

## Exhibit SA-5 Natural Resource Review

# Natural Resources Review

Rochester  
1030 Vermont Route 100  
Rochester, Vermont 05767

EBI Project No. 001994-PR

Report Date: June 20, 2025

Prepared for:

Vertex Towers LLC  
2 Commercial Street  
Sharon, Massachusetts 02067

Prepared by:



**BUILDING VALUE  
SUSTAINABLY**

21 B Street  
Burlington, MA 01803  
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June 20, 2025

**Subject:                   Natural Resources Review for a Proposed Wireless Communications Facility  
Rochester  
1030 Vermont Route 100, Rochester, Windsor County, Vermont 05767  
43° 51' 35.46" N (Latitude) / 72° 47' 53.41" W (Longitude)  
EBI Project No. 001994-PR**

EBI Consulting (EBI) has prepared this Natural Resources Review (NR Review) for the above-referenced wireless communications facility (herein as the "Facility"). This NR Review has been prepared in support of a Federal Communications Commission (FCC) National Environmental Policy Act (NEPA) review of the Facility and in accordance with the FCC's NEPA implementing procedures (47 CFR 1.1301-1.1320).

The purpose of this NR Review is to determine whether further environmental review is required, per §1.1307(a)(1), (2), (3), (6), and (7) of FCC NEPA Rules. Specifically, this NR Review summarizes EBI's findings regarding whether the Facility may significantly impact federal lands, protected species, flood zones, or surface features.

EBI prepared this NR Review using readily available online resources and visual observations made during EBI's field survey. This NR Review is designed to provide a baseline evaluation of the potential for the proposed Facility to significantly affect the above-referenced natural resources (including federal-listed species) and to determine if additional review, specialized on-site surveys, or consultation is required.

## **Project Summary**

As of the date of this NR Review, the proposed project consists of the construction of a new facility. Specifically, the proposed installation will consist of a 140-foot-tall self-support lattice tower and support equipment within a 60-foot by 60-foot lease area. The limits of clearing will extend approximately 10 to 15 feet beyond the lease area. Access will be gained via a proposed 15-foot-wide access easement, which follows an existing logging path that is proposed to be upgraded as required. This proposed easement extends in a general easterly direction from Vermont Route 100, then northerly direction to the proposed facility. Utilities will be routed underground and overhead within a 10-foot-wide easement that will generally run adjacent to the proposed access easement overhead from the proposed facility to a field where it will then be routed underground for approximately 700 feet to VT Route 100. Please see the attached site drawings for complete details.

## Property and Vicinity Description

EBI's evaluation of the potential impacts of the wireless facility project considered the areas of direct impact, including the specific Facility location, associated access and utility easements, and temporary staging areas. EBI also considered areas of potential indirect impacts (e.g., areas potentially affected by potential sedimentation and run-off). For the purposes of this report, EBI refers to the entire action area herein as the "Project Site."

The Project Site currently consists of undeveloped wooded land and an existing logging road that is proposed to be improved as needed. Tree trimming/clearing is proposed as part of the scope.

The general vicinity surrounding the Project Site consists of undeveloped wooded land and limited residential development.

## Federal Lands Review

### 47 CFR §1.1307(a)(1) and (2)

EBI reviewed publicly available mapping data identifying federal lands under the jurisdictions of the United States Fish and Wildlife Service (USFWS), the United States Forest Service (USFS), the National Park Service (NPS), or the Bureau of Land Management (BLM), including Wilderness Areas<sup>1</sup>, National Wildlife Refuges<sup>2</sup>, National Wild & Scenic Rivers<sup>3</sup>, and National Scenic Trails<sup>4</sup>.

### Review Summary

Federal Lands Map Review	Within Boundary	Within 1-Mile	Not Within 1-Mile
Facility location relative to a <b>Wilderness Area</b>			✓
Facility location relative to a <b>Wildlife Preserve</b>			✓
Facility location relative to a <b>Wild &amp; Scenic Rivers</b>			✓
Facility location relative to a <b>National Scenic Trails</b>			✓

Based on a review of the above-referenced resources, the proposed facility is not located within the boundaries of, or within one mile of any of the above-referenced federal lands. However, please note, the proposed facility is within 0.38 mile of the Green Mountain National Forest. Due to the close proximity and potential visibility of the proposed tower from the Green Mountain National Forest, EBI has invited the U.S. Forest Service (USFS) to comment on the project. Any comments received will be included in the final NEPA report.

1. <https://wilderness.net/>
2. <https://www.fws.gov/program/national-wildlife-refuge-system>
3. <https://www.rivers.gov/>
4. <https://www.nps.gov/subjects/nationaltrailssystem/national-scenic-trails.htm>

## Protected Species Review

### Endangered Species Act

EBI utilized the USFWS Information for Planning and Consultation<sup>5</sup> (IPaC) online project review tool to identify species that are federal-listed or proposed for listing under the Endangered Species Act (ESA), and that are known to occur within the vicinity of the Project Site. EBI also utilized the USFWS IPaC and/or online Critical Habitat Portal<sup>6</sup> mapping tool to determine if designated critical habitat is present at or in the immediate vicinity of the Project Site. Please refer to the attachments for a copy of this documentation.

EBI also reviewed species occurrence data and/or associated habitat descriptions maintained by the Vermont Agency of Natural Resources (VT ANR) Atlas<sup>7</sup> to further evaluate the likelihood of protected species being present at or within the vicinity of the Project Site.

A summary of EBI's evaluation of the potential impacts to the protected species and habitats identified using the above-referenced data sources is presented in the Species & Habitat Determination Table on the following page.

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5. <https://ipac.ecosphere.fws.gov/>
  6. <https://ecos.fws.gov/ecp/report/table/critical-habitat.html>
  7. <https://gis-vtanr.hub.arcgis.com/apps/anr-atlas/explore>

### Species and Habitat Determination Table

Species Name (Scientific Name)	Status	Habitat Description	Effect Determination
Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	FE/SE	Hibernates in caves and mines. Found in a variety of forested habitats and adjacent areas during the summer. Bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. May also use man-made structures such as barns, and bridges as summer habitat. USFWS survey guidance further indicates that stands of trees with a diameter at breast height (dbh) of 3 inches or greater and individual trees of a suitable size within 1000 feet of a forested area should be considered suitable habitat, while trees in urban areas are not considered suitable.	<b>May Affect, Not Likely to Adversely Affect</b> - Potentially suitable habitats (undeveloped wooded land with trees $\geq$ 3-inches dbh) capable of supporting this species were noted as adjacent to the Project Site. Please see the information below the table for additional information.
Tricolored Bat ( <i>Perimyotis subflavus</i> )	FP/SE	This species is found in a variety of forested habitats where it roosts in tree foliage such as leaf and lichen clumps. Will also use caves, mines, rock crevices, culverts, and old buildings or pavilions. Preferred foraging habitat is near riparian areas and preferred roost trees are usually oaks, although a variety of trees species may be used. USFWS guidance indicates that trees in densely urban areas and industrial pine plantations are not suitable for this species	<b>May Affect, Not Likely to Adversely Affect</b> - Although suitable habitat may be present within and immediately adjacent to the Project Site, proposed endangered species are not protected by the take prohibitions of Section 9 of the ESA, and under Section 7 the USFWS must only be consulted if the proposed action will jeopardize the continued existence of the species. Based on the small scope, the proposed project is not likely to jeopardize the species. Should the tricolored bat become fully listed before completion of the proposed project, consultation with the USFWS must be reinitiated.

Species Name (Scientific Name)	Status	Habitat Description	Effect Determination
Monarch Butterfly ( <i>Danaus plexippus</i> )	FP	This species can be found throughout the United States but occurs mostly in areas with host plant (milkweed) availability.	<b>No Jeopardy</b> - Proposed threatened species are not protected by the take prohibitions of Section 9 of the ESA, and under Section 7 the USFWS must only be consulted if the proposed action will jeopardize the continued existence of the species. No USFWS consultation is currently required for this species but additional review and/or consultation may be required if it is officially listed in the ESA prior to construction.
<i>FE = Federal Endangered; FP = Federal Proposed; SE = State Endangered</i>			

## Summary of Effects Analysis

### Endangered Species Act

On June 18, 2025, EBI ran and submitted the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (DKey) and the USFWS, in an online concurrence letter (Project Code: 2025-0083418), noted that the proposed project 'may affect, not likely to adversely affect' the northern long-eared bat and tricolored bat, provided the following mitigation measures are implemented:

- **Utilize downward-facing, full cut-off lens lights and direct any temporary lighting away from suitable northern long-eared bat and/or tricolored bat roosting habitat when bats may be present (April 15 - October 31).**
- **Any tree trimming/clearing, as well as drilling/blasting occurs during hibernation season between November 1 and April 14.**

No further consultation with the USFWS is required regarding the northern long-eared bat, provided that no comments are received within 15 days from the date of the DKey. If comments are received within this time-frame, they will be discussed within the final NEPA, otherwise the USFWS consultation for this species is considered complete. **Should the tricolored bat be listed under the ESA prior to construction, this determination must be re-evaluated by the USFWS to confirm it is still accurate.**

According to the Vermont Natural Resource Atlas, the Project Site is not within the vicinity of any documented rare and/or threatened, and/or uncommon wildlife species, significant natural communities, or mapped vernal pools or Vermont Significant Wetlands Inventory (VSWI) identified wetlands. Although no significant impacts are anticipated to state species and resources, the Vermont ANR requires consultation on all projects. Therefore, a letter will be sent inviting them to comment on state protected species and resources. Correspondence will be discussed in the final NEPA report.

### Migratory Bird Treaty Act

EBI also considered potential impacts of the construction and ongoing operation of the Facility, on species of migratory birds. The Migratory Bird Treaty Act (MBTA; 16 U.S.C. 703-712) prohibits the take (including the killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS. The USFWS issued "*Recommended Best Practices for Communications Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning*"<sup>8</sup> to provide avoidance and minimization measures (A&M Measures) aimed at reducing the risk of avian mortality as a result of communications towers. These A&M Measures include design and siting recommendations such as maximum tower heights not exceeding 200 feet; avoiding the use of guy wires and lighting; and not placing tower structures in areas of known bird concentrations (e.g., wetlands, coastal areas).

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8. <https://www.fws.gov/sites/default/files/documents/usfws-communication-tower-guidance.pdf>

Based on the current scope of work as of the date of this assessment, the Facility meets most of the USFWS's tower siting and design recommendations and is therefore not anticipated to adversely affect migratory birds.

### **Bald and Golden Eagle Act**

EBI also considered potential impacts of the construction and ongoing operation of the Facility on Bald and Golden Eagles. The Bald and Golden Eagle Protection Act (BGEPA; 16 U.S.C. 668-668d) prohibits the "taking" of bald and golden eagles in the absence of a permit issued by the Secretary of the Interior.

Based on project details, an assessment of habitat, and review of publicly available occurrence data, the proposed installation is not anticipated to result in the "take" of any Bald or Golden Eagles. No further review is required.

## Flood Zones

### 47 CFR §1.1307(a)(6)

EBI reviewed project details, survey data (if available), and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM)<sup>9</sup> applicable to the Facility location.

### FEMA FIRM

FIRM Number:	50027C0131E	FIRM Date:	9/28/07
Flood Zone(s):	X	Within a 100-year flood zone?	No

### Flood Zone Determination Summary

Based on EBI's review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the proposed facility is not located within a 100-year floodplain. As such, in accordance with §1.1307(a)(6) of FCC NEPA Rules, an Environmental Assessment is **not** required.

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9. <https://www.fema.gov/flood-maps>

## Significant Changes to Surface Features

### 47 CFR §1.1307(a)(7)

EBI reviewed USFWS National Wetlands Inventory (NWI) maps<sup>10</sup>, the Natural Resources Conservation Service (NRCS) Web Soil Survey<sup>11</sup>(WSS), other Geographic Information System (GIS) mapping resources (if available), and/or site observations, to identify the presence of known or suspect wetlands at or in the immediate vicinity of the Facility. EBI also reviewed online aerial photography and available Project Site photos, as well as project design and location details provided by the project proponent.

### Wetlands Map Review

Although a review of the NWI map did not identify wetlands within 300 feet of the Project Site, EBI observed suspect wetlands within the vicinity of the Project Site; therefore, Arrowwood Environmental of Huntington Vermont completed a 'Wetland at the proposed Rochester, Vermont Vertex Tower Site' memo. This memo identified two very small wetlands (Wetland A and Wetland B) located in low spots within the existing dirt access road. The wetlands are shallow emergent marsh wetlands and the vegetation is dominated by reed canary grass, sedges, tall buttercup, and sensitive fern. There is no permanent standing water in either wetland, although after heavy rain there may be temporary pooling of water in the wetlands. Based on a site visit on November 13, 2023, the Vermont state District Wetland Biologist classified these wetlands as Class III and therefore they are not regulated under the Vermont Wetland Rules. The proposed access road will cross Wetland A, which lies within the existing road. The proposed access road will impact 210 sq. ft. of Wetland A and will not effect Wetland B.

Although there are impacts to wetlands, EBI confirmed with Michael Adams, a Permit Project Manager from the Army Corp of Engineers (ACOE), no reporting is necessary due to the insignificant impact to the identified wetland features. As such, no general permit is needed. **Best management practices (BMPs) (i.e. silt fencing, wattles, erosion controls, etc.) should be employed during construction to ensure stormwater runoff does not carry construction related debris into nearby wetland features.**

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10. <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>

11. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

## Findings and Conclusions

Based on the results of EBI's review as summarized herein, the proposed communications facility is:

- Anticipated to 'may affect, not likely to adversely affect' listed species or associated critical habitats, provided any conservation measures summarized in the report above are implemented;
- Not within the boundaries of, or within one mile of federal lands noted above (i.e. wildlife preserves, wilderness areas, etc.);
- Not within the boundaries of a FEMA-designated 100-year flood zone; and
- Not anticipated to result in a significant change to surface features; however, **BMPs should be implemented.**

## Limitations

EBI is an independent contractor, not an employee of either the property owner or the project proponent, and its compensation was not based on the findings or recommendations made in this assessment or on the closing of any business transaction.

EBI relied upon project information (e.g., drawings, surveys, permits, etc.) provided by the Applicant or an authorized representative, and did not independently verify the accuracy of any such documents provided.


EBI also reviewed readily available online resources and available photographs showing the project area. This assessment is intended to provide a baseline evaluation of the Facility's potential to significantly affect listed or proposed threatened or endangered species or designated critical habitats, and to determine whether further on-site assessment is required. No species or habitat-specific survey was completed in the preparation of this assessment unless otherwise stated. Details and findings of any such surveys, if completed, will be attached to this report.

## Signatories

The following EBI personnel contributed to the preparation of this report. Please see attachments for a summary of professional qualifications.

Sincerely,

**EBI Consulting**



Owen Price / Biologist I

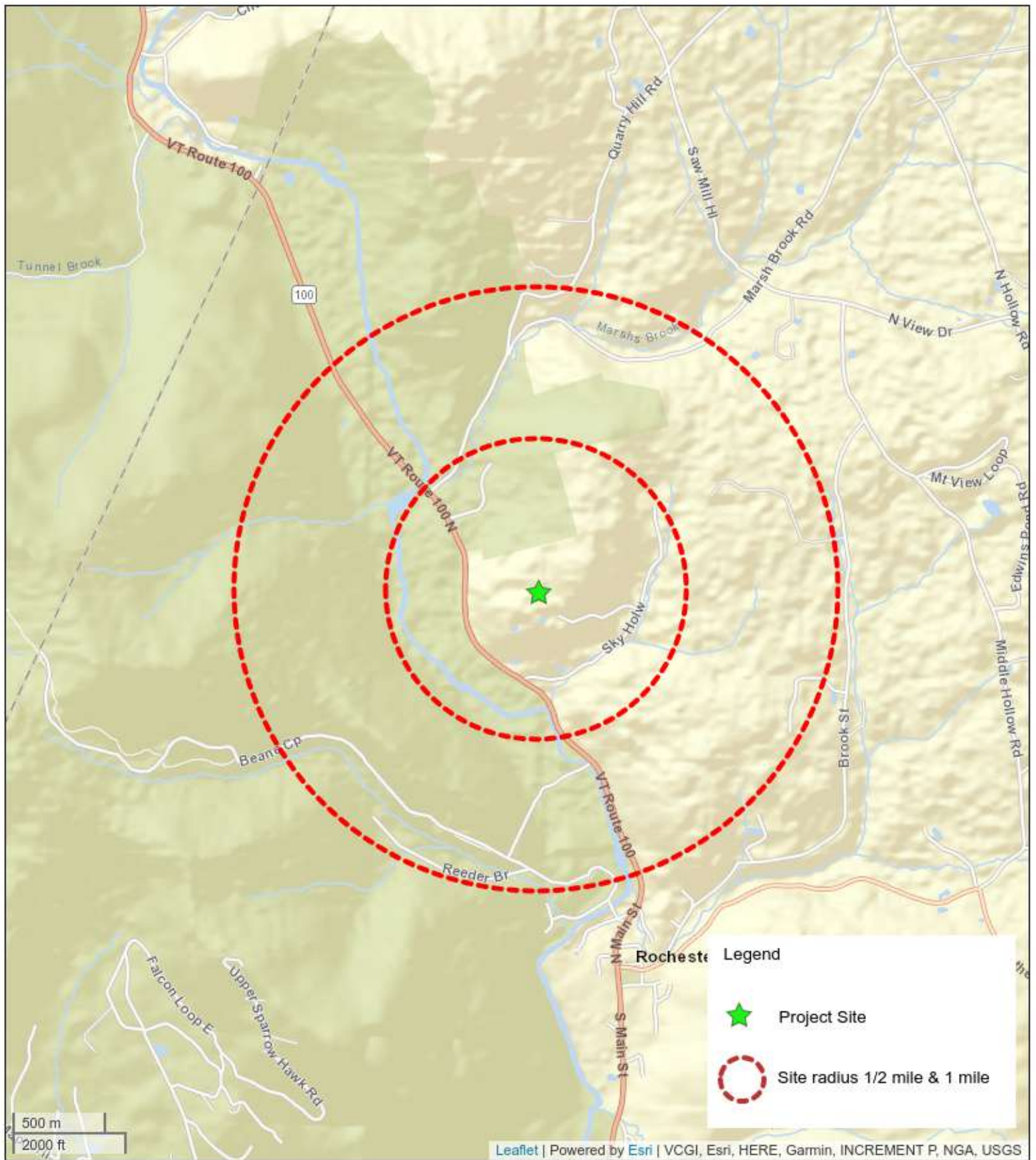


Jesse Redd / Senior Biologist  
jredd@ebiconsulting.com

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## Appendix A

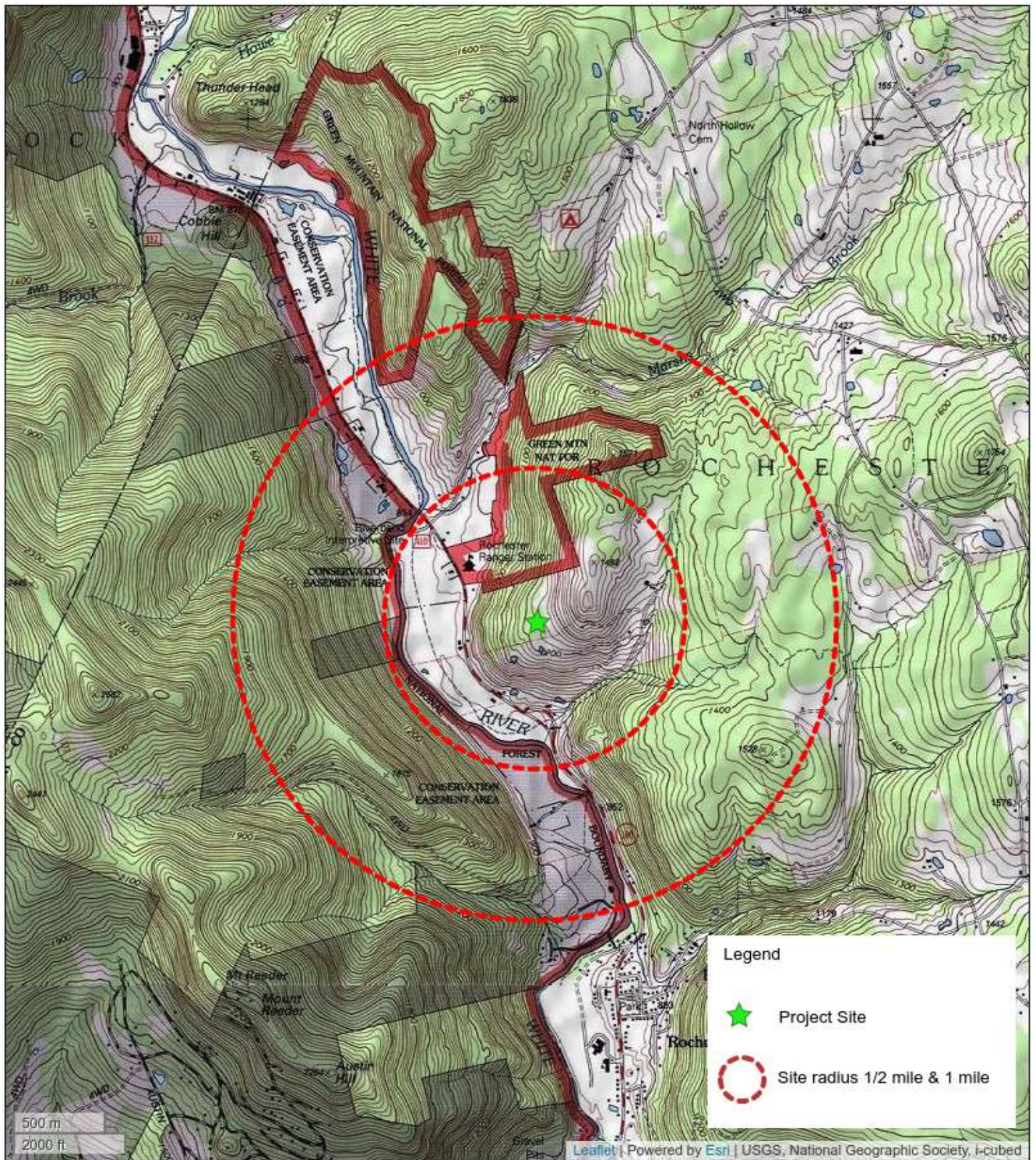
### Figures



**Figure 1 - Street Map**

Rochester  
 1030 Vermont Route 100  
 Rochester, Vermont 05767





**Figure 2 - Topographic Map**

Rochester  
 1030 Vermont Route 100  
 Rochester, Vermont 05767



# VT-VT-0111A ROCHESTER

1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

**verizon**

118 FLANDERS ROAD  
WESTBOROUGH, MA 01581  
(508) 330-3300 TEL

**Vertex  
Towers LLC**

VERTEX TOWERS LLC  
P.O. BOX 680  
MEDFIELD, MA 02052

**EGADVANCED  
ENGINEERING GROUP, P.C.**

Civil Engineering - Site Development  
Surveying - Telecommunications  
179 Swansea Mall Drive, Suite 1  
Swansea, MA 02777  
Tel: (508) 243-1414  
Fax: (401) 633-6354



AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

### SUBMITTALS

REV#	DATE	DESCRIPTION
2	06/05/24	REVISED
3	08/19/24	REVISED
4	10/20/24	REVISED
5	10/24/24	REVISED
6	12/11/24	REVISED
7	02/18/25	REVISED
8	04/10/25	REVISED

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VT-VT-0111A

**ROCHESTER**

1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

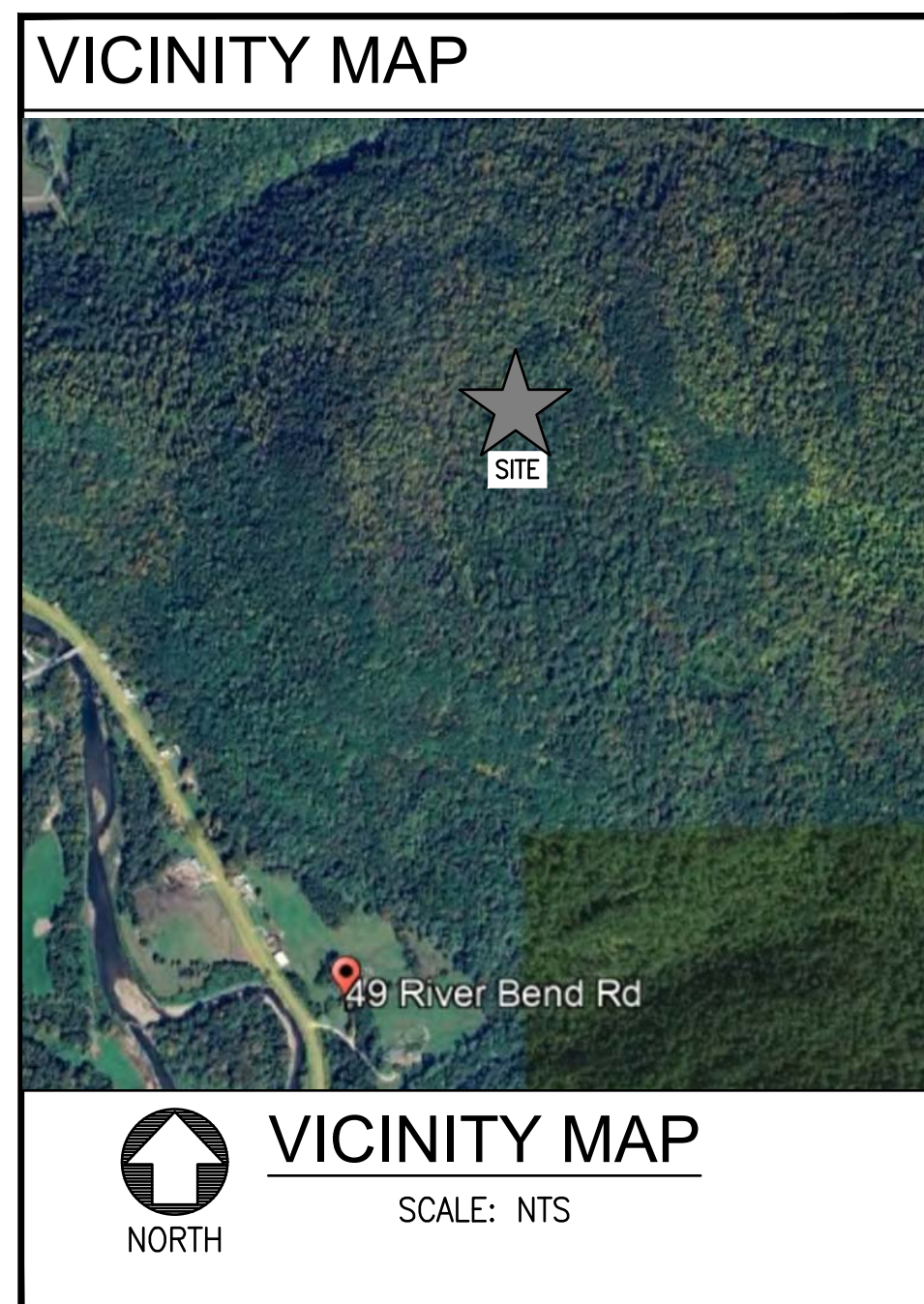
SHEET TITLE

TITLE SHEET

SHEET NUMBER

**T-1**

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	8
C-1	VICINITY PLAN	8
C-2	EXISTING CONDTION SITE PLAN	8
Z-1.1	PROPOSED SITE PLAN	8
Z-1.2	PROPOSED SITE PLAN	8
Z-2.1	ENALRGED PLAN & PROFILE (SEGMENT 1)	8
Z-2.2	ENALRGED PLAN & PROFILE (SEGMENT 2)	8
Z-2.3	ENALRGED PLAN & PROFILE (SEGMENT 3)	8
Z-2.4	ENALRGED PLAN & PROFILE (SEGMENT 4)	8
Z-2.5	ENALRGED PLAN & PROFILE (SEGMENT 5)	8
Z-2.6	ENALRGED PLAN & PROFILE (SEGMENT 6)	8
Z-2.7	ENALRGED PLAN & PROFILE (SEGMENT 7)	8
Z-2.8	ENALRGED PLAN & PROFILE (SEGMENT 8)	8
Z-2.9	ENALRGED PLAN & PROFILE (SEGMENT 9)	8
Z-3	COMPOUND PLAN	8
Z-4	COMPOUND / TOWER ELEVATIONS	8
Z-5	EROSTION CONTROL PLAN	8
Z-6	DETAILS	8
Z-7	EROSION PREVENTION DETAILS	8
Z-8	DETAILS	8
Z-9	VERIZON DETAILS	8
Z-10	PROPOSED ANTENNA AND EQUIPMENT PLANS	8
Z-11	TEMPORARY ACCESS MAT DETAIL / NOTES	8
S-1	EQUIPMENT SHED DETAILS	8
S-2	EQUIPMENT SHED DETAILS	8
S-3	EQUIPMENT SHED DETAILS	8
S-4	ANTENNA MOUNT DETAILS	8
G-1	GROUNDING RISER DIAGRAM & DETAILS	8
HB-1	GROUNDING RISER DIAGRAM & DETAILS	8
HB-2	GROUNDING RISER DIAGRAM & DETAILS	8
HB-3	GROUNDING RISER DIAGRAM & DETAILS	8
EB-2	SHED DETAILS	8
EB-3	SHED DETAILS	8
EB-4	SHED DETAILS	8



### GENERAL NOTES

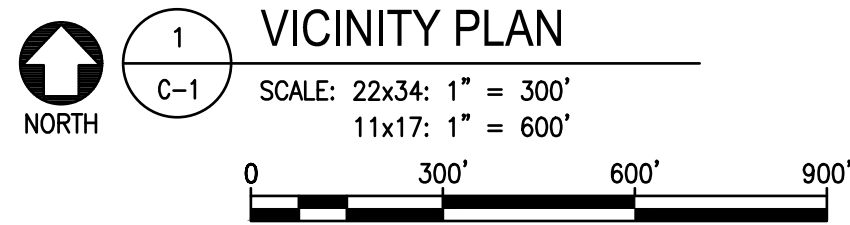
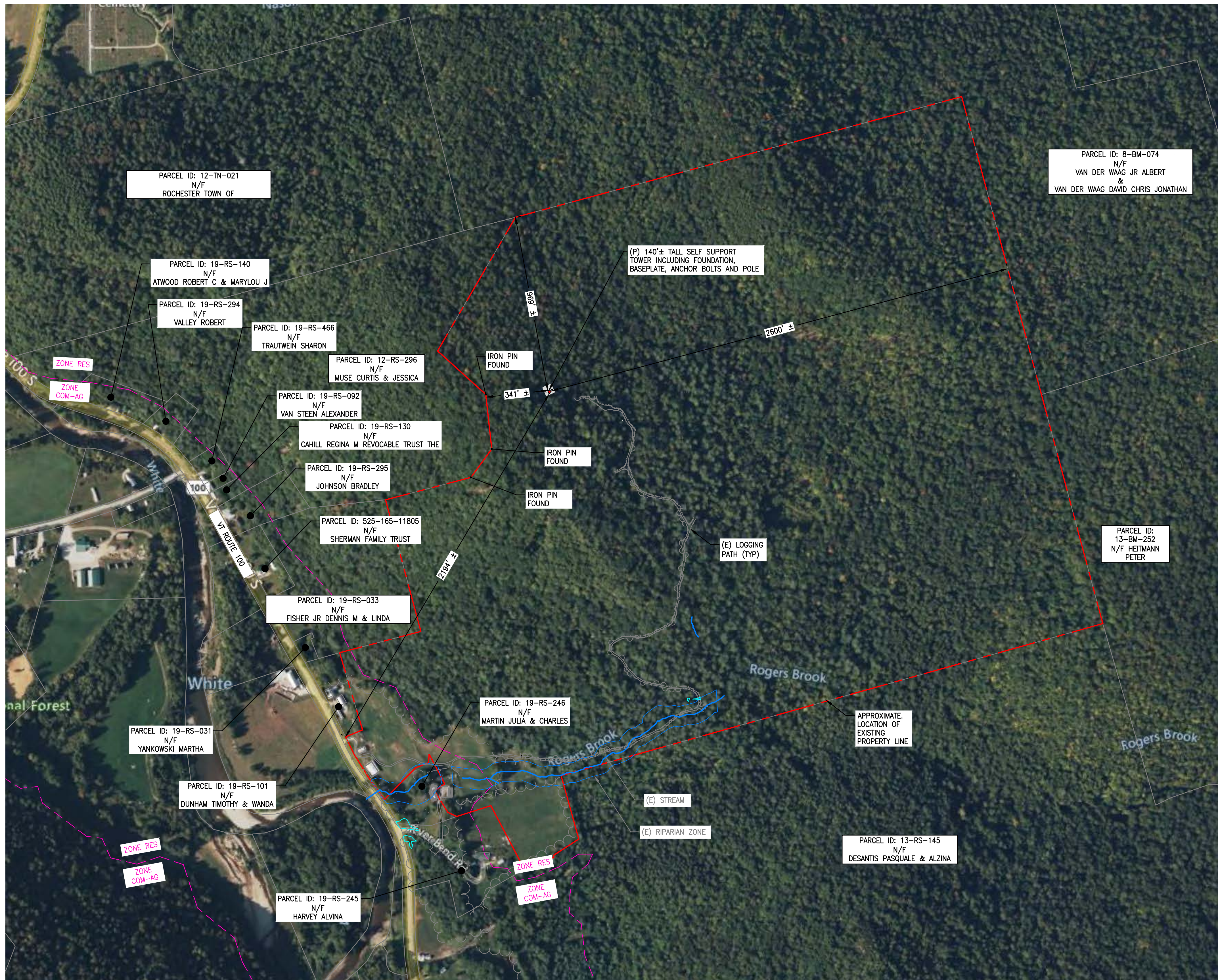
- THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
- THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
- THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE LESSEE/LICENSEE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
- THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
- THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY REFERRED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
- THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
- THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBS, ETCETERA DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
- THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SECURED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
- THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
- THE CONTRACTOR SHALL NOTIFY THE LESSEE/LICENSEE REPRESENTATIVE, WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
- 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 CALL BEFORE YOU DIG (CT): 1-800-922-4455
- ALL DIMENSIONS SHOWN THIS ± ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH EFFECT THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH PROJECT OWNER PRIOR TO CONSTRUCTION.
- NORTH ARROW SHOWN ON PLANS REFERS TO APPROXIMATE TRUE NORTH. PRIOR TO THE START OF CONSTRUCTION, GROUNDING OR FABRICATING OF ANTENNA MOUNTS, CONTRACTOR SHALL CONSULT WITH PROJECT OWNER'S RF ENGINEER AND FIELD VERIFY ALL ANTENNA SECTOR LOCATIONS AND ANTENNA ADJUSTS.
- THE CONTRACTOR AND OR HIS SUB CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
- ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES AND SUPPORT STRUCTURES.
- COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE PROJECT OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF PROJECT OWNER SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS (SEE EXHIBIT 3). ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
- WHEN "PAINT TO MATCH" IS SPECIFIED FOR ANTENNA CONCEALMENT, PAINT PRODUCT FOR ANTENNA RADOME SHALL BE SHERWIN WILLIAMS COROTRANE II. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND PROJECT OWNER'S GUIDELINES.
- COORDINATION, LAYOUT, AND FURNISHING OF CONDUIT, CABLE AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK. SUBJECT TO THE APPROVAL OF UTILITY COMPANY ENGINEERING, THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT, DRIVEWAY OR LEASE AREA SHALL BE RESTORED TO ORIGINAL CONDITION.
- GRAVEL SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED AND COVERED WITH MULCH UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROLS AT ALL TIMES.
- DURING CONSTRUCTION PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS.
- FOR WIRELESS COMMUNICATIONS SYSTEMS, PROJECT OWNER'S IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. PROJECT OWNER RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.
- SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:  
AMERICAN CONCRETE INSTITUTE (ACI) 318: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE  
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;  
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL  
ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.  
FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN, WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.  
APPLICABLE BUILDING CODES:  
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.  
BUILDING CODE:  
2015 INTERNATIONAL BUILDING CODE  
2015 VERMONT FIRE & SAFETY CODE  
NFPA 780 2014  
LOCAL CODE AS REQUIRED

### PROJECT SUMMARY

SITE NUMBER: VT-VT-0111A  
SITE NAME: ROCHESTER  
SITE ADDRESS: 1030 VT ROUTE 100  
ROCHESTER, VT 05767  
ASSESSOR'S PARCEL NO.: 000RS245B  
CONSTRUCTION TYPE: NEW SITE DESIGN  
PROPERTY OWNER: JULIA W & CHARLES W MARTIN  
49 RIVER BEND RD  
ROCHESTER, VT, 05767  
APPLICANT, LESSEE/LICENSEE, PROJECT OWNER: VERTEX TOWERS LLC  
P.O. BOX 680  
MEDFIELD, MA 02052  
TOWER TYPE: SELF SUPPORT TOWER  
TOWER HEIGHT: 140'±

### DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



**SURVEY NOTES**

- FIELD SURVEY DATE: 05/26/2023
- VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
- HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)
- CENTER OF (P) TOWER: LAT: 43° 51' 35.39" N LONG: 72° 47' 53.37" W ELEV.: 1585± A.M.S.L.
- PROPERTY OWNER: JULIA W & CHARLES W MARTIN  
49 RIVER BEND RD  
ROCHESTER, VT, 05767
- SITE ADDRESS: 1030 ROUTE 100 S  
ROCHESTER, NH 05767
- APPLICANT: VERTEX TOWERS LLC  
P.O. BOX 680  
MEDFIELD, MA 02052  
VERIZON WIRELESS  
118 FLANDERS ROAD  
WESTBOROUGH, MA 01581
- JURISDICTION: TOWN OF ROCHESTER
- TAX ID: 000RS245B
- DEED REFERENCE: BOOK: 3163 PAGE: 2520
- PLAN REFERENCES: COMPILATION SITE PLAN COMPLETED BY:  
EMANUEL ENGINEERING, INC.  
DATE: 9/25/2012
- ZONING JURISDICTION: RESIDENTIAL
- TOTAL LAND AREA: 244.0± ACRES

14. 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  
CALL BEFORE YOU DIG (CT): 1-800-922-4455

15. PROPERTY LINE, TOPOGRAPHY, AND EXISTING FEATURES INFORMATION HAS BEEN COMPILED FROM "NH GRANIT" AND TOWN OF ROCHESTER GIS SYSTEMS. 2. A METES AND BOUNDS SURVEY WAS NOT CONDUCTED BY ADVANCED ENGINEERING GROUP, PC.

16. THE PURPOSE OF THIS SURVEY IS TO SUPPORT THE DESIGN AND CONSTRUCTION OF A TELECOMMUNICATION FACILITY. USE OF THIS SURVEY BY ANYONE OTHER THAN VERTEX TOWER ASSETS, LLC AND USE OF THIS SURVEY FOR ANY PURPOSE NOT RELATED TO THE DESIGN OF THE INTENDED FACILITY IS STRICTLY PROHIBITED.

17. BEARING SYSTEM OF THIS PLAN IS BASED ON TRUE NORTH. TRUE NORTH WAS ESTABLISHED FROM GPS READINGS ON 5/4/2023.

18. A WETLANDS DELINEATION HAS BEEN COMPLETED BY ARROWWOOD ENVIRONMENTAL AS DESCRIBED ON REPORT DATED 09/01/2023.

19. 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.

20. THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES DIVIDING EXISTING OWNERSHIPS, 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.

**LEGEND**

- PROPERTY LINE
- ABUTTING PROPERTY LINE
- EXIST. TOWN LINE BOUNDARY
- EXIST. R.O.W. LAYOUT
- EXIST. CHAIN LINK FENCE
- EXIST. EDGE OF TREE CANOPY
- STREAM LOCATION
- WETLAND SETBACK LINE
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (E) U/G GAS MAIN (APPROX.)
- (E) OVERHEAD UTILITY WIRES

**ZONING SUMMARY TABLE**

<ul style="list-style-type: none"> <li>ZONING DISTRICT: RESIDENTIAL</li> <li>ASSESSOR'S ID: 000RS245B</li> <li>PROPOSED USE: WIRELESS COMMUNICATION FACILITY</li> </ul>		
DIMENSION:	REQUIRED MINIMUM	PROVIDED
FRONT YARD SETBACK*	30 FT	2194± FT
SIDE YARD SETBACK*	30 FT	341± FT
REAR YARD SETBACK*	20 FT	2600± FT
AREA	2 ACRES	244± ACRES
FRONTAGE	150 FT	320± FT

\* DIMENSIONS MEASURED FROM EDGE OF TOWER TO THE NEAREST PROPERTY LINE

118 FLANDERS ROAD  
WESTBOROUGH, MA 01581  
(508) 330-3300 TEL

VERTEX TOWERS LLC  
P.O. BOX 680  
MEDFIELD, MA 02052

Civil Engineering - Site Development  
Surveying - Telecommunications  
179 Swansea Mall Drive, Suite 1  
Swansea, MA 02777  
Tel: (508) 243-1414  
Fax: (401) 633-6354

AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

**SUBMITTALS**

REV#	DATE	DESCRIPTION
2	06/05/24	REVISED
3	08/19/24	REVISED
4	10/20/24	REVISED
5	10/24/24	REVISED
6	12/11/24	REVISED
7	02/18/25	REVISED
8	04/10/25	REVISED

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VT-VT-0111A

**ROCHESTER**

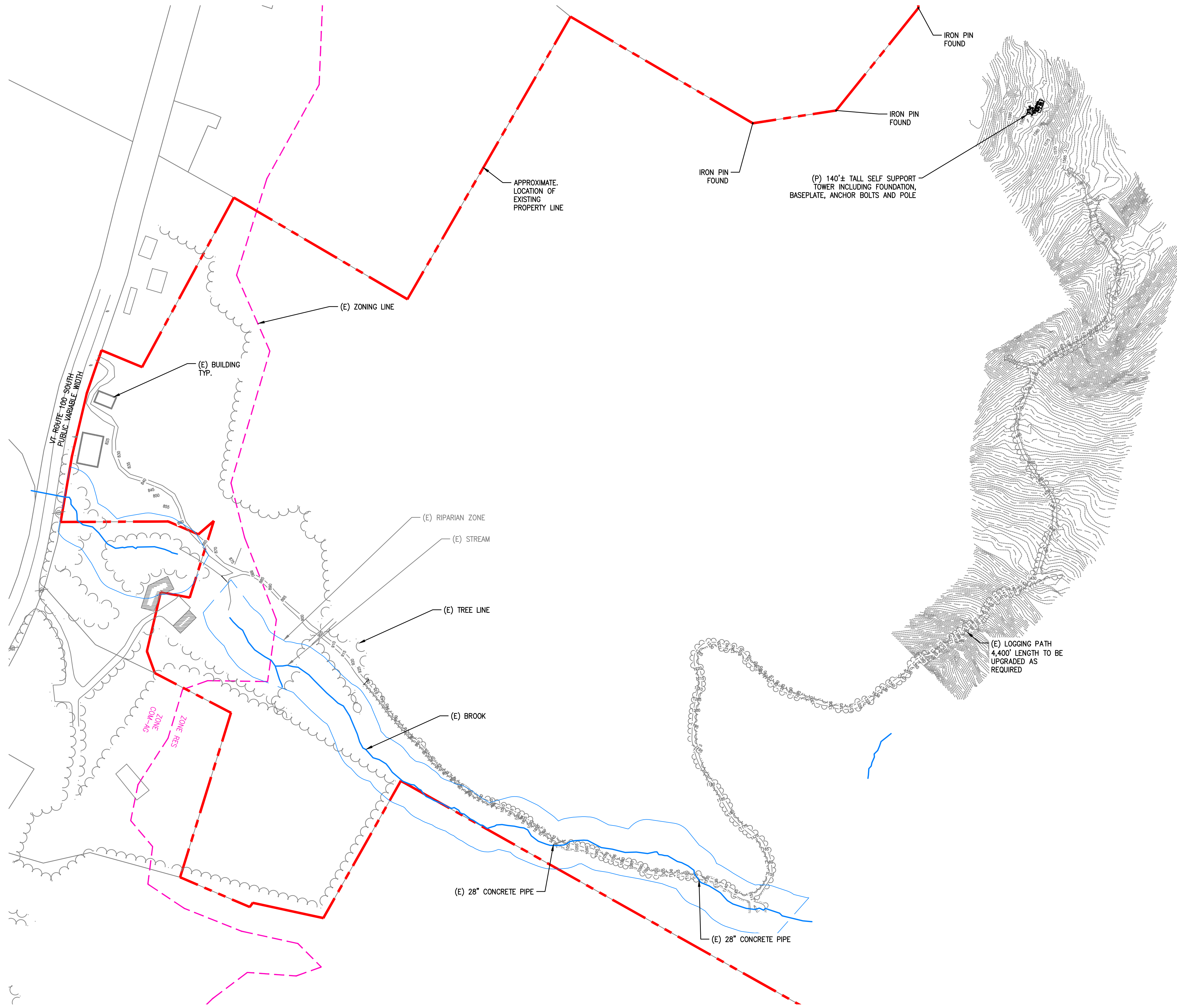
1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

SHEET TITLE

VICINITY PLAN

SHEET NUMBER

**C-1**



**SURVEY NOTES**

- FIELD SURVEY DATE: 05/26/2023
- VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
- HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)
- CENTER OF (P) TOWER LAT: 43° 51' 35.39" N LONG: 72° 47' 53.37" W ELEV.: 1585'± A.M.S.L.
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49 RIVER BEND RD  
ROCHESTER, VT, 05767
- SITE ADDRESS: 1030 ROUTE 100 S  
ROCHESTER, NH 05767
- APPLICANT: VERTEX TOWERS LLC P.O. BOX 680 MEDFIELD, MA 02052  
VERIZON WIRELESS 118 FLANDERS ROAD WESTBOROUGH, MA 01581
- JURISDICTION: TOWN OF ROCHESTER
- TAX ID: 000RS245B
- DEED REFERENCE: BOOK: 3163 PAGE: 2520
- PLAN REFERENCES: COMPILATION SITE PLAN COMPLETED BY: EMANUEL ENGINEERING, INC. DATE: 9/25/2012
- ZONING JURISDICTION: RESIDENTIAL
- TOTAL LAND AREA 244.0± ACRES
- 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:  
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- PROPERTY LINE, TOPOGRAPHY, AND EXISTING FEATURES INFORMATION HAS BEEN COMPILED FROM "NH GRANIT" AND TOWN OF ROCHESTER GIS SYSTEMS. 2. A METES AND BOUNDS SURVEY WAS NOT CONDUCTED BY ADVANCED ENGINEERING GROUP, PC.
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**LEGEND**

- PROPERTY LINE
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- EXIST. TOWN LINE BOUNDARY
- EXIST. R.O.W. LAYOUT
- EXIST. CHAIN LINK FENCE
- EXIST. EDGE OF TREE CANOPY
- STREAM LOCATION
- WETLAND SETBACK LINE
- (E) MAJOR CONTOUR
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- (E) OVERHEAD UTILITY WIRES

**ZONING SUMMARY TABLE**

DIMENSION:	REQUIRED MINIMUM	PROVIDED
FRONT YARD SETBACK*	30 FT	2194± FT
SIDE YARD SETBACK*	30 FT	341± FT
REAR YARD SETBACK*	20 FT	2600± FT
AREA	2 ACRES	244± ACRES
FRONTAGE	150 FT	320± FT

\* DIMENSIONS MEASURED FROM EDGE OF TOWER TO THE NEAREST PROPERTY LINE

**EXISTING CONDITIONS SITE PLAN**

SCALE: 22x34: 1" = 120'  
11x17: 1" = 240'

0 120' 240' 360'

**verizon**

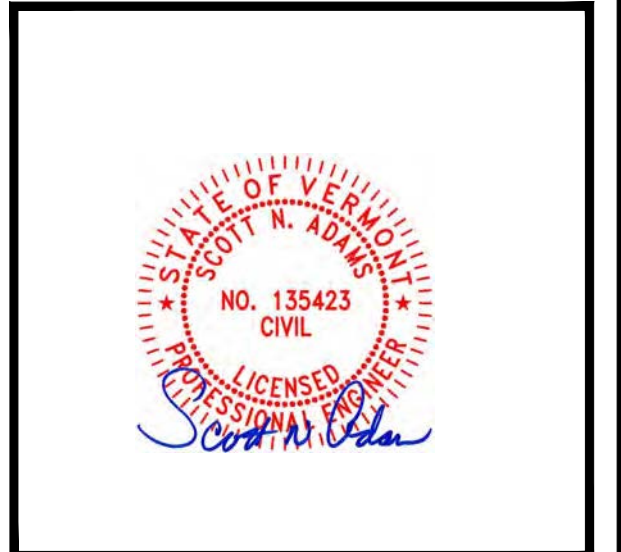
118 FLANDERS ROAD  
WESTBOROUGH, MA 01581  
(508) 330-3300 TEL

**Vertex Towers LLC**

VERTEX TOWERS LLC  
P.O. BOX 680  
MEDFIELD, MA 02052

**AEG ADVANCED ENGINEERING GROUP, P.C.**

Civil Engineering - Site Development  
Surveying - Telecommunications  
179 Swansea Mall Drive, Suite 1  
Swansea, MA 02777  
Tel: (508) 343-1414  
Fax: (401) 633-6354



AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

**SUBMITTALS**

REV#	DATE	DESCRIPTION
2	06/05/24	REVISED
3	08/19/24	REVISED
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5	10/24/24	REVISED
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7	02/18/25	REVISED
8	04/10/25	REVISED

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VT-VT-0111A

**ROCHESTER**

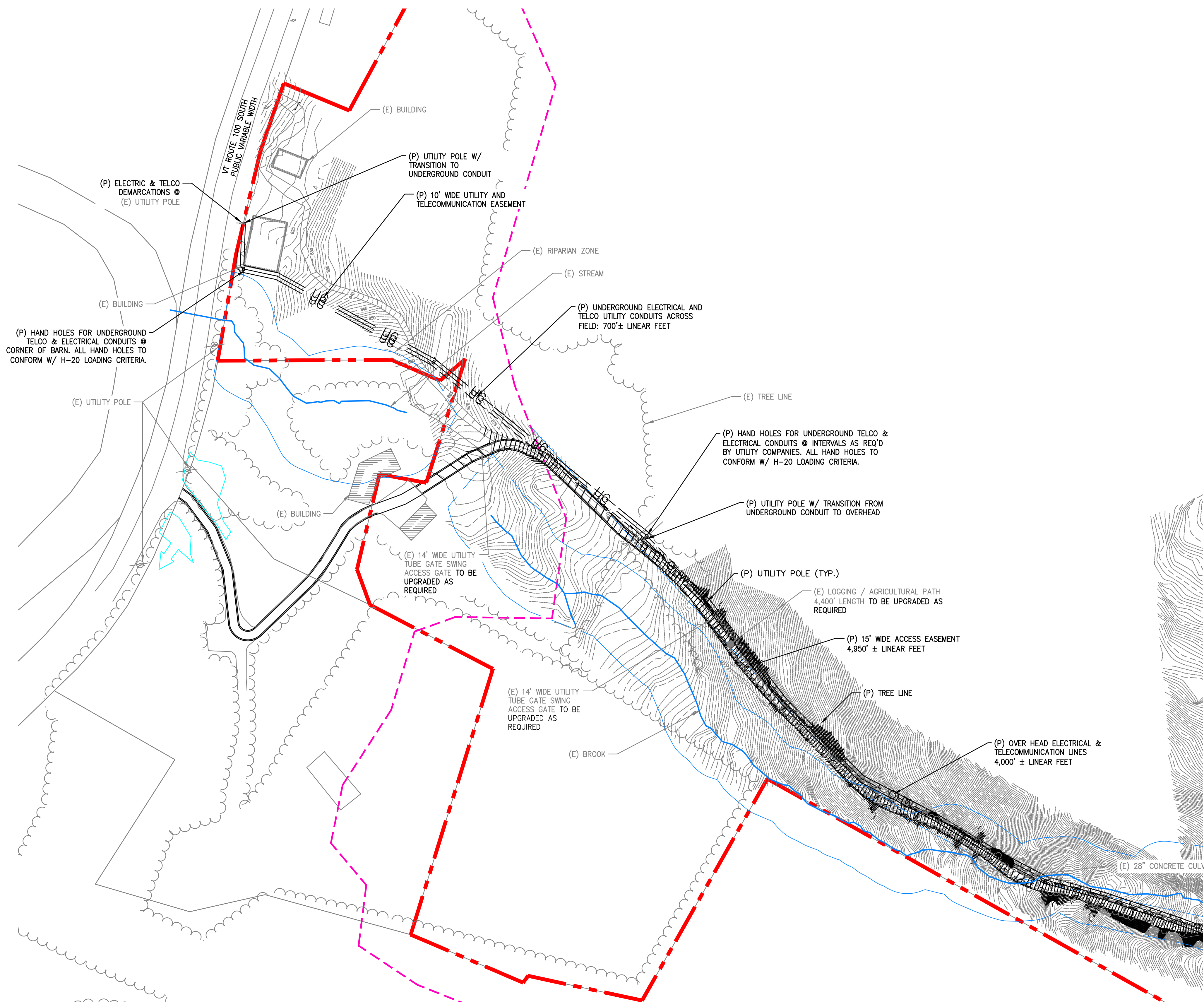
1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

SHEET TITLE

EXISTING CONDITIONS  
SITE PLAN

SHEET NUMBER

**C-2**

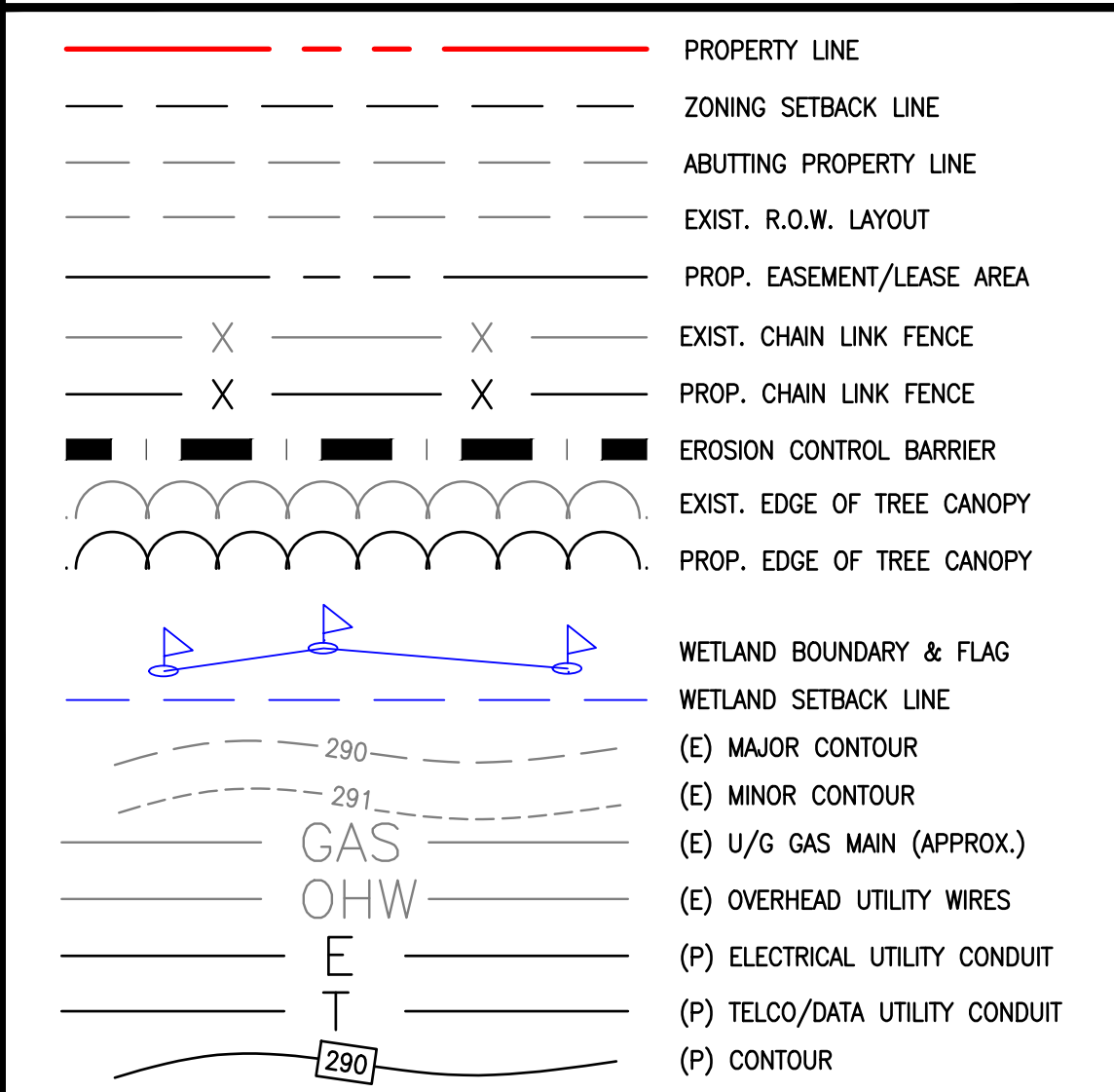


**PROPOSED SITE PLAN**  
 SCALE: 22x34: 1" = 80'  
 11x17: 1" = 160'

**ENGINEERING NOTES**

1. THE TYPE, DIMENSIONS, MOUNTING HARDWARE, AND POSITIONS OF ALL PROJECT OWNER'S EQUIPMENT ARE SHOWN IN ILLUSTRATIVE FASHION. THESE DRAWINGS ARE NOT INTENDED FOR CONSTRUCTION. 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 PROJECT OWNER'S BASE TRANSMISSION STATION (BTS) CABINET IS A VANDAL RESISTANT STEEL CABINET CONTAINING RECTIFIERS, AMPLIFIERS, RADIOS, AND OTHER INTEGRATED ELECTRONIC CONTROL EQUIPMENT. BATTERY BACKUP FOR EMERGENCY STANDBY POWER IS CONTAINED WITHIN A SEPARATE BATTERY RACK CONTAINING 12-VOLT, CLOSED-CELL DC BATTERIES. THE BATTERIES ARE LEAD-ACID RECHARGEABLE STANDBY INDUSTRIAL POWER CELLS MANUFACTURED TO MEET ENVIRONMENTAL QUALITY AND RUGGEDNESS STANDARDS OF THE INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA). THE BATTERY CHARGING SYSTEM IS COMPUTER-CONTROLLED AND THE EQUIPMENT CABINET IS REMOTELY MONITORED AT PROJECT OWNER'S NETWORK OPERATIONS CONTROL CENTER 24-HOURS A DAY, 7 DAYS A WEEK FOR FAULTS AND ALARMS.
4. THE DESIGN OF THE ANTENNA MOUNTING HARDWARE AND STRUCTURAL REINFORCEMENT OF EXISTING BUILDING ROOF/FLOOR (IF NECESSARY) TO SUPPORT THE BTS EQUIPMENT CABINETS WILL MEET THE ANSI/EIA/TIA-222-G 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.
5. ONCE THE FACILITY BECOMES FULLY OPERATIONAL, NORMAL AND ROUTINE MAINTENANCE BY PROJECT OWNER'S TECHNICIANS WILL BE PERFORMED ON A MONTHLY BASIS. THEREFORE, THE ESTIMATED VEHICLE TRIP GENERATION RATE IS 2 TRIPS PER MONTH. THE AVERAGE DAILY TRIP GENERATION RATE (ADT) IS 0.07.
6. PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. PROJECT OWNER'S IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.
7. APPLICANT: VERTEX TOWERS LLC P.O. BOX 680 MEDFIELD, MA 02052 VERIZON WIRELESS 118 FLANDERS ROAD WESTBOROUGH, MA 01581
8. OWNER: JULIA W & CHARLES W MARTIN 49 RIVER BEND RD ROCHESTER, VT, 05767
9. ZONING DISTRICT: RESIDENTIAL
10. JURISDICTION: TOWN OF ROCHESTER
11. TAX ID: 00ORS245B
12. ALL MEASUREMENTS ARE SHOWN IN FEET ± UNLESS OTHERWISE NOTED.
13. PLOT PLAN MEASUREMENTS ARE APPROXIMATE AND BASED ON SCALED ASSESSORS MAPS AND OTHER AVAILABLE INFORMATION.
14. ALL SETBACKS SHOWN FROM PROPOSED ANTENNAS TO THE EDGE OF THE ROOF ARE APPROXIMATE AND SHOULD BE USED FOR REFERENCE ONLY.

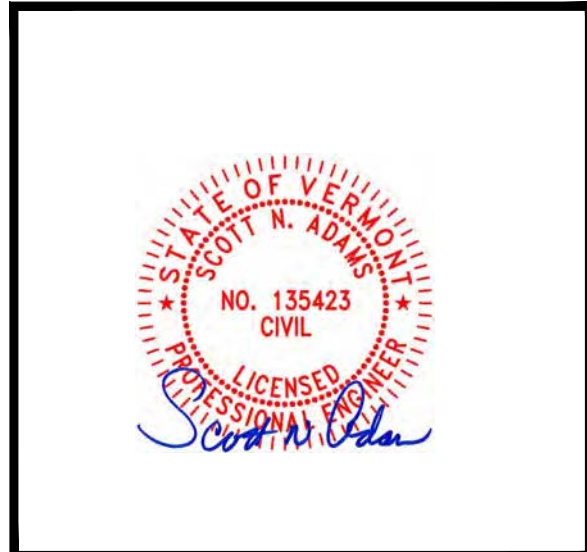
**LEGEND**



**verizon**  
 118 FLANDERS ROAD  
 WESTBOROUGH, MA 01581  
 (508) 330-3300 TEL

**Vertex Towers LLC**  
 VERTEX TOWERS LLC  
 P.O. BOX 680  
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**ADVANCED ENGINEERING GROUP, P.C.**  
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 179 Swansea Mall Drive, Suite 1  
 Swansea, MA 02777  
 Tel: (508) 343-1414  
 Fax: (401) 633-6354



AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

**SUBMITTALS**

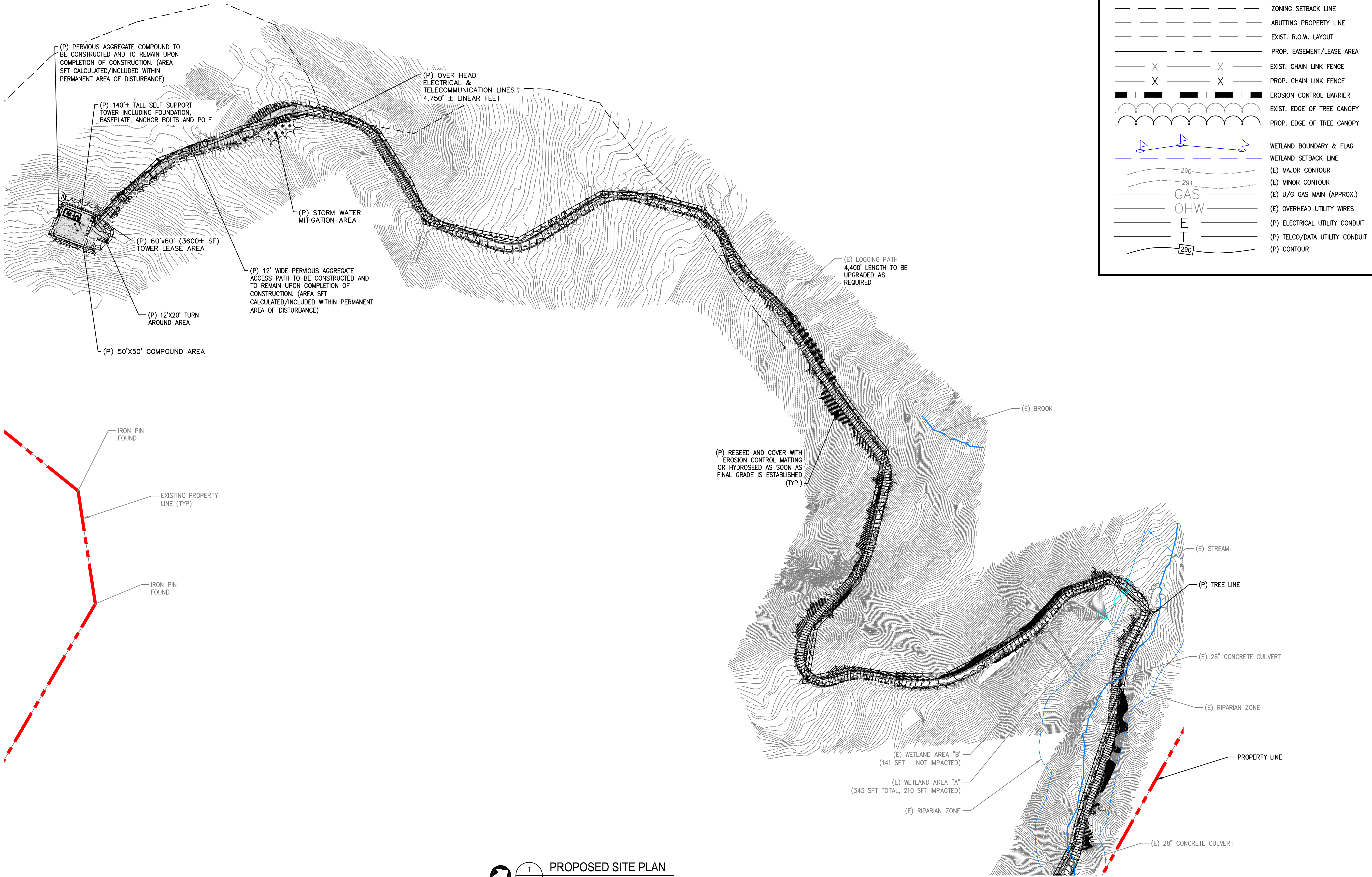
REV#	DATE	DESCRIPTION
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VT-VT-0111A  
**ROCHESTER**  
 1030 VT ROUTE 100  
 ROCHESTER, VT 05767  
 WINDSOR COUNTY

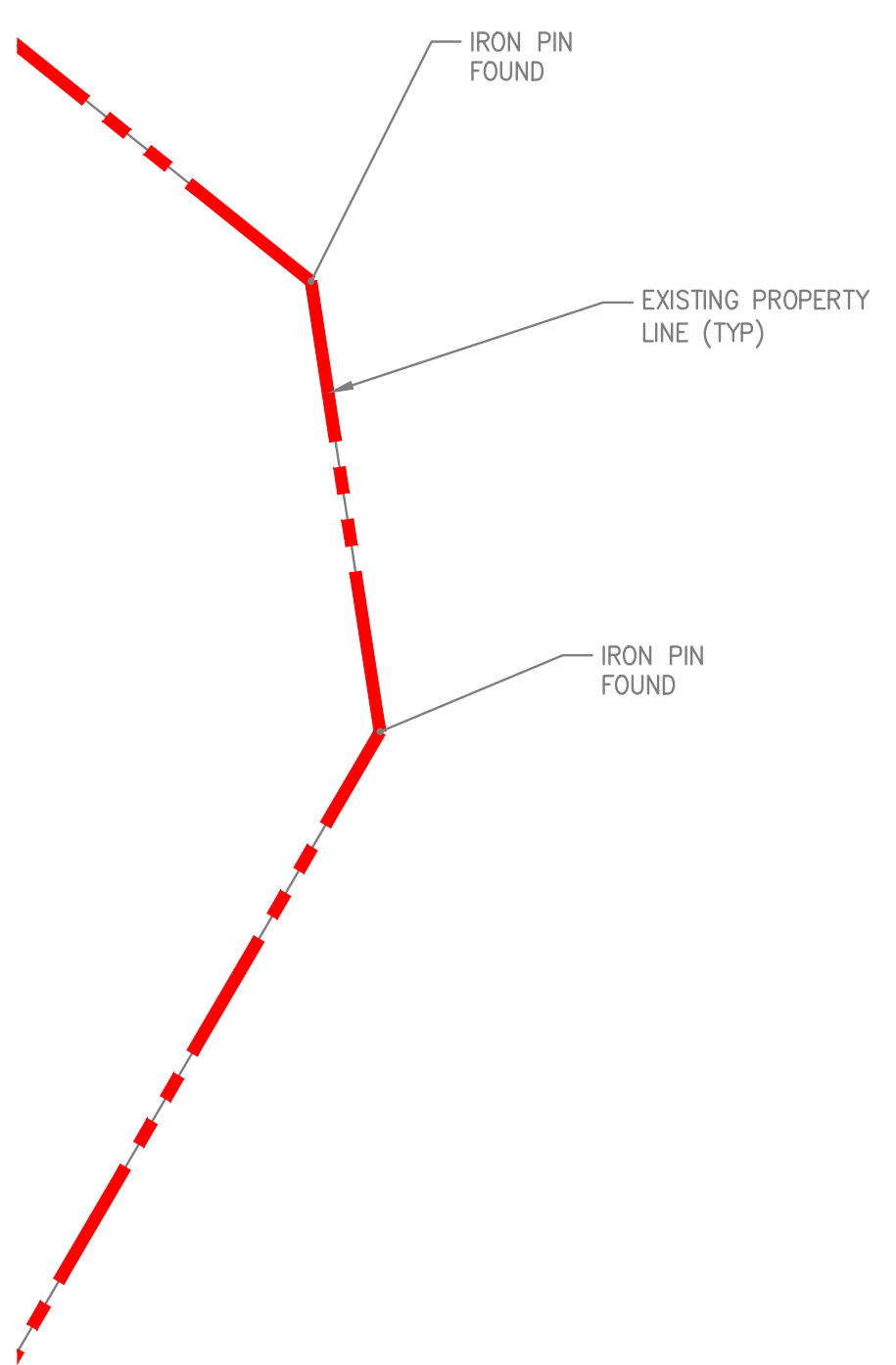
SHEET TITLE  
 PROPOSED SITE PLAN

SHEET NUMBER  
**Z-1.1**



**LEGEND**

	PROPERTY LINE
	ZONING SETBACK LINE
	ABUTTING PROPERTY LINE
	EXIST. R.O.W. LAYOUT
	PROP. EASEMENT/LEASE AREA
	EXIST. CHAIN LINK FENCE
	PROP. CHAIN LINK FENCE
	EROSION CONTROL BARRIER
	EXIST. EDGE OF TREE CANOPY
	PROP. EDGE OF TREE CANOPY
	WETLAND BOUNDARY & FLAG
	WETLAND SETBACK LINE
	(E) MAJOR CONTOUR
	(E) MINOR CONTOUR
	(E) U/G GAS MAIN (APPROX.)
	(E) OVERHEAD UTILITY WIRES
	(P) ELECTRICAL UTILITY CONDUIT
	(P) TELCO/DATA UTILITY CONDUIT
	(P) CONTOUR



**verizon**  
 118 FLANDERS ROAD  
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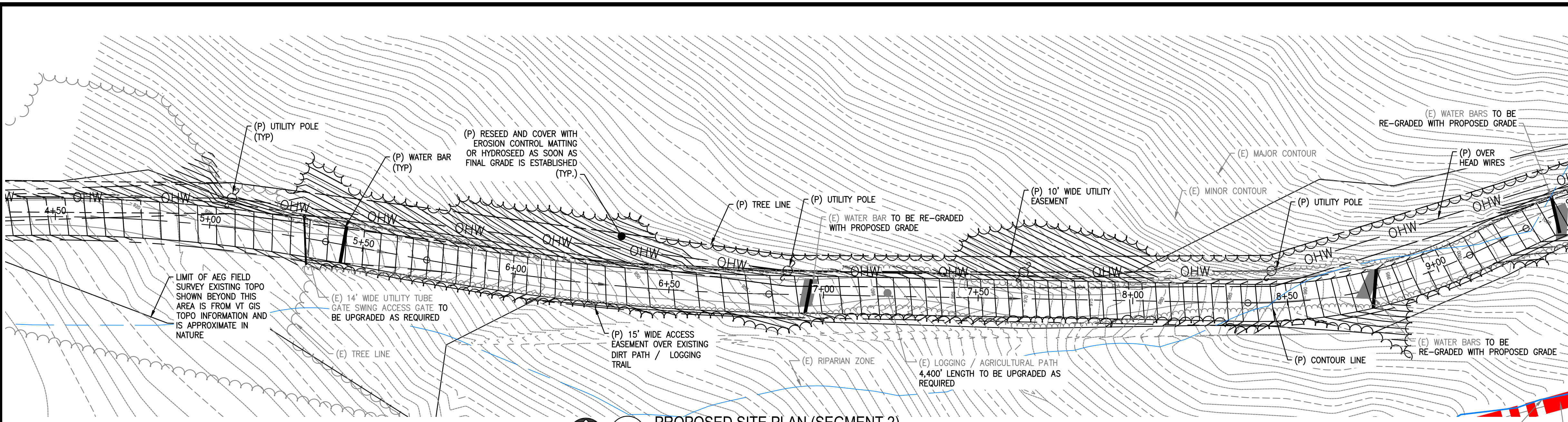
SHEET TITLE  
 PROPOSED SITE PLAN

SHEET NUMBER  
**Z-1.2**

**PROPOSED SITE PLAN**

SCALE: 22x34: 1" = 80'  
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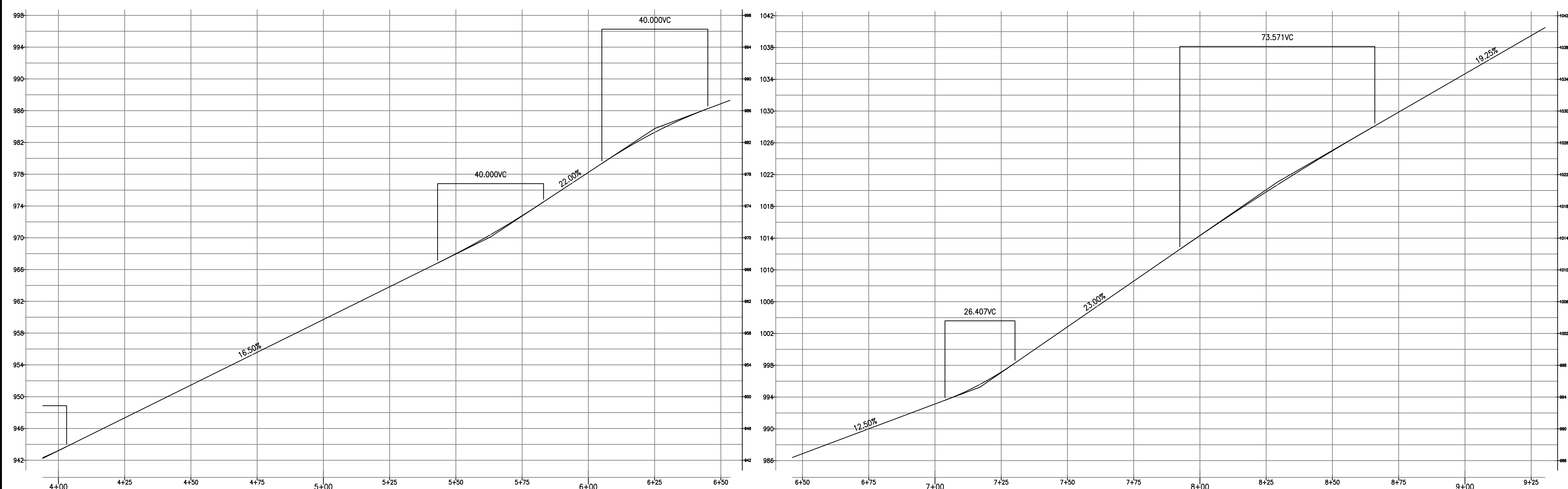




**LEGEND**

- PROPERTY LINE
- ZONING SETBACK LINE
- ABUTTING PROPERTY LINE
- PROP. EASEMENT/LEASE AREA
- EXIST. CHAIN LINK FENCE
- PROP. CHAIN LINK FENCE
- EROSION CONTROL BARRIER
- EXIST. EDGE OF TREE CANOPY
- PROP. EDGE OF TREE CANOPY
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- (P) TELCO/DATA UTILITY CONDUIT
- (P) CONTOUR LINE

**1 PROPOSED SITE PLAN (SEGMENT 2)**  
 Z-2.2 SCALE: 22x34: 1" = 20'  
 11x17: 1" = 40'



**2 PROFILE VIEW (SEGMENT 2)**  
 Z-2.2 SCALE: 22x34: 1" = 20'  
 11x17: 1" = 40'

**verizon**  
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 VERTEX TOWERS LLC  
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 MEDFIELD, MA 02052

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AEG PROJECT #: 2023-0079  
 DRAWN BY: JWH  
 CHECKED BY: SNA

**SUBMITTALS**

REV#	DATE	DESCRIPTION
2	06/05/24	REVISED
3	08/19/24	REVISED
4	10/20/24	REVISED
5	10/24/24	REVISED
6	12/11/24	REVISED
7	02/18/25	REVISED
8	04/10/25	REVISED

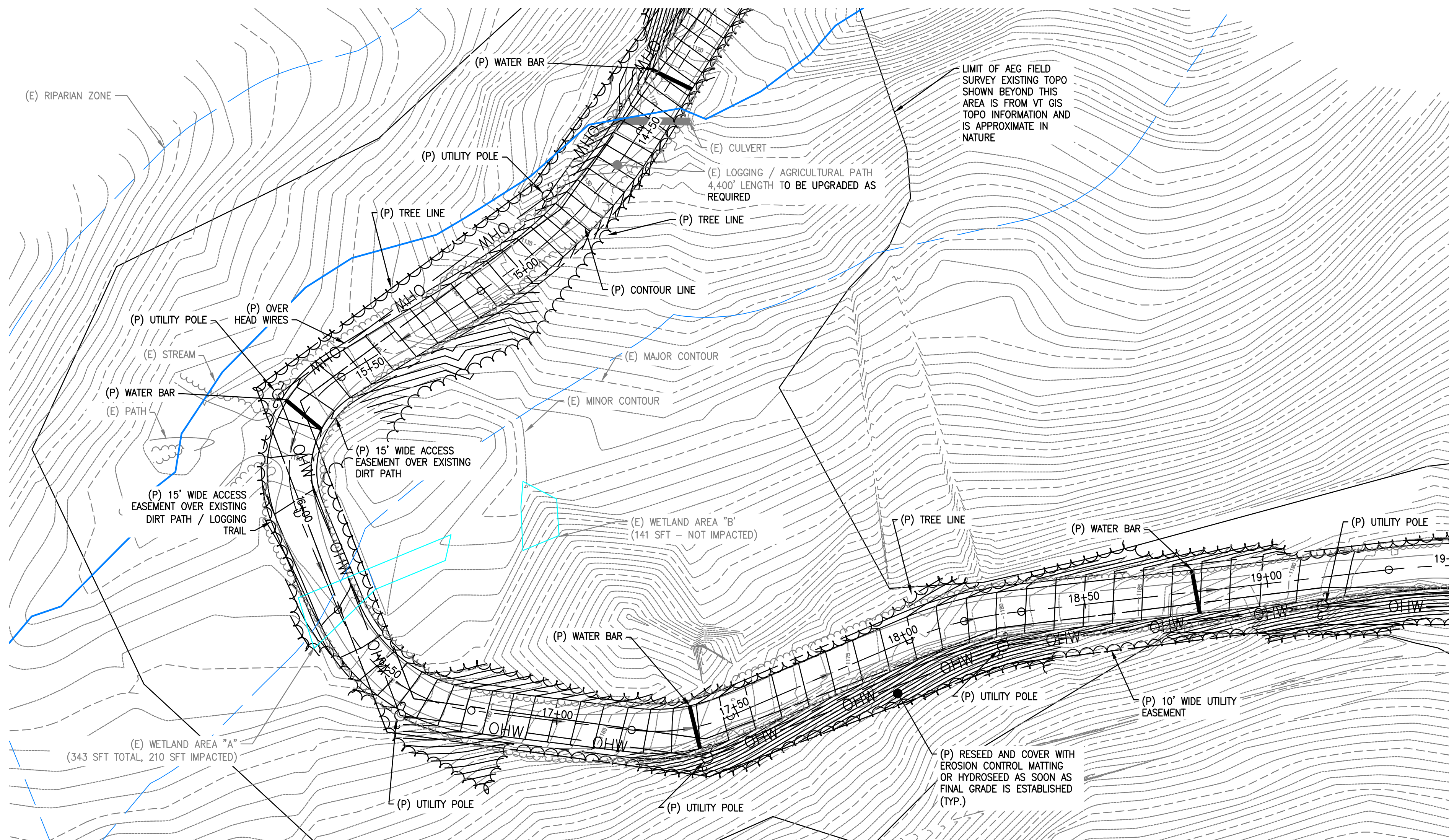
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**ROCHESTER**  
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 WINDSOR COUNTY

SHEET TITLE  
 ENLARGED PLAN &  
 PROFILE (SEGMENT 2)

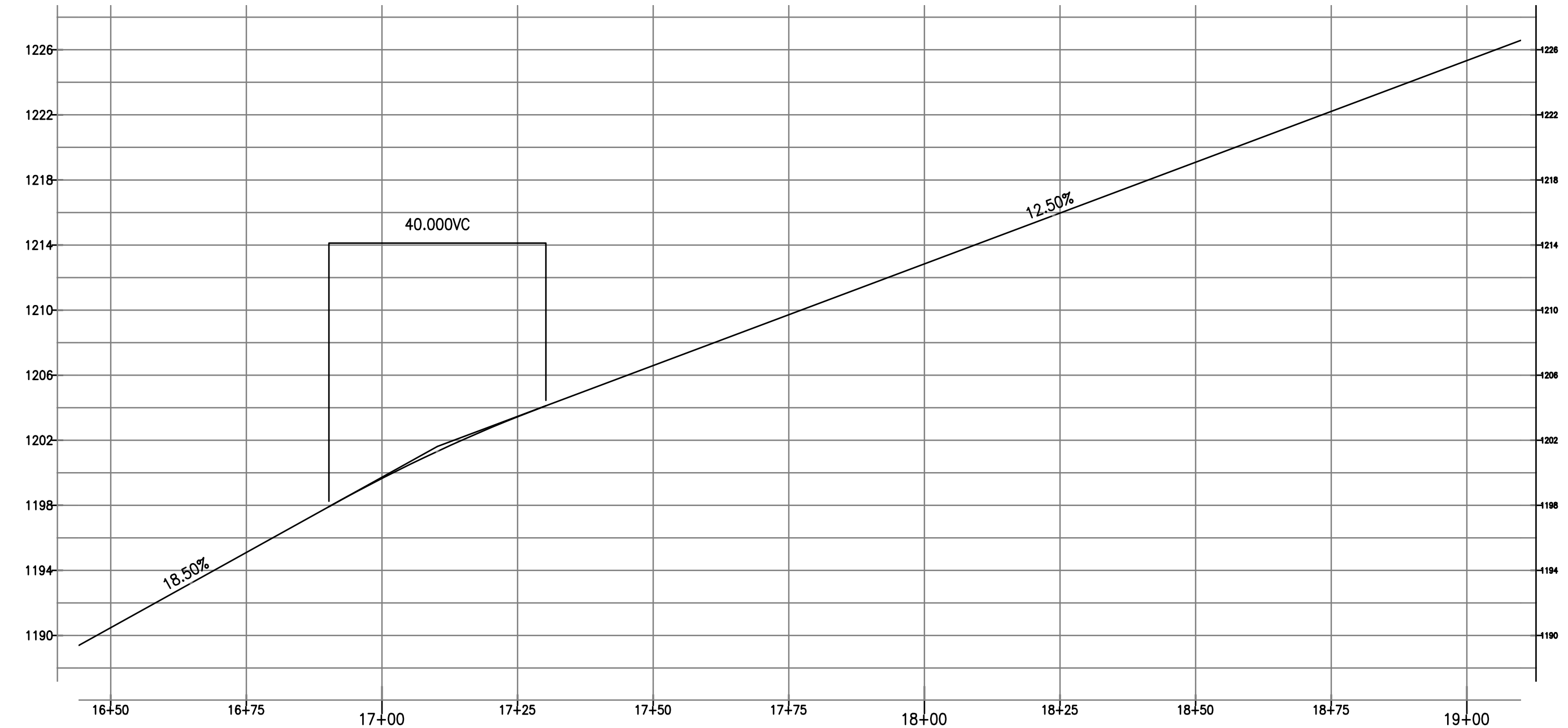
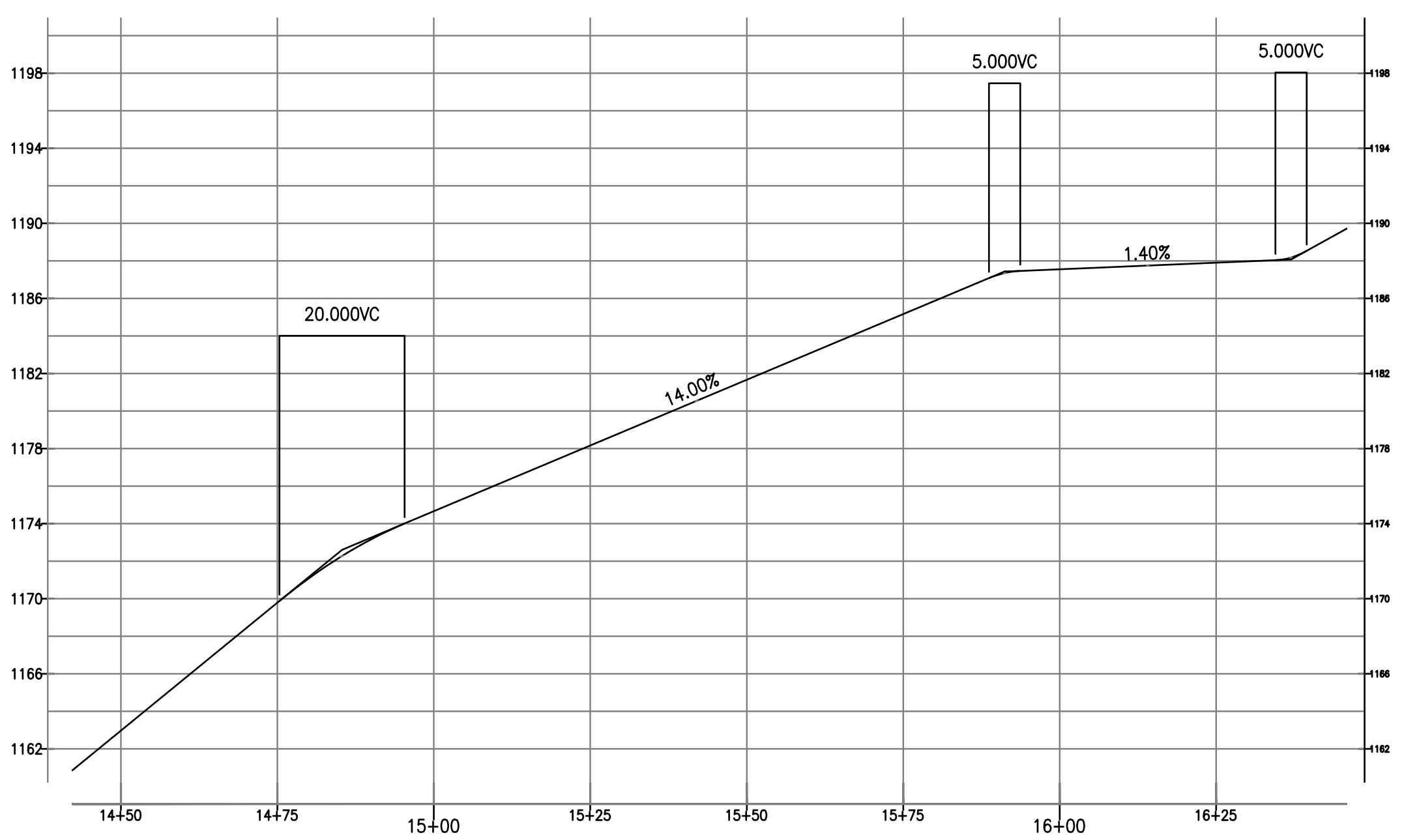
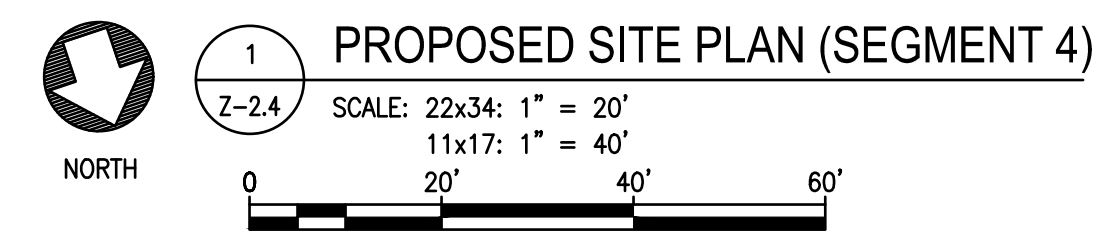
SHEET NUMBER  
**Z-2.2**





**LEGEND**

	PROPERTY LINE
	ZONING SETBACK LINE
	ABUTTING PROPERTY LINE
	EXIST. R.O.W. LAYOUT
	PROP. EASEMENT/LEASE AREA
	EXIST. CHAIN LINK FENCE
	PROP. CHAIN LINK FENCE
	EROSION CONTROL BARRIER
	EXIST. EDGE OF TREE CANOPY
	PROP. EDGE OF TREE CANOPY
	WETLAND BOUNDARY & FLAG
	WETLAND SETBACK LINE
	(E) MAJOR CONTOUR
	(E) MINOR CONTOUR
	(E) U/G GAS MAIN (APPROX.)
	(E) OVERHEAD UTILITY WIRES
	(P) ELECTRICAL UTILITY CONDUIT
	(P) TELCO/DATA UTILITY CONDUIT
	(P) CONTOUR



**2 PROFILE VIEW (SEGMENT 4)**

2  
Z-2.4

SCALE: 22x34: 1" = 20'  
11x17: 1" = 40'

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AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

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1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

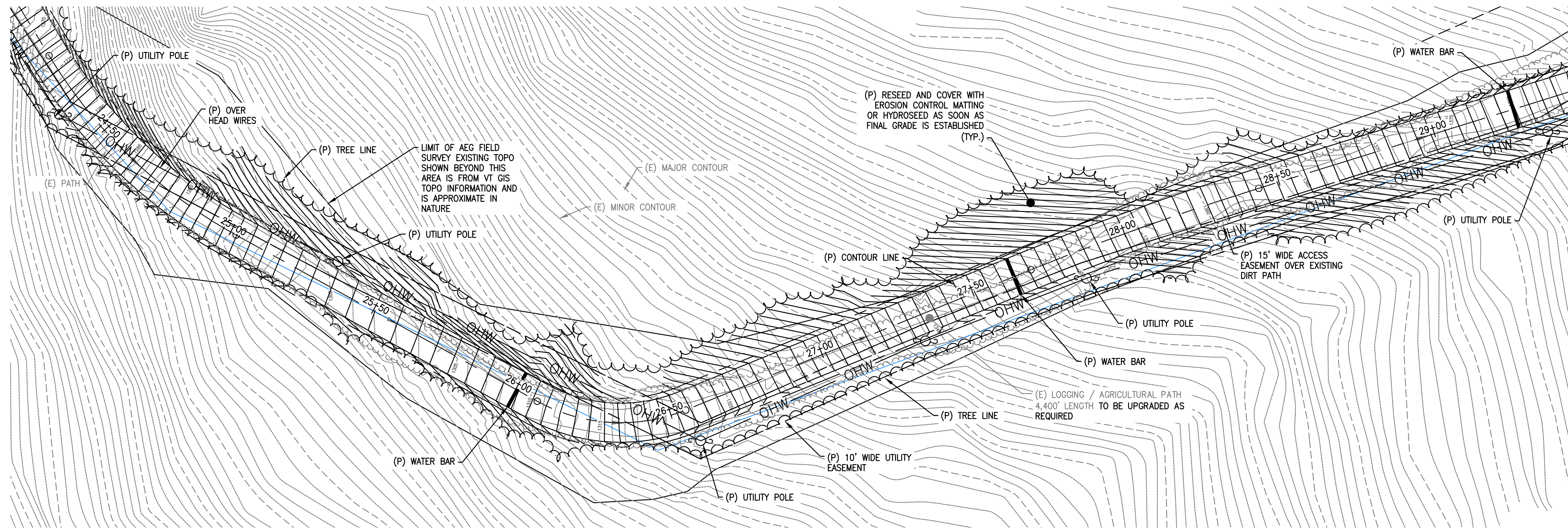
SHEET TITLE

ENLARGED PLAN & PROFILE (SEGMENT 4)

SHEET NUMBER

**Z-2.4**





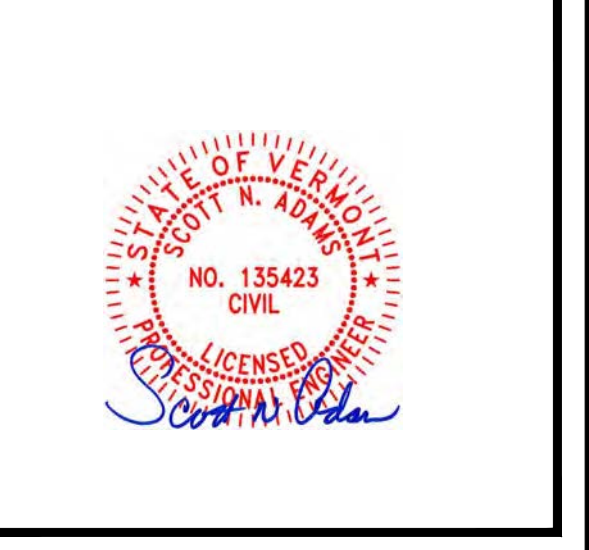
**LEGEND**

	PROPERTY LINE
	ZONING SETBACK LINE
	ABUTTING PROPERTY LINE
	EXIST. R.O.W. LAYOUT
	PROP. EASEMENT/LEASE AREA
	EXIST. CHAIN LINK FENCE
	PROP. CHAIN LINK FENCE
	EROSION CONTROL BARRIER
	EXIST. EDGE OF TREE CANOPY
	PROP. EDGE OF TREE CANOPY
	WETLAND BOUNDARY & FLAG
	WETLAND SETBACK LINE
	(E) MAJOR CONTOUR
	(E) MINOR CONTOUR
	(E) U/G GAS MAIN (APPROX.)
	(E) OVERHEAD UTILITY WIRES
	(P) ELECTRICAL UTILITY CONDUIT
	(P) TELCO/DATA UTILITY CONDUIT
	(P) CONTOUR

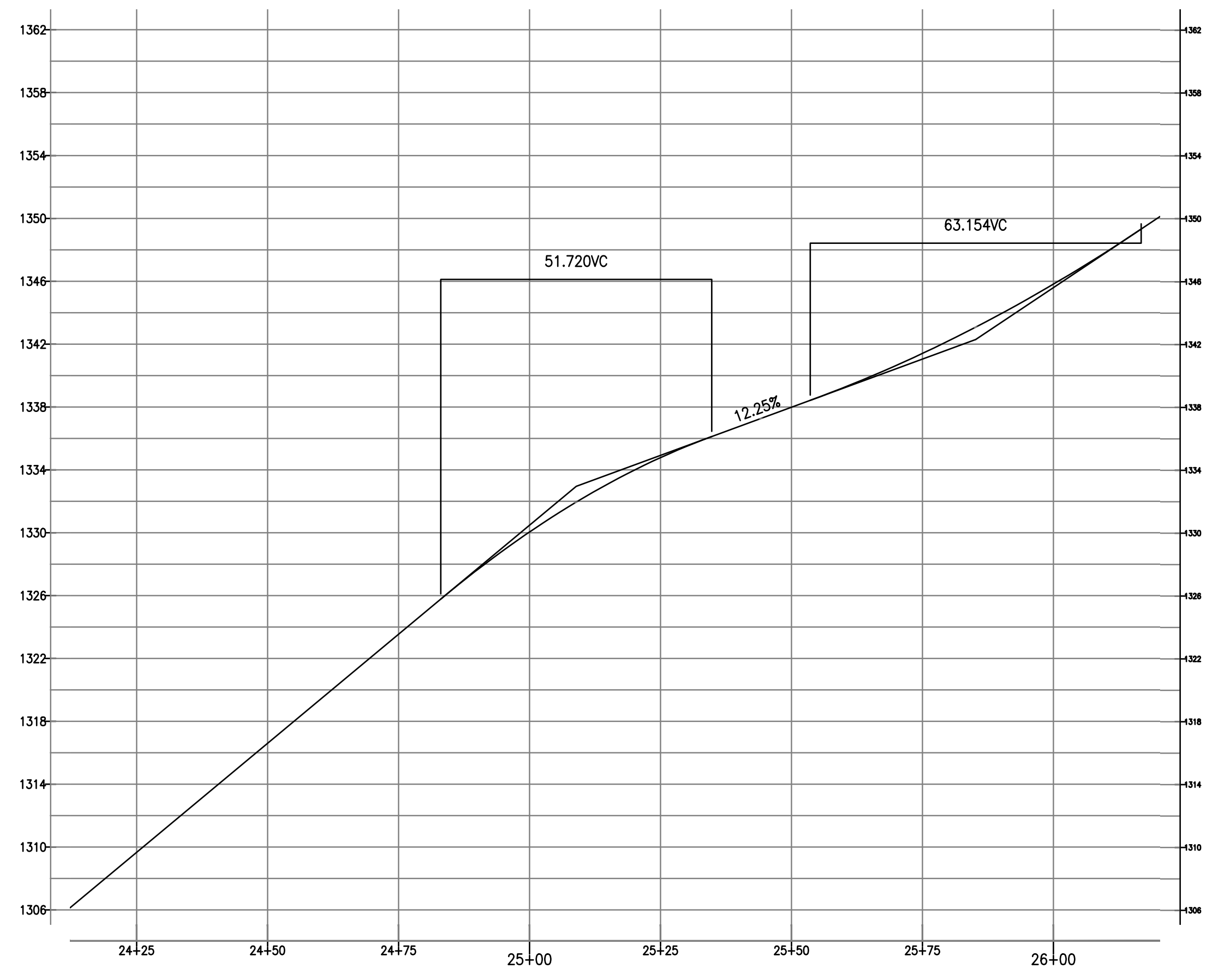
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 MEDFIELD, MA 02052

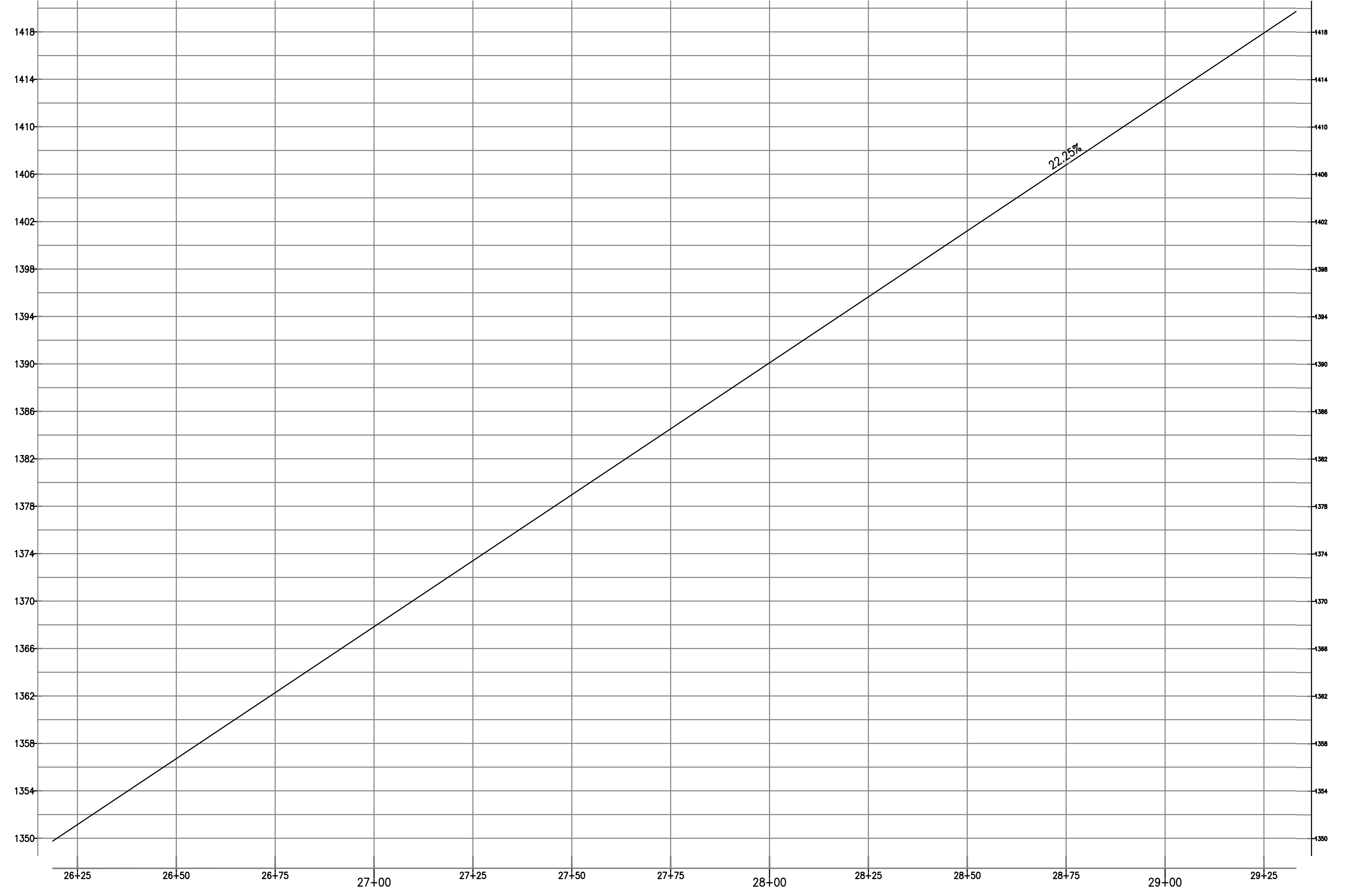
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**1 PROPOSED SITE PLAN (SEGMENT 6)**  
 Z-2.6 SCALE: 22x34: 1" = 20'  
 11x17: 1" = 40'  
 NORTH



**2 PROFILE VIEW (SEGMENT 6)**  
 Z-2.6 SCALE: 22x34: 1" = 20'  
 11x17: 1" = 40'



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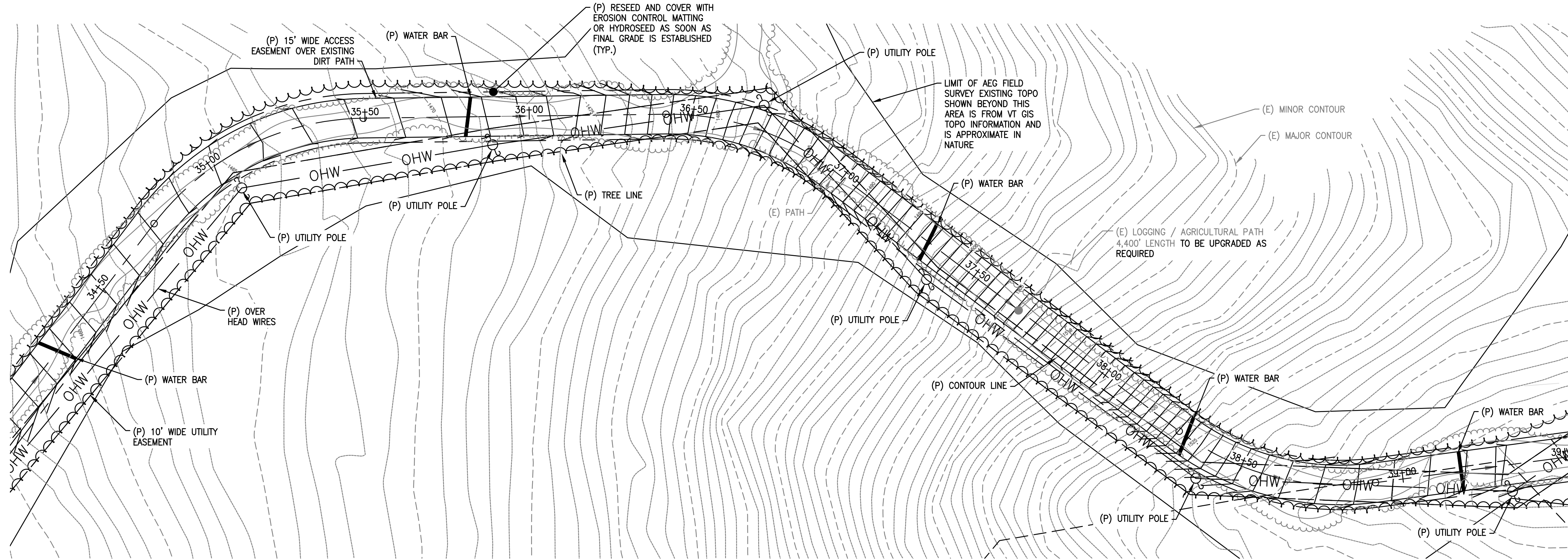
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 ENLARGED PLAN &  
 PROFILE (SEGMENT 6)

SHEET NUMBER  
**Z-2.6**





**LEGEND**

	PROPERTY LINE
	ZONING SETBACK LINE
	ABUTTING PROPERTY LINE
	EXIST. R.O.W. LAYOUT
	PROP. EASEMENT/LEASE AREA
	EXIST. CHAIN LINK FENCE
	PROP. CHAIN LINK FENCE
	EROSION CONTROL BARRIER
	EXIST. EDGE OF TREE CANOPY
	PROP. EDGE OF TREE CANOPY
	WETLAND BOUNDARY & FLAG
	WETLAND SETBACK LINE
	(E) MAJOR CONTOUR
	(E) MINOR CONTOUR
	(E) U/G GAS MAIN (APPROX.)
	(E) OVERHEAD UTILITY WIRES
	(P) ELECTRICAL UTILITY CONDUIT
	(P) TELCO/DATA UTILITY CONDUIT
	(P) CONTOUR

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**PROPOSED SITE PLAN (SEGMENT 8)**  
 SCALE: 22x34: 1" = 20'  
 11x17: 1" = 40'

AEG PROJECT #: 2023-0079  
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**SUBMITTALS**

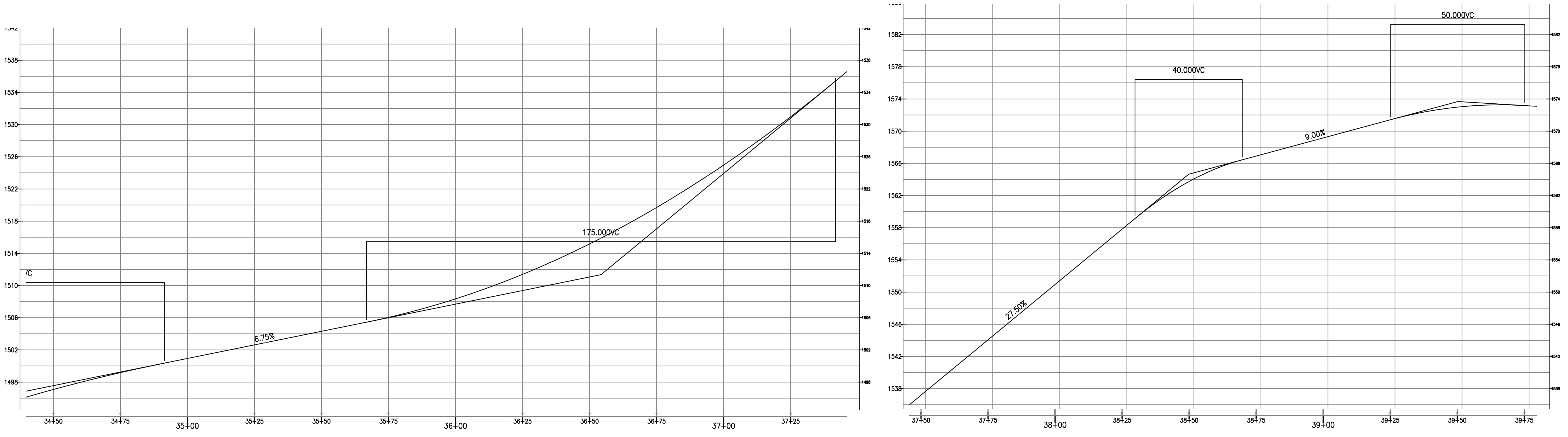
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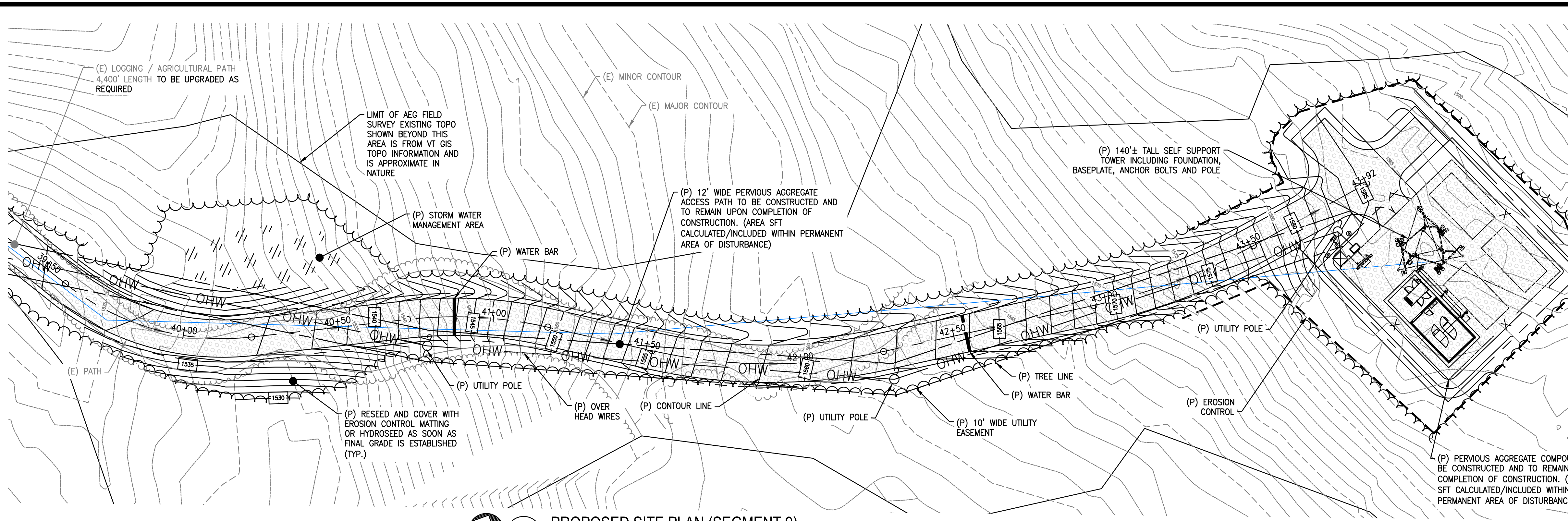
VT-VT-0111A  
**ROCHESTER**  
 1030 VT ROUTE 100  
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 WINDSOR COUNTY

SHEET TITLE  
 ENLARGED PLAN &  
 PROFILE (SEGMENT 8)

SHEET NUMBER  
**Z-2.8**



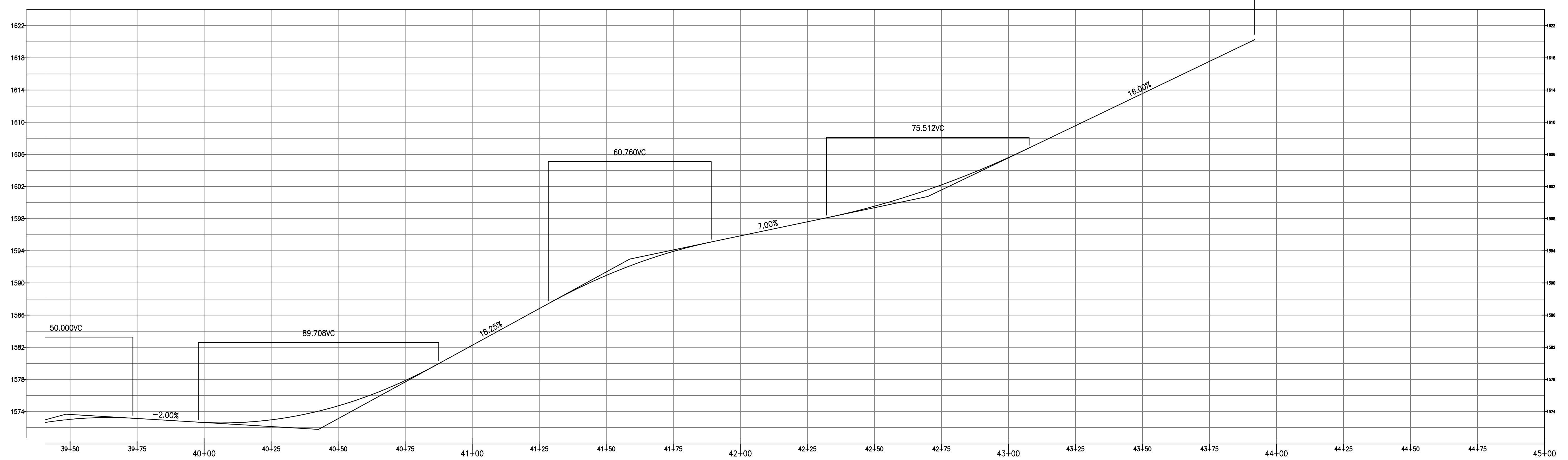
**PROFILE VIEW (SEGMENT 8)**  
 SCALE: 22x34: 1" = 20'  
 11x17: 1" = 40'



**LEGEND**

	PROPERTY LINE
	ZONING SETBACK LINE
	ABUTTING PROPERTY LINE
	EXIST. R.O.W. LAYOUT
	PROP. EASEMENT/LEASE AREA
	EXIST. CHAIN LINK FENCE
	PROP. CHAIN LINK FENCE
	EROSION CONTROL BARRIER
	EXIST. EDGE OF TREE CANOPY
	PROP. EDGE OF TREE CANOPY
	WETLAND BOUNDARY & FLAG
	WETLAND SETBACK LINE
	(E) MAJOR CONTOUR
	(E) MINOR CONTOUR
	(E) U/G GAS MAIN (APPROX.)
	(E) OVERHEAD UTILITY WIRES
	(P) ELECTRICAL UTILITY CONDUIT
	(P) TELCO/DATA UTILITY CONDUIT
	(P) CONTOUR

**1 PROPOSED SITE PLAN (SEGMENT 9)**  
 NORTH  
 Z-2.9 SCALE: 22x34: 1" = 20'  
 11x17: 1" = 40'  
 0 20' 40' 60'



**2 PROFILE VIEW (SEGMENT 9)**  
 Z-2.9 SCALE: 22x34: 1" = 20'  
 11x17: 1" = 40'  
 0 20' 40' 60'

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**STATE OF VERMONT**  
 NOTARY PUBLIC  
 NO. 135423  
 CIVIL  
 LICENSED PROFESSIONAL ENGINEER  
 Scott M. Adams

AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

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**ROCHESTER**  
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 ROCHESTER, VT 05767  
 WINDSOR COUNTY

SHEET TITLE  
 ENLARGED PLAN &  
 PROFILE (SEGMENT 9)

SHEET NUMBER  
**Z-2.9**

(P) PERVIOUS AGGREGATE COMPOUND TO BE CONSTRUCTED AND TO REMAIN UPON COMPLETION OF CONSTRUCTION. (AREA SFT CALCULATED/INCLUDED WITHIN PERMANENT AREA OF DISTURBANCE)

- CONSTRUCTION DISTURBANCE NOTES:
- 1) THE PERMANENT DISTURBED AREA ARE LIMITED TO THE PROPOSED STONE PATH, FENCED COMPOUND AREA, AND RUNOFF MITIGATION AREA.
  - 2) COMPOUND WILL BE SURFACED IN 4" OF CRUSHED STONE. IMPERVIOUS AREAS DUE TO CARRIER PADS, EQUIPMENT, TOWER, TRANSFORMER AND ASSOCIATED EQUIPMENT WILL BE BELOW 2,500SFT. ANY RUNOFF FROM THESE PROPOSED IMPERVIOUS AREAS WILL BE CAPTURED WITHIN THE VOID AREAS OF THE CRUSHED STONE COMPOUND AND INFILTRATE.
  - 3) STONE ACCESS PATH IS TO BE CONSTRUCTED UTILIZING 8" FREE DRAINING CRUSHED STONE. THIS TYPE OF CRUSHED STONE (VAOT 704.17) IS UTILIZED AS A BASE MATERIAL FOR BUILDING FOUNDATIONS, ROADWAYS AND RAILROADS. THE LARGER PARTICLE SIZES PROVIDE A STABLE AND COMPACT BASE THAT IS CAPABLE OF WITHSTANDING HEAVY LOADS AS WELL AS PROVIDE FOR EXCELLENT DRAINAGE AND INFILTRATION CAPABILITY. STONE ACCESS PATH IS DESIGNED/INTENDED TO BE PERMEABLE.
  - 4) LIMITS OF TREE CLEARING SHOWN AS APPROXIMATE. FIELD CONDITIONS AND INDIVIDUAL TREES WILL VARY. CONTRACTOR SHALL LIMIT CLEARING TO THE MINIMUM REQUIRED TO CONSTRUCT THE ACCESS DRIVE AND SITE UTILITIES. STUMPS OUTSIDE THE LIMITS OF EXCAVATION SHOULD BE LEFT IN PLACE.
  - 5) ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS SOON AS FINAL GRADE IS ESTABLISHED TO RE-ESTABLISH A VEGETATED COVER. AREAS WITH ONGOING WORK SHALL BE TEMPORARILY STABILIZED WITHIN 14 DAYS OF INITIAL GROUND DISTURBANCE.
  - 6) THE PROPOSED ACCESS DRIVE FOLLOWS EXISTING WOODS TRAIL WHENEVER FEASIBLE. FOLLOWING CONSTRUCTION OF THE SITE COMPOUND, THE CONTRACTOR SHALL INSTALL THE ACCESS ROAD IN ACCORDANCE WITH THE DETAILS TO MAINTAIN A PERVIOUS CONDITION.
  - 7) PERMANENT AND TEMPORARY WATER BARS SHALL BE INSTALLED AND MAINTAINED FOLLOWING INITIAL SOIL DISTURBANCE. TEMPORARY WATER BARS CAN BE REMOVED ONCE EXPOSED SUBGRADE MATERIAL IS STABILIZED WITH CRUSHED STONE SURFACE. PERMANENT WATER BARS SHALL REMAIN FOLLOWING CONSTRUCTION.

**LEGEND**

- PROPERTY LINE
- ZONING SETBACK LINE
- ABUTTING PROPERTY LINE
- EXIST. R.O.W. LAYOUT
- PROP. EASEMENT/LEASE AREA
- EXIST. CHAIN LINK FENCE
- PROP. CHAIN LINK FENCE
- EROSION CONTROL BARRIER
- EXIST. EDGE OF TREE CANOPY
- PROP. EDGE OF TREE CANOPY
- WETLAND BOUNDARY & FLAG
- WETLAND SETBACK LINE
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (E) U/G GAS MAIN (APPROX.)
- (E) OVERHEAD UTILITY WIRES
- (P) ELECTRICAL UTILITY CONDUIT
- (P) TELCO/DATA UTILITY CONDUIT

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STATE OF VERMONT  
 SEAN N. ADAMS  
 NO. 135423  
 CIVIL  
 LICENSED PROFESSIONAL ENGINEER  
 Scott M. White

AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

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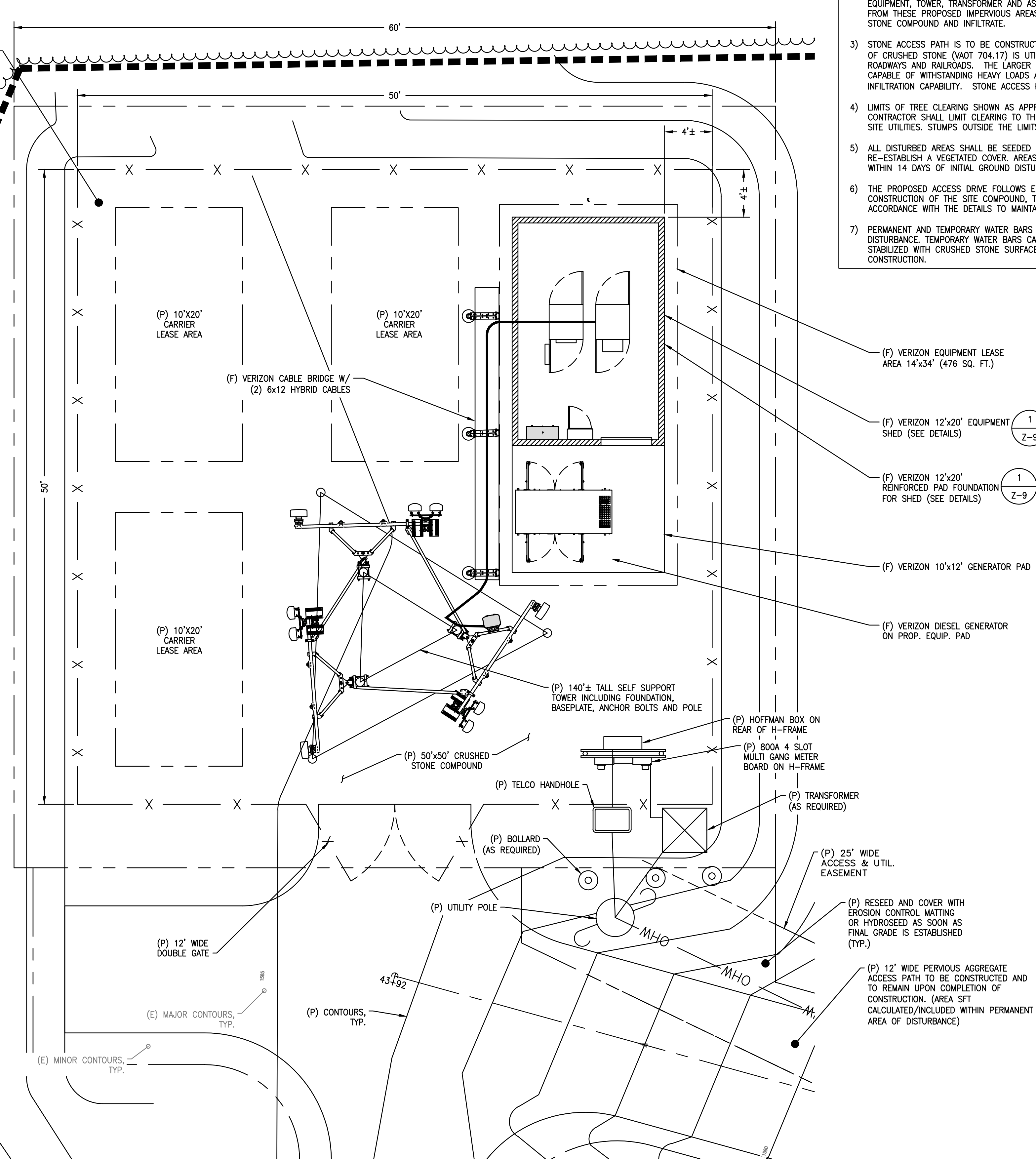
VT-VT-0111A  
**ROCHESTER**  
 1030 VT ROUTE 100  
 ROCHESTER, VT 05767  
 WINDSOR COUNTY

SHEET TITLE  
 COMPOUND PLAN

SHEET NUMBER  
**Z-3**

- SITE AREA CALCULATION NOTES:**
1. TOTAL ACREAGE OF TEMPORARY EARTH DISTURBANCE: 72,024 SFT (1.65 ACRES)
  2. TOTAL AREA OF PERMANENT EARTH DISTURBANCE: 8,833 SFT (0.20 ACRES)
  3. TOTAL ACREAGE OF TREE CLEARING: 57,978 SFT (1.33 ACRES)
  4. IMPERVIOUS AREA
    - 4.1. EXISTING = LOGGING / AGRICULTURAL EXEMPT
    - 4.2. PROPOSED = 1,500 SFT MAX. (0.03 ACRES MAX.)
- STORMWATER OPERATIONAL PERMIT REQUIRED: NO
  - STORMWATER CONSTRUCTION GENERAL PERMIT REQUIRED: NO
  - CALCULATIONS DO NOT INCLUDE EXISTING EXEMPT LOGGING AND AGRICULTURAL PATH AREAS. (SEE NOTE #5)

- NOTES:**
- 1) DUE TO THE TYPE OF CONSTRUCTION AND STEEP GRADES ACCESS IS INTENDED TO BE PRIVATE AND LIMITED TO APPROPRIATE VEHICLES AND QUALIFIED TECHNICIANS/CONTRACTORS ONLY. THE INTENT OF THIS PRIVATE STONE PATH IS TO PROVIDE ACCESS TO THE TOWER COMPOUND LOCATION VIA ALL TERRAIN VEHICLES (ATV), OFF-PATH VEHICLES, CONSTRUCTION VEHICLES, 4X4 VEHICLES, AND SNOWMOBILES. THIS ACCESS PATH IS NOT INTENDED FOR NORMAL PUBLIC/VEHICULAR TRAFFIC AND/OR (2) WHEEL DRIVE VEHICLES AND SHOULD BE RESTRICTED AS SUCH BY OWNER.
  - 2) STONE ACCESS PATH WILL NOT BE PLOWED DURING WINTER. SHOULD ACCESS BE REQUIRED, SNOWMOBILE AND/OR TRACKED VEHICLES WILL BE UTILIZED.
  - 3) STONE ACCESS PATH WILL BE MAINTAINED EACH SPRING AND FALL BY:
    - 3)1) CLEARING ALL DEBRIS, INCLUDING BY NOT LIMITED TO LEAVES, TREES BRANCHES AND OTHER OBJECTS THAT WOULD LIMIT THE STONES ABILITY TO INFILTRATE.
    - 3)2) INSPECT AND MAINTAIN WATER BARS / STORMWATER DEVICES TWICE A YEAR, AND AFTER ALL MAJOR RAIN EVENTS.
  - 4) SPEED LIMITED TO 10 MPH.
  - 5) IT SHOULD BE NOTED THAT THE EXISTING ACCESS PATH HAS HISTORICALLY BEEN UTILIZED AS LOGGING PATH/AGRICULTURAL PATH/ SNOWMOBILE VAST PATH (PORTION). THIS PATH WILL BE UTILIZED FOR ACCESS TO THE TELECOMMUNICATIONS COMPOUND IN ORDER TO REDUCE PERMANENT DISTURBANCE AREAS. IT IS EXPECTED THAT THIS PRIVATE PATH WILL CONTINUE TO BE UTILIZED BY THESE OPERATIONS IN THE FUTURE. INSPECTIONS SHOULD BE COMPLETED PRIOR TO LOGGING OPERATIONS AS WELL AS UPON COMPLETION. ANY DEFICIENCIES ARE TO BE REPAIRED BY THE LOGGING COMPANY.



**COMPOUND PLAN**  
 SCALE: 22x34: 1"=5'  
 11x17: 1"=10'  
 NORTH

**verizon**

118 FLANDERS ROAD  
WESTBOROUGH, MA 01581  
(508) 330-3300 TEL

**Vertex  
Towers LLC**

VERTEX TOWERS LLC  
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VT-VT-0111A

**ROCHESTER**

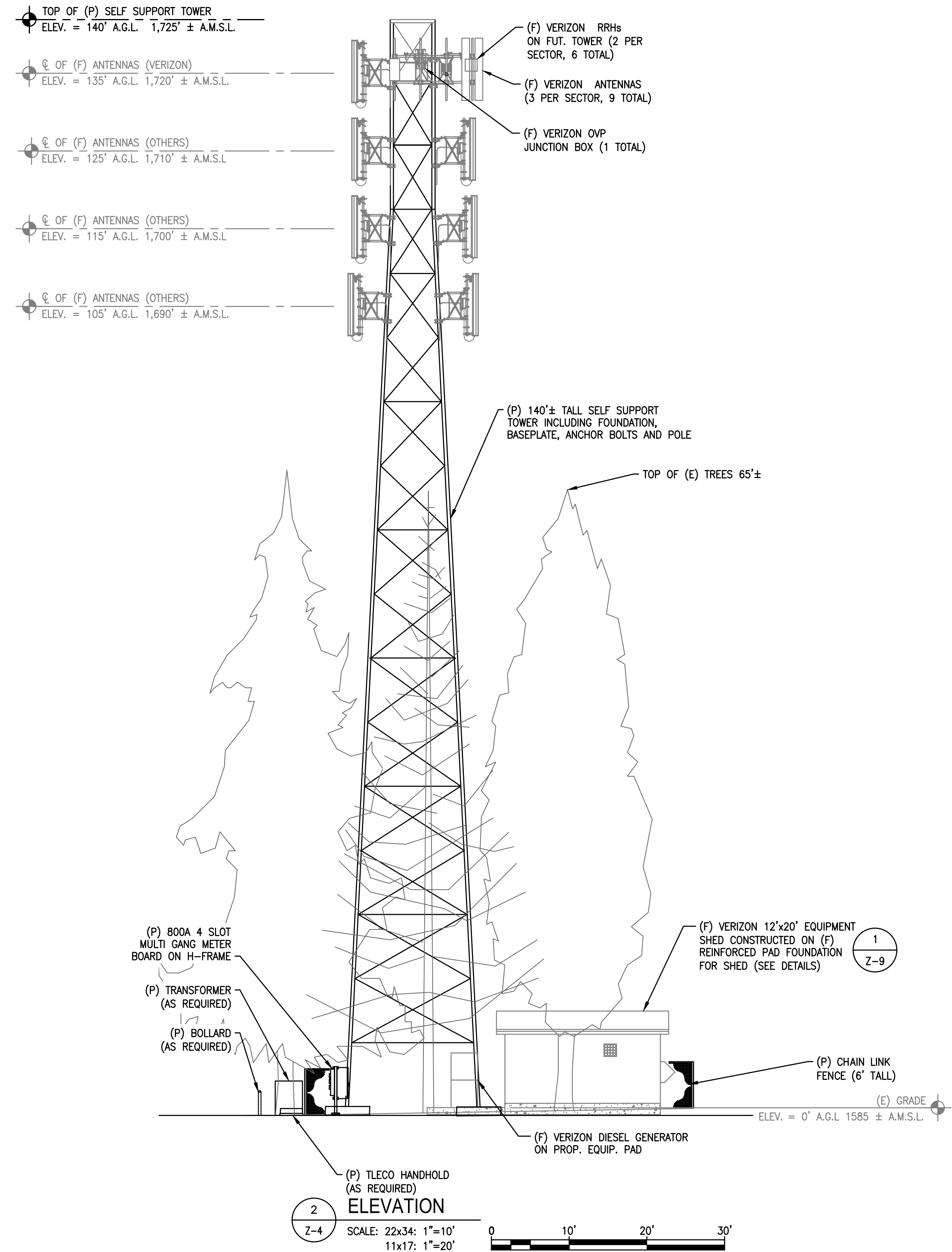
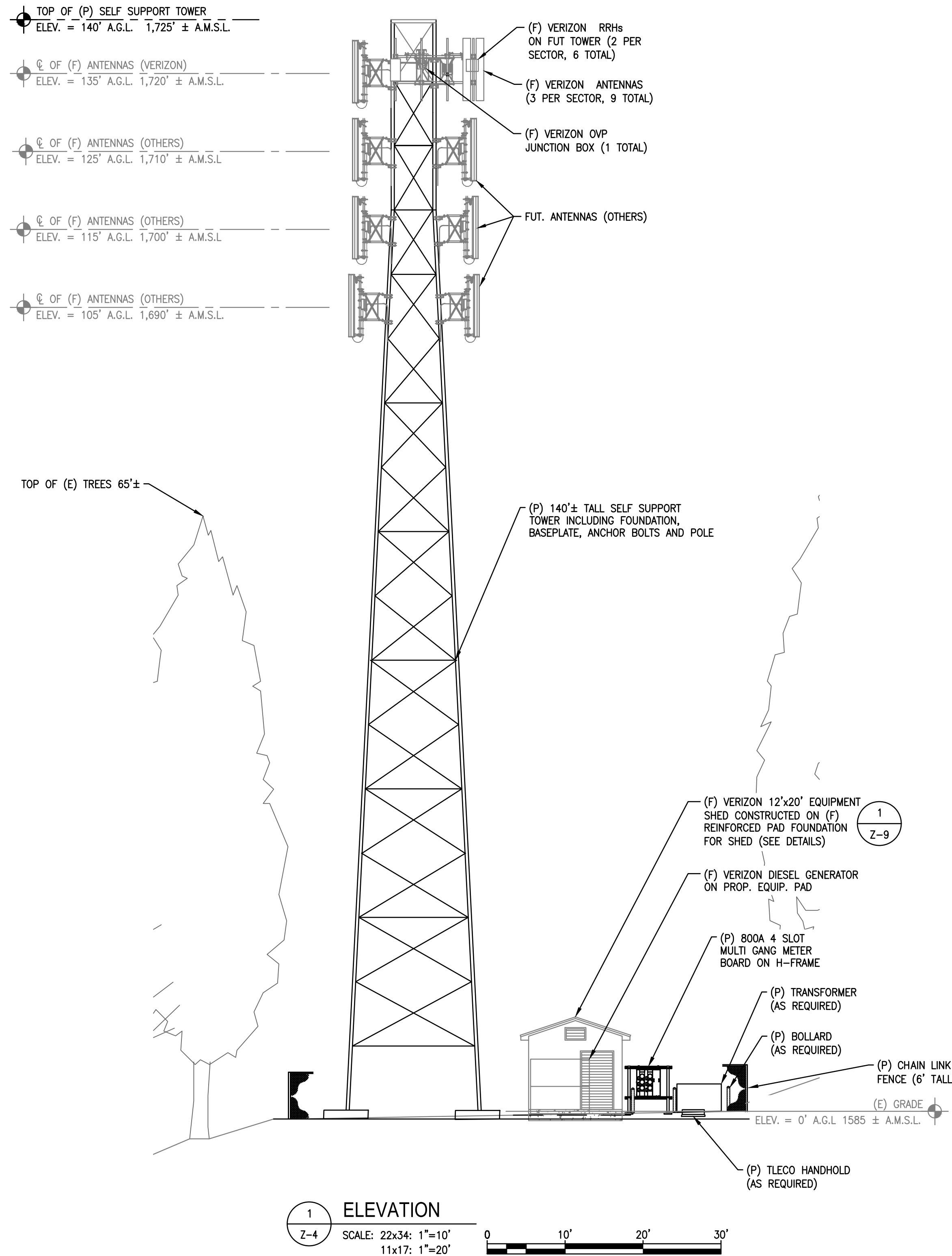
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WINDSOR COUNTY

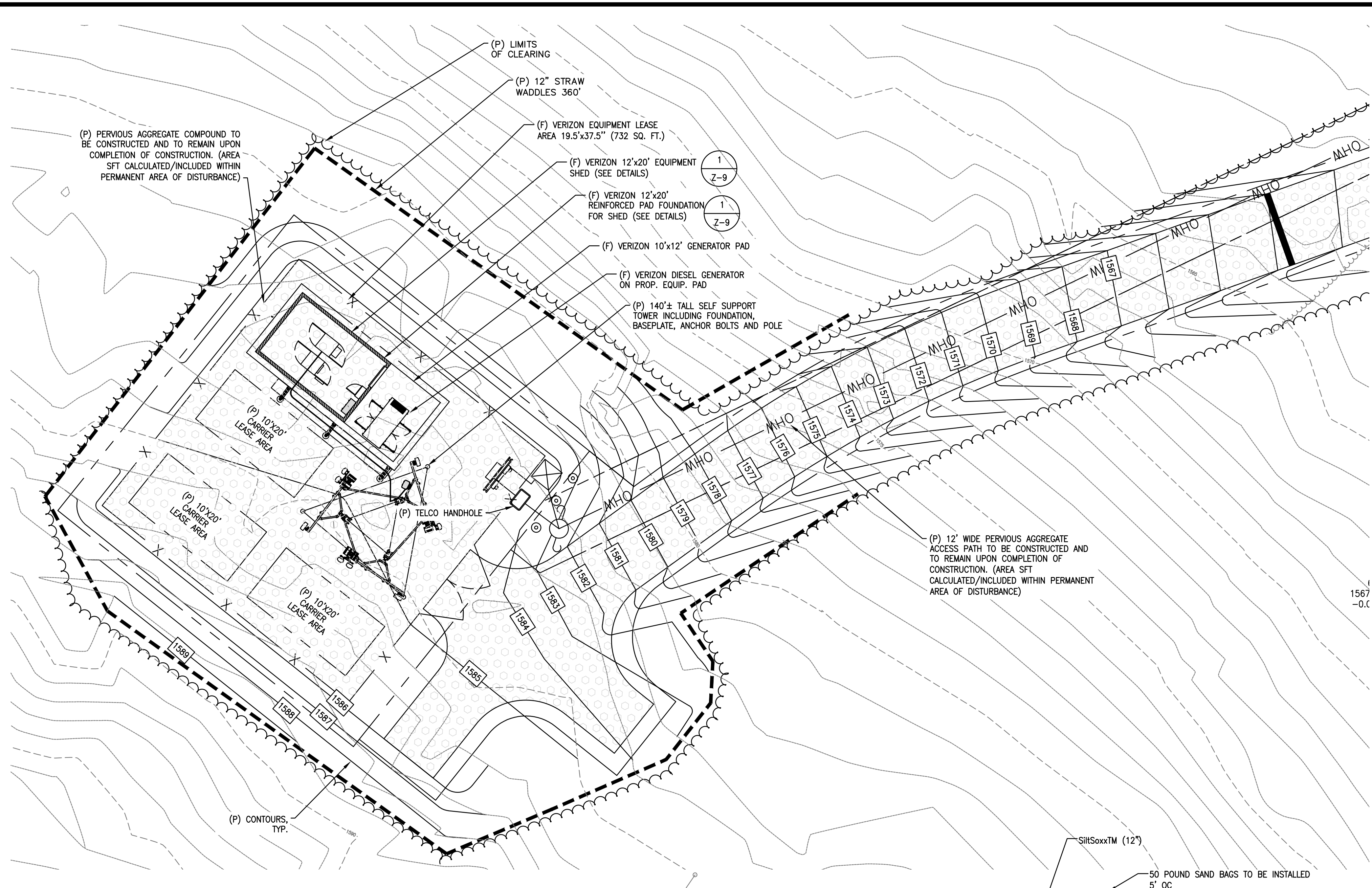
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COMPOUND / TOWER  
ELEVATIONS

SHEET NUMBER

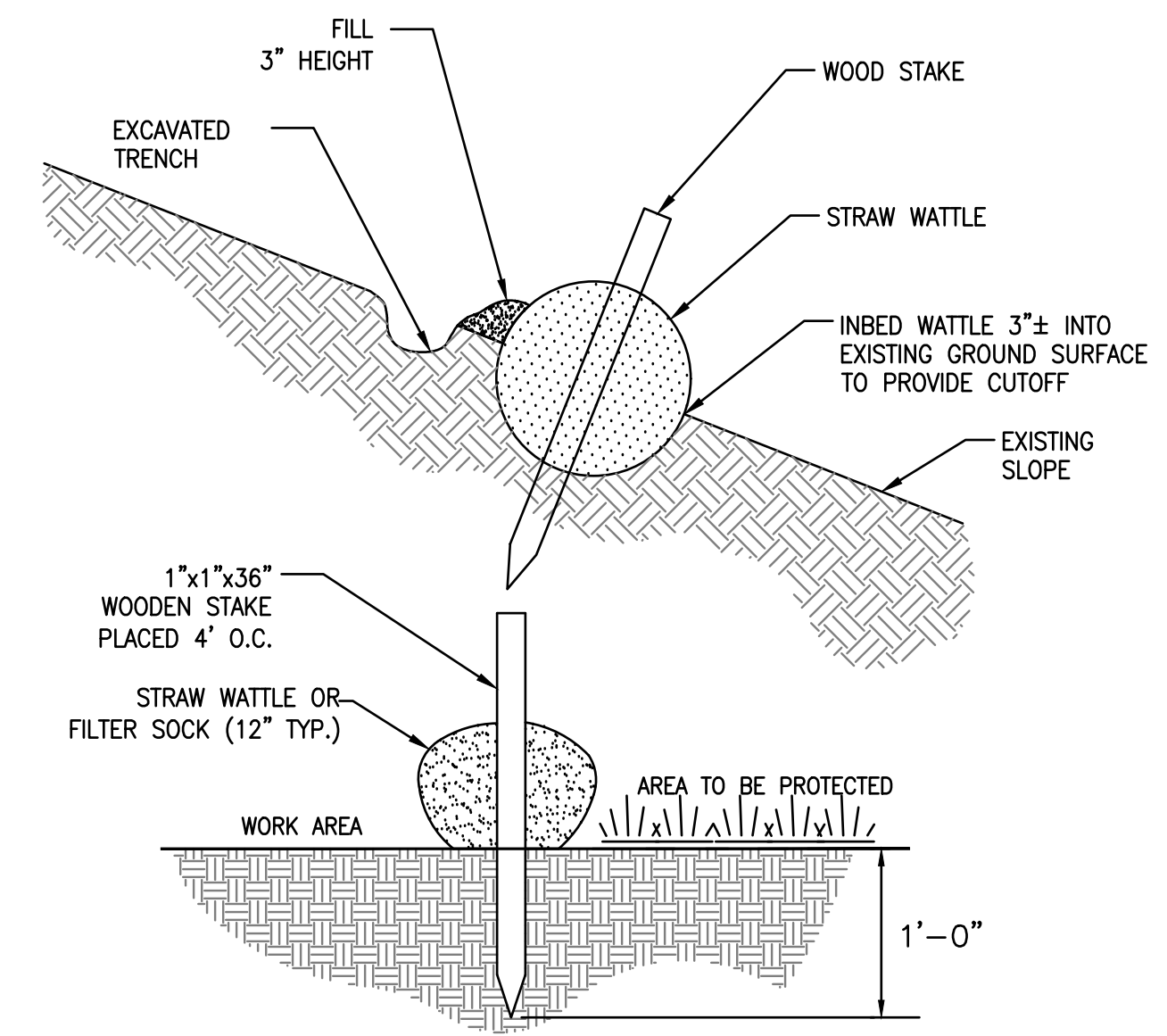
**Z-4**





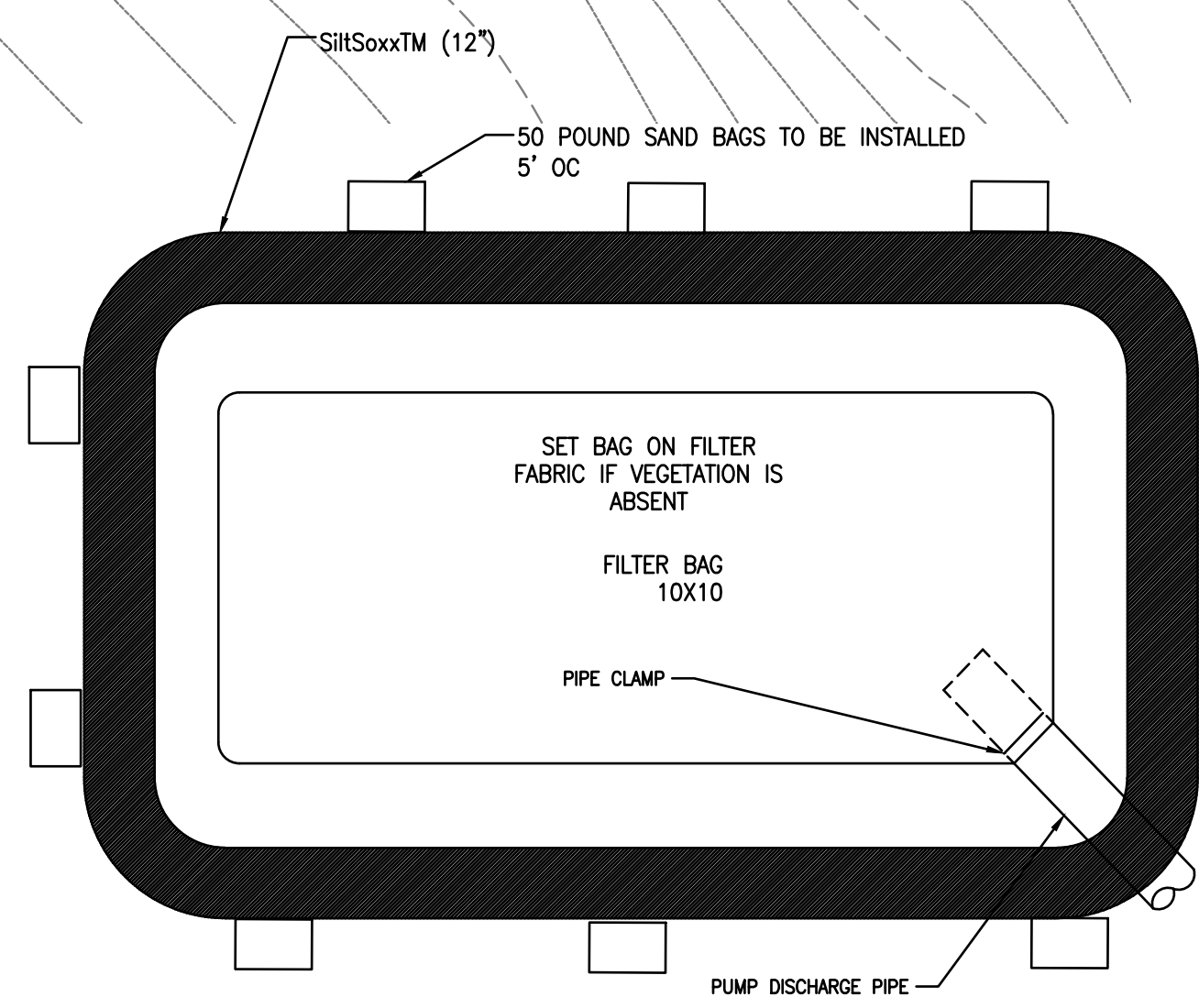
**LEGEND**

	PROPERTY LINE
	ZONING SETBACK LINE
	ABUTTING PROPERTY LINE
	EXIST. R.O.W. LAYOUT
	PROP. EASEMENT/LEASE AREA
	EXIST. CHAIN LINK FENCE
	PROP. CHAIN LINK FENCE
	EROSION CONTROL BARRIER
	EXIST. EDGE OF TREE CANOPY
	PROP. EDGE OF TREE CANOPY
	WETLAND BOUNDARY & FLAG
	WETLAND SETBACK LINE
	(E) MAJOR CONTOUR
	(E) MINOR CONTOUR
	(E) U/G GAS MAIN (APPROX.)
	(E) OVERHEAD UTILITY WIRES
	(P) ELECTRICAL UTILITY CONDUIT
	(P) TELCO/DATA UTILITY CONDUIT
	(P) CONTOUR



**2 EROSION CONTROL BARRIER DETAIL**  
SCALE: NTS

**1 EROSION CONTROL PLAN**  
SCALE: 22x34: 1"=6'  
11x17: 1"=12'



- 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. THE SIZE OF THE STRAW BALE ENCLOSURE TO BE 10' X10' AND CAN BE ADJUSTED BASED ON WATER VOLUME
  5. ADDITIONAL STRAW BALES CAN BE USED TO INCREASE RETENTION & FILTRATION

**3 DEWATERING BASIN DETAIL**  
SCALE: N.T.S.

**EROSION AND SEDIMENT CONTROL NOTES:**

1. PRIOR TO STARTING ANY WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR SHALL CONDUCT INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE SITE.
6. NO SLOPE SHALL BE GREATER THAN 3 TO 1.
7. CONTRACTOR TO USE WATER TRUCK TO SPRAY DOWN ACCESS PATH FOR DUST CONTROL AS REQUIRED
8. NO CONCRETE TO BE WASHED OUT IN THE WETLANDS

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Fax: (401) 633-6354



AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

**SUBMITTALS**

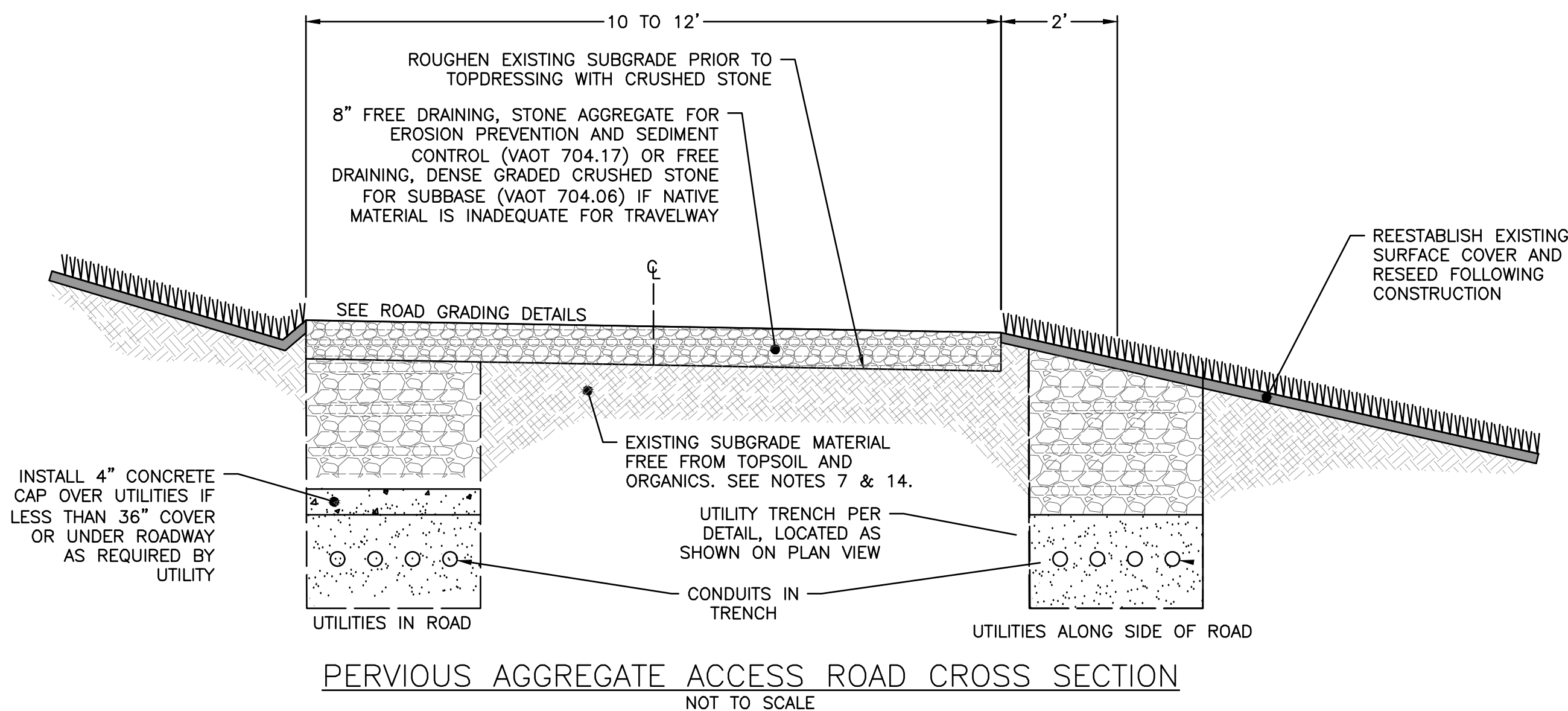
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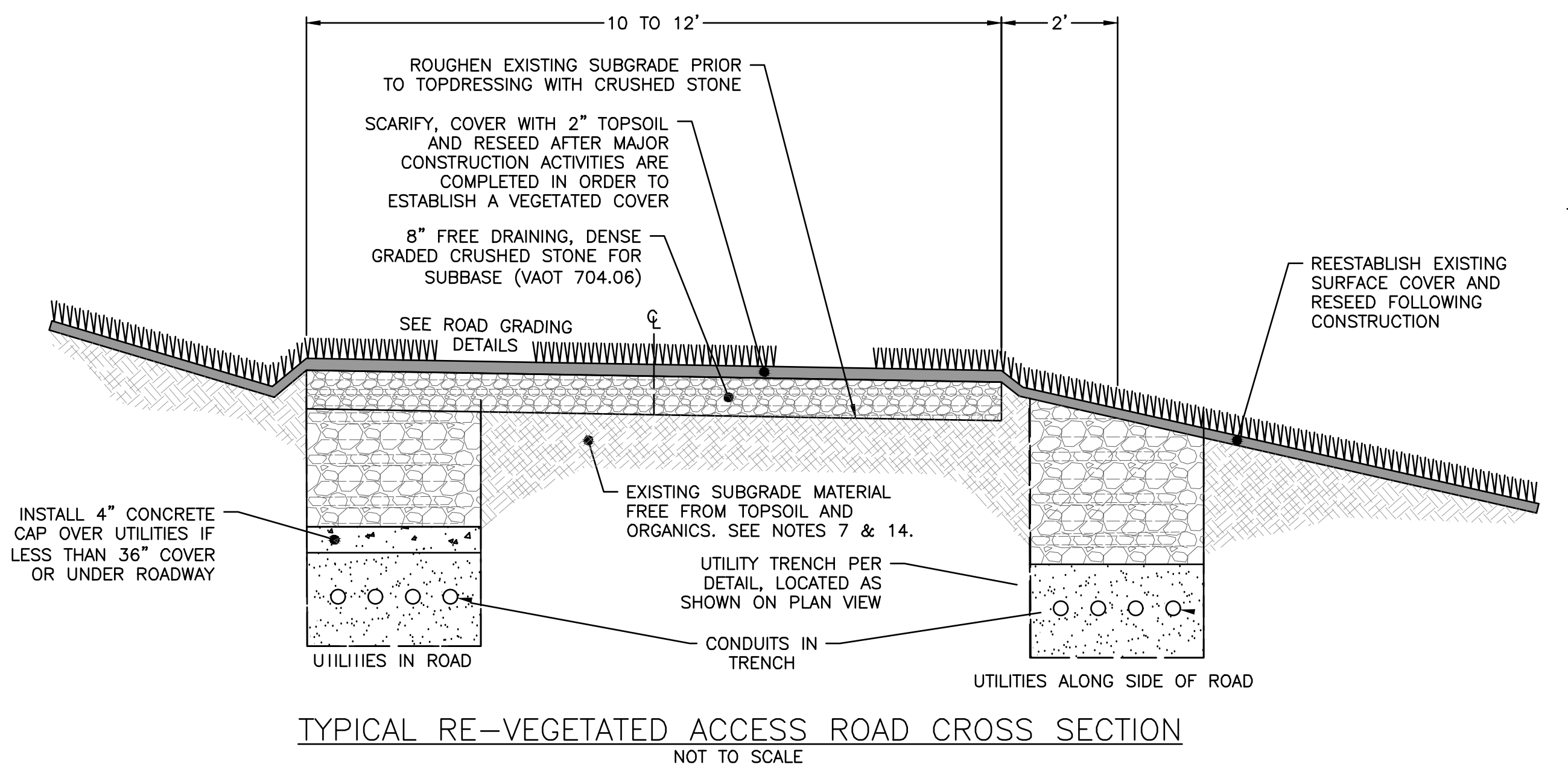
VT-VT-0111A  
**ROCHESTER**  
1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

SHEET TITLE  
EROSION CONTROL PLAN

SHEET NUMBER  
**Z-5**



PERVIOUS AGGREGATE ACCESS ROAD CROSS SECTION  
NOT TO SCALE

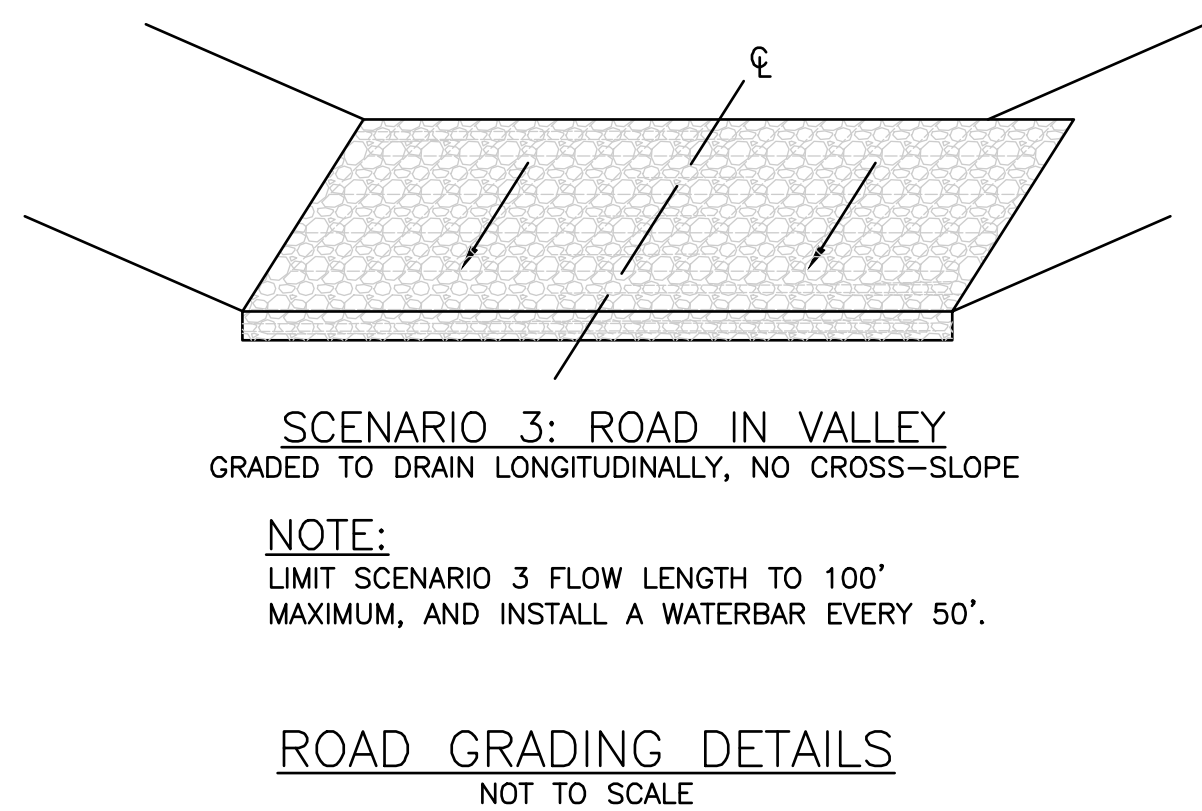
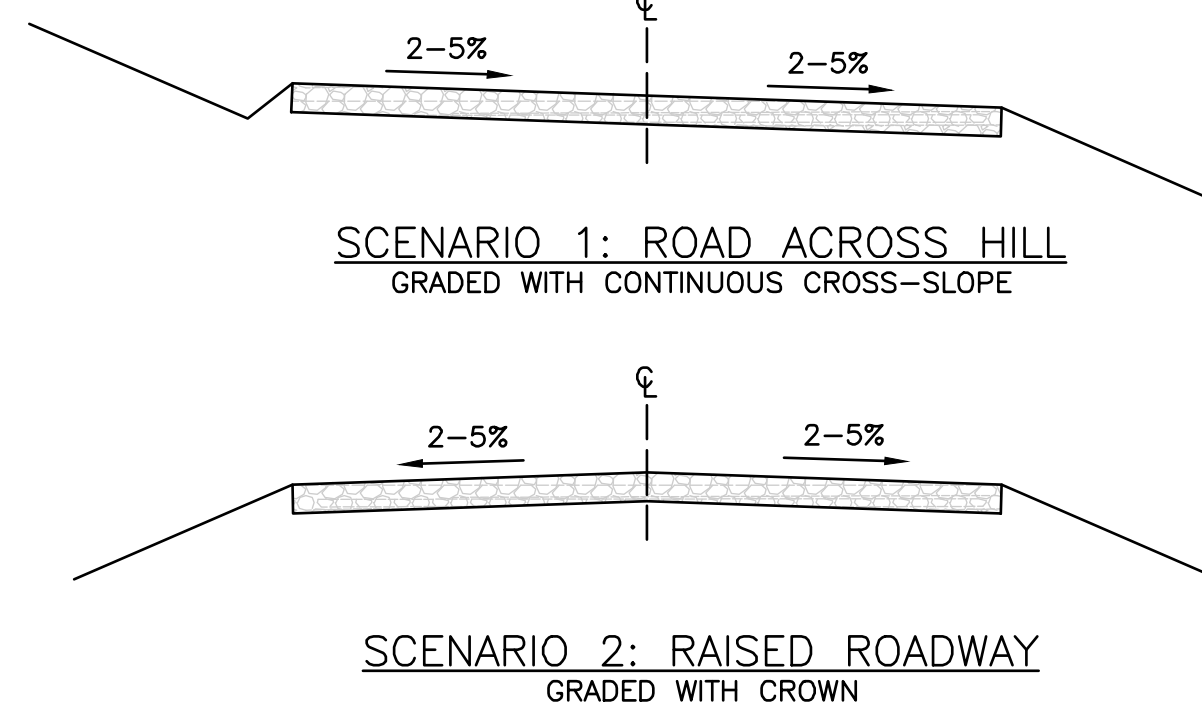


TYPICAL RE-VEGETATED ACCESS ROAD CROSS SECTION  
NOT TO SCALE

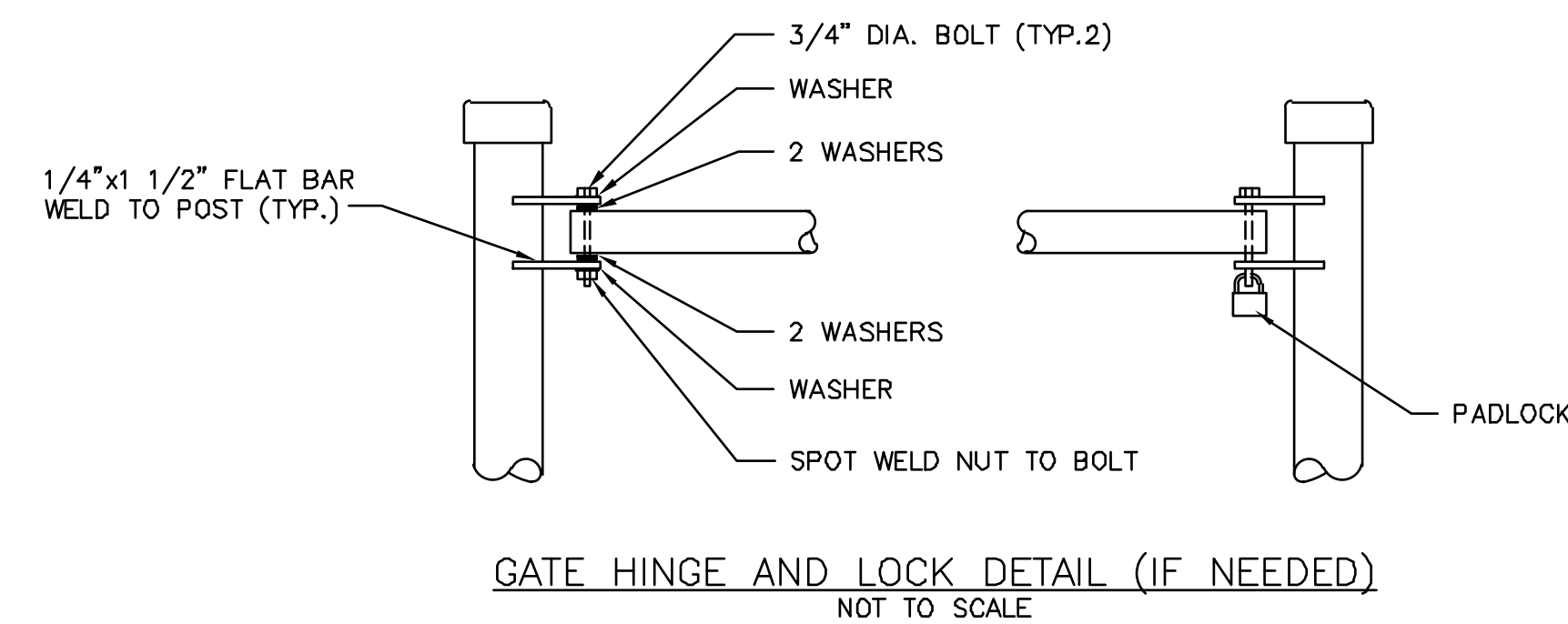
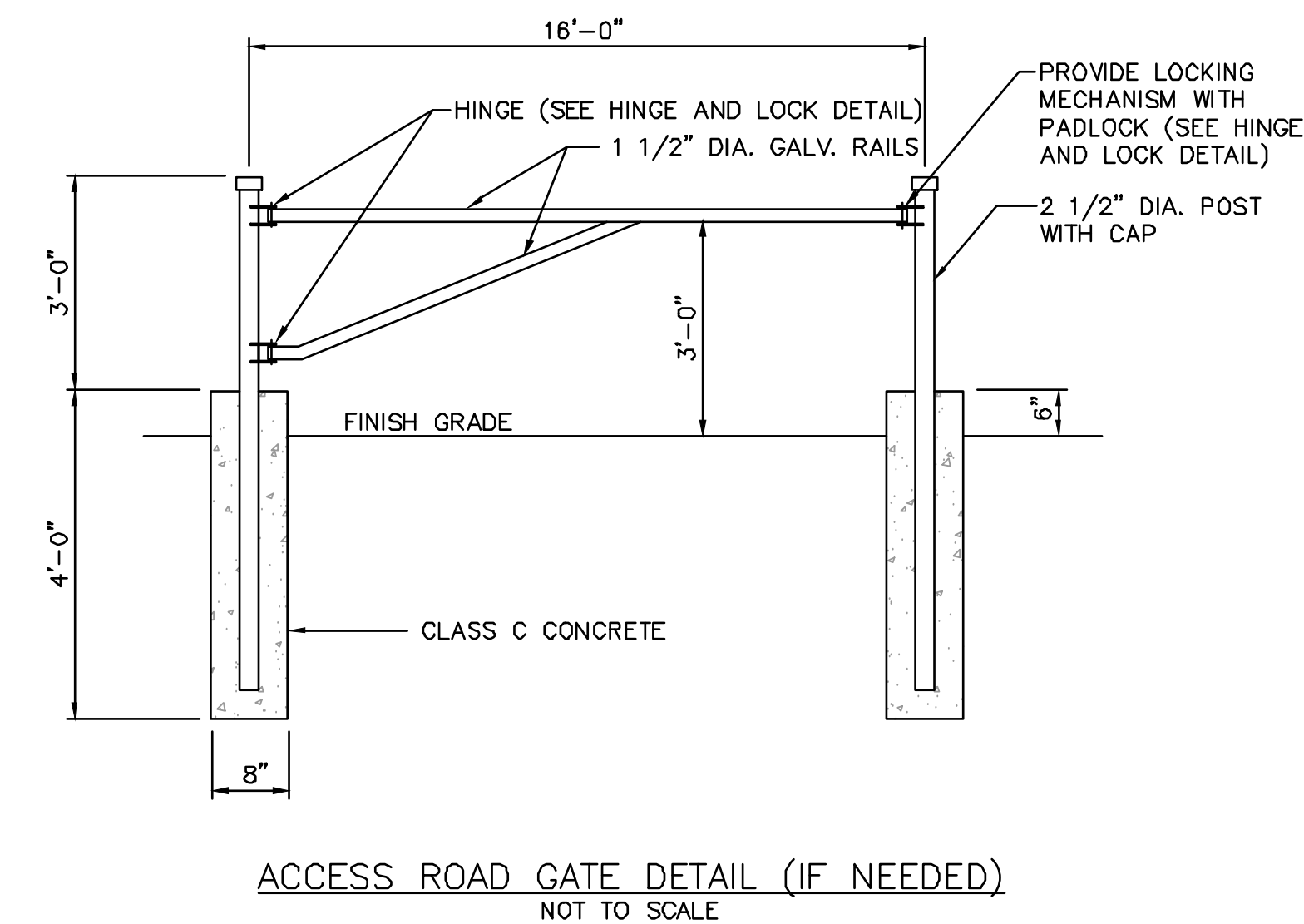
**ACCESS ROAD NOTES:**

- ACCESS TO FOLLOW EXISTING PATHS WHENEVER FEASIBLE.
- TREE CLEARING SHALL BE LIMITED TO THE MINIMUM REQUIRED TO PERMIT CONSTRUCTION VEHICLE ACCESS. SEE PLAN FOR CLEARING LIMITS. STUMPS OUTSIDE THE ACCESS, UTILITY TRENCH, OR FILL LIMITS SHALL BE LEFT IN PLACE.
- CONSTRUCTION STANDARDS SHALL MEET OR EXCEED THOSE OUTLINED IN "THE ACCEPTABLE MANAGEMENT PRACTICES FOR MAINTAINING WATER QUALITY ON LOGGING JOBS IN VERMONT" HANDBOOK.
- UTILITY TRENCH LOCATION SHOWN AS TYPICAL. REFER TO SITE PLAN FOR UTILITY PLACEMENT.
- STABILIZE ALL EXPOSED SOILS IN CONFORMANCE WITH THE LOW RISK HANDBOOK OR STORMWATER CONSTRUCTION GENERAL PERMIT. AT A MINIMUM ALL SOILS SHALL BE STABILIZED WITHIN 14 DAYS.
- CONTRACTOR TO FOLLOW STATE OF VERMONT LOW RISK HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL. SEE EPSC LOW RISK HANDBOOK.
- REMOVE UNSUITABLE SUBGRADE MATERIAL AND REPLACE WITH CRUSHED STONE AGGREGATE OR NATIVE MATERIAL AND SLOPE TO PROVIDE STABLE WORKING SURFACE.
- CUT/FILL SLOPES TO BE RE-SEEDDED AND STABILIZED WITH MULCH, EROSION CONTROL MATTING, STONE RIPRAP, AND/OR WOOD CHIPS ONCE FINAL GRADE HAS BEEN ESTABLISHED.
- ACCESS ROAD TO BE GRADED WITH A MINIMUM OF 2% CROSS-SLOPE.
- RE-VEGETATED SLOPES EXCEEDING 3H:1V UPON RESTORATION TO BE MATTED WITH JUTE MAT EROSION CONTROL BLANKETS, NORTH AMERICAN GREEN S150BN, OR APPROVED EQUIVALENT.
- INSTALL EROSION CONTROLS IN ACCORDANCE WITH THE SITE PLANS AND PROJECT PERMITS. ADDITIONAL EROSION CONTROLS MAY BE REQUIRED AS DIRECTED BY THE PROJECT ENVIRONMENTAL COMPLIANCE INSPECTOR OR THE ON-SITE PLAN COORDINATOR.
- INSTALL PERMANENT WATER BARS IN ACCORDANCE WITH TYPICAL DETAIL.
- MINIMALLY COMPACT EXISTING SUBGRADE MATERIAL AS NECESSARY TO CREATE A STABLE WORKING SURFACE FOR CONSTRUCTION ACCESS, WITHOUT OVER-COMPACTING AND CREATING AN IMPERVIOUS SURFACE. FOLLOWING HEAVY CONSTRUCTION TRAFFIC, TILL OR BACK BLADE THE ACCESS ROAD SUBGRADE PRIOR TO SURFACE COURSE PLACEMENT TO PROMOTE INFILTRATION.

1 ACCESS PATH DETAILS  
SCALE: NTS



NOTE:  
WIDTH OF GATE #4 TO BE 26'-0".  
ALL OTHER GATES TO BE 16'-0" WIDE.



2 ACCESS GATE DETAILS  
SCALE: NTS

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AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

**SUBMITTALS**

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VT-VT-0111A

**ROCHESTER**

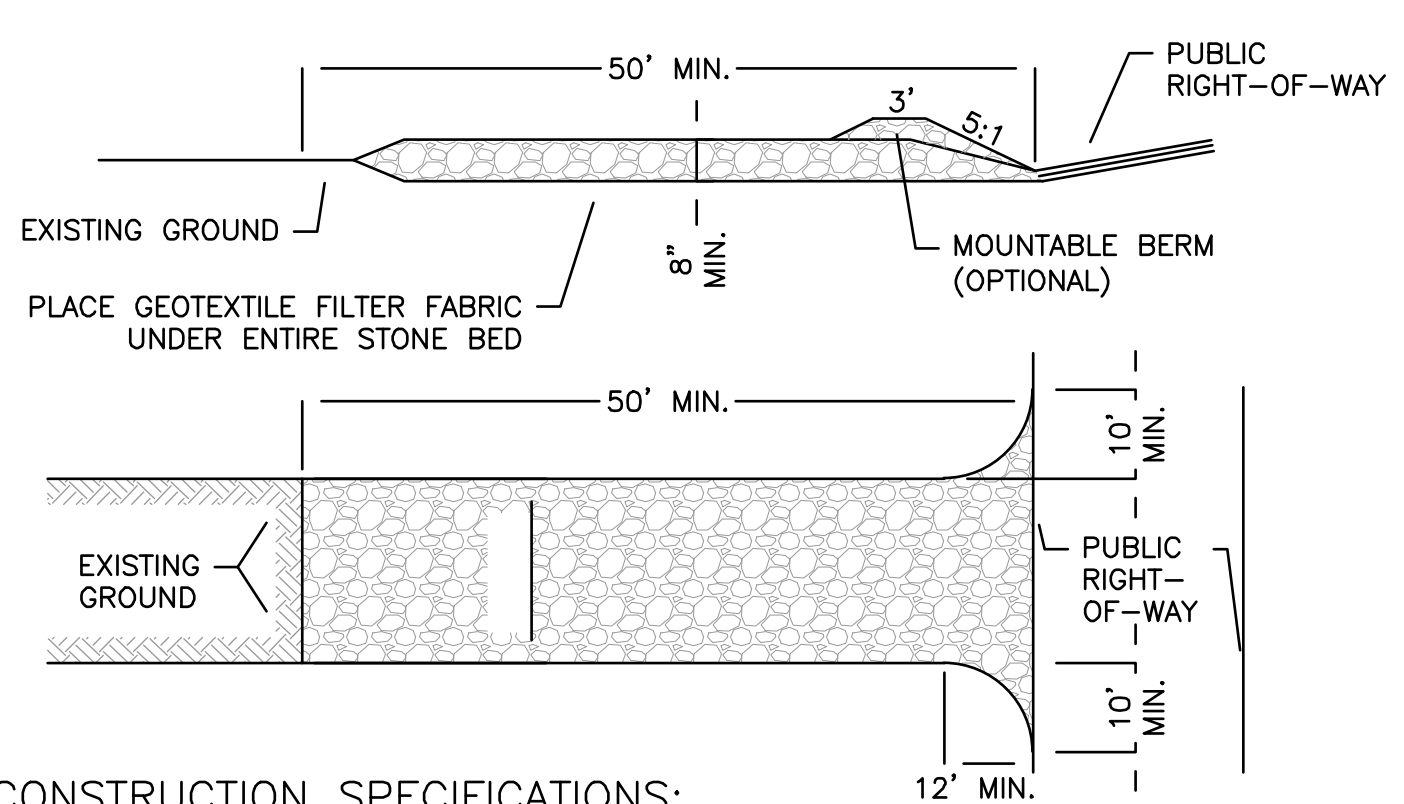
1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

SHEET TITLE

DETAILS

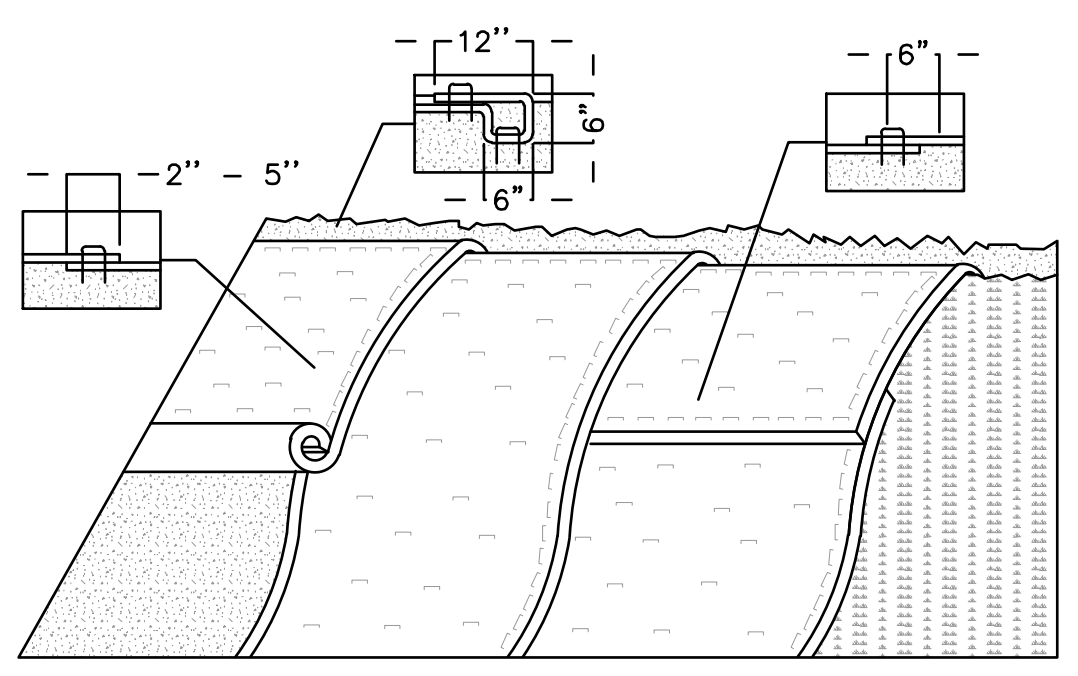
SHEET NUMBER

**Z-6**



- CONSTRUCTION SPECIFICATIONS:**
- STONE SIZE SHALL BE A MIX OF 1 TO 4 INCH STONE.
  - LENGTH SHALL NOT BE LESS THAN 50 FEET.
  - THICKNESS SHALL NOT BE LESS THAN 8 INCHES.
  - WIDTH SHALL BE 12 FEET MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FEET IF SINGLE ENTRANCE TO SITE.
  - GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
  - SURFACE WATER.** ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
  - WASHING.** WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
  - MAINTENANCE.** THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
  - PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

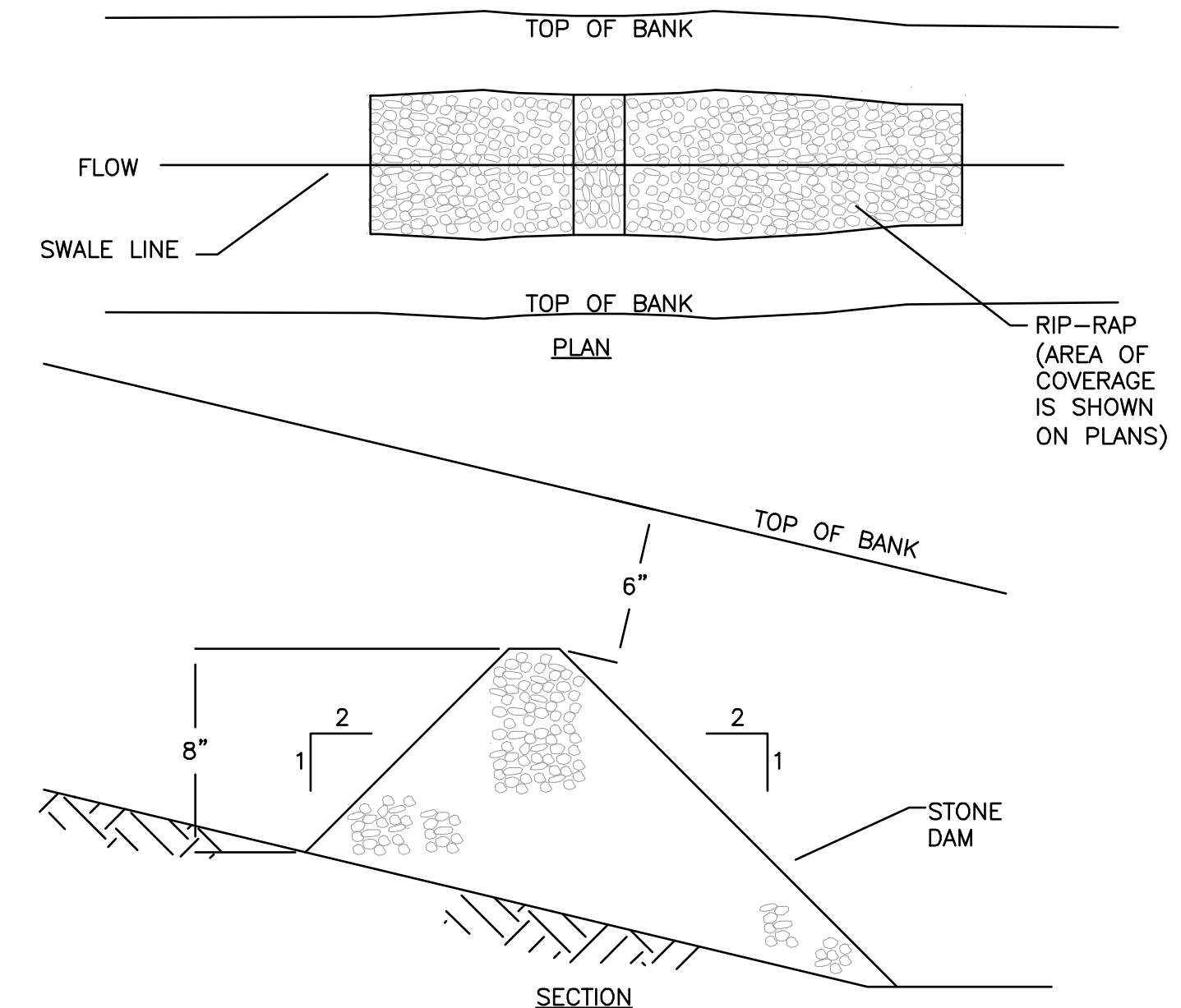
**STABILIZED CONSTRUCTION ENTRANCE**  
NOT TO SCALE



- APPLICATION NOTES:**
- THE PURPOSE OF MATTING ON SIDE SLOPES IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION.
  - EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:
    - SIDE SLOPES > 3:1 (H:V)
    - AREAS WHERE SEED AND MULCH WILL NOT STAY IN PLACE ALONE
    - WHERE SEEDING IS OUTSIDE THE GROWING SEASON.

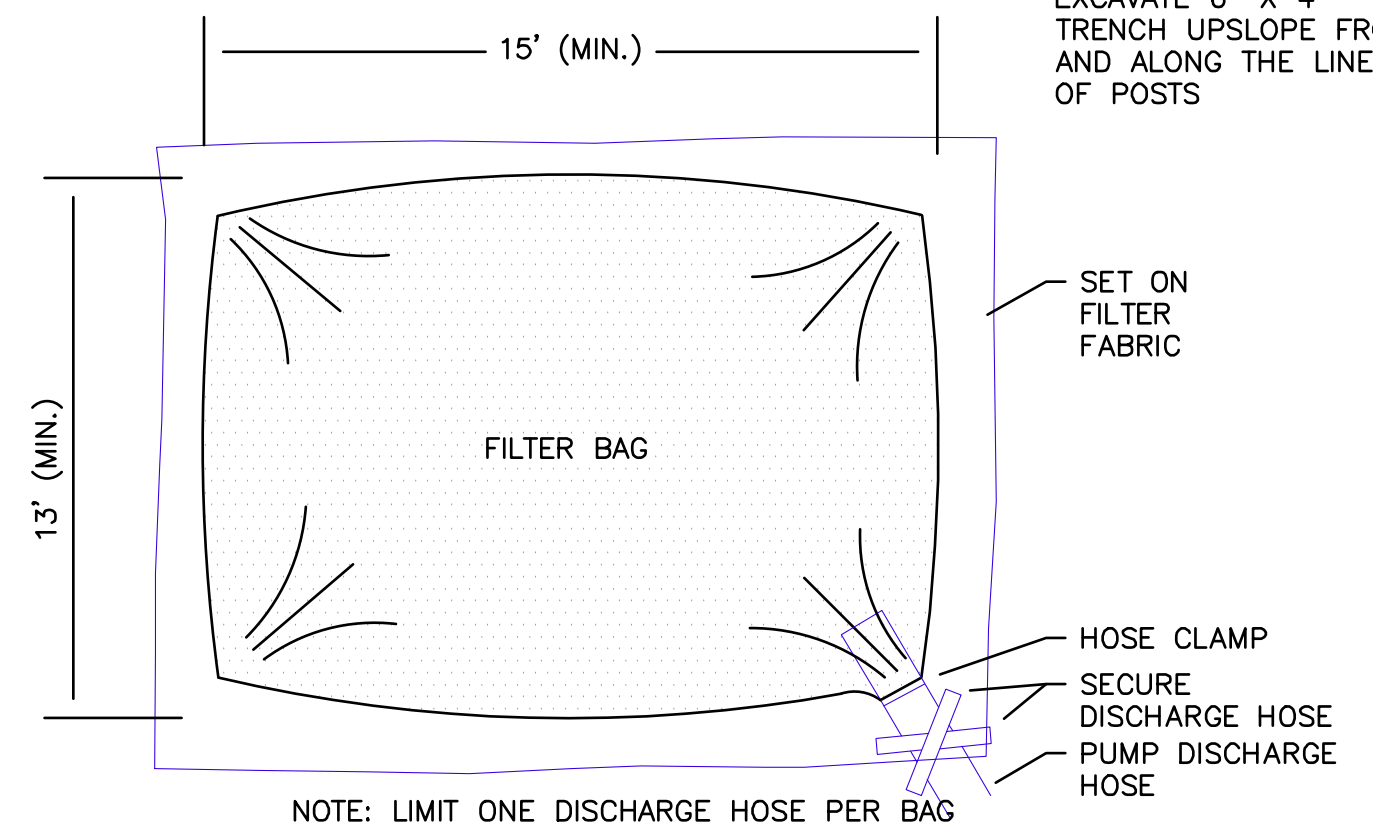
- GENERAL NOTES:**
- GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
  - APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
  - ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
  - UNROLL MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.
  - OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN.
  - OVERLAP ADJACENT MATTING AS SHOWN.
  - CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.
  - MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS MINIMUM AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
  - MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
  - THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE INSTALLATION, INSPECTION AND MAINTENANCE OF ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES.

**EROSION PREVENTION FOR SIDE SLOPES**  
NOT TO SCALE

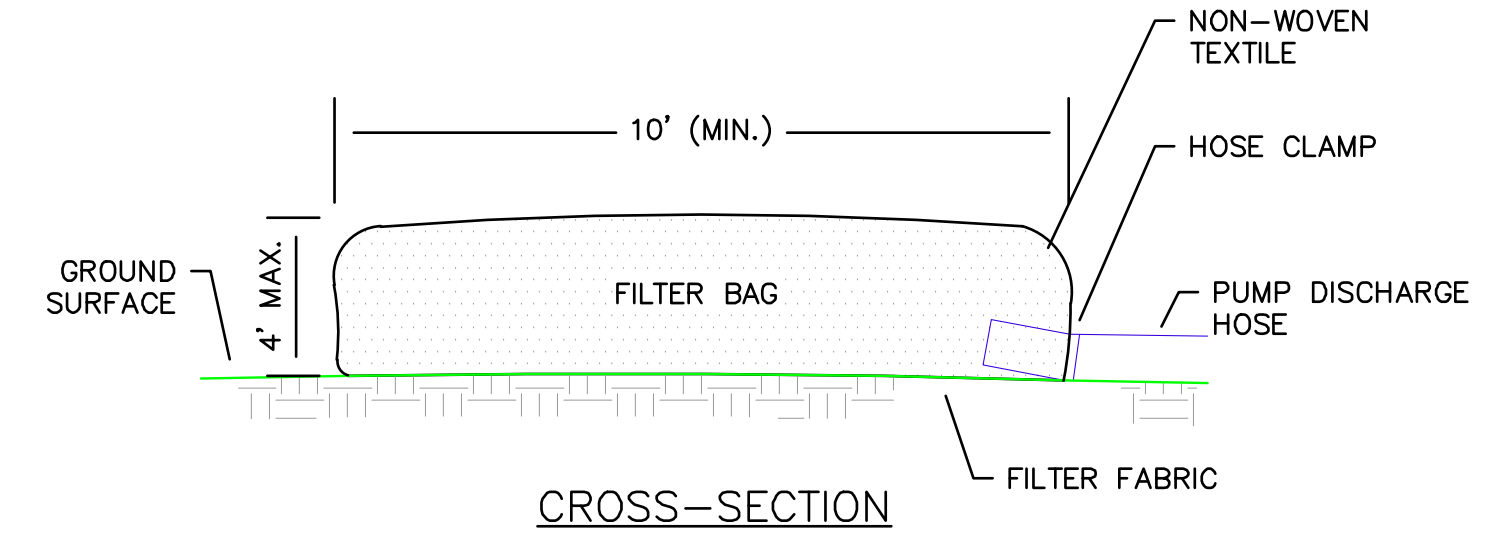


- NOTES:**
- ALL EMBANKMENTS AND DISTURBED AREAS SHALL BE VEGETATED AND MULCHED IN ACCORDANCE WITH EROSION CONTROL MEASURE NO. 3.
  - CHECK DAM TO BE CONSTRUCTED OF STONE. MINIMUM HEIGHT IS 8", BUT NO HIGHER THAN 6" BELOW THE TOP OF THE BANK.
  - ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER, WHEN 1/2 OF THE CONTAINMENT VOLUME HAS BEEN LOST.
  - CHECK DAM SHALL REMAIN UNTIL DIRECTED BY THE ENGINEER, AT WHICH TIME THE STRUCTURE SHALL BE REMOVED AND THE MATERIALS DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER.

**CHECK DAM**  
NOT TO SCALE



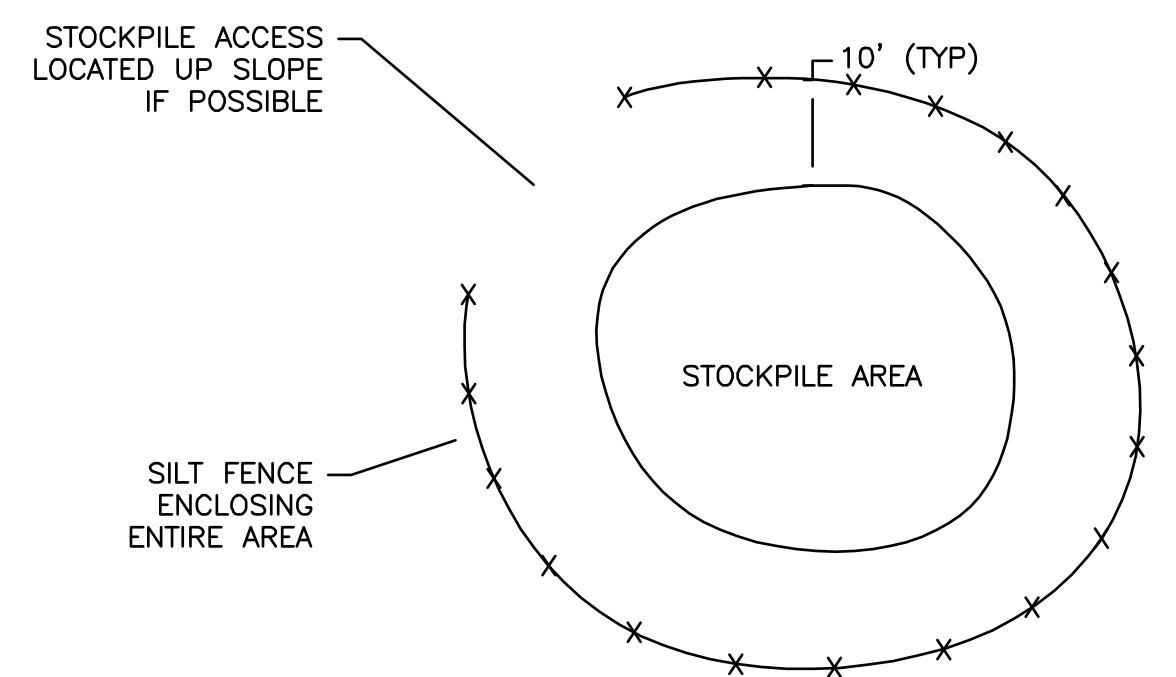
**PLAN VIEW**



**CROSS-SECTION**

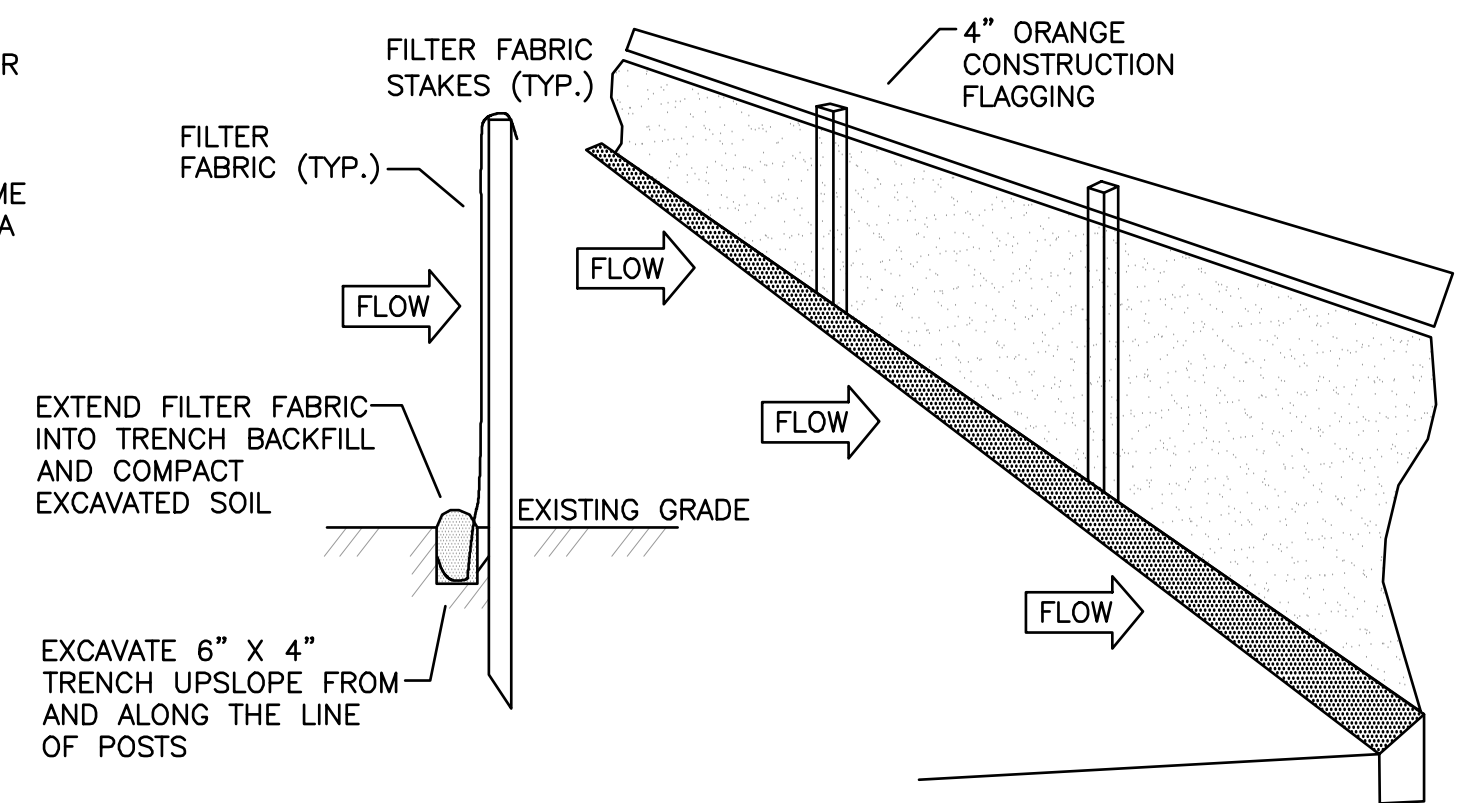
**DEWATERING FILTER BAG**

- NOTE:**
- BAG TO BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



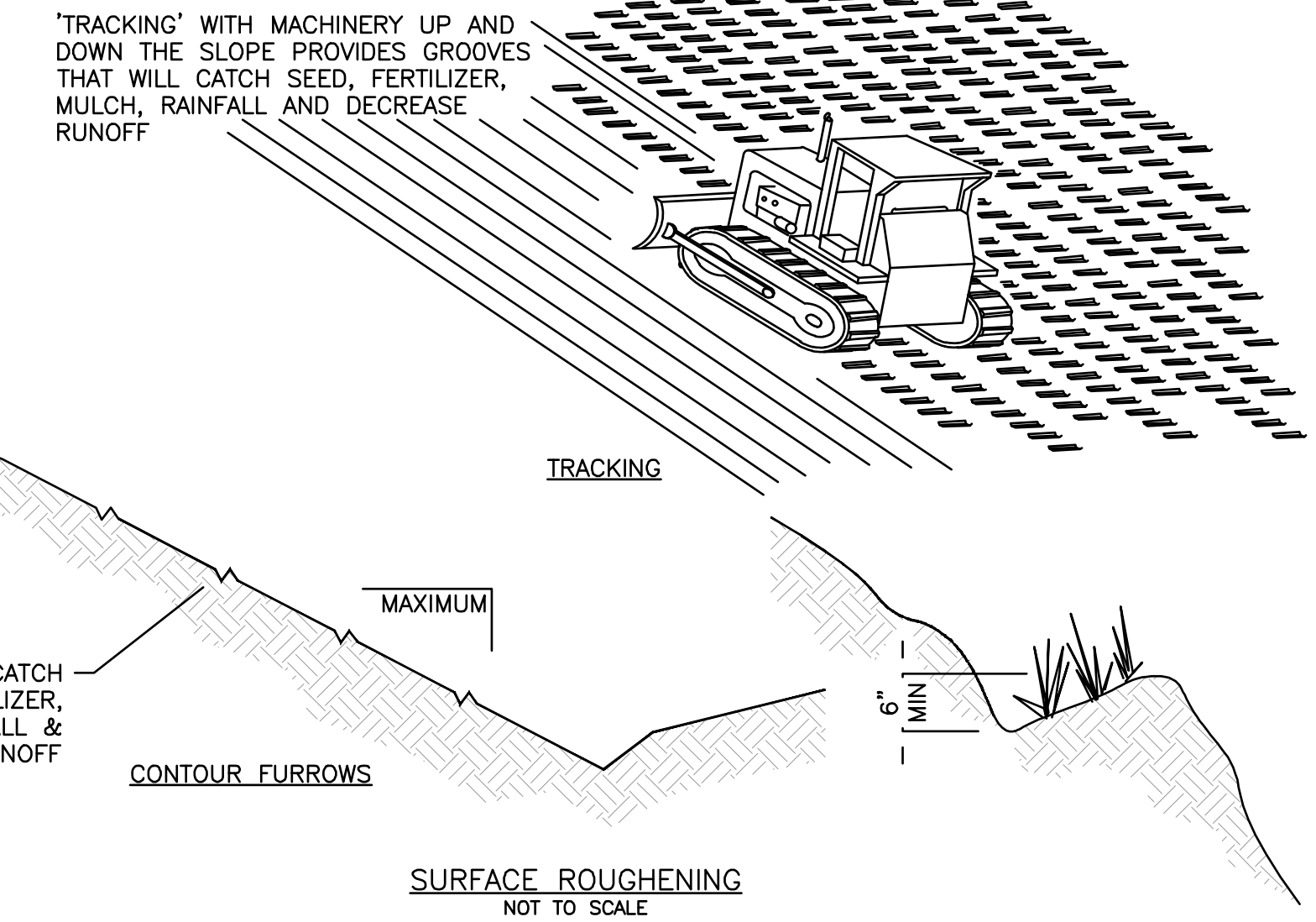
- NOTES:**
- ALL AREAS NOT TO BE WORKED FOR 14 DAYS OR MORE SHALL BE TEMPORARILY STABILIZED WITH MULCH, MATTING, OR OTHER MEASURES SUITABLE TO THE LOCATION.

**STOCKPILE AREA ISOLATION DETAIL**  
NOT TO SCALE



**SILT FENCE DETAIL**  
NOT TO SCALE

EROSION CONTROL SCHEDULE	
FOR SITE CONDITIONS	USE TYPE
AREAS FLATTER THAN 1:5 (20%) AND WITHIN WETLAND/WETLAND BUFFER AREAS	STRAW MULCH
AREAS 1:5 (20%) OR STEEPER	MATTING/BLANKETS
ALL DISTURBED AREAS	SEED AND MULCH OR SOD
ACROSS SLOPES	SILT FENCES
AROUND CATCH BASINS	
AROUND STOCK PILE AND BORROW AREAS	
TOES OF SLOPE	
ALONG STREAMS AND WATER BODIES	
AS SHOWN ON DRAWINGS	CHECK DAMS
AROUND CATCH BASINS	
IN DRAINAGE DITCHES	
9% SLOPE OR LESS - PLACE 100 FT. APART	
10% TO 19% - PLACE 50 FT. APART	
20% OR GREATER - PLACE 25 FT. APART	
AS SHOWN ON DRAWINGS	
IN DITCHES	SEDIMENT BASINS
PRIOR TO DISCHARGE TO BODIES OF WATER	
AS SHOWN ON DRAWINGS	
STABILIZED CONST. ENTRANCE	STABILIZED CONST. ENTRANCE
AS SHOWN ON DRAWINGS	



**SURFACE ROUGHENING**  
NOT TO SCALE

**WINTER CONSTRUCTION**  
SITE CONSTRUCTION MAY CONTINUE THROUGH THE WINTER MONTHS ON THIS PROJECT. IT IS IMPERATIVE THAT ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES BE IN PLACE AND FUNCTIONING TO ENSURE THEIR EFFECTIVENESS THROUGH THE WINTER AND SPRING SEASON. WINTER IN VERMONT CAN DIMINISH THE EFFECTIVENESS OF CONTROLS AND PREDISPOSE A SITE TO SEVERE EROSION AND SEDIMENTATION. DISTURBED AND BARE SOIL THAT IS WELL-FROZEN IS QUITE RESISTANT TO EROSION. HOWEVER, SEVERE EROSION OCCURS DURING THE MIDWINTER AND SPRING THAWS WHEN MELTING SNOW, THAWING SOILS AND HEAVY RAINS PRODUCE INTENSE RUNOFF OVER SATURATED UNSTABLE SOILS. FOR THESE REASONS, SOIL DISTURBANCES SHALL BE STABILIZED BY PRIOR TO THE START OF THE WINTER CONSTRUCTION SEASON (OCTOBER, 15TH). ALL EARTHWORK CONTINUING DURING THE WINTER CONSTRUCTION SEASON SHALL BE STABILIZED IN ACCORDANCE WITH THE STATE OF VERMONT EROSION PREVENTION AND SEDIMENT CONTROL REQUIREMENTS FOR WINTER CONSTRUCTION.

**INSPECTION AND MAINTENANCE**  
INSPECT EROSION PREVENTION AND SEDIMENT CONTROL MEASURES MORE FREQUENTLY IN THE WINTER AND SPRING THAN IN THE SUMMER. PAY CAREFUL ATTENTION TO WEATHER PREDICTIONS. WATCH FOR PREDICTED THAWS OR HEAVY RAINS. BEFORE SUCH EVENTS, CHECK ALL CONTROL MEASURES TO BE SURE THAT STRUCTURES WILL MANAGE THE POTENTIALLY HEAVY AND INTENSE RUNOFF AND SEDIMENT. PRACTICALLY CONSTANT MAINTENANCE OF CRITICAL CONTROL MEASURES MAY BE NECESSARY DURING THE WINTER AND EARLY SPRING TO PREVENT FAILURE OR OVERLOADING OF CONTROL MEASURES. BE PREPARED TO QUICKLY INSTALL A SECOND LINE OF DEFENSE IF PROBLEMS OCCUR. BE PREPARED TO DEVOTE A SUBSTANTIAL AMOUNT OF TIME, EQUIPMENT AND MANPOWER TO EROSION PREVENTION AND SEDIMENT CONTROL.

**FOLLOW-UP**  
AS EARLY AS IS PRACTICAL, AT THE BEGINNING OF THE NEXT GROWING SEASON, INSTALL PERMANENT VEGETATIVE CONTROLS AS SPECIFIED IN THIS EPSC PLAN.

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DRAWN BY: JWH

CHECKED BY: SNA

**SUBMITTALS**

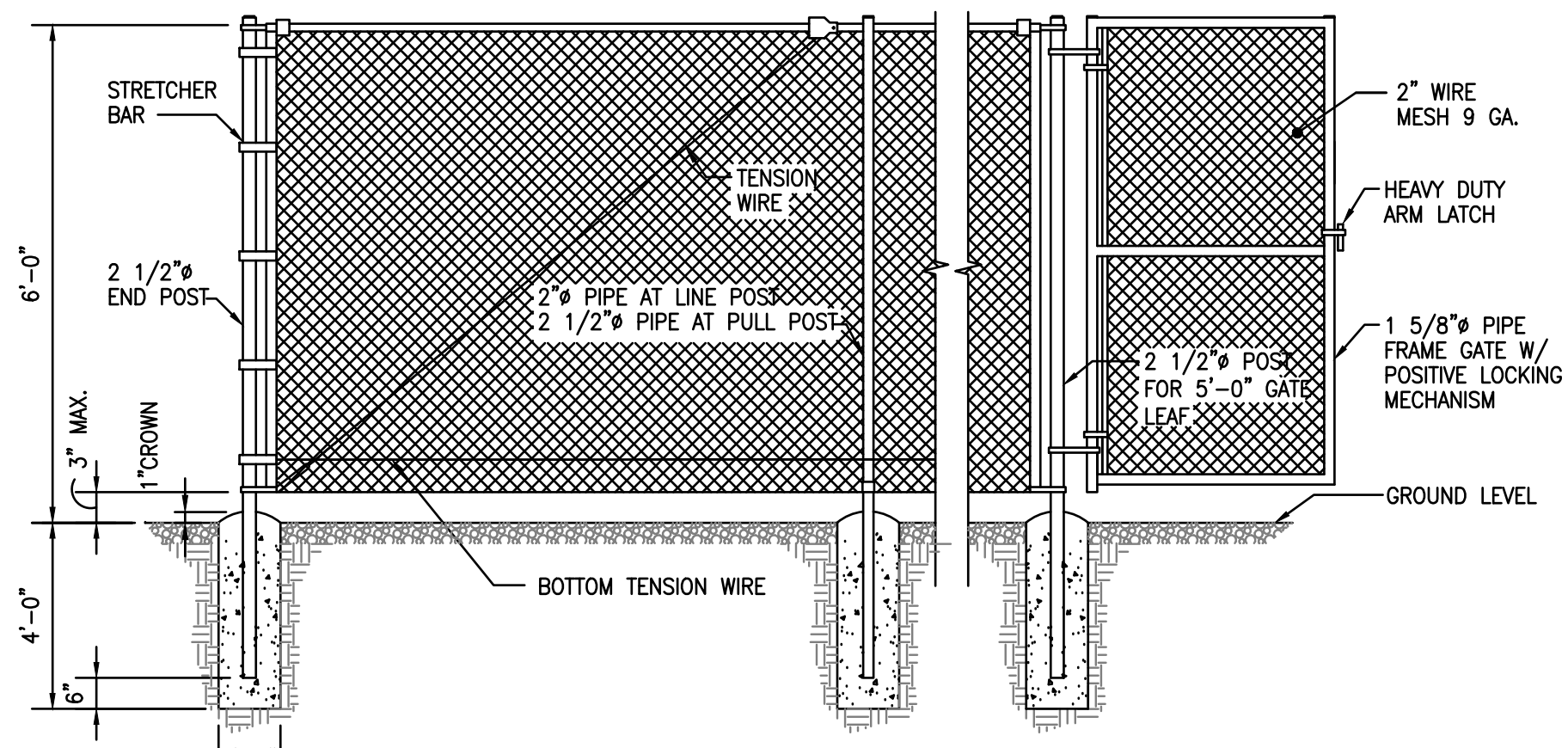
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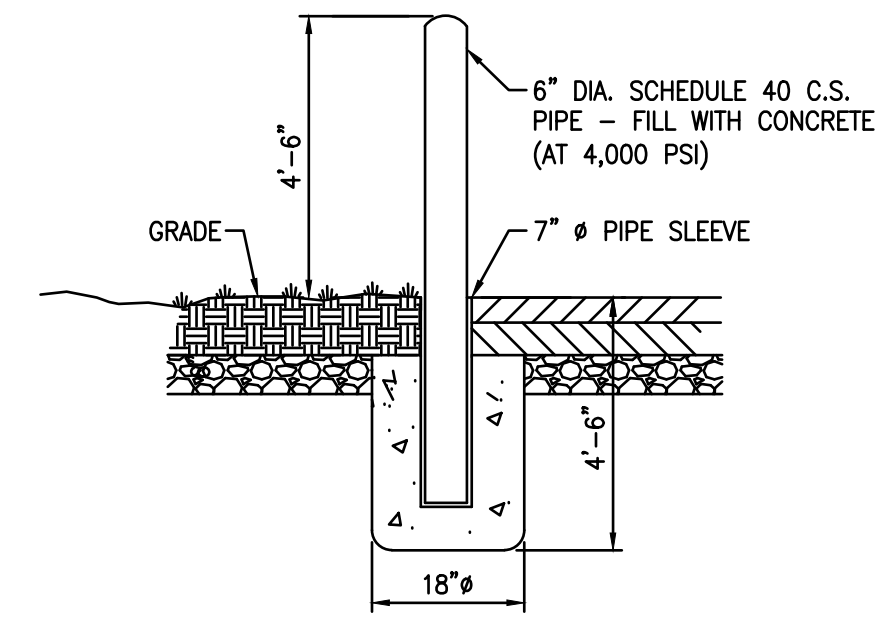
SHEET TITLE  
EROSION PREVENTION  
DETAILS

SHEET NUMBER  
**Z-7**

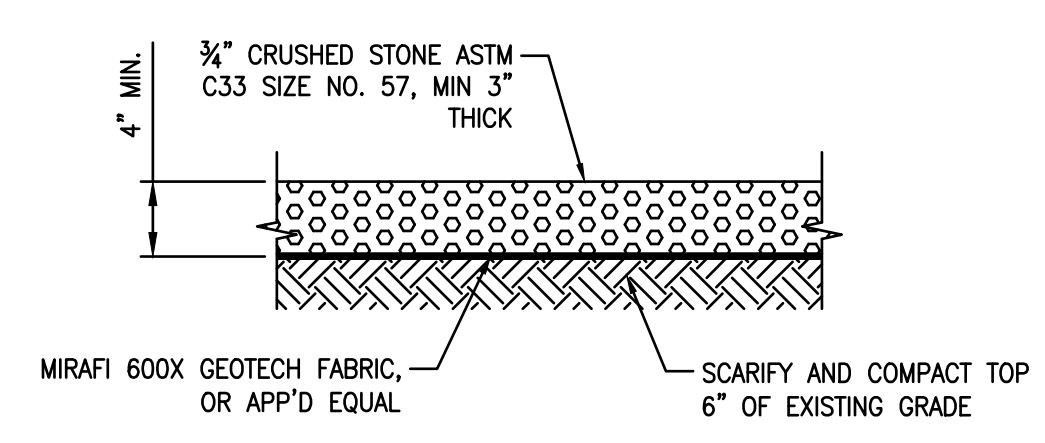


**1 FENCE DETAILS**  
Z-8 SCALE: N.T.S.

- FENCE NOTES:
1. INSTALL FENCING PER ASTM F-567, SWING GATE PER ASTM F-900.
  2. ALL END POSTS, LINE POSTS, PULL POSTS, POSTS FOR GATE LEAF, PIPES FOR GATE FRAME AND TOP RAILS SHALL BE SCHEDULE 40 PIPE PER ASTM F-1083.
  3. FABRIC SHALL BE 12 GA. CORE WIRE SIZE 2" MESH CONFORMING TO ASTM A-392.
  4. TENSION WIRE SHALL BE 7 GA. GALV. STEEL.
  5. TIE WIRE SHALL BE 11 GA. GALV. STEEL (MIN.) AT POSTS AND RAILS. A SINGLE WRAP FABRIC TIE AT TENSION WIRE BY HOG RINGS SPACED MAX. OF 24" INTERVALS
  6. BARBED WIRE SHALL BE DOUBLE STRAND 12 1/2" O.D. TWISTED WIRE TO MATCH W/FABRIC 14 GA., 4 PT. BARBS SPACED AT APPROXIMATELY 5" O.C.
  7. COMPLY WITH LOCAL ORDINANCES OF BARBED WIRE PERMIT REQUIREMENTS, IF REQUIRED.
  8. STEEL FENCE SYSTEM SHALL INCLUDE THE FENCE POSTS, FABRIC, GATE SYSTEM AND ALL NECESSARY ERECTION ACCESSORIES, FITTINGS AND FASTENINGS. ALL FENCE SYSTEM COMPONENTS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153. GATES SHALL BE SWING GATES WITH 5'-0" LEAFS. REFER TO TYPICAL FENCE DETAIL FOR ADDITIONAL INFORMATION. INSTALL FENCE AFTER CONCRETE HAS ATTAINED 75% OF 28 DAY DESIGN STRENGTH.
  9. SCREENING SLATS SHALL BE INSTALLED ON PROPOSED FENCING (COLOR: GREEN OR AS DET'S BY PROJECT OWNER)



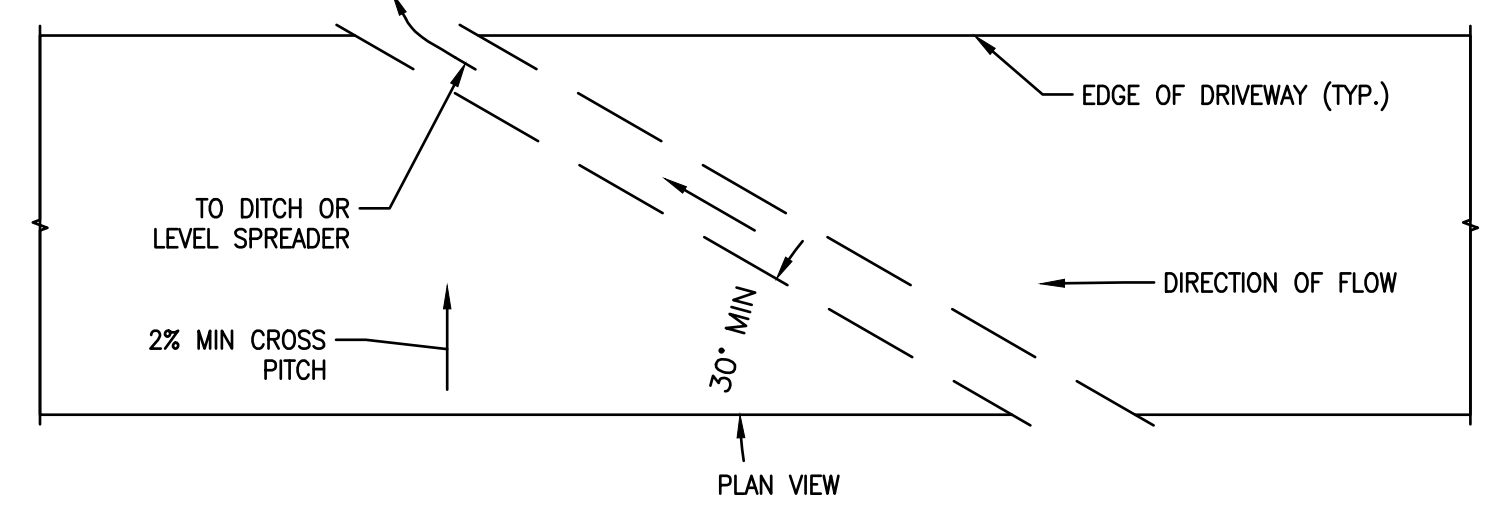
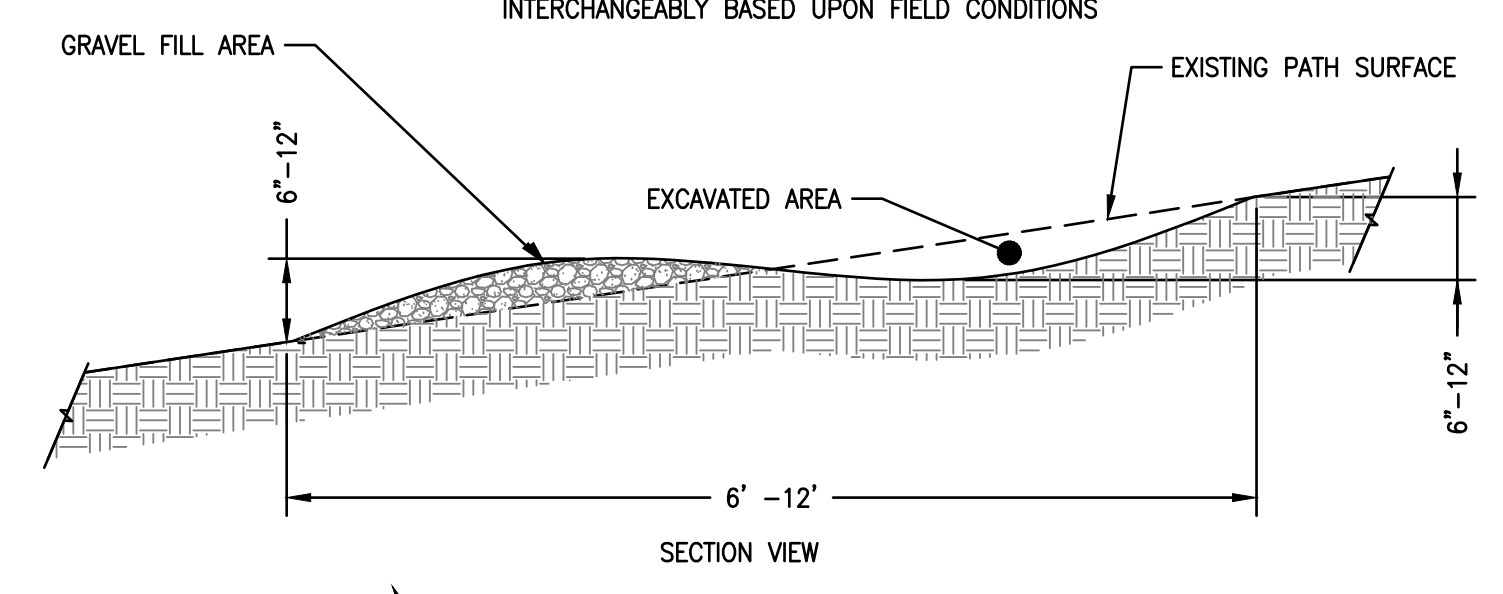
**2 BOLLARD DETAIL**  
Z-8 SCALE: N.T.S.



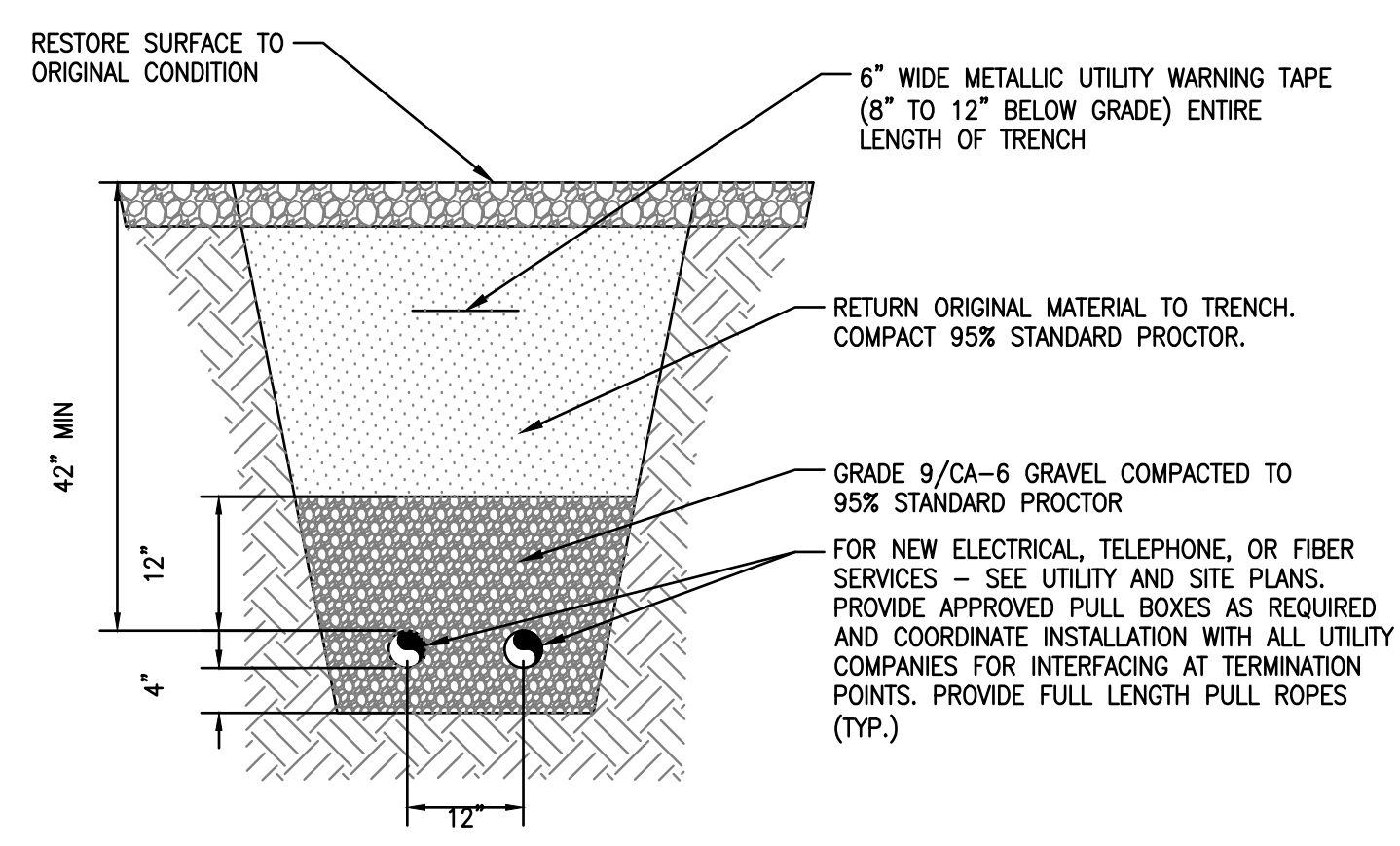
**3 STONE COMPOUND DETAIL**  
Z-8 SCALE: N.T.S.

SPACING NEEDED BETWEEN WATER BARS	
SLOPE	DIVERSION SPACING (FT)
< 5%	NONE
5%-10%	200
10%-20%	150
20%-35%	100

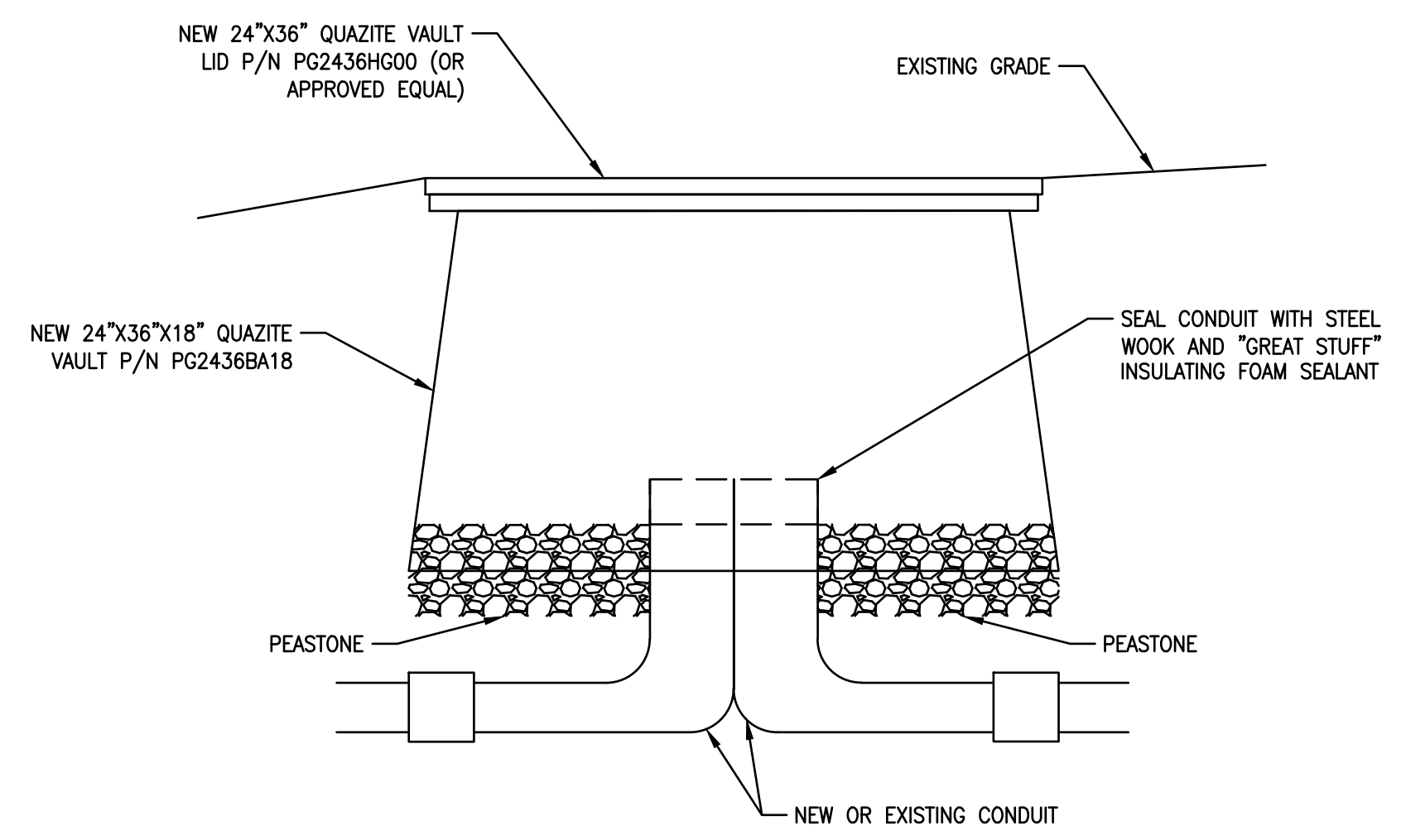
WATER BAR OR WATER DEFLECTOR MAY BE USED INTERCHANGEABLY BASED UPON FIELD CONDITIONS



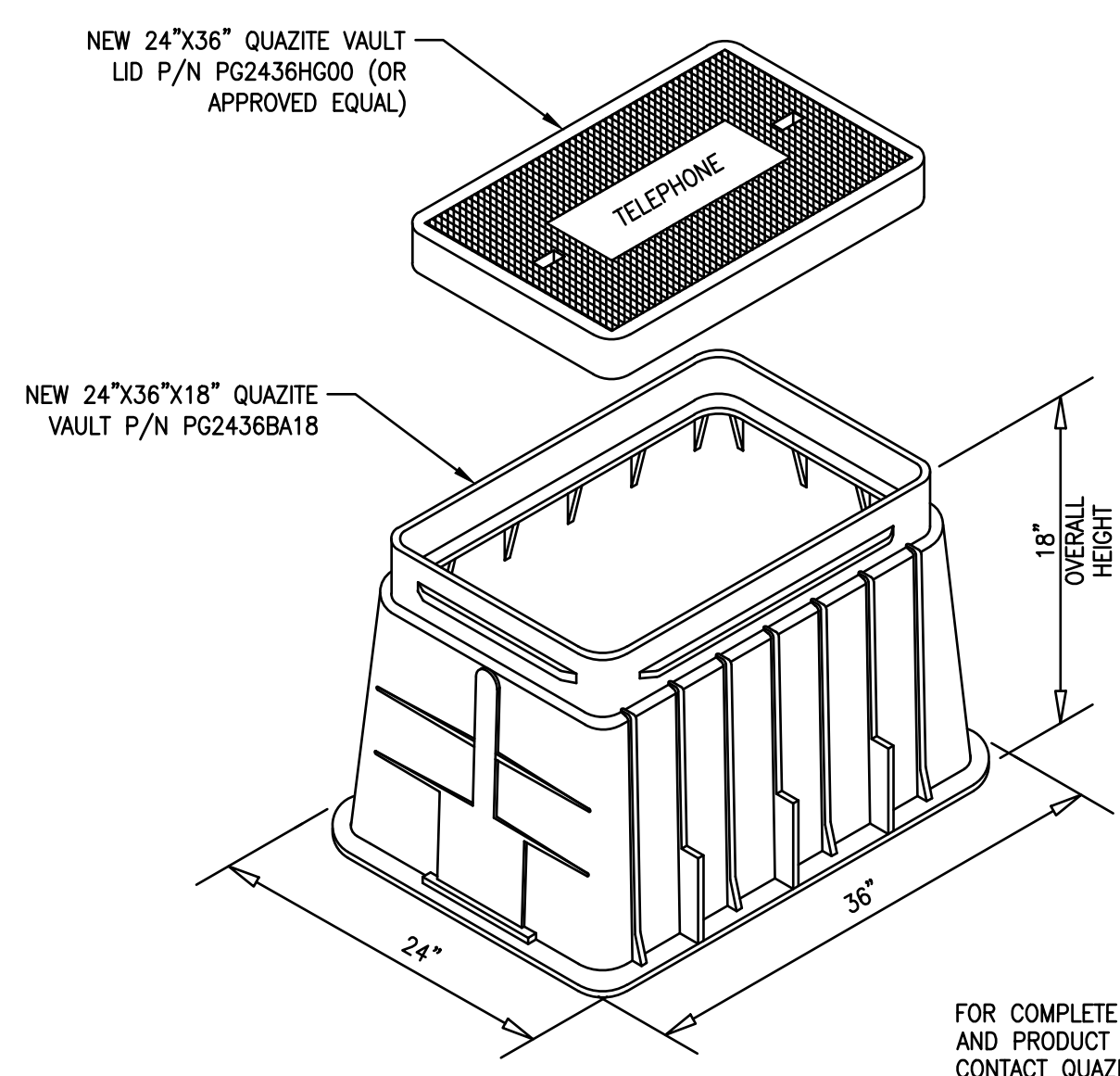
**6 WATER BAR DETAIL**  
Z-8 SCALE: N.T.S.



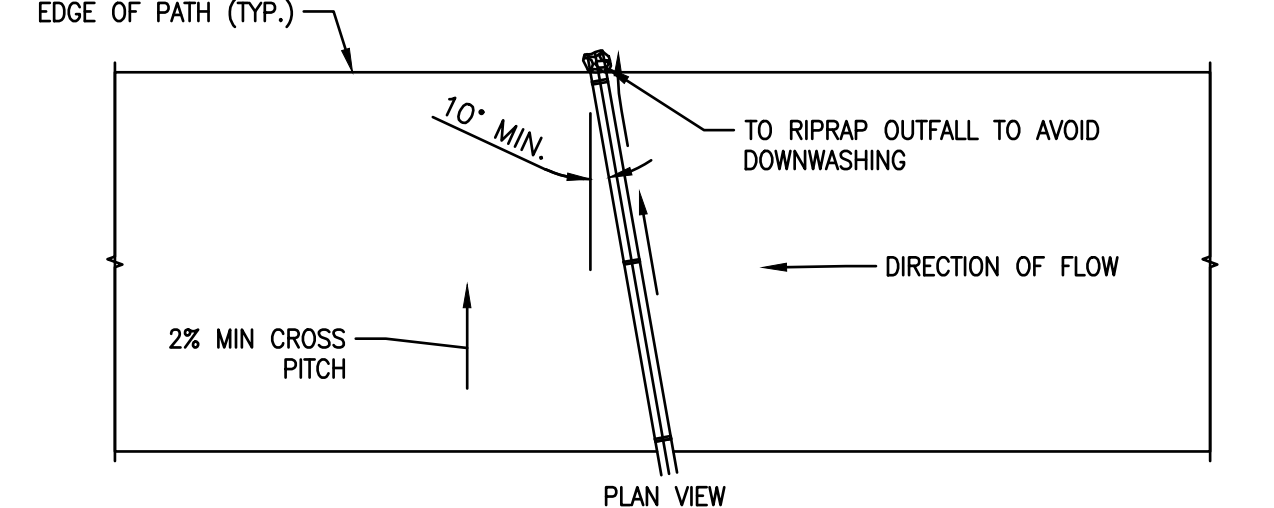
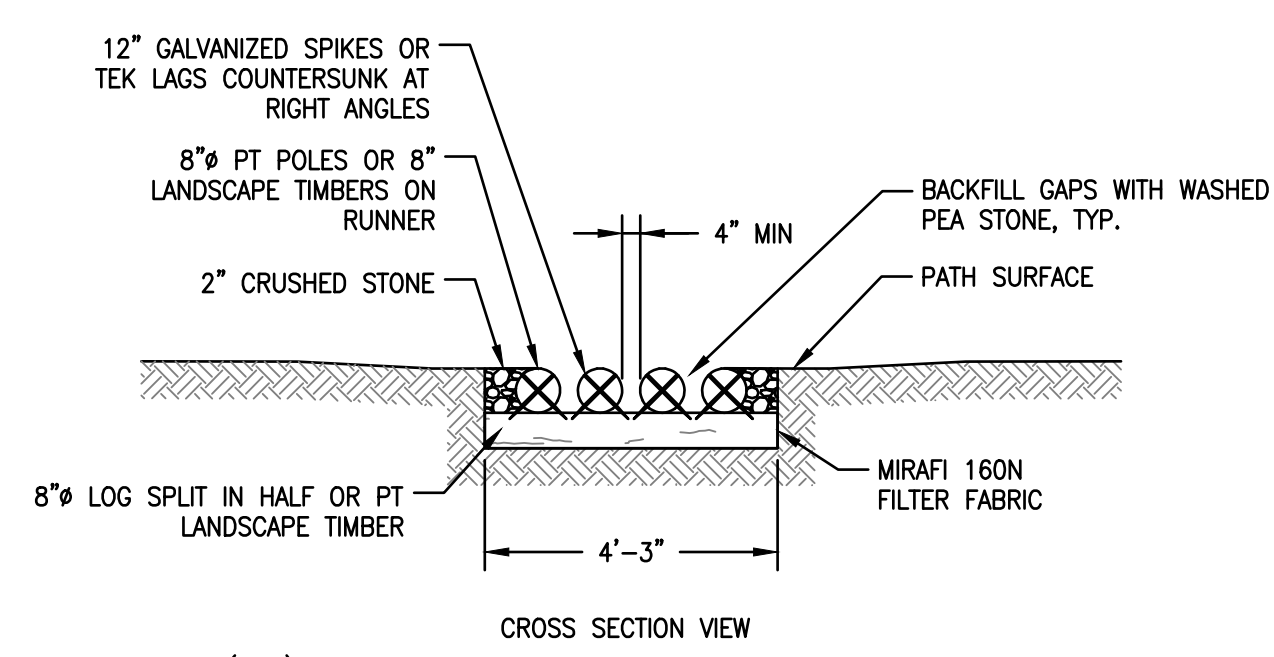
**5 TRENCH DETAIL AT ACCESS CROSSING**  
Z-8 SCALE: N.T.S.



**7 TELCO HANDHOLE WITH LID DETAIL**  
Z-8 SCALE: N.T.S.



**8 TELCO HANDHOLE ISOMETRIC**  
Z-8 SCALE: N.T.S.



**9 POLE CULVERT DETAIL**  
Z-8 SCALE: N.T.S.

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STATE OF VERMONT  
NOTARY PUBLIC  
NO. 135423  
CIVIL  
LISEE M. ADAMS  
PROFESSIONAL SEAL

AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

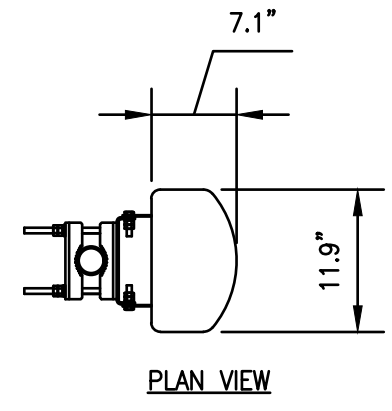
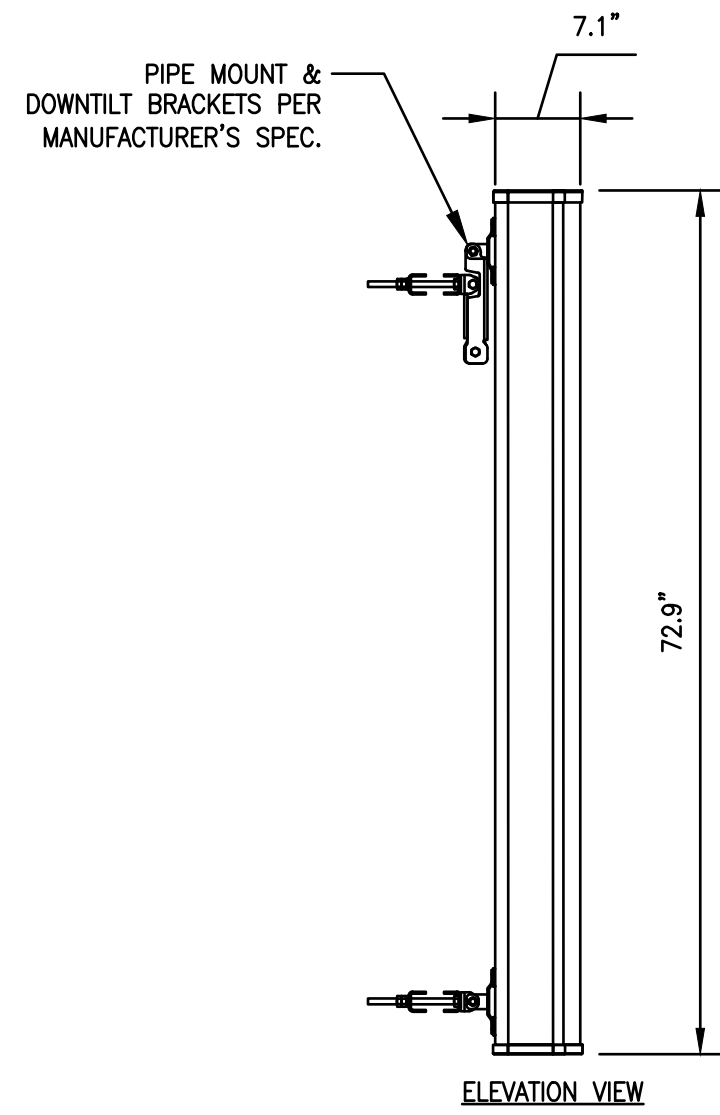
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REV#	DATE	DESCRIPTION
2	06/05/24	REVISED
3	08/19/24	REVISED
4	10/20/24	REVISED
5	10/24/24	REVISED
6	12/11/24	REVISED
7	02/18/25	REVISED
8	04/10/25	REVISED

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VT-VT-0111A  
**ROCHESTER**  
1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

SHEET TITLE  
DETAILS

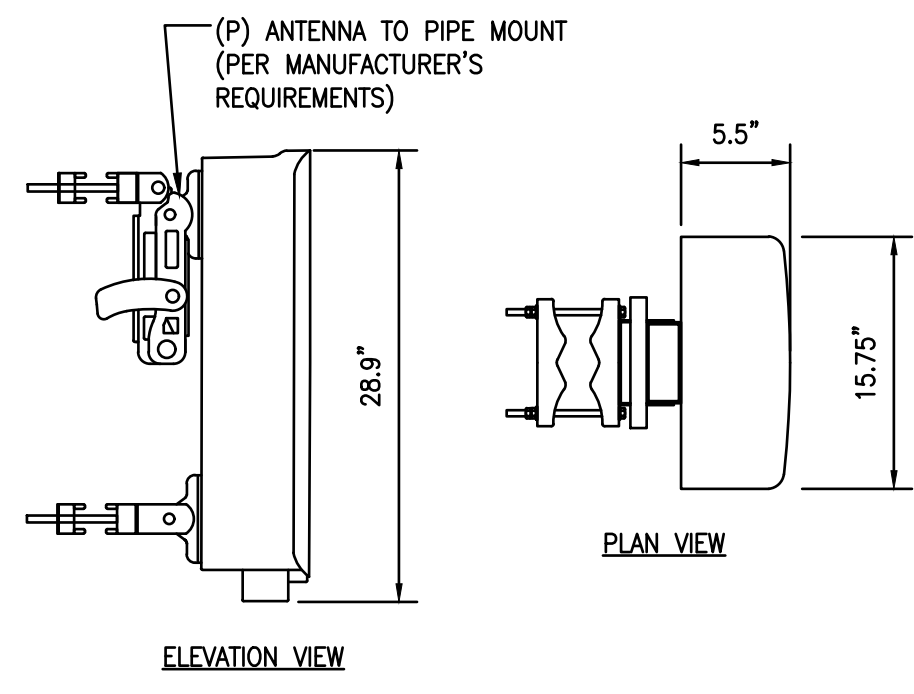
SHEET NUMBER  
**Z-8**



**NHH-65B-R2B**

MANUFACTURER: ANDREW-COMSCOPE  
 DIMENSIONS: (HxWxD) 72.9"x11.9"x7.1"  
 WEIGHT: 43.7 LBS.

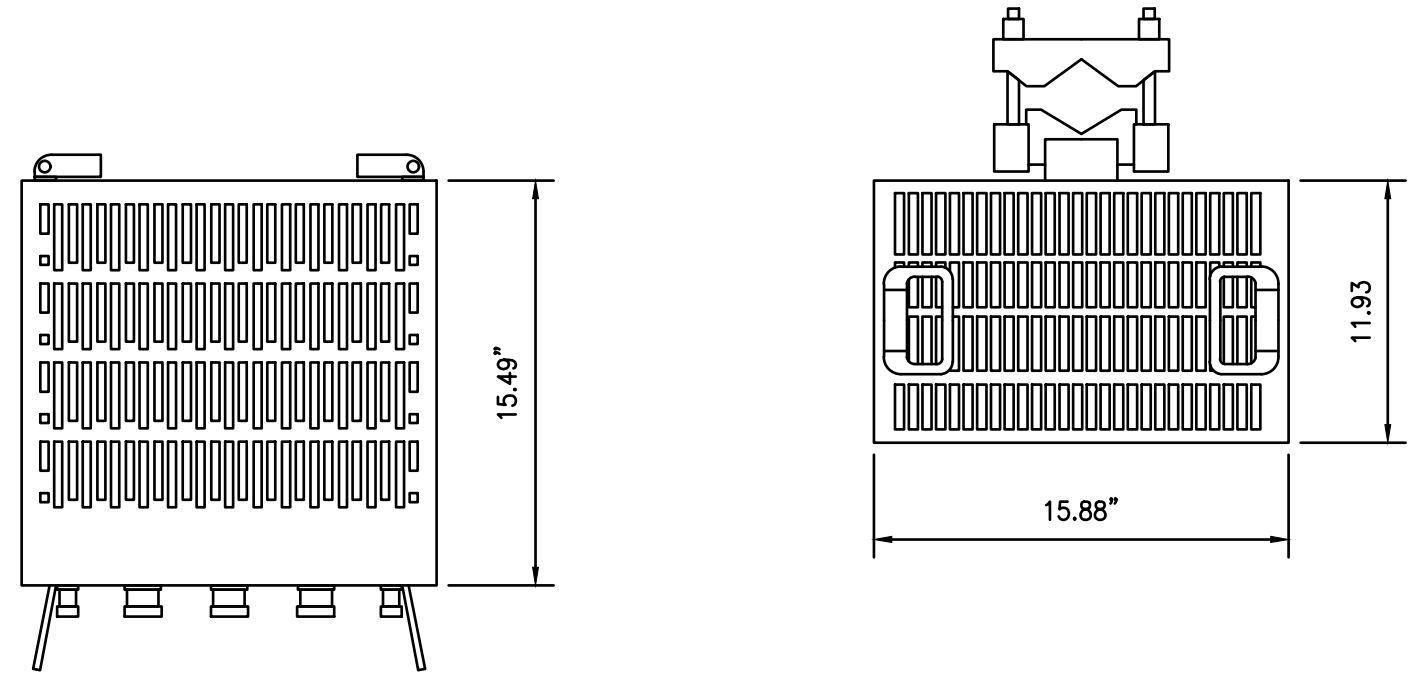
**1 ANTENNA DETAIL**  
 Z-9 SCALE: N.T.S.



**MT6413-77A ANTENNA**

MANUFACTURER: SAMSUNG  
 DIMENSIONS (HxWxD): 28.9" X 15.75" X 5.5"  
 WEIGHT: 57.3 LBS.

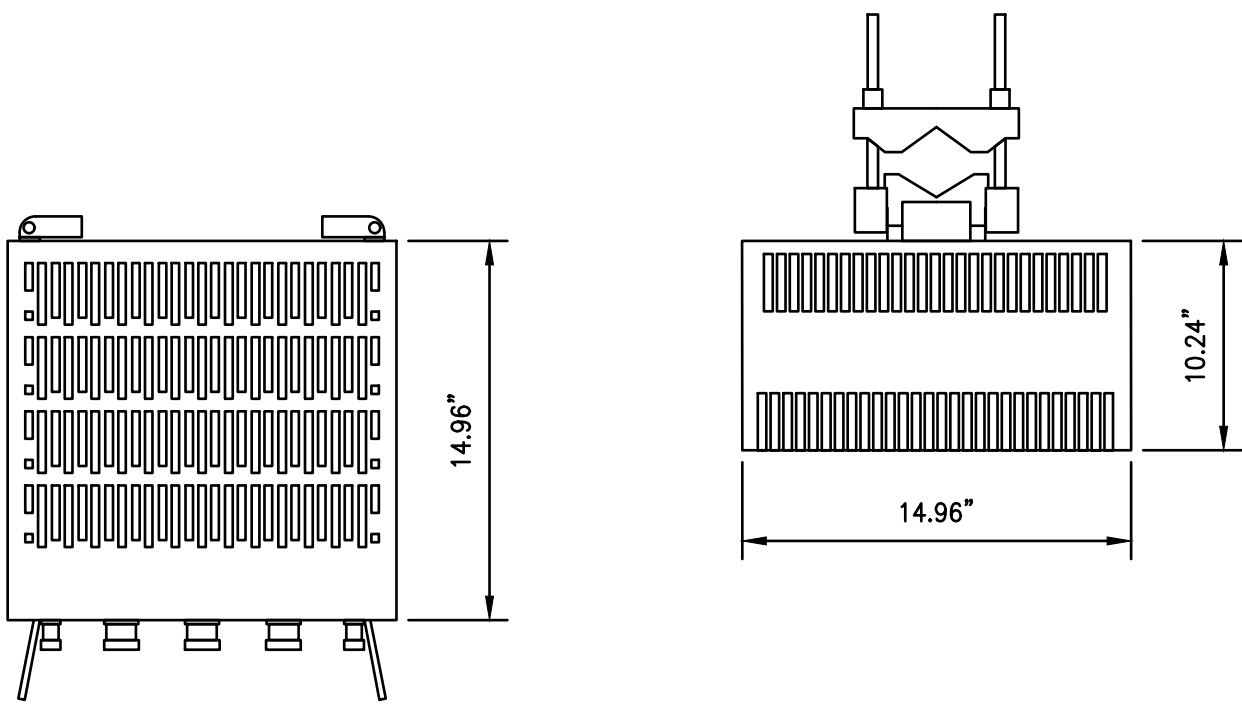
**2 ANTENNA DETAIL**  
 Z-9 SCALE: N.T.S.



**RF4439D-25A**

MANUFACTURER: SAMSUNG  
 DIMENSIONS: (HxWxD) 15.49"x15.88"x11.93" (WITH FINGER GUARD)  
 WEIGHT: 40.4 LBS. (WITH FINGER GUARD)

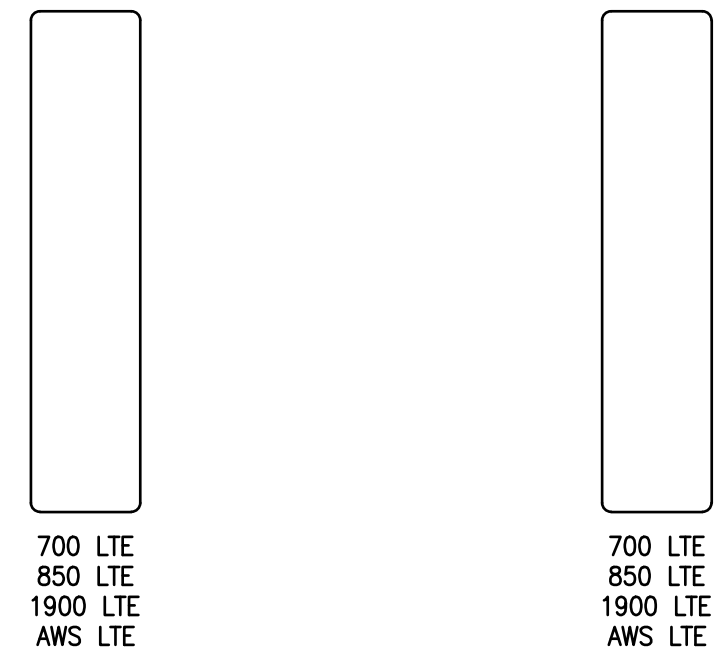
**3 RRU DETAILS**  
 Z-9 SCALE: NOT TO SCALE



**RF4461D-13A**

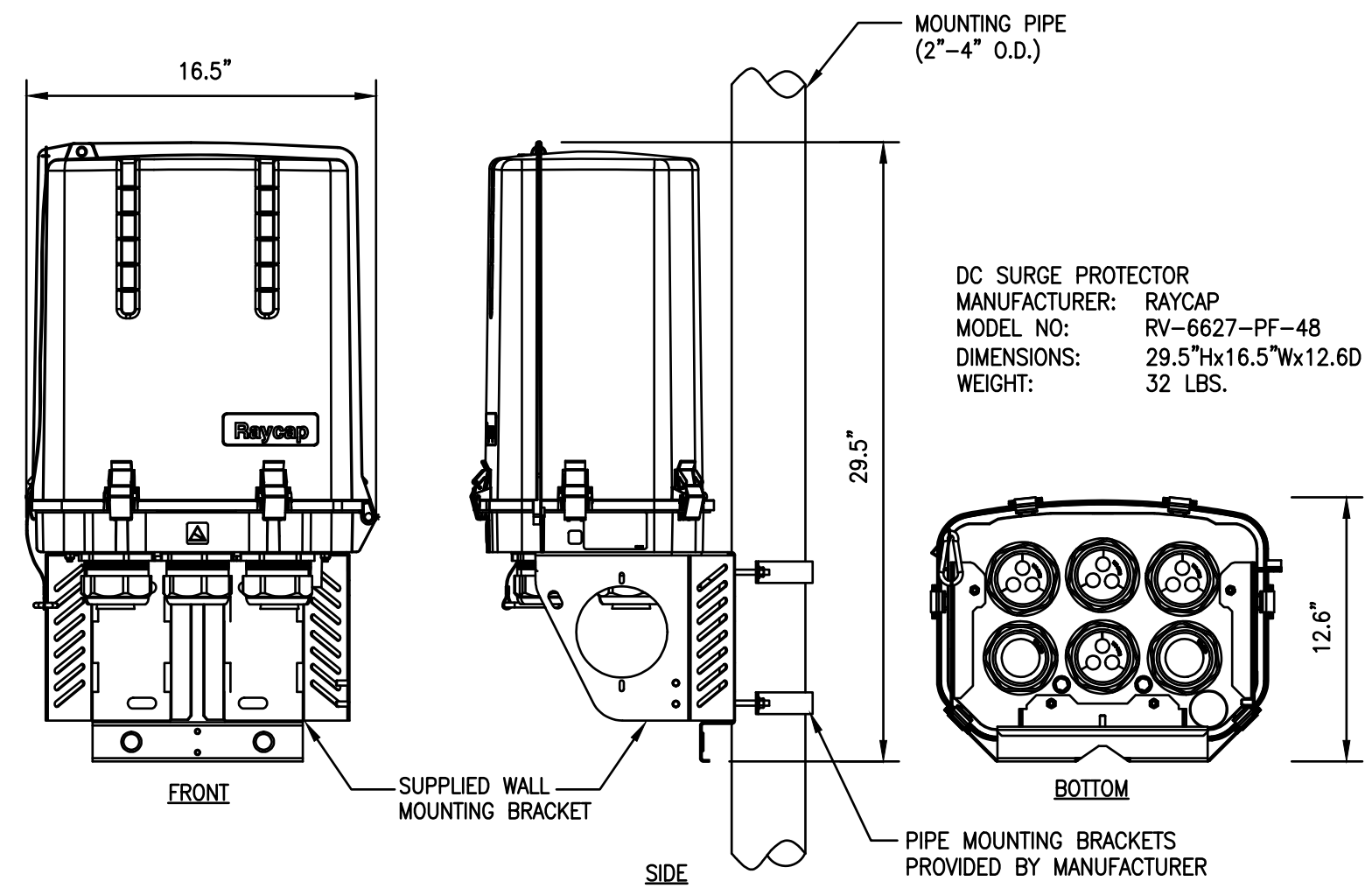
MANUFACTURER: SAMSUNG  
 DIMENSIONS: (HxWxD) 14.96"x14.96"x10.24" (WITHOUT FINGER GUARD)  
 WEIGHT: 79 LBS. (WITHOUT FINGER GUARDS)

**4 RRU DETAILS**  
 Z-9 SCALE: NOT TO SCALE

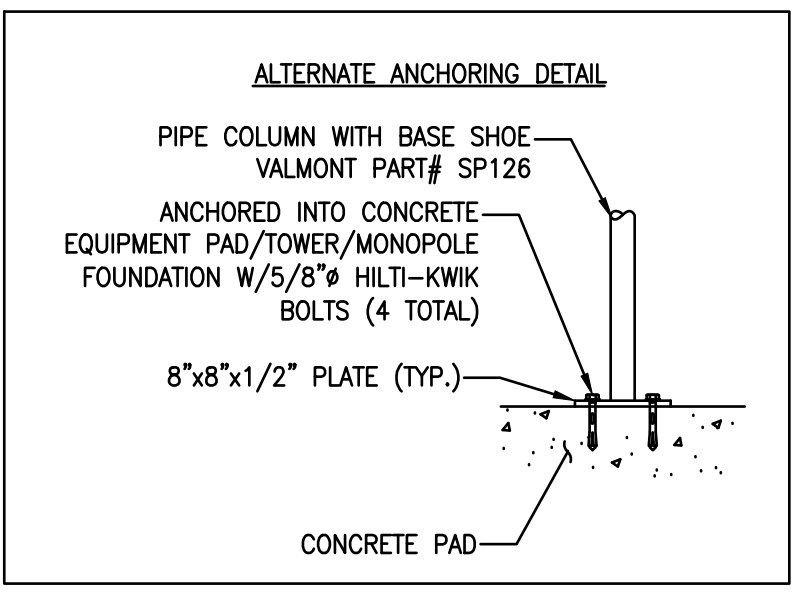
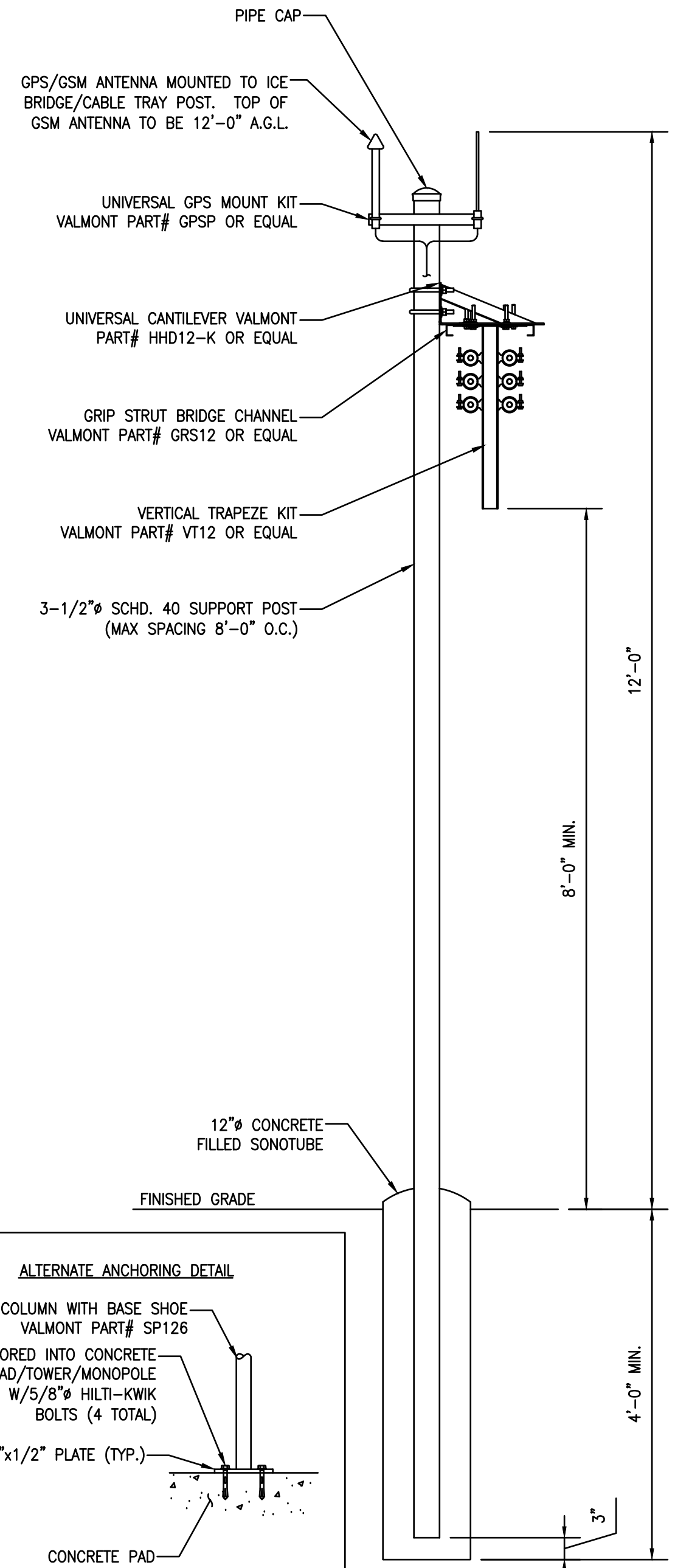


ANTENNAS SHOWN FROM BACKSIDE OF SECTOR

**5 PROPOSED ANTENNA CONFIG**  
 Z-9 SCALE: N.T.S.



**6 SURGE PROTECTOR (OVP) DETAILS**  
 A-4 SCALE: SCALE: N.T.S.

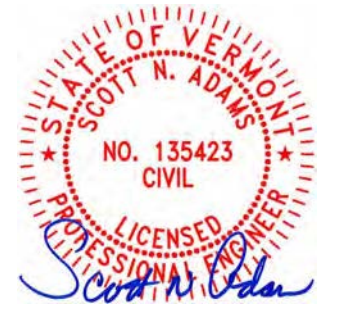


**7 CABLE BRIDGE DETAIL**  
 A-5 SCALE: N.T.S.

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 (508) 330-3300 TEL

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AEG PROJECT #: 2023-0079

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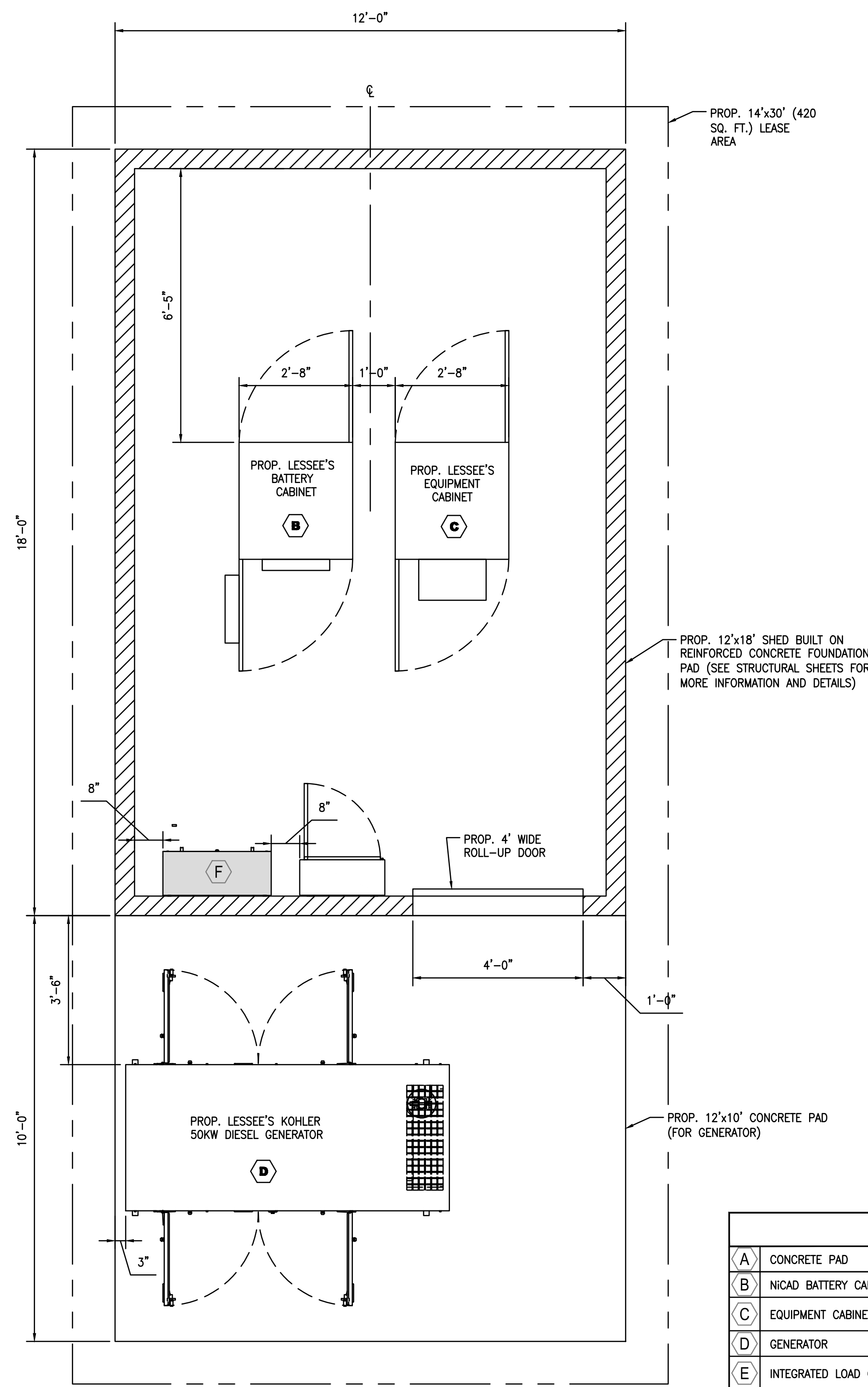
SUBMITTALS		
REV#	DATE	DESCRIPTION
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VT-VT-0111A  
**ROCHESTER**  
 1030 VT ROUTE 100  
 ROCHESTER, VT 05767  
 WINDSOR COUNTY

SHEET TITLE  
 VERIZON DETAILS

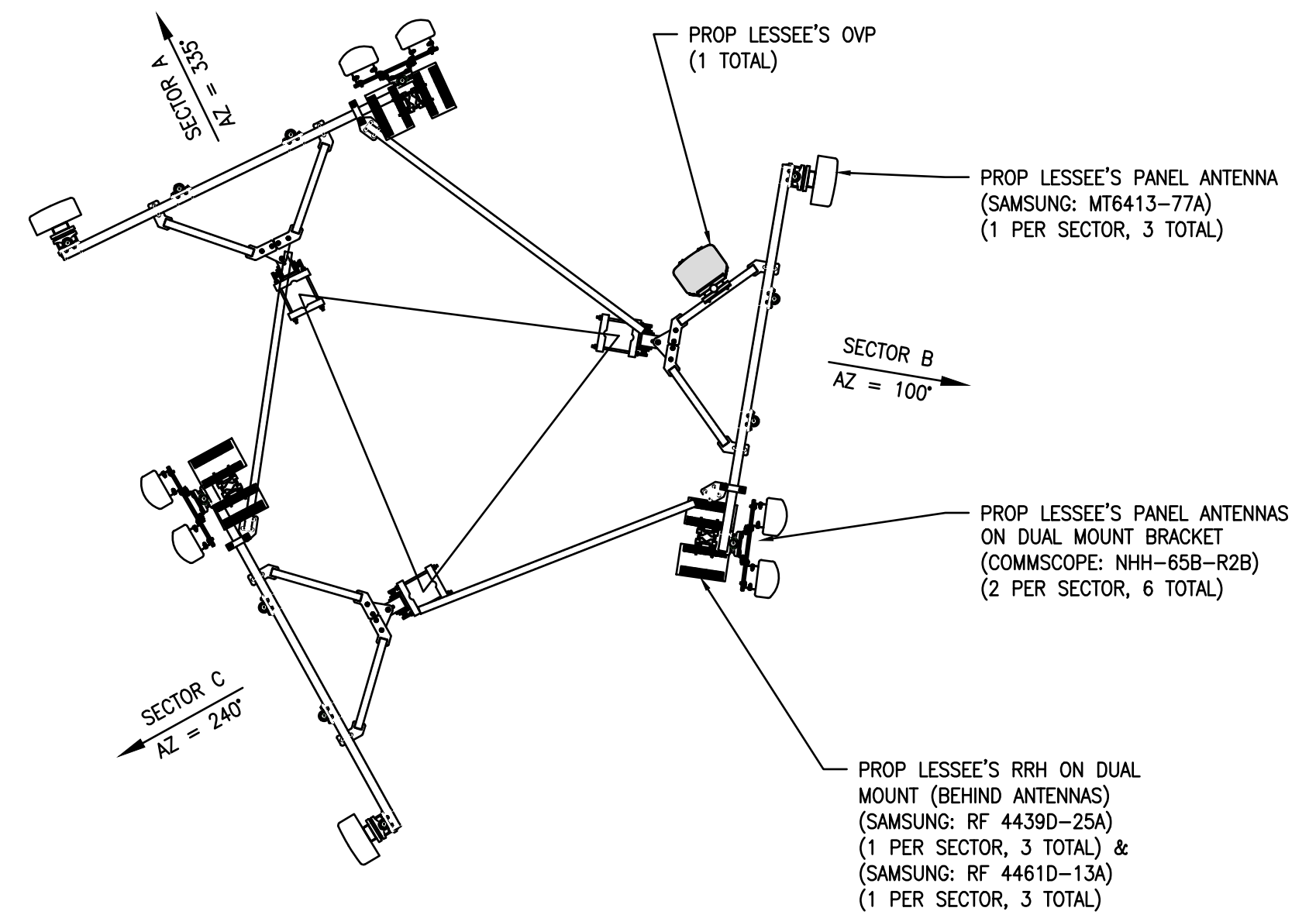
SHEET NUMBER  
**Z-9**



1 PROPOSED EQUIPMENT PLAN  
Z-10 SCALE: 22x34: 1"=2'  
11x17: 1"=4'

EQUIPMENT LEGEND	
A	CONCRETE PAD 12'x20'x12" THICK CONCRETE PAD
B	NICAD BATTERY CABINET COMMSCOPE CMC74-36B BATTERY CABINET
C	EQUIPMENT CABINET COMMSCOPECMC74-36E-4KWAC-TC EQUIPMENT CABINET
D	GENERATOR KOHLER 50KW DIESEL GENERATOR
E	INTEGRATED LOAD CENTER (ILC) ASCO D300 L-SERIES POWER TRANSFER LOAD CENTER RATED 200A, 240VAC, SINGLE PHASE/ 3 WIRE, TYPE 3R ENCLOSURE
F	TELCO BOX INTERSECT (T313589-DC48-HE) 39"X20"X20" POWDER COATED ALUMINUM, NEMA 3R JUNCTION BOX/ENCLOSURE
G	LED WORK LAMP LED WORK LIGHT W/ 60-MINUTE TIMER (TO VERIFY WITH LOCAL CX MANAGER)
H	UNISTRUT H-FRAME P1000 UNISTRUT 10' LENGTHS & UNISTRUT P2860 END CAPS
J	PIPE COLUMNS W/ BASE SHOE 12" WIDE GRIP-SPAN BRIDGE CHANNEL
K	ICE CANOPY W/ BASE SHOE 10'x12' CANOPY - SITE PRO 1 P/N COV1012-B

VERIZON PROJECT INFORMATION & DIMENSIONS				
DIMENSION	REQUIRED	EXISTING	PROPOSED	NET INCREASE
SURFACE AREA OF THE FACES OF THE EQUIPMENT ON SUPPORT STRUCTURE	< 75 SQ.FT.	ANTENNA (0) 0"x0" =0 SQ.FT.	ANTENNA: (6) 72.0"x11.9" =35.70 SQ.FT.	CHANGE TO THE FACIAL SURFACE AREA: 53.41 SQ.FT -00.00 SQ.FT 53.41 SQ.FT
		ANTENNA (0) 0"x0" =0 SQ.FT.	(3) 28.9"x15.7" =9.45 SQ.FT.	
		EXISTING EQUIPMENT TOTAL = 0 SQ.FT.	RRH: (3) 15.88"x15.49" =0.0 SQ.FT. (3) 14.96"x14.96" =0.0 SQ.FT. (BEHIND ANTENNAS) OVP BOX: (1) 29.5"x12.6" =2.58 SQ.FT. PROPOSED EQUIPMENT TOTAL =47.73 SQ.FT.	
MAXIMUM VERTICAL EXTENSION FROM SUPPORT STRUCTURE	< 10'-0"	0'-0"	0"	0"
MAXIMUM HORIZONTAL EXTENSION FROM SUPPORT STRUCTURE	< 10'-0"	0'-0"	7'-3"	7'-3"
IMPERVIOUS SURFACE AREA BEING ADDED TO SITE	< 300 SQ.FT.	0 SQ.FT.	394 SQ.FT.	394 SQ.FT.
NO ANTENNAS TO BE REMOVED (4) 72.0"x18.0" & (2) 72.0"x13.8" PANEL ANTENNAS TO BE INSTALLED				



2 PROPOSED ANTENNA PLAN  
Z-10 SCALE: 22x34: 1"=4'  
11x17: 1"=8'

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STATE OF VERMONT  
NOTARY PUBLIC  
NO. 135423  
CIVIL  
LICENSURE  
PROFESSIONAL ENGINEER  
Scott M. Adams

AEG PROJECT #: 2023-0079  
DRAWN BY: JWH  
CHECKED BY: SNA

SUBMITTALS		
REV#	DATE	DESCRIPTION
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VT-VT-0111A  
**ROCHESTER**  
1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

SHEET TITLE  
PROPOSED ANTENNA AND EQUIPMENT PLANS

SHEET NUMBER  
**Z-10**



**Installation**

Mats should be in good condition to ensure proper installation, use and removal. Operating heavy equipment in wetlands shall be minimized, and such equipment other than fixed equipment (drill rigs, fixed cranes, etc.) shall not be stored, maintained, fueled or repaired in wetlands unless the equipment is broken down and cannot be easily removed.

An adequate supply of spill containment equipment shall be maintained on site. General Permits in New England do not authorize dragging construction mats into position in waters of the U.S.

Woody vegetation (trees, shrubs, etc.) shall be cut at or above ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area.

Where feasible, place mats in a location that would minimize the amount needed for the wetlands crossing.

Minimize impacts to wetland areas during installation, use, and removal. Install adequate erosion and sediment controls at approaches to mats to promote a smooth transition to, and minimize sediment tracking onto, swamp mats.

In most cases, construction mats should be placed along the travel area so that the individual boards are resting perpendicular to the direction of traffic. No gaps should exist between mats. Place mats far enough on either side of the resource area to rest on firm ground.

Provide standard construction mat BMP details to work crews (examples provided below).

**Wetland/Stream Channel Crossing**

At "dry" crossings where no flow is present or anticipated during project construction, the mats may be placed directly onto the ground in order to prevent excessive rutting, provided stream banks and bottoms are not adversely altered.

Construction mats may be used as a temporary bridge over a stream to allow vehicles access to the work site. Small sections of mat are placed within and along the stream parallel to the flow of water. Mats may then be placed perpendicular to the stream, resting on top of the initial construction mat supports. It may be necessary to place additional reinforcement for extra stability and to minimize the amount of sediment that could fall between the spaces of each timber.

In areas where wildlife passage or migration is a consideration, mats may be installed in accordance with the diagram "Typical Stream Crossing with Swamp Mats."

Mats should not be placed so that they restrict the natural flow of the stream.

Minimize number of stream/wetland crossings. Where feasible, locate crossing site where stream channel is narrow for the shortest possible clear span and where stream banks are stable and well defined. For large wetland complexes, consider accessing structures from opposite sides where possible to avoid crossing the entire wetland. More than one layer of mats may be necessary in areas which are inundated or have deep organic wetland soils.

Construction Mat BMPs March 2016

**Maintenance**

Matted wetland crossings should be monitored to assure correct functioning of the mats. Inspect mats after use. Look for any defects or structural problems. Mats which become covered with soils or construction debris should be cleaned and the materials removed and disposed of in an upland location. The material should not be scraped and shoveled into the resource area. Mats which become imbedded must be reset or layered to prevent mud from covering them or water passing over them.

**Removal**

Matting should be removed by "backing" out of the site, removing mats one at a time. Any rutting or significant indentations identified during mat removal should be regraded immediately, taking care not to compact soils.

Mats should be cleaned before transport to another wetland location to remove soil and any invasive plant species seed stock or plant material.

Mats shall be cleaned of soil and any invasive plant species seed stock or plant material from before installation.

Cleaning methods may include but are not limited to shaking or dropping mats in a controlled manner with a piece of machinery to knock off attached soil and debris, spraying with water or air, and sweeping.

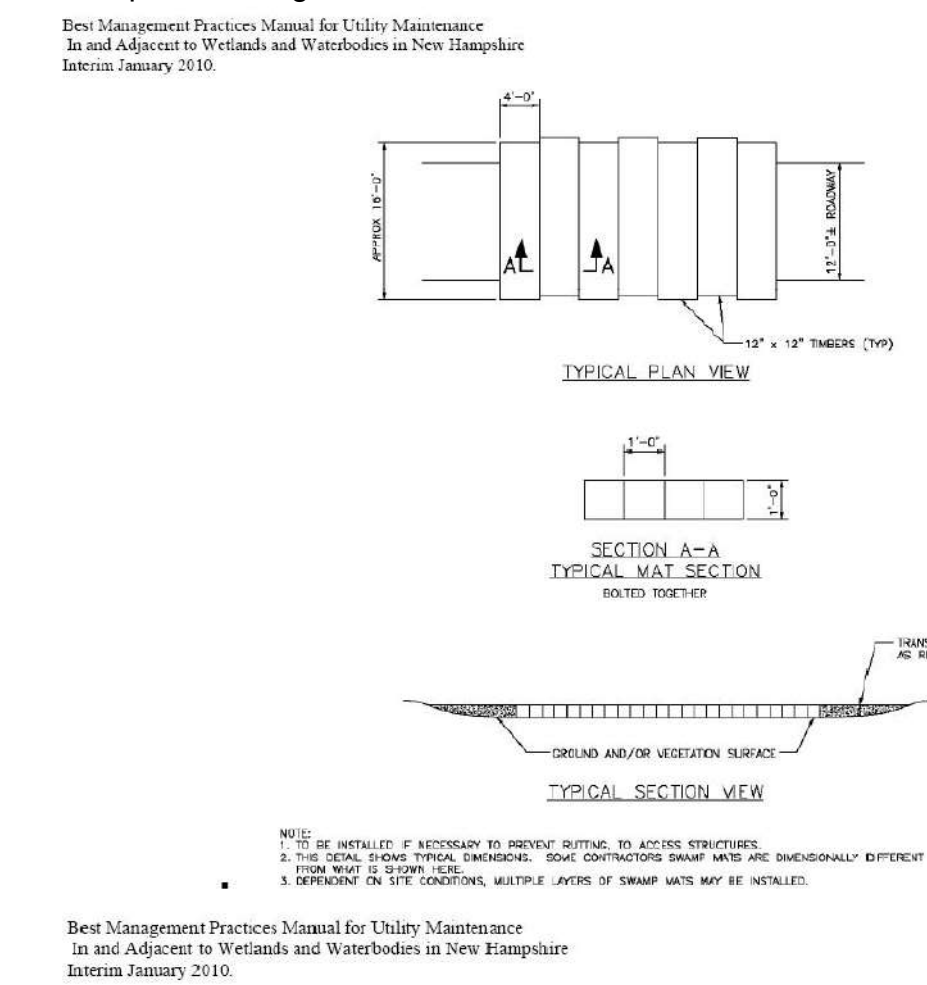
Crossings should be inspected following mat removal to determine the level of restoration required.

**Restoration**

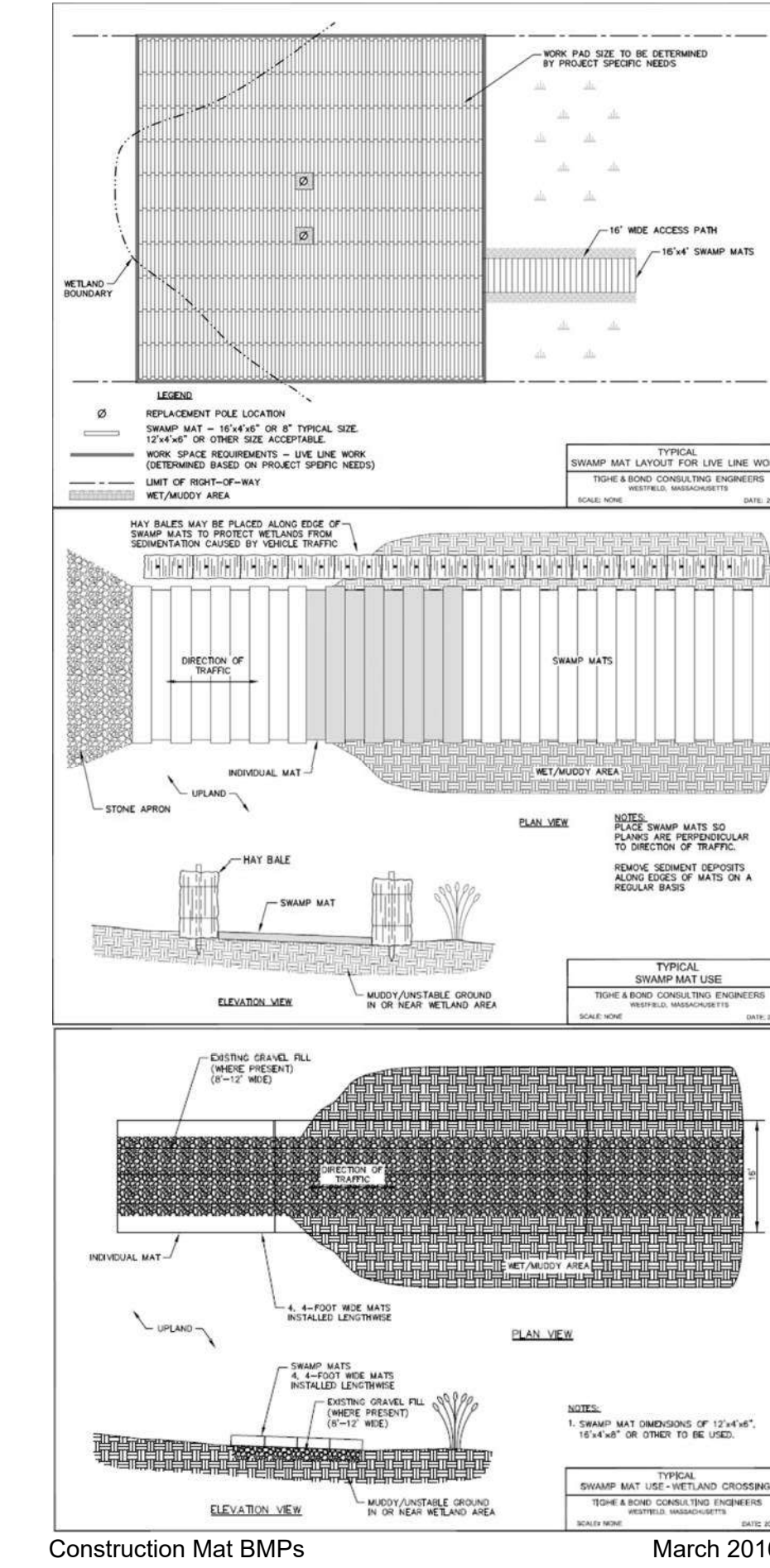
Special precautions should be taken to promptly stabilize areas of disturbed soil located near wetlands and streams. Matted areas within wetlands shall be restored to their original condition and elevation. This may involve natural revegetation from existing root and seed stock of native plant species. Conditions may warrant planting and the bPATHcast of a wetland seed mix over the matted area to supplement the existing seed and rootstock. Seed mixes and vegetation shall contain only plant species native to New England. The use of mulch in wetlands shall consist of weed-free mulch to mitigate the risk of the spread of invasive plant species.

Construction Mat BMPs March 2016

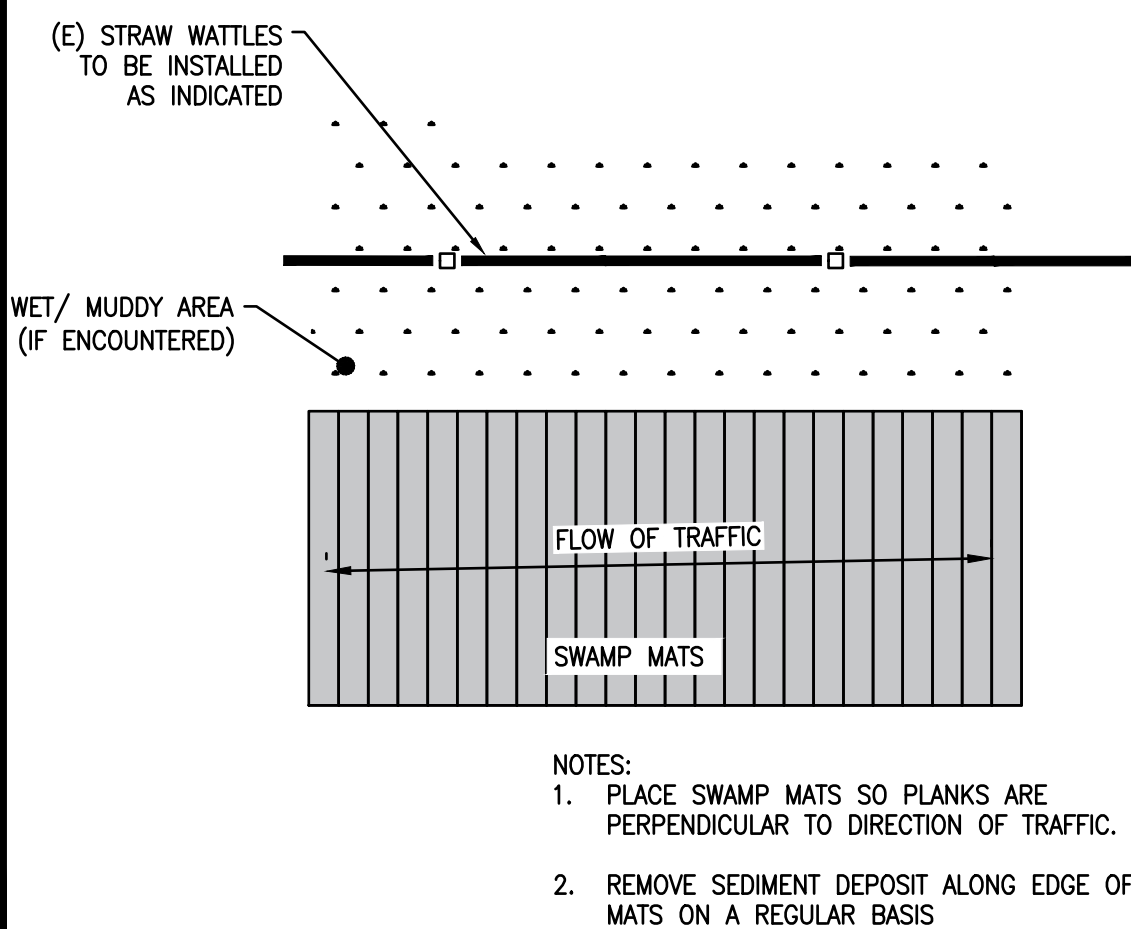
**Example Mat Diagrams -**



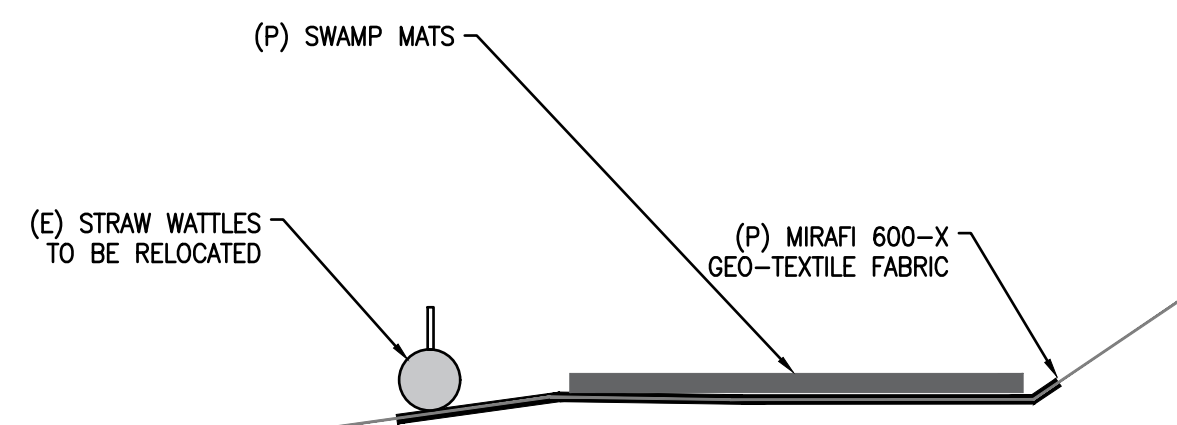
Construction Mat BMPs March 2016



Construction Mat BMPs March 2016



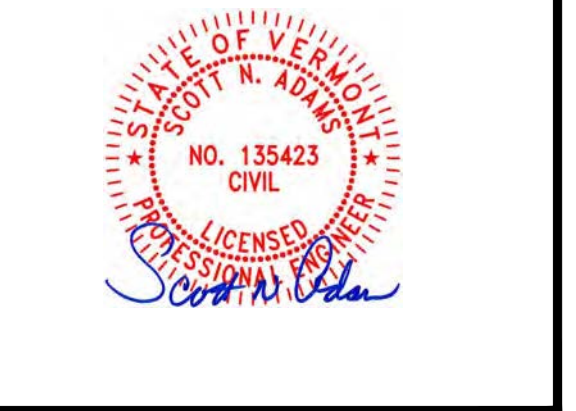
5 EROSION CONTROL MAT DETAIL  
A-3 SCALE: N.T.S.



**verizon**  
118 FLANDERS ROAD  
WESTBOROUGH, MA 01581  
(508) 330-3300 TEL

**Vertex Towers LLC**  
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AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

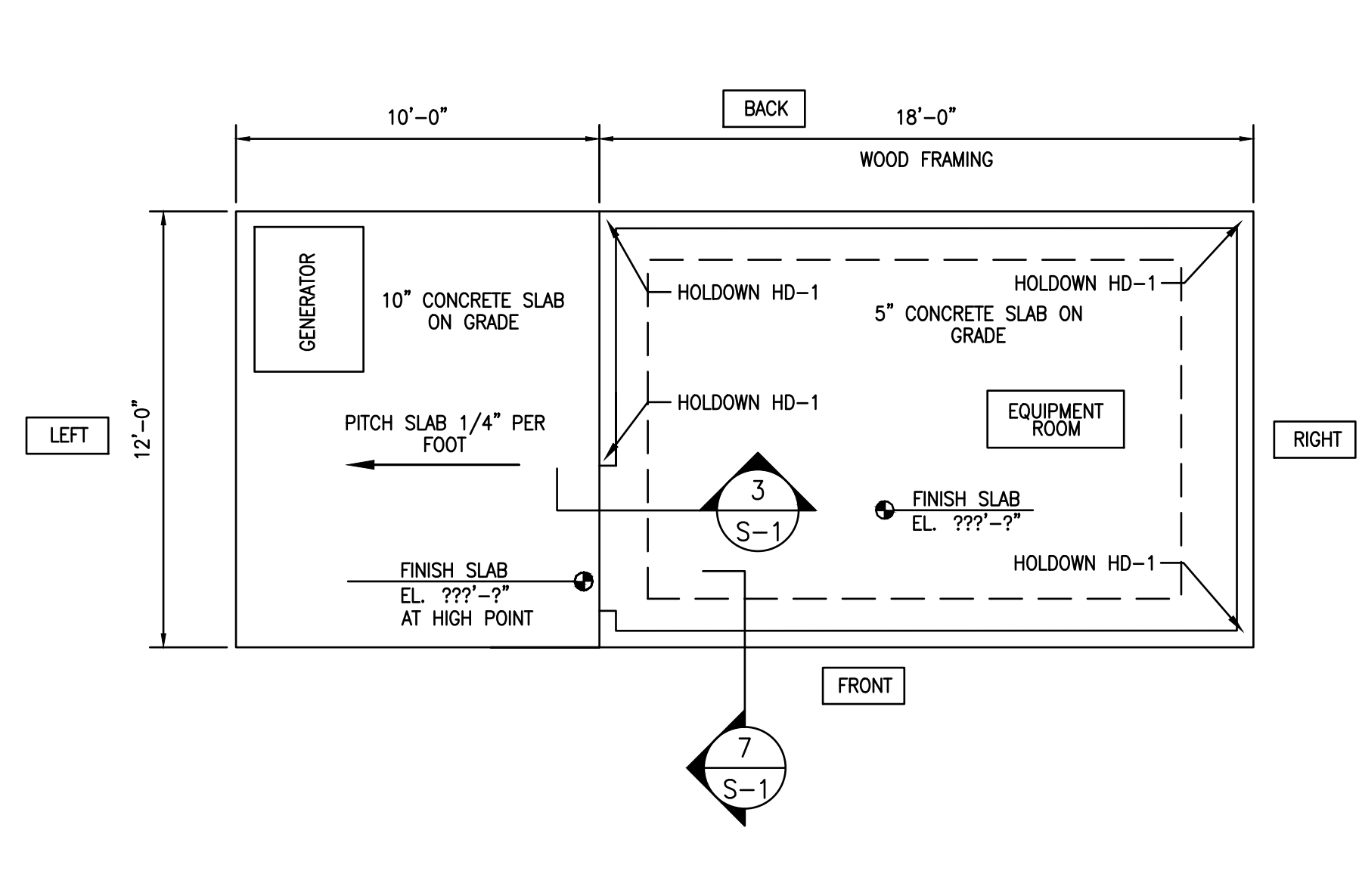
SUBMITTALS		
REV#	DATE	DESCRIPTION
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VT-VT-0111A  
**ROCHESTER**  
1030 VT ROUTE 100  
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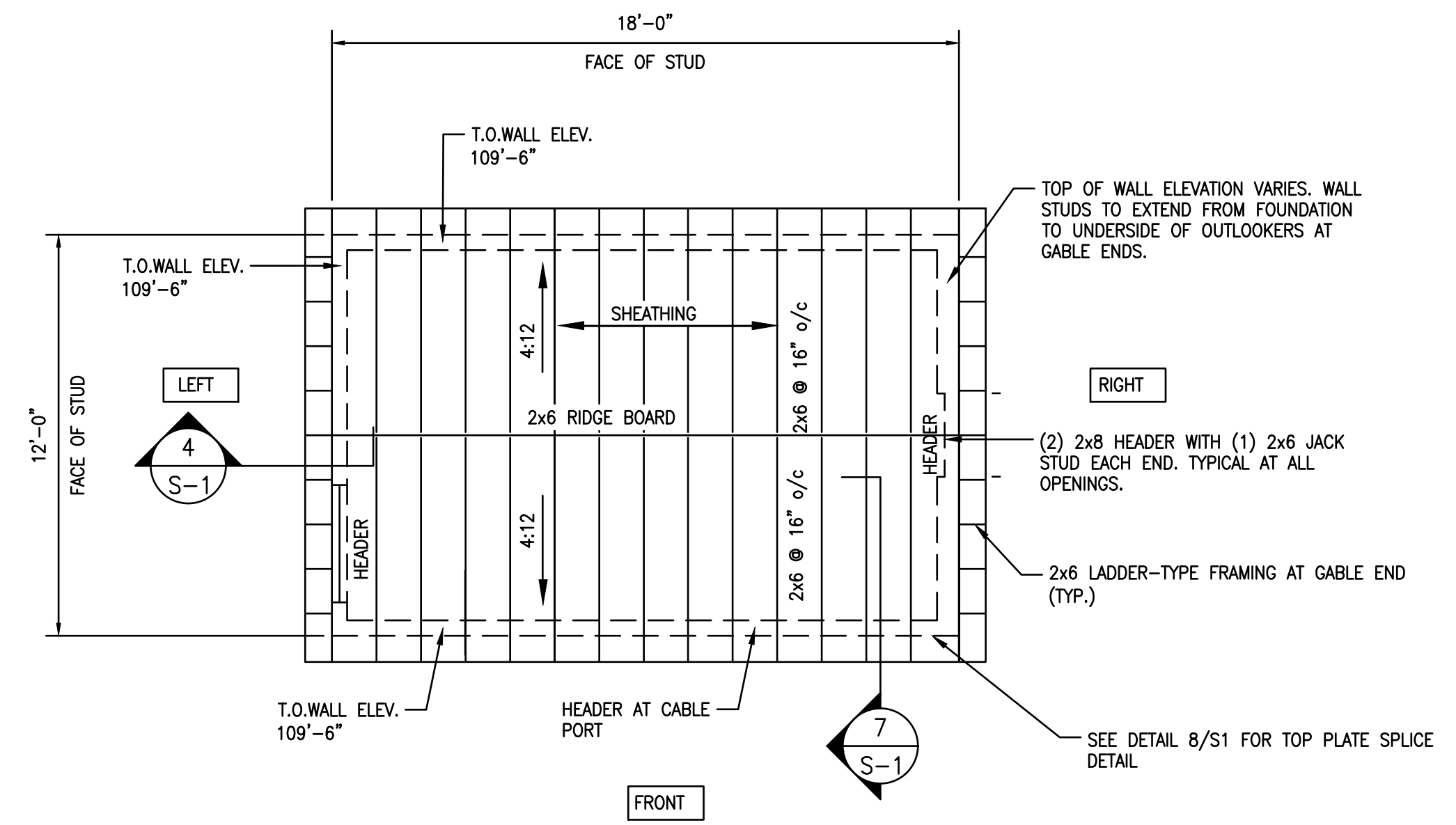
SHEET TITLE  
TEMPORARY ACCESS  
MAT DETAIL/NOTES

SHEET NUMBER  
**Z-11**



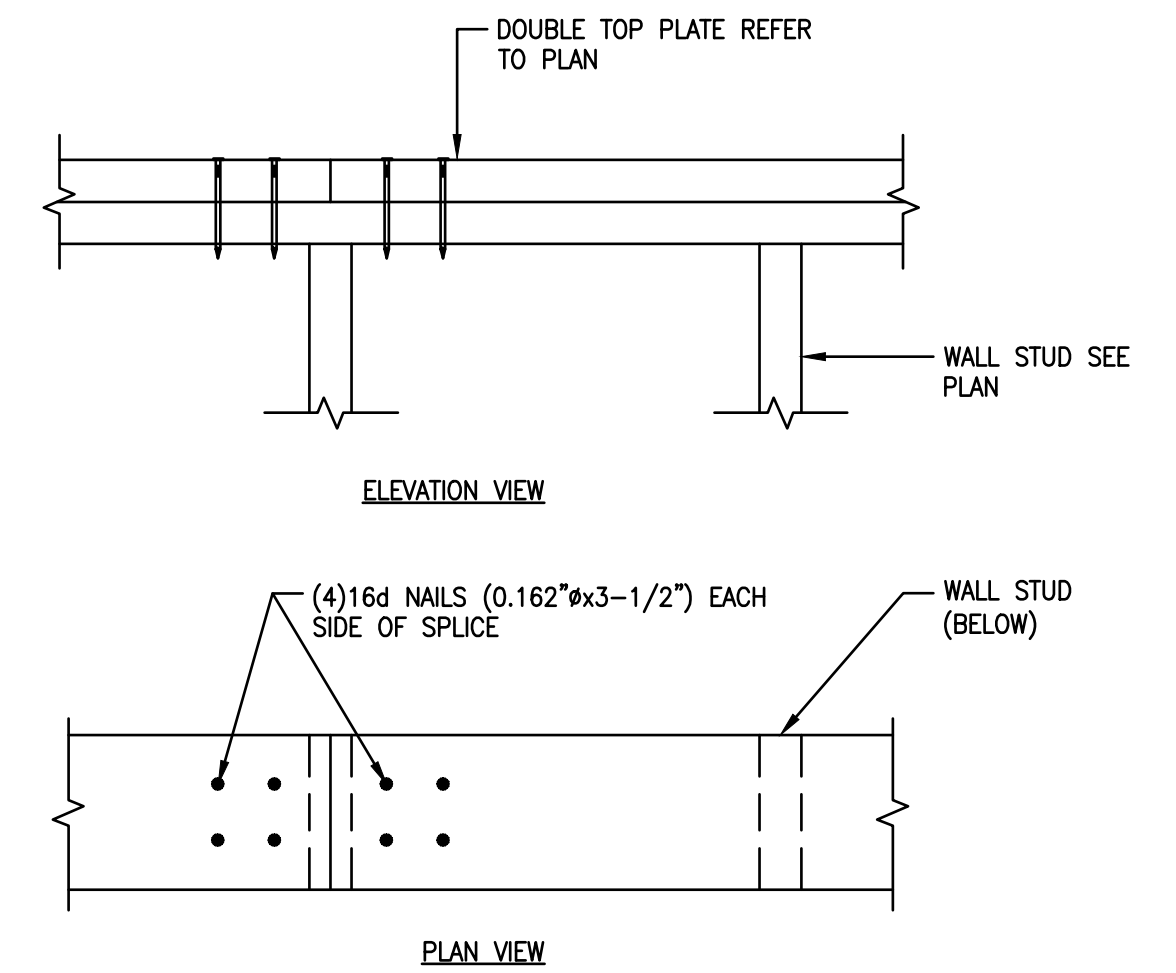
1 EQUIPMENT BUILDING FOUNDATION/FLOOR PLAN  
SCALE: 22x34: 1/4"=1'

- NOTES:
- 5" SLAB ON GRADE. REINFORCE WITH #4 @ 16" ON CENTER, EACH WAY, PLACED 1-1/4" CLEAR FROM TOP.
  - 10" SLAB ON GRADE. REINFORCE WITH #4 @ 12" ON CENTER, EACH WAY, TOP AND BOTTOM. PLACE TOP BARS 1-1/4" CLEAR FROM TOP OF SLAB, AND BOTTOM BARS 3" CLEAR FROM BOTTOM OF SLAB.
  - REFER TO MECH. DWGS. FOR LOUVER SIZES AND LOCATIONS.
  - INTERIOR AND EXTERIOR SLABS TO RECEIVE A BROOM FINISH.
  - PROVIDE A 3/4" CHAMFER AT EXPOSED EDGES OF 10" EXTERIOR SLABS.

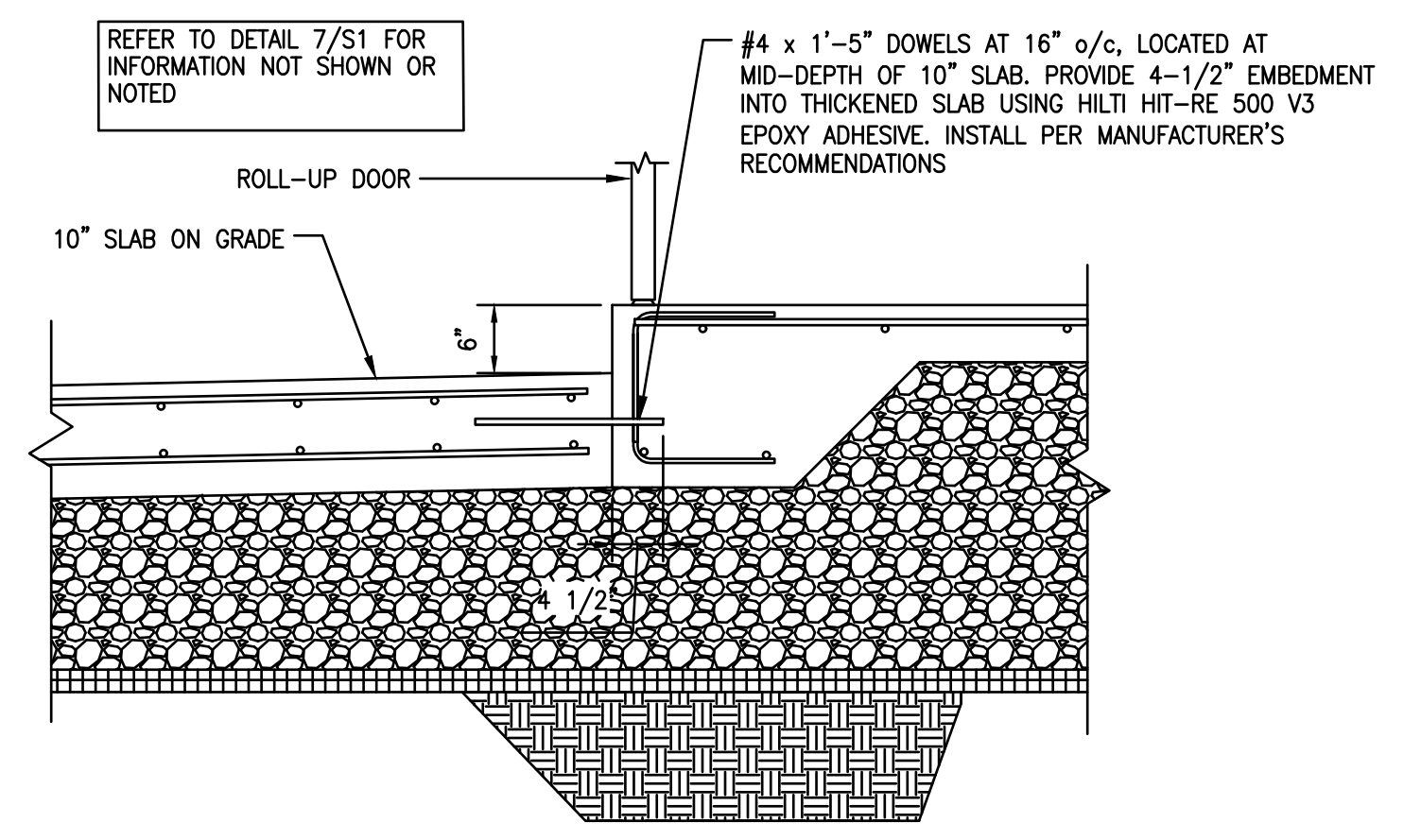


2 EQUIPMENT BUILDING ROOF FRAMING PLAN  
SCALE: 22x34: 1/4"=1'

- NOTES:
- ALL EXTERIOR WOOD WALLS TO BE TYPE-A SHEARWALLS, 2x6 STUDS SPACED AT 16" ON CENTER. REFER TO SHEAR WALL SCHEDULE FOR INFORMATION.
  - REFER TO HOLDOWN SCHEDULE FOR HOLDOWN INFORMATION AND TO FOUNDATION PLAN FOR HOLDOWN LOCATIONS AT RIGHT AND LEFT WALLS.



8 TOP PLATE SPLICE  
SCALE: 22x34: 3/4"=1'



3 EQUIPMENT BLDG. GENERATOR PAD DETAIL  
SCALE: 22x34: 3/4"=1'

MARK	SHEATHING	NAILING			TIE-DOWN 2	SILL ANCHORS
		SIZE 1	EDGE	INTERMEDIATE		
TYPE-A	1/2" APA RATED, EXT. FACE	8d	6" o/c	12" o/c	(2) 2x6 SPF	1/2"Ø BOLTS @ 32" o/c

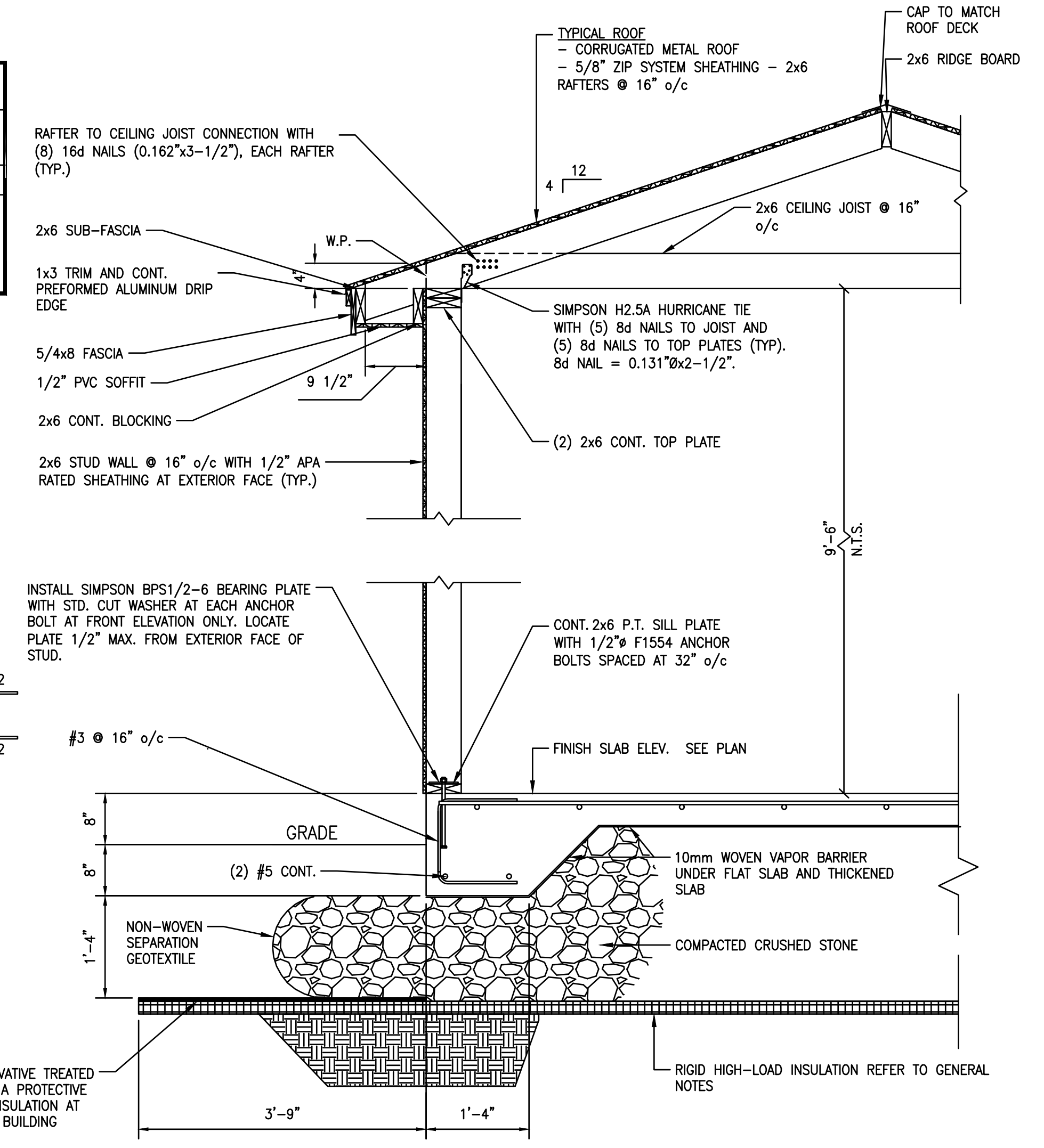
NOTES:  
1. FASTENERS: 8d COMMON (0.131"Øx2-1/2").  
2. FASTEN EDGE CHORD MEMBERS TOGETHER WITH (8) 10d NAILS (0.148"x3"), DISTRIBUTED ALONG MEMBER HEIGHT.

5 SHEAR WALL SCHEDULE  
SCALE: NOT TO SCALE

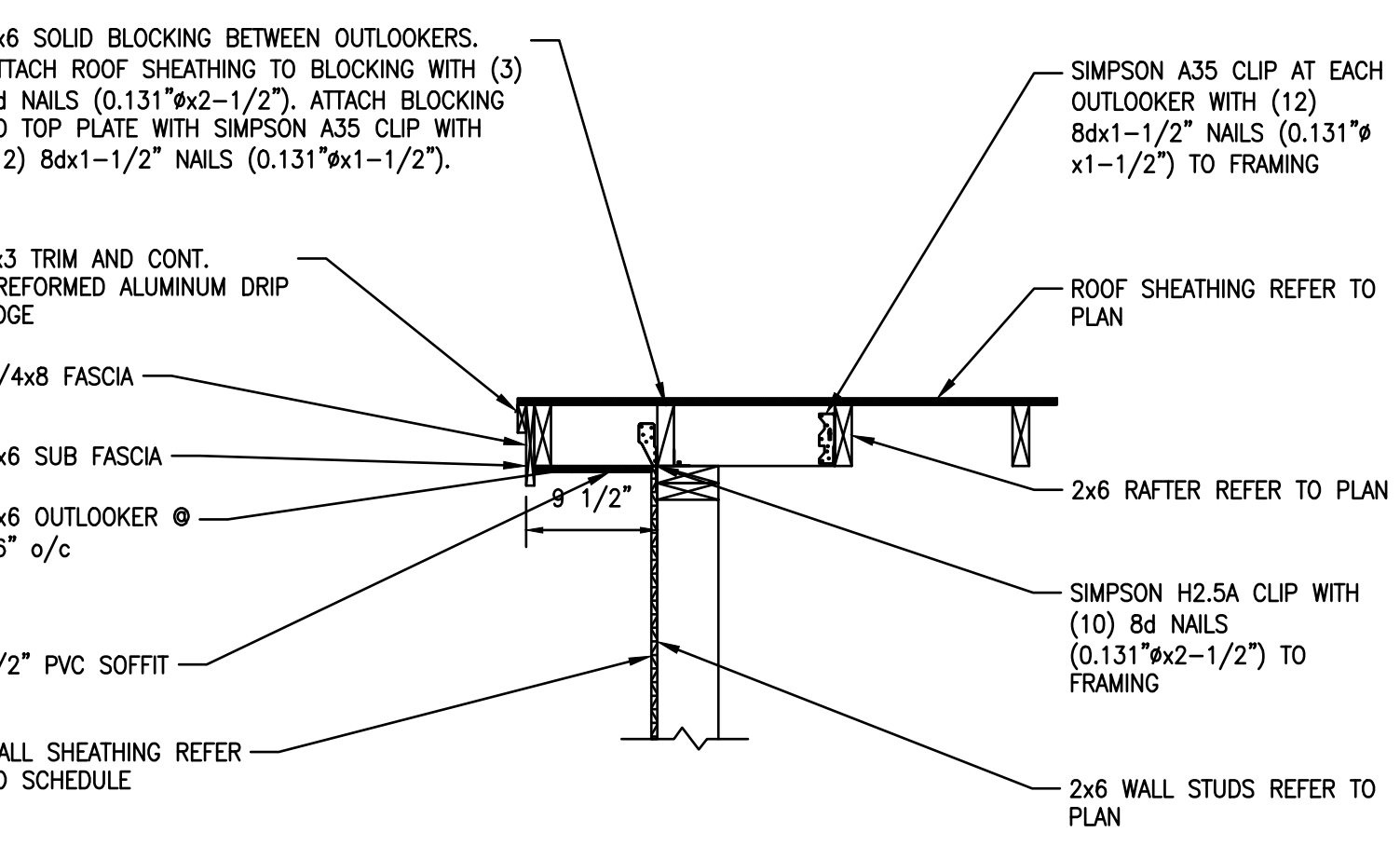
MARK	HOLDOWN	ANCHOR ROD	FASTENERS TO TIE-DOWN 4	EMBEDMENT DEPTH 3 FOR CAST-IN-PLACE	EMBEDMENT DEPTH 5 FOR POST-INSTALLED
HD-1	HDU2-SDS2.5	5/8"Ø	(6) SDS25212	10"	5-5/8"

NOTES:  
1. REFER TO PLAN FOR HOLDOWN LOCATIONS.  
2. HOLDOWN HARDWARE AND SDS SCREWS AS MANUFACTURED BY SIMPSON STRONG-TIE.  
3. REFER TO TYPICAL DETAILS FOR ANCHOR ROD ATTACHMENT. INSTALL NUT AT EMBEDDED END OF ANCHOR ROD FOR CAST-IN-PLACE OPTION. EMBEDMENT DEPTH LISTED IS TO TOP OF NUT.  
4. SDS25212 = 1/4" x 2-1/2" SDS SCREW.  
5. POST-INSTALLED ANCHORS TO BE INSTALLED USING HILTI HIT-RE 500 V3 EPOXY ADHESIVE. 5/8"Ø HILTI HAS-E THREADED ROD; MAINTAIN 3" MIN. EDGE DISTANCE TO FACE OF CONCRETE.

6 SHEAR WALL SCHEDULE  
SCALE: NOT TO SCALE



7 EQUIPMENT BUILDING SECTION  
SCALE: 22x34: 3/4"=1'



4 GABLE END ROOF DETAIL  
SCALE: 22x34: 3/4"=1'

**verizon**  
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AEG PROJECT #: 2023-0079  
DRAWN BY: JWH  
CHECKED BY: SNA

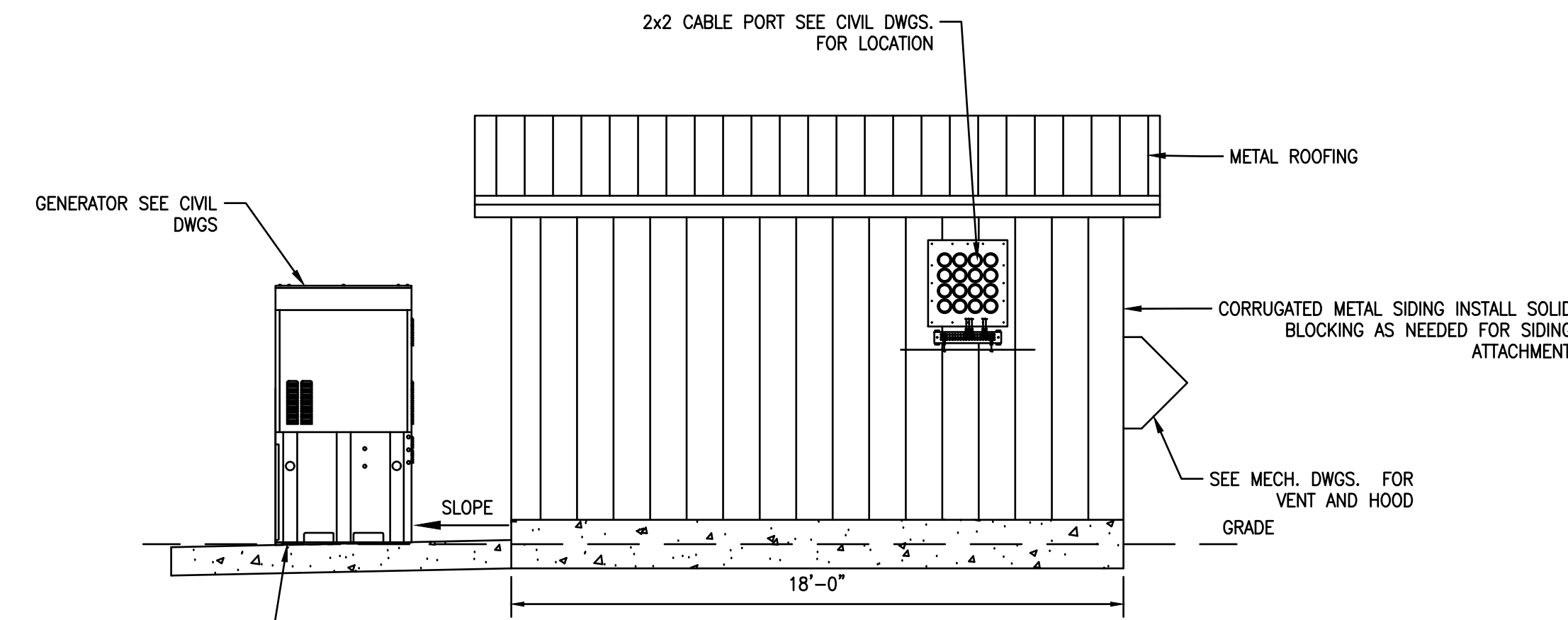
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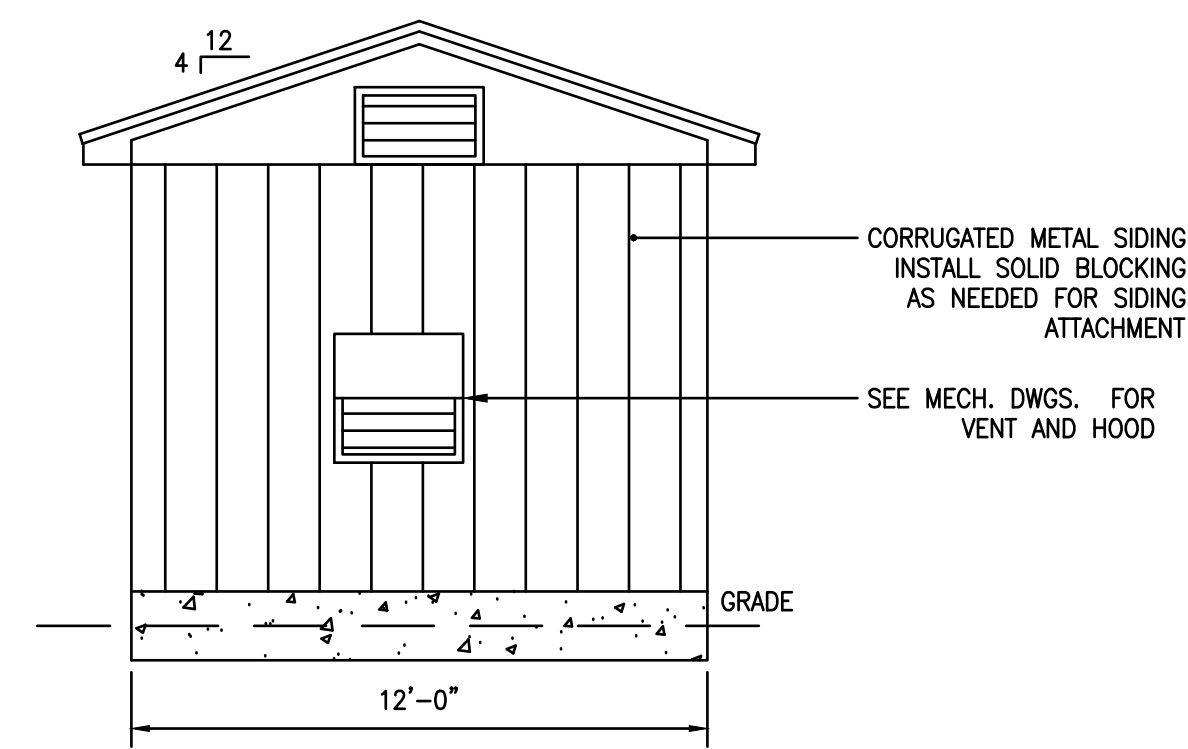
VT-VT-0111A  
**ROCHESTER**  
1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

SHEET TITLE  
EQUIPMENT SHED DETAILS

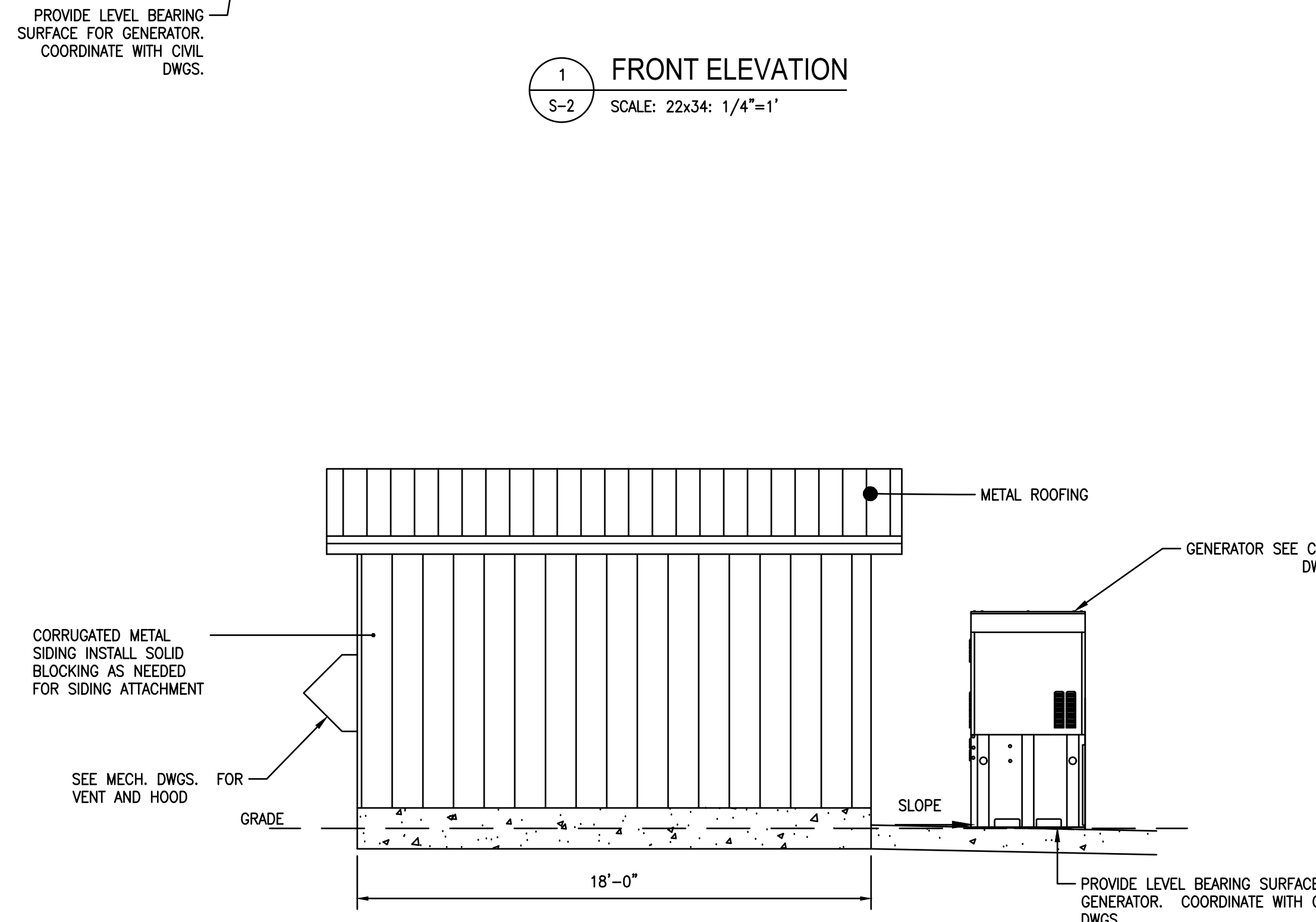
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**S-1**



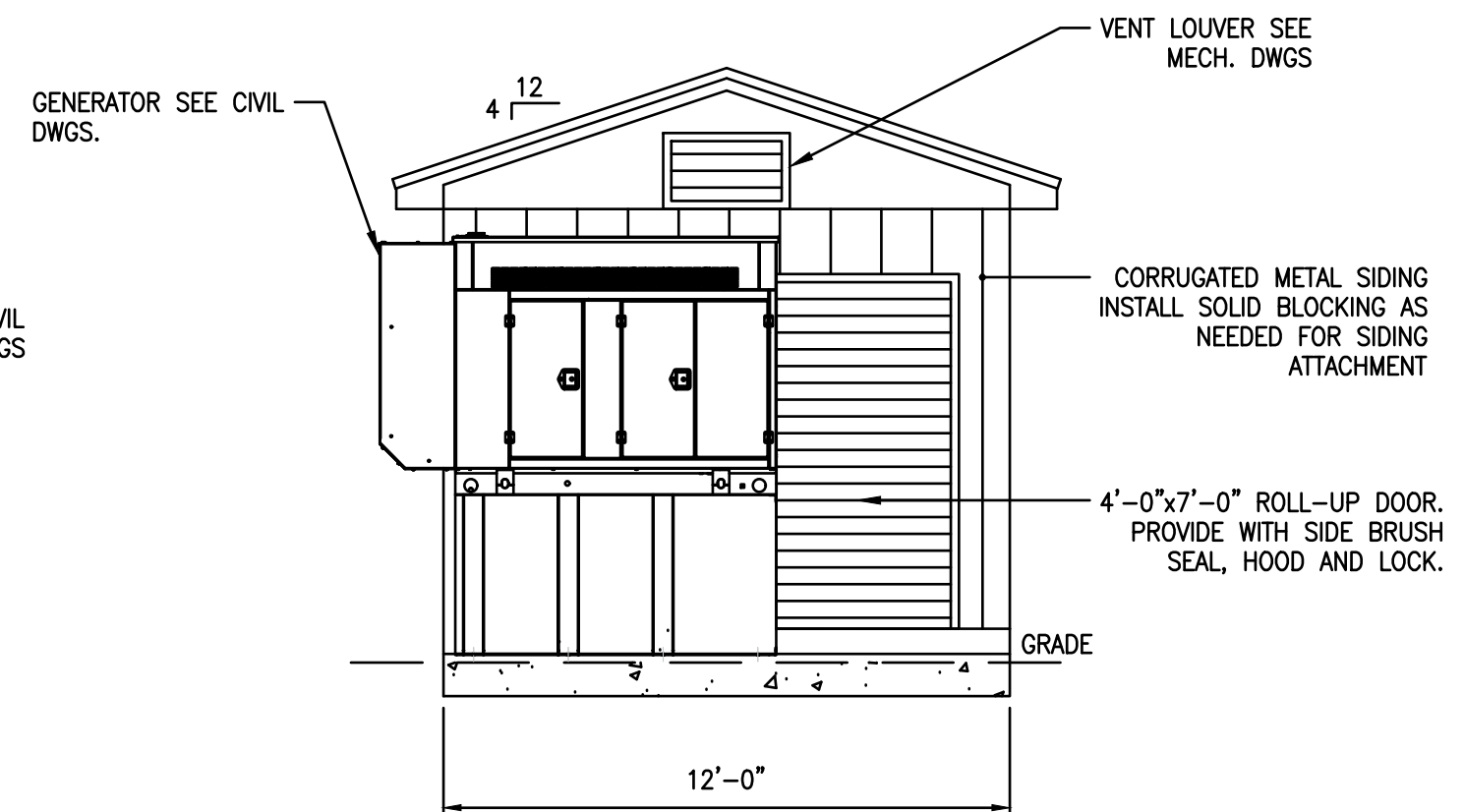
1 FRONT ELEVATION  
SCALE: 22x34: 1/4"=1'



3 LEFT ELEVATION  
SCALE: 22x34: 1/4"=1'



2 BACK ELEVATION  
SCALE: 22x34: 1/4"=1'



4 RIGHT ELEVATION  
SCALE: 22x34: 1/4"=1'

**GENERAL**

1. USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE SPECIFICATIONS AND MECHANICAL, ELECTRICAL AND CIVIL DRAWINGS.
2. PERFORM ALL WORK IN ACCORDANCE WITH APPLICABLE CODES.
3. DO NOT SCALE DIMENSIONS FROM DRAWINGS.
4. DETAILS SHOWN ARE TYPICAL, UNLESS NOTED OTHERWISE.
5. VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS, AND REPORT DISCREPANCIES TO ENGINEER BEFORE PROCEEDING WITH THE WORK

**EARTHWORK**

1. COMPACTED CRUSHED STONE MATERIAL: WASHED, NARROWLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL, ASTM D448 COARSE AGGREGATE GRADING SIZE 57 WITH 100% PASSING A 1-1/2" SIEVE AND 0%-5% PASSING A NO. 8 SIEVE.
2. FOOTINGS/SLABS: PLACE FOOTING/SLABS ON COMPACTED CRUSHED STONE FILL. ASSUMED BEARING CAPACITY FOR FOUNDATION DESIGN IS 2000 POUNDS PER SQUARE FOOT.

**CONCRETE**

1. ALL CONCRETE SHALL CONFORM TO REQUIREMENTS AND RECOMMENDATIONS OF ACI 318 "BUILDING CODE REQUIREMENTS OF REINFORCED CONCRETE" AND TO ACI FIELD REFERENCE MANUAL SP-15.
2. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED OR SUPPLEMENTED BELOW.
3. CONCRETE COMPRESSIVE DESIGN STRENGTH AND MIX PROPORTIONS SHALL BE AS OUTLINED BELOW. MIX PROPORTIONS AND DESIGNS SHALL BE SUBMITTED FOR APPROVAL. LIMIT MAXIMUM WATER-SOLUBLE CHLORIDE ION CONTENT IN CONCRETE BY WEIGHT OF CEMENT FOR CAST-IN-PLACE CONCRETE TO 0.15 FOR ALL CONCRETE.

INTERIOR SLABS ON GRADE:  
CONCRETE CLASS: F2, S0, W1, C1  
COMPRESSIVE STRENGTH = 4,500 PSI  
MAX. W/CM RATIO = 0.45  
AIR CONTENT = 6% +/- 1.5%

EXTERIOR SLABS ON GRADE:  
CONCRETE CLASS: F3, S0, W1, C2  
COMPRESSIVE STRENGTH = 5,000 PSI  
MAX. W/CM RATIO = 0.40  
AIR CONTENT = 6% +/- 1.5%

4. ALL CONCRETE SHALL BE READY-MIX CONCRETE CONFORMING TO ASTM C94, EXCEPT THAT ADDITION OF WATER WILL NOT BE PERMITTED.
5. CONCRETE SLABS SHALL BE WET CURED. USE OF MEMBRANE-FORMING CURING COMPOUND IS PROHIBITED.
6. INTERIOR SLABS SHALL RECEIVE A FLOAT FINISH. EXTERIOR SLABS SHALL RECEIVE A BROOM FINISH.
7. INTERIOR SLABS SHALL RECEIVE A PENETRATING FLOOR SEALER. APPLY ASHFORD FORMULA OR APPROVED EQUAL TO EXPOSED CONCRETE SURFACES IN STRICT COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. REINFORCING STEEL: ASTM A615 GRADE 60.
9. FOUNDATION INSULATION: ASTM C578 TYPE VII RIGID INSULATION. SINGLE LAYER SHALL BE 1-1/2" MINIMUM THICKNESS. ALTERNATE INSULATION MAY BE (2) LAYERS OF 1" TYPE VII RIGID INSULATION, WITH TOP LAYER PLACE 90° TO BOTTOM LAYER.

**WOOD FRAMING**

1. ALL WOOD CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" BY THE NATIONAL FOREST PRODUCTS ASSOCIATION AND TO LOCAL BUILDING CODES.
2. ALL WOOD MEMBERS 2x4 AND LARGER SHALL BE SPRUCE-PINE-FIR, NO. 2 GRADE OR BETTER.
3. ALL PRESSURE TREATED WOOD MEMBERS SHALL BE SOUTHERN PINE NO. 2 GRADE OR BETTER. ALL METAL CONNECTORS, ANCHORS AND FASTENERS USED FOR PRESERVATIVE TREATED WOOD SHALL BE STAINLESS STEEL OR HOT-DIPPED GALVANIZED AS RECOMMENDED BY THE CONNECTOR, ANCHOR OR FASTENER MANUFACTURER.
4. ALL WOOD HEADERS AT BEARING WALLS SHALL BE A MINIMUM OF (2) 2x8's, UNLESS NOTED OTHERWISE. WOOD MEMBERS USED FOR HEADERS, OR BUILT-UP BEAMS SHALL NOT HAVE CHECKS OR SPLITS LONGER THAN THE WIDE FACE WIDTH.
5. EXTERIOR WALL AND ROOF SHEATHING SHALL BE 5/8" ADVANTECH ZIP SYSTEM.

**BUILDING MATERIALS**

1. FINISHES:  
A. ROOFING: MINIMUM 24 GAGE CORRUGATED METAL OVER GRACE ICE & WATER SHIELD.  
B. WALLS: SEE DETAILS.  
C. CEILING: NONE.  
D. FLOOR: CONCRETE SLAB. SEE CONCRETE NOTE #6 ABOVE.
2. INSULATION:  
A. BELOW FLOOR SLAB AND OUTSIDE BUILDING PERIMETER: REFER TO CONCRETE NOTES ABOVE.  
B. ROOF: NONE.  
C. WALLS: NONE.
3. LOUVERS: REFER TO MECHANICAL DRAWINGS.

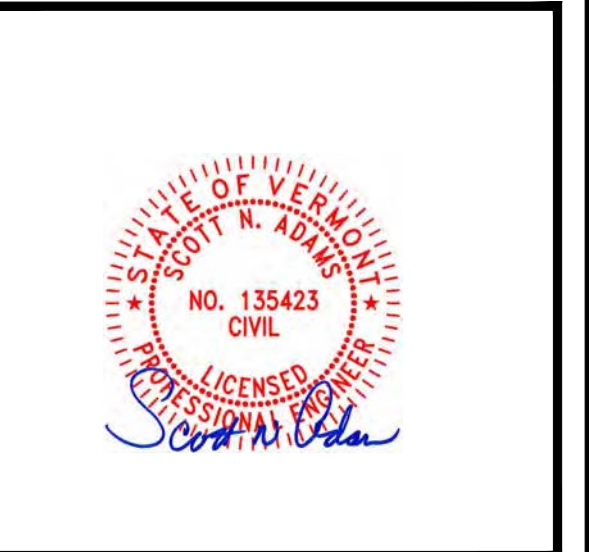
**DESIGN CRITERIA**

1. CODES: IBC 2015 AND ASCE 7-10, AS AMENDED BY THE 2015 VERMONT FIRE AND BUILDING SAFETY CODE.
2. BUILDING/STRUCTURE RISK CATEGORY: III.
3. ROOF LOADS:  
RAFTER DEAD: 8 PSF  
CEILING DEAD: 8 PSF  
ROOF LIVE: 20 PSF
4. SNOW LOADS:  
GROUND SNOW: Pg = 50 PSF  
EXPOSURE FACTOR: Ce = 1.2  
THERMAL FACTOR: Ct = 1.2  
IMPORTANCE FACTOR: Is = 1.10  
FLAT ROOF SNOW LOAD: Pf = 55.4 PSF  
SLOPE ROOF SNOW LOAD: Ps = 52 PLUS DRIFT  
125 PSF
5. FLOOR LIVE LOADS: 125 PSF
6. WIND LOADS:  
WIND SPEED: V = 120 MPH  
NOMINAL WIND SPEED: VASD = 93 MPH  
IMPORTANCE FACTOR: Iw = 1.0  
EXPOSURE: B  
INTERNAL PRESSURE COEFFICIENT: GCpi = +/- 0.18  
COMPONENTS AND CLADDING: ASCE 7-10
7. SEISMIC LOADS:  
IMPORTANCE FACTOR: Ie = 1.25  
MAPPED SPECTRAL RESPONSE COEFFICIENTS: Ss = 0.338, S1 = 0.105  
D (ASSUMED)  
SITE CLASS: D  
SPECTRAL RESPONSE COEFFICIENTS: SDS = 0.345, SD1 = 0.166  
SEISMIC DESIGN CATEGORY: C  
SEISMIC FORCE RESISTING SYSTEM: BEARING WALL SYSTEM WITH LIGHT-FRAMED WOOD WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE.

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**Vertex Towers LLC**  
VERTEX TOWERS LLC  
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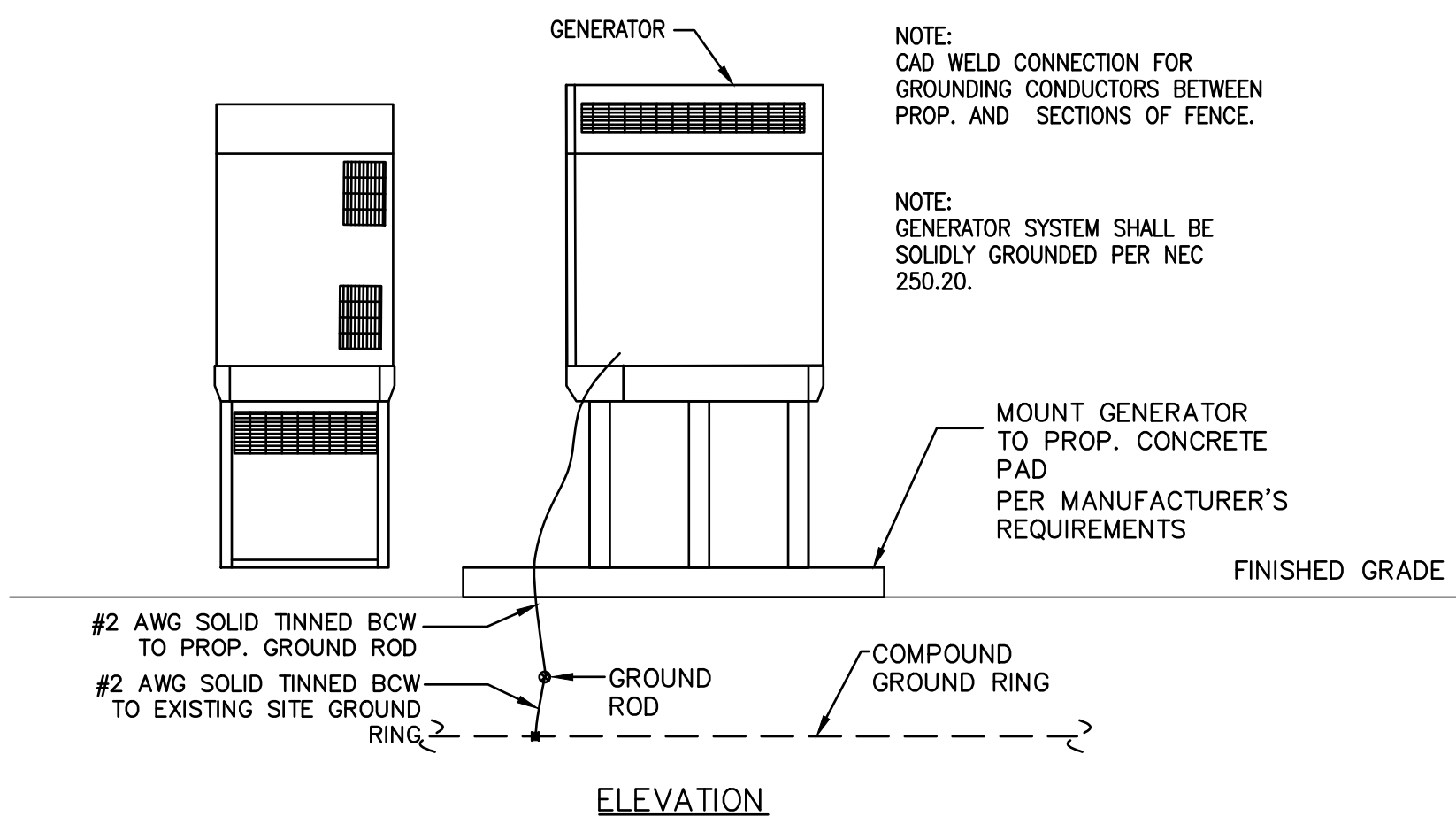
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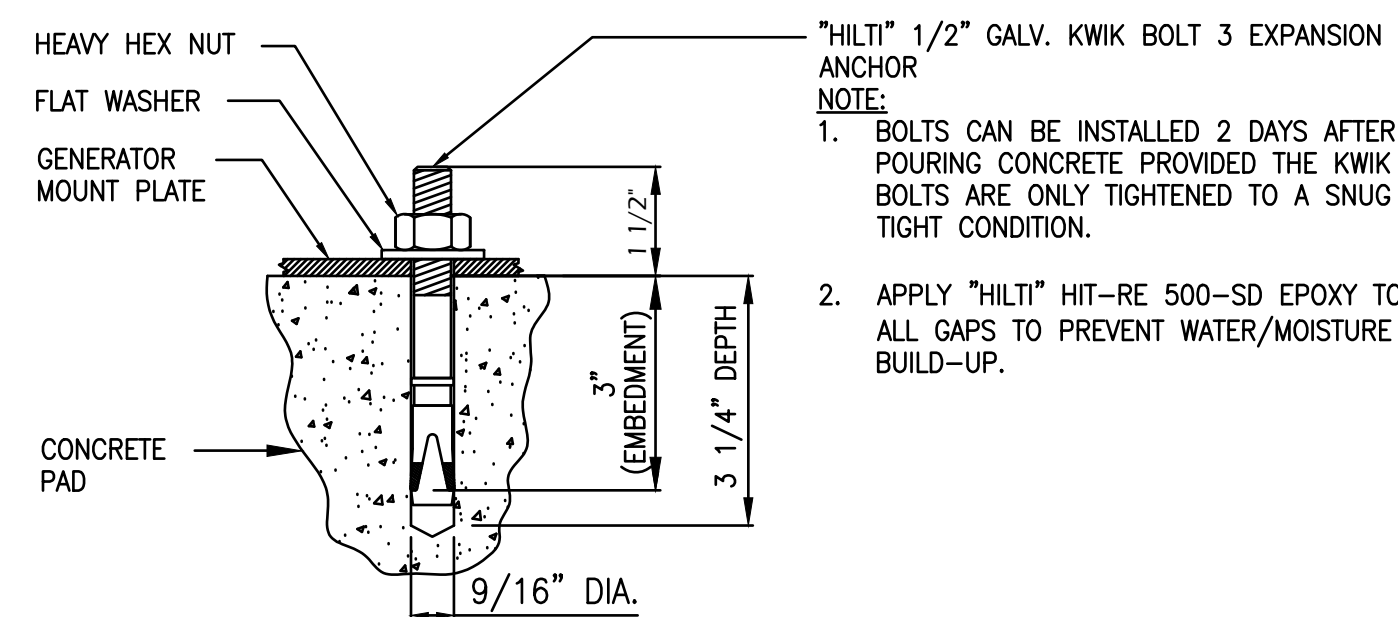
SHEET TITLE  
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SHEET NUMBER  
**S-2**



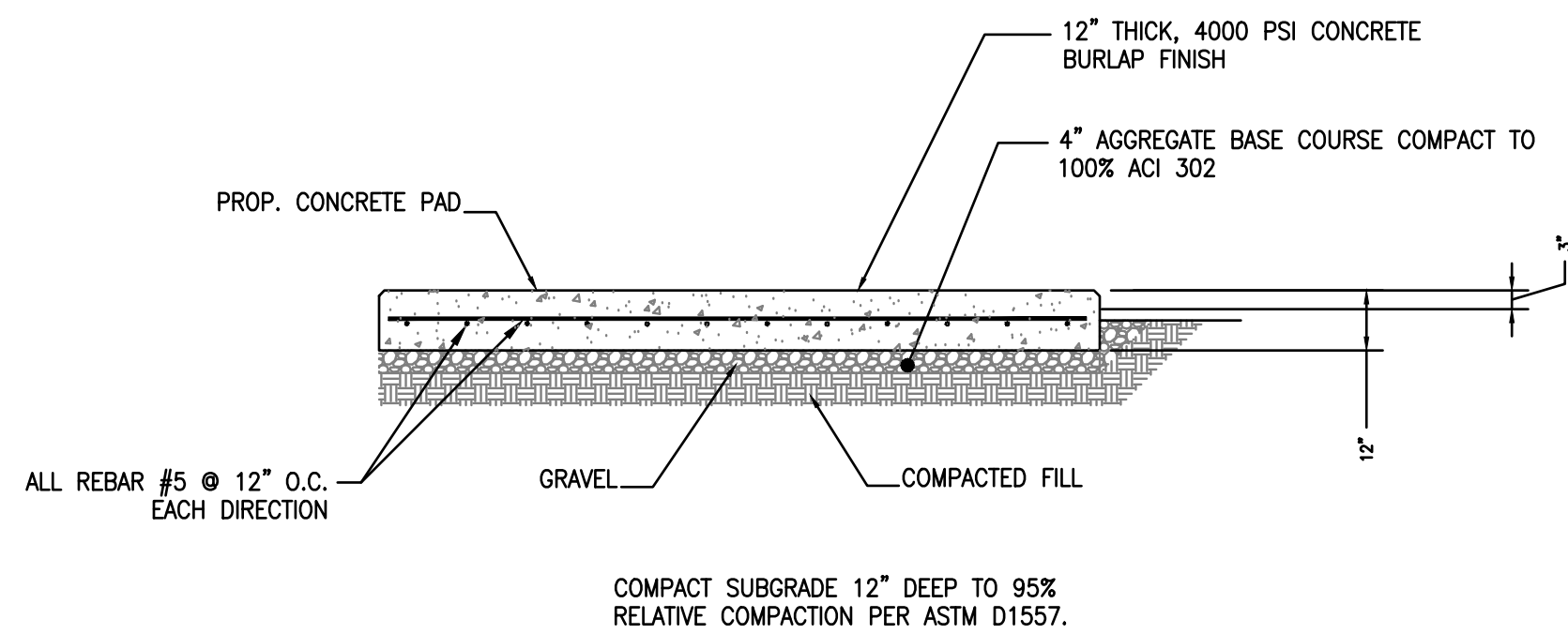
ELEVATION

1 GENERATOR DETAILS  
S-3 SCALE: N.T.S.



"HILTI" 1/2" GALV. KWIK BOLT 3 EXPANSION ANCHOR  
NOTE:  
1. BOLTS CAN BE INSTALLED 2 DAYS AFTER POURING CONCRETE PROVIDED THE KWIK BOLTS ARE ONLY TIGHTENED TO A SNUG TIGHT CONDITION.  
2. APPLY "HILTI" HIT-RE 500-SD EPOXY TO ALL GAPS TO PREVENT WATER/MOISTURE BUILD-UP.

3 HILTI BOLT DETAIL  
S-3 SCALE: N.T.S.



COMPACT SUBGRADE 12" DEEP TO 95% RELATIVE COMPACTION PER ASTM D1557.

4 CONCRETE PAD DETAIL  
S-3 SCALE: N.T.S.

CONCRETE PAD CONSTRUCTION NOTES

1. ALL REBAR (HORIZONTAL & VERTICAL) SHALL BE SECURELY WIRE TIED TO PREVENT DISPLACEMENT DURING POURING OF CONCRETE.
2. CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
3. REINFORCED CONCRETE CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH ACI STANDARDS 318.
4. MINIMUM CONCRETE COVER OVER REBAR IS 1 1/4".
5. REINFORCING MATERIAL SHALL BE IN ACCORDANCE WITH ASTM SPECIFICATION A615-85.

CONCRETE PAD AND EMBEDMENT TOLERANCES

1. EMBEDMENTS: PLUS OR MINUS 1/16".
2. CONCRETE DIMENSIONS: PLUS OR MINUS 1/4".
3. REINFORCING STEEL PLACEMENT: PLUS OR MINUS 1/4" INCLUDING CONCRETE COVER.

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, ANSI/ASCE7, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 STRUCTURAL STEEL UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE A, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 5/8" DIA. UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZINC BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUTS SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP, WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF 1/2" DIAMETER STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-20 AND OR HY-150 SYSTEMS (AS SPECIFIED AN DWG.) OR ENGINEERS APPROVED EQUAL WITH 4-1/4" MIN. EMBEDMENT DEPTH.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT II OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE AND ONE HALF (3 1/2) INCHES.
15. GRAVEL SUB BASE AND CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL.
16. CONCRETE FOR FENCE AND ICE BRIDGE SUPPORT SHALL BE 3000 PSI AIR ENTRAINED (4%-6%) NORMAL WEIGHT CONCRETE.
17. ALL CAST IN PLACE CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318 AND ACI 301.
18. THE FOLLOWING MINIMUM CONCRETE COVER OVER REINFORCING STEEL SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:  
CONCRETE CAST AGAINST EARTH ... 3 INCHES.  
CONCRETE EXPOSED TO EARTH OR WATER  
#6 AND LARGER .....2 INCHES  
#5 AND SMALLER .....1 1/2 INCHES  
  
ALL EXPOSED EDGES SHALL BE PROVIDED WITH A 3/4"x3/4" CHAMFER UNLESS NOTED OTHERWISE.
19. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.

NOTES

1. FOUNDATION WAS DESIGNED BY ASSUMING ALLOWABLE SOIL BEARING CAPACITY OF 1000 PSI. THE SOIL BEARING CAPACITY FOR EACH SITE MUST BE VERIFIED USING THE SITE SPECIFIC GEOTECH REPORT. IF SHALLOW GROUNDWATER (≤3 FT.) WAS REPORTED, A FURTHER REVIEW OF THE DESIGN OR SPECIAL DESIGN MAY BE REQUIRED.
2. THE SOIL UNDERNEATH THE CONCRETE PAD MUST BE FREE OF ORGANIC MATTER OR OTHER DELETERIOUS SUBSTANCES, AND SHOULD BE COMPACTED AND LEVELED BEFORE PLACING THE FOUNDATION. PAD SHALL BE INSTALLED LEVEL TO WITHIN +/- 1/8".
3. CONCRETE SLUMPS: 1"±2".
4. CONCRETE VOLUME: 0.78 CUBIC YARDS.

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Towers LLC**

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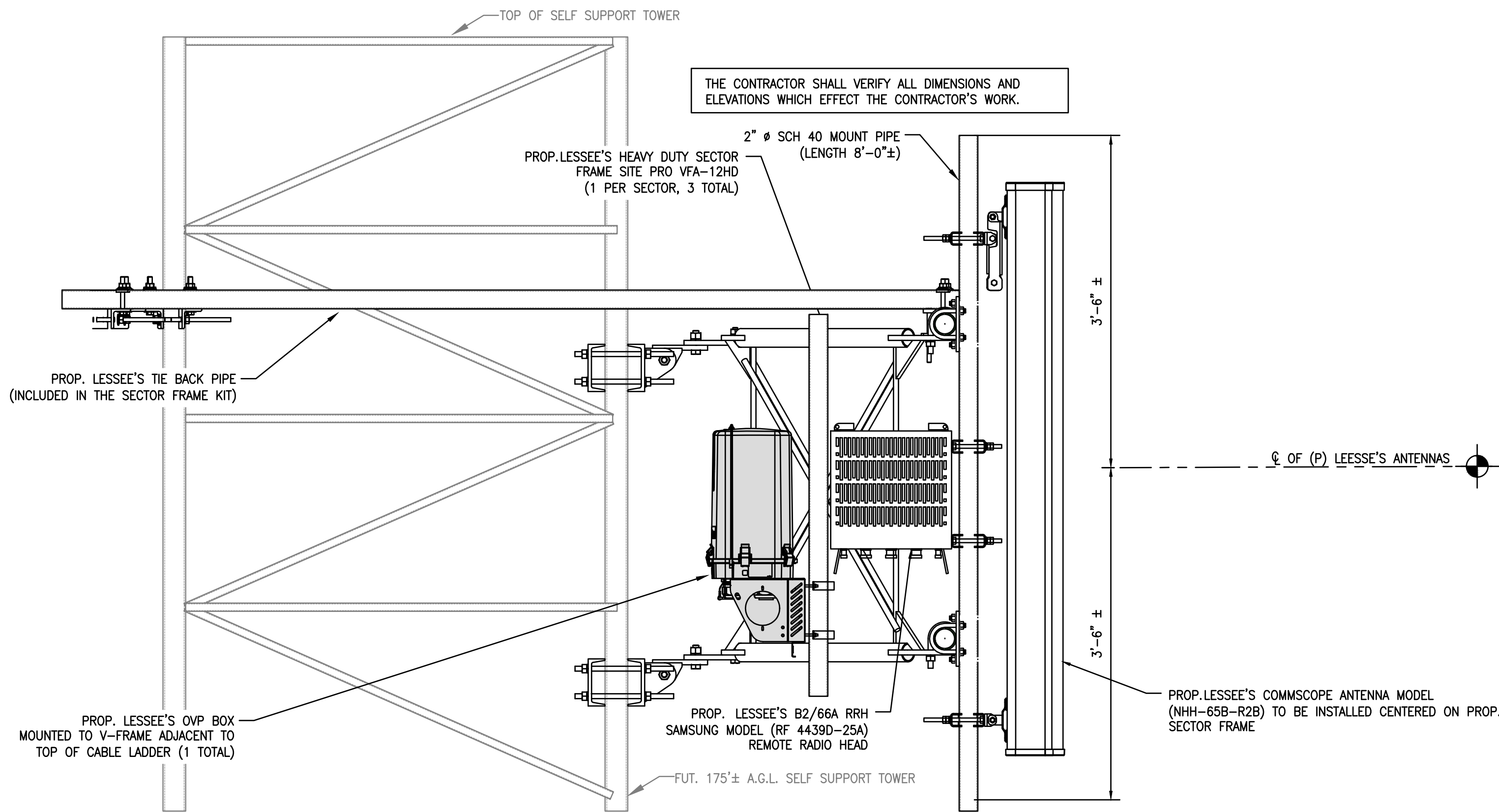
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WINDSOR COUNTY

SHEET TITLE

EQUIPMENT SHED DETAILS

SHEET NUMBER

**S-3**



1 ANTENNA MOUNT DETAIL  
SCALE: 1"=1'-0"

**GENERAL NOTES:**

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS AND COORDINATE HIS WORK WITH THE WORK OF ALL OTHER CONTRACTORS TO ENSURE THAT WORK PROGRESSION IS NOT INTERRUPTED.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A NEAT AND ORDERLY SITE, YARD AND GROUNDS. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND/OR OFFSITE DISPOSAL OF ALL RUBBISH, WASTE MATERIALS, PETRO-CHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS. THE GROUNDS ARE TO BE RAKED TO A SMOOTH EVEN-TEXTURED SURFACE.
- THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES. THE EXACT LOCATION OF ABOVE GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH UTILITIES, PIPELINES, AND/OR SUBSURFACE STRUCTURES IN THE AREA, MAY BE SHOWN OR NOT BE SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTION OF ANY WORK. CALL 1-888-DIG-SAFE 48 HOURS BEFORE YOU DIG, DRILL OR BLAST. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE UNDERGROUND UTILITIES.
- THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER OR DESIGNATED ENGINEER'S REPRESENTATIVE.
- THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.
- THE CONTRACTOR SHALL RESTORE ALL PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO AT LEAST AS GOOD OF CONDITION AS BEFORE DISTURBED AS DETERMINED BY THE OWNER OR OWNERS REPRESENTATIVE.
- THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS AND SHALL BE RESPONSIBLE FOR OBTAINING AND MAINTAINING ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC.
- THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE OWNER OR OWNER'S REPRESENTATIVE, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A LICENSED LAND SURVEYOR.
- ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH OSHA REGULATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
- ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE AWAY FROM THE BUILDING AND THE TOWER. COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE AND THE UTILITY OWNER. NOTIFY THE OWNER OR OWNER'S REPRESENTATIVE AND THE UTILITY OWNER BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
- MAINTAIN FLOW FOR ALL EXISTING UTILITIES.
- ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS AS DEFINED BY THE ENGINEER ON THE DRAWINGS.
- CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE.
- THESE DRAWINGS DO NOT INCLUDE PROVISIONS FOR CONSTRUCTION SAFETY AND THE CONTRACTOR SHALL COMPLY WITH ALL OSHA CONSTRUCTION SAFETY REGULATIONS.
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE APPROVAL BY THE ENGINEER OR ENGINEER'S DESIGNATE.

**ANTENNA MOUNTING AND INSTALLATION DESIGN NOTES**

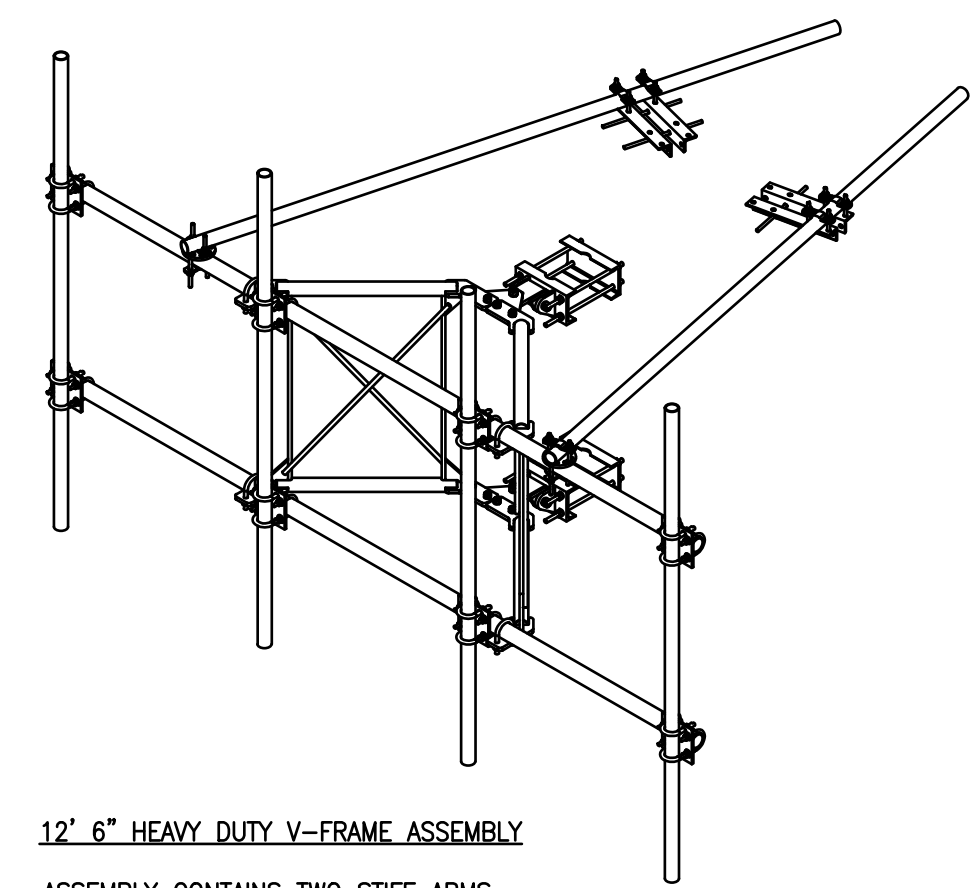
- ANTENNA ASSEMBLY, CONNECTIONS, DESIGN LOADS, MOUNTING, BRACKETS, POLES AND ALL COMPONENTS THERE OF, AND ATTACHMENT THERE TO, IS THE RESPONSIBILITY OF THE ANTENNA MANUFACTURER. ANTENNA MANUFACTURER SHALL PROVIDE THE ENGINEER THE PROPER DESIGN SPECIFICATIONS FOR INCLUSION INTO CONSTRUCTION DRAWINGS.
- BRACKETS SHALL BE DESIGNED TO SUPPORT CURRENT AND FUTURE PANEL ANTENNAS AND COAXIAL CABLES AS SHOWN.
- ANTENNA MOUNTING PLATFORM SUPPLIED, CONTRACTOR TO VERIFY ATTACHMENT REQUIREMENTS PRIOR TO CONSTRUCTION.

**EXCAVATION AND FOUNDATION NOTES:**

- FOUNDATION EXCAVATION SHALL BE HAND-TRIMMED TO REMOVE LOOSE MATERIALS.
- EXTERIOR FOUNDATION BACKFILL SHALL BE SELECTED GRANULAR FILL.
- DO NOT PLACE FOOTINGS IN WATER OR ON FROZEN GROUND.
- SOIL BEARING SURFACES, PREVIOUSLY ACCEPTED BY GEOTECHNICAL ENGINEER, WHICH ARE ALLOWED TO BECOME SATURATED, FROZEN OR DISTURBED SHALL BE REWORKED TO SATISFACTION OF GEOTECHNICAL ENGINEER OR THEIR APPROVED DESIGNATE.
- DO NOT ALLOW GROUND BENEATH FOOTINGS TO FREEZE.
- FOOTING EXCAVATIONS SHALL BE CUT NEAT.
- ALL STRUCTURAL BACKFILL AND SUBBASE UNDER SLABS-ON-GRADE AND FOOTINGS SHALL BE "SW" OR BETTER PER ASTM D-2487 COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY PER ASTM D-698.

**STRUCTURAL STEEL NOTES:**

- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STEEL ANGLES BASE PLATES, BEARING PLATES AND MISC. FABRICATION SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF ASTM-A36 WITH A MINIMUM YIELD STRESS OF 36 KSI. ALL STEEL TUBES AND PIPES SHALL BE A500 STEEL MINIMUM.
- ALL EXTERIOR STRUCTURAL STEEL SHALL BE, WHEN DELIVERED, HOT-DIP GALVANIZED ACCORDING TO ASTM A123. TOUCH-UP FIELD WELDS AND MARRED AREAS W/2 COATS OF GALVANIZED PAINT.
- DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
- CONNECTIONS:**
  - WELDS (SHIELDED METAL ARC) - ELECTRODES SHALL BE E70XX MINIMUM AND BE IN ACCORDANCE WITH AWS D1.1 UNLESS NOTED OTHERWISE.
  - MINIMUM CAPACITY OF CONNECTIONS: FOR CONNECTIONS NOT DETAILED, PROVIDE CONNECTION CAPACITY OF AT LEAST THAT REQUIRED BY PART 2 OF THE AISC MANUAL (9TH EDITION) IN THE SECTION "ALLOWABLE LOADS ON BEAMS", FOR THE GIVEN MEMBER AND STEEL SPECIFICATIONS. CONCENTRATED LOADS NEAR SUPPORTS MUST BE ADDED.
- CONNECTION DESIGNS BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL.
- BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 OLTS (3/4" DIA.) AND SHALL HAVE A MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A307 BOLTS UNLESS NOTED OTHERWISE.



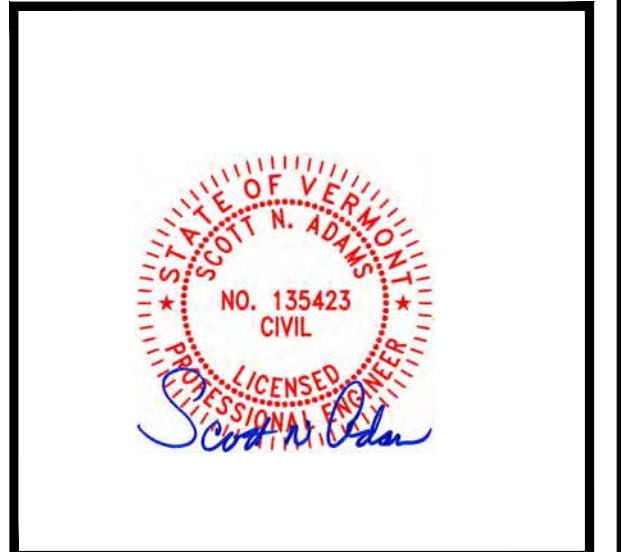
12' 6" HEAVY DUTY V-FRAME ASSEMBLY  
ASSEMBLY CONTAINS TWO STIFF ARMS  
MANUFACTURER: SITE PRO 1  
ASSEMBLY MODEL# VFA12-HD

5 SECTOR FRAME MOUNT DETAIL  
SCALE: N.T.S.

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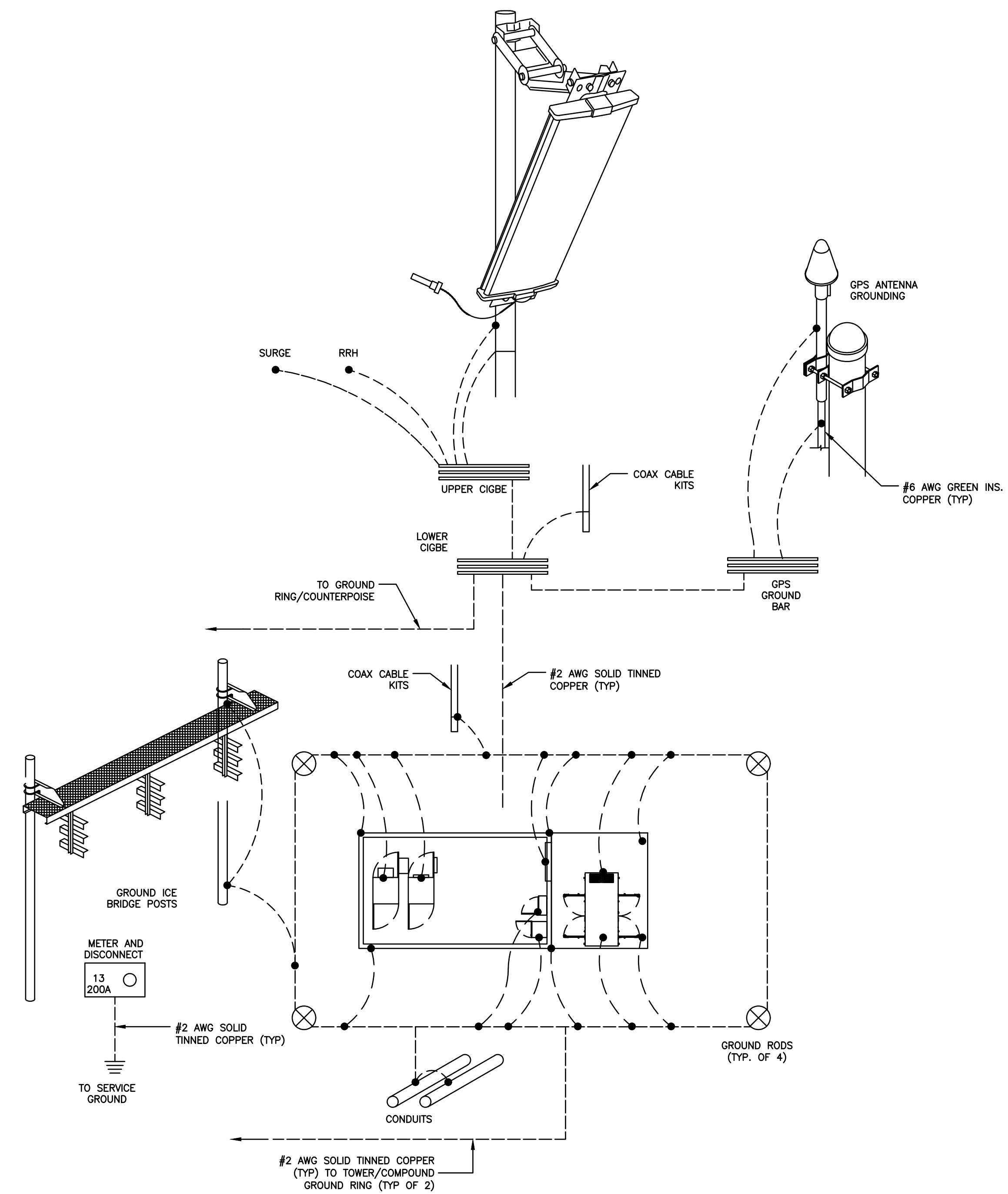
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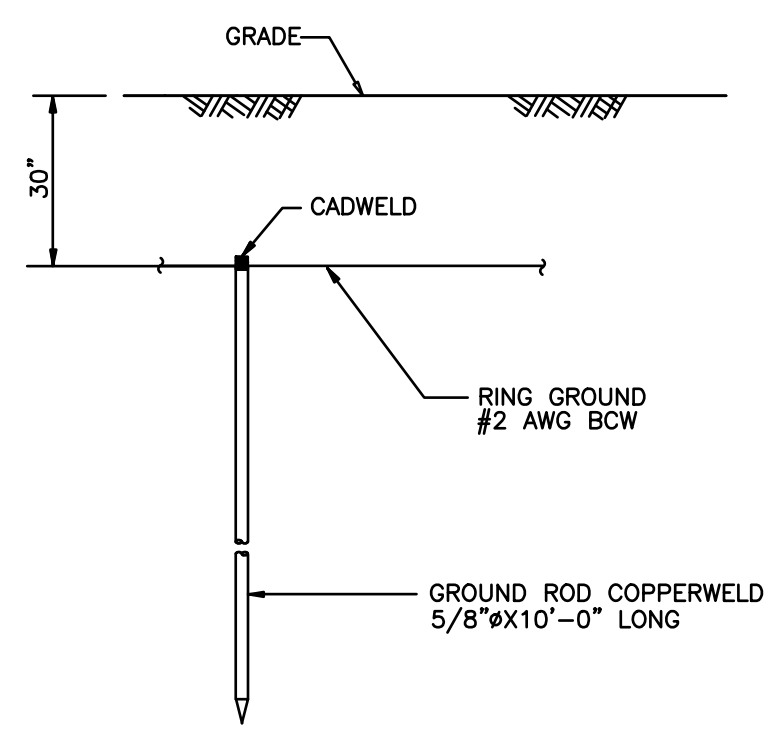
VT-VT-0111A  
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1030 VT ROUTE 100  
ROCHESTER, VT 05767  
WINDSOR COUNTY

SHEET TITLE  
ANTENNA MOUNT DETAILS

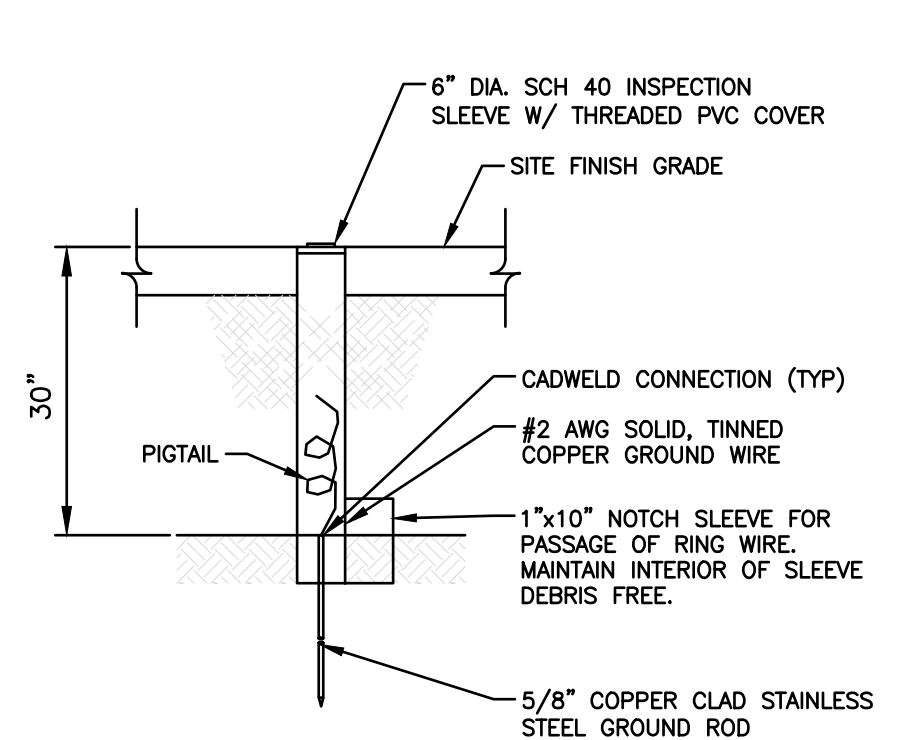
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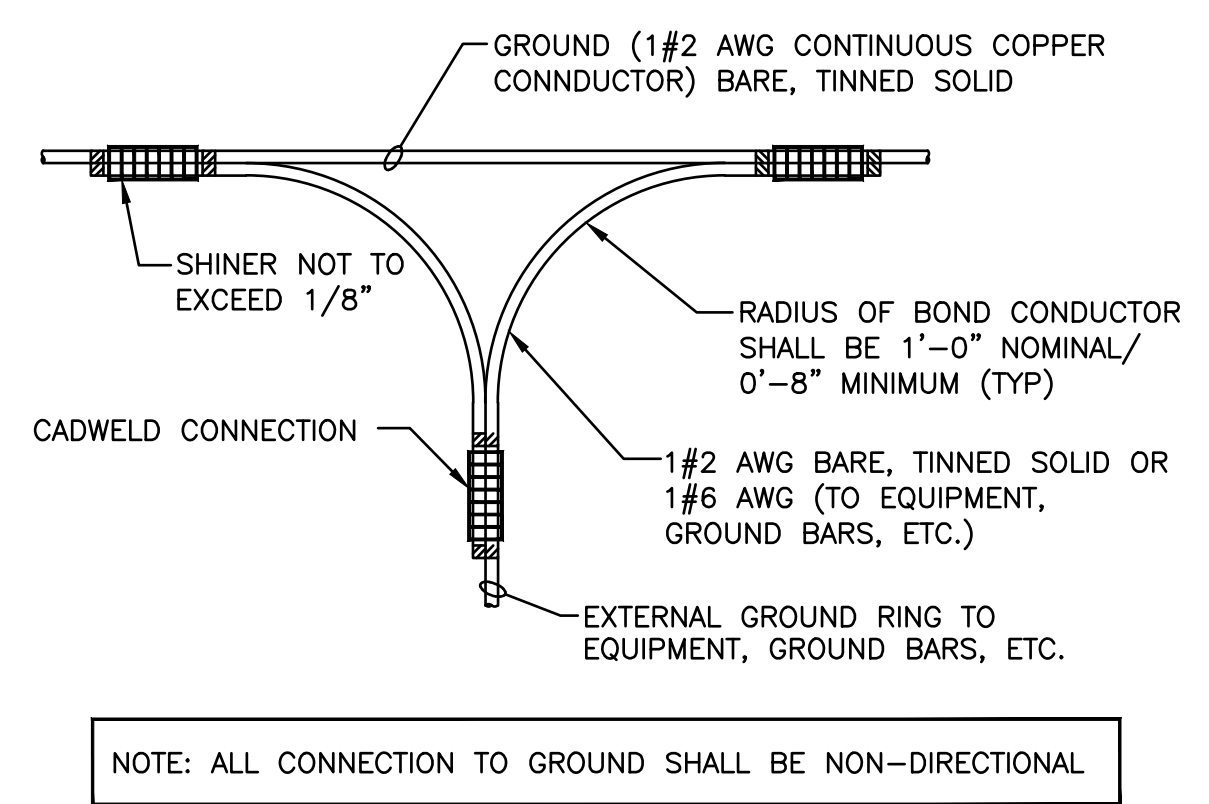
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G-1 SCALE: N.T.S.



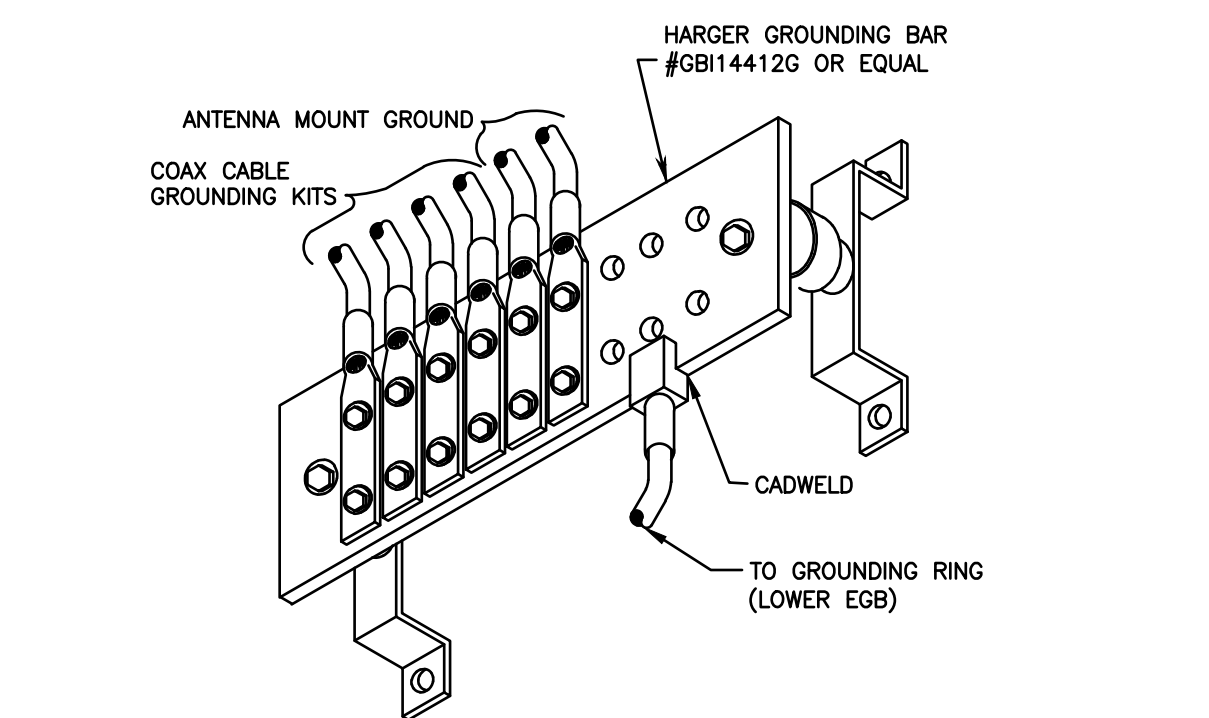
8 TYPICAL GROUND ROD DETAIL  
G-1 SCALE: N.T.S.



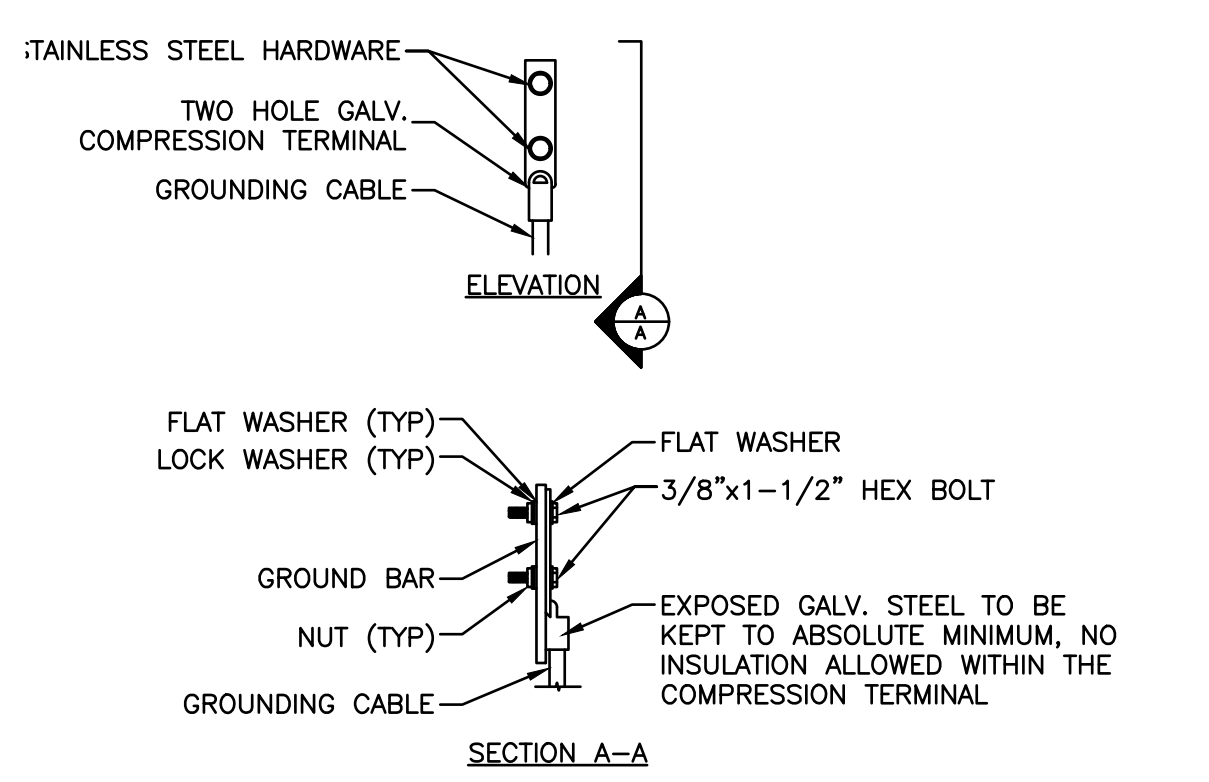
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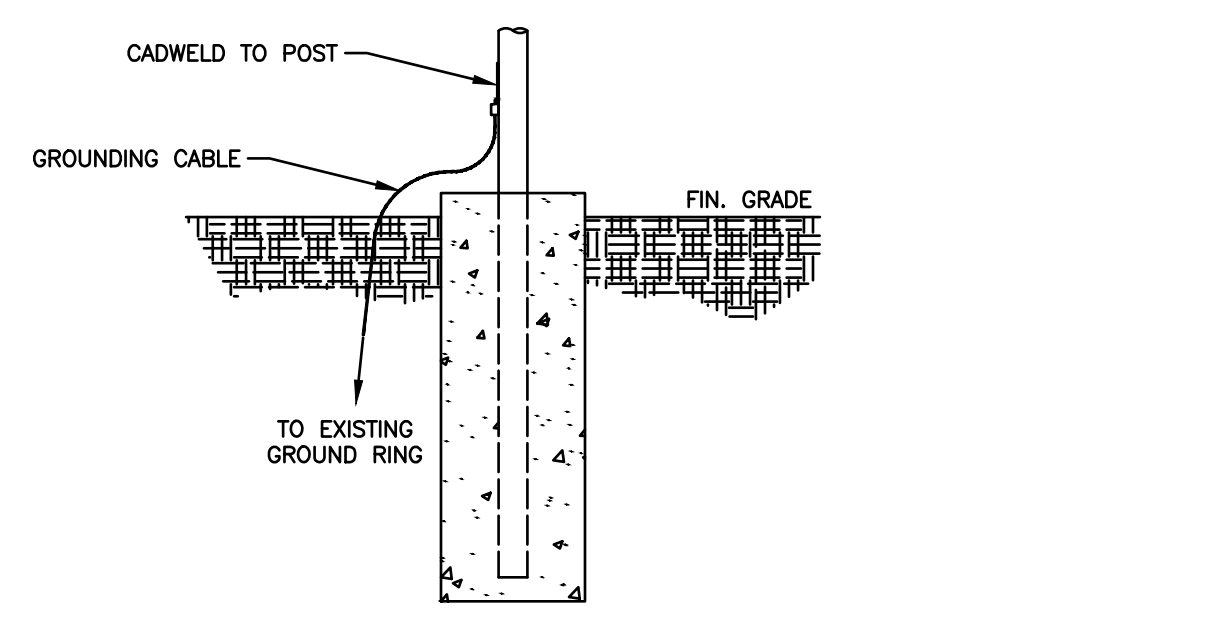
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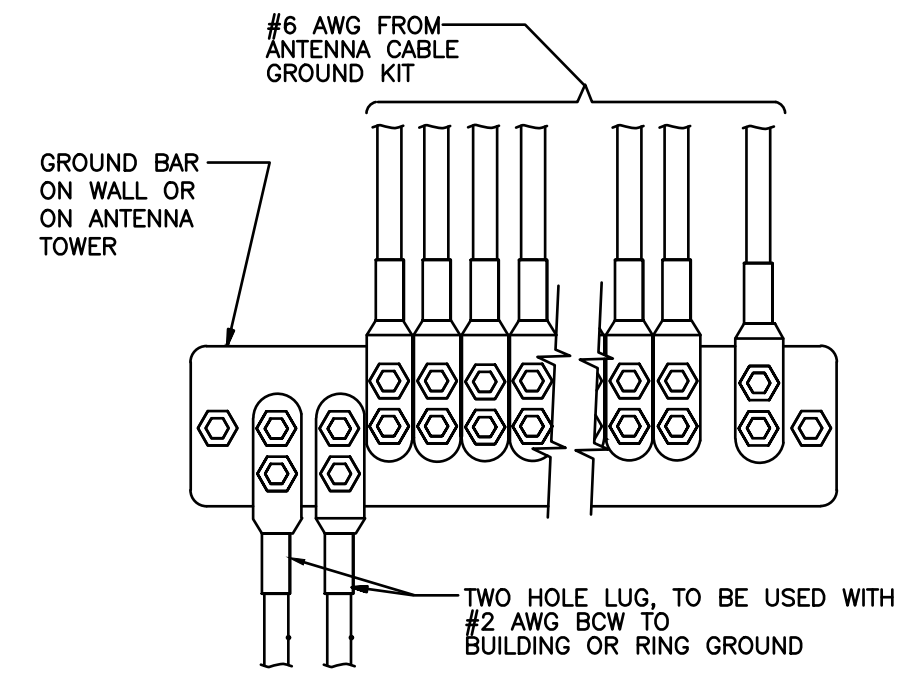
4 GROUND BAR DETAIL  
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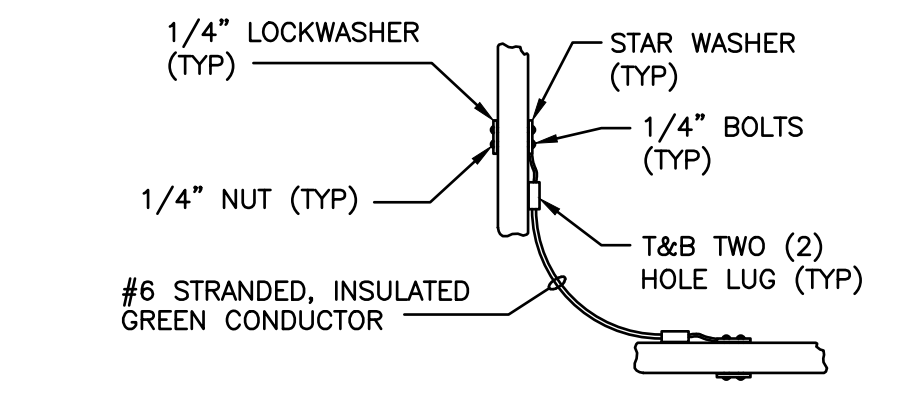
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G-1 SCALE: N.T.S.



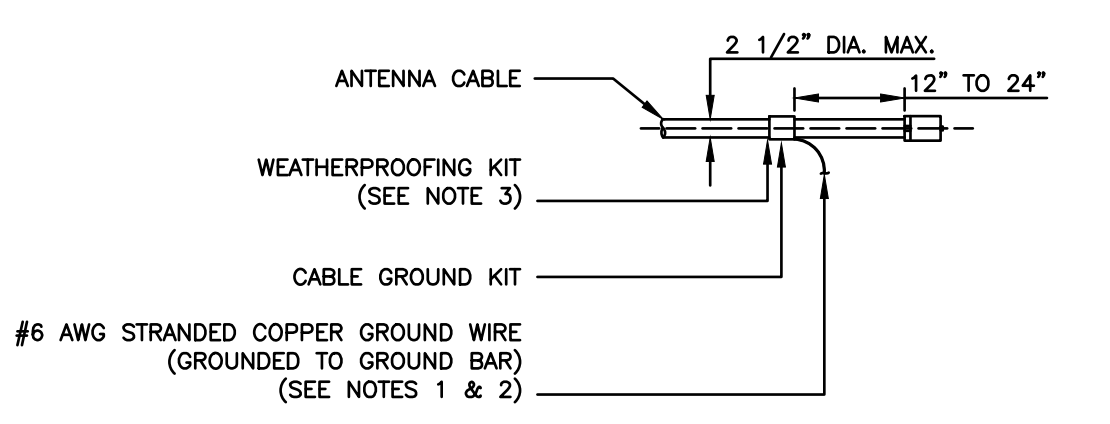
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G-1 SCALE: N.T.S.



3 GROUND WIRE TO GROUND BAR INSTALLATION  
G-1 SCALE: N.T.S.

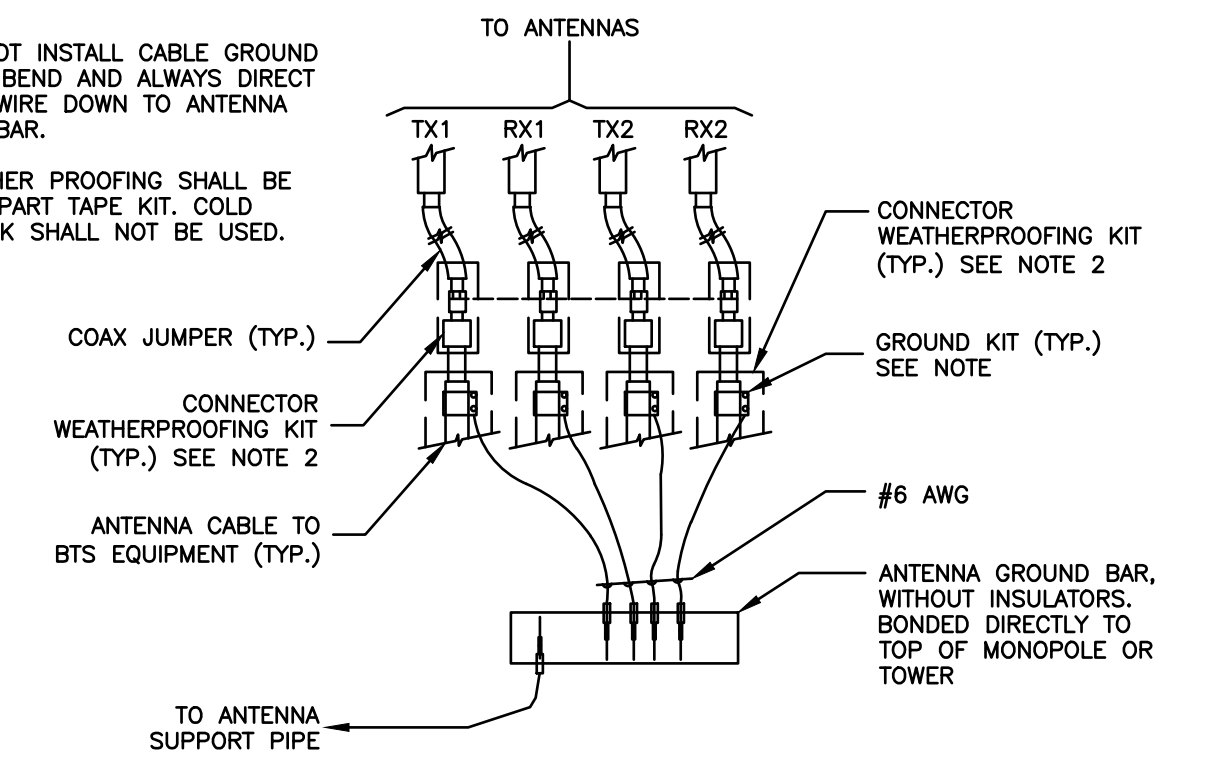


5 CABLE TRAY GROUNDING  
G-1 SCALE: N.T.S.



7 CABLE GROUND KIT ANTENNA CABLE CONN.  
G-1 SCALE: N.T.S.

NOTES:  
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.  
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.  
3. WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED. 1-2-1 (1"x2"x1") TAPE WRAPPING SHALL BE COMPLETED OVER ALL WEATHER PROOFING CONNECTIONS THAT EXTENDS MINIMUM 6" BEYOND THE CONNECTION POINT ON COAX LINES. EACH WRAP SHOULD OVERLAP THE PRECEEDING LAYER TO ENSURE WATER TIGHT INTEGRITY.



11 GROUND WIRE TO GROUND BAR CONN.  
G-1 SCALE: N.T.S.

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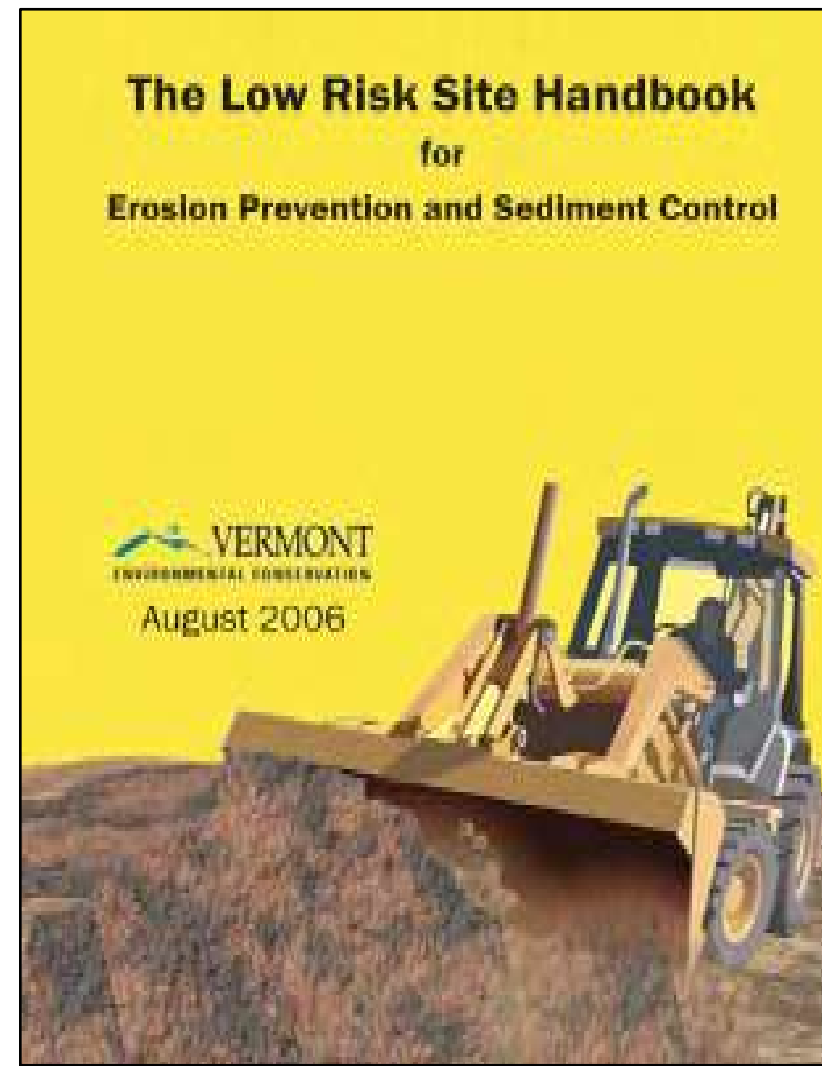
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WINDSOR COUNTY

SHEET TITLE  
GROUNDING RISER  
DIAGRAM & DETAILS

SHEET NUMBER  
**G-1**



**The Low Risk Site Handbook for Erosion Prevention and Sediment Control**

Any construction activity that disturbs 1 or more acres of land, or is part of a larger development plan that will disturb 1 or more acres, requires a Vermont state permit for stormwater discharges from construction sites.

Construction General Permit 3-9020 guides an applicant in the determination of the potential risk to water quality from the construction activity and categorizes the applicant's activity as Low Risk, Moderate Risk, or that which requires an Individual Permit.

The standards in this handbook serve as the required Erosion Prevention and Sediment Control Plan for construction sites determined to be "Low Risk" under GP-3-9020.

**Contact Information**  
 Vermont Department of Environmental Conservation  
 Watershed Management Division  
 One National Life Drive - Main Building - 2nd Floor  
 Montpelier, VT 05620-3522  
 Tel: 802-828-1535  
 Fax: 802-828-1544  
 dec.vermont.gov/watershed/stormwater

**Table of Contents**

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**UPDATE**

Rolled Erosion Control Product (RECP) materials have the potential to ensnare animals such as snakes and birds, which can lead to injury or fatality. This has been observed to be most problematic in products with chemically-bound joints in the supporting mesh.

Accordingly, only woven and interlinked products are approved for use in temporary RECP applications.

(See Tables 4.3 and 4.4 of the Vermont Standards & Specifications for Erosion Prevention and Sediment Control)

**Section 1 Introduction**

**What is erosion prevention and sediment control?**

Sediment washing into streams is one of the largest water quality problems in Vermont. Sediment can kill or weaken fish and other organisms and adversely impact aquatic habitat.

On most construction sites, vegetation that holds the soil in place and protects it from erosive forces of rain and runoff is removed, leaving large areas of soil exposed to the elements. During rainfall or snowmelt, the exposed soil may be easily eroded and transported to nearby streams, lakes, or wetlands.

To prevent this from happening, a small number of simple practices to prevent erosion and contain soil on the construction site must be used.

**Do I need a permit?**

Any construction activity that disturbs 1 or more acres of land, or is part of a larger development plan that will disturb 1 or more acres, requires a Vermont state permit for stormwater discharges from construction sites.

**Application Process**

- Obtain a copy of the permit and determine the Risk Category of the proposed project. The permit is available online at: [dec.vermont.gov/watershed/stormwater](http://dec.vermont.gov/watershed/stormwater)
- Submit the Notice of Intent (NOI) form, notifying the Department of your intent to begin construction. \*Submit the NOI to DEC at least 60 days before you plan to begin construction to allow sufficient time for processing.
- Upon receipt of written authorization from DEC, you are covered under the permit and may begin construction.
- If your project is determined to be "Low Risk", you must follow this handbook for erosion prevention and sediment control on your construction site.
- If your site is not classified as Low Risk, then you must follow the Department guidance in GP 3-9020 for Moderate Risk activities or those requiring an Individual Permit.

Introduction 2

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 WINDSOR COUNTY

SHEET TITLE  
 SITE HANDBOOK

SHEET NUMBER  
**HB-1**

**Section 2 The Requirements**

**1. Mark Site Boundaries**

**Purpose:**  
 Mark the site boundaries to identify the limits of construction. Delineating your site will help to limit the area of disturbance, preserve existing vegetation and limit erosion potential on the site.

**Requirements:**  
 You must physically mark the limits of construction.

3

**How to comply:**  
 Before beginning construction, walk the site boundaries and flag trees, post signs, or install orange safety fence. Fence is required on any boundary within 50 feet of a stream, lake, pond or wetland, unless the area is already developed (existing roads, buildings, etc.)

Properly placed barrier tape marks the boundaries and limits of construction on this site.

Mark Site boundaries 4

**2. Limit Disturbance Area**

**Purpose:**  
 Limit the amount of soil exposed at one time to reduce the potential erosion on site.

**Requirements:**  
 The permitted disturbance area is specified on the site's written authorization to discharge. Only the acreage listed on the authorization form may be exposed at any given time.

How to comply:  
 Plan ahead and phase the construction activities to ensure that no more than the permitted acreage is disturbed at one time. Be sure to properly stabilize exposed soil with seed and mulch or erosion control matting before beginning work in a new section of the site.

Limit Disturbance Area 6

**3. Stabilize Construction Entrance**

**Purpose:**  
 A stabilized construction entrance helps remove mud from vehicle wheels to prevent tracking onto streets.

**Requirements:**  
 If there will be any vehicle traffic off of the construction site, you must install a stabilized construction entrance before construction begins.

Construction entrance detail. Entrance/exit pad must keep mud from tracking onto both paved and dirt roads.

7

**How to install:**  
**Rock Size:** Use a mix of 1 to 4 inch stone  
**Depth:** 8 inches minimum  
**Width:** 12 feet minimum  
**Length:** 40 feet minimum (or length of driveway, if shorter)  
**Geotextile:** Place filter cloth under entire gravel bed

**Maintenance:**  
 Redress with clean stone as required to keep sediment from tracking onto the street.

Good stabilized construction entrance. Adequate width to accommodate construction traffic and prevent mud tracking onto neighboring streets. Ensure that the pad is 8 inches deep and 40 feet long. Stabilize Construction Entrance 8

**Poor construction exit. Rock pad is poorly constructed; rock is too small. Use filter fabric under 1 - 4 inch rock. No mud should be tracked onto roads.**

**Rock sizing and placement look OK for residential site, and very little mud appears on the road. The pad should be at least 8 inches thick and 12 feet wide. Ensure that pad is used as the entrance and exit points - note track marks near curb. Entire area needs seed and mulch.**

Stabilize Construction Entrance 9

**Rock pad was installed properly with right sized rock, but lack of filter fabric underliner is causing rock to spread and sink into the soil. Note tracking of mud onto road. Mud tracked on roadways violates the permit requirements and is a potential legal liability.**

Stabilize Construction Entrance 10

**4. Install Silt Fence**

**Purpose:**  
 Silt fences intercept runoff and allow suspended sediment to settle out.

**Requirements:**  
 Silt fence must be installed:  
 • on the downhill side of the construction activities  
 • between any ditch, swale, storm sewer inlet, or waters of the State and the disturbed soil

\* Hay bales must not be used as sediment barriers due to their tendency to degrade and fall apart.

Remember: stakes go on the downhill side. Dig trench first, install fence in downhill side of trench, tuck fabric into trench, then backfill on the uphill side (the side toward the bare soil area).

Install Silt Fence 11

**Where to place:**

- Place silt fence on the downhill edge of bare soil. At the bottom of slopes, place fence 10 feet downhill from the end of the slope (if space is available).
- Ensure the silt fence catches all runoff from bare soil.
- Maximum drainage area is 1/4 acre for 100 feet of silt fence.
- Install silt fence across the slope (not up and down hills).
- Install multiple rows of silt fence on long hills to break up flow.
- Do not install silt fence across ditches, channels, or streams or in stream buffers.

**How to install silt fence:**

- Dig a trench 6 inches deep across the slope
- Unroll silt fence along the trench
- Ensure stakes are on the downhill side of the fence
- Join fencing by rolling the end stakes together
- Drive stakes in against downhill side of trench
- Drive stakes until 16 inches of fabric is in trench
- Push fabric into trench; spread along bottom
- Fill trench with soil and pack down

**Maintenance:**

- Remove accumulated sediment before it is halfway up the fence.
- Ensure that silt fence is trenched in ground and there are no gaps.

Install Silt Fence 12

**Very good use of continuous "super" (reinforced) silt fence. Note that wire fencing is installed between the filter fabric and the posts.**

**Good use of J-hook in silt fence to trap sediment in water running along the fence. Sediment must be removed before it reaches halfway to top of fence.**

Install Silt Fence 13

**Very good installation of multiple silt fences on long slope. Turn ends of fencing uphill to prevent bypass. Leave silt fences up until grass is well established on all areas of the slope. Re-seed bare areas as soon as possible. Remove or spread accumulated sediment and remove silt fence after all grass is up.**

**Poor installation of silt fencing. Silt fence must be trenched in along bottom. Hay bales are not approved as sediment barriers.**

Install Silt Fence 14



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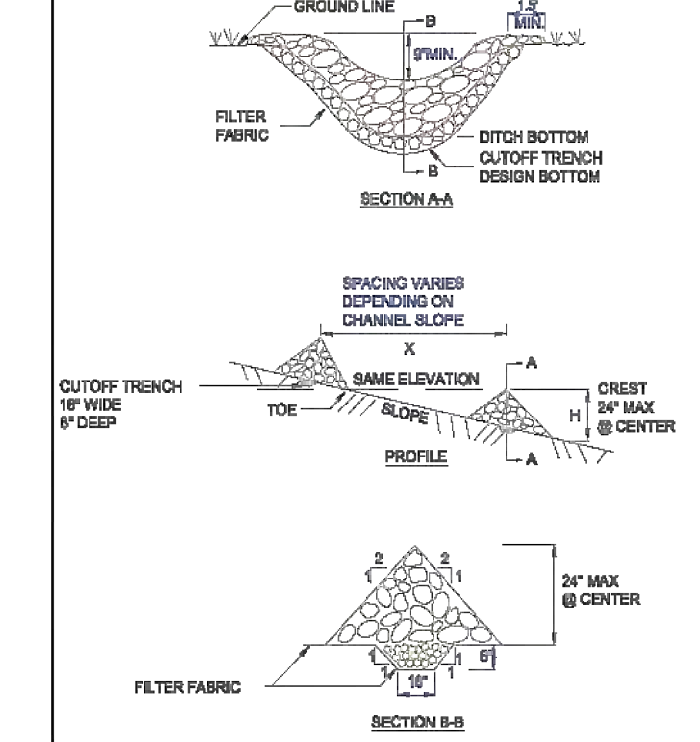
SHEET TITLE

SITE HANDBOOK

SHEET NUMBER

**HB-2**

as needed to allow channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam.  
If significant erosion occurs between check dams, a liner of stone should be installed.



Slow Down Channelized Runoff 20

**6. Slow Down Channelized Runoff**

**Purpose:** Stone check dams reduce erosion in drainage channels by slowing down the stormwater flow.

**Requirements:** If there is a concentrated flow (e.g. in a ditch or channel) of stormwater on your site, then you must install stone check dams. Hay bales must not be used as check dams.

**How to install:**  
**Height:** No greater than 2 feet. Center of dam should be 9 inches lower than the side elevation  
**Side slopes:** 2:1 or flatter (see p.39 for slope calculation)  
**Stone size:** Use a mixture of 2 to 9 inch stone  
**Width:** Dams should span the width of the channel and extend up the sides of the banks  
**Spacing:** Space the dams so that the bottom (toe) of the upstream dam is at the elevation of the top (crest) of the downstream dam. This spacing is equal to the height of the check dam divided by the channel slope.

**Spacing (in feet) = Height of check dam (in feet) / Slope in channel (ft/ft)**

**Maintenance:** Remove sediment accumulated behind the dam

19



Good installation of rock-lined berm to divert rain runoff around residential construction site on steep slope near a river. Diversion ditches can be lined with grass if channel slopes are 5% or less, and with 4 inch stone if they are steeper. 18

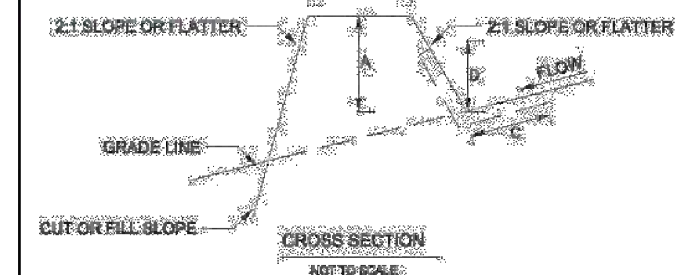


Good construction, seeding, and stabilization of diversion berm. Note that diversion ditch is lined with grass on flatter part of slope, and with rock on steeper part. 17



Well built vegetated berm diverting runoff. Diversion berms and ditches should be seeded after construction. Use matting if slopes are steep. 17

**How to install:**



A - Berm Height: 1.5 feet  
B - Berm Width: 2 feet  
C - Flow width: 4 feet  
D - Flow depth: 8 inches  
Side slopes: 2:1 or flatter \*

1. Compact the berm with a shovel or earth-moving equipment.
2. Seed and mulch berm or cover with erosion control matting immediately after installation.
3. Stabilize the flow channel with seed and straw mulch or erosion control matting. Line the channel with 4 inch stone if the channel slope is greater than 20%\*.
4. Ensure the berm drains to an outlet stabilized with riprap. Ensure that there is no erosion at the outlet.
5. The diversion berm shall remain in place until the disturbed areas are completely stabilized.

\* See page 39 for slope calculations.

Divert Upland Runoff 16

**5. Divert Upland Runoff**

**Purpose:** Diversion berms intercept runoff from above the construction site and direct it around the disturbed area. This prevents "clean" water from becoming muddied with soil from the construction site.

**Requirements:** If stormwater runs onto your site from upslope areas and your site meets the following two conditions, you must install a diversion berm before disturbing any soil.

1. You plan to have one or more acres of soil exposed at any one time (excluding roads).
2. Average slope of the disturbed area is 20% or steeper.\*



Berms and ditches divert clean upland runoff around construction sites and reduce erosion and sedimentation problems. Stabilize berms and ditches after construction. 15

**How to comply:** Prepare bare soil for seeding by grading the top 3 to 6 inches of soil and removing any large rocks or debris.

**Seeding Rates for Temporary Stabilization**  
April 15 - Sept. 15 - Ryegrass (annual or perennial): 20 lbs./acre  
Sept. 15 - April 15 - Winter rye: 120 lbs./acre

**Seeding Rates for Final Stabilization:**

Choose from:	Variety	lbs./acre	lbs./1000 sq.ft.
Birdfoot trefoil	Empire/Pardee	5 <sup>1</sup>	0.10
or			
Common white clover	Common	8	0.20
plus			
Tall Fescue	KY-31/Rebel	10	0.25
plus			
Redtop	Common	2	0.05
or			
Ryegrass (perennial)	Penntine/Linn	5	0.10

<sup>1</sup> - Mix 2.5 each of Empire and Pardee OR 2.5 lbs. of Birdfoot and 2.5 lbs. white clover per acre.

**Mulching Rates**  
April 15 - Sept.15 - Hay or Straw: 1 inch deep (1-2 bales/1000 s.f.)  
Sept.15 - April 15 - Hay or Straw: 2 in. deep (2-4 bales/1000 s.f.)

**Erosion Control Matting**  
As per manufacturer's instructions  
**Hydroseed**  
As per manufacturer's instructions  
**Stabilize Exposed Soil** 26

**8. Stabilize Exposed Soil**

**Purpose:** Seeding and mulching, applying erosion control matting, and hydroseeding are all methods to stabilize exposed soil. Mulches and matting protect the soil surface while grass is establishing.

**Requirements:** All areas of disturbance must have temporary or permanent stabilization within 7, 14, or 21 days of initial disturbance, as stated in the project authorization. After this time, any disturbance in the area must be stabilized at the end of each work day.

- The following exceptions apply:
- Stabilization is not required if earthwork is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.
  - Stabilization is not required if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of 2 feet or greater (e.g. house foundation excavation, utility trenches).

All areas of disturbance must have permanent stabilization within 48 hours of reaching final grade (See page 33).



This wet pond is designed to treat stormwater runoff, recharge groundwater, regulate the flow of water into nearby streams, and prevent downstream flooding. 24



Install all permanent stormwater treatment practices before commencing any impervious surfaces on site. This stormwater wetland treats stormwater runoff from the adjacent parking lot. 24

**7. Construct Permanent Controls**

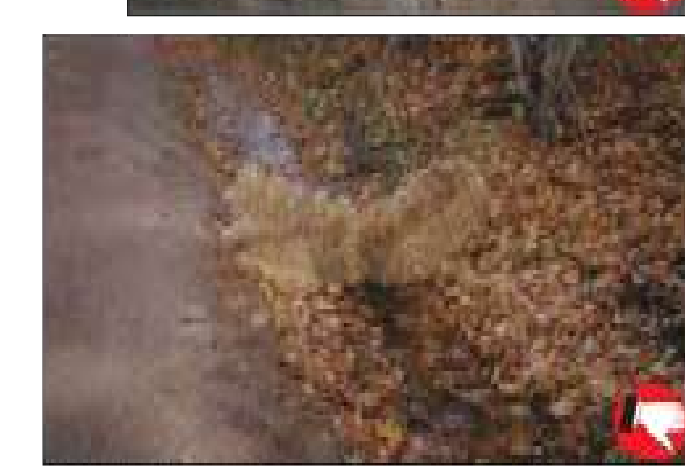
**Purpose:** Permanent stormwater treatment practices are constructed to maintain water quality, ensure groundwater flows, and prevent downstream flooding. Practices include detention ponds and wetlands, infiltration basins, and stormwater filters.

**Requirements:** If the total impervious\* area on your site, or within the common plan of development, will be 1 or more acres, you must apply for a State Stormwater Discharge Permit and construct permanent stormwater treatment practices on your site. These practices must be installed before the construction of any impervious surfaces.

**How to comply:** Contact the Vermont Stormwater Program and follow the requirements in the Vermont Stormwater Management Manual. The Stormwater Management Manual is available at: [dec.vermont.gov/watershed/stormwater](http://dec.vermont.gov/watershed/stormwater)

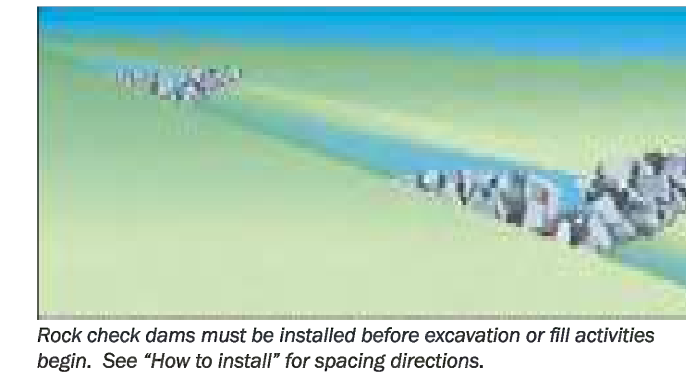
\*An impervious surface is a manmade surface, including, but not limited to, paved and unpaved roads, parking areas, roofs, driveways, and walkways, from which precipitation runs off rather than infiltrates.

23



Hay bales must not be used as check dams due to their high failure rates. 22

Slow Down Channelized Runoff 22



Rock check dams must be installed before excavation or fill activities begin. See "How to Install" for spacing directions. 21



Good installation of temporary rock check dams. The check dams should extend up the sides of the banks. Middle section should be lower than the sides. Clean out sediment as it accumulates. Remove check dams after site and channel are stabilized with vegetation. 21

Slow Down Channelized Runoff 21

7. Silt fence and other practices requiring earth disturbance must be installed ahead of frozen ground.

8. Mulch used for temporary stabilization must be applied at double the standard rate, or a minimum of 3 inches with an 80-90% cover.

9. To ensure cover of disturbed soil in advance of a melt event, areas of disturbed soil must be stabilized at the end of each work day, with the following exceptions:

- If no precipitation within 24 hours is forecast and work will resume in the same disturbed area within 24 hours, daily stabilization is not necessary.
  - Disturbed areas that collect and retain runoff, such as house foundations or open utility trenches.
10. Prior to stabilization, snow or ice must be removed to less than 1 inch thickness.
11. Use stone to stabilize areas such as the perimeter of buildings under construction or where construction vehicle traffic is anticipated. Stone paths should be 10-20 feet wide to accommodate vehicular traffic.

Winter Stabilization 32

**Requirements for Winter Construction**

If construction activities involving earth disturbance continue past October 15 or begin before April 15, the following requirements must be adhered to:

1. Enlarged access points, stabilized to provide for snow stockpiling.
2. Limits of disturbance moved or replaced to reflect boundary of winter work.
3. A snow management plan prepared with adequate storage and control of meltwater, requiring cleared snow to be stored down slope of all areas of disturbance and out of stormwater treatment structures.
4. A minimum 25 foot buffer shall be maintained from perimeter controls such as silt fence.
5. In areas of disturbance that drain to a water body within 100 feet, two rows of silt fence must be installed along the contour.
6. Drainage structures must be kept open and free of snow and ice dams.

Winter Stabilization 31



Stabilization and seeding of slopes before winter will reduce or eliminate erosion in the spring. The grass on this slope is holding the soil in place and promoting infiltration of the melting snow. 30

stabilize the site for the winter period. This includes use of Erosion Control Matting or netting of a heavy mulch layer. Seeding with winter rye is recommended to allow for early germination during wet spring conditions.

3. Where mulch is specified, apply roughly 2 inches with an 80-90% cover. Mulch should be tracked in or stabilized with netting in open areas vulnerable to wind.

Winter Stabilization 30

**9. Winter Stabilization**

**Purpose:** Managing construction sites to minimize erosion and prevent sediment loading of waters is a year-round challenge. In Vermont, this challenge becomes even greater during the late fall, winter, and early spring months.

'Winter construction' as discussed here, describes the period between October 15 and April 15, when erosion prevention and sediment control is significantly more difficult. Rains in late fall, thaws throughout the winter, and spring melt and rains can produce significant flows over frozen and saturated ground, greatly increasing the potential for erosion.

**Requirements for Winter Shutdown:** For those projects that will complete earth disturbance activities prior to the winter period (October 15), the following requirements must be adhered to:

1. For areas to be stabilized by vegetation, seeding shall be completed no later than September 15 to ensure adequate growth and cover.
2. If seeding is not completed by September 15, additional non-vegetative protection must be used to

29



Hydroseeding exposed soil is a good option for stabilizing large areas. Hydroseed is a mixture of seed, fertilizer, water and a tackifier to hold the seed in place before it germinates. 28



Excellent application of hay mulch. Good mulch cover and sediment barrier around soil stockpile. 28

Stabilize Exposed Soil 28



Excellent stabilization of large slopes to limit the area of disturbance. Make sure to install erosion control matting within 48 hours of grading to ensure good contact between soil and mat. 27



Good tracking up and down slope. Tracking slows down runoff and promotes infiltration. More mulch is needed. 27

Stabilize Exposed Soil 27

### 10. Stabilize Soil at Final Grade

**Purpose:**  
Stabilizing the site with seed and mulch or erosion control matting when it reaches final grade is the best way to prevent erosion while construction continues.

**Requirements:**  
Within 48 hours of final grading, the exposed soil must be seeded and mulched or covered with erosion control matting.



Lawn is fully established before construction is completed at this home site.

33

**How to comply:**

Bring the site or sections of the site to final grade as soon as possible after construction is completed. This will reduce the need for additional sediment and erosion control measures and will reduce the total disturbed area.

For seeding and mulching rates, follow the specifications under Rule 8, "Stabilizing Exposed Soil".



Within 48 hours of final grading, erosion control matting and mulch have been applied.

Stabilize Soil at Final Grade

34

### 11. Dewatering Activities

**Purpose:**  
Treat water pumped from dewatering activities so that it is clear when leaving the construction site.

**Requirements:**  
Water from dewatering activities that flows off of the construction site must be clear. Water must not be pumped into storm sewers, lakes, or wetlands unless the water is clear.

**How to comply:**  
Using sock filters or sediment filter bags on dewatering discharge hoses or pipes, discharge water into silt fence enclosures installed in vegetated areas away from waterways. Remove accumulated sediment after the water has dispersed and stabilize the area with seed and mulch.



Water is pumped from the construction site into a silt fence enclosure on a vegetated area or into a sock filter away from waterways.

Dewatering Activities

36

### 12. Inspect Your Site

**Purpose:**  
Perform site inspections to ensure that all sediment and erosion control practices are functioning properly. Regular inspections and maintenance of practices will help to reduce costs and protect water quality.

**Requirements:**  
Inspect the site at least once every 7 days and after every rainfall or snowmelt that results in a discharge from the site. Perform maintenance to ensure that practices are functioning according to the specifications outlined in this handbook.

In the event of a noticeable sediment discharge from the construction site, you must take immediate action to inspect and maintain existing erosion prevention and sediment control practices. Any visibly discolored stormwater runoff to waters of the State must be reported.

Forms for reporting discharges are available at: [dec.vermont.gov/watershed/stormwater](http://dec.vermont.gov/watershed/stormwater)

Example Site Inspection Form		Y	N
<b>1. Boundary Limits</b>			
• Site boundary markers are up and visible			
• Disturbance is only occurring within marked boundaries			
<b>2. Limit Disturbance Area</b>			
• Only the acreage listed on the Authorization to Discharge is disturbed at one time			
<b>3. Construction Entrance</b>			
• Off-site tracking of mud prevented			

37

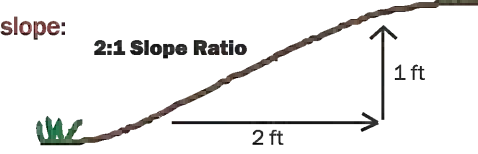
Example Site Inspection Form		Y	N
<b>4. Sediment Barriers</b>			
• Silt fence is trenched into ground with no gaps			
• Accumulated sediment is less than 1/2 way up the fence			
<b>5. Diversion Berms</b>			
• All upland stormwater is diverted around the site			
<b>6. Check Dams</b>			
• Check dams are in place and stretch the width of the channel			
• Channels are stable with no erosion			
<b>8. Stabilize Exposed Soil</b>			
• Seed and mulch, and/or erosion control blankets are being used in accordance with the permit requirements			
<b>9. Winter Stabilization</b>			
• After September 15, all disturbed areas have been seeded and mulched to 3 inches deep, or covered in erosion control blankets.			
• For ongoing construction, exposed soil is mulched prior to forecasted rain events.			
<b>10. Stabilize Soil at Final Grade</b>			
• Within 48 hours of establishing final grade, soil is seeded and mulched or covered in erosion control matting			
<b>Water flowing off the site</b>			
• Water is free of sediment (water is clear)			

Inspection

38

### Section 3 Additional Resources

**How to calculate slope:**



Approximate Slope Conversions			
Steepness	Percent	Slope ratio (ft/ft)	Degrees
Very steep	100%	1:1	45°
	50%	2:1	27°
Moderate	33%	3:1	18°
	25%	4:1	14°
Slight	10%	10:1	6°
	5%	20:1	3°

**How to estimate disturbance area:**  
1 acre = 43,560 square feet = 4,840 square yards

Area in acres (width in feet x length in feet)						
(ft x ft)	100	150	200	300	400	500
100	0.2	0.3	0.5	0.7	0.9	1.1
150	0.3	0.5	0.7	1.0	1.4	1.7
200	0.5	0.7	0.9	1.4	1.8	2.3
300	0.7	1.0	1.4	2.1	2.8	3.4
400	0.9	1.4	1.8	2.8	3.7	4.6
500	1.1	1.7	2.3	3.4	4.6	5.7

39

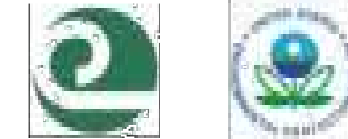
### Acknowledgements

Design details and standards for sediment and erosion control practices have been adapted from the New York State Standards and Specifications for Erosion and Sediment Control, August 2005.

Photographs and illustrations provided by Tetra Tech, Kim Greenwood, Don Lake, Jim Pease, and Hydrograss Technologies.

This document has been adapted from the *Kentucky Erosion Prevention and Sediment Control Field Guide* produced by the Tetra Tech Water Resources Division in Fairfax VA for the Kentucky Division of Conservation and Division of Water. Inquiries regarding this publication should be directed to Barry Tinning, Tetra Tech, 1060 Eaton Place, Suite 340, Fairfax VA 22030 (703.385.6000).

Printing of this manual is sponsored by the Winooski Natural Resources Conservation District through a grant by the U.S. Environmental Protection Agency.



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VT Relay Service for the Hearing Impaired  
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AEG PROJECT #: 2023-0079

DRAWN BY: JWH

CHECKED BY: SNA

### SUBMITTALS

REV#	DATE	DESCRIPTION
2	06/05/24	REVISED
3	08/19/24	REVISED
4	10/20/24	REVISED
5	10/24/24	REVISED
6	12/11/24	REVISED
7	02/18/25	REVISED
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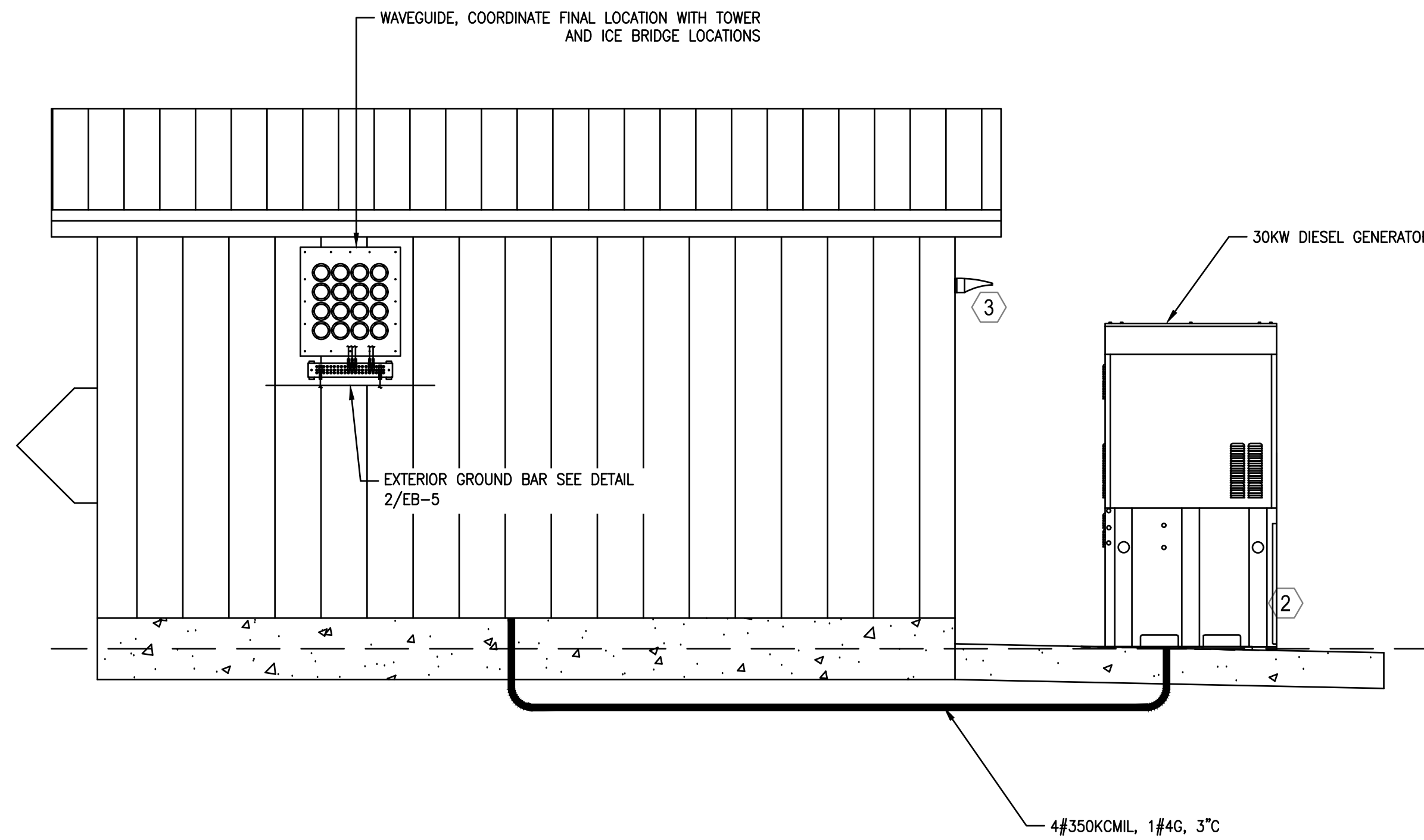
SITE HANDBOOK

SHEET NUMBER

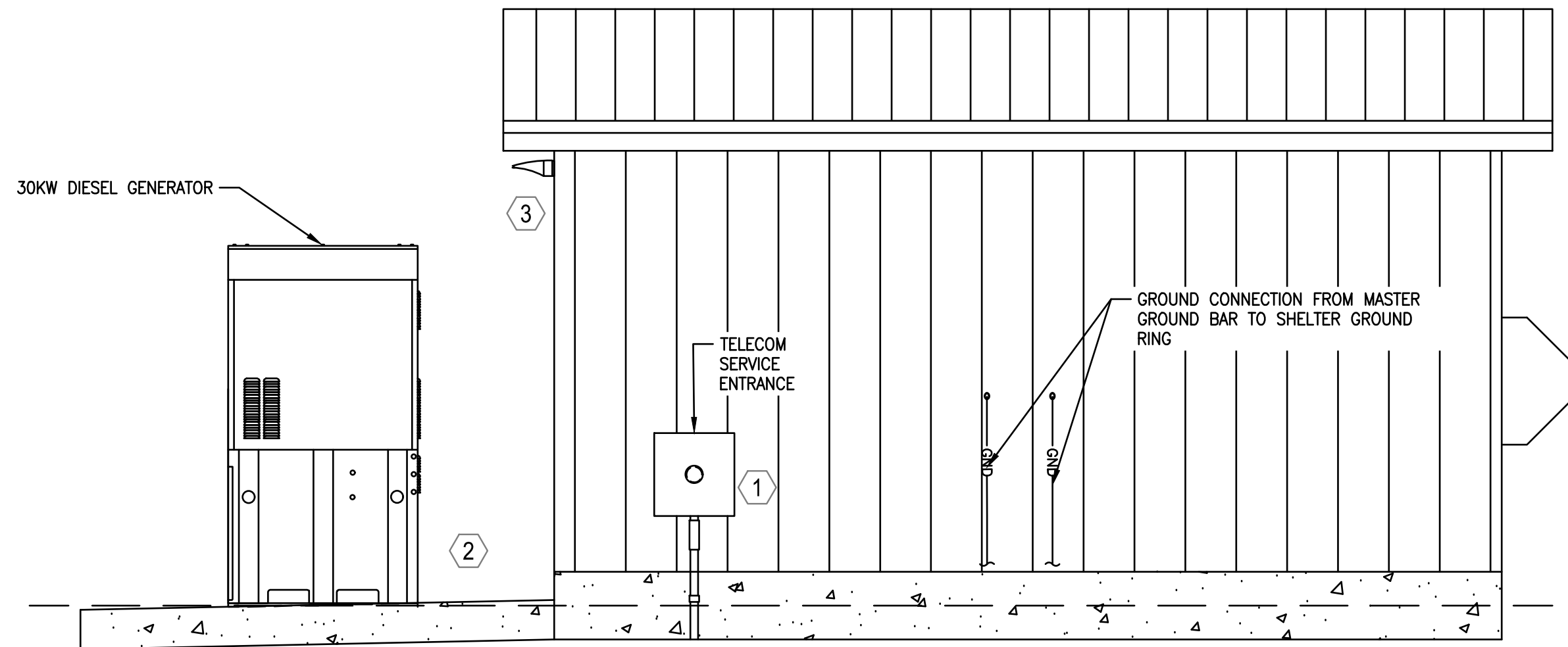
**HB-3**

Vermont Department of Environmental Conservation  
Watershed Management Division  
One National Life Drive - Davis 3  
Montpelier, VT 05620-3522  
Tel: 802-828-1115  
Fax: 802-828-1544

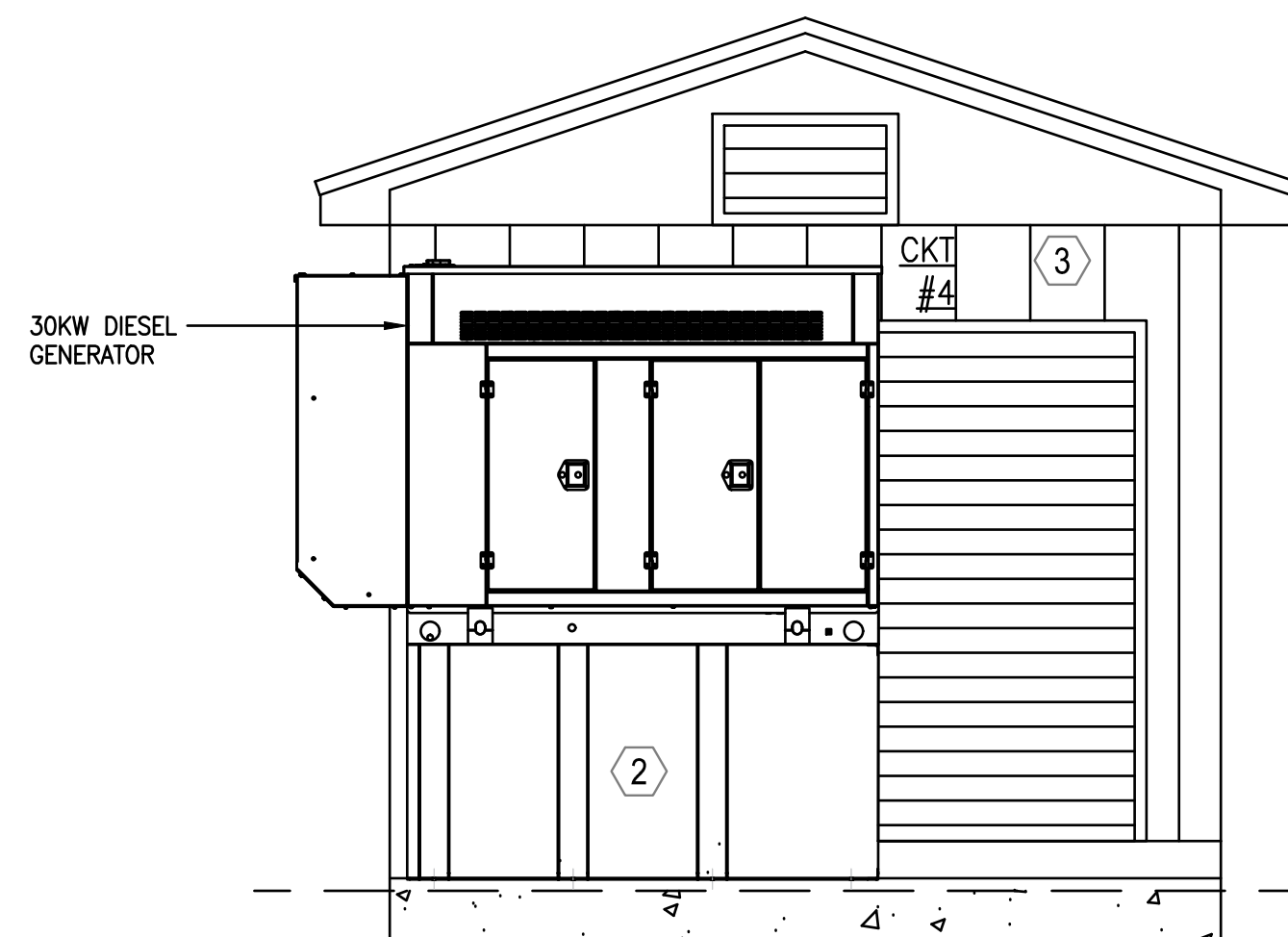
[dec.vermont.gov/watershed/stormwater](http://dec.vermont.gov/watershed/stormwater)



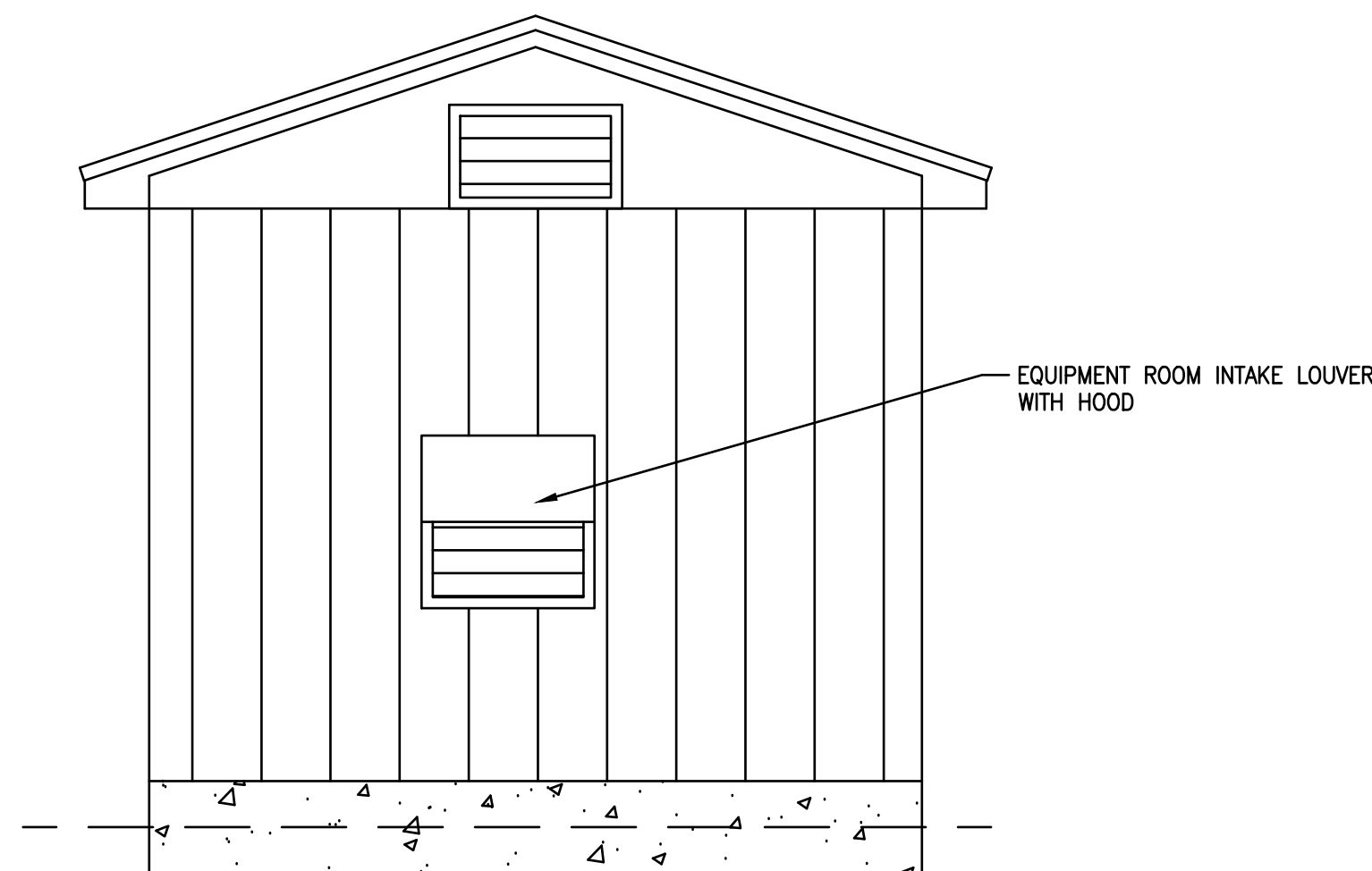
1 EXTERIOR ELEVATION "A"  
EB-2 SCALE: 22x34: 3/8"=1'



2 EXTERIOR ELEVATION "C"  
EB-2 SCALE: 22x34: 3/8"=1'



3 EXTERIOR ELEVATION "B"  
EB-2 SCALE: 22x34: 3/8"=1'



4 EXTERIOR ELEVATION "D"  
EB-2 SCALE: 22x34: 3/8"=1'

**GENERAL NOTES:**

1. COORDINATE BUILDING CONSTRUCTION WITH STRUCTURAL DRAWINGS.
2. COORDINATE FINAL MECHANICAL EQUIPMENT LOCATIONS WITH MECHANICAL DRAWINGS.
3. COORDINATE WITH ELECTRICAL SITE DRAWINGS FOR FINAL CONNECTIONS OF GROUNDING CABLES.

**KEY NOTES:**

- 1 PROVIDE 2" SCH 40 PVC FROM UTILITY POLE TO TELECOM PULLBOX. PROVIDE 2" SCH 40 THRU WALL INTO SHELTER.
- 2 PROVIDE CONNECTION OF CONDUIT AND WIRING FROM VERIZON BATTERY CABINET TO GENERATOR PER MANUFACTURER'S RECOMMENDATIONS.
- 3 PROVIDE RAB WPLED10 MOUNT 6" ABOVE DOOR.

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**Vertex Towers LLC**

VERTEX TOWERS LLC  
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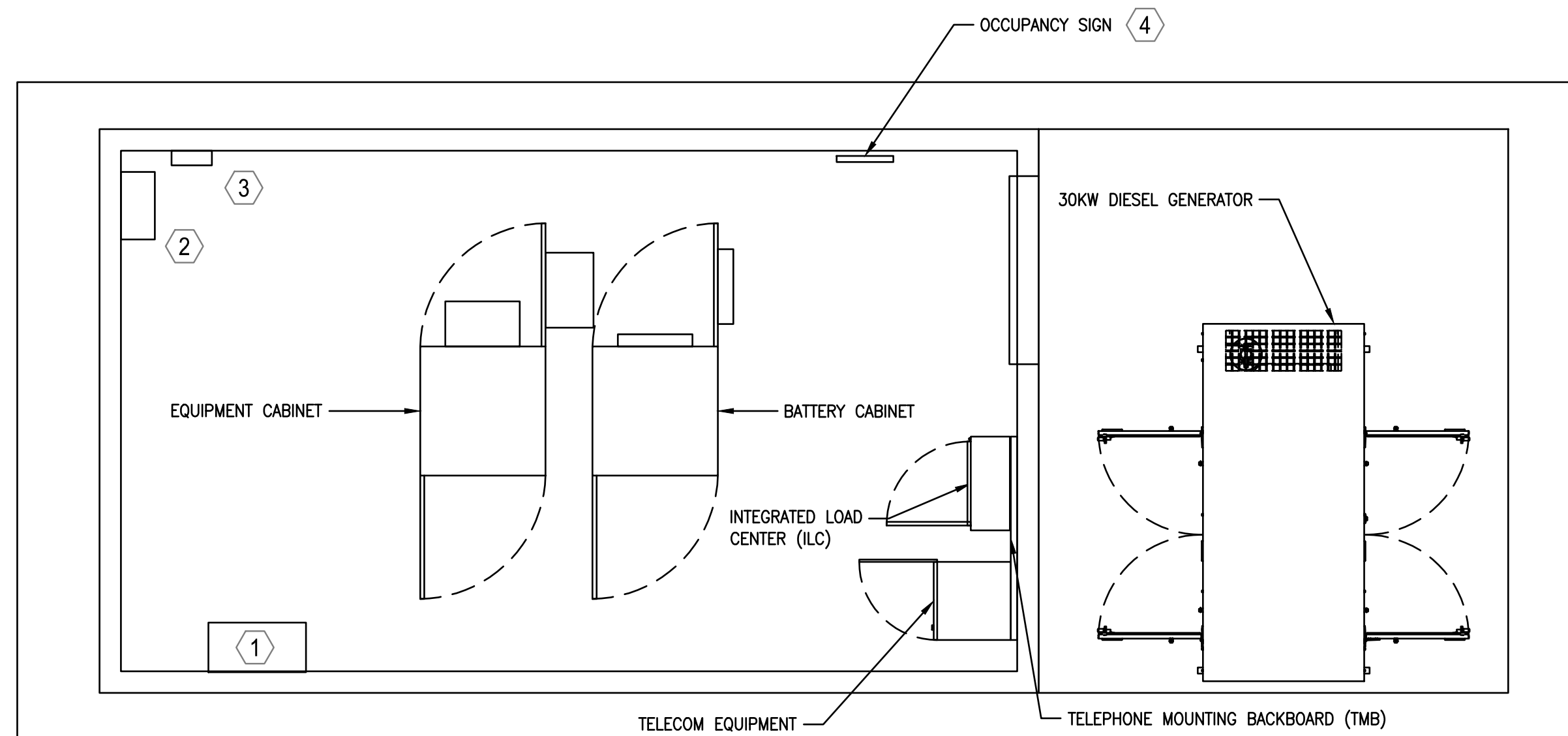
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WINDSOR COUNTY

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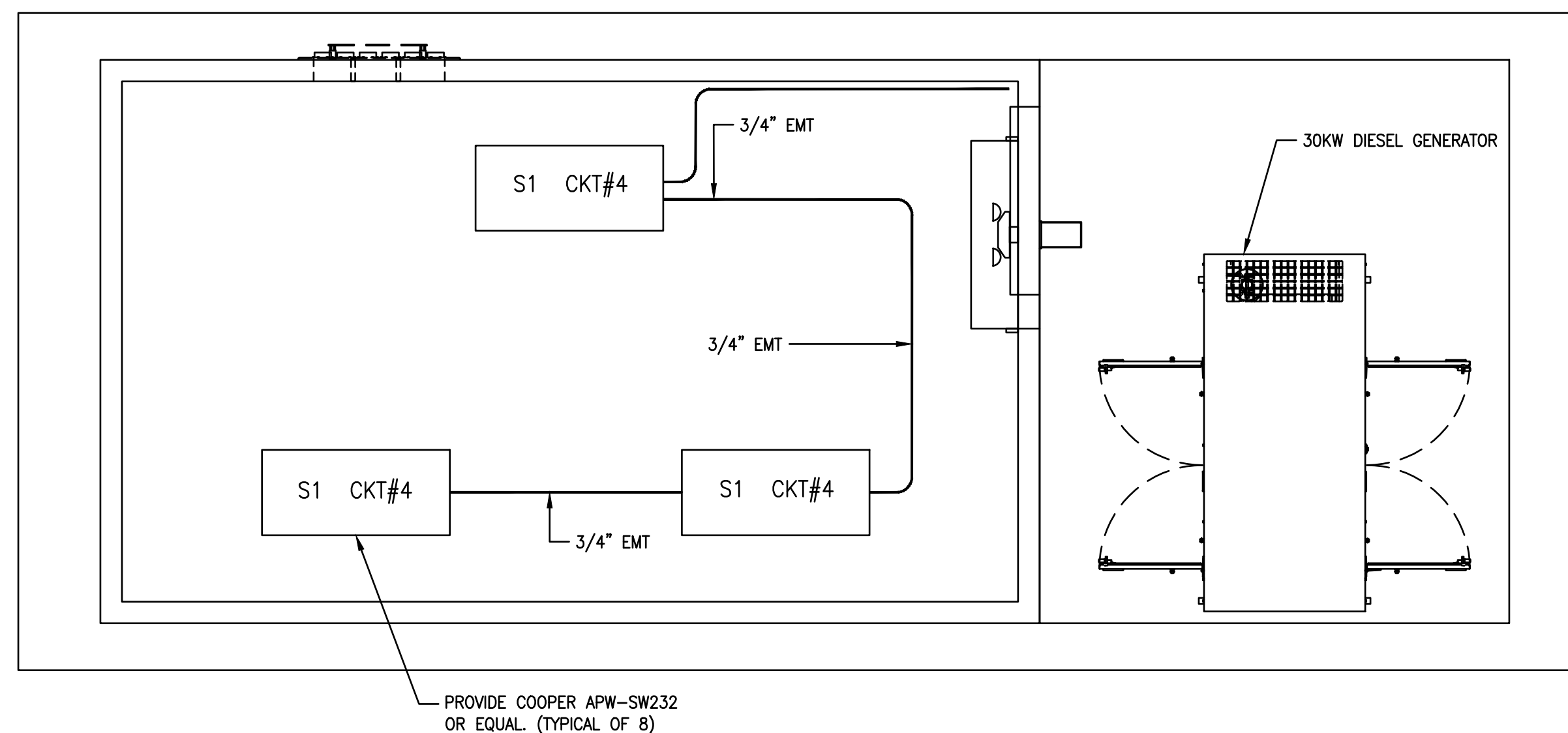
TEMPORARY ACCESS  
MAT DETAIL/NOTES

SHEET NUMBER

**EB-2**



1 EQUIPMENT FLOOR PLAN  
EB-3 SCALE: 22x34: 3/8"=1'



2 REFLECTED CEILING PLAN - ELECTRICAL  
EB-3 SCALE: 22x34: 3/8"=1'

GENERAL NOTES:

1. CONTRACTOR TO CONFIRM ALL EQUIPMENT LOCATIONS WITH OWNER.
2. COORDINATE BUILDING CONSTRUCTION WITH STRUCTURAL DRAWINGS.
3. COORDINATE FINAL MECHANICAL EQUIPMENT LOCATIONS WITH MECHANICAL DRAWINGS.
4. COORDINATE WITH ELECTRICAL SITE DRAWINGS FOR FINAL COORDINATE WITH ELECTRICAL SITE DRAWINGS FOR FINAL CONNECTIONS OF GROUNDING CABLES.
5. ALL INTERIOR GROUND CABLES TO BE #2 THHN STRANDED GREEN UNLESS OTHERWISE NOTED.
6. ALL CABLE TRAY TO BE 18" WIDE AND SUSPENDED FROM THE ALL CABLE TRAY TO BE 18" WIDE AND SUSPENDED FROM THE CEILING AS SHOWN WITH 17" HANGERS AND INSULATED CEILING BRACKETS. PROVIDE AUX CABLE BRACKETS AS SHOWN.
7. ALL GROUNDING CABLES TO BE SECURED USING WAX STRING, PLASTIC WIRE TIES NOT PERMITTED
8. ALL CABLES RUN IN EMT OR LIQUID TIGHT FLEXIBLE CONDUIT AND ATTACHED TO ROOF JOISTS.

KEY NOTES:

1. PROVIDE (1) 24" FOLDING TABLE AND (1) ROLLING OFFICE CHAIR FOR WORK SPACE.
2. PROVIDE (1) COMMERCIAL GRADE ROLLING UTILITY CART. HEAVY DUTY POLYMER WITH 3 SHELVES
3. PROVIDE (1) 6' FIBERGLASS STEP LADDER WITH MINIMUM 350 LB. CAPACITY.
4. OCCUPANCY SIGN SHALL BE READILY VISIBLE. DURABLE SIGN IN LETTERS NOT LESS THAN 1" HIGH ON CONTRASTING BACKGROUND THAT READS: "THIS DOOR TO REMAIN OPEN WHEN THE SPACE IS OCCUPIED"

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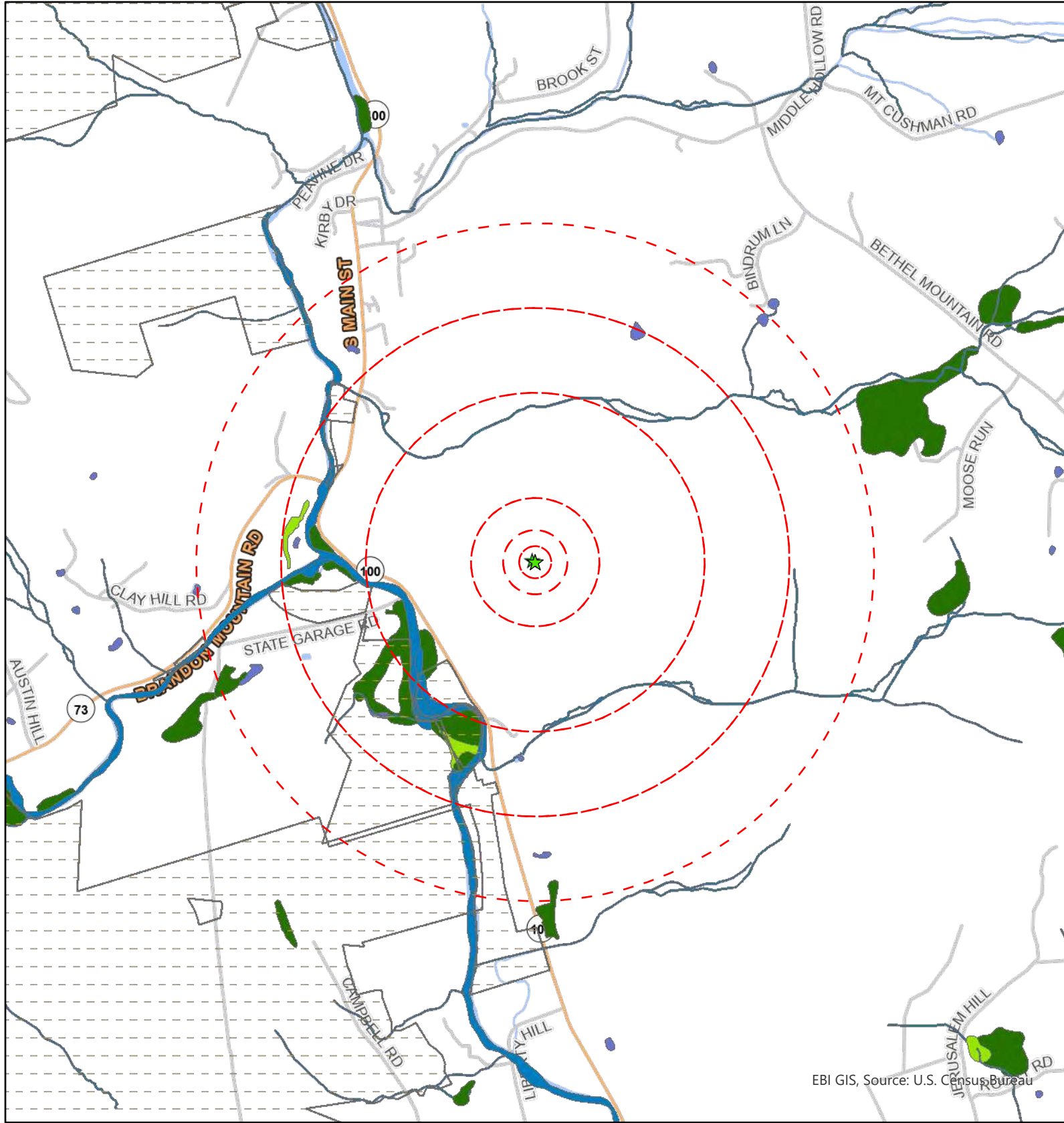
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MAT DETAIL/NOTES

SHEET NUMBER  
**EB-3**





\*See associated legend for additional map symbology

EBI GIS, Source: U.S. Census Bureau  
 Source: Selected data from ESRI & EBI.  
 See associated map legend for more details

★ Project Site    (---) Site Radius at 250', 500', 1000', 1/2, 3/4 & 1 mile

Land Resources



Date: 2/5/2024






Rochester  
 Rochester  
 1030 Vermont Route 100  
 Rochester, Vermont 5767



# Land Resources Legend

## Scenic Parkways, Rivers & Trails

-  National Scenic Parkway
-  National Park Service Trail / Appalachian Trail
- AZ - BLM Historic Trail
- CT - DEP Trail
- MT- Lewis & Clark Trail
- NY - Trails






-  NY - Scenic Landmark Area
-  NY - Statewide Area of Scenic Significance
-  National Wild, Scenic River
-  State Wild, Scenic, Protected River
-  PA - Scenic River

Sources: National Park Service [http://www.nps.gov/gis/data\\_info/](http://www.nps.gov/gis/data_info/); Bureau of land management <http://www.blm.gov/wo/st/en.html>; CT DEP [http://www.ct.gov/deep/cwp/view.asp?a=2698&q=323342&deepNav\\_GID=1707%20](http://www.ct.gov/deep/cwp/view.asp?a=2698&q=323342&deepNav_GID=1707%20); NY GIS Clearinghouse <http://gis.ny.gov/>; National W & S Rivers <http://www.rivers.gov/rivers/mapping-gis.php>; Montana GIS <http://nris.mt.gov/gis>; State rivers data from state government and protection agencies.









## State Conservation, Lands & Wildlife Areas

-  CT - DEP Property
- CO - Public Access Wildlife Area
- FL - Wildlife Management Area
- MT - National Wildlife Refuge
- NH - WMNF Management Area
- ME - Conservation Land
- TN - Wildlife Resource Land
- TX - State Park or Wildlife Mgt Area
-  TX - Audubon Sanctuary
-  CT - DEP Municipal and Open Space
- NH - Conservation Land
- NY - DEC State Lands
-  NY - Agricultural District

Sources: CT DEP [http://www.ct.gov/deep/cwp/view.asp?a=2698&q=323342&deepNav\\_GID=1707%20](http://www.ct.gov/deep/cwp/view.asp?a=2698&q=323342&deepNav_GID=1707%20); CO Wildlife Space [http://ndis.nrel.colostate.edu/ftp/ftp\\_response.asp](http://ndis.nrel.colostate.edu/ftp/ftp_response.asp); Florida Fish and Wildlife [www.MyFWC.com](http://www.MyFWC.com); Montana GIS <http://nris.mt.gov/gis>; NH GRANIT <http://www.granit.unh.edu/data/downloadfree/data>; ME GIS <http://megis.maine.gov/catalog>; TN GIS <http://www.state.tn.us/environment/parks/gis/data/>; TX GIS <http://www.glo.state.tx.us/nri/data/index.html>; NY GIS Clearinghouse <http://gis.ny.gov/>


- ### US FWS NWI Wetland Type
-  Estuarine and Marine Deepwater
  -  Estuarine and Marine Wetland
  -  Freshwater Emergent Wetland
  -  Freshwater Forested/Shrub Wetland
  -  Freshwater Pond
  -  Lake
  -  Other
  -  Riverine

## State Endangered Threatened & Protected Species

-  AZ - Areas of Environmental Concern
-  CA - Spotted Owl Territory
-  CA - NDDDB T & E Species
- CT - NDDDB Area Feature
-  CT - DEP Critical Habitat
- MA - NHESP Estimated Habitats of Rare Wildlife
- TX - Protected Species
-  MA - NHESP Priority Habitats of Rare Species
-  FL - Conservation Species
- MA - NHESP Certified Vernal Pool
- ME - Vernal Pool
-  NY - Important Bird Area
-  TX - Ecologically Unique Rivers Streams

Sources: AZ BLM Page [http://www.blm.gov/az/st/en/prog/maps/gis\\_files.html](http://www.blm.gov/az/st/en/prog/maps/gis_files.html); CNDDB <http://www.dfg.ca.gov/biogeodata/cnddb/>; CT DEP [http://www.ct.gov/deep/cwp/view.asp?a=2698&q=323342&deepNav\\_GID=1707%20](http://www.ct.gov/deep/cwp/view.asp?a=2698&q=323342&deepNav_GID=1707%20); MAGIS <http://www.mass.gov/mgis/laylist.htm>; TX GIS <http://www.glo.state.tx.us/nri/data/index.html>; Florida Fish and Wildlife [www.MyFWC.com](http://www.MyFWC.com); NY GIS Clearinghouse <http://gis.ny.gov/>

## Federal & National Coverage Data Layers

-  USFWS Critical Habitat
-  USFWS Critical Habitat Area
-  National Park Service Land
-  National Wildlife Area or Refuge
-  BIA Indian Lands
-  Federally Owned Land
-  National Wilderness Areas
-  National Park Service Site

Sources: National Park Service [http://www.nps.gov/gis/data\\_info/](http://www.nps.gov/gis/data_info/); USFWS <http://crithab.fws.gov/>; National Park Service <http://science.nature.nps.gov/nrdata/index.cfm>; The National Map <http://nationalmap.gov/>; USFW Wildlife Refuge System <http://www.fws.gov/refuges/>; Wilderness.net <http://www.wilderness.net/>

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## Appendix B

### Photographs



1. Overview of the proposed tower facility.



2. View from center of the proposed tower facility, looking north.



3. View from center of the proposed tower facility, looking east.



4. View from center of the proposed tower facility, looking south.



5. View from center of the proposed tower facility, looking west.



6. View along a portion of the proposed access easement and overhead utilities.



7.

View along a portion of the proposed access easement and overhead utilities.



8.

View along a portion of the proposed access easement and overhead utilities.



9. View of wetlands adjacent to proposed access easement



10. View along a portion of the proposed access easement and overhead utilities.



11.

View along a portion of the proposed access easement and overhead utilities.



12.

View of wetlands adjacent to proposed access easement



13.

View along a portion of the proposed access easement and overhead utilities.



14.

View along a portion of the proposed access easement and overhead utilities.



15.

View along a portion of the proposed access easement and overhead utilities.



16.

View of proposed access easement



17. View of wetlands adjacent to proposed access easement



18. View along a portion of the proposed access easement and overhead utilities.



19.

View along a portion of the proposed access easement and overhead utilities.



20.

View of wetlands adjacent to proposed access easement



21.

View along a portion of the proposed access easement and overhead utilities.



22.

View along a portion of the proposed access easement and overhead utilities.



23.

View along a portion of the proposed access easement and overhead utilities.



24.

View of wetlands adjacent to proposed access easement



25. View of wetlands adjacent to proposed access easement



26. View along a portion of the proposed access easement and overhead utilities.



27. View of wetlands adjacent to proposed access easement



28. View along a portion of the proposed access easement and overhead utilities.

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## Appendix C

### Species Review Documentation



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:  
Project Code: 2025-0083418  
Project Name: Rochester (001994-PR)

06/18/2025 18:46:21 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

*Updated 4/12/2023 - Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.*

## **About Official Species Lists**

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

## **Endangered Species Act Project Review**

Please visit the “**New England Field Office Endangered Species Project Review and Consultation**” website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

<https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review>

**\*NOTE\*** Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

**Northern Long-eared Bat - (Updated 4/12/2023)** The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule went into effect on March 31, 2023. You may utilize the **Northern Long-eared Bat Rangewide Determination Key** available in IPaC. More information about this Determination Key and the Interim Consultation Framework are available on the northern long-eared bat species page:

<https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis>

For projects that previously utilized the 4(d) Determination Key, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project was not completed by March 31, 2023, and may result in incidental take of NLEB, please reach out to our office at [newengland@fws.gov](mailto:newengland@fws.gov) to see if reinitiation is necessary.

#### *Additional Info About Section 7 of the Act*

Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/service/section-7-consultations>

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

**Candidate species** that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to

consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

### **Migratory Birds**

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

<https://www.fws.gov/program/migratory-bird-permit>

<https://www.fws.gov/library/collections/bald-and-golden-eagle-management>

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List

## **OFFICIAL SPECIES LIST**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

### **New England Ecological Services Field Office**

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

## PROJECT SUMMARY

Project Code: 2025-0083418

Project Name: Rochester (001994-PR)

Project Type: Communication Tower New Construction

Project Description: the proposed installation will consist of a 140-foot-tall self-support lattice tower and support equipment within a 60-foot by 60-foot lease area. Access will be gained via a proposed 15-foot-wide access easement, which follows an existing logging path that is proposed to be upgraded as required. This proposed easement extends in a general easterly direction from Vermont Route 100, then northerly direction to the proposed facility. Utilities will be routed underground and overhead along this easement.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.8584404,-72.7976081659671,14z>



Counties: Windsor County, Vermont

## ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

**MAMMALS**

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

**INSECTS**

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is <b>proposed</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Proposed Threatened

**CRITICAL HABITATS**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## **IPAC USER CONTACT INFORMATION**

Agency: Private Entity  
Name: Erin Gould  
Address: 21B St  
City: Burlington  
State: MA  
Zip: 01803  
Email: naturalresources@ebiconsulting.com  
Phone: 7812732500

## **LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Federal Communications Commission



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:  
Project code: 2025-0083418  
Project Name: Rochester (001994-PR)

06/18/2025 18:52:02 UTC

Federal Nexus: yes  
Federal Action Agency (if applicable): Federal Communications Commission

**Subject:** Federal agency coordination under the Endangered Species Act, Section 7 for 'Rochester (001994-PR)'

Dear Erin Gould:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on June 18, 2025, for 'Rochester (001994-PR)' (here forward, Project). This project has been assigned Project Code 2025-0083418 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements may not be complete.**

### **Ensuring Accurate Determinations When Using IPaC**

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (DKey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid. Note that conservation measures for northern long-eared bat and tricolored bat may differ. If both bat species are present in the action area and the key suggests more conservative measures for one of the species for your Project, the Project may need to apply the most conservative measures in order to avoid adverse effects. If unsure which conservation measures should be applied, please contact the appropriate Ecological Services Field Office.***

**Determination for the Northern Long-Eared Bat and Tricolored Bat**

Based on your IPaC submission and a standing analysis completed by the Service, you determined the proposed Project will have the following effect determinations:

<b>Species</b>	<b>Listing Status</b>	<b>Determination</b>
Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	Endangered	NLAA
Tricolored Bat ( <i>Perimyotis subflavus</i> )	Proposed Endangered	NLAA

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that consultation on the Action is complete for northern long-eared bat and/or tricolored bat and no further action is necessary unless either of the following occurs:

- new information reveals effects of the action that may affect the northern long-eared bat or tricolored bat in a manner or to an extent not previously considered; or,
- the identified action is subsequently modified in a manner that causes an effect to the northern long-eared bat or tricolored bat that was not considered when completing the determination key.

### **15-Day Review Period**

As indicated above, the Service will notify you within 15 calendar days if we determine that this proposed Action does not meet the criteria for a “may affect, not likely to adversely affect” (NLAA) determination for the northern long-eared bat and/or tricolored bat. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the identified Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that we did not anticipate when developing the key. In such cases, the identified Ecological Services Field Office may request additional information to verify the effects determination reached through the Northern Long-eared Bat and Tricolored Bat DKey.

### **Other Species and Critical Habitat that May be Present in the Action Area**

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may affect the species and/or critical habitat listed above. Note that reinitiation of consultation would be necessary if a new species is listed or critical habitat designated that may be affected by the identified action before it is complete.

If you have any questions regarding this letter or need further assistance, please contact the New England Ecological Services Field Office and reference Project Code 2025-0083418 associated with this Project.

## Action Description

You provided to IPaC the following name and description for the subject Action.

### 1. Name

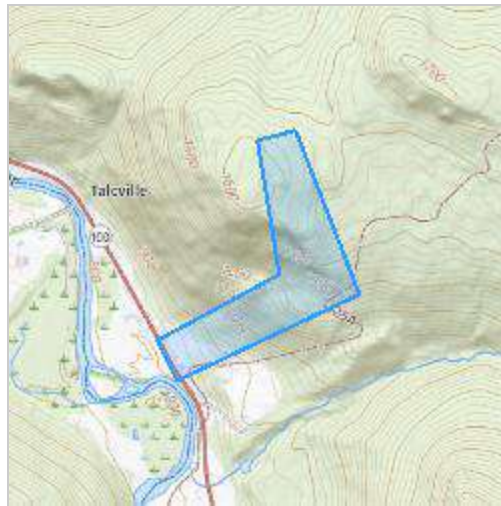
Rochester (001994-PR)

### 2. Description

The following description was provided for the project 'Rochester (001994-PR)':

the proposed installation will consist of a 140-foot-tall self-support lattice tower and support equipment within a 60-foot by 60-foot lease area. Access will be gained via a proposed 15-foot-wide access easement, which follows an existing logging path that is proposed to be upgraded as required. This proposed easement extends in a general easterly direction from Vermont Route 100, then northerly direction to the proposed facility. Utilities will be routed underground and overhead along this easement.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.8584404,-72.7976081659671,14z>



## DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for a least one species covered by this determination key.

## QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

**Note:** Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

*No*

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

**Automatically answered**

*No*

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

**Automatically answered**

*No*

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

**Note:** For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

*No*

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

*Yes*

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

*No*

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

**Note:** This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

*Yes*

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

*Yes*

9. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

**Automatically answered**

*No*

10. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

*No*

11. Does the action area contain (1) talus or (2) anthropogenic or naturally formed rock shelters or crevices in rocky outcrops, rock faces or cliffs?

*No*

12. Will the action cause effects to a covered bridge?

*No*

13. Are trees present within 1000 feet of the action area?

**Note:** If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

*Yes*

14. Does the action include the intentional exclusion of bats from a building or structure?

**Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

*No*

15. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

*No*

16. Will the action cause construction of one or more new roads open to the public?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

*No*

17. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

*No*

18. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

*No*

19. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

**Note:** For information regarding NSF/ANSI 60 please visit <https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects>

*No*

20. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

*No*

21. Will the action include drilling or blasting?

*Yes*

22. Will the drilling or blasting produce noise or vibrations above existing background levels that will affect suitable summer habitat for northern long-eared bats and/or tricolored bats?

**Note:** Additional information defining suitable suitable summer habitat for the northern long-eared bat and/or tricolored bat, can be found in Appendix A in the USFWS' Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>

*No*

23. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

*No*

24. Will the proposed action involve the use of herbicides or other pesticides other than herbicides (e.g., fungicides, insecticides, or rodenticides)?

*No*

25. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

**Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

*No*

26. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

**Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

*Yes*

27. Will the action cause an increase in the extent of suitable forested habitat exposed to artificial lighting?

*Yes*

28. Will the action use only downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting) when installing new or replacing existing permanent lights?

Or for those transportation agencies using the Backlight, Uplight, Glare (BUG) system developed by the Illuminating Engineering Society, will all three ratings (backlight, uplight, and glare) be as close to zero as is possible, with a priority of "uplight" of 0?

*Yes*

29. Will the action direct any temporary lighting away from suitable northern long-eared bat or tricolored bat roosting habitat when bats may be present?

**Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

*Yes*

30. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

*Yes*

31. Will the proposed action occur exclusively in an already established and currently maintained utility right-of-way?

*No*

32. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

**Note:** A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property.

*No*

33. Does the project intersect with the 0- 9.9% forest density category?

**Automatically answered**

*No*

34. Does the project intersect with the 10.0- 19.9% forest density category map?

**Automatically answered**

*No*

35. Does the project intersect with the 20.0- 29.9% forest density category map?

**Automatically answered**

*No*

36. Does the project intersect with the 30.0- 100% forest density category map?

**Automatically answered**

*Yes*

37. Will the action cause trees to be cut, knocked down, or otherwise brought down across an area greater than 100 acres in total extent?

*No*

38. Will the proposed action result in the use of prescribed fire?

**Note:** If the prescribed fire action includes other activities than application of fire (e.g., tree cutting, fire line preparation) please consider impacts from those activities within the previous representative questions in the key. This set of questions only considers impacts from flame and smoke.

*No*

39. Does the action area intersect the northern long-eared bat species list area?

**Automatically answered**

*Yes*

40. [Semantic] Is the action area located within 0.5 miles of radius of an entrance/opening to any known NLEB hibernacula? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

**Automatically answered**

*No*

41. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

**Automatically answered**

*No*

42. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

**Automatically answered**

*No*

43. [Semantic] Is the action area located within 150 feet of a documented northern long-eared bat roost site?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency. Have you contacted the appropriate agency to determine if your action is within 150 feet of any documented northern long-eared bat roosts?

Note: A document with links to Natural Heritage Inventory databases and other state-specific sources of information on the locations of northern long-eared bat roosts is available here. Location information for northern long-eared bat roosts is generally kept in state natural heritage inventory databases – the availability of this data varies by state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited.

**Automatically answered**

No

44. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?

If unsure, answer "Yes."

**Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

Yes

45. Are any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming suitable for northern long-eared bat roosting (i.e., live trees and/or snags  $\geq 3$  inches dbh that have exfoliating bark, cracks, crevices, and/or cavities)?

**Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

Yes

46. Will any tree cutting/trimming or other knocking or bringing down of trees occur during the **Fall Swarming season** for northern long-eared bats in the action area?

**Note:** Bat activity periods for your state can be found in Appendix L of the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>

No

47. Will any tree cutting/trimming or other knocking or bringing down of trees occur during the **Spring Staging** season for northern long-eared bats in the action area?

**Note:** Bat activity periods for your state can be found in Appendix L of the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey [Guidelines](#).

No

48. Will any tree cutting/trimming or other knocking or bringing down of trees occur during the **Summer Occupancy season** for northern long-eared bats in the action area? **Note:** Bat activity periods for your state can be found in Appendix L of the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey [Guidelines](#).

No

49. Does the action area intersect the tricolored bat species list area?

**Automatically answered**

Yes

50. [Semantic] Is the action area located within 0.5 miles of radius of an entrance/opening to any known tricolored bat hibernacula? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

**Automatically answered**

No

51. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

**Automatically answered**

No

52. Has a presence/probable absence bat survey targeting the [tricolored bat and following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines](#) been conducted within the project area?

No

53. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities?

(If unsure, answer ""Yes."" )

**Note:** If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see Appendix A in the [Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#).

Yes

54. Do any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pine trees)?

**Note:** Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

Yes

55. Will any tree cutting/trimming or other knocking or bringing down of trees be conducted during the Spring Staging Season for tricolored bat?

**Note:** Bat activity periods for your state can be found in Appendix L of the [Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#).

No

56. Will any tree cutting/trimming or other knocking or bringing down of trees be conducted during the Fall Swarming Season for tricolored bat?

**Note:** Bat activity periods for your state can be found in Appendix L of the [Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#).

No

57. Will any tree cutting/trimming or other knocking or bringing down of trees be conducted during the Pup Season for tricolored bat?

**Note:** Bat activity periods for your state can be found in Appendix L of the [Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#).

No

58. Do you have any documents that you want to include with this submission?

No

## **PROJECT QUESTIONNAIRE**

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

1.3

## **IPAC USER CONTACT INFORMATION**

Agency: Private Entity  
Name: Erin Gould  
Address: 21B St  
City: Burlington  
State: MA  
Zip: 01803  
Email: naturalresources@ebiconsulting.com  
Phone: 7812732500

## **LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Federal Communications Commission

### Critical Habitat for Threatened & Endangered Species [USFWS]

Final Polygon Features



Final Linear Features



Proposed Polygon Features



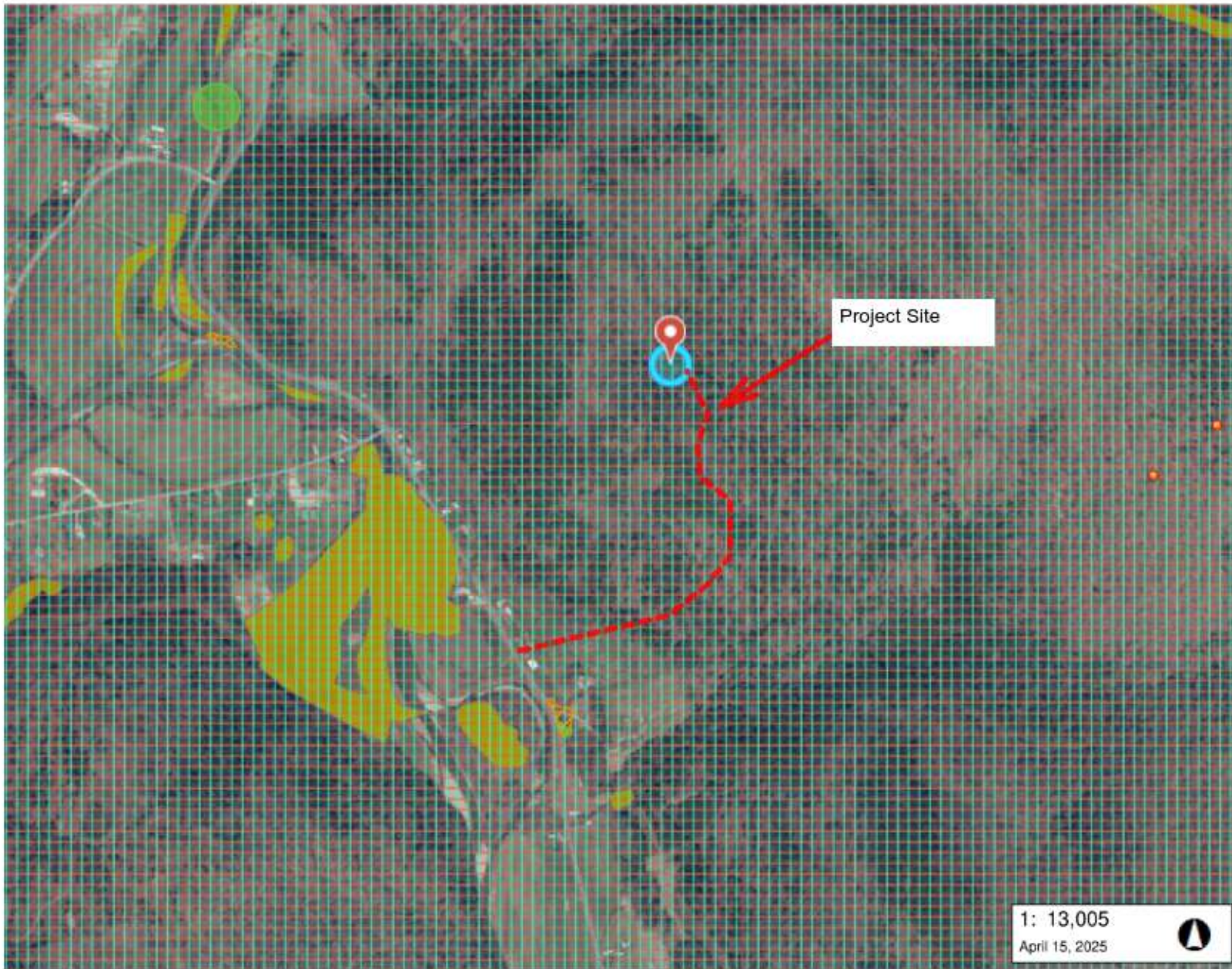
Proposed Linear Features



A specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

0.2mi

VCGI, Maxar



Project Site

### LEGEND

- Mapped Vernal Pools
- Uncommon Species and other
  - Plant
  - Animal
  - Natural Community
- Rare Threatened and Endange
  - RTE Animal
  - RTE Plant
- Significant Natural Communities
  - Northern Long-Eared Bat
  - Tricolored Bat
- Wetland - VSWI
  - Class 1 Wetland
  - Class 2 Wetland
  - Wetland Buffer

1: 13,005  
April 15, 2025



661.0 0 330.00 661.0 Meters  
 WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere 1" = 1084 Ft. 1cm = 130 Meters  
 © Vermont Agency of Natural Resources THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.

### NOTES

Map created using ANR's Natural Resources Atlas

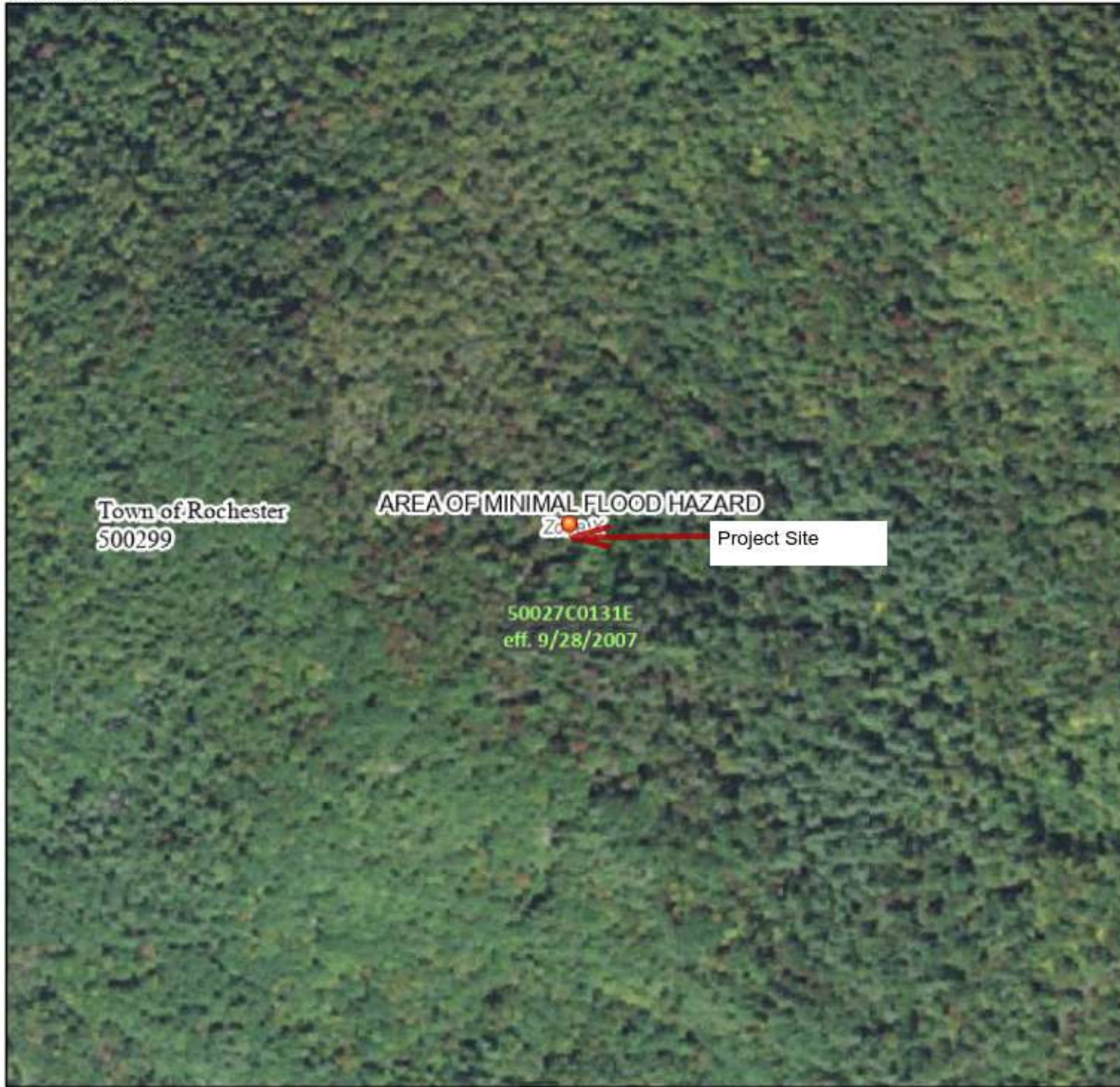
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**Appendix D**  
**Supporting Documentation**

# National Flood Hazard Layer FIRMette



72°48'12"W 43°51'48"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AP, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levees. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
	Hydrographic Feature	

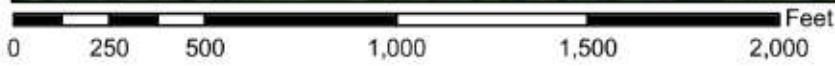
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/14/2025 at 12:44 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

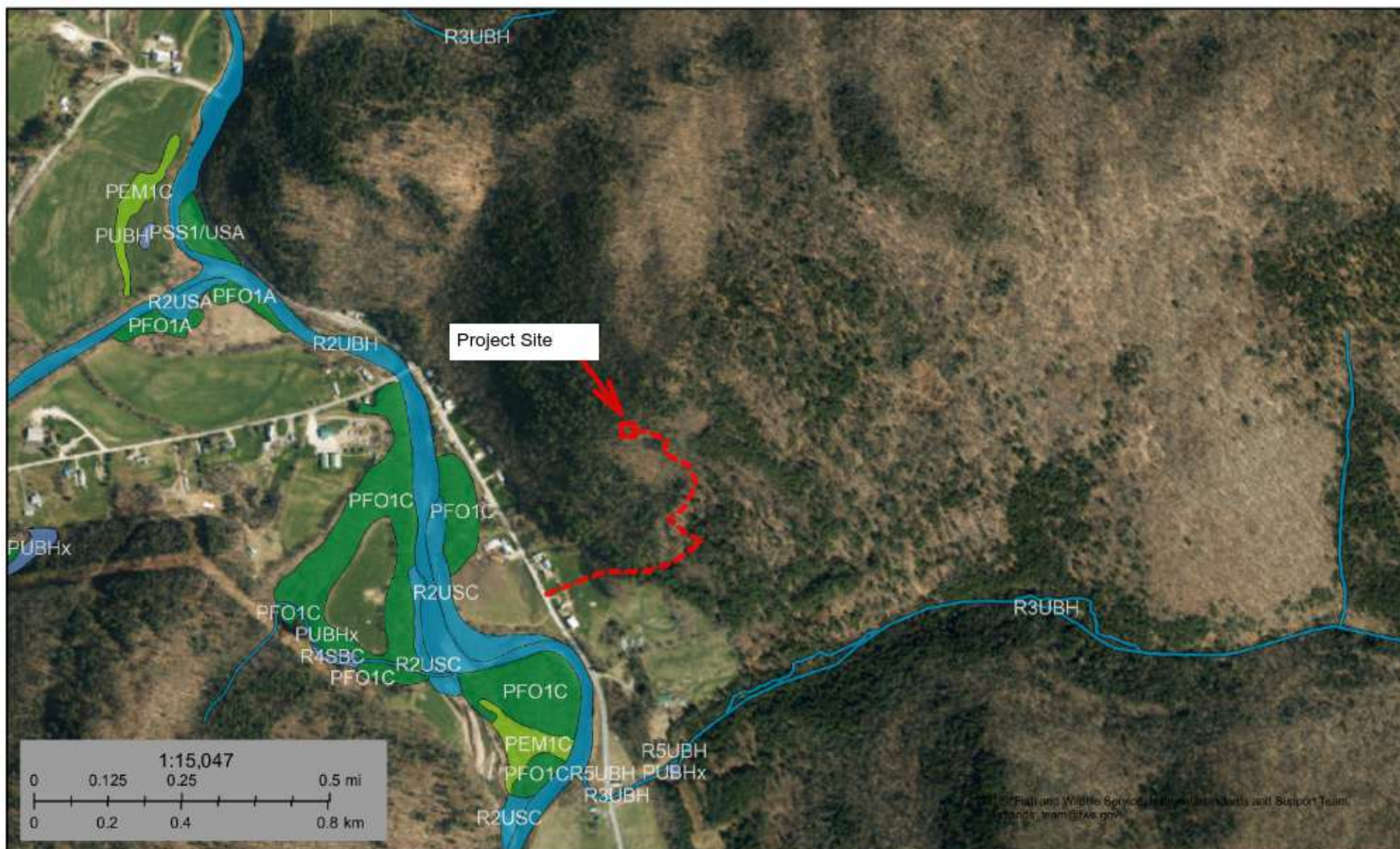
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



1:6,000

72°47'35"W 43°51'22"N

Basemap Imagery Source: USGS National Map 2023



March 14, 2025

**Wetlands**

- |                                |                                   |          |
|--------------------------------|-----------------------------------|----------|
| Estuarine and Marine Deepwater | Freshwater Emergent Wetland       | Lake     |
| Estuarine and Marine Wetland   | Freshwater Forested/Shrub Wetland | Other    |
| Freshwater Pond                |                                   | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



## ARROWWOOD ENVIRONMENTAL

950 BERT WHITE ROAD  
HUNTINGTON, VT 05462  
(802) 434-7276 FAX: (802) 329-2259

---

3/13/2025

TO: Vertex Towers  
FROM: Arrowwood Environmental  
SUBJECT: Wetland at the proposed Rochester, Vermont Vertex Tower Site

### **Environmental Setting**

The proposed Rochester Vertex site access road exists VT Route 100 east onto an already existing driveway at 49 River Bend Road. The driveway will pass between the house and garage at this residence and proceed north into dry fields. The power and tele-communications infrastructure will continue utilizing a more direct route through these fields down to barnyards located a few hundred yards north of the existing driveway.

Once in the fields the proposed access road follows an exiting dirt logging road to the east. The existing dirt road parallels a stream which is located immediately to the north of the road. The road climbs steep terrain and there is a considerable gain in elevation. The surrounding terrain is forestland, dominated by coniferous trees, particularly eastern hemlock. Eventually the access road turns north, crossing the stream and the 2 small wetlands described below. The remaining access road follows existing dirt logging roads, with a short area of new road cut. The proposed Vertex tower site consists of hemlock and broad-leaved deciduous trees such as sugar and red maple and yellow birch and is dry. There are no wetlands in the vicinity of the actual tower site. The area is steep and well-drained.

### **Wetlands**

There are 2 wetlands located within 100 feet of the proposed Vertex Tower location and access road in Rochester, Vermont. (See Figure 1)

Wetland A and B are nearly identical, very small wetlands located in low spots within the existing dirt access road. The wetlands are shallow emergent marsh wetlands and the vegetation is dominated by reed canary grass, sedges, tall buttercup, and sensitive fern. There is no permanent standing water in either wetland, although after heavy rain there may be temporary pooling of water in the wetlands.

These 2 small wetlands were delineated utilizing the 1987 Army Corps of Engineers Wetland Delineation Manual for guidance. Their location was identified through the use of a GPS with submeter accuracy.

Based on a site visit on November 13, 2023, the Vermont state District Wetland Biologist classified these wetlands as Class III and therefore they are not regulated under the Vermont

Wetland Rules. The proposed access road will cross the wetland which lies within the existing road. The proposed access road will impact 210 sq. ft. of Wetland A. This level of impact falls below any level of concern of the federal government and Army Corps of Engineers jurisdiction. However, there are 2 conditions that must be met: 1) no tree cutting within the wetland; and, (2) there must be no impacts on streams. There is no tree cutting associated with this crossing and it is not located on a stream.

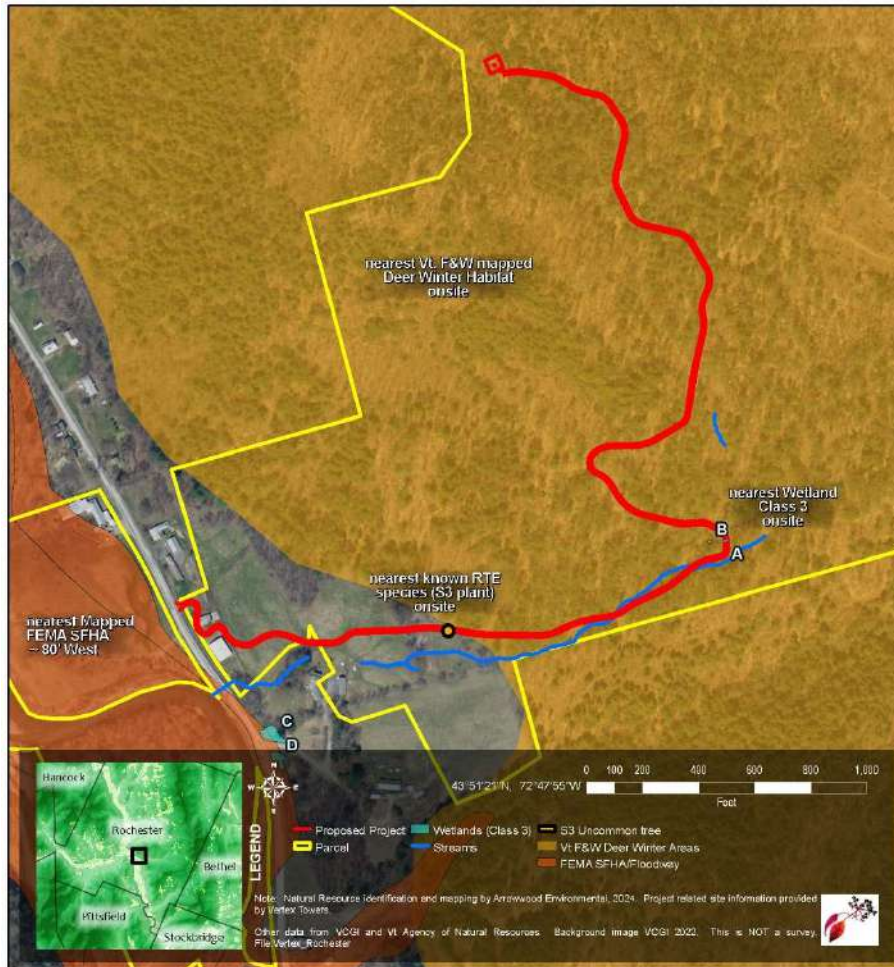


Figure 1. Wetlands and Natural Resources

**EBI Consulting**  
**RECORD OF COMMUNICATION**

**JOB:** 001994-PR

Contact Name: Michael Adams Date: June 11, 2025

Contact Title: Permit Project Manager Time: 9:50 a.m.

Organization: Army Corp of Engineers Phone: (603) 356-5327

**EBI CONTACT: MR. OWEN PRICE**

---

**RESULTS:**

EBI confirmed with Michael Adams, a Permit Project Manager from the Army Corp of Engineers (ACOE), no reporting is necessary due to the insignificant impact to the identified wetland features. As such, no general permit is needed.

**FOLLOW-UP ACTION REQUIRED:**

Not applicable



United States  
Department of  
Agriculture

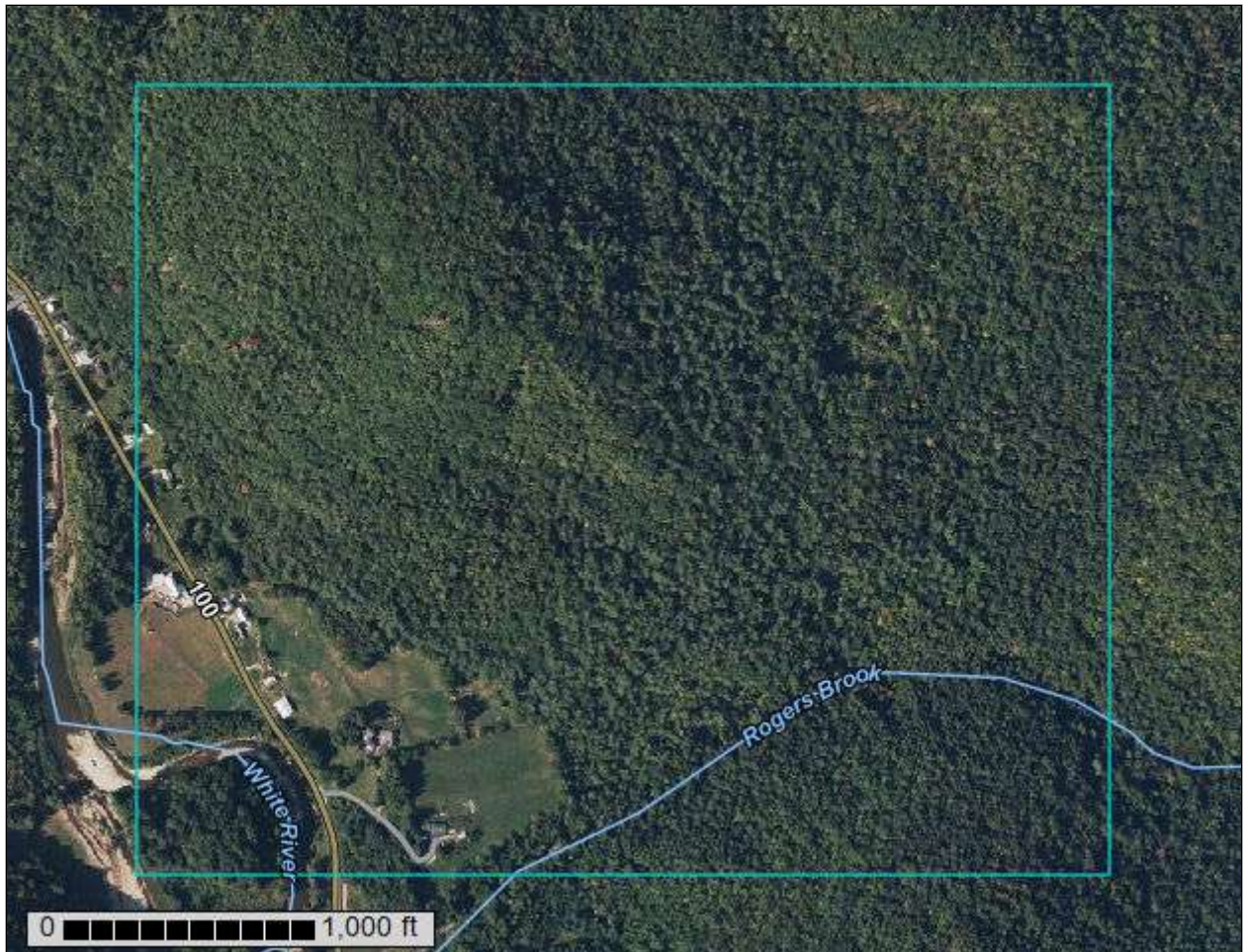
**NRCS**

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 **Windsor County, Vermont**

**001994-PR Soil Survey**



# 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](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.

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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

## Custom Soil Resource Report

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

## Custom Soil Resource Report

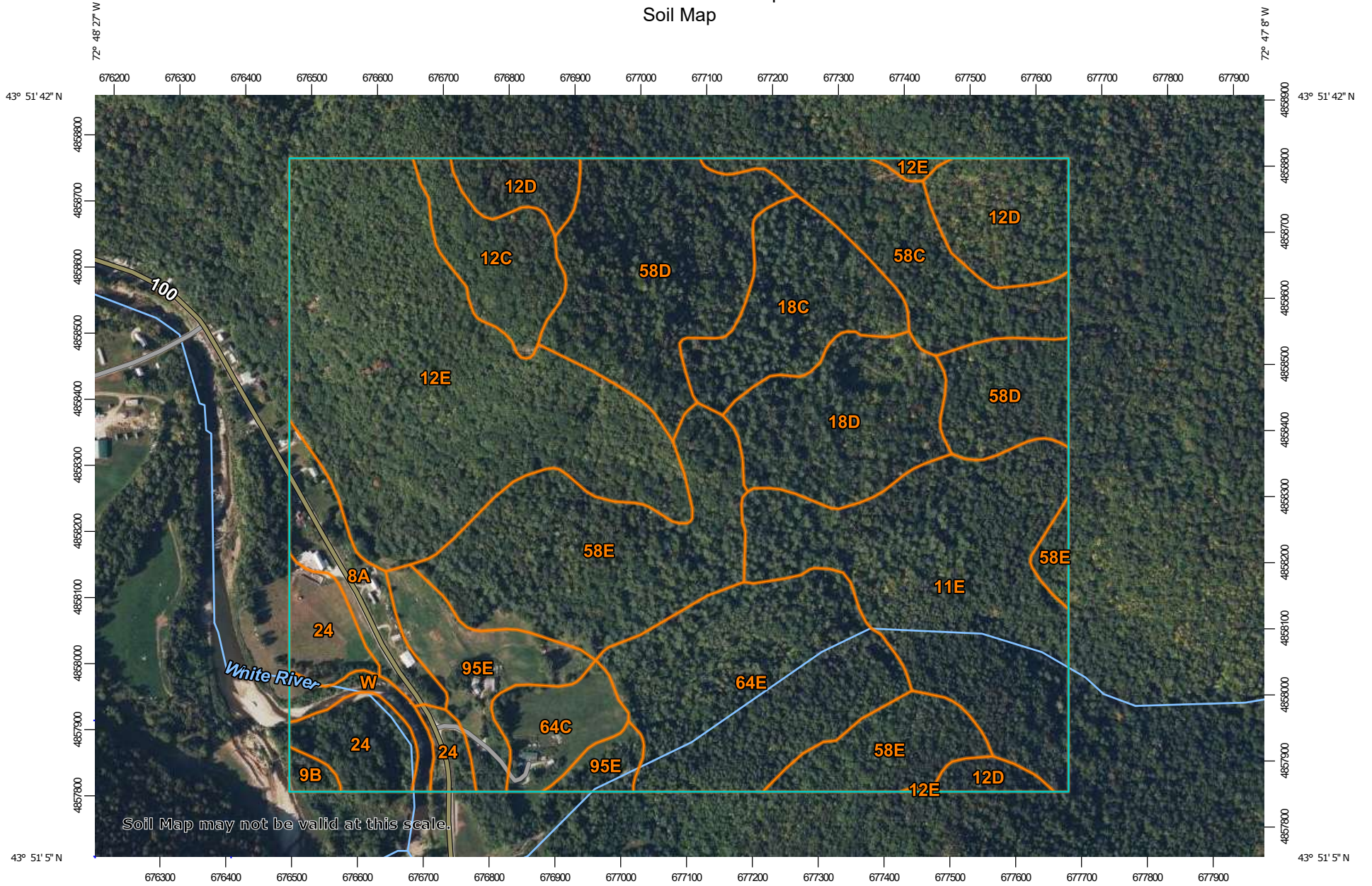
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

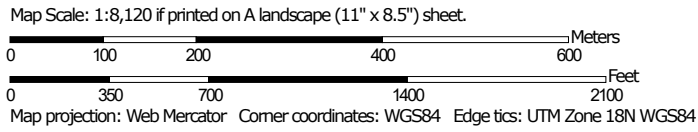
---

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




Soil Map may not be valid at this scale.




### 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: Windsor County, Vermont  
 Survey Area Data: Version 29, Aug 28, 2024

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

Date(s) aerial images were photographed: May 27, 2020—Sep 16, 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
8A	Agawam fine sandy loam, 0 to 3 percent slopes	7.2	2.6%
9B	Ninigret fine sandy loam, 0 to 8 percent slopes	0.9	0.3%
11E	Marlow fine sandy loam, 35 to 60 percent slopes, very stony	34.3	12.2%
12C	Tunbridge-Lyman complex, 8 to 15 percent slopes, very rocky	8.4	3.0%
12D	Tunbridge-Lyman complex, 15 to 35 percent slopes, very rocky	14.5	5.1%
12E	Tunbridge-Lyman complex, 35 to 60 percent slopes, very rocky	51.1	18.2%
18C	Peru, Skerry, and Colonel soils, 8 to 15 percent slopes, very stony	13.5	4.8%
18D	Becket fine sandy loam association, 15 to 35 percent slopes, very stony	15.7	5.6%
24	Podunk fine sandy loam, 0 to 3 percent slopes, occasionally flooded	11.1	3.9%
58C	Berkshire-Tunbridge complex, 8 to 15 percent slopes, very stony	13.8	4.9%
58D	Berkshire-Tunbridge complex, 15 to 35 percent slopes, very stony	31.1	11.1%
58E	Berkshire-Tunbridge complex, 35 to 50 percent slopes, very stony	33.8	12.0%
64C	Colton gravelly sandy loam, 8 to 15 percent slopes	6.0	2.1%
64E	Colton gravelly sandy loam, 25 to 60 percent slopes	26.1	9.3%
95E	Nicholville-Adams complex, 25 to 60 percent slopes	11.3	4.0%
W	Water	2.6	0.9%
<b>Totals for Area of Interest</b>		<b>281.5</b>	<b>100.0%</b>

## 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

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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.

## Windsor County, Vermont

### 8A—Agawam fine sandy loam, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2tyqw  
*Elevation:* 0 to 1,040 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F  
*Frost-free period:* 140 to 250 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Agawam and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Agawam

##### Setting

*Landform:* Moraines, kames, kame terraces, outwash plains, outwash terraces  
*Landform position (two-dimensional):* Backslope, shoulder, footslope, summit  
*Landform position (three-dimensional):* Side slope, crest, tread, riser, rise, dip  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss, granite, schist, and/or phyllite

##### Typical profile

*Ap - 0 to 11 inches:* fine sandy loam  
*Bw1 - 11 to 16 inches:* fine sandy loam  
*Bw2 - 16 to 26 inches:* fine sandy loam  
*2C1 - 26 to 39 inches:* loamy fine sand  
*2C2 - 39 to 55 inches:* loamy fine sand  
*2C3 - 55 to 65 inches:* loamy sand

##### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* 15 to 35 inches to strongly contrasting textural stratification  
*Drainage class:* Well drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 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 3.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2s  
*Hydrologic Soil Group:* B  
*Ecological site:* F145XY008MA - Dry Outwash

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*Hydric soil rating:* No

### Minor Components

#### **Ninigret**

*Percent of map unit:* 5 percent

*Landform:* Terraces

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Hydric soil rating:* No

#### **Windsor**

*Percent of map unit:* 4 percent

*Landform:* Dunes, deltas, outwash terraces, outwash plains

*Landform position (three-dimensional):* Tread, riser

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex, linear

*Hydric soil rating:* No

#### **Walpole**

*Percent of map unit:* 3 percent

*Landform:* Deltas, depressions, outwash terraces, depressions, outwash plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread, talf, dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### **Hinckley**

*Percent of map unit:* 3 percent

*Landform:* Deltas, kames, eskers, outwash plains

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

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

*Down-slope shape:* Convex

*Across-slope shape:* Convex, linear

*Hydric soil rating:* No

## **9B—Ninigret fine sandy loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2tyr5

*Elevation:* 260 to 1,330 feet

*Mean annual precipitation:* 36 to 65 inches

*Mean annual air temperature:* 36 to 48 degrees F

*Frost-free period:* 120 to 195 days

*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Ninigret, frigid, and similar soils:* 85 percent

*Minor components:* 15 percent

## Custom Soil Resource Report

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

### Description of Ninigret, Frigid

#### Setting

*Landform:* Drainageways, depressions, kame terraces, outwash plains, moraines, kames, outwash terraces

*Landform position (two-dimensional):* Backslope, shoulder, footslope, summit

*Landform position (three-dimensional):* Side slope, crest, tread, dip, rise

*Down-slope shape:* Concave, convex, linear

*Across-slope shape:* Concave, convex

*Parent material:* Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss, granite, schist, and/or phyllite

#### Typical profile

*Ap - 0 to 8 inches:* fine sandy loam

*Bw1 - 8 to 16 inches:* fine sandy loam

*Bw2 - 16 to 26 inches:* fine sandy loam

*2C - 26 to 65 inches:* stratified loamy sand to loamy fine sand

#### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* 18 to 38 inches to strongly contrasting textural stratification

*Drainage class:* Moderately well drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)

*Depth to water table:* About 17 to 39 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 3.4 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* C

*Ecological site:* F144AY026CT - Moist Silty Outwash

*Hydric soil rating:* No

### Minor Components

#### Agawam, frigid

*Percent of map unit:* 5 percent

*Landform:* Kame terraces, outwash plains, outwash terraces, moraines, kames

*Landform position (two-dimensional):* Backslope, shoulder, footslope, summit

*Landform position (three-dimensional):* Side slope, crest, tread, riser, rise

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Walpole, frigid

*Percent of map unit:* 5 percent

*Landform:* Deltas, depressions, outwash terraces, depressions, outwash plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread, talf, dip

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*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

### **Windsor, frigid**

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces, dunes, outwash plains, deltas  
*Landform position (three-dimensional):* Tread, riser  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Hydric soil rating:* No

## **11E—Marlow fine sandy loam, 35 to 60 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 2ty5v  
*Elevation:* 660 to 2,100 feet  
*Mean annual precipitation:* 31 to 95 inches  
*Mean annual air temperature:* 27 to 48 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Marlow, very stony, and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Marlow, Very Stony**

#### **Setting**

*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite

#### **Typical profile**

*O<sub>i</sub> - 0 to 2 inches:* slightly decomposed plant material  
*A - 2 to 5 inches:* fine sandy loam  
*E - 5 to 8 inches:* fine sandy loam  
*B<sub>s1</sub> - 8 to 15 inches:* fine sandy loam  
*B<sub>s2</sub> - 15 to 19 inches:* fine sandy loam  
*BC - 19 to 33 inches:* gravelly fine sandy loam  
*Cd - 33 to 65 inches:* fine sandy loam

#### **Properties and qualities**

*Slope:* 35 to 60 percent  
*Surface area covered with cobbles, stones or boulders:* 1.1 percent  
*Depth to restrictive feature:* 20 to 41 inches to densic material

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*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 1.42 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 5.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* C  
*Ecological site:* F143XY501ME - Loamy Slope  
*Hydric soil rating:* No

### Minor Components

#### Peru, very stony

*Percent of map unit:* 5 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Footslope, backslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Microfeatures of landform position:* Open depressions, open depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

#### Tunbridge, very stony

*Percent of map unit:* 4 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Berkshire, very stony

*Percent of map unit:* 4 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Pillsbury, very stony

*Percent of map unit:* 2 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Microfeatures of landform position:* Open depressions, open depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## 12C—Tunbridge-Lyman complex, 8 to 15 percent slopes, very rocky

### Map Unit Setting

*National map unit symbol:* 2tv91  
*Elevation:* 590 to 2,360 feet  
*Mean annual precipitation:* 31 to 95 inches  
*Mean annual air temperature:* 27 to 52 degrees F  
*Frost-free period:* 60 to 160 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Tunbridge, very rocky, and similar soils:* 44 percent  
*Lyman, very rocky, and similar soils:* 39 percent  
*Minor components:* 17 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Tunbridge, Very Rocky

#### Setting

*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Shoulder, summit, backslope  
*Landform position (three-dimensional):* Mountaintop, mountainflank, mountainbase, side slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

#### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material  
*Oa - 3 to 5 inches:* highly decomposed plant material  
*E - 5 to 8 inches:* fine sandy loam  
*Bhs - 8 to 11 inches:* fine sandy loam  
*Bs - 11 to 26 inches:* fine sandy loam  
*BC - 26 to 28 inches:* fine sandy loam  
*R - 28 to 38 inches:* bedrock

#### Properties and qualities

*Slope:* 8 to 15 percent  
*Surface area covered with cobbles, stones or boulders:* 1.5 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 6.1 inches)

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### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Ecological site:* F143XY702ME - Shallow And Moderately Deep Till,  
F143XY703ME - Shallow And Moderately Deep Humic Till  
*Hydric soil rating:* No

### Description of Lyman, Very Rocky

#### Setting

*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope, summit, shoulder  
*Landform position (three-dimensional):* Mountaintop, mountainflank,  
mountainbase, crest, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or  
loamy supraglacial till derived from phyllite and/or loamy supraglacial till  
derived from mica schist

#### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material  
*A - 1 to 3 inches:* loam  
*E - 3 to 5 inches:* fine sandy loam  
*Bhs - 5 to 7 inches:* loam  
*Bs1 - 7 to 11 inches:* loam  
*Bs2 - 11 to 18 inches:* channery loam  
*R - 18 to 28 inches:* bedrock

#### Properties and qualities

*Slope:* 8 to 15 percent  
*Surface area covered with cobbles, stones or boulders:* 1.5 percent  
*Depth to restrictive feature:* 11 to 24 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00  
to 14.03 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 3.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* D  
*Ecological site:* F143XY702ME - Shallow And Moderately Deep Till  
*Hydric soil rating:* No

### Minor Components

#### Rock outcrop

*Percent of map unit:* 5 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope, shoulder, summit

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*Landform position (three-dimensional):* Mountaintop, mountainflank, free face, crest, side slope

*Microfeatures of landform position:* Rises, rises

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* Unranked

**Cabot, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Footslope, toeslope

*Landform position (three-dimensional):* Mountaintop, mountainflank, mountainbase, side slope, crest

*Microfeatures of landform position:* Open depressions, open depressions, closed depressions, closed depressions

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

**Berkshire, very rocky**

*Percent of map unit:* 4 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Shoulder, summit, backslope

*Landform position (three-dimensional):* Mountainbase, mountainflank, side slope, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Peru, very rocky**

*Percent of map unit:* 3 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Mountainflank, mountainbase, mountaintop, side slope, crest

*Microfeatures of landform position:* Open depressions, open depressions, closed depressions, closed depressions

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* No

**12D—Tunbridge-Lyman complex, 15 to 35 percent slopes, very rocky**

**Map Unit Setting**

*National map unit symbol:* 2tv93

*Elevation:* 560 to 2,460 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 60 to 160 days

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*Farmland classification:* Not prime farmland

### Map Unit Composition

*Tunbridge, very rocky, and similar soils:* 47 percent

*Lyman, very rocky, and similar soils:* 35 percent

*Minor components:* 18 percent

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

### Description of Tunbridge, Very Rocky

#### Setting

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Shoulder, summit, backslope

*Landform position (three-dimensional):* Mountainflank, mountaintop, side slope, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

#### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material

*Oa - 3 to 5 inches:* highly decomposed plant material

*E - 5 to 8 inches:* fine sandy loam

*Bhs - 8 to 11 inches:* fine sandy loam

*Bs - 11 to 26 inches:* fine sandy loam

*BC - 26 to 28 inches:* fine sandy loam

*R - 28 to 38 inches:* bedrock

#### Properties and qualities

*Slope:* 15 to 35 percent

*Surface area covered with cobbles, stones or boulders:* 1.5 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Moderate (about 6.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* C

*Ecological site:* F143XY702ME - Shallow And Moderately Deep Till,  
F143XY703ME - Shallow And Moderately Deep Humic Till

*Hydric soil rating:* No

### Description of Lyman, Very Rocky

#### Setting

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Backslope, summit, shoulder

*Landform position (three-dimensional):* Mountainflank, mountaintop, side slope, crest

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*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material  
*A - 1 to 3 inches:* loam  
*E - 3 to 5 inches:* fine sandy loam  
*Bhs - 5 to 7 inches:* loam  
*Bs1 - 7 to 11 inches:* loam  
*Bs2 - 11 to 18 inches:* channery loam  
*R - 18 to 28 inches:* bedrock

### Properties and qualities

*Slope:* 15 to 35 percent  
*Surface area covered with cobbles, stones or boulders:* 1.5 percent  
*Depth to restrictive feature:* 11 to 24 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 3.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Ecological site:* F143XY702ME - Shallow And Moderately Deep Till  
*Hydric soil rating:* No

### Minor Components

#### Peru, very rocky

*Percent of map unit:* 5 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Footslope, backslope  
*Landform position (three-dimensional):* Mountainflank, mountaintop, side slope, crest  
*Microfeatures of landform position:* Open depressions, open depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

#### Rock outcrop

*Percent of map unit:* 5 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope, summit, shoulder  
*Landform position (three-dimensional):* Mountainflank, mountaintop, side slope, crest  
*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* Unranked

**Berkshire, very rocky**

*Percent of map unit:* 4 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Shoulder, summit, backslope

*Landform position (three-dimensional):* Mountainflank, mountaintop, side slope, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

**Cabot, very rocky**

*Percent of map unit:* 4 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Footslope, toeslope

*Landform position (three-dimensional):* Mountainflank, mountaintop, side slope, crest

*Microfeatures of landform position:* Open depressions, open depressions

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

**12E—Tunbridge-Lyman complex, 35 to 60 percent slopes, very rocky**

**Map Unit Setting**

*National map unit symbol:* 2tv95

*Elevation:* 590 to 2,490 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 60 to 160 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Tunbridge, very rocky, and similar soils:* 47 percent

*Lyman, very rocky, and similar soils:* 37 percent

*Minor components:* 16 percent

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

**Description of Tunbridge, Very Rocky**

**Setting**

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountainflank, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

## Custom Soil Resource Report

### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material  
*Oa - 3 to 5 inches:* highly decomposed plant material  
*E - 5 to 8 inches:* fine sandy loam  
*Bhs - 8 to 11 inches:* fine sandy loam  
*Bs - 11 to 26 inches:* fine sandy loam  
*BC - 26 to 28 inches:* fine sandy loam  
*R - 28 to 38 inches:* bedrock

### Properties and qualities

*Slope:* 35 to 60 percent  
*Surface area covered with cobbles, stones or boulders:* 1.5 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 6.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* C  
*Ecological site:* F143XY702ME - Shallow And Moderately Deep Till,  
F143XY703ME - Shallow And Moderately Deep Humic Till  
*Hydric soil rating:* No

## Description of Lyman, Very Rocky

### Setting

*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material  
*A - 1 to 3 inches:* loam  
*E - 3 to 5 inches:* fine sandy loam  
*Bhs - 5 to 7 inches:* loam  
*Bs1 - 7 to 11 inches:* loam  
*Bs2 - 11 to 18 inches:* channery loam  
*R - 18 to 28 inches:* bedrock

### Properties and qualities

*Slope:* 35 to 60 percent  
*Surface area covered with cobbles, stones or boulders:* 1.5 percent  
*Depth to restrictive feature:* 11 to 24 inches to lithic bedrock  
*Drainage class:* Somewhat excessively drained

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.03 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 3.4 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* D

*Ecological site:* F143XY702ME - Shallow And Moderately Deep Till

*Hydric soil rating:* No

### **Minor Components**

#### **Rock outcrop**

*Percent of map unit:* 5 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountainflank, side slope

*Microfeatures of landform position:* Rises, rises

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* Unranked

#### **Peru, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Footslope, backslope

*Landform position (three-dimensional):* Mountainflank, side slope

*Microfeatures of landform position:* Open depressions, open depressions

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* No

#### **Berkshire, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountainflank, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### **Cabot, very rocky**

*Percent of map unit:* 1 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Footslope, toeslope

*Landform position (three-dimensional):* Mountainflank, side slope

*Microfeatures of landform position:* Open depressions, open depressions

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

## 18C—Peru, Skerry, and Colonel soils, 8 to 15 percent slopes, very stony

### Map Unit Setting

*National map unit symbol:* 2w9r1

*Elevation:* 750 to 2,260 feet

*Mean annual precipitation:* 31 to 65 inches

*Mean annual air temperature:* 36 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Peru, very stony, and similar soils:* 55 percent

*Skerry, very stony, and similar soils:* 20 percent

*Colonel, very stony, and similar soils:* 15 percent

*Minor components:* 10 percent

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

### Description of Peru, Very Stony

#### Setting

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Mountainbase, mountainflank, side slope, nose slope, interfluvium

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Loamy lodgment till derived from granite and/or mica schist and/or phyllite

#### Typical profile

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 5 inches:* fine sandy loam

*E - 5 to 6 inches:* fine sandy loam

*Bs1 - 6 to 7 inches:* fine sandy loam

*Bs2 - 7 to 13 inches:* fine sandy loam

*Bs3 - 13 to 18 inches:* fine sandy loam

*BC - 18 to 21 inches:* fine sandy loam

*Cd1 - 21 to 37 inches:* fine sandy loam

*Cd2 - 37 to 65 inches:* fine sandy loam

#### Properties and qualities

*Slope:* 8 to 15 percent

*Surface area covered with cobbles, stones or boulders:* 1.1 percent

*Depth to restrictive feature:* 21 to 43 inches to densic material

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 1.42 in/hr)

*Depth to water table:* About 17 to 34 inches

## Custom Soil Resource Report

*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 3.6 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F143XY501ME - Loamy Slope  
*Hydric soil rating:* No

### **Description of Skerry, Very Stony**

#### **Setting**

*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Mountainflank, mountainbase, side slope, nose slope, interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loamy lodgment till derived from granite and gneiss and/or schist over sandy lodgment till derived from granite and gneiss and/or schist

#### **Typical profile**

*Oa - 0 to 2 inches:* highly decomposed plant material  
*E - 2 to 4 inches:* fine sandy loam  
*Bhs - 4 to 6 inches:* fine sandy loam  
*Bs1 - 6 to 20 inches:* gravelly fine sandy loam  
*Bs2 - 20 to 25 inches:* gravelly fine sandy loam  
*Cd1 - 25 to 34 inches:* gravelly loamy sand  
*Cd2 - 34 to 65 inches:* gravelly loamy sand

#### **Properties and qualities**

*Slope:* 8 to 15 percent  
*Surface area covered with cobbles, stones or boulders:* 1.1 percent  
*Depth to restrictive feature:* 21 to 43 inches to densic material  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.01 to 1.42 in/hr)  
*Depth to water table:* About 17 to 34 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 4.2 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F143XY501ME - Loamy Slope  
*Hydric soil rating:* No

### **Description of Colonel, Very Stony**

#### **Setting**

*Landform:* Hills, mountains

## Custom Soil Resource Report

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Mountainbase, mountainflank, nose slope, side slope, interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Parent material:* Loamy lodgment till derived from granite and/or mica schist and/or phyllite

### Typical profile

*Oa - 0 to 1 inches:* highly decomposed plant material

*E - 1 to 2 inches:* fine sandy loam

*Bhs - 2 to 3 inches:* fine sandy loam

*Bs1 - 3 to 9 inches:* fine sandy loam

*Bs2 - 9 to 12 inches:* fine sandy loam

*BC - 12 to 18 inches:* gravelly fine sandy loam

*Cd - 18 to 65 inches:* gravelly fine sandy loam

### Properties and qualities

*Slope:* 8 to 15 percent

*Surface area covered with cobbles, stones or boulders:* 1.1 percent

*Depth to restrictive feature:* 11 to 25 inches to densic material

*Drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 1.42 in/hr)

*Depth to water table:* About 6 to 18 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 2.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* D

*Ecological site:* F143XY501ME - Loamy Slope, F143XY502ME - Loamy Till Toeslope

*Hydric soil rating:* No

### Minor Components

#### Marlow, very stony

*Percent of map unit:* 4 percent

*Landform:* Mountains, hills

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

*Landform position (three-dimensional):* Mountainbase, mountainflank, interfluve, side slope, nose slope

*Microfeatures of landform position:* Rises, rises

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

#### Tunbridge, very stony

*Percent of map unit:* 3 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Backslope, summit, shoulder

*Landform position (three-dimensional):* Mountainbase, mountainflank, side slope, nose slope, interfluve

## Custom Soil Resource Report

*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Cabot, very stony**

*Percent of map unit:* 3 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Mountainflank, mountainbase, side slope, nose slope, interfluve  
*Microfeatures of landform position:* Open depressions, open depressions, closed depressions, closed depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## **18D—Becket fine sandy loam association, 15 to 35 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 2w9pt  
*Elevation:* 460 to 1,510 feet  
*Mean annual precipitation:* 31 to 65 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Becket, very stony, and similar soils:* 75 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Becket, Very Stony**

#### **Setting**

*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountainflank, side slope, nose slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy lodgment till derived from granite and gneiss and/or schist over sandy lodgment till derived from granite and gneiss and/or schist

#### **Typical profile**

*Oi - 0 to 2 inches:* slightly decomposed plant material  
*E - 2 to 4 inches:* fine sandy loam  
*Bhs - 4 to 5 inches:* fine sandy loam

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*Bs1 - 5 to 7 inches: fine sandy loam*  
*Bs2 - 7 to 14 inches: fine sandy loam*  
*Bs3 - 14 to 24 inches: gravelly sandy loam*  
*BC - 24 to 33 inches: gravelly sandy loam*  
*Cd - 33 to 65 inches: gravelly loamy sand*

### Properties and qualities

*Slope: 15 to 35 percent*  
*Surface area covered with cobbles, stones or boulders: 1.1 percent*  
*Depth to restrictive feature: 21 to 43 inches to densic material*  
*Drainage class: Well drained*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 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 5.0 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 7s*  
*Hydrologic Soil Group: C*  
*Ecological site: F143XY501ME - Loamy Slope*  
*Hydric soil rating: No*

### Minor Components

#### Skerry, very stony

*Percent of map unit: 15 percent*  
*Landform: Mountains, hills*  
*Landform position (two-dimensional): Backslope, footslope*  
*Landform position (three-dimensional): Mountainflank, side slope, nose slope*  
*Microfeatures of landform position: Open depressions, open depressions*  
*Down-slope shape: Convex, concave*  
*Across-slope shape: Convex, concave*  
*Hydric soil rating: No*

#### Monadnock, very stony

*Percent of map unit: 5 percent*  
*Landform: Mountains, hills*  
*Landform position (two-dimensional): Shoulder, backslope, summit*  
*Landform position (three-dimensional): Mountainflank, side slope, nose slope*  
*Down-slope shape: Convex*  
*Across-slope shape: Convex*  
*Hydric soil rating: No*

#### Lyman, very stony

*Percent of map unit: 5 percent*  
*Landform: Hills, mountains*  
*Landform position (two-dimensional): Shoulder, summit, backslope*  
*Landform position (three-dimensional): Mountainflank, side slope, nose slope*  
*Microfeatures of landform position: Rises, rises*  
*Down-slope shape: Convex*  
*Across-slope shape: Convex*  
*Hydric soil rating: No*

## **24—Podunk fine sandy loam, 0 to 3 percent slopes, occasionally flooded**

### **Map Unit Setting**

*National map unit symbol:* 2qgvw

*Elevation:* 0 to 2,330 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 54 degrees F

*Frost-free period:* 80 to 160 days

*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Podunk and similar soils:* 83 percent

*Minor components:* 17 percent

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

### **Description of Podunk**

#### **Setting**

*Landform:* Flood plains

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Coarse-loamy alluvium derived from schist and/or coarse-loamy alluvium derived from quartzite and/or coarse-loamy alluvium derived from granite and gneiss

#### **Typical profile**

*Ap - 0 to 10 inches:* fine sandy loam

*Bw1 - 10 to 18 inches:* fine sandy loam

*Bw2 - 18 to 30 inches:* fine sandy loam

*C - 30 to 65 inches:* loamy fine sand

#### **Properties and qualities**

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)

*Depth to water table:* About 18 to 36 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Moderate (about 7.6 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* B/D

*Ecological site:* F144BY110ME - Broad Floodplain Riparian Complex,  
F144BY120ME - Small Floodplain Riparian Complex (reserved)

Custom Soil Resource Report

*Hydric soil rating:* No

**Minor Components**

**Rumney**

*Percent of map unit:* 6 percent  
*Landform:* Flood plains  
*Landform position (three-dimensional):* Tread  
*Microfeatures of landform position:* Closed depressions  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Linear, concave  
*Hydric soil rating:* Yes

**Ondawa**

*Percent of map unit:* 5 percent  
*Landform:* Flood plains  
*Landform position (three-dimensional):* Tread  
*Microfeatures of landform position:* Rises  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Hydric soil rating:* No

**Lovewell**

*Percent of map unit:* 4 percent  
*Landform:* Flood plains  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Charles**

*Percent of map unit:* 2 percent  
*Landform:* Flood plains  
*Landform position (three-dimensional):* Tread  
*Microfeatures of landform position:* Closed depressions  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

**58C—Berkshire-Tunbridge complex, 8 to 15 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol:* 2wlnr  
*Elevation:* 660 to 2,230 feet  
*Mean annual precipitation:* 31 to 95 inches  
*Mean annual air temperature:* 27 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Berkshire, very stony, and similar soils:* 50 percent  
*Tunbridge, very stony, and similar soils:* 40 percent

## Custom Soil Resource Report

*Minor components: 10 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Berkshire, Very Stony

#### Setting

*Landform: Mountains, hills*  
*Landform position (two-dimensional): Backslope, summit, shoulder*  
*Landform position (three-dimensional): Mountainflank, mountainbase, side slope, nose slope, interfluve*  
*Down-slope shape: Convex*  
*Across-slope shape: Convex*  
*Parent material: Loamy supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist*

#### Typical profile

*O<sub>i</sub> - 0 to 2 inches: slightly decomposed plant material*  
*A - 2 to 4 inches: fine sandy loam*  
*E - 4 to 5 inches: fine sandy loam*  
*B<sub>s1</sub> - 5 to 7 inches: fine sandy loam*  
*B<sub>s2</sub> - 7 to 13 inches: fine sandy loam*  
*B<sub>s3</sub> - 13 to 21 inches: fine sandy loam*  
*BC<sub>1</sub> - 21 to 28 inches: fine sandy loam*  
*BC<sub>2</sub> - 28 to 33 inches: fine sandy loam*  
*C - 33 to 65 inches: fine sandy loam*

#### Properties and qualities

*Slope: 8 to 15 percent*  
*Surface area covered with cobbles, stones or boulders: 1.1 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Well drained*  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>): Moderately low to high (0.14 to 14.17 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: High (about 10.0 inches)*

#### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 6s*  
*Hydrologic Soil Group: B*  
*Ecological site: F143XY501ME - Loamy Slope*  
*Hydric soil rating: No*

### Description of Tunbridge, Very Stony

#### Setting

*Landform: Hills, mountains*  
*Landform position (two-dimensional): Summit, shoulder, backslope*  
*Landform position (three-dimensional): Mountainbase, mountainflank, interfluve, side slope, nose slope*  
*Down-slope shape: Convex*  
*Across-slope shape: Convex*  
*Parent material: Loamy supraglacial till derived from granite and gneiss and/or phyllite and/or mica schist*

## Custom Soil Resource Report

### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material  
*Oa - 3 to 5 inches:* highly decomposed plant material  
*E - 5 to 8 inches:* fine sandy loam  
*Bhs - 8 to 11 inches:* fine sandy loam  
*Bs - 11 to 26 inches:* fine sandy loam  
*BC - 26 to 28 inches:* fine sandy loam  
*R - 28 to 38 inches:* bedrock

### Properties and qualities

*Slope:* 8 to 15 percent  
*Surface area covered with cobbles, stones or boulders:* 1.5 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 6.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Ecological site:* F143XY501ME - Loamy Slope  
*Hydric soil rating:* No

### Minor Components

#### Marlow, very stony

*Percent of map unit:* 3 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountainflank, mountainbase, side slope, nose slope, interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Lyman, very stony

*Percent of map unit:* 3 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Summit, backslope, shoulder  
*Landform position (three-dimensional):* Mountainflank, mountainbase, side slope, nose slope, interfluve  
*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Peru, very stony

*Percent of map unit:* 3 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Backslope, footslope

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*Landform position (three-dimensional):* Mountainflank, mountainbase, side slope, nose slope, interfluve

*Microfeatures of landform position:* Closed depressions, open depressions, closed depressions, open depressions

*Down-slope shape:* Convex, concave

*Across-slope shape:* Linear, concave

*Hydric soil rating:* No

### **Cabot, very stony**

*Percent of map unit:* 1 percent

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Toeslope, footslope

*Landform position (three-dimensional):* Mountainbase, mountainflank, interfluve, side slope, nose slope

*Microfeatures of landform position:* Open depressions, closed depressions, open depressions, closed depressions

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

## **58D—Berkshire-Tunbridge complex, 15 to 35 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 2wln1

*Elevation:* 820 to 2,330 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Berkshire, very stony, and similar soils:* 45 percent

*Tunbridge, very stony, and similar soils:* 40 percent

*Minor components:* 15 percent

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

### **Description of Berkshire, Very Stony**

#### **Setting**

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Backslope, summit, shoulder

*Landform position (three-dimensional):* Mountainflank, side slope, nose slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist

#### **Typical profile**

*Oi - 0 to 2 inches:* slightly decomposed plant material

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*A - 2 to 4 inches: fine sandy loam*  
*E - 4 to 5 inches: fine sandy loam*  
*Bs1 - 5 to 7 inches: fine sandy loam*  
*Bs2 - 7 to 13 inches: fine sandy loam*  
*Bs3 - 13 to 21 inches: fine sandy loam*  
*BC1 - 21 to 28 inches: fine sandy loam*  
*BC2 - 28 to 33 inches: fine sandy loam*  
*C - 33 to 65 inches: fine sandy loam*

### Properties and qualities

*Slope: 15 to 35 percent*  
*Surface area covered with cobbles, stones or boulders: 1.1 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Drainage class: Well drained*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 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: High (about 10.0 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 6s*  
*Hydrologic Soil Group: B*  
*Ecological site: F143XY501ME - Loamy Slope*  
*Hydric soil rating: No*

## Description of Tunbridge, Very Stony

### Setting

*Landform: Mountains, hills*  
*Landform position (two-dimensional): Summit, shoulder, backslope*  
*Landform position (three-dimensional): Mountainflank, side slope, nose slope*  
*Down-slope shape: Convex*  
*Across-slope shape: Convex*  
*Parent material: Loamy supraglacial till derived from granite and gneiss and/or phyllite and/or mica schist*

### Typical profile

*Oe - 0 to 3 inches: moderately decomposed plant material*  
*Oa - 3 to 5 inches: highly decomposed plant material*  
*E - 5 to 8 inches: fine sandy loam*  
*Bhs - 8 to 11 inches: fine sandy loam*  
*Bs - 11 to 26 inches: fine sandy loam*  
*BC - 26 to 28 inches: fine sandy loam*  
*R - 28 to 38 inches: bedrock*

### Properties and qualities

*Slope: 15 to 35 percent*  
*Surface area covered with cobbles, stones or boulders: 1.5 percent*  
*Depth to restrictive feature: 20 to 40 inches to lithic bedrock*  
*Drainage class: Well drained*  
*Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.17 in/hr)*  
*Depth to water table: More than 80 inches*

## Custom Soil Resource Report

*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 6.1 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Ecological site:* F143XY501ME - Loamy Slope  
*Hydric soil rating:* No

### **Minor Components**

#### **Peru, very stony**

*Percent of map unit:* 6 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Mountainflank, side slope, nose slope  
*Microfeatures of landform position:* Open depressions, open depressions  
*Down-slope shape:* Convex, concave  
*Across-slope shape:* Convex, concave  
*Hydric soil rating:* No

#### **Lyman, very stony**

*Percent of map unit:* 4 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Summit, backslope, shoulder  
*Landform position (three-dimensional):* Mountainflank, nose slope, side slope  
*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### **Marlow, very stony**

*Percent of map unit:* 3 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Mountainflank, side slope, nose slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### **Cabot, very stony**

*Percent of map unit:* 2 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Mountainflank, side slope, nose slope  
*Microfeatures of landform position:* Open depressions, open depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## 58E—Berkshire-Tunbridge complex, 35 to 50 percent slopes, very stony

### Map Unit Setting

*National map unit symbol:* 2wlnw

*Elevation:* 750 to 2,260 feet

*Mean annual precipitation:* 31 to 95 inches

*Mean annual air temperature:* 27 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Berkshire, very stony, and similar soils:* 45 percent

*Tunbridge, very stony, and similar soils:* 40 percent

*Minor components:* 15 percent

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

### Description of Berkshire, Very Stony

#### Setting

*Landform:* Mountains, hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountainflank, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist

#### Typical profile

*Oi - 0 to 2 inches:* slightly decomposed plant material

*A - 2 to 4 inches:* fine sandy loam

*E - 4 to 5 inches:* fine sandy loam

*Bs1 - 5 to 7 inches:* fine sandy loam

*Bs2 - 7 to 13 inches:* fine sandy loam

*Bs3 - 13 to 21 inches:* fine sandy loam

*BC1 - 21 to 28 inches:* fine sandy loam

*BC2 - 28 to 33 inches:* fine sandy loam

*C - 33 to 65 inches:* fine sandy loam

#### Properties and qualities

*Slope:* 35 to 50 percent

*Surface area covered with cobbles, stones or boulders:* 1.1 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high  
(0.14 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

## Custom Soil Resource Report

*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water supply, 0 to 60 inches:* High (about 10.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* B  
*Ecological site:* F143XY501ME - Loamy Slope  
*Hydric soil rating:* No

### Description of Tunbridge, Very Stony

#### Setting

*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy supraglacial till derived from granite and gneiss and/or phyllite and/or mica schist

#### Typical profile

*Oe - 0 to 3 inches:* moderately decomposed plant material  
*Oa - 3 to 5 inches:* highly decomposed plant material  
*E - 5 to 8 inches:* fine sandy loam  
*Bhs - 8 to 11 inches:* fine sandy loam  
*Bs - 11 to 26 inches:* fine sandy loam  
*BC - 26 to 28 inches:* fine sandy loam  
*R - 28 to 38 inches:* bedrock

#### Properties and qualities

*Slope:* 35 to 50 percent  
*Surface area covered with cobbles, stones or boulders:* 1.5 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to high (0.00 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 6.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C  
*Ecological site:* F143XY501ME - Loamy Slope  
*Hydric soil rating:* No

### Minor Components

#### Peru, very stony

*Percent of map unit:* 5 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Microfeatures of landform position:* Open depressions, open depressions

## Custom Soil Resource Report

*Down-slope shape:* Convex, concave  
*Across-slope shape:* Convex, concave  
*Hydric soil rating:* No

### **Lyman, very stony**

*Percent of map unit:* 5 percent  
*Landform:* Mountains, hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Microfeatures of landform position:* Rises, rises  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Marlow, very stony**

*Percent of map unit:* 3 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Cabot, very stony**

*Percent of map unit:* 2 percent  
*Landform:* Hills, mountains  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Mountainflank, side slope  
*Microfeatures of landform position:* Open depressions, open depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## **64C—Colton gravelly sandy loam, 8 to 15 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2yjf  
*Elevation:* 10 to 2,000 feet  
*Mean annual precipitation:* 31 to 65 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Colton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Colton

### Setting

*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Summit, backslope  
*Landform position (three-dimensional):* Base slope, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Sandy-skeletal glaciofluvial deposits

### Typical profile

*Ap - 0 to 7 inches:* gravelly sandy loam  
*Bs - 7 to 14 inches:* gravelly loamy sand  
*BC - 14 to 24 inches:* very gravelly coarse sand  
*C - 24 to 65 inches:* extremely gravelly coarse sand

### Properties and qualities

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(1.42 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water supply, 0 to 60 inches:* Very low (about 2.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* A  
*Ecological site:* F146XY071ME - Sandy  
*Hydric soil rating:* No

## Minor Components

### Adams

*Percent of map unit:* 10 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope, summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Sheepscot

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Croghan

*Percent of map unit:* 2 percent

## Custom Soil Resource Report

*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

### **64E—Colton gravelly sandy loam, 25 to 60 percent slopes**

#### **Map Unit Setting**

*National map unit symbol:* 2yjf  
*Elevation:* 10 to 2,000 feet  
*Mean annual precipitation:* 31 to 65 inches  
*Mean annual air temperature:* 36 to 52 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

#### **Map Unit Composition**

*Colton and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### **Description of Colton**

##### **Setting**

*Landform:* Eskers, kames  
*Landform position (two-dimensional):* Summit, backslope  
*Landform position (three-dimensional):* Crest, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Sandy-skeletal glaciofluvial deposits

##### **Typical profile**

*Ap - 0 to 7 inches:* gravelly sandy loam  
*Bs - 7 to 14 inches:* gravelly loamy sand  
*BC - 14 to 24 inches:* very gravelly coarse sand  
*C - 24 to 65 inches:* extremely gravelly coarse sand

##### **Properties and qualities**

*Slope:* 25 to 60 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(1.42 to 14.17 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 2.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* A  
*Ecological site:* F146XY071ME - Sandy  
*Hydric soil rating:* No

**Minor Components**

**Adams**

*Percent of map unit:* 10 percent  
*Landform:* Eskers, kames  
*Landform position (two-dimensional):* Shoulder, summit, backslope  
*Landform position (three-dimensional):* Crest, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Sheepscot**

*Percent of map unit:* 3 percent  
*Landform:* Eskers, kames  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

**Croghan**

*Percent of map unit:* 2 percent  
*Landform:* Eskers, kames  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**95E—Nicholville-Adams complex, 25 to 60 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 2w40t  
*Elevation:* 600 to 1,450 feet  
*Mean annual precipitation:* 40 to 50 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 90 to 135 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Nicholville and similar soils:* 55 percent  
*Adams and similar soils:* 30 percent  
*Minor components:* 15 percent

## Custom Soil Resource Report

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

### Description of Nicholville

#### Setting

*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope, summit  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Coarse-silty glaciomarine deposits

#### Typical profile

*Oa - 0 to 2 inches:* highly decomposed plant material  
*E - 2 to 3 inches:* very fine sandy loam  
*Bs - 3 to 19 inches:* very fine sandy loam  
*BC - 19 to 30 inches:* very fine sandy loam  
*C - 30 to 65 inches:* loamy very fine sand

#### Properties and qualities

*Slope:* 25 to 60 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.14 to 1.42 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water supply, 0 to 60 inches:* High (about 10.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* C  
*Ecological site:* F143XY501ME - Loamy Slope  
*Hydric soil rating:* No

### Description of Adams

#### Setting

*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope, shoulder  
*Landform position (three-dimensional):* Riser  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy glaciofluvial deposits

#### Typical profile

*Oe - 0 to 4 inches:* moderately decomposed plant material  
*E - 4 to 6 inches:* loamy sand  
*Bs - 6 to 21 inches:* sand  
*BC - 21 to 27 inches:* sand  
*C - 27 to 65 inches:* sand

#### Properties and qualities

*Slope:* 25 to 60 percent  
*Depth to restrictive feature:* More than 80 inches

## Custom Soil Resource Report

*Drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(1.42 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Available water supply, 0 to 60 inches:* Low (about 4.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* A  
*Ecological site:* F143XY601ME - Dry Sand  
*Hydric soil rating:* No

### Minor Components

#### Marlow, very stony

*Percent of map unit:* 4 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Riser  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

#### Berkshire, very stony

*Percent of map unit:* 4 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Riser  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

#### Monadnock, very stony

*Percent of map unit:* 4 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Riser  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Colton

*Percent of map unit:* 3 percent  
*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Riser  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **W—Water**

### **Map Unit Setting**

*National map unit symbol: 9hsv*

*Mean annual precipitation: 35 to 59 inches*

*Mean annual air temperature: 37 to 52 degrees F*

*Frost-free period: 60 to 180 days*

*Farmland classification: Not prime farmland*

### **Map Unit Composition**

*Water: 100 percent*

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

# **Soil Information for All Uses**

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## **Suitabilities and Limitations for Use**

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

## **Land Classifications**

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

## **Hydric Rating by Map Unit**

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

## Custom Soil Resource Report

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

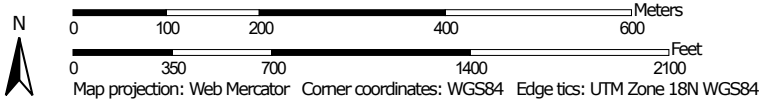
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

# Custom Soil Resource Report Map—Hydric Rating by Map Unit




Map Scale: 1:8,120 if printed on A landscape (11" x 8.5") sheet.









### MAP LEGEND

**Area of Interest (AOI)**







 Area of Interest (AOI)

**Soils**







**Soil Rating Polygons**

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

**Soil Rating Lines**

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available






**Soil Rating Points**

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available


**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: Windsor County, Vermont  
 Survey Area Data: Version 29, Aug 28, 2024

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

Date(s) aerial images were photographed: May 27, 2020—Sep 16, 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.

**Table—Hydric Rating by Map Unit**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8A	Agawam fine sandy loam, 0 to 3 percent slopes	3	7.2	2.6%
9B	Ninigret fine sandy loam, 0 to 8 percent slopes	5	0.9	0.3%
11E	Marlow fine sandy loam, 35 to 60 percent slopes, very stony	2	34.3	12.2%
12C	Tunbridge-Lyman complex, 8 to 15 percent slopes, very rocky	5	8.4	3.0%
12D	Tunbridge-Lyman complex, 15 to 35 percent slopes, very rocky	4	14.5	5.1%
12E	Tunbridge-Lyman complex, 35 to 60 percent slopes, very rocky	1	51.1	18.2%
18C	Peru, Skerry, and Colonel soils, 8 to 15 percent slopes, very stony	3	13.5	4.8%
18D	Becket fine sandy loam association, 15 to 35 percent slopes, very stony	0	15.7	5.6%
24	Podunk fine sandy loam, 0 to 3 percent slopes, occasionally flooded	8	11.1	3.9%
58C	Berkshire-Tunbridge complex, 8 to 15 percent slopes, very stony	1	13.8	4.9%
58D	Berkshire-Tunbridge complex, 15 to 35 percent slopes, very stony	2	31.1	11.1%
58E	Berkshire-Tunbridge complex, 35 to 50 percent slopes, very stony	2	33.8	12.0%
64C	Colton gravelly sandy loam, 8 to 15 percent slopes	0	6.0	2.1%
64E	Colton gravelly sandy loam, 25 to 60 percent slopes	0	26.1	9.3%

Custom Soil Resource Report

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
95E	Nicholville-Adams complex, 25 to 60 percent slopes	0	11.3	4.0%
W	Water	0	2.6	0.9%
<b>Totals for Area of Interest</b>			<b>281.5</b>	<b>100.0%</b>

**Rating Options—Hydric Rating by Map Unit**

*Aggregation Method: Percent Present*

*Component Percent Cutoff: None Specified*

*Tie-break Rule: Lower*

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## Appendix E

### Resumes



## OWEN PRICE

*Biologist I*

**Experience:** Employed at EBI since 2021, in the industry since 2020  
**Education:** B.S. Wildlife and Conservation Biology, University of New Hampshire, Durham, NH  
**Professional Credentials:** **Asbestos Inspector -Licensed in MA (AI901270), VT (Asb-I/MP-000189), ME**  
**The Wildlife Society**

Owen Price is a Biologist I that specializes in natural resource reviews, avian nest surveys, and Phase 1 Environmental Site Assessments (ESA) for the Telecommunications Industry throughout the United States.

### RELEVANT PROJECT EXPERIENCE:

#### **Environmental Site Assessments, Various Projects, Multiple Locations, USA**

Owen has conducted ASTM and Client-specific Phase 1 ESAs, Preliminary Environmental Site screenings, and soil sampling for various clients at a variety of properties throughout the United States. These properties have included industrial, commercial, retail, telecommunications facilities, and undeveloped land. Owen has also performed asbestos surveys and conducted bulk lead-based paint sampling in the New England area. Mr. Price has been conducting ESAs since 2021.

#### **Avian Nest Survey, Various Projects, Multiple Locations, USA**

Owen has reviewed, conducted, and completed avian nest surveys for the telecommunications industry throughout the United States. Owen has been conducting avian nest surveys since 2021.

#### **NEPA Reports, Various Projects, Multiple Locations, USA**

Owen has assisted clients in navigating the environmental review process to ensure adherence to Federal Communication Commission (FCC) regulations in accordance with NEPA guidelines. This includes evaluating potential impacts on historic properties, wetlands, endangered species habitats, floodplains, and other sensitive environmental areas that may be affected by the installation of cellular equipment. Additionally, Owen serves as a liaison between clients and regulatory agencies at the state and federal levels, the FCC, and the United States Fish and Wildlife Service (USFWS).

## Jesse Redd

### *Senior Biologist*

**Experience:** 20+ years in the industry  
**Education:** BS Forestry (Environmental Resources Management), Virginia Tech, Blacksburg VA

Jesse Redd has extensive experience in environmental due diligence specializing in National Environmental Policy Act (NEPA), natural resource reviews, avian nest surveys, Phase 1 Environmental Site Assessments (ESA), and Federal Aviation Administration (FAA) studies for the telecommunication industry.

## Relevant project experience:

### **Environmental Site Assessments, Multiple Locations**

Jesse has conducted Phase I ESAs, Preliminary Environmental Site Screenings and soil and groundwater sampling for various clients and has prepared phase I and phase II compliance reports for properties located in the Mid-Atlantic, Southeast, Northeast and Midwest. These properties have included industrial, manufacturing, commercial, retail and multifamily residential (including HUD) properties as well as telecommunications sites.

### **Avian Nest Surveys**

Mr. Redd has conducted Avian Nest Surveys for telecommunication sites throughout the Mid-Atlantic region. These reports include an analysis of habitat types, breeding pair identification, and breeding behavior for species surveyed.

### **Mobile telecommunications site assessments, Multiple Locations**

In addition to environmental assessments, he has prepared over 300 NEPA screening reports and environmental assessments for telecommunications sites located in the Mid-Atlantic, Southeast, Northeast, and Midwest. These reports ensure compliance with Federal Communications Commission (FCC) requirements under the NEPA and include the analysis of historic properties, wetlands, endangered species habitats, floodplains and other areas of environmental concern and the possible impacts of cellular installations on these sensitive areas. He has also prepared client-specific and State Historic Preservation Office (SHPO)-requested photo simulations for proposed telecommunications structures, including detailed analysis of visual impacts.

### **Environmental sampling, Multiple Locations**

He has also conducted sampling for radon, asbestos and lead at various property types across the Mid-Atlantic, Southeast, Northeast, and Midwest. Additionally, he has performed detailed mold assessments and sampling for residential and commercial properties.