intended purpose. As a minimum, include—

- A plan view of the proposed road that shows water features, known utilities, and other features that affect the design.
- Road width and length with profile and typical cross section(s) including turnouts, parking, and turnarounds.
- Design road grades or maximum grades when applicable.
- Soils investigation. Include location of soil borings and plot of the soil/geologic boring showing the Unified Soil Classification System, as needed.
- Type and thickness of surface treatment including any subbase preparation.
- Grading plan.

- Cut and fill slopes where applicable.
- Planned drainage features.
- Location, size, type, length, and invert elevations of all required water control structures.
- Vegetative requirements that include vegetation materials to be used, establishment rates, and season of planting.
- Erosion and sediment control measures, as needed.
- Safety features.
- Construction and material specifications.

OPERATION AND MAINTENANCE

Prepare a written operation and maintenance plan for the access road. As a minimum, include the following activities:

- Inspect culverts, roadside ditches, water bars, and outlets after each major runoff event and restore flow capacity as needed. Ensure proper cross section is available and outlets are stable.
- Maintain vegetated areas in adequate cover to meet the intended purpose(s).
- Fill low areas in travel treads and regrade, as needed, to maintain road cross section. Repair or replace surfacing materials as needed.
- Selection of chemical treatment(s) for surface treatment or snow/ice removal, as needed. Select the chemicals used for surface treatment or snow and ice removal to minimize adverse effects on stabilizing vegetation.
- Selection of dust control measures, as needed.

REFERENCES

American Association of State Highway and Transportation Officials. 2011. A Policy on Geometric Design of Highways and Streets, 6th Edition. Washington, D.C.

American Association of State Highway and Transportation Officials. 2001. Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT $\leq$ 400). Washington, D.C.

Swift, L.W., Jr. 1988. Forest Access Roads: Design, Maintenance, and Soil Loss. *In*: W.T. Swank and D.A. Crossley, Jr. (ed.) Ecological Studies, Vol. 66: Forest Hydrology and Ecology at Coweeta. New York: Springer-Verlag: 313-324.

USDA Forest Service. 2003. Water/Road Interaction: Introduction to Surface Cross Drains, Publication 9877 1806 – SDTDC. Washington, D.C.

Weaver, W.E., E.M. Weppner, and D.K. Hagans. 2015. Handbook for Forest, Ranch & Rural Roads: A Guide for Planning, Designing, Constructing, Reconstructing, Upgrading, Maintaining and Closing Wildland Roads (Rev. 1st ed). Mendocino County Resource Conservation District. Ukiah, CA.
<https://www.pacificwatershed.com/sites/default/files/RoadsEnglishBOOKApril2015b.pdf>

Photographic Simulation Package

Proposed Wireless Telecommunications Facility:

Dover-W-NH
180 Tolend Road
Dover, NH 03820

- Balloon Test Conducted 9/21/23
- Proposed New 104ft AGL Antenna Structure

Package prepared by:

Virtual Site Simulations, LLC
24 Salt Pond Road
Suite C3
South Kingstown, Rhode Island 02879

www.VirtualSiteSimulations.com
www.ThinkVSSFirst.com



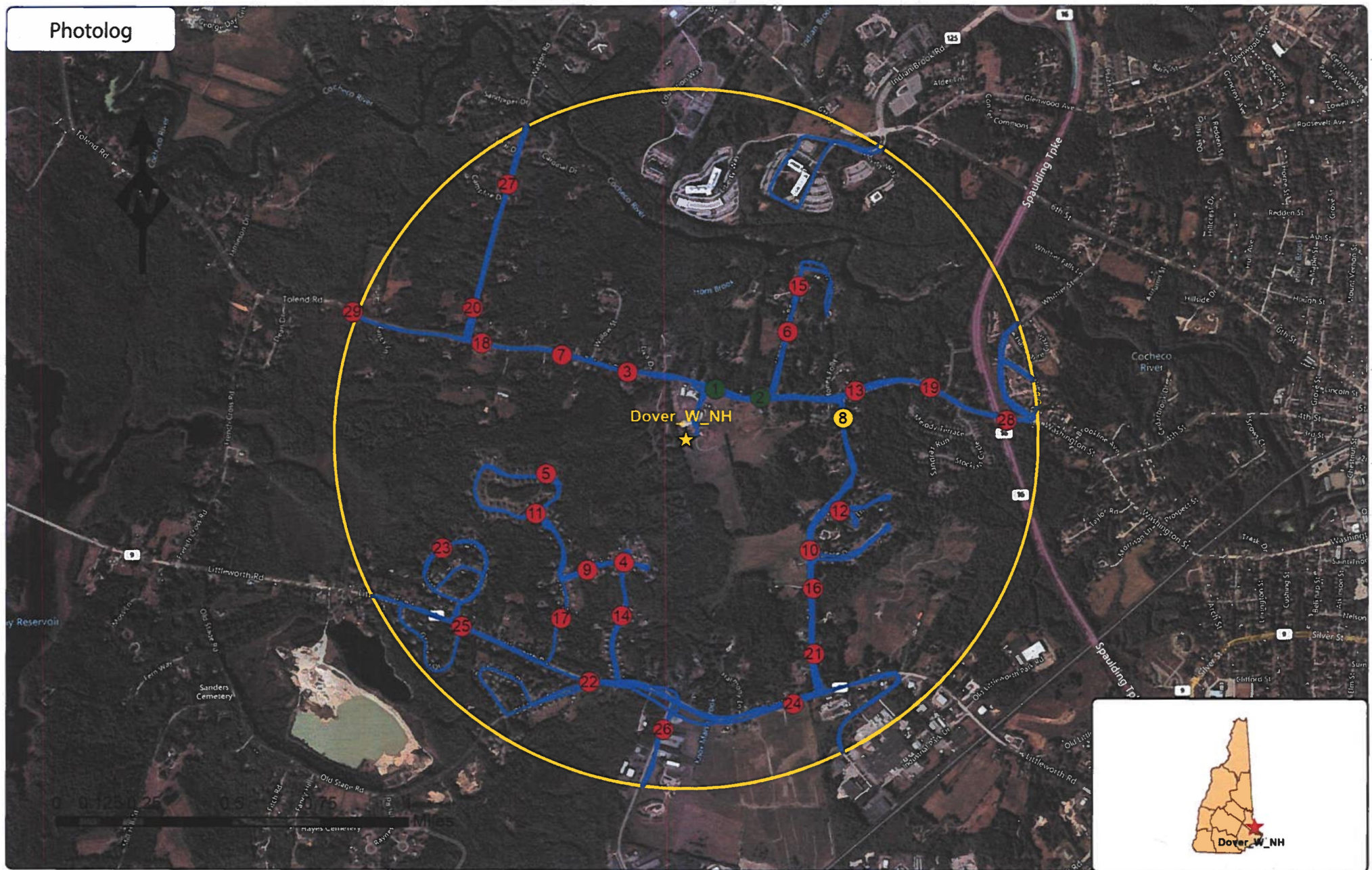
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Photolog



Wireless Telecommunications Facility:

Dover-W-NH
180 Tolend Road
Dover, NH 03820

Legend:

- ★ Facility Location
- 1 Mile Radius
- Reconnaissance Track Log
- Photo location - Balloon visible - Year Round Visibility
- Photo location - Balloon visible - Obscured Visibility
- Photo location - Balloon NOT visible

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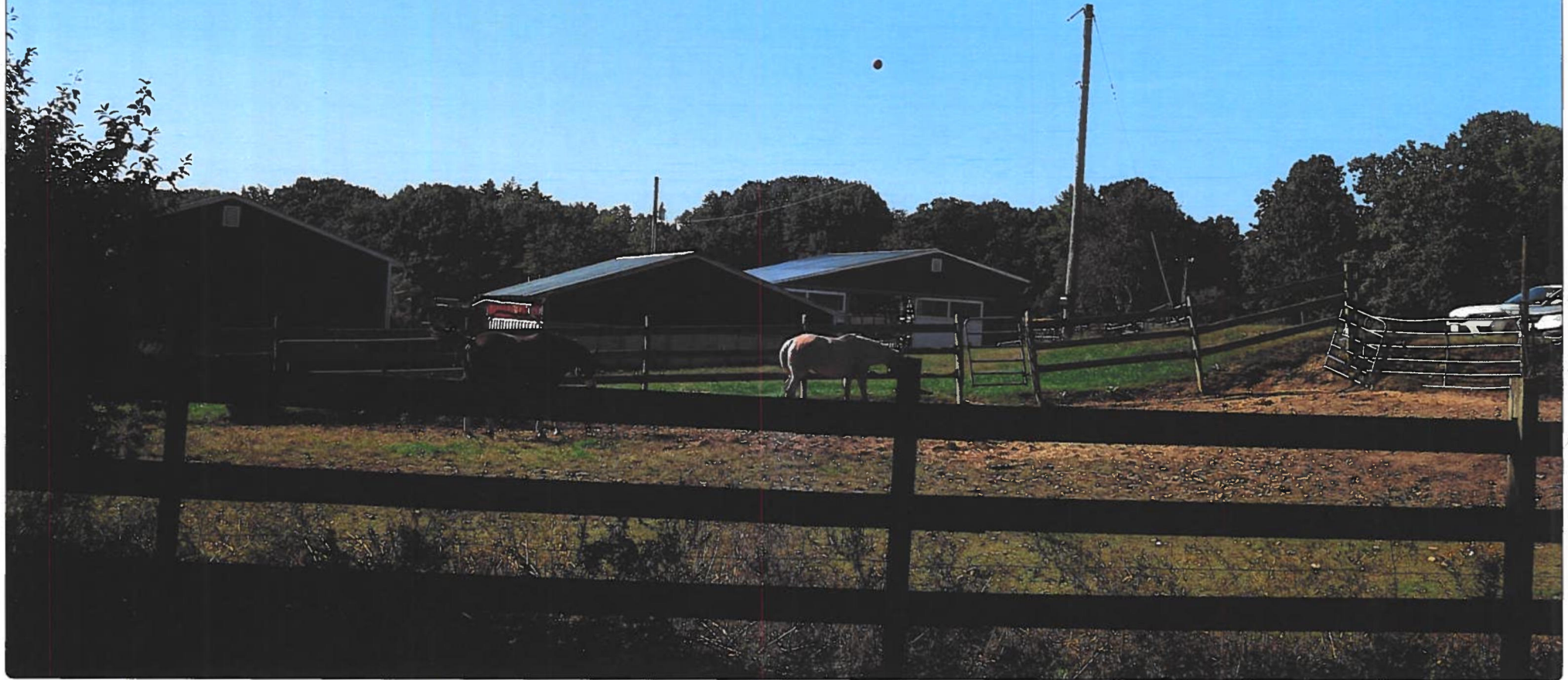


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
1	Tolend Rd	43.20135	-70.91274	0.17 Miles	North-East	211	Year Round

Site: Dover-W-NH

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Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
1	Tolend Rd	43.20135	-70.91274	0.17 Miles	North-East	211	Year Round

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Existing



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
2	Tolend Rd	43.20096	-70.91022	0.24 Miles	North-East	242	Year Round

Site: Dover-W-NH

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Simulation



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
2	Tolend Rd	43.20096	-70.91022	0.24 Miles	North-East	242	Year Round

Site: Dover-W-NH

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Existing

Balloon not visible from this location



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
3	Tolend Rd	43.20213	-70.91766	0.25 Miles	North-West	140	Not Visible

Site: Dover-W-NH

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Existing

Balloon not visible from this location



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
4	Susannah's Crossing	43.19427	-70.9181	0.39 Miles	South-West	28	Not Visible

Site: Dover-W-NH

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Balloon not visible from this location

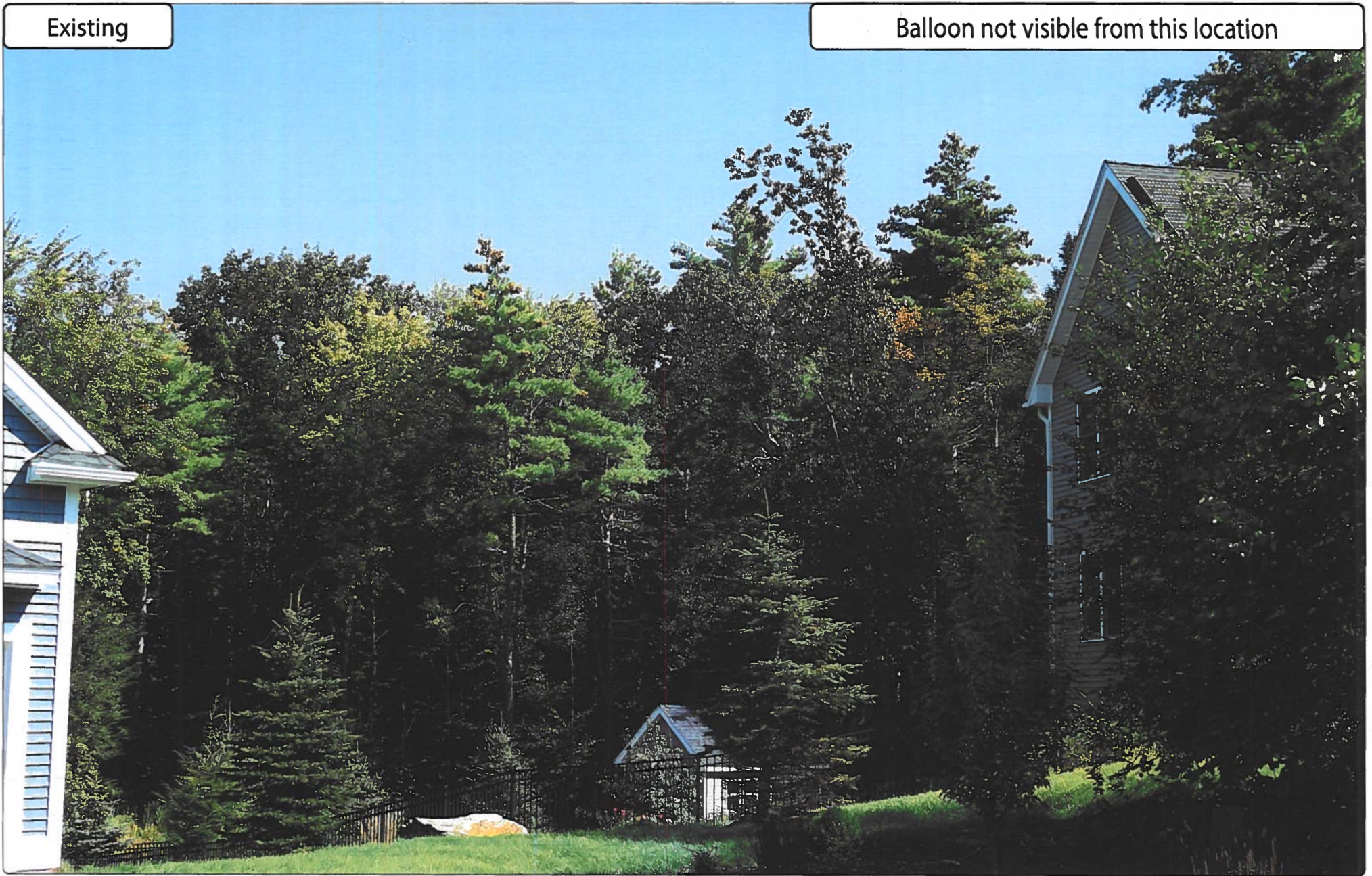


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
5	Emerald Ln	43.19797	-70.92235	0.41 Miles	West	77	Not Visible

Site: Dover-W-NH

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Balloon not visible from this location

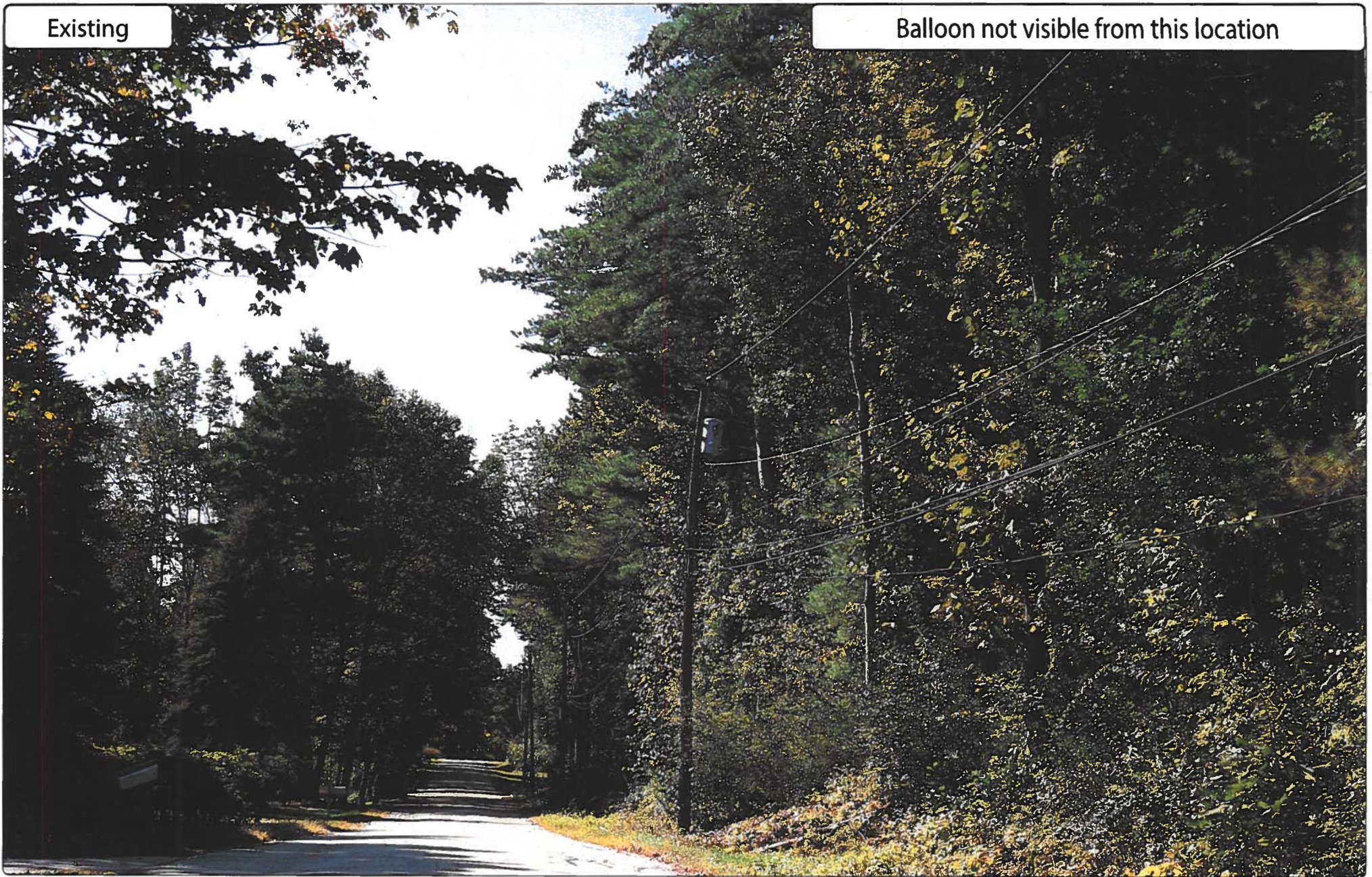


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
6	Upper Factory Rd	43.20365	-70.9086	0.42 Miles	North-East	224	Not Visible

Site: Dover-W-NH

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Balloon not visible from this location



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
7	Tolend Rd	43.20289	-70.92134	0.43 Miles	North-West	125	Not Visible

Site: Dover-W-NH

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Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
8	Columbus Ave	43.20003	-70.9056	0.45 Miles	East	264	Obscured

Site: Dover-W-NH

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Simulation



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
8	Columbus Ave	43.20003	-70.9056	0.45 Miles	East	264	Obscured

Site: Dover-W-NH

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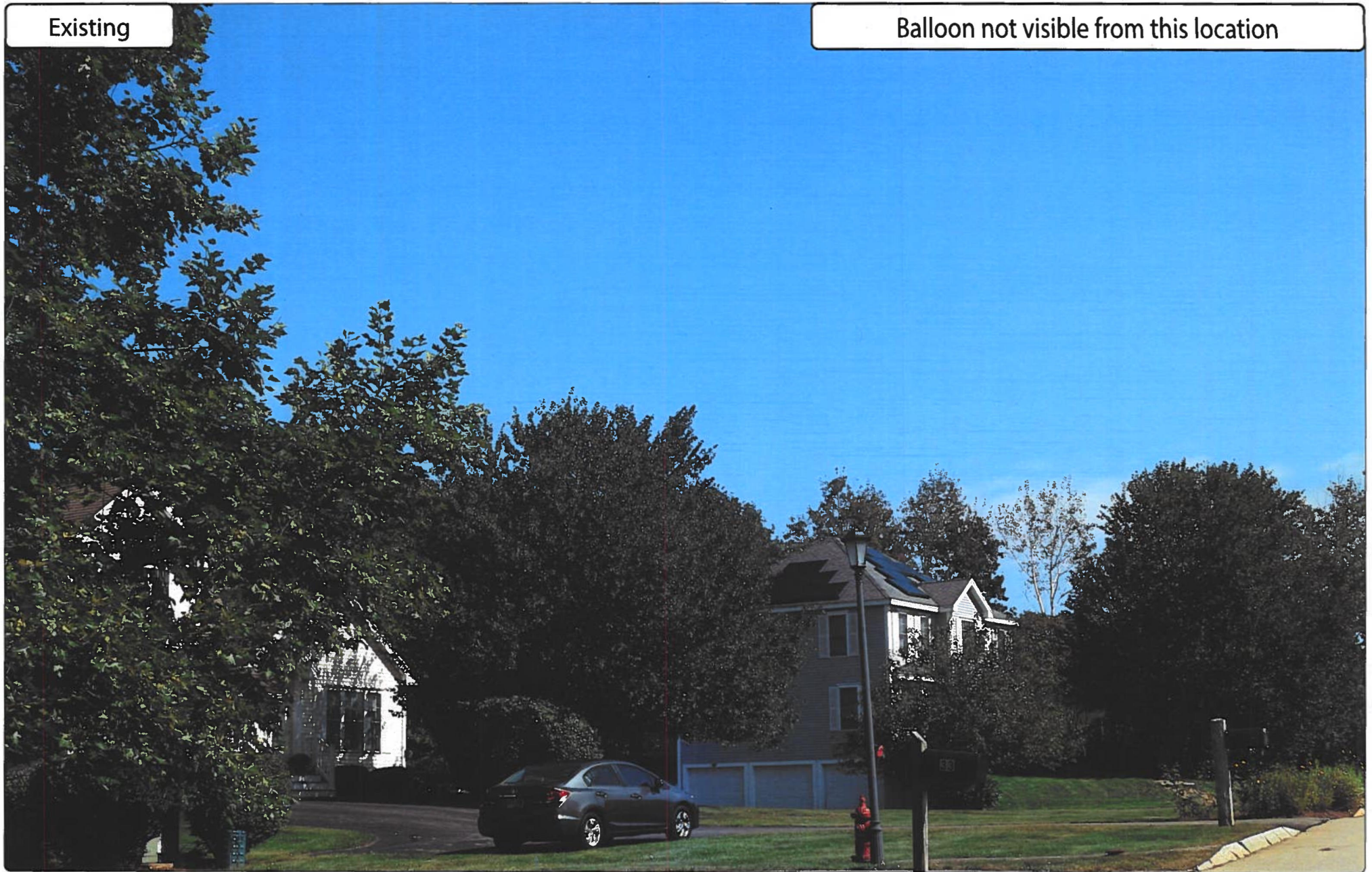


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
9	Susannah's Crossing	43.19399	-70.92015	0.47 Miles	South-West	38	Not Visible

Site: Dover-W-NH

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Balloon not visible from this location



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
10	Wallace Dr	43.19462	-70.90763	0.47 Miles	South-East	313	Not Visible

Site: Dover-W-NH

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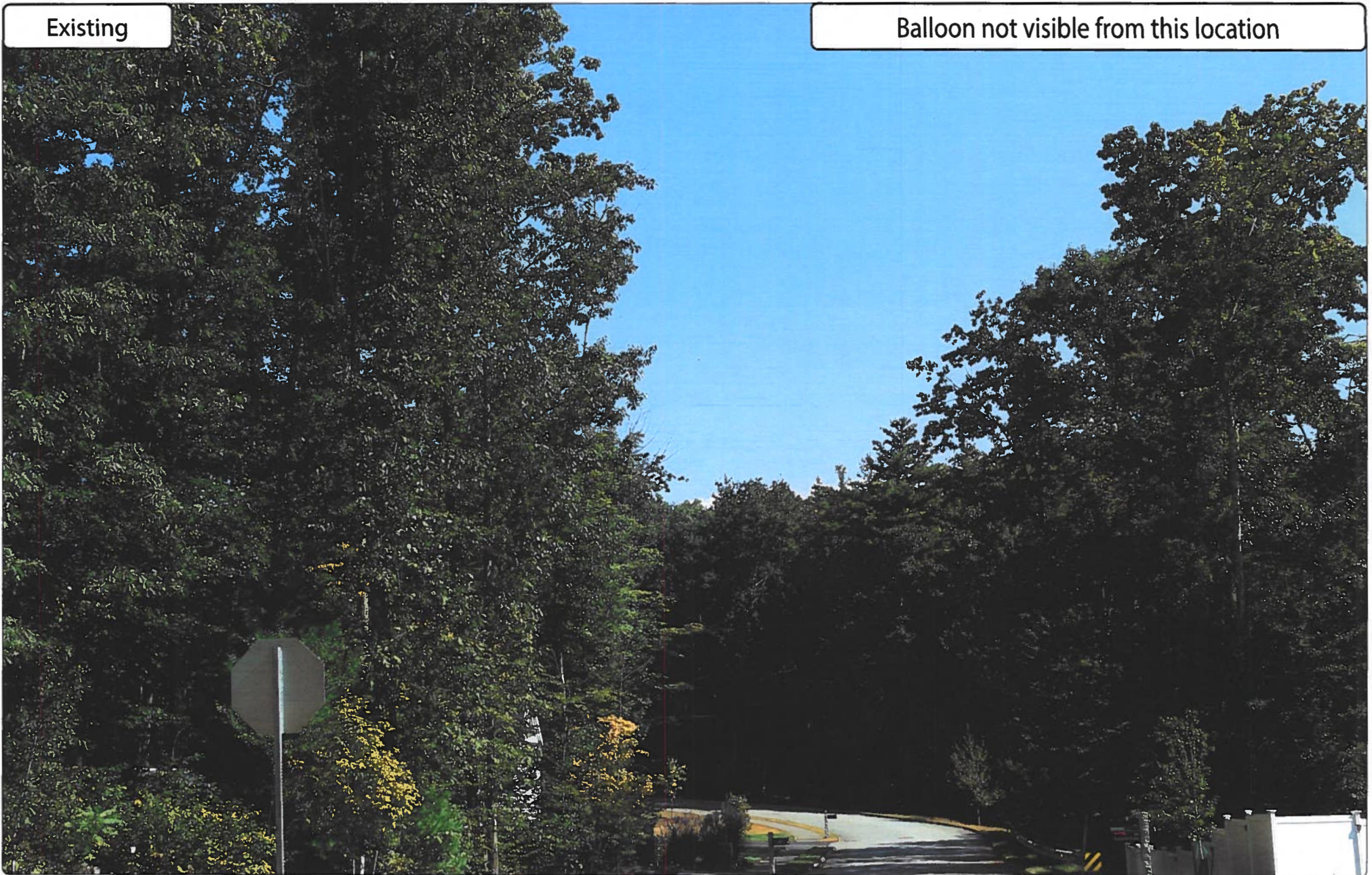


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
11	Emerald Ln	43.19636	-70.92298	0.48 Miles	South-West	65	Not Visible

Site: Dover-W-NH

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Balloon not visible from this location



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
12	Lucy Ln	43.19622	-70.90589	0.48 Miles	South-East	296	Not Visible

Site: Dover-W-NH

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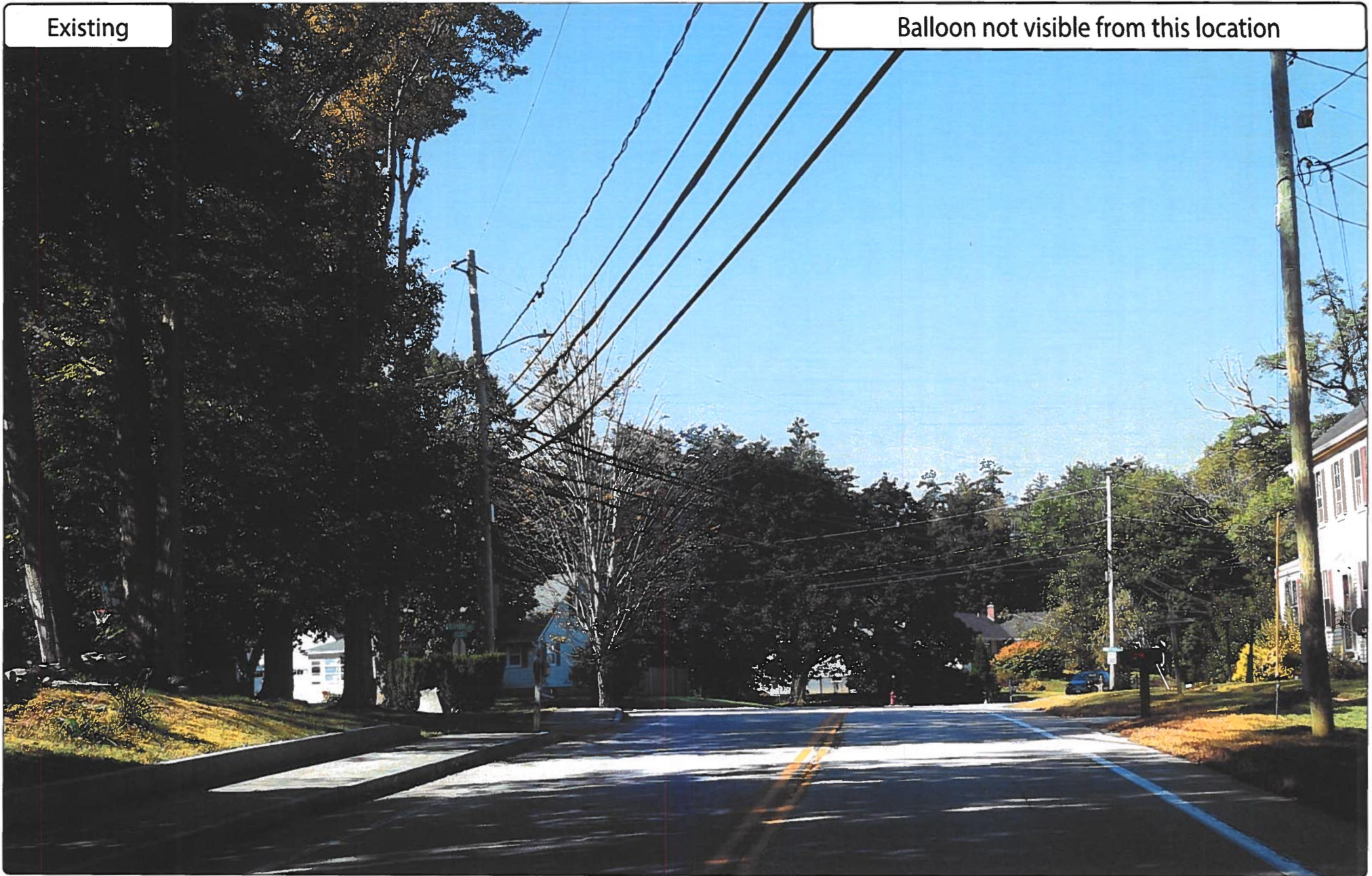


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
13	Tolend Rd	43.20117	-70.90488	0.5 Miles	East	255	Not Visible

Site: Dover-W-NH

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Balloon not visible from this location



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
14	Ezras Way	43.19204	-70.91827	0.54 Miles	South	21	Not Visible

Site: Dover-W-NH

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Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
15	Upper Factory Rd	43.20553	-70.90795	0.54 Miles	North-East	217	Not Visible

Site: Dover-W-NH

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Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
16	Columbus Ave	43.19303	-70.9075	0.56 Miles	South-East	321	Not Visible

Site: Dover-W-NH

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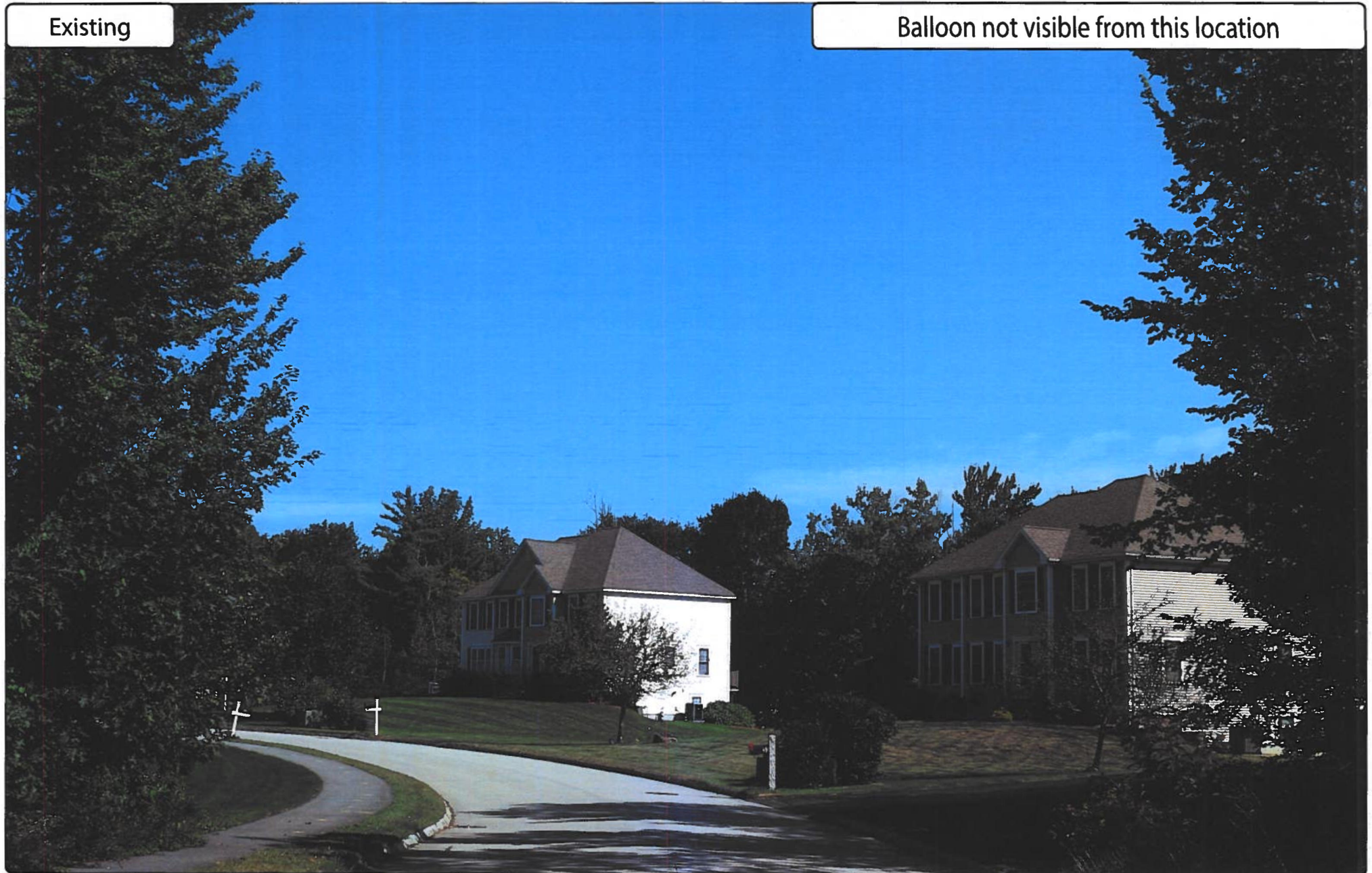


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
17	Emerald Ln	43.19199	-70.9217	0.62 Miles	South-West	36	Not Visible

Site: Dover-W-NH

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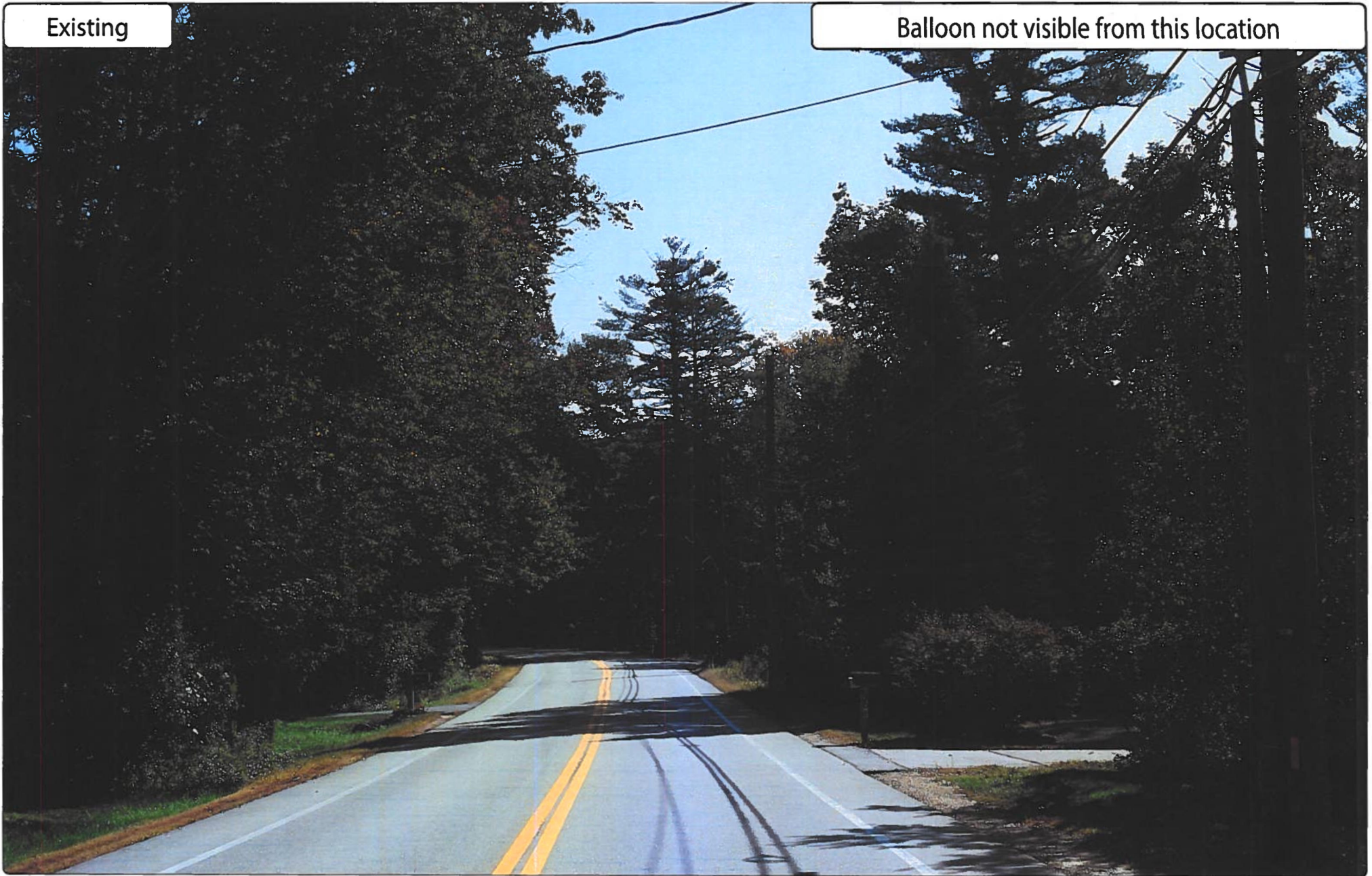


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
18	Tolend Rd	43.20344	-70.92583	0.64 Miles	North-West	116	Not Visible

Site: Dover-W-NH

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Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
19	Tolend Rd	43.20124	-70.90066	0.71 Miles	East	259	Not Visible

Site: Dover-W-NH

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Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
20	Watson Rd	43.2049	-70.92628	0.71 Miles	North-West	123	Not Visible

Site: Dover-W-NH

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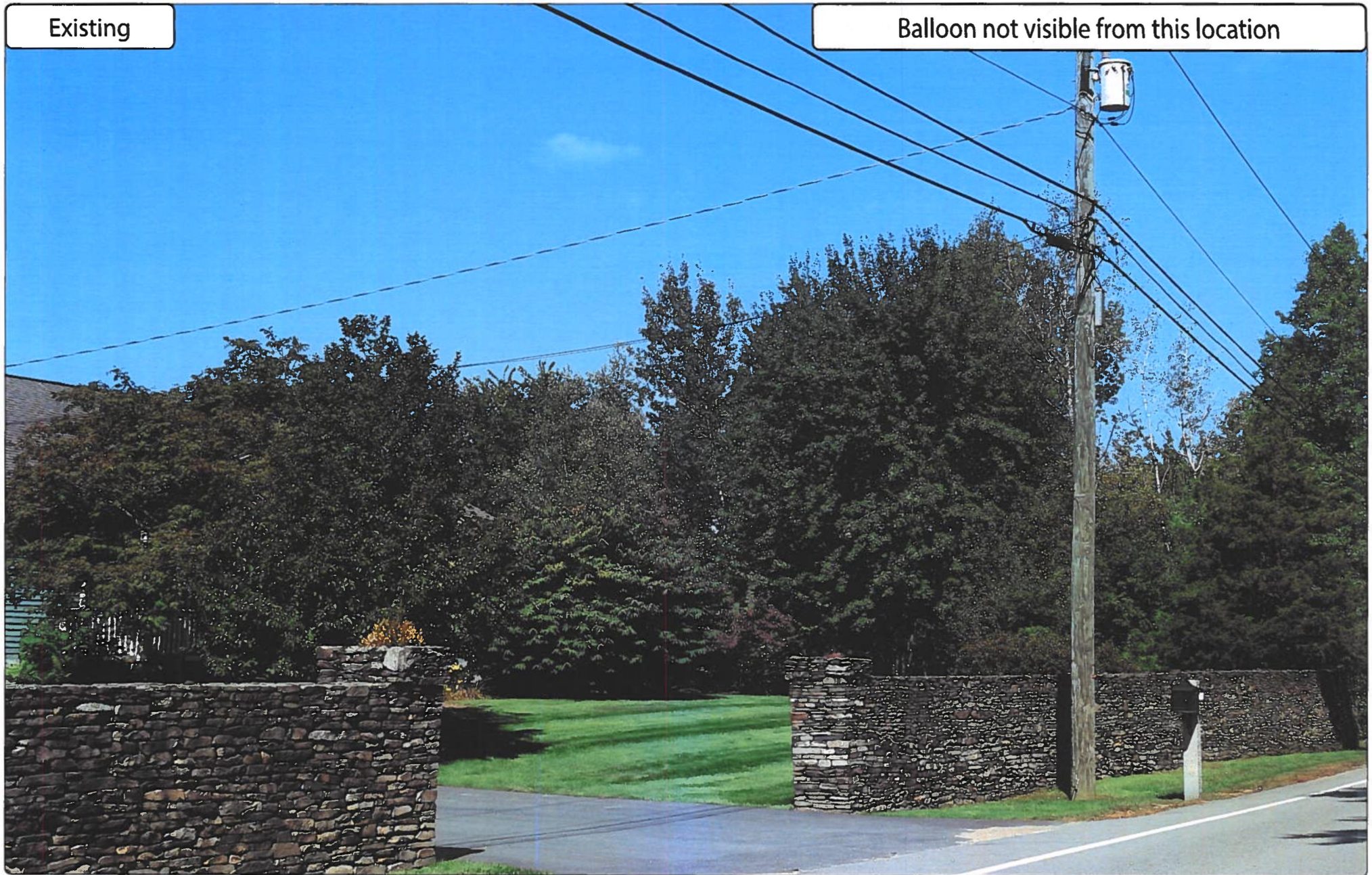


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
21	Columbus Ave	43.19033	-70.90751	0.71 Miles	South-East	331	Not Visible

Site: Dover-W-NH

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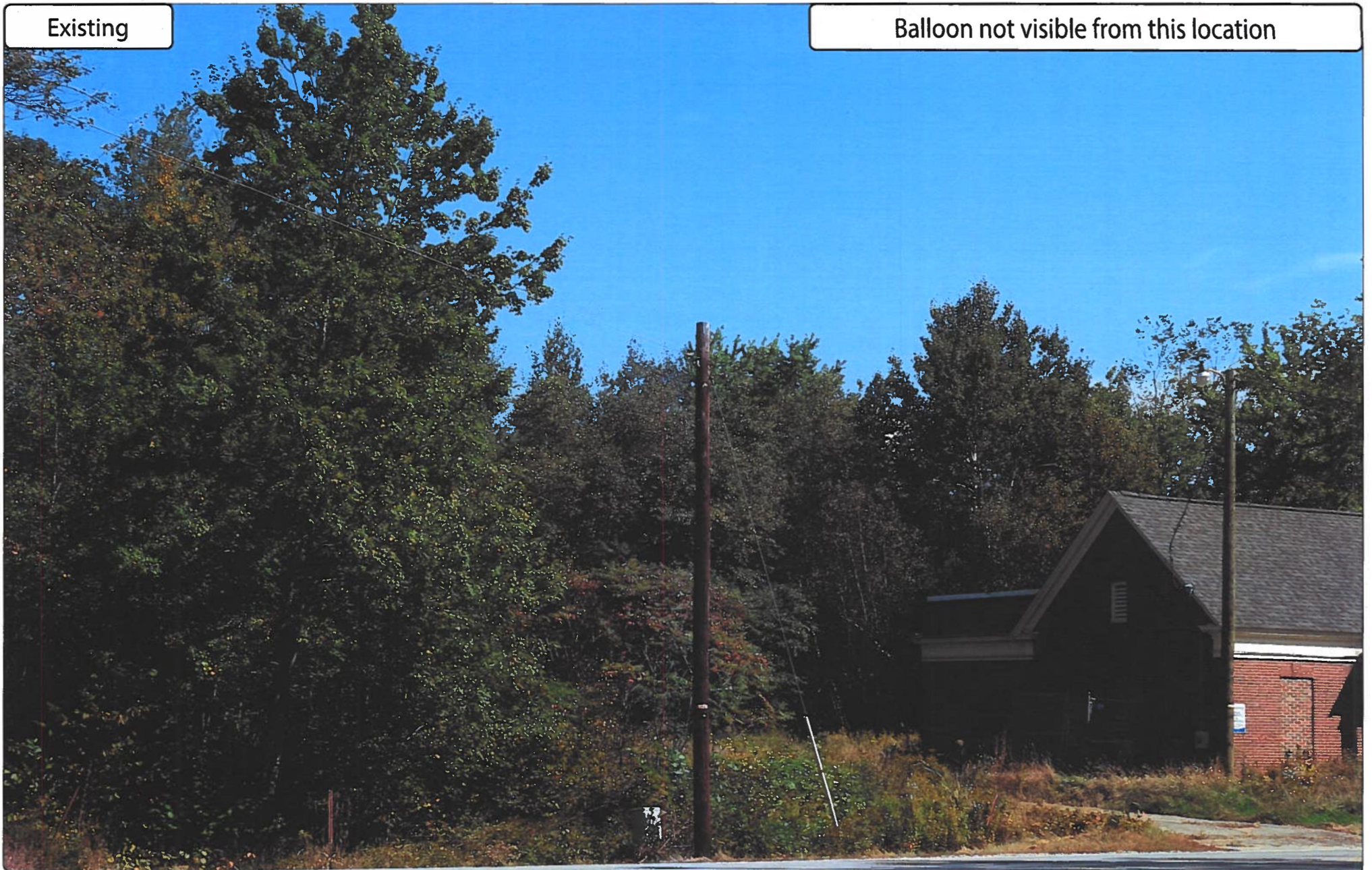


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
22	Littleworth Rd	43.18935	-70.92018	0.75 Miles	South-West	23	Not Visible

Site: Dover-W-NH

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Existing

Balloon not visible from this location

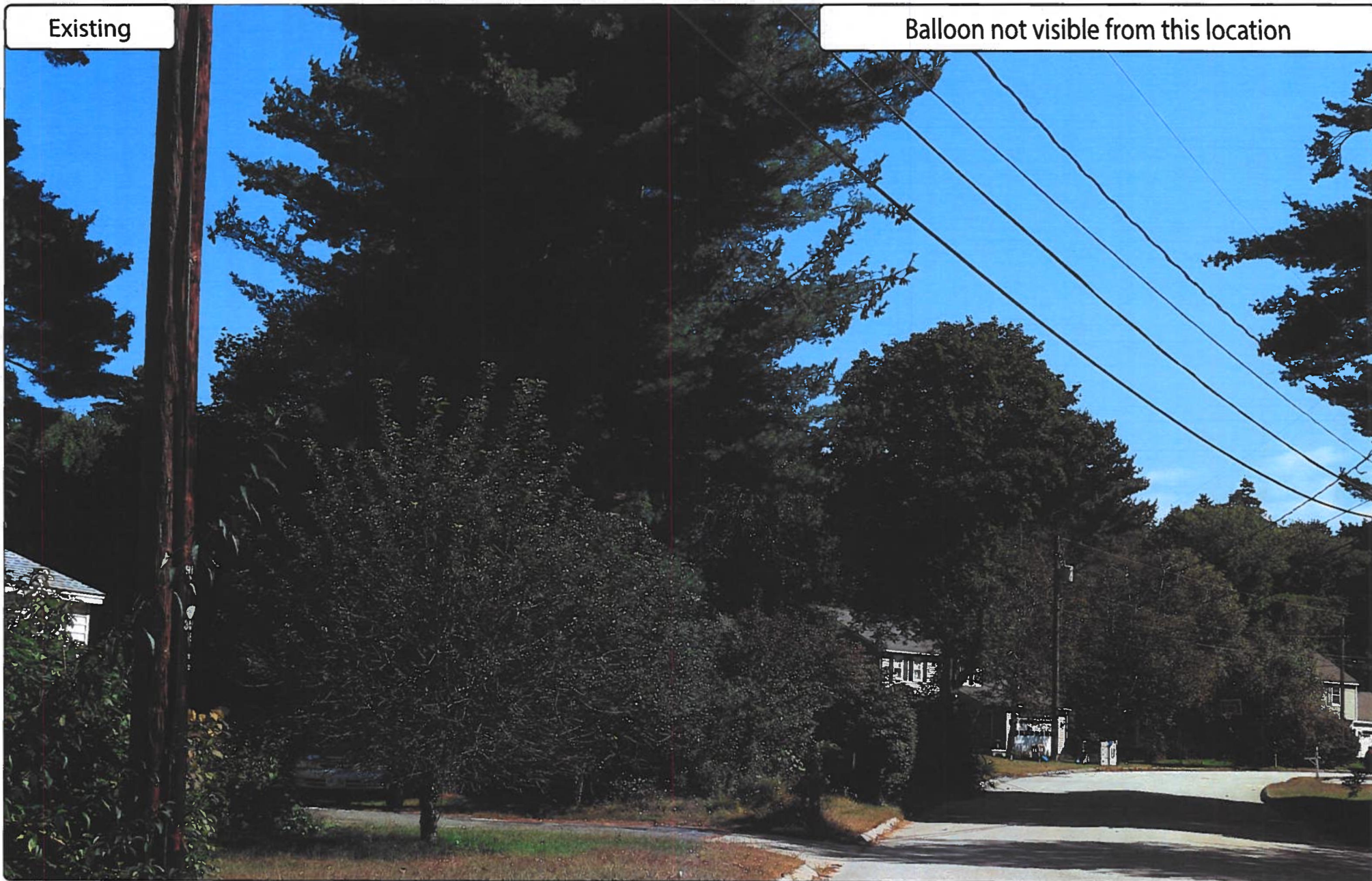


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
23	Westwood Cir	43.195	-70.9283	0.76 Miles	South-West	67	Not Visible

Site: Dover-W-NH

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Your Visual Data Partner

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DESIGN GROUP, LLC

verizon

Existing

Balloon not visible from this location

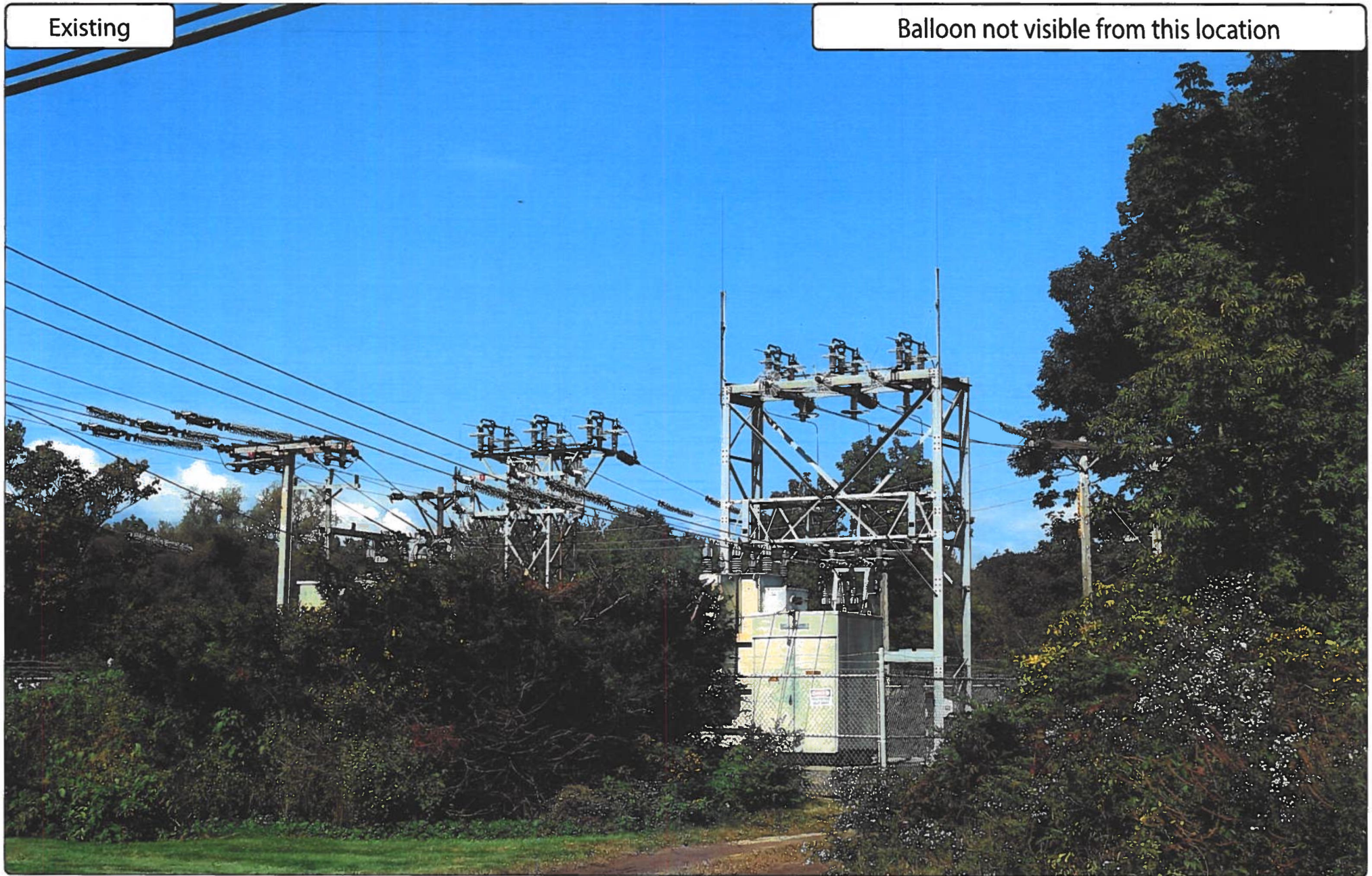


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
24	Littleworth Rd	43.18827	-70.90872	0.81 Miles	South	339	Not Visible

Site: Dover-W-NH

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



ProTerra
DESIGN GROUP, LLC

verizon✓

Existing

Balloon not visible from this location

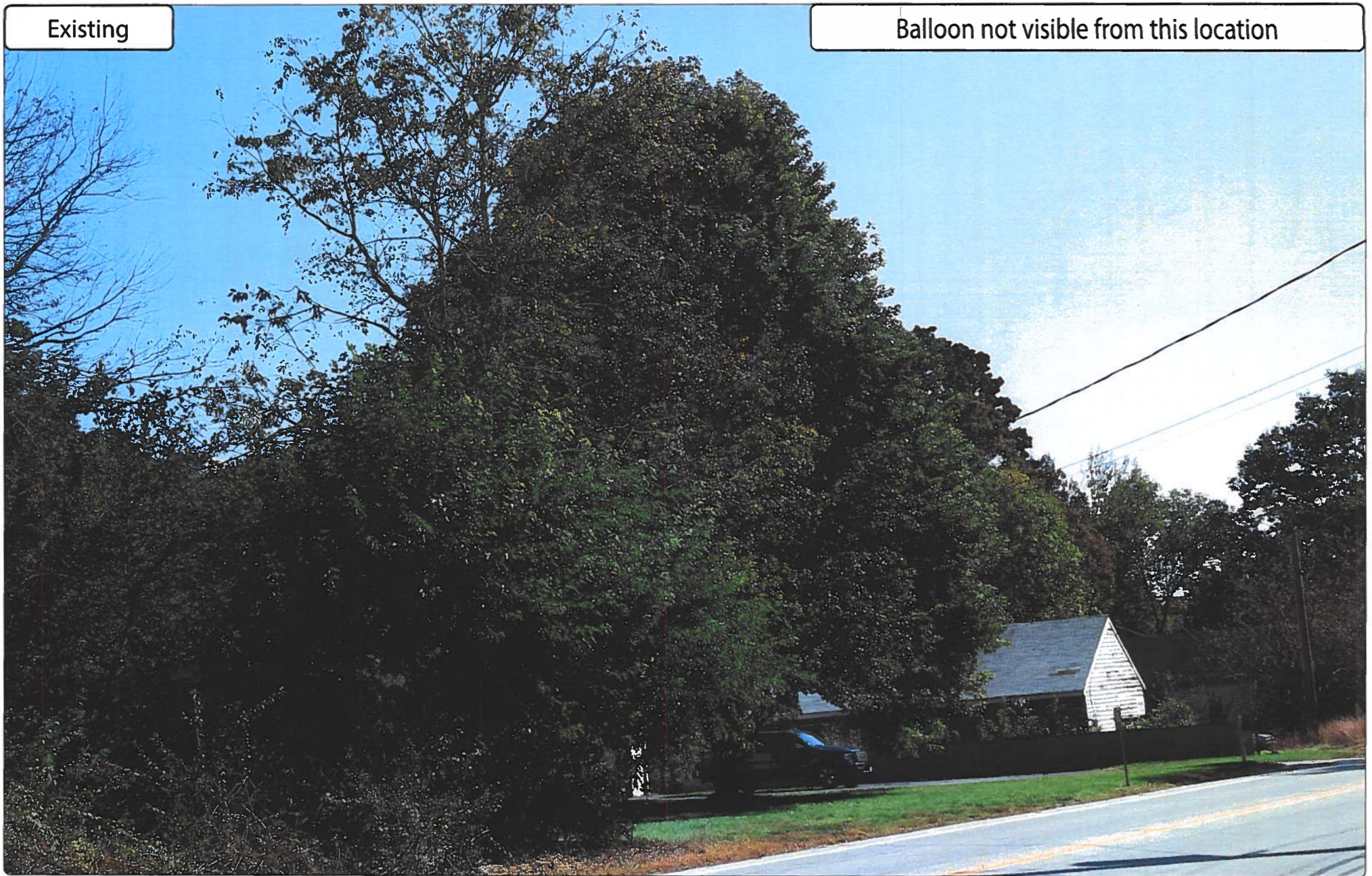


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
25	Grandview Dr	43.19174	-70.9273	0.83 Miles	South-West	51	Not Visible

Site: Dover-W-NH

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



Your Visual Data Partner

ProTerra
DESIGN GROUP, LLC

verizon

Existing

Balloon not visible from this location

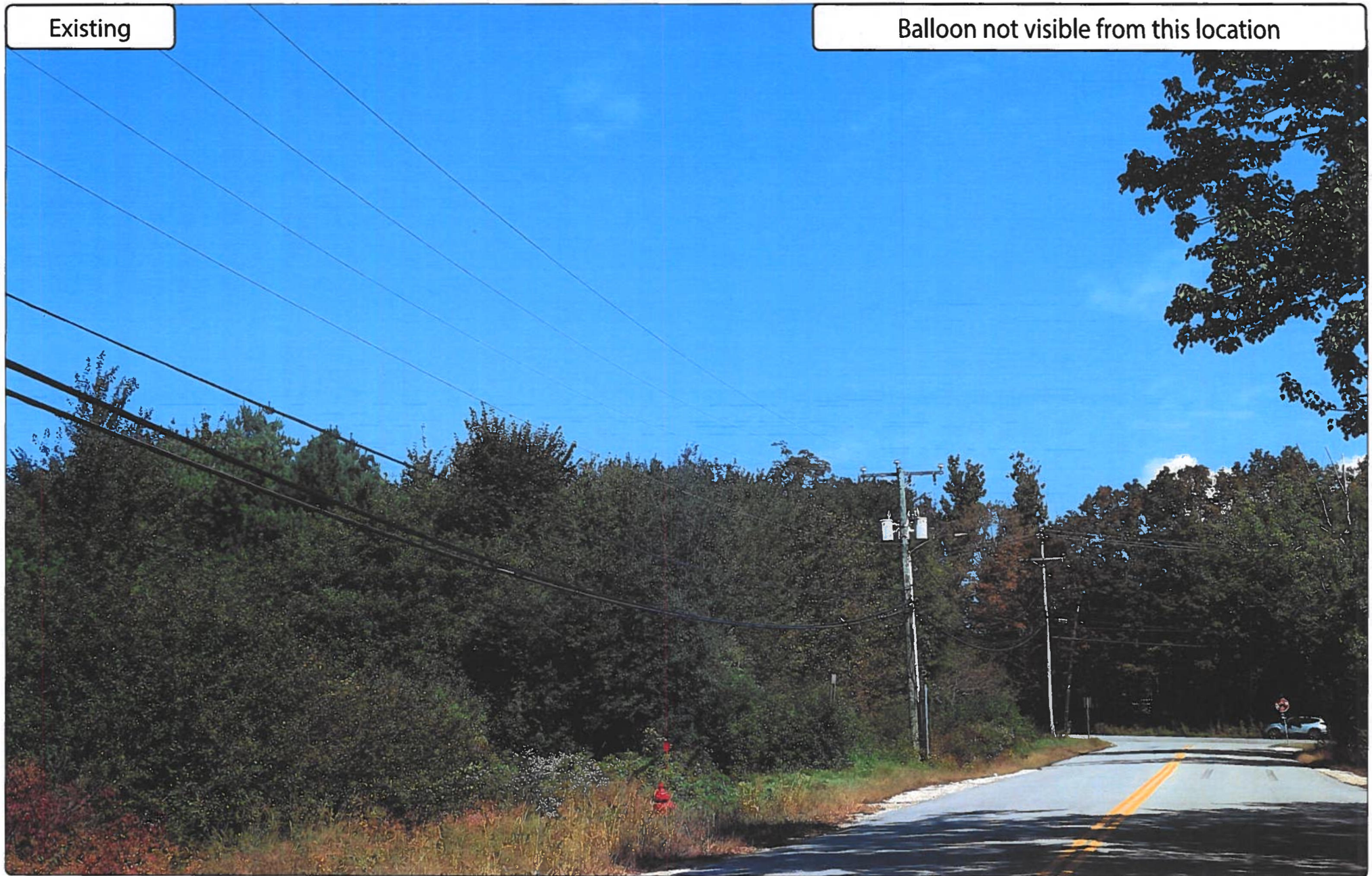


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
26	Crosby Rd	43.18731	-70.91609	0.83 Miles	South	6	Not Visible

Site: Dover-W-NH

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DESIGN GROUP, LLC

verizon

Existing

Balloon not visible from this location

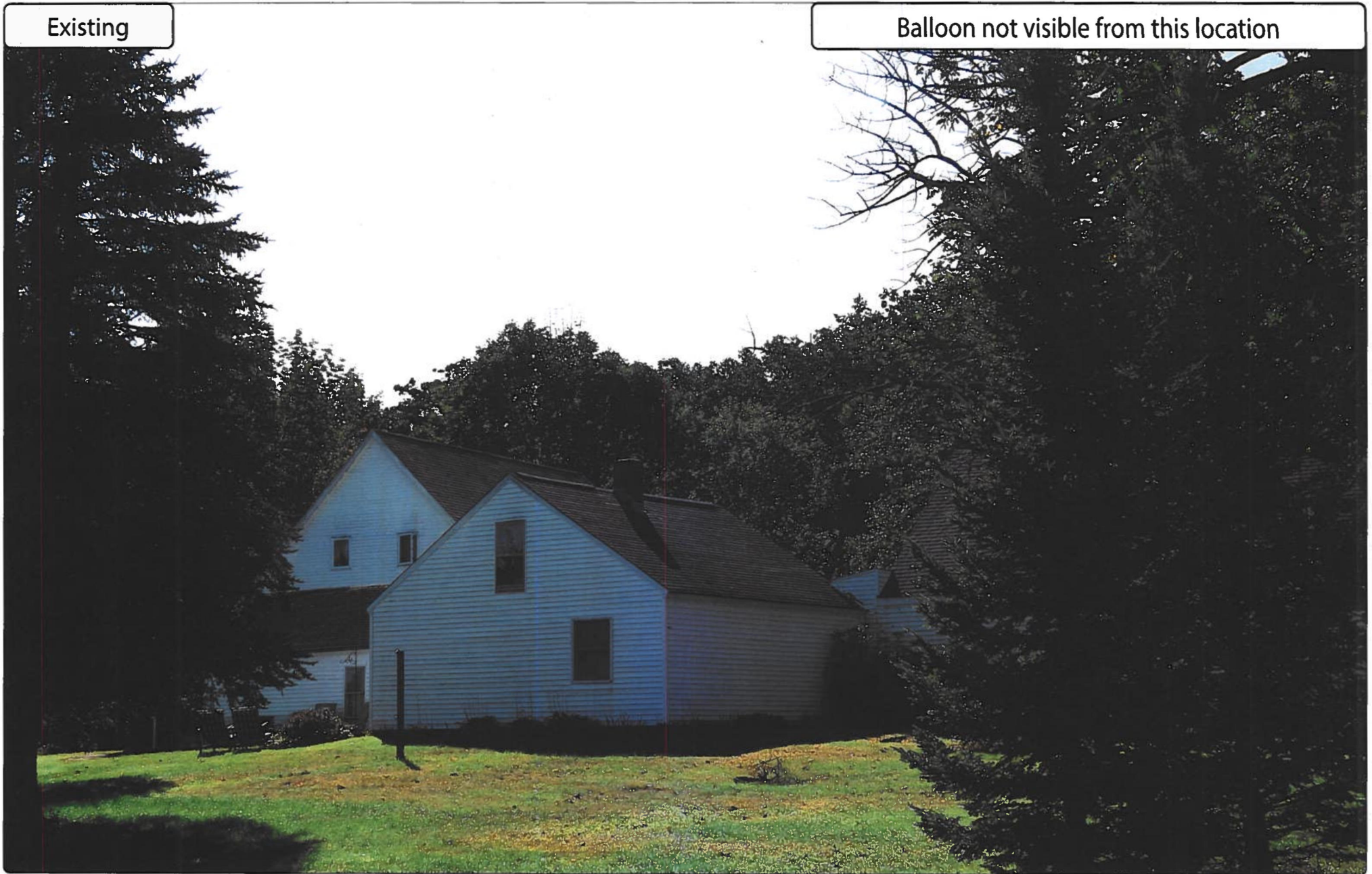


Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
27	Watson Rd	43.20999	-70.92417	0.89 Miles	North-West	146	Not Visible

Site: Dover-W-NH

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



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Existing

Balloon not visible from this location



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
28	Whittier St	43.19982	-70.89641	0.91 Miles	East	268	Not Visible

Site: Dover-W-NH

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



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DESIGN GROUP, LLC

verizon

Existing

Balloon not visible from this location



Photo #	Approximate Location	Gps Coordinates		Distance to site	Orientation	Bearing to site	Visibility
29	Tolend Rd	43.20483	-70.93305	1.01 Miles	West	112	Not Visible

Site: Dover-W-NH

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution



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Viewshed Mapping Package

Proposed Wireless Telecommunications Facility:

Dover-W-NH
180 Tolend Road
Dover, NH 03820



- Proposed new 104 ft AGL antenna structure
- Viewshed map completed 9/19/23
- Balloon test and viewshed verification completed 9/21/23

Package prepared by:

Virtual Site Simulations, LLC
24 Salt Pond Road
Suite C3
South Kingstown, Rhode Island 02879

www.VirtualSiteSimulations.com
www.ThinkVSSFirst.com

Viewshed analysis maps and representations contained herein depict where proposed facility may potentially be visible based on the best data available and site conditions at the time data was collected. This study does not claim to depict all locations from where the facility may be potentially visible.

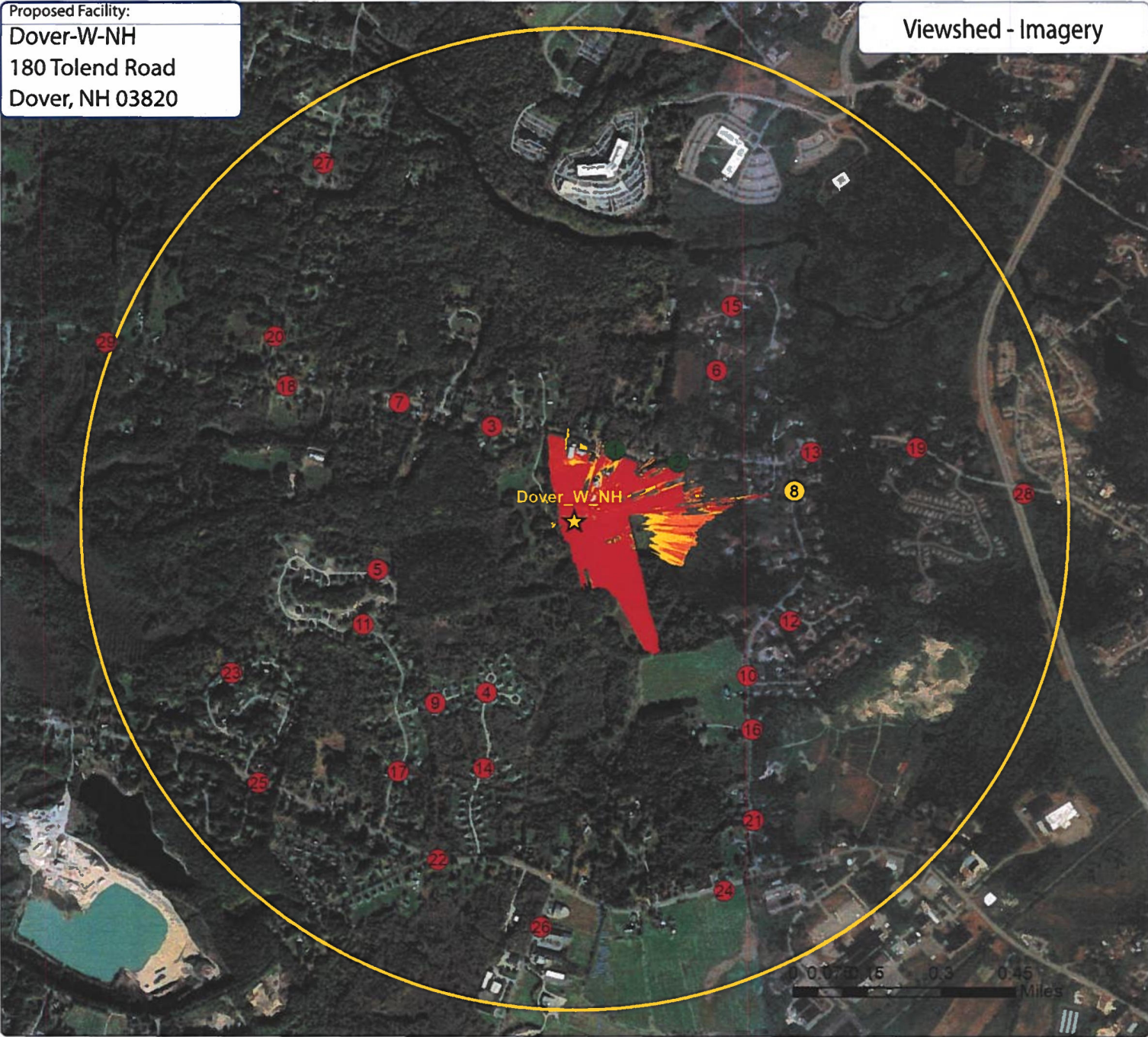


ProTerra
DESIGN GROUP, LLC

verizon

Proposed Facility:
 Dover-W-NH
 180 Tolend Road
 Dover, NH 03820

Viewshed - Imagery



IVSview® Color Legend



★ Facility Location ○ 1 Mile Radius

- Photo location -Balloon visible
 - Year Round Visibility
- Photo location -Balloon visible
 - Obstructed Visibility
- Photo location -Balloon NOT visible

Tower Visibility			
Color	Location	% Vis	Acres
Yellow	Top 25%	0.07%	1.4
Orange	Top 50%	0.14%	2.8
Red	Top 75%	0.22%	4.5
Dark Red	Top 100%	0.25%	4.9
	Base	1.41%	28.3
TOTAL		2.09%	41.9 Acres

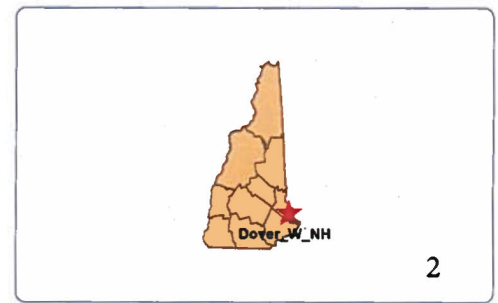
Statistics:
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 PROJ_DATUM=WGS84 PROJ_UNITS=arc degrees
 PIXEL_WIDTH=0.0000013 arc degrees (+/- .6 ft)
 PIXEL_HEIGHT=0.0000014 arc degrees (+/- .6 ft)
 RADIUS (FT)= 1 Mile
 TRANSMITTER_HEIGHT (Ft-AGL)= 104
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%)= 2.09%

Notes:
 - map compiled by VSS, LLC on : 9/21/23
 - Tower location(lat/long NAD 83): 43.199306 -70.914431
 - Data Sources noted on documentation page attached

VSS-IVS- Interactive Viewshed Analysis output maps contained herein depict where proposed facility may potentially be visible based on the best and newest data publicly available at the time the data was collected. VSS does not claim to depict all locations from where the facility may potentially be visible and calculated output should be confirmed via site testing as needed.

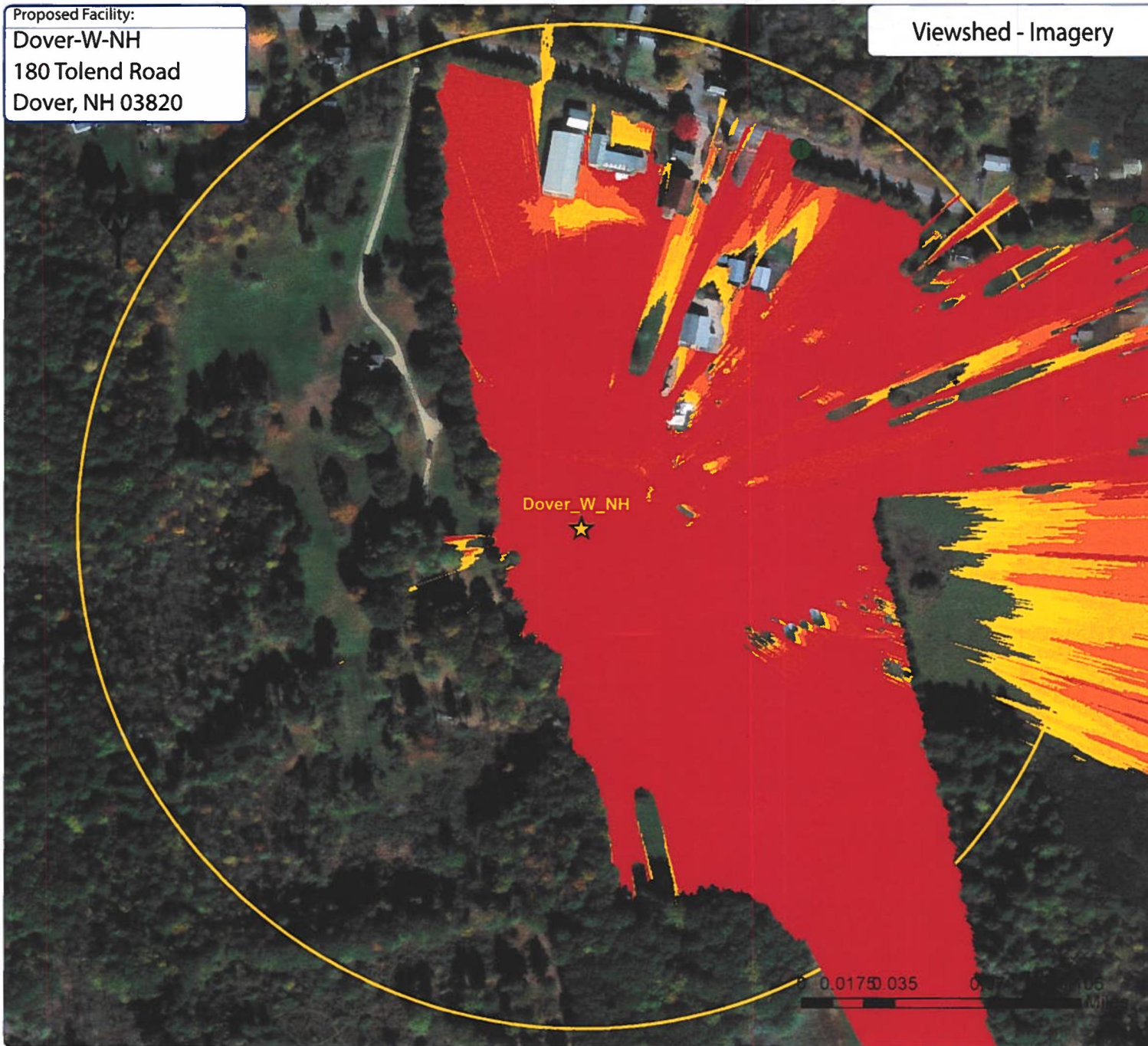


ProTerra
 DESIGN GROUP, LLC

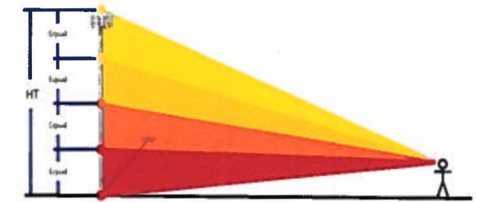


Proposed Facility:
 Dover-W-NH
 180 Tolend Road
 Dover, NH 03820

Viewshed - Imagery



IVSview® Color Legend



★ Facility Location ○ 1000 Ft Radius

- Photo location - Balloon visible
- Year Round Visibility
- Photo location - Balloon visible
- Obstructed Visibility
- Photo location - Balloon NOT visible

Tower Visibility

Color	Location	% Vis	Acres
Yellow	Top 25%	0.07%	1.4
Orange	Top 50%	0.14%	2.8
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Dark Red	Top 100%	0.25%	4.9
	Base	1.41%	28.3
	TOTAL	2.09%	41.9 Acres

Statistics:

PROJ_DESC=Geographic (Lat/Long) / WGS84 / arc degrees
 PROJ_DATUM=WGS84 PROJ_UNITS=arc degrees
 PIXEL_WIDTH=0.0000013 arc degrees (+/- .6 ft)
 PIXEL_HEIGHT=0.0000014 arc degrees (+/- .6 ft)
 RADIUS (FT)= 1000 Feet
 TRANSMITTER_HEIGHT (Ft-AGL)= 104
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%)= 2.09%

Notes:

- map compiled by VSS, LLC on : 9/21/23
- Tower location (lat/long NAD 83): 43.199306 -70.914431
- Data Sources noted on documentation page attached

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 DESIGN GROUP, LLC

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Proposed Facility:
Dover-W-NH
 180 Tolend Road
 Dover, NH 03820

Viewshed - Topo

IVSview® Color Legend



★ Facility Location ○ 1 Mile Radius

- Photo location - Balloon visible
- Photo location - Year Round Visibility
- Photo location - Obstructed Visibility
- Photo location - Balloon NOT visible

Tower Visibility

Color	Location	% Vis	Acres
Yellow	Top 25%	0.07%	1.4
Orange	Top 50%	0.14%	2.8
Red	Top 75%	0.22%	4.5
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Statistics:

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 RADIUS (FT)= 1 Mile
 TRANSMITTER_HEIGHT (Ft-AGL)= 104
 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
 PERCENT_VISIBLE (%)= 2.09%

Notes:

- map compiled by VSS, LLC on : 9/21/23
- Tower location(lat/long NAD 83): 43.199306 -70.914431
- Data Sources noted on documentation page attached



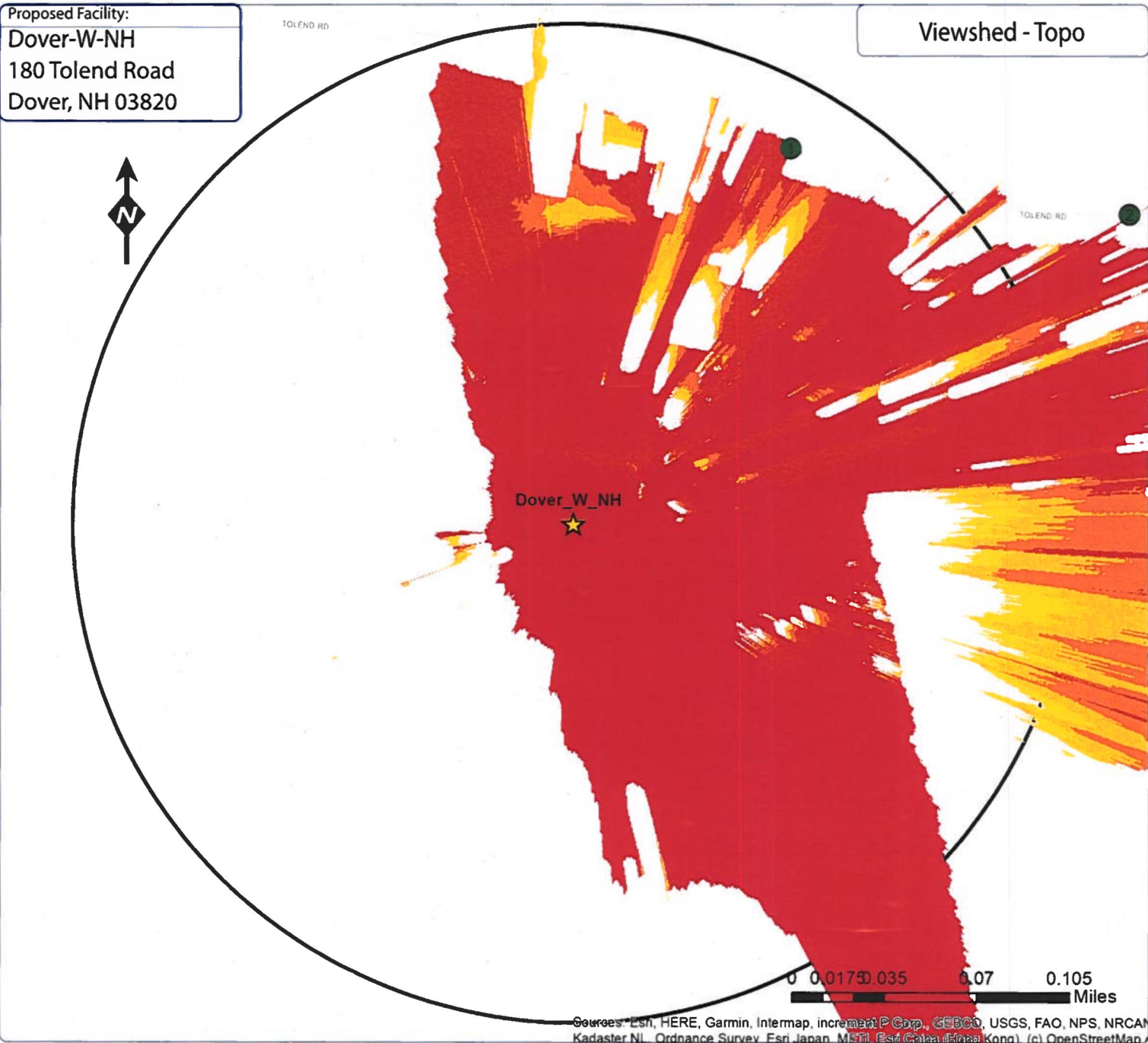
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Proposed Facility:
Dover-W-NH
 180 Tolend Road
 Dover, NH 03820



Viewshed - Topo

IVSview® Color Legend

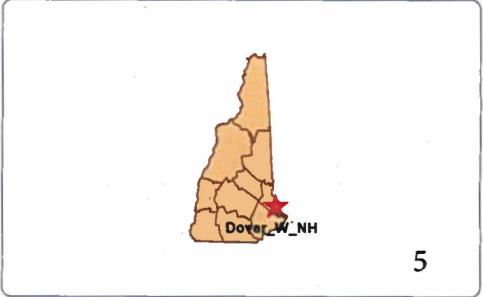


- ★ Facility Location ○ 1000 Ft Radius
- Photo location -Balloon visible
- Year Round Visibility
- ⓧ Photo location -Balloon visible
- Obstructed Visibility
- ⓧ Photo location -Balloon NOT visible

Tower Visibility			
Color	Location	% Vis	Acres
Yellow	Top 25%	0.07%	1.4
Orange	Top 50%	0.14%	2.8
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 RECEIVER_HEIGHT (Ft-AGL)= 5 Ft
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Notes:
 - map compiled by VSS, LLC on : 9/21/23
 - Tower location(lat/long NAD 83): 43.199306 -70.914431
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VSS-IVS- Interactive Viewshed Analysis output maps contained herein depict where proposed facility may potentially be visible based on the best and newest data publicly available at the time the data was collected. VSS does not claim to depict all locations from where the facility may potentially be visible and calculated output should be confirmed via site testing as needed.



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OWNERS OF RECORD ARE:
N/F LIONEL R. JR. & KRISTINA L. PARADIS
180 TOLEND ROAD
DOVER, NH 03820

AUTHORIZED SIGNATURE _____

DRAWING INDEX

SHEET	DESCRIPTION	REVISION
T-1	TITLE SHEET	0
C-1	ABUTTERS PLAN	A
C-2	EXISTING CONDITIONS	A
A-1	OVERALL SITE PLAN	0
A-2	COMPOUND PLAN & ELEVATION	0
P-1	DRIVEWAY PLAN & PROFILE	0
M-1	DRIVEWAY ACCESS PLAN	0
D-1 TO D-3	DETAILS	0
EC-1 TO EC-2	EROSION CONTROL PLAN & DETAILS	0

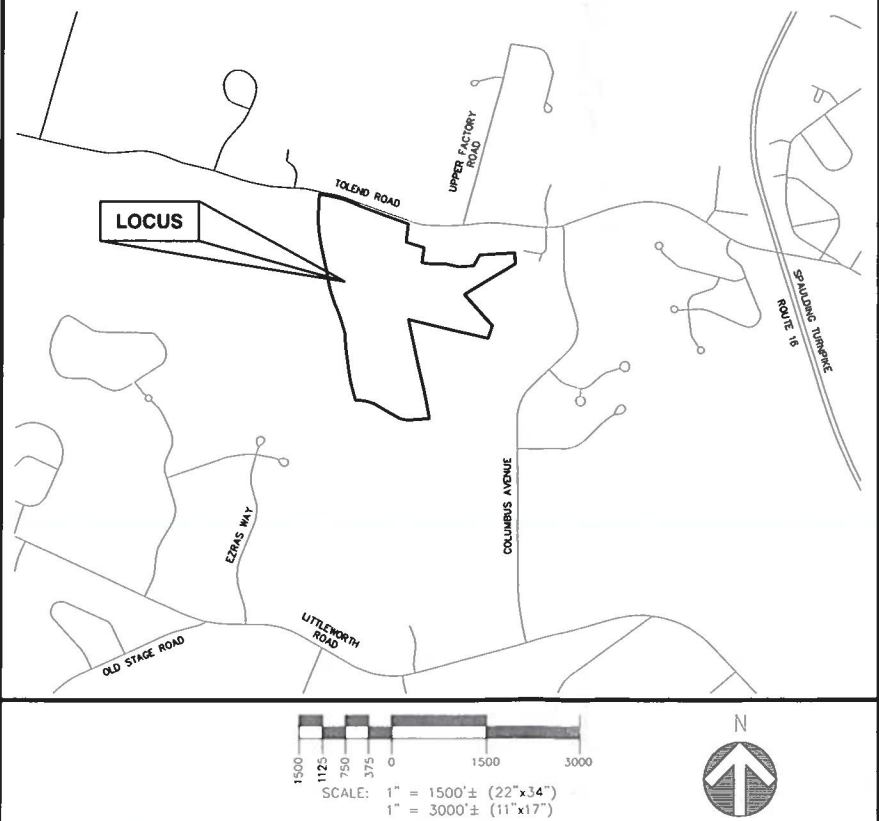
GENERAL NOTES

- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER & VERIZON WIRELESS REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
- PLANS FOR PERMITTING PURPOSES ONLY. NOT FOR CONSTRUCTION.
- THIS PLAN SET WAS ORIGINALLY PRINTED TO ANSI D (22"x34") WITH 1" MARGINS. PRINTING TO ANSI B (11"x17") WILL RESULT IN A HALF-SCALE (1:2) SHEET SET WITH 1/2" MARGINS. CONFIRM ALL SCALED DISTANCES WITH GRAPHICAL SCALES SHOWN HEREIN.
- ALL WORK TO BE PERFORMED IN ACCORDANCE WITH VERIZON WIRELESS CONSTRUCTION GUIDELINES.
- ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL DIG-SAFE (888) 344-7233 72-HOURS PRIOR TO ANY EXCAVATION.
- NEW CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
BUILDING CODE: NEW HAMPSHIRE STATE BUILDING CODE BCR 300 (2018 IBC BASED) WITH AMENDMENTS
ELECTRICAL CODE: NEC 2020 WITH NEW HAMPSHIRE AMENDMENTS
- 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 OR P.E. DIGITAL FILES SHALL BE GEO-REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
- ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION "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.
- 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.
- 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.
- THE SITE HAS BEEN DESIGNED TO DISTURB NO MORE THAN 20,000 SF AND NO MORE THAN 4,000 SF ADDITIONAL IMPERVIOUS SURFACE.

verizon

SITE NAME: DOVER_W_NH
SITE LOCATION CODE (PSLC): 721391
FUZE ID: 16917794
ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820
RAW LAND MONOPOLE

VICINITY MAP



SCOPE OF WORK

PROPOSED 104' TALL MONOPOLE (110' HIGHEST APPURTENANCE) TO BE INSTALLED WITHIN A PROPOSED 75'x75' LEASE AREA AND 48'x60' FENCED COMPOUND. ASSOCIATED GRADING, DRAINAGE, AND PLANTINGS TO BE INSTALLED AROUND THE COMPOUND AND ALONG THE PROPOSED ACCESS DRIVEWAY FROM THE EXISTING DRIVEWAY AS SHOWN IN THESE PLANS. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

VERIZON GROUND LEVEL EQUIPMENT TO INCLUDE EQUIPMENT CABINETS, WEATHER CANOPY AND GENERATOR WITH ON A CONCRETE PAD TO BE INSTALLED WITHIN THE PROPOSED FENCED COMPOUND. CABLING TO BE RUN FROM THE VERIZON EQUIPMENT AREA ALONG AN ICE BRIDGE AND WITHIN THE PROPOSED MONOPOLE TO THE ANTENNA LEVEL.

- PROPOSED VERIZON TOWER TOP RF EQUIPMENT TO BE INSTALLED ON THE ON PROPOSED MONOPOLE TO INCLUDE:
- (1) 12'-6" 4-SECTOR EQUIPMENT PLATFORM WITH HANDRAIL KIT AND 2.5"Ø PIPE NOMINAL DIA. ANTENNA PIPES
 - (8) 6' TALL PANEL ANTENNAS MOUNTED ON DUAL MOUNTING BRACKETS
 - (3) L-SUB6 PANEL ANTENNAS
 - (8) RRRH's MOUNTED BEHIND THE ANTENNA MOUNTING PIPES
 - (1) 12-ØVP LARGE JUNCTION BOX WITH SURGE
 - (2) 6x12 HYBRID CABLES
 - INSTALL RF SIGNAGE PER VERIZON GUIDELINES
 - MAINTAIN CLEARANCES TO FALL ARREST CABLE. ADD BRACKETS AS REQUIRED.

PROJECT INFORMATION

SITE TYPE: RAW LAND MONOPOLE
SCOPE OF WORK: PROPOSED FENCED COMPOUND AND 104 TALL STEEL MONOPOLE WITH RF EQUIPMENT WITHIN 75'x75' LEASE AREA.
SITE NAME: DOVER_W_NH
SITE LOCATION CODE: 721391
SITE ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820
ASSESSOR'S TAX ID#: F-2-0-0
ZONING DISTRICT(S): INNOVATIVE TECHNOLOGY (IT)
LATITUDE: 43° 11' 57.50"± N (43.1993064± N) (SURVEY 1A)
LONGITUDE: 70° 54' 51.95"± W (70.9144305± W) (SURVEY 1A)
(P) ELEVATION: 169.7±
DATUM: NAD83/NAVD88
PROPERTY OWNER: N/F LIONEL R. JR. & KRISTINA L. PARADIS
180 TOLEND ROAD
DOVER, NH 03820
APPLICANT: CELCO PARTNERSHIP
dba VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851
SITE ENGINEER: PROTERRA DESIGN GROUP, LLC
4 BAY ROAD
BUILDING A; SUITE 200
HADLEY, MA 01035
(413) 320-4918
SURVEYOR: NORTHEAST SURVEY CONSULTANTS
3 FERRY STREET
STUDIO 1
EASTHAMPTON, MA 01027

PERMITTING

ProTerra
DESIGN GROUP, LLC

4 Bay Road
Building A, Suite 200
Hadley, MA 01035
(413) 320-4918

CLIENT:

NO.	DATE	REVISIONS
A	06/13/23	ISSUED FOR REVIEW
B	09/25/23	ISSUED FOR REVIEW
C	09/29/23	ISSUED FOR PERMITTING

SITE NAME: DOVER_W_NH
ADDRESS: 180 TOLEND ROAD
DOVER, NH 03820
APPLICANT: CELCO PARTNERSHIP
dba VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851
verizon

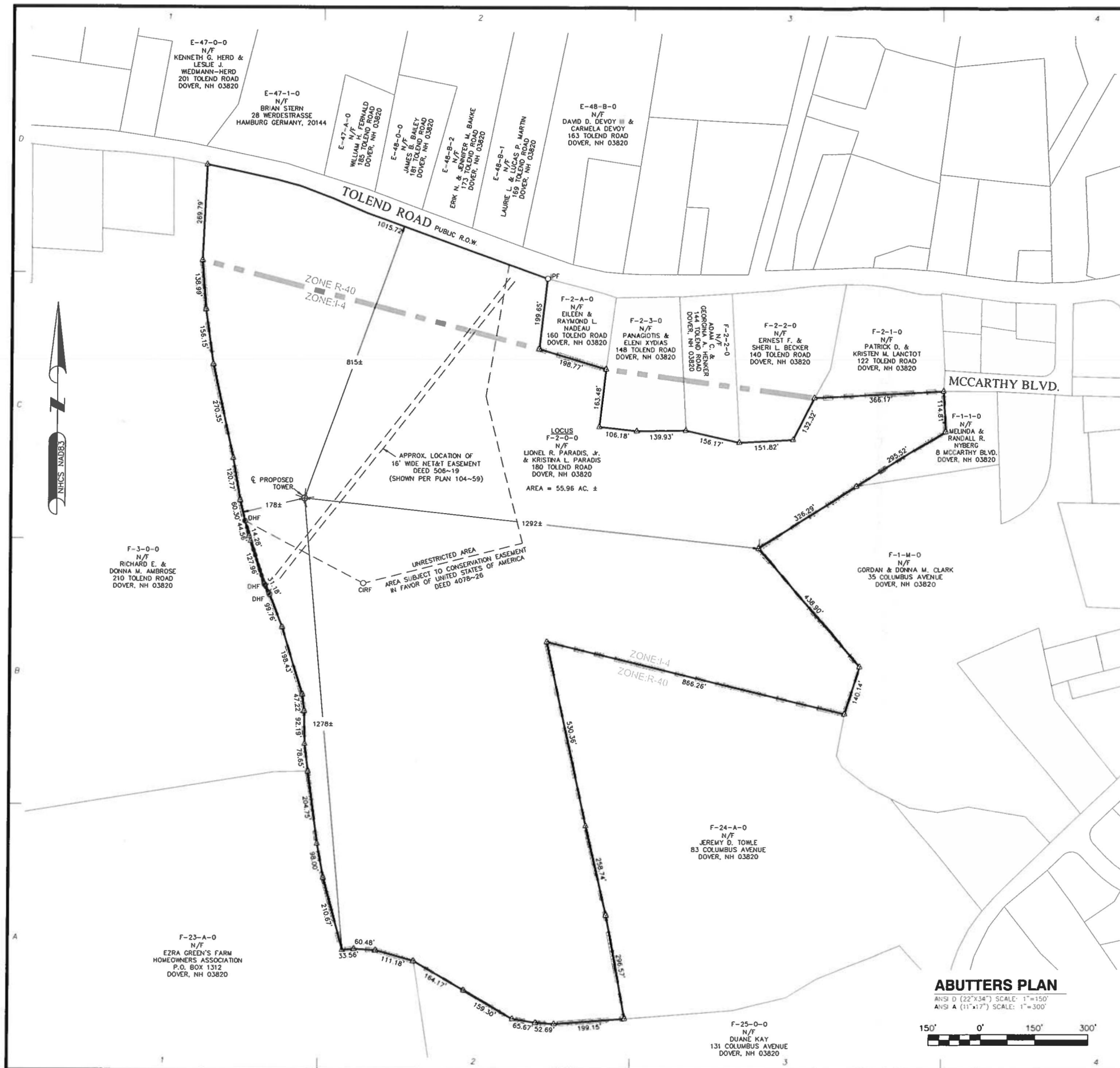
STAMP
JESSE M. MORENO
No. 12508
9-29-2023
Jesse Moreno, PE

DATE: 09/29/2023
DRAWN: STZ/JEB
CHECK: JMM/TEJ
SCALE: SEE PLAN
JOB NO.: 13-030
SHEET TITLE:

TITLE SHEET

T-1

DOVER FILE: SITE_2023-0012



FAA 1-A CERTIFICATION

I HEREBY CERTIFY THAT THE LATITUDE, LONGITUDE, AND ELEVATION PRESENTED HEREON MEET THE REQUIREMENTS OF THE FAA WITH THE FOLLOWING ACCURACIES.

THREE (3) FEET VERTICALLY
TWENTY (20) FEET HORIZONTALLY

JAMES M. LAVELLE NH LLS # 489
8/30/2023
DATE

SURVEY NOTES

- SITE DETAIL SHOWN ON THIS SURVEY IS BASED ON FIELD DATA COLLECTED ON AUGUST 21, 2018. BOUNDARY INFORMATION IS COMPILED FROM RECORD DOCUMENTS AND IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD BOUNDARY SURVEY, AND IS SUBJECT TO CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.
- THE PURPOSE OF THIS SURVEY IS TO SUPPORT THE DESIGN AND CONSTRUCTION OF A TELECOMMUNICATION FACILITY. USE OF THIS SURVEY BY ANYONE OTHER THAN VMI TOWERS, LLC, AND USE OF THIS SURVEY FOR ANY PURPOSE NOT RELATED TO THE DESIGN OF THE INTENDED FACILITY IS STRICTLY PROHIBITED.
- PROPERTY LINES AND BOUNDARY DIMENSIONS SHOWN ON THIS SURVEY ARE BASED ON A COMPILATION OF RECORDED DEEDS AND ARE NOT INTENDED TO REPRESENT DEFINITIVE BOUNDARY LINES OR BE USED FOR THE PURPOSES OF CONVEYANCE. PROPERTY RELATED INFORMATION HAS NOT BEEN CONFIRMED BY FIELD SURVEY OBSERVATIONS AND NO ASSESSMENT OF LAND OCCUPATION HAS BEEN CONDUCTED IN THE PREPARATION OF THIS SURVEY. A PROPERTY LINE RETRACEMENT SURVEY HAS NOT BEEN CONDUCTED.
- THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES DIVIDING EXISTING OWNERSHIP'S, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.
- PRIMARY GEODETIC SURVEY CONTROL WAS ESTABLISHED FROM AN ON THE GROUND SURVEY USING THE GLOBAL POSITIONING SYSTEM (GPS) ON AUGUST 21, 2018. THE HORIZONTAL REFERENCED DATUM IS THE NAD 83 BASED ON THE GRS 80 REFERENCE ELLIPSOID. THE GRID COORDINATES ARE BASED ON THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM OF 1983 CORRS96. ELEVATIONS SHOWN ARE ASSUMED AND ARE APPROXIMATED TO THE NAVD 88 VERTICAL DATUM. VERTICAL AND HORIZONTAL INFORMATION SHOWN MEETS THE STANDARD CRITERIA FOR AN FAA 1A CERTIFICATION (20'± HORIZONTAL AND 3'± VERTICAL).
- IN THE EVENT THAT BENCHMARKS (TBM'S), ESTABLISHED FOR THIS PROJECT AND PUBLISHED ON THIS SURVEY, ARE DESTROYED, NOT RECOVERABLE OR A DISCREPANCY IS FOUND, THE USER SHOULD NOTIFY THIS FIRM IN WRITING PRIOR TO COMMENCING OR CONTINUING ANY WORK.
- THE LOCUS PARCEL IS IDENTIFIED AS MAP F LOT 2-0-0 IN THE TOWN OF DOVER'S TAX ASSESSOR'S DATABASE.
- THE PROJECT AREA IS LOCATED IN FLOOD ZONE "X" (NO SHADING) (AREAS OF MINIMAL FLOOD HAZARD) ACCORDING TO FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 33017 C0310E, DATED SEPTEMBER 30, 2015.
- ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233
- THE SUBJECT PROPERTY IS LOCATED IN THE TOWN OF DOVER COMMERCIAL I-4 & R-40 ZONING DISTRICT.
- WETLANDS WERE INVESTIGATED BY THOMAS E. LIDDY, CERTIFIED WETLANDS SCIENTIST, CERTIFICATION NUMBER #243, IN ACCORDANCE WITH CHAPTER 170-27.1 OF THE ZONING ORDINANCE, ON AUGUST 9, 2018, AND FOUND NO JURISDICTIONAL WETLANDS LOCATED WITHIN APPROXIMATELY 100 FEET OF THE PROPOSED WORK.

PROPERTY OWNER: LIONEL R. PARADIS, JR. & KRISTINA L. PARADIS
180 TOLEND ROAD
DOVER, NH 03820

LOCUS DEED REFERENCE: BOOK 1868 PAGE 382

PLAN REFERENCES: PLAN 104~59

LEGEND

N/F

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○

◆

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~~~~~

NOW OR FORMERLY

CALCULATED POINT

CAPPED IRON ROD FOUND

PK NAIL FOUND

LOCUS PROPERTY LINE

ABUTTERS PROPERTY LINE

EXISTING EASEMENT LINE

ZONING LINE

STONE WALL

ProTerra  
DESIGN GROUP, LLC

4 Bay Road, Bldg. A,  
Suite 200  
Hadley, MA 01035  
Ph: (413) 320-4918

CONSULTANTS:

NORTHEAST SURVEY  
CONSULTANTS

3 Ferry Street  
Easthampton, MA 01027  
(413) 203-5144  
northeastsurvey.com

NO. DATE

REVISIONS

ISSUED FOR REVIEW

A 8/30/23

SITE NAME: DOVER WEST NH

SITE NUMBER: 721891

ADDRESS: 180 TOLEND ROAD

DOVER, NH 03820

118 FLANDERS ROAD

THIRD FLOOR

WESTBOROUGH, MA 01581

verizon

DATE: 8/30/2023

DRAWN: JDG

CHECK: BCF

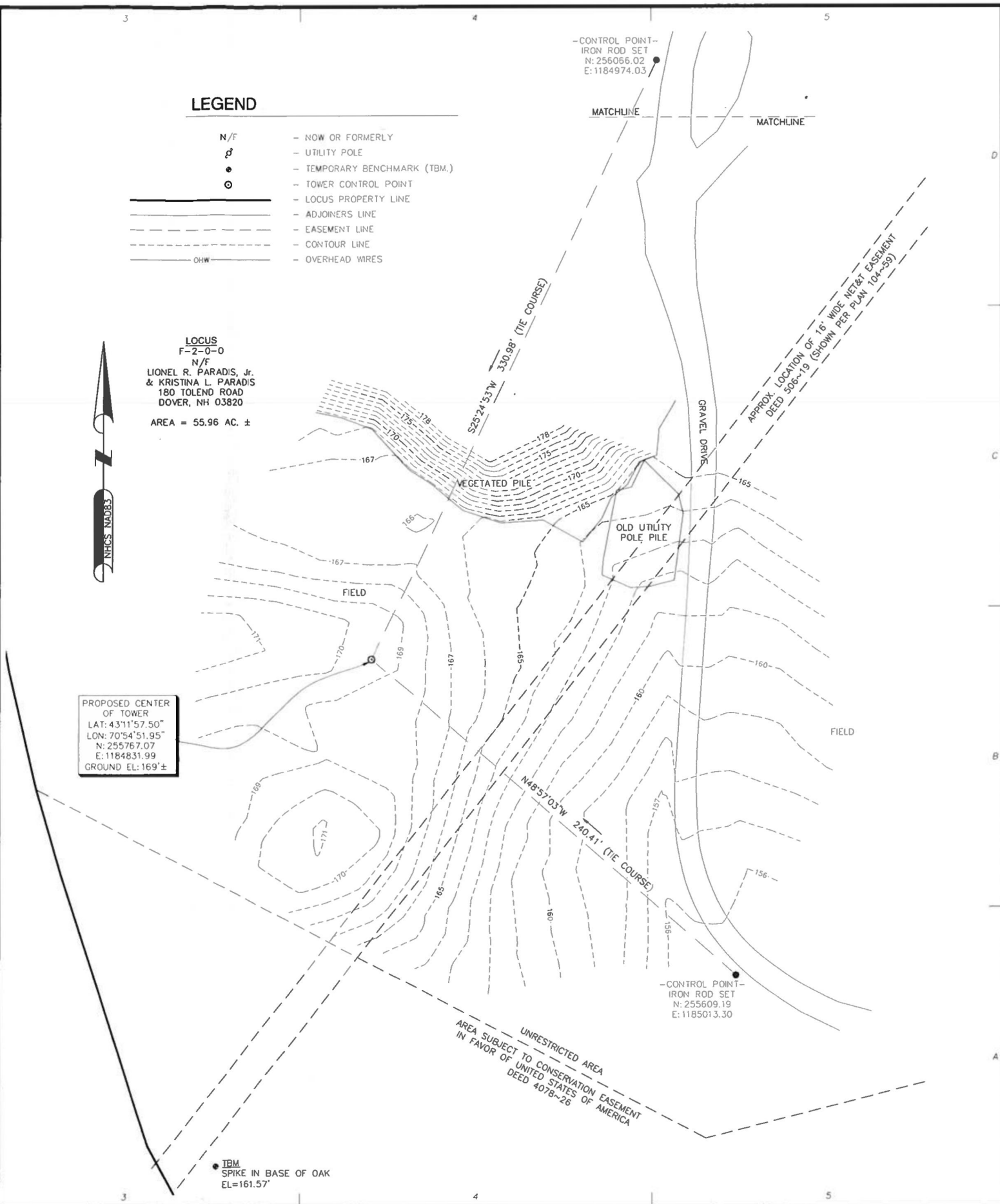
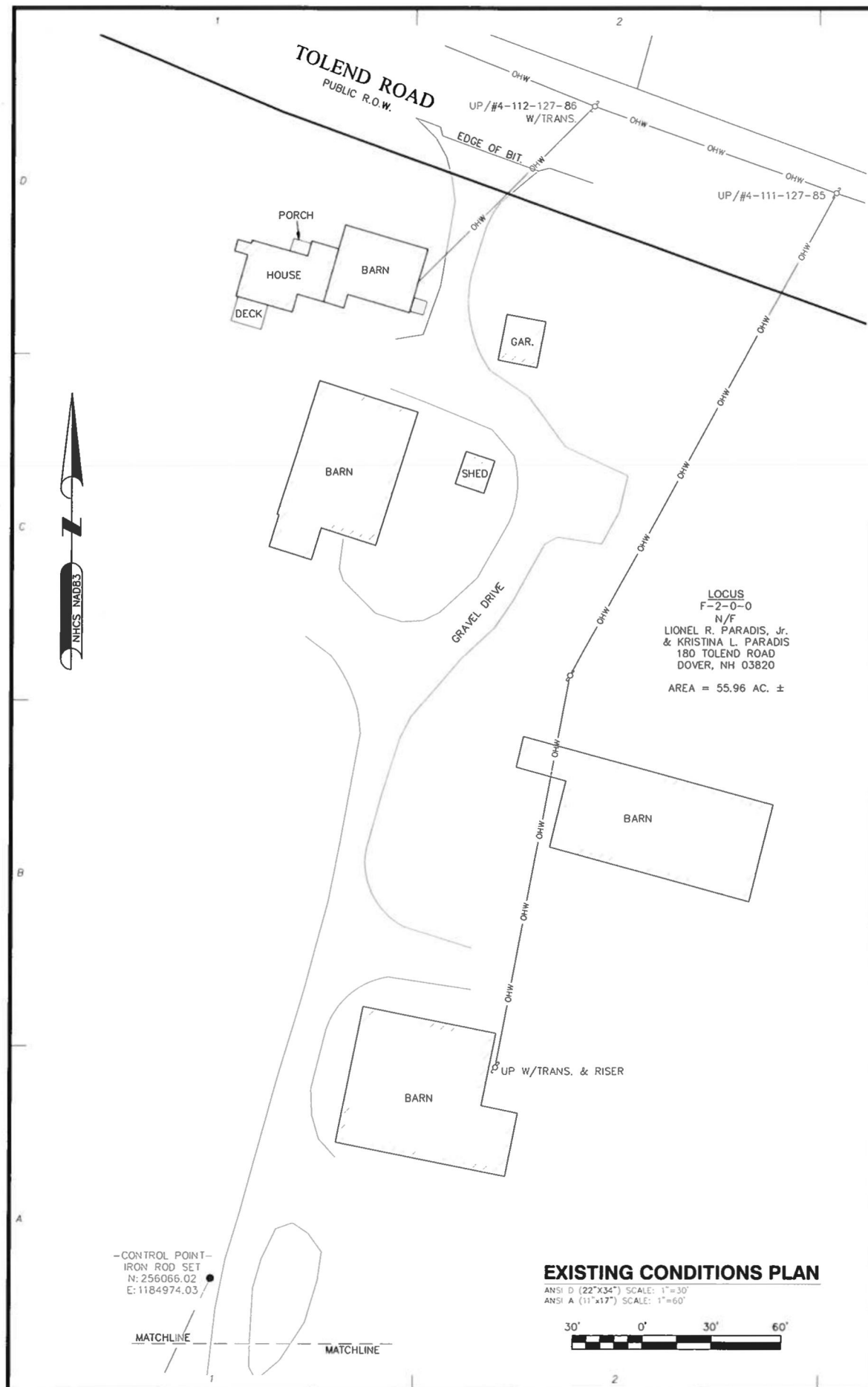
SCALE: 1"=150'

JOB NO.: 18-225.1

SHEET TITLE:

ABUTTERS  
PLAN

C-1



**ProTerra**  
DESIGN GROUP, LLC

4 Bay Road, Bldg. A,  
Suite 200  
Hodley, MA 01035  
Ph: (413)320-4918

**CONSULTANTS:**  
**NORTHEAST SURVEY  
CONSULTANTS**

3 Ferry Street  
Studio 1 East  
Easthampton, MA 01027  
(413) 203-5144  
northeastsurvey.com

NO. DATE REVISIONS  
A 8/30/23 ISSUED FOR REVIEW

**SITE NAME: DOVER WEST NH  
SITE NUMBER: 721391  
ADDRESS: 180 TOLEND ROAD  
DOVER, NH 03820**

**verizon**  
118 FLANDERS ROAD  
THIRD FLOOR  
WESTBOROUGH, MA 01581

**EXISTING  
CONDITIONS PLAN**

**C-2**

DATE: 8/30/2023  
DRAWN: JDG  
CHECK: BCF  
SCALE: 1"=30'  
JOB NO.: 18-225.1  
SHEET TITLE:





## REFERENCES

PROPERTY LINE, TOPOGRAPHY, AND EXISTING FEATURES — SEE SHEETS C-1 TO C-2  
PREPARED BY NORTHEAST SURVEY CONSULTANTS.

ZONING MAP — AVAILABLE THROUGH DOVER.NH.GOV WEBSITE, MAP ENTITLED "CITY OF DOVER, NEW HAMPSHIRE ZONING MAP" ADOPTED SEPTEMBER 11, 2019, AND CITY OF DOVER NH ONLINE GIS "HTTPS://DOVERNH.MAPGEO.IO/" ZONING THEME, LAST VIEWED 01/20/2023.

THE FOLLOWING DATALAYERS PREPARED BY NH GRANIT AT GRANIT.UNH.EDU GIS PORTAL.  
— STATEWIDE AERIAL PHOTOGRAPHY (2010/2011)  
— NATIONAL WETLANDS INVENTORY (LAST UPDATED SEPTEMBER 30, 2022)

FEMA NATIONAL FLOOD HAZARD LAYER  
PROJECT AREA IS WITHIN ZONE X: "AREA OF MINIMAL FLOOD HAZARD. (NO SHADING)"  
VERIFIED BY FEMA FLOOD INSURANCE RATE MAP FOR THE CITY OF DOVER, NEW HAMPSHIRE, STRAFFORD COUNTY, COMMUNITY PANEL NUMBER 33017C0310E DATED SEPTEMBER 30, 2015.

## GENERAL NOTES

1. THE TYPE, DIMENSIONS, MOUNTING HARDWARE, AND POSITIONS OF ALL PROJECT OWNER'S EQUIPMENT ARE SHOWN IN ILLUSTRATIVE FASHION. ACTUAL HARDWARE DETAILS AND FINAL LOCATIONS MAY DIFFER SLIGHTLY FROM WHAT IS SHOWN.
2. THE PROJECT OWNER'S PCS FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. THE DESIGN OF THE TOWER, FOUNDATION AND ANTENNA MOUNTING HARDWARE WILL MEET THE ANSI/EIA/TIA-222-H STANDARDS FOR STRUCTURAL STEEL ANTENNA SUPPORTING STRUCTURES AND STATE BUILDING CODE REQUIREMENTS. DETAILED CONSTRUCTION DRAWINGS AND STRUCTURAL CALCULATIONS WILL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED WITH A BUILDING PERMIT APPLICATION FOR REVIEW AND APPROVAL BY THE LOCAL BUILDING CODE ENFORCEMENT OFFICIAL.
4. ONCE THE FACILITY BECOMES FULLY OPERATIONAL, NORMAL AND ROUTINE MAINTENANCE BY TOWER OWNER'S AND CARRIER'S TECHNICIANS WILL BE PERFORMED. THE ESTIMATED VEHICULAR TRAFFIC GENERATED BY THESE VISITS IS PREDICTED TO BE LESS THAN THE TYPICAL TRAFFIC GENERATED BY A SINGLE-FAMILY DWELLING.

## ZONING SUMMARY

ZONING DISTRICT(S): INNOVATIVE TECHNOLOGY (IT) DISTRICT

ASSESSORS ID(S): F-2-0-0

(P) USE: WIRELESS COMMUNICATIONS FACILITY<sup>1</sup>

| DIMENSION                                  | PROVIDED              | CONSTRAINT                                           |
|--------------------------------------------|-----------------------|------------------------------------------------------|
| LOT - AREA                                 | 55.96± ACRES          | 2 ACRES                                              |
| LOT - FRONTAGE                             | 1,015'±               | 200' MIN.                                            |
| LOT - COVERAGE                             | <2%                   | 33% MAX.                                             |
| (P) COMPOUND - FRONT YARD                  | 777'±                 | 50' MIN.                                             |
| (P) COMPOUND - REAR YARD                   | 1,235'±               | 50' MIN. (PRINCIPAL USE)<br>10' MIN. (ACCESSORY USE) |
| (P) COMPOUND - SIDE YARD                   | 135'±                 | 50' MIN. (PRINCIPAL USE)<br>10' MIN. (ACCESSORY USE) |
| (P) COMPOUND - BUILDING HEIGHT             | 15'±                  | 55' MAX. (PRINCIPAL USE)<br>55' MAX. (ACCESSORY USE) |
| (P) TOWER - HEIGHT (HIGHEST APPURTENANCE)  | 104'± (110'±)         | 180' MAX.                                            |
| (P) TOWER (PROPERTY LINE/BUILDING SETBACK) | 175'± (EDGE OF TOWER) | 100% HEIGHT<br>=110' MIN.                            |

SPECIAL CONSIDERATIONS MAY BE REQUIRED FOR THE FOLLOWING:

1 - CITY OF DOVER, NH ZONING BYLAW § 170-22.C(1) LOCATION: THE LOCUS PARCEL IS NOT LISTED AS A PERMITTED SITE FOR TELECOMMUNICATIONS FACILITY.

PER ZONING VARIANCE CASE NO. 2023-0035, THE CITY OF DOVER ZONING BOARD OF ADJUSTMENT, ON JULY 20, 2023, APPROVED THE REQUEST FOR VARIANCE OF SECTION § 170-22.C(1) OF THE ZONING ORDINANCE WITH CONDITION THE APPLICANT SHALL GO BEFORE THE PLANNING BOARD FOR SITE PLAN REVIEW. (SEE NOTICE OF DECISION DATED JULY 25, 2023)

VERIZON WIRELESS, THROUGH THEIR COUNCIL NIXON PEABODY, HAS INFORMED PROTERRA DESIGN GROUP LLC THAT THEY ARE UNAWARE OF ANY FEDERAL PERMITS REQUIRED OTHER THAN FCC AND NEPA SCREENING.



## OVERALL SITE PLAN

SCALE: 1"=150' (22x34)  
1"=300' (11x17)

150 75 0 150 300

**ProTerra**  
DESIGN GROUP, LLC

4 Bay Road  
Building A, Suite 200  
Hodley, MA 01035  
(413) 320-4918

CLIENT:

| NO. | DATE     | REVISIONS             |
|-----|----------|-----------------------|
| A   | 06/13/23 | ISSUED FOR REVIEW     |
| B   | 09/25/23 | ISSUED FOR REVIEW     |
| C   | 09/29/23 | ISSUED FOR PERMITTING |

SITE NAME: DOVER\_7\_NH  
ADDRESS: 180 TOLAND ROAD  
DOVER, NH 03820

CELCO PARTNERSHIP  
800 CHERMID STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851

verizon

STAMP:

JESSE  
M. MORENO  
No. 12508  
9-29-2023

DATE: 09/29/2023

DRAWN: STZ/JEB

CHECK: JMM/TEJ

SCALE: SEE PLAN

JOB NO.: 13-030

SHEET TITLE:

**OVERALL SITE  
PLAN**

**A-1**



CLIENT:

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**SITE NAME: DOVER, NH**  
**ADDRESS: 180 TOLAND ROAD**  
**DOVER, NH 03820**

**CELCO PARTNERSHIP**  
**486 VERIZON WIRELESS**  
**900 CHELSEA STREET**  
**TOWER 2 FLOOR 5**  
**LOWELL, MA 01851**

**verizon**

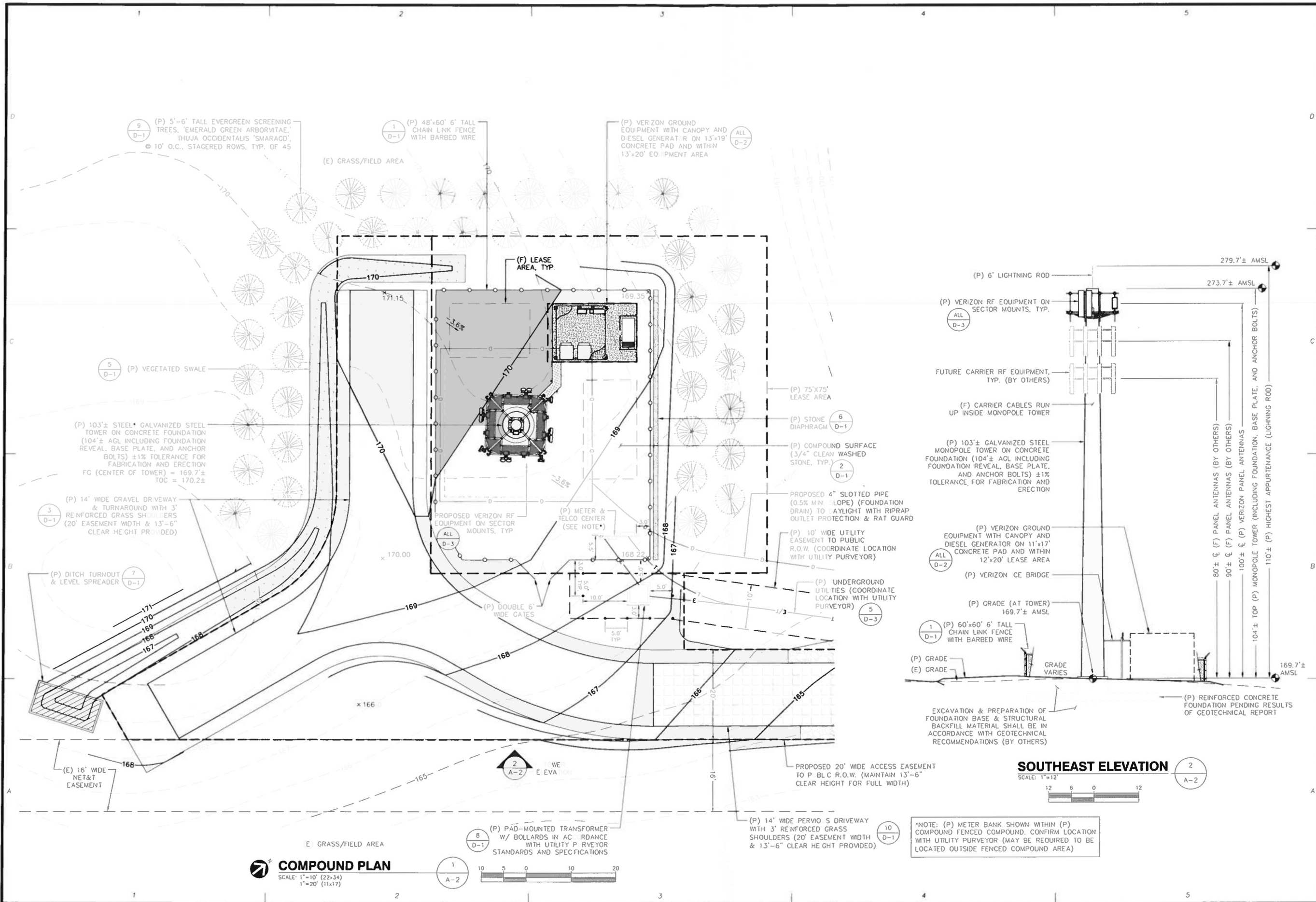
**STAMP:**

JESSE M. MORENO  
No. 12508  
9-29-2023

DATE: 09/29/2023  
DRAWN: STZ/JEB  
CHECK: JMM/TEJ  
SCALE: SEE PLAN  
JOB NO.: 13-030

SHEET TITLE:  
**COMPOUND SITE PLAN**

**A-2**

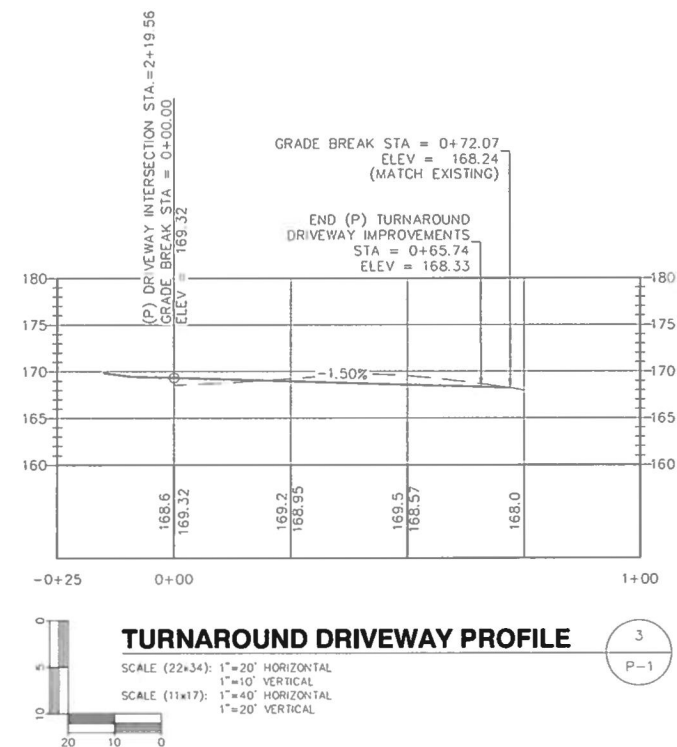
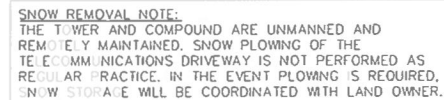


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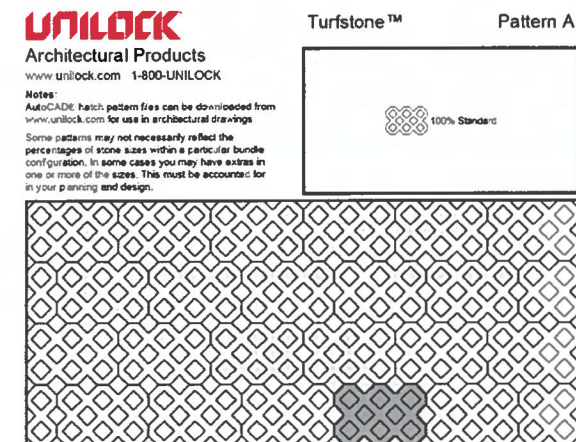
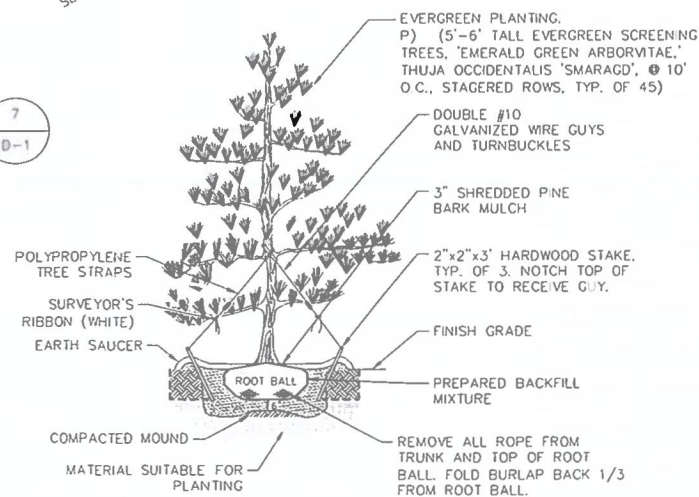
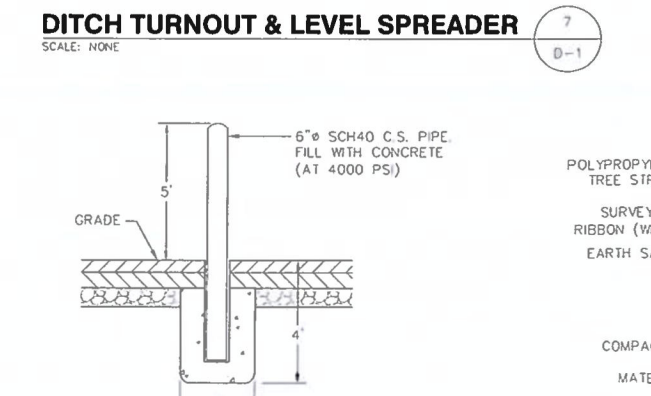
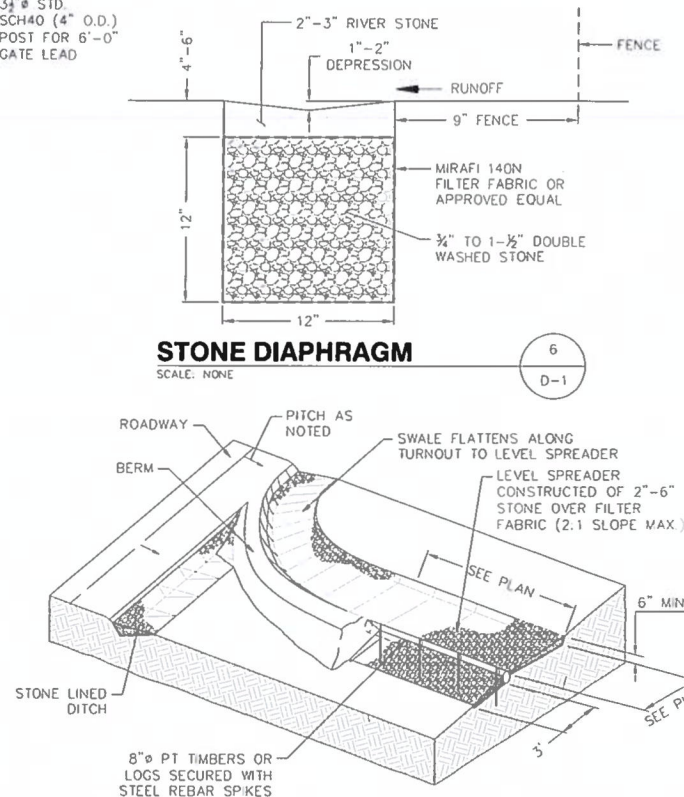
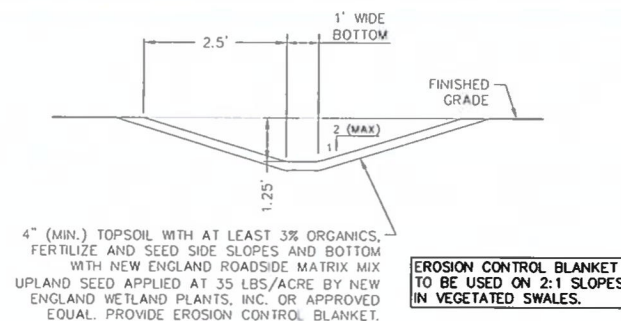
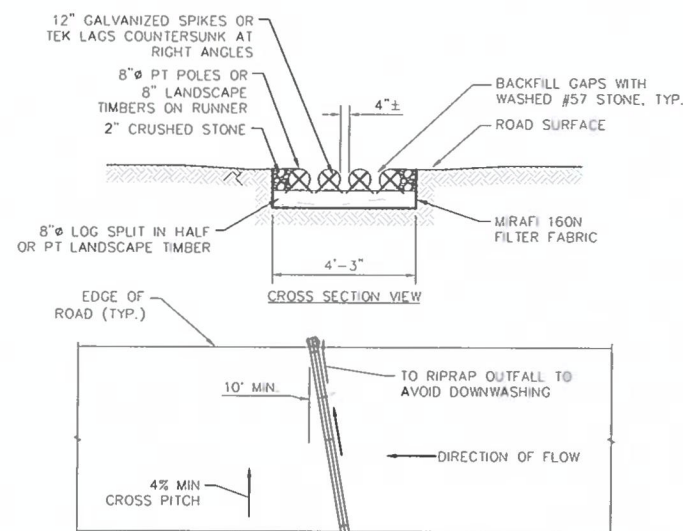
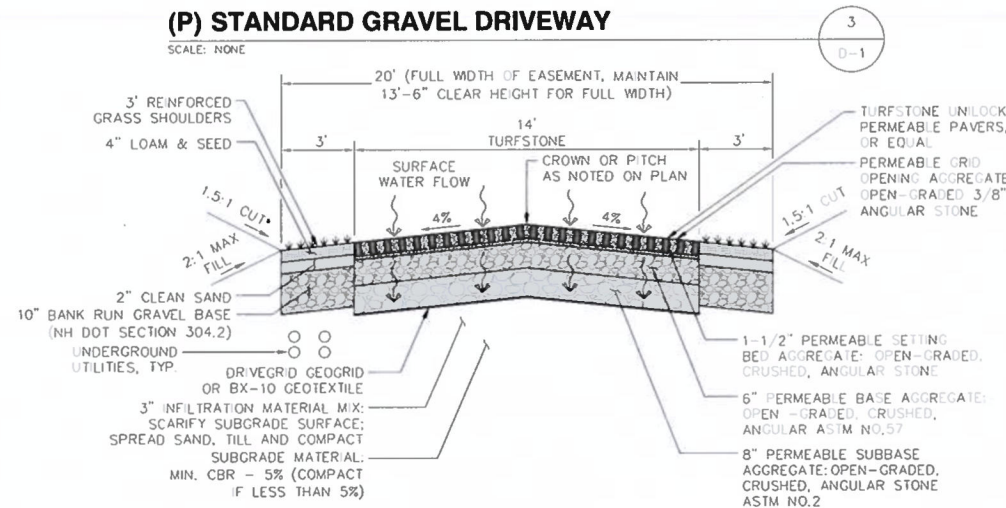
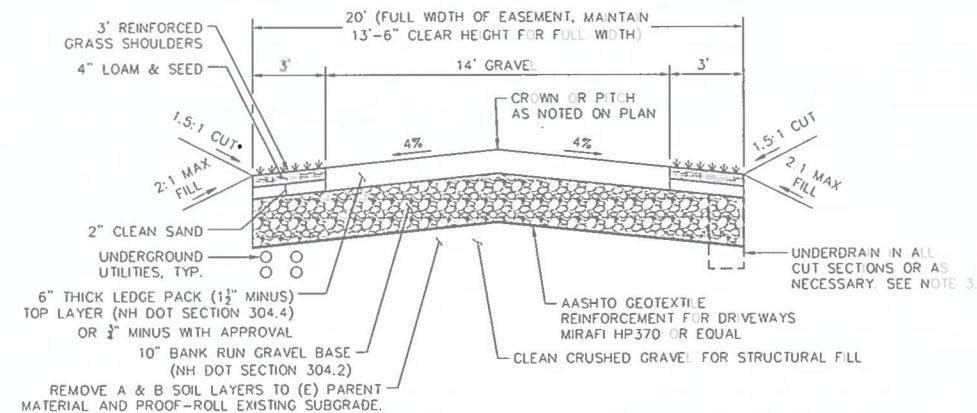
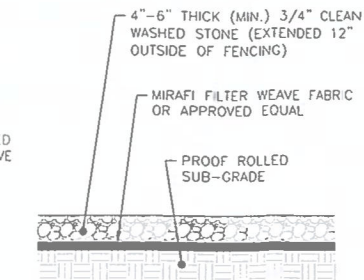
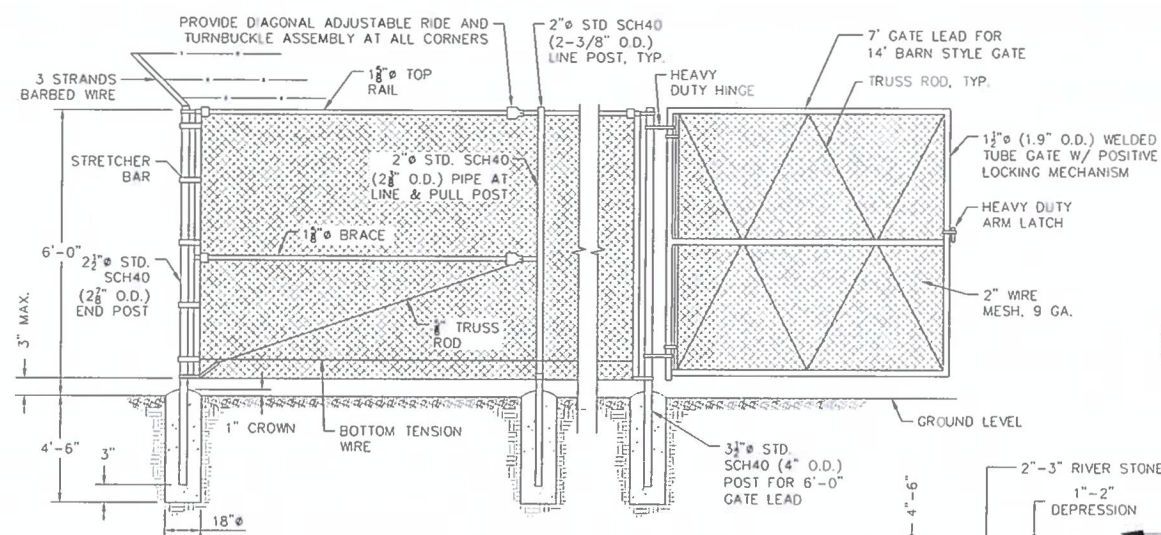
**verizon**  
 d-b-a VERIZON WIRELESS  
 900 CHELMSFORD STREET  
 TOWER 2 FLOOR 5  
 LOWELL, MA 01851

DATE: 09/29/2023  
DRAWN: STZ/JEB  
CHECK: JMM/TEJ  
SCALE: SEE PLAN  
JOB NO.: 13-030

**P-1**







**ProTerra**  
DESIGN GROUP, LLC

4 Bay Road  
Building A; Suite 200  
Hadley, MA 01035  
(413) 320-4918

CLIENT

|   | NO.      | DATE                  | REVISIONS |
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| D |          |                       |           |
| E |          |                       |           |
| F |          |                       |           |
| G |          |                       |           |
| H |          |                       |           |
| I |          |                       |           |
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| X |          |                       |           |
| Y |          |                       |           |
| Z |          |                       |           |

**SITE NAME: DOVER\_W\_NH**  
**ADDRESS: 180 TOLEND ROAD**  
**DOVER, NH 03820**

**verizon**  
CELCO PARTNERSHIP  
dba VERIZON WIRELESS  
900 CHILSFORD STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851

STAMP

|              |            |
|--------------|------------|
| DATE:        | 09/29/2023 |
| DRAWN:       | STZ/JEB    |
| CHECK:       | JMM/TEJ    |
| SCALE:       | SEE PLAN   |
| JOB NO.:     | 13-030     |
| SHEET TITLE: |            |

## DETAILS

D-1



CLIENT:

| NO. | DATE     | REVISIONS             |
|-----|----------|-----------------------|
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SITE NAME: DOVER, NH  
ADDRESS: 180 TOLAND ROAD  
DOVER, NH 03820

CELCO PARTNERSHIP  
dba VERIZON WIRELESS  
900 CHELSEA STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851

verizon

STAMP:



DATE: 09/29/2023

DRAWN: STZ/JEB

CHECK: JMM/TEJ

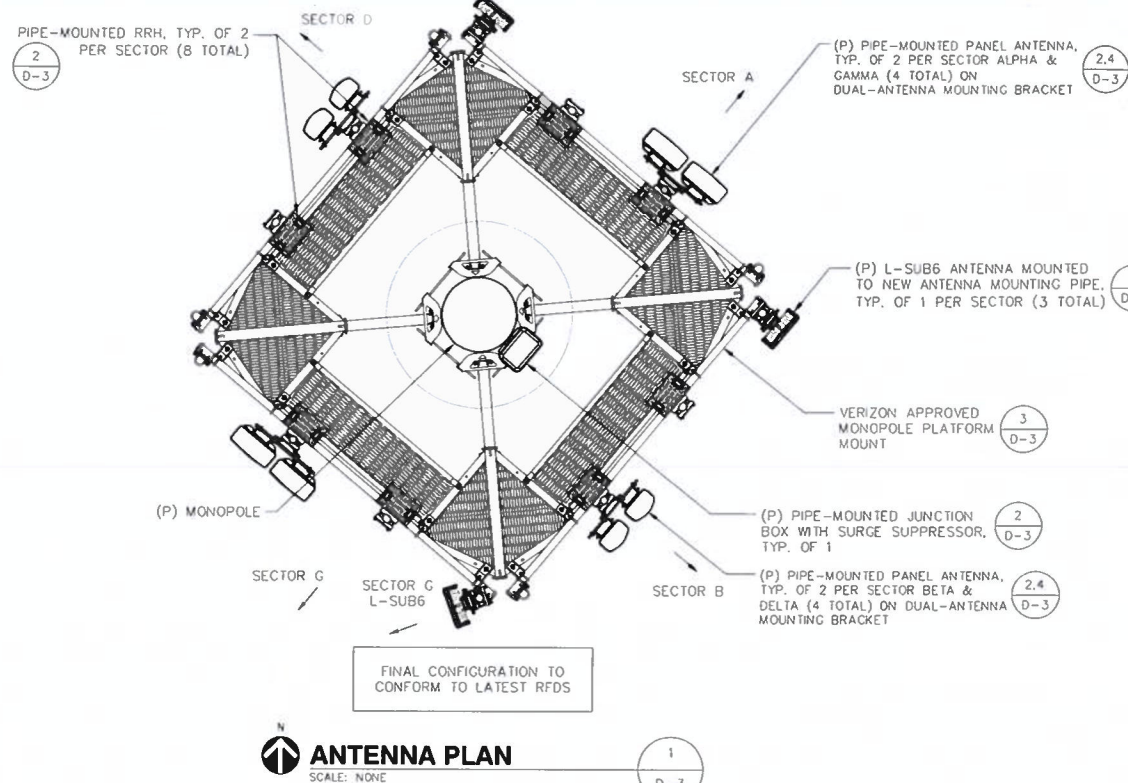
SCALE: SEE PLAN

JOB NO.: 13-030

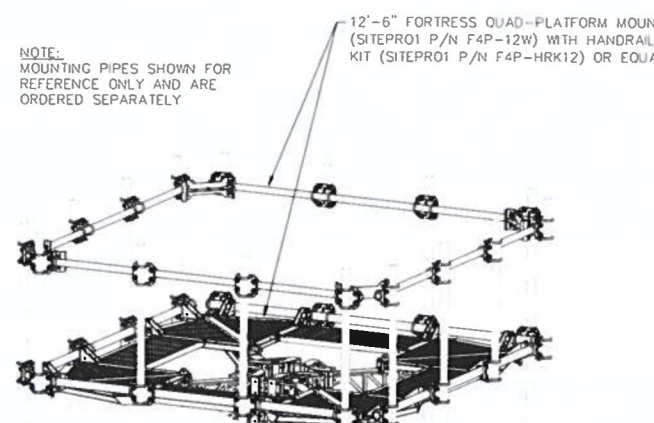
SHEET TITLE:

DETAILS

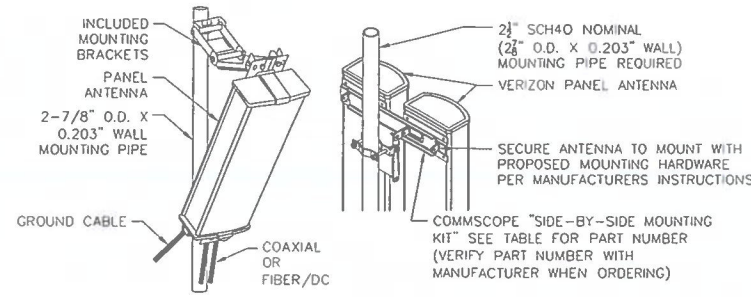
D-3



ANTENNA PLAN  
SCALE: NONE

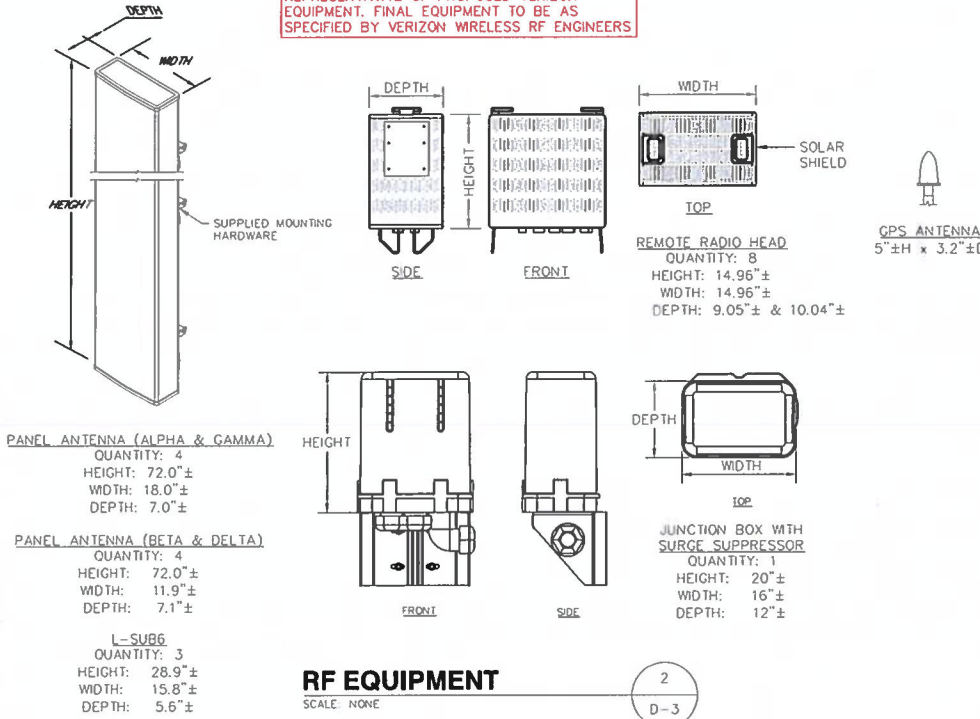


PLATFORM MOUNT DETAIL  
SCALE: NONE

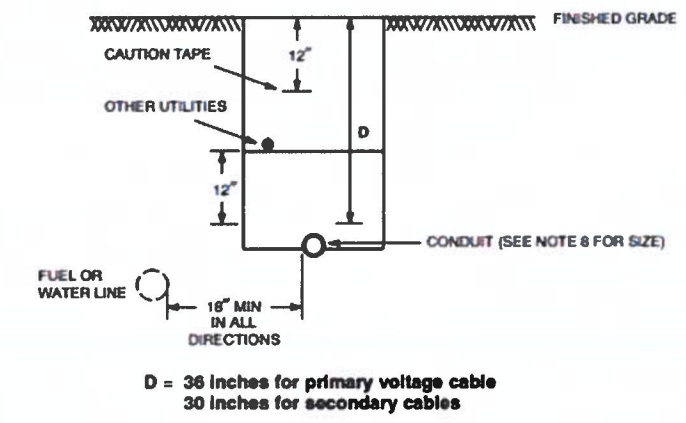


TYPICAL PANEL ANTENNA DETAIL  
SCALE: NONE

NOTE: ALL EQUIPMENT SIZE IS APPROXIMATE & REPRESENTATIVE OF PROPOSED VERIZON EQUIPMENT. FINAL EQUIPMENT TO BE AS SPECIFIED BY VERIZON WIRELESS RF ENGINEERS



RF EQUIPMENT  
SCALE: NONE



PRIMARY/SECONDARY CABLE INSTALLATION  
DETAIL FROM NORTHEAST UTILITIES (EVERSOURCE)  
CONSTRUCTION STANDARD, DTR 50.102. REFER TO  
NOTES 1-9 ON ORIGINAL DETAIL.

PRIMARY/ SECONDARY CABLE INSTALLATION  
SCALE: NONE



CLIENT:

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A 06/13/23 ISSUED FOR REVIEW  
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SITE NAME: DOVER, NH  
ADDRESS: 180 TOLAND ROAD  
DOVER, NH 03820

CELLCO PARTNERSHIP  
d/b/a VERIZON WIRELESS  
800 CHERMID STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851

APPLICANT:

**verizon**

STAMP:

JESSE  
M. JOHNSON  
No. 12508  
9-29-2023

DATE: 09/29/2023

DRAWN: STZ/JEB

CHECK: JMM/TEJ

SCALE: SEE PLAN

JOB NO.: 13-030

SHEET TITLE:

**EROSION CONTROL  
PLAN & DETAILS**

**EC-1**

LOCUS  
N/F LIONEL R. PARADIS  
& KRISTINA L. PARADIS  
180 TOLAND ROAD  
DOVER, NH 03820  
PARCEL I.D.: F-2-0-0

(P) 10' WIDE UTILITY EASEMENT  
TO PUBLIC R.O.W. (COORDINATE  
LOCATION WITH UTILITY PURVEYOR)

PROPOSED 20' WIDE ACCESS  
EASEMENT TO PUBLIC R.O.W.  
(MAINTAIN 13'-6" CLEAR  
HEIGHT FOR FULL WIDTH)

(E) GRAVEL DRIVEWAY  
(20' EASEMENT WIDTH WITH 13'-6"  
CLEAR HEIGHT PROVIDED)

(P) CONSTRUCTION  
ENTRANCE/TRACKING PAD

(E) GRASS/FIELD AREA

(P) 75'x75' LEASE AREA  
WITH FENCED COMPOUND  
AND MONOPOLE TOWER

(P) DEWATERING  
BASIN, AS  
REQUIRED

(E) 16' WIDE  
NET&T EASEMENT

(P) SILT FENCE  
EROSION CONTROL  
AT LIMIT OF WORK

(P) SILT FENCE EROSION  
CONTROL AT LIMIT OF WORK

(P) COMPOUND SURFACE  
(3/4" CLEAN WASHED  
STONE, TYP.)

(P) 14' WIDE DRIVEWAY WITH 3' REINFORCED  
GRASS SHOULDERS (20' EASEMENT WIDTH &  
13'-6" CLEAR HEIGHT PROVIDED)

(P) ARMORED FENCE/SILT SOCK  
EROSION CONTROL DOUBLE SPACED  
(2 ROWS) AT LIMIT OF WORK

(P) CONSTRUCTION  
LAYDOWN AREA

(P) SILT FENCE  
EROSION CONTROL  
AT LIMIT OF WORK

UNRESTRICTED  
AREA

CONSERVATION  
EASEMENT LINE

AREA SUBJECT  
TO CONSERVATION  
EASEMENT IN FAVOR  
OF THE UNITED  
STATES OF AMERICA

(P) CONCRETE  
WASHOUT AREA

(E) GRASS/FIELD AREA

(P) SOIL & GRAVEL  
STOCKPILE AREA

(P) ARMORED FENCE/SILT SOCK  
EROSION CONTROL DOUBLE SPACED  
(2 ROWS) AT LIMIT OF WORK

ALL DISTURBED AREAS OUTSIDE GRAVEL AREAS, OTHER  
THAN SWALES, SHALL BE SEEDED WITH NORTHEAST  
TOLERANT GRASS MIXTURE CONSISTING OF TALL FESCUE,  
KENTUCKY BLUEGRASS, AND PERENNIAL RYE GRASS, TYP.  
OTHERWISE VEGETATED SWALES AND STORMWATER DEVICES  
SHALL BE SEEDED WITH NEW ENGLAND ROADSIDE MATRIX  
MIX UPLAND SEED APPLIED AT 35 LBS/ACRE BY NEW  
ENGLAND WETLAND PLANTS, INC. OR APPROVED EQUAL.

**EROSION CONTROL BARRIER LEGEND**

SF SILT FENCE  
DAF ARMORED FENCE / SILT SOCK  
DOUBLE SPACED (2 ROWS)

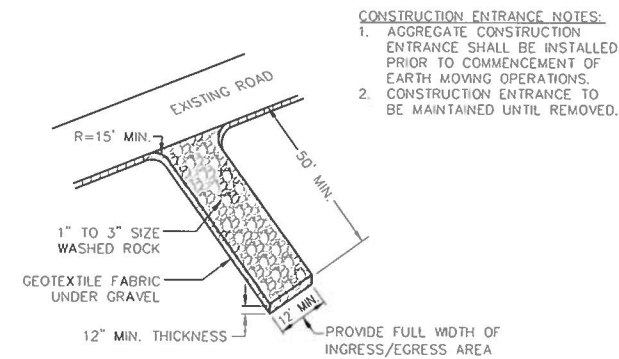
DOUBLE SPACED EROSION CONTROL  
BARRIERS SHALL BE LOCATED AT  
OUTFALLS AND CRITICAL POINTS.

**DISTURBANCE SUMMARY**

| ITEM                                                                                      | AREA (SF)                                                |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------|
| (P) GRAVEL DRIVEWAY SECTIONS (STANDARD GRAVEL DRIVEWAY)                                   | 2,960±                                                   |
| (P) COMPOUND IMPERVIOUS (VERIZON CONC. PAD, TOWER PIER)                                   | 340±                                                     |
| (F) COMPOUND IMPERVIOUS - LIMIT OF ADDITIONAL FULL BUILD<br>(BY OTHERS - 2 CARRIERS EST.) | 680± MAX.                                                |
| MAXIMUM COMBINED TOTAL OF (P) & (F) IMPERVIOUS                                            | 3,300± SF (PROPOSED)<br>3,980± SF (MAX.)<br>(= 4,000 SF) |
| (P) COMPOUND WASHED STONE SURFACE (PERVIOUS)                                              | 2,850±                                                   |
| (P) TURF STONE AND DRAINAGE STONE (PERVIOUS)                                              | 2,615±                                                   |
| LOAM & SEED                                                                               | 9,785±                                                   |
| TOTAL EARTH DISTURBANCE                                                                   | 19,250±                                                  |

**EROSION CONTROL PLAN**

SCALE: 1"=20' (22x34)  
1"=40' (11x17)

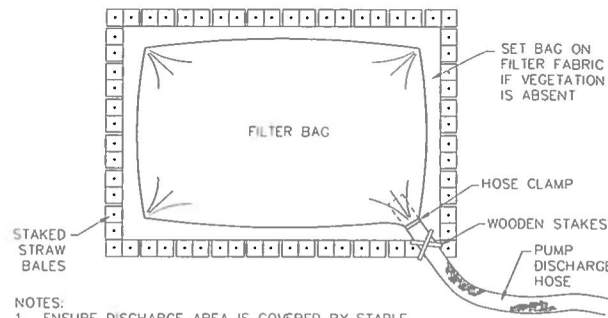


### CONSTRUCTION ENTRANCE

SCALE: NONE

1  
EC-2

- CONSTRUCTION ENTRANCE NOTES:**
1. AGGREGATE CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF EARTH MOVING OPERATIONS. CONSTRUCTION ENTRANCE TO BE MAINTAINED UNTIL REMOVED.



NOTES:

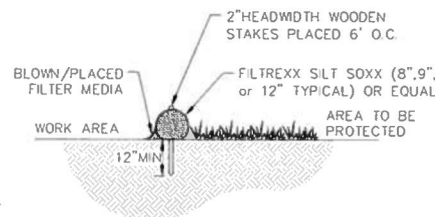
1. ENSURE DISCHARGE AREA IS COVERED BY STABLE VEGETATION.
2. USE DIFFUSER NOZZLE OR LOW DISCHARGE RATE TO PREVENT SCOURING.
3. TO BE PLACED AT AN UPLAND LOCATION THAT WILL ALLOW WATER TO DRAIN TO THE GROUND.
4. SIZE OF STRAW BALE ENCLOSURE TO BE 10'x10' ADJUSTED TO WATER VOLUME.
5. ADDITIONAL STRAW BALES MAY BE USED TO INCREASE RETENTION & FILTERING.

### DEWATERING BASIN

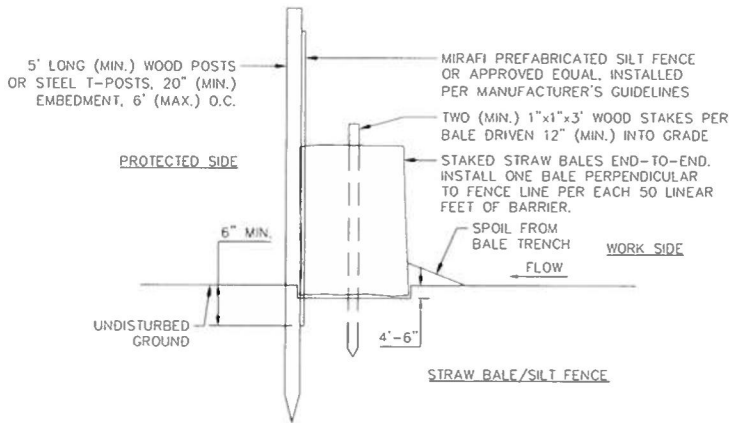
SCALE: NONE

2  
EC-2

- NOTES:**
1. USE SILT SOXX WHERE CONDITIONS DO NOT ALLOW STAKES TO BE DRIVEN.
  2. SILT SOXX FILL TO MEET FILTREXX SPECIFICATIONS AND APPLICATION REQUIREMENTS.
  3. SILT SOXX COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.
  4. FILTER MEDIA/STRAW BALES TO BE INERT AND FREE FROM INVASIVE WEEDS AND NON-NATIVE SPECIES.
  5. MAY STAKE BEHIND SOCK AT SLIGHT ANGLE (6° O.C.).



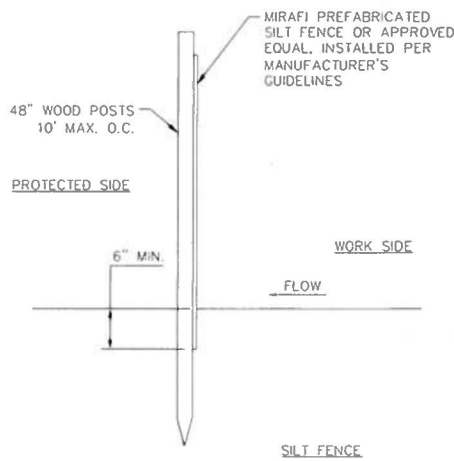
### SILT SOXX / COMPOST MEDIA SOCK



### EROSION CONTROL BARRIER

SCALE: NONE

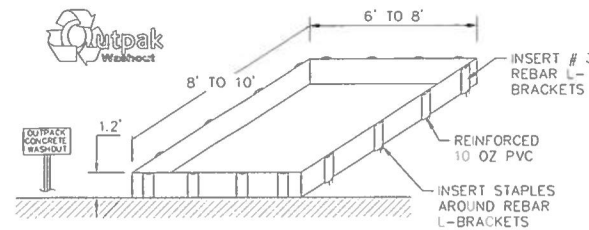
4  
EC-2



### SILT FENCE

SCALE: NONE

5  
EC-2



NOTES:

1. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THIS PROJECT.
2. SIGNS SHALL BE PLACED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT.
3. THE CONCRETE WASHOUT AREA WILL BE REPLACED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE AND OTHER LIQUID WASTE.
4. WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
5. DO NOT MIX EXCESS AMOUNTS OF FRESH CONCRETE OR CEMENT ON-SITE. DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
6. AVOID DUMPING EXCESS CONCRETE IN NON-DESIGNATED DUMPING AREAS.
7. LOCATE WASHOUT AREA AT LEAST 50' (15 METERS) FROM STORM DRAINS, OPEN DITCHES, OR WATERBODIES.
8. WASH OUT WASTES INTO THE OUTPAK WASHOUT AS SHOWN WHERE THE CONCRETE CAN SET, BE BROKEN UP, AND THEN DISPOSED OF PROPERLY.

### CONCRETE WASHOUT AREA

SCALE: NONE

3  
EC-2

NAME OF PROJECT

PER PLANNING BOARD APPROVAL  
WORKING HOURS ARE:

MONDAY - FRIDAY \_\_\_\_\_  
SATURDAY \_\_\_\_\_  
NO SUNDAY OR HOLIDAY HOURS

NAME OF DEVELOPER/SITE CONTRACTOR  
24HR REACHABLE PHONE NUMBER

NOTES:

1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND

### CITY OF DOVER - CONSTRUCTION SIGN

SCALE: NONE

6  
EC-2

### EROSION CONTROL NOTES

1. APPLICANT PROPOSES TO CONSTRUCT A CELLULAR TELECOMMUNICATIONS FACILITY CONSISTING OF A FENCED COMPOUND, DRIVEWAY AND UTILITY WORK WITHIN A LEASE AREA AND EASEMENTS.
2. ALL WORK SHALL CONFORM TO THE NEW HAMPSHIRE STORMWATER MANUAL - VOLUME 3 "EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" BY NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES DATED DECEMBER 2008 OR AS SUBSEQUENTLY REVISED.
3. TEMPORARY SILT FENCE EROSION CONTROL BARRIER SHALL BE MAINTAINED THROUGHOUT SITE CONSTRUCTION. STOCK PILE ON SITE 100 FT. OF SILT FENCE FOR EMERGENCY USE. TEMPORARY EROSION BARRIERS SHALL REMAIN IN PLACE UNTIL PERMANENT VEGETATIVE GROUND COVER IS ESTABLISHED.
4. THE CONTRACTOR SHALL CHIP ALL BRUSH AND SLASH CUTTINGS ON SITE AND STOCKPILE THE CHIPS TO BE USED ON ALL UNSTABLE, DISTURBED AREAS DURING CONSTRUCTION AS TEMPORARY STABILIZATION MULCH. NO BURNING WILL BE ALLOWED ON SITE.
5. TEMPORARY STABILIZATION MUST BE PROVIDED TO ANY DISTURBED EARTH THAT IS OPENED UP IN ANY ONE LOCATION FOR MORE THAN 14 DAYS. CHIPS FROM LAND CLEARING, EROSION CONTROL BLANKETS, OR FAST GROWING RYE GRASSES MAY BE USED FOR TEMPORARY STABILIZATION AS REQUIRED.
6. STRIPPED TOPSOIL SHALL BE STOCKPILED AND PROTECTED WITH STRAW MULCH. ALL STOCKPILES SHALL HAVE AN APPROVED SILTATION BARRIER TOTALLY SURROUNDING THE PILE. THE PILE SHALL BE IN AN APPROVED UPLAND AREA A MINIMUM OF TWENTY-FIVE FEET FROM ALL RESOURCE AREAS.
7. THE PHASING AND SEQUENCING OF THE WORK FOR THE SITE PREPARATION FOR THE TELECOMMUNICATIONS EQUIPMENT INSTALLATION CONSISTS OF INSTALLING TEMPORARY EROSION AND SEDIMENTATION CONTROL BARRIERS; CLEARING AND ROUGH GRADING OF COMPOUND; FOUNDATION WORK; BACK FILL FOUNDATIONS; FENCED COMPOUND CONSTRUCTION; INSTALLATION OF TOWER AND GROUND EQUIPMENT; INSTALLATION OF UTILITIES; GROUNDING AND LIGHTNING PROTECTION; EQUIPMENT TESTING; FINAL GRADING AND STABILIZATION OF DISTURBED AREAS; LOAM AND SEED DISTURBED AREAS OUTSIDE COMPOUND; FINAL CLEANUP. THE ESTIMATED TIME FOR COMPLETION OF THE WORK IS APPROXIMATELY **FOURTEEN (14) WEEKS**.
8. THE COMPOUND ENCLOSURE IS SURFACED WITH CRUSHED STONE UNDERLAIN BY A WEED-BLOCK SYNTHETIC FILTER FABRIC. DRAINAGE PATTERNS, RUNOFF VOLUMES AND PEAK FLOW RATES WILL NOT BE ALTERED BY THE PROPOSED CONSTRUCTION.
9. IF REQUIRED, TEMPORARY DEWATERING OF THE TRENCH EXCAVATIONS SHALL BE DIVERTED INTO A TEMPORARY STILLING BASIN. INFILTRATION IN THE STILLING BASIN AND FLOW THROUGH THE CRUSHED STONE CONTAINMENT BERM WILL RESULT IN DIFFUSE, NON-POINT SOURCE RUNOFF OVER VEGETATED AREAS.
10. ALL DISTURBED AREAS OUTSIDE THE LIMITS OF THE FENCED COMPOUND AND ROADWAY SHALL BE PERMANENTLY ESTABLISHED WITH A NATIVE VEGETATIVE GROUND COVER AT THE CONCLUSION OF CONSTRUCTION. GRADED AREAS SHALL BE PROTECTED WITH STRAW MULCH UNTIL A GOOD VEGETATIVE COVER IS ESTABLISHED.
11. THE TOTAL IMPACT AREA OF THE DISTURBED TOWER & COMPOUND CONSTRUCTION SITE IS BOUNDED BY THE "LIMIT OF WORK" AS SHOWN HEREON. THE MAXIMUM AREA OF DISTURBANCE WITHIN THE LIMIT OF WORK IS APPROXIMATELY **19,250 SQUARE FEET**. THE PROJECT IMPACT AREA IS BELOW THE EXEMPTION THRESHOLD OF 43,560 SQUARE FEET IN 40 CFR PARTS 9, 122-124 AND THEREFORE IS NOT SUBJECT TO REGULATION UNDER THE EPA NPDES GENERAL CONSTRUCTION PERMIT PROGRAM.
12. THE PROJECT OWNER'S GENERAL CONTRACTOR SHALL CONDUCT ALL SITE DEVELOPMENT WORK IN A MANNER THAT DOES NOT EXCEED THE LIMITS OF WORK SHOWN ON THE PLANS. ADDITIONALLY, THE PROJECT OWNER'S GENERAL CONTRACTOR SHALL CONDUCT ALL CONSTRUCTION ACTIVITIES IN A MANNER THAT DOES NOT RESULT IN STORM WATER DISCHARGES WITH AN ADVERSE IMPACT ON ANY RESOURCE AREAS OR DOWNSTREAM PROPERTIES.
13. A CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THIS PROJECT. SIGNS SHALL BE PLACED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT. WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
14. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SILT FROM BEHIND SILTATION BARRIERS AND DISPOSE OF SILT EVENLY IN UPLAND AREAS. REMOVE ALL EROSION CONTROL DEVICES WHEN A GOOD VEGETATIVE COVER IS ESTABLISHED.

**ProTerra**  
DESIGN GROUP, LLC

4 Bay Road  
Building A, Suite 200  
Hodley, MA 01035  
(413) 320-4918

CLIENT:

| NO. | DATE     | REVISIONS             |
|-----|----------|-----------------------|
| A   | 06/13/23 | ISSUED FOR REVIEW     |
| B   | 09/25/23 | ISSUED FOR REVIEW     |
| C   | 09/29/23 | ISSUED FOR PERMITTING |

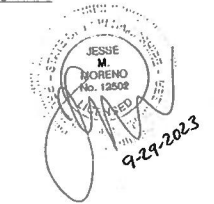
SITE NAME: DOVER, V. NH  
ADDRESS: 180 TOLAND ROAD  
DOVER, NH 03820

CELCO PARTNERSHIP  
486 VERIZON WIRELESS  
900 CHELSEA STREET  
TOWER 2 FLOOR 5  
LOWELL, MA 01851

verizon

TITLE:

STAMP:



DATE: 09/29/2023

DRAWN: STZ/JEB

CHECK: JMM/TEJ

SCALE: SEE PLAN

JOB NO.: 13-030

SHEET TITLE:

**EROSION CONTROL  
PLAN & DETAILS**

**EC-2**