

<b>For NHDOT use only:</b> Application #: _____ LOI Received on: _____ MMW Attendee: _____ MMW Date: _____ Application Received on: _____
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**NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION  
TRANSPORTATION ALTERNATIVES PROGRAM (TAP)**

**Round 4 - 2021 APPLICATION FOR FUNDING**

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**1. Sponsor Information** *(Sponsor is the municipality or school district / SAU that is applying. Contact is the person who will be in responsible charge of the project).*

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**Sponsor Name:**

**Mailing Address:**

**Telephone:**

**Email:**

**Contact Name:**

**Title:**

**Mailing Address:**

**Telephone:**

**Email:**

**Governing Regional Planning Commission:**

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## 2. Project Information

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**Map:** *(A map is required as part of the application. Map must be scanned as a pdf file. Map should include street names, State route numbers, project details, identification of resources, north arrow, and a scale)*

**MAP SUBMITTED**

**Eligible TAP Activities:** *Check the eligible TAP activity(s) that your project is proposing.*

*Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic-calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990 (42 USC 12101 et seq).*

*Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs.*

*Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other non-motorized transportation users.*

*The Safe Routes to School Program eligible projects and activities listed at section 1404(f) of the SAFETEA-LU: Infrastructure-related projects only.*

**Description of work being proposed:**

*(Clearly describe purpose and need for project as well as project goals and objectives)*

**Resources within project limits:**

*(List all cultural, archeological, and natural resources, as well as any known hazardous materials in project limits)*

**Project Details**

**Road Name(s)** *(List all roads in project limits)*

**State Route Number:** *(List all State route numbers or N/A if on a municipal road)*

**Railroad:** *(List name of railroad corridor if rail trail or rail with trail project)*

**Other:** *(If off-road path, describe beginning and ending termination locations)*

**Length of Project:** *(If more than one location, provide total length of proposed improvement)*

**Width of proposed improvement:** *(If width isn't consistent, provide an average width for majority of improvements)*

**Surface Type:** *(List Paved, Concrete, Gravel, Stone Dust, etc. for all proposed improvements)*

**Ownership:** *(List the entity that owns the land in the limits of your proposed improvements)*

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### 3. Project Cost Estimate

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Identify the estimated project costs under each of the phases below.

**A) Design/Engineering:** \$   
*(Costs for engineering study, preliminary design, environmental review, identifying and establishing right-of-way, easements preparation, final design, and bid phase services)*

**B) Right-Of-Way:** \$   
*(Cost of easement acquisition and/or land acquisition)*

**C) Construction:** \$   
*(Cost of constructing project, materials, and labor)*

**D) Construction Engineering:** \$   
*(Cost of engineering oversight for the project. Oversight needs to be almost fulltime.)*

**Project Total:** \$   
*(Min. \$400,000 Max \$1,250,000)*

#### Identify the amount of federal funding you are applying for.

*If you are overmatching your project to get your total up to \$400,000 or over \$1,250,000 you add the additional funds to your required match and put that in the Match\$ box below. Your % federal funds will be adjusted based on your amount of overmatch. If you are adding funds that will be in addition to the amount of federal funds and match for your project those are considered non-participating funds. In this case you put the additional funds in the non-participating box. This is usually done if you want to do additional work that may not be eligible under the TAP program but you want the work done under the overall contract.*

**Federal \$**   
*(\$1,000,000 Max. \$320,000 Min. for federal amount requested)*

%  
*(80% Max. for TAP reimbursement)*

**Match \$**   
*(Enter amount of local match and additional funds if applicable)*

%

**Non-Participating \$**

**Funding Total \$**   
*(Min. \$400,000 Max.\$1,250,000)*

*Reason for non-participating funds*

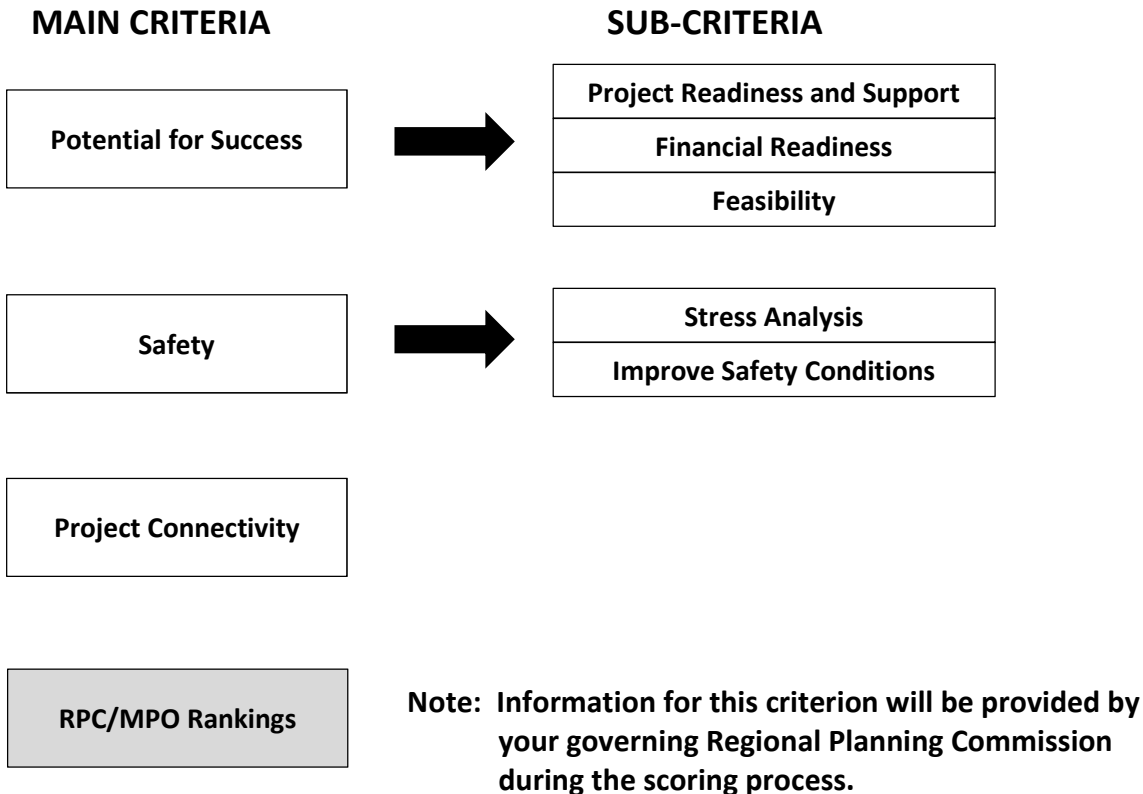
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**4. Evaluation Criteria** (*Applications will be scored on criteria developed by the Department's Transportation Alternatives Program Advisory Committee (TAPAC). The TAPAC developed these criteria to select the best applications for funding.*)

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There are four main criteria and five sub-criteria that will be used to evaluate projects and are listed below:

- **RPC/MPO Ranking criterion, Section D will be done by the governing regional planning commission using the information provided in the application. Application will be submitted to the Department and the Department will forward copies to the Regional Planning Commissions**



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**A) Potential for Success: Sponsor will need to demonstrate the factors that will indicate a project's likeliness to succeed.**

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**MANDATORY REQUIREMENT: All applications must include a letter of support from the Sponsor's governing body committing to actively engaging and leading the project. Application will not be accepted without this letter.**

**Letter of support attached:**

- **Project Readiness and Support:** *Is the project part of a local and/or regional plan and effort, and has it been endorsed by local and regional bodies and advocacy groups? That is, did you build your case about the importance of this project to many constituents like conservation commission, planning board, other local groups? Is it part of a regional plan or have RPC/TAC support? Is it part of a master plan or other planning document? (Number of constituents and/or planning documents will be used for scoring)*

- **Financial Readiness:** *(TAP is a reimbursement program. Sponsor will have to gross appropriate funds for the entire project. (The Department reimburses a maximum of 80% of each reimbursement request.) Explain how the project will be funded and the timeline for funding. Is there a written commitment to bring this project forward for approval of funds at town meeting, through capital reserve funds, through inclusion in the capital improvement plan, etc. or are there funds already raised/appropriated and dedicated to this project?*

- **Feasibility:** *Address historic, cultural, environmental, maintenance, possible areas of contamination, and other related issues that may impact the project's ability to succeed. Applicant should discuss issue and how it will be addressed. Discuss impacts to project timeline and possible financial impacts.*



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**B) Safety: Projects will need to demonstrate the extent to which the project will improve safety conditions and/or reduce the perception of user stress as a result of the project being implemented. This criterion will be rated on the difference between the stress level of the existing condition versus the anticipated stress level of the proposed project.**

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- **Stress Analysis:**

- *Describe the existing stress level of your project area as it exists today without the proposed project and based on the scale below, assign it a letter. You must justify why you chose the letter.*
- *Describe the anticipated stress level for the project area after the proposed project is completed and based on the scale below, assign it a letter. You must justify why you chose the letter.*

A - Facility is reasonably safe for all children.

B - Facility can accommodate users with basic skills and knowledge of traffic.

C - Facility requires an intermediate level of skill and knowledge of traffic to use.

D - Facility requires an advanced level of skill and knowledge of traffic to use.

E - Facility is generally not suitable for pedestrians or bicyclists.

- **Improve Safety Conditions:** *Improvement over existing safety conditions - are there very specific actions that are being taken to improve safety. What specific safety improvements will be made? If there is information, (road safety audit, corridor study, etc.) to support it, please provide it in pdf format with your application. Only specific actions and improvements will be used for scoring - anecdotal information will not be used.*

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**C) Project Connectivity: Project will need to demonstrate how it enables movement from origins to destinations, how it fits in with the larger transportation network and identify any other modes it will serve.**

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- *Does the project fill a vital gap in an existing transportation network or phased plan? Does it provide a standalone new facility that did not exist previously? Is it part of a larger phased plan? List the different modes and destinations it link together? Please describe in detail all connections, and if part of a phased plan what will the proposed improvement accomplish? Is it the first phase, middle phase or final phase of the plan.*

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**D) RPC/MPO Rankings: This section will be completed by the local Regional Planning Commission for your project.**

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- *The Department will send applications to the local Regional Planning Commissions to score and develop a regional ranking. This information will then be incorporated into the final score of projects.*

***NO ACTION NEEDED FROM APPLICANT FOR SECTION D***

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**Only one application will be accepted per municipality**

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- *The Department received 43 letters of interest requesting more than \$29.6 million in federal funds.*

5) Application Submission Information: The application is an adobe .pdf form and it must be saved and copied to our Department FTP site. Any supporting documents like the Map, Letter of support and other supporting documentation need to be submitted with the application in pdf format and saved to the FTP site. Directions on accessing the Department FTP site are below. A tutorial on accessing the FTP site and copying files will be on the TAP website.

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**APPLICATIONS ARE DUE BY 11:59PM FRIDAY MARCH 19, 2021!**

**Failure to meet this deadline will result in your project being removed from the scoring process.**

### **Submission Guidelines**

**Format:** *Application form **must** be saved electronically as a pdf and then copied to the Department FTP site. All supporting maps, letters and other documents must be saved as a pdf and transmitted saved to the Department FTP site with the application form.*

**Naming Convention:** *The FTP site has one folder for all submissions, **TAP Applications Round 4**. To keep track of the applications and attachments it is **essential** you follow the following naming convention. Name of town/city followed by file.*

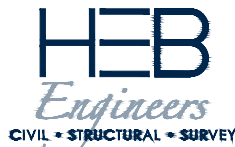
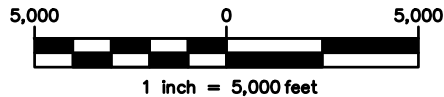
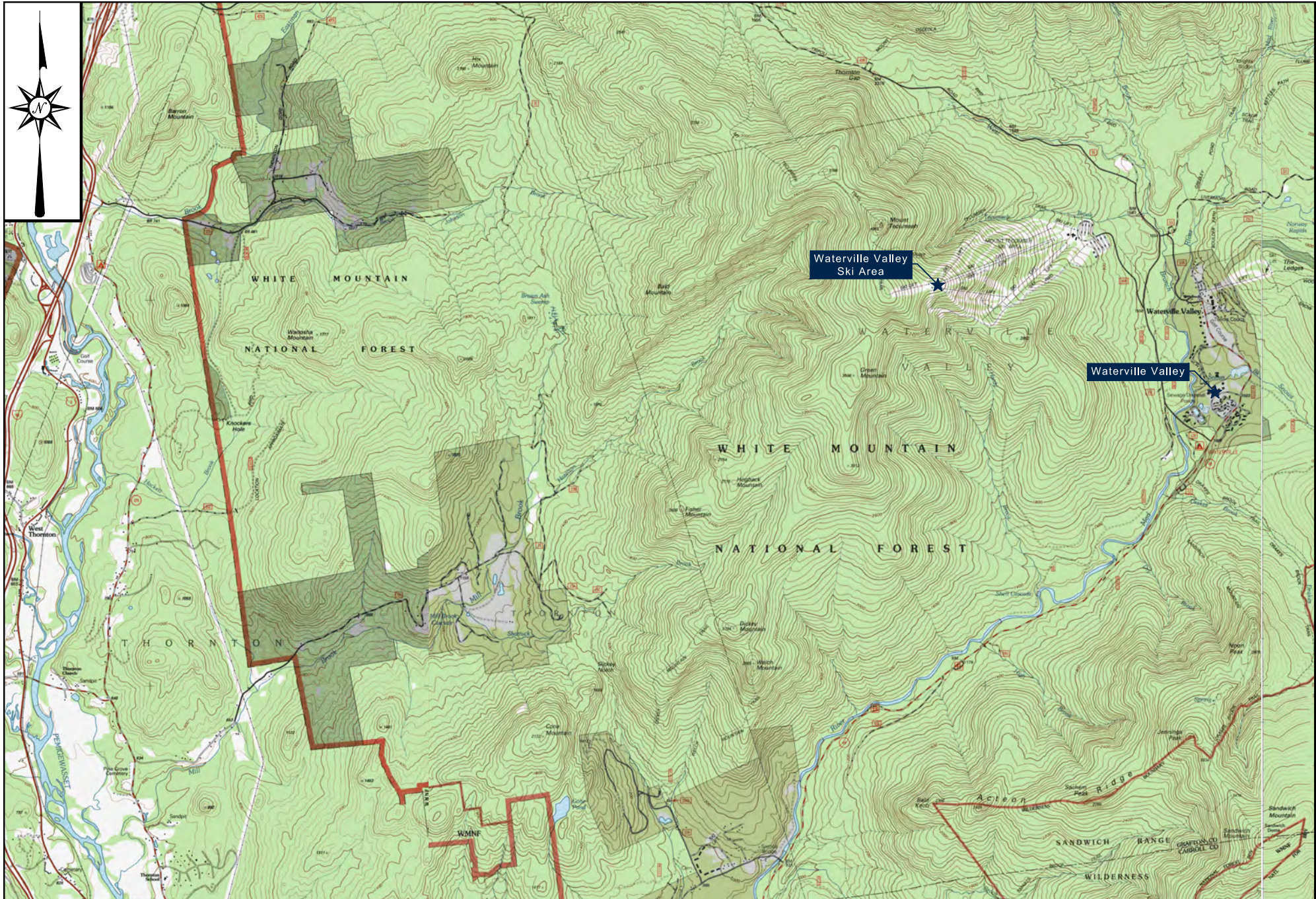
*Example: **ConcordApplication.pdf ConcordMAP.pdf ConcordLetterOfSupport.pdf***

**Failure to follow this naming convention will cause confusion and could result in applications and/or attachments being lost.**

**A TUTORIAL DOCUMENT WILL BE PUT ON THE TAP WEBSITE. THIS DOCUMENT WILL SHOW HOW TO ACCESS THE FTP SITE, HOW TO COPY FILES TO THE SITE AND TO EXPLAIN THE REQUIRED NAMING CONVENTION**

**Submission:** *All files must be received on or before 11:59 PM Friday March 19, 2021.*

Direct any questions to: Tom Jameson, email: [thomas.e.jameson@dot.nh.gov](mailto:thomas.e.jameson@dot.nh.gov) , phone: 271-3462

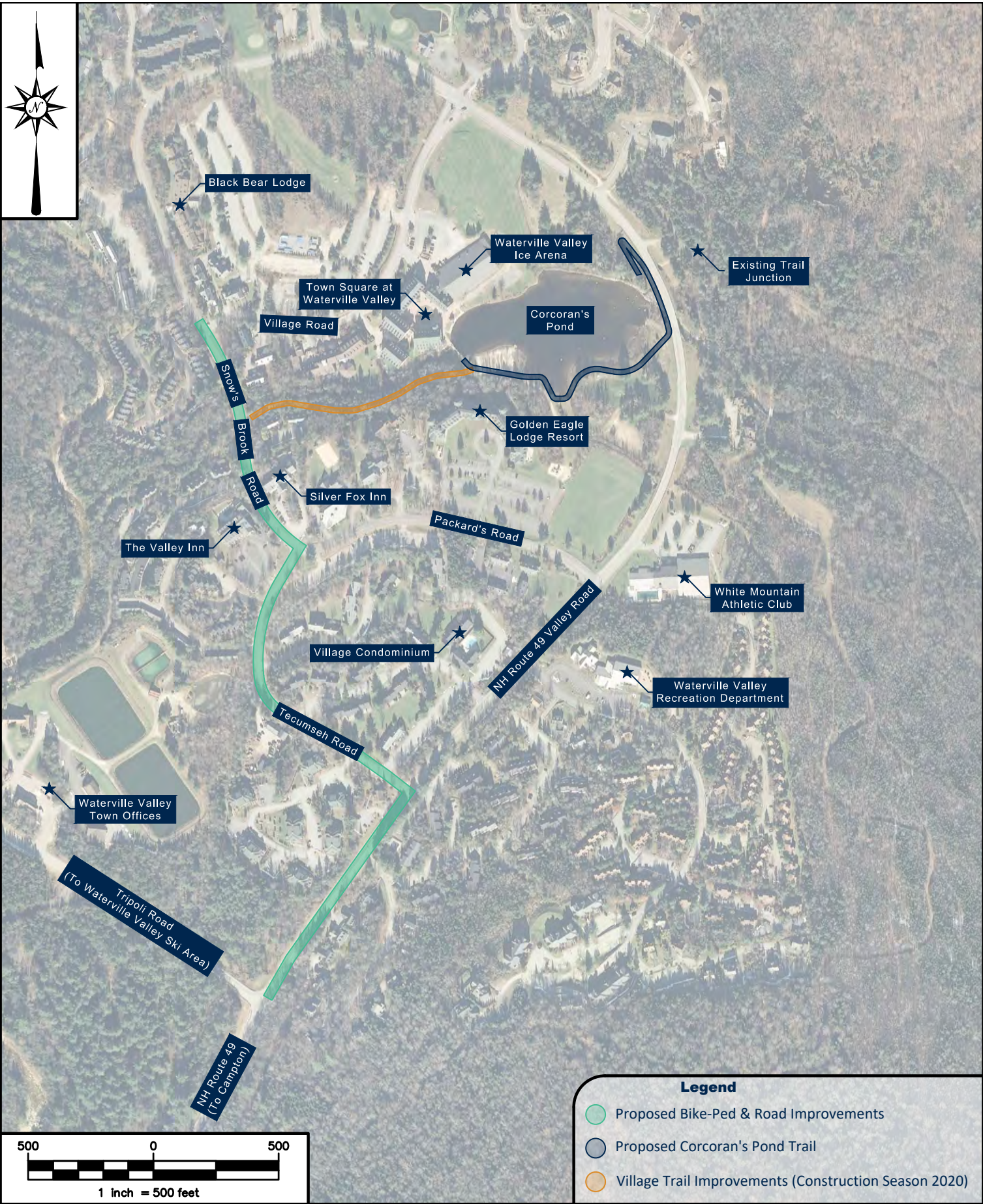


HEB Engineers, Inc.  
 www.hebengineers.com  
 NH Office (603) 356-6936  
 Post Office Box 440  
 North Conway, NH 03860  
 ME Office (207) 803-8265  
 Post Office Box 343  
 Bridgton, ME 04009

Regional Project Location Plan  
 for the  
**Waterville Valley Trail Improvement Project**  
 located in and prepared for the  
**Town of Waterville Valley, New Hampshire**

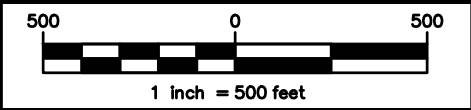
**Figure 1**

DESIGNED BY	—	PROJECT	2020-038
DRAWN BY	DRL	REVISION	—
CHECKED BY	JMM	DATE	05/26/2020
		SCALE	1"=5,000'



**Legend**

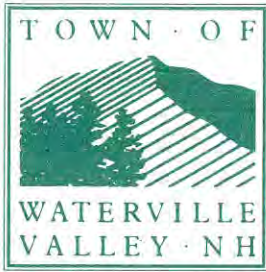
- Proposed Bike-Ped & Road Improvements
- Proposed Corcoran's Pond Trail
- Village Trail Improvements (Construction Season 2020)



**HEB Engineers, Inc.**  
 www.hebengineers.com  
 NH Office (603) 356-6936  
 Post Office Box 440  
 North Conway, NH 03860  
 ME Office (207) 803-8265  
 Post Office Box 343  
 Bridgton, ME 04009

**Detailed Project Location Plan**  
 for the  
**Waterville Valley Trail Improvement Project**  
 located in and prepared for the  
**Town of Waterville Valley, New Hampshire**

<b>Figure 2</b>		PROJECT	2020-038
DESIGNED BY	-	REVISION	-
DRAWN BY	DRL	DATE	05/26/2020
CHECKED BY	JMM	SCALE	1"=500'



Post Office Box 500  
Waterville Valley  
New Hampshire 03215  
(603) 236-4730  
(603) 236-2056 FAX

March 17, 2021

Mr. Thomas Jameson, PE Tap Program Manager  
NHDOT Bureau of Planning & Community Assistance  
John O. Moron Building  
7 Hazen Drive, PO Box 483  
Concord, NH 03302-0483

**Re: The Town of Waterville Valley TAP Proposal**

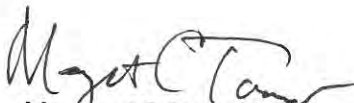
Dear Mr. Jameson,

We are writing to express the support of the Waterville Valley Board of Selectmen for the Town's application for a Transportation Alternative Program in the amount of up to \$1,030,554. The Town has capital reserves on-hand equal to twenty percent (20%) of this total project cost (\$206,111) as the Town match for the grant funds. The grant funds will support the reconstruction of Valley Road, Tecumseh Road, and Snow's Brook Road including the construction of a shared pedestrian and bike pathway.


The improvements outlined in our grant application are important additions to our transportation network in our Town. Enhancement of pedestrian and non-motorized transportation facilities is extremely important to improved safety as well as the continued success of the economy of our Town. We have significant investment in transportation facilities and support in the past 10 years and look to continue that investment into the future.

If you have any questions pertaining to this information, please do not hesitate to contact the town through the Town Manager, Mark Decoteau, at ph. (603) 236-4730.

Sincerely,

  
Margaret C. Turner  
Chair of the Select Board

  
Richard A. Rita  
Vice Chair Selectman

  
William M. Aronson  
Selectman

*The Town of Waterville Valley prohibits discrimination on the basis of race, color, national origin, sex, sexual orientation, religion, age, disability or family status.*

*The Town of Waterville Valley is an equal opportunity employer.*





# WATERVILLE VALLEY ELEMENTARY SCHOOL

GALE ADAMS-DAVIS, PRINCIPAL

11A NOON PEAK RD., WATERVILLE VALLEY, NH 03215

TELEPHONE: 603-236-4700 FAX: 603-236-2018

EMAIL: [GADAMS-DAVIS@PEMIBAKER.ORG](mailto:GADAMS-DAVIS@PEMIBAKER.ORG)

WEBSITE: [WWW.WVES.SAU48.ORG](http://WWW.WVES.SAU48.ORG)

March 16, 2021

Tom Jameson, TAP Program Manager  
NHDOT Bureau of Planning and Community Assistance  
7 Hazen Drive, P.O. Box 483  
Concord, NH 03302

***Re: The Town of Waterville Valley TAP Proposal***

Dear Mr. Jameson,

Waterville Valley Elementary School is pleased to provide this letter of support for The Town of Waterville Valley's application for NHDOT Transportation Alternatives Program funds to support reconstruction of Valley Road, Tecumseh Road and Snow's Brook Road, including construction of pedestrian/bike bath.

This proposed project of reconstruction and construction will improve safe routes for non-drivers, children, older adults, and individuals with disabilities. The creation of a pedestrian/bike path will safely connect residential areas into the town's business area where services are located.

Waterville Valley Elementary has had a tremendous increase in students attending our school this year. Part of our outdoor education program in the fall includes a biking unit. Having a bike path will improve the safety and quality of this program for all of our students, from those on training wheels to the most advanced. Second, most of our students walk or ride their bikes throughout most of the year using the above routes. Safety is always a number one priority, and having a pedestrian/bike path will have a significant positive effect.

On behalf of the elementary school community; thank you for your consideration of this proposal.

Regards,  
Gale Adams-Davis

Waterville Valley Elementary School Principal

[gadams-davis@pemibaker.org](mailto:gadams-davis@pemibaker.org)

(603) 236 4700



# Waterville Valley Resort

March 16, 2021

Tom Jameson, TAP Program Manager  
NHDOT Bureau of Planning and Community Assistance  
7 Hazen Drive, P.O. Box 483  
Concord, NH 03302

***Re: The Town of Waterville Valley TAP Proposal***

Dear Mr. Jameson,

Waterville Valley Resort is pleased to provide this letter of support for The Town of Waterville Valley's application for NHDOT Transportation Alternatives Program funds to support reconstruction of Valley Road, Tecumseh Road and Snow's Brook Road, including construction of pedestrian/bike bath.

This proposed project of reconstruction and construction will improve safe routes for non-drivers, children, older adults, and individuals with disabilities. The creation of a pedestrian/bike path will safely connect residential areas into the town's business area where services are located.

A large portion of our summer business is based around our community's safe atmosphere. Kids are able to be kids, riding our rental bikes around town, while their parents enjoy shopping and eating in our town square. It is important of the parents to feel that it is a safe place to let their kids explore and find their adventure. The creation of a pedestrian / bike path is critical to the sense of safety as current roadways have proven to be problematic.

On behalf of the Waterville Valley Resort, thank you for your consideration of this proposal.

Sincerely,

**Tim Smith** | President /General Manager  
Waterville Valley Resort, New Hampshire  
[Tsmith@waterville.com](mailto:Tsmith@waterville.com) | [603-236-8311 ext. 3358](tel:603-236-8311)  
[www.waterville.com](http://www.waterville.com)

# Tyrell Development Company LLC

March 15, 2021

Tom Jameson, TAP Program Manager  
NHDOT Bureau of Planning and Community Assistance  
7 Hazen Drive  
P.O. Box 483  
Concord, NH 03302

## Re: Town of Waterville Valley TAP Grant Application

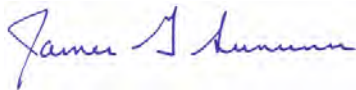
Dear Mr. Jameson:

I am writing on behalf of Tyrell Development Company to express our support for the Town's on-going efforts to improve vehicular and pedestrian transportation throughout the community. Specifically, we support the Town's application for NHDOT Transportation Alternatives Program funds to support the reconstruction of Valley Road, Tecumseh Road and Snow's Brook Road, including construction of pedestrian and bike paths.

As one of the largest landowners in Waterville Valley, we have supported the Town's Pedestrian Village Revitalization Study, the Town Entrance Project, and plans for road improvements throughout the community. These projects are critical to improving the use and enjoyment of town facilities and the natural surroundings by residents and guests of the community, and are consistent with the community's Master Plan.

These improvements not only make it safer for drivers, cyclists, and pedestrians to move around the town, they also enhance the economic base of this tourism-dependent community. It is critical that everyone using our transportation infrastructure is able to easily navigate high quality roads, sidewalks, and trails to get from one location to another, and we look forward to continuing to work with the Town of Waterville Valley to support these projects

Sincerely,



James Sununu  
Manager  
Tyrell Development Company LLC

cc: Margaret Turner, Select Board Chair, Town of Waterville Valley  
Mark Decoteau, Town Manager, Town of Waterville Valley

# Schematic Design Drawings

for the

# Bike-Ped & Roadway Improvements

located in and prepared for the

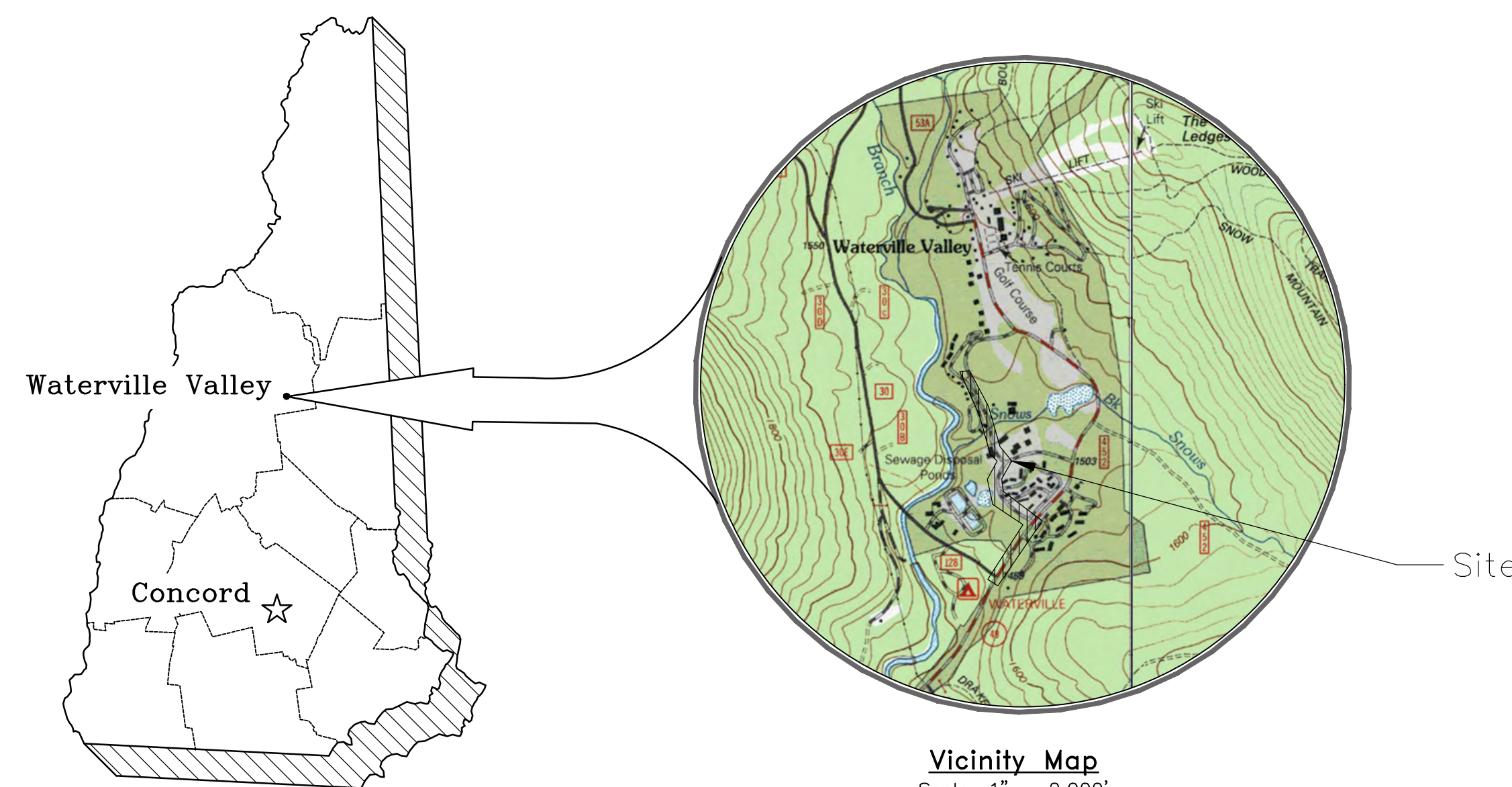
# Town of Waterville Valley, New Hampshire

HEB Project #2020-036  
 Issued: May 22, 2020

Sheet Index

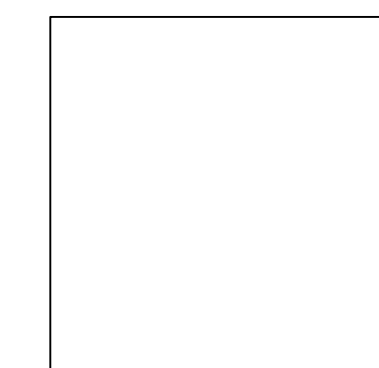
Number	Sheet	Sheet Name	Latest Issue
1.	C0.01	Cover Sheet	05/22/2020
2.	C0.02	General Notes	05/22/2020
3.	V1.01	Existing-Features Plan - Snow's Brook Road	05/22/2020
4.	V1.02	Existing-Features Plan - Tecumseh Road	05/22/2020
5.	V1.03	Existing-Features Plan - Valley Road	05/22/2020
6.	C1.21	Roadway Layout Plan - Snow's Brook Road	05/22/2020
7.	C1.22	Roadway Layout Plan - Tecumseh Road	05/22/2020
8.	C1.23	Roadway Layout Plan - Valley Road	05/22/2020
9.	C2.11	Plan & Profile - Snow's Brook Road	05/22/2020
10.	C2.12	Plan & Profile - Tecumseh Road	05/22/2020
11.	C2.13	Plan & Profile - Tecumseh Road	05/22/2020
12.	C2.14	Plan & Profile - Valley Road	05/22/2020
13.	C3.00	Typical Sections	05/22/2020
14.	C3.11	Cross Sections - Snow's Brook Road	05/22/2020
15.	C3.12	Cross Sections - Snow's Brook Road	05/22/2020
16.	C3.21	Cross Sections - Tecumseh Road	05/22/2020
17.	C3.22	Cross Sections - Tecumseh Road	05/22/2020
18.	C3.31	Cross Sections - Valley Road	05/22/2020
19.	C3.32	Cross Sections - Valley Road	05/22/2020
20.	C5.11	Construction Details - General	05/22/2020
21.	C5.12	Construction Details - General	05/22/2020

Owner: Town of Waterville Valley  
 PO Box 500  
 Waterville Valley, NH 03215



Vicinity Map  
 Scale: 1" = 2,000'  
 Source: USGS Map  
 (City/Town, ST)

Engineer



**HEB**  
 Engineers  
 CIVIL • STRUCTURAL • SURVEY

HEB Engineers, Inc.  
 www.hebengineers.com  
 NH Office (603) 356-6936  
 Post Office Box 440  
 North Conway, NH 03860  
 ME Office (207) 803-8265  
 Post Office Box 343  
 Bridgton, ME 04009

Surveyor



34 School Street  
 Littleton, NH 03561  
 Phone 603.444.4111 - Fax 603.444.1343

**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

Summary of Quantities

To Be Determined

**General Construction Requirements:**

1. Contractor is responsible for all work shown on the drawings, unless otherwise noted. Provide all materials and labor necessary to complete site plans.
2. All work shall conform to the latest edition of the NHDOT Standard Specifications for Road & Bridge Construction.
3. Perform all work in compliance with Federal, State, and Local permit approvals. Copies of all permit approvals shall be maintained at the project site.
4. Make all necessary construction notifications and apply for and obtain all necessary permits, pay all fees and post all bonds associated with the work indicated on the drawings.
5. Site security and job safety are the sole responsibility of the Contractor. All construction activities shall comply with OSHA standards and local requirements.
6. The location of existing utilities are approximate and have not been independently verified. Contact "Dig Safe" 72 hours prior to any excavation at 1-888-344-7233 and any other utility owners for accurate utility marking. Contractor shall pay for all damages which may occur by the failure to locate and preserve any utilities.
7. At least one (1) week prior to site clearing/demolition, request Owner's Representative to identify features to remain.
8. Field-verify the location, size, inverts and types of existing pipes at all proposed points of connection prior to ordering materials. Where an existing utility is found to be in conflict with the proposed work, the location, elevation and size of the utility shall be accurately determined without delay, and the information furnished in writing to the Owner's Representative for resolution of the conflict.
9. Rim elevations of proposed drainage structures are approximate in paved areas. Final elevations are to be set flush and consistent with the grading plan. Adjust all other rim elevations to finished grade within the limit of work.
10. All site signage and pavement markings shall conform to the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD) and N.H. Department of Transportation Standards.
11. Provide traffic control and flaggers (if required) complying with the State Department of Transportation requirements.
12. Contractor shall remove and replace or repair all curbs, sidewalk, pavement and other items damaged by construction activities to, at a minimum, their original condition, and to the satisfaction of the Owner and Owner's Representative.
13. Contractor shall remove and dispose of all debris and excess excavated material from within the construction limit of work, to a suitable site provided by the Contractor, in compliance with all state and local regulations. Any excess suitable material may remain on site at the request of the Owner.
14. When power or telephone pole support is required, the Contractor shall provide a minimum 48-hour notification to utility agency.
15. Open trenches in the roadway must be backfilled at the end of the workday. Open trenches outside of the roadway may be left open if the Contractor provides adequate safe barricading and lights. Two-way traffic must be maintained during off-work hours.
16. All existing sewer, storm drain and water lines encountered during construction are to remain in service. Any lines damaged during construction shall be repaired by the Contractor at the Contractor's expense, except when in direct conflict with the new service or when not shown or indicated.
17. All structures and pipelines located adjacent to the trench excavation shall be protected and firmly supported by the Contractor until the trench is backfilled. Injury to such structures caused by, or resulting from, the Contractor's operations shall be repaired at the Contractor's expense. All utilities requiring repair, relocation or adjustment as a result of the project shall be coordinated through the respective utility.
18. Severing existing utilities for abandonment or removal of a segment from service shall be performed in such a manner as to allow the remaining active segment to continue in its intended service. Cap active segments with appropriate fittings, joint restraint, etc., to ensure their integrity. Plug ends of abandoned pipe segments with concrete, unless special circumstances dictate plugging abandoned pipes with blind flanges, restrained mechanical joint plugs, etc. as appropriate.
19. Do not disturb areas outside the limits of proposed work. Areas disturbed by the Contractor's operations shall be restored to their original condition at the Contractor's expense. All areas disturbed during construction on the track side of the path shall be stabilized with a 4-inch thick blanket of standard stone size #357, NHDOT Item 304.357. All other disturbed areas not covered with buildings, structures or pavement shall receive 4 inches of loam and seed.
20. Vehicle access to driveways and access to businesses shall be maintained at all times during construction.
21. The Contractor shall provide a construction schedule to the Owner prior to commencing work and shall update the schedule monthly.
22. Any contaminated materials encountered during excavation shall be re-used as fill material where possible or legally disposed of off-site.
23. Pathway layout is subsidiary and is the responsibility of the Contractor.
24. The Contractor shall coordinate construction activities, materials storage, and equipment staging areas with the Owner's Representative.

**As-Built Measurements and Record Drawings:**

1. Record as-built dimensions on a daily basis and review with the Owner's Representative on a weekly basis. Submit complete record information on a clean set of drawings to Owner's Representative(s) upon substantial completion of work.
2. As-built dimensions shall include locations of all surface features and subsurface utility systems including, but not limited to:
  - a. Location, size, depths, rims, angle points, and invert elevations of buried pipes, utilities, vaults, etc.
  - b. Field changes of dimension and detail.
  - c. Details not on original drawings.

**Approvals Received:**

NHDES Wetlands Permit: Pending

**Utility Notes:**

1. Perform all work in compliance with federal, state, and local permit approvals. Copies of all permit approvals shall be maintained at the project site.
2. Site security and job safety are the sole responsibility of the Contractor. All construction activities shall comply with OSHA standards and local requirements.
3. The location of existing utilities are approximate and have not been independently verified. Contact "Dig Safe" 72 hours prior to any excavation at 1-888-344-7233 and any other utility owners for accurate utility marking. Contractor shall pay for all damages which may occur by the failure to locate and preserve any utilities.
4. The location, size, depth, and specifications for construction of proposed utility services shall be installed complying with the requirements of the respective utility company (electric, telephone, cable, etc.).
5. Field-verify the location, size, inverts and types of existing pipes at all proposed points of connection prior to ordering materials. Where an existing utility is found to be in conflict with the proposed work, the location, elevation and size of the utility shall be accurately determined without delay, and the information furnished in writing to the Owner's representative for resolution of the conflict.
6. Make all arrangements and pay any fees for relocation and/or alteration of utilities such as electric, telephone, cable, and any other private utilities.
7. Make all necessary construction notifications and apply for and obtain all necessary permits not provided by Owner, and pay all fees and post all bonds associated with the work indicated on the drawings.

**Project Intent Notes:**

1. The intent of the project is to construct a 10-foot paved bike-pedestrian lane for Snow's Brook Road, Tecumseh Road, and Valley Road to connect existing pathways in Waterville Valley from Tripoli Road to Corcoran's Pond. Roadway improvements will also be made to Snow's Brook Road, Tecumseh Road, and Valley Road including new pavement and drainage measures.

**Material Testing:**

1. It is anticipated the following material testing program will be implemented and be the responsibility of the Owner.
2. Contractor shall notify Owner's Representative at least 48 hours prior to placement of materials noted below.
3. Contractor is responsible for supplying and installing construction materials that meet NHDOT Specifications.
4. Testing program outlined below assumes phased construction.

NHDOT Item	Description	Test Location & Frequency
TBD	TBD	TBD

**Construction Sequence:**

In addition to complying with the "General Erosion-Control Requirements", the construction sequence is based on construction beginning in the spring 2020 and completed in the summer of 2020. Should the construction take longer than assumed, the Contractor shall stabilize the site in accordance with the Winter Construction Standards at no additional cost to the Owner, and the Engineer shall be contacted to determine if additional measures are needed.

**Spring/Summer 2021:**

1. Install stabilized construction entrance.
2. Install silt fence and other temporary erosion-control measures.
3. Strip and stockpile topsoil.
4. Install new drainage controls and utilities as identified.
5. Excavate to subgrade for roadway widening and proof roll.
6. Install gravel for roadway widening and compact.
7. Install crushed gravel for roadway widening and compact.
8. Reclaim existing roadway pavement.
9. Fine grade crushed gravel/reclaim.
10. Place the pavement indicated on plans.
11. Loam, seed, mulch, and apply tackifier to all disturbed areas. Install erosion control fabric to all 3:1 or steeper slopes and install check dams in ditches.
12. After vegetation is sufficiently established in the opinion of the Engineer, remove the temporary erosion control measures.
13. Site must be stabilized prior to September 2021.

**Winter Construction Notes:**

1. All proposed vegetated areas which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melts.
2. All ditches or swales which do not exhibit 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
3. After November 15th, incomplete road or parking surfaces, where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel per NHDOT Item 304.3.

CO.02  
SHEET 2 OF 21

2020-036  
General Notes  
Bike-Ped & Roadway Improvements

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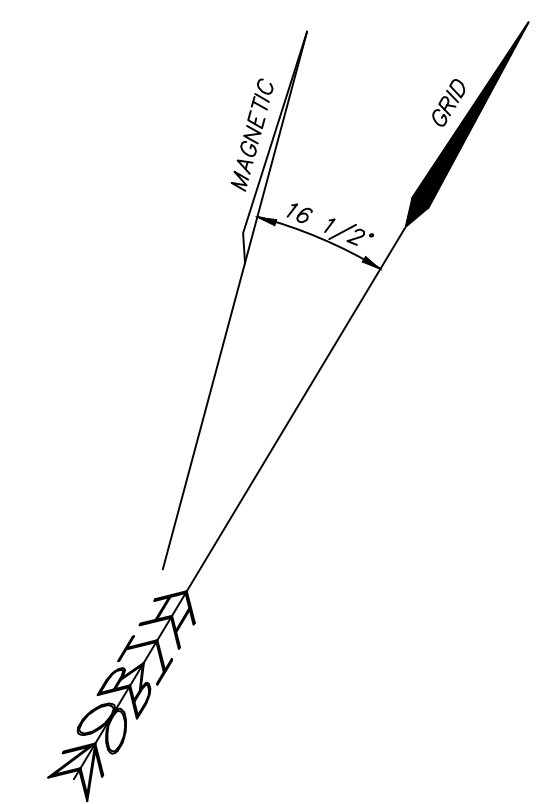
**General Notes**  
for the  
**Bike-Ped & Roadway Improvements**  
located in  
**Waterville Valley, New Hampshire**  
prepared for  
**Town of Waterville Valley**

2020-036

CO.02

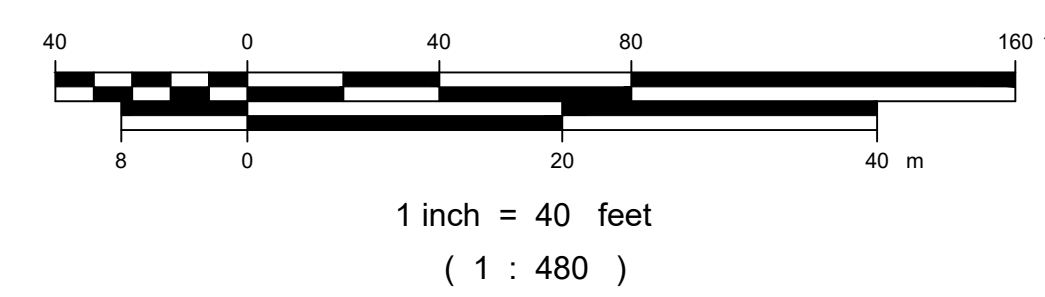
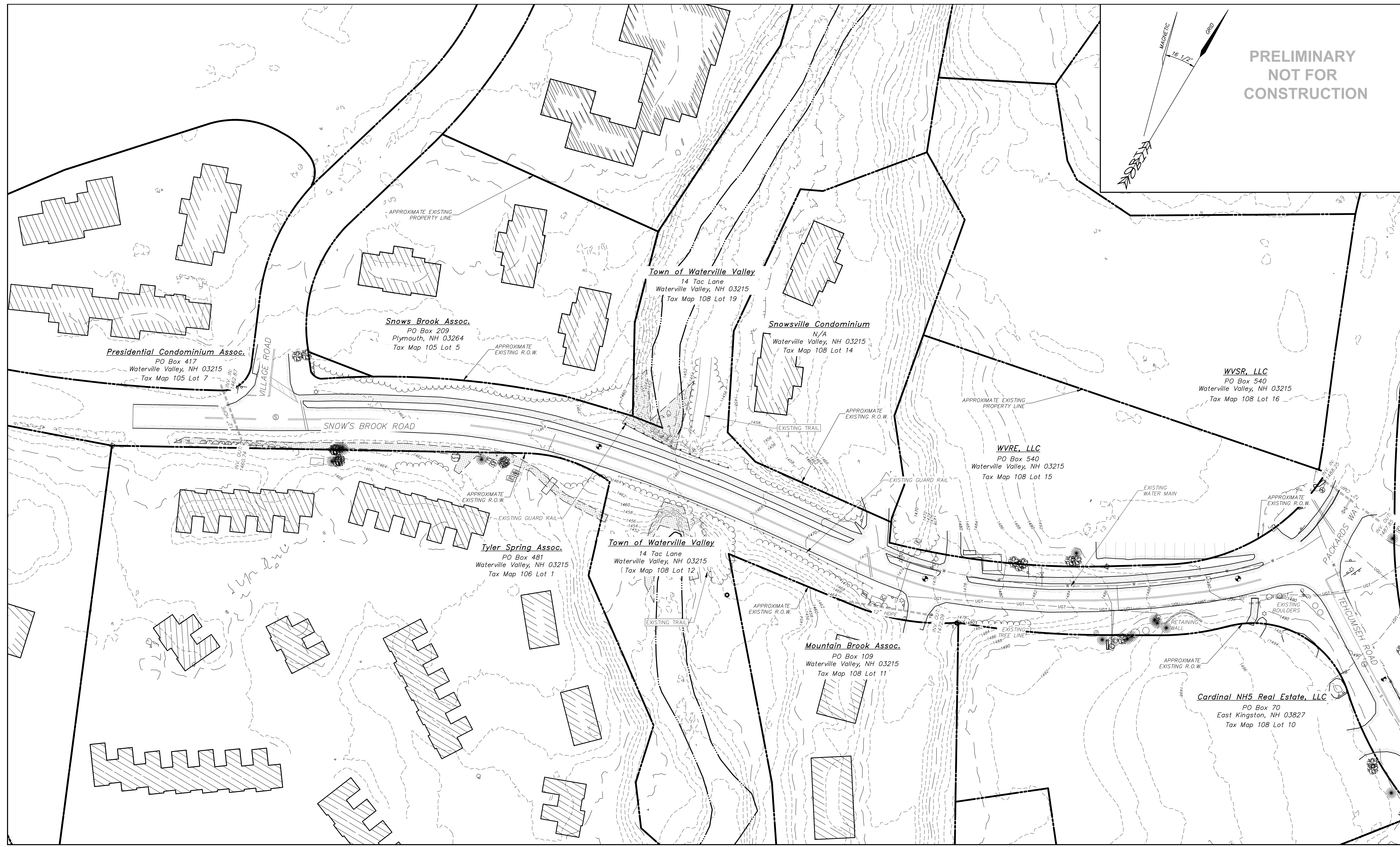
SHEET 2 OF 21

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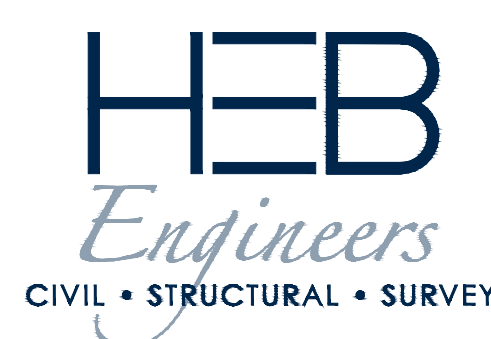


VI.01  
SHEET 3 OF 21

2020-036  
Existing-Features Plan - Snow's Brook Road  
Bike-Ped & Roadway Improvements



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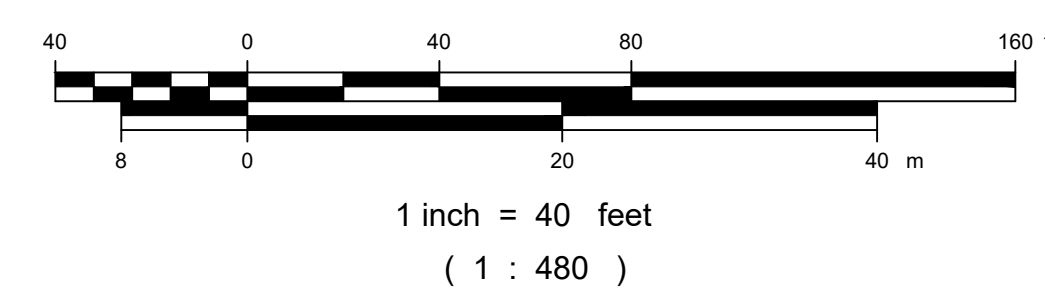
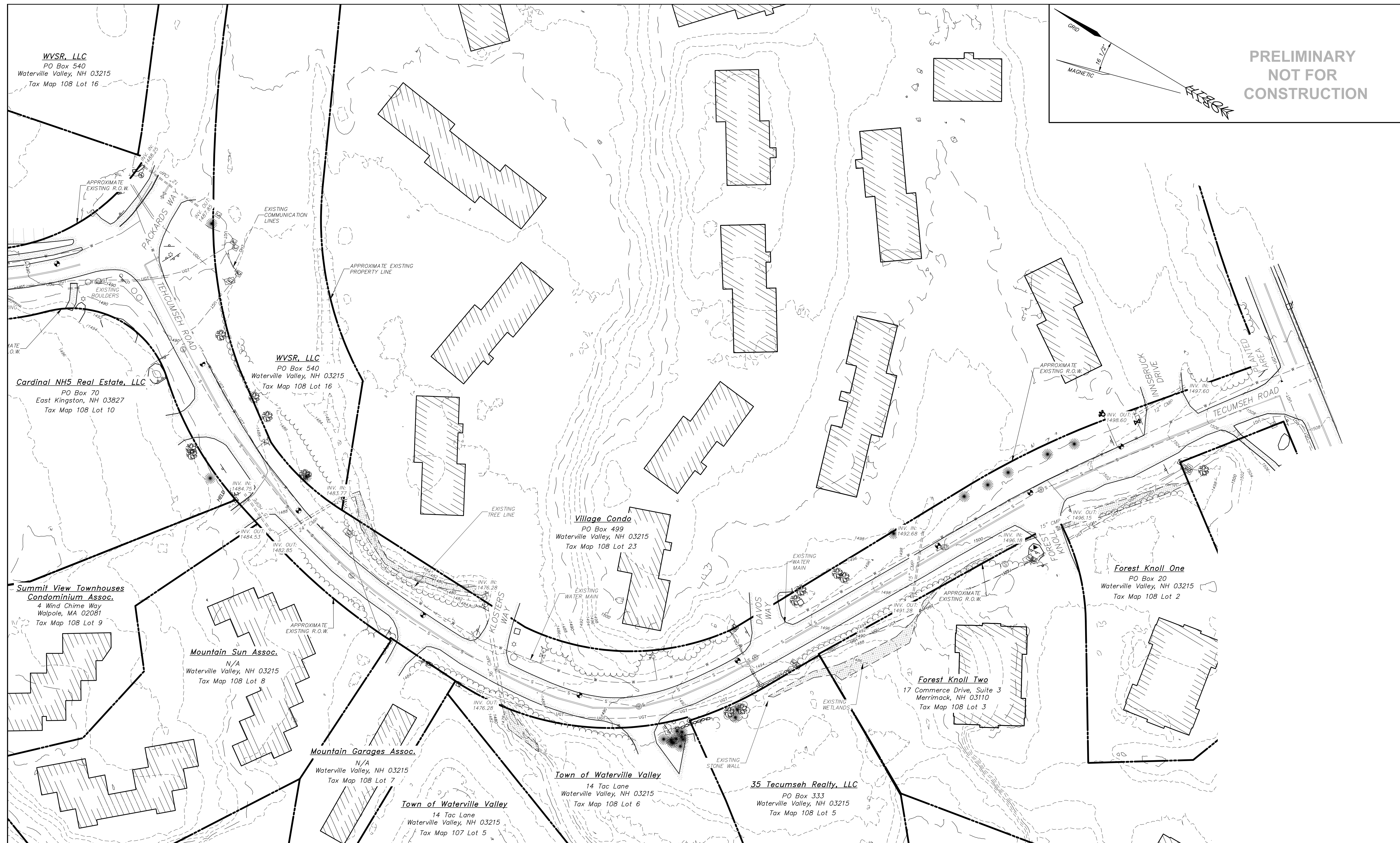
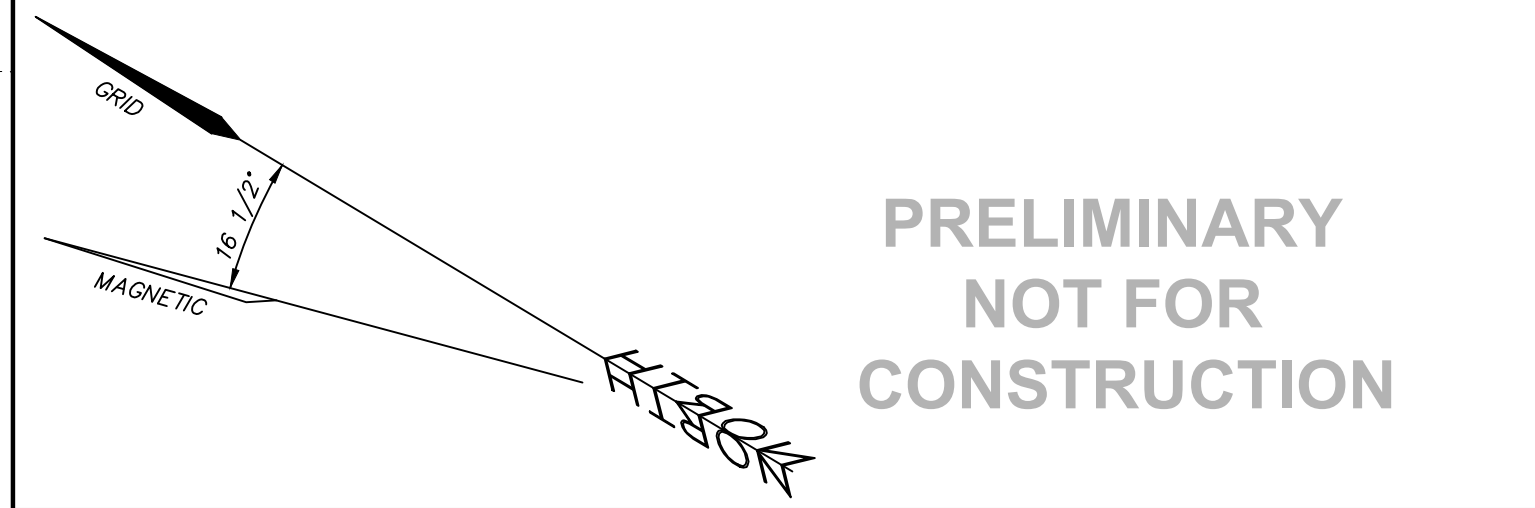


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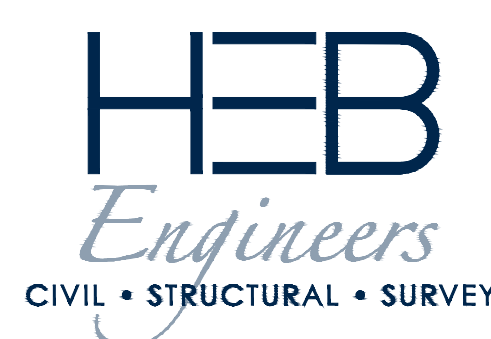
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Existing-Features Plan - Snow's Brook Road  
for the  
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2020-036  
V1.01  
SHEET 3 OF 21



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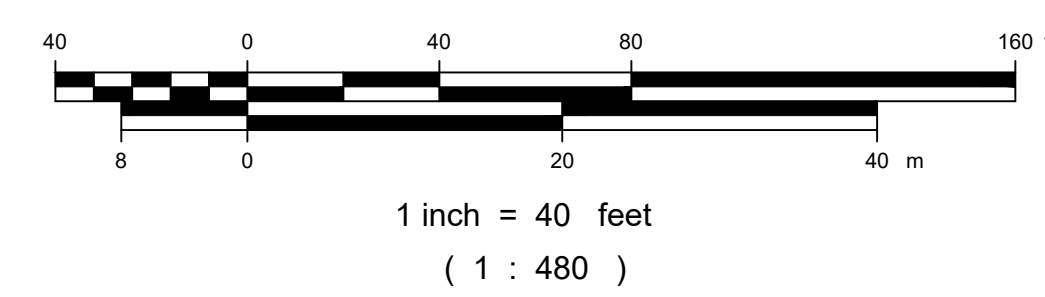
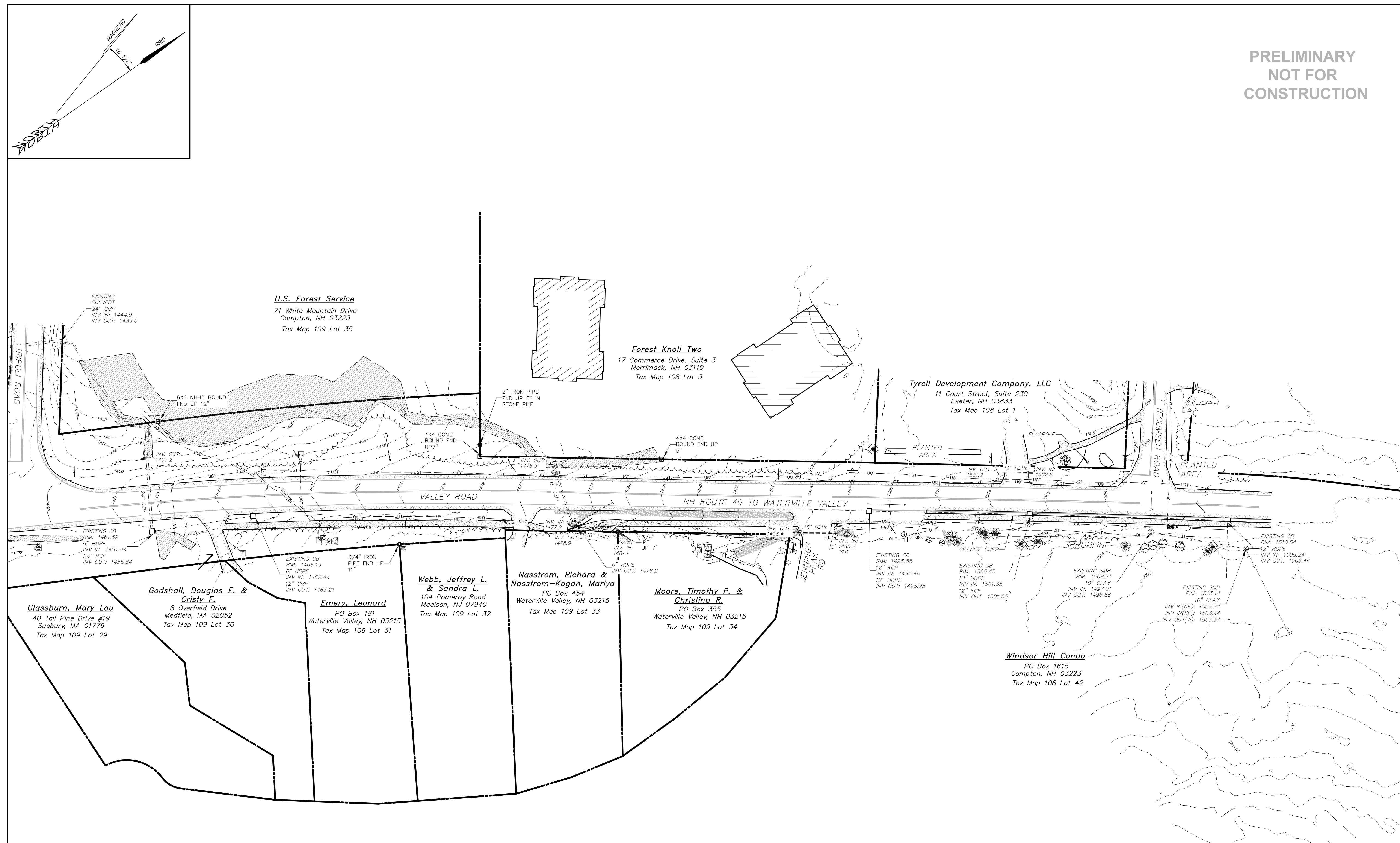
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Existing-Features Plan - Tecumseh Road  
 for the  
 Bike-Ped & Roadway Improvements  
 located in  
 Waterville Valley, New Hampshire  
 prepared for  
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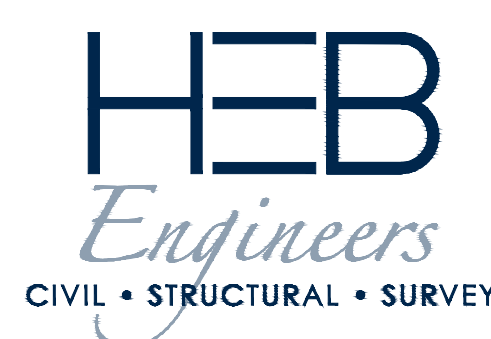
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Existing-Features Plan - Valley Road  
Bike-Ped & Roadway Improvements



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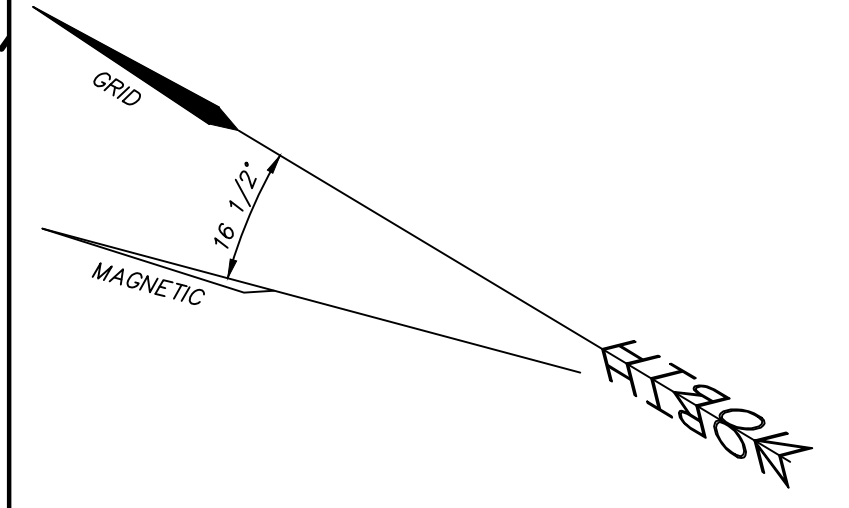
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Existing-Features Plan - Valley Road  
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2020-036  
V1.03  
SHEET 5 OF 21

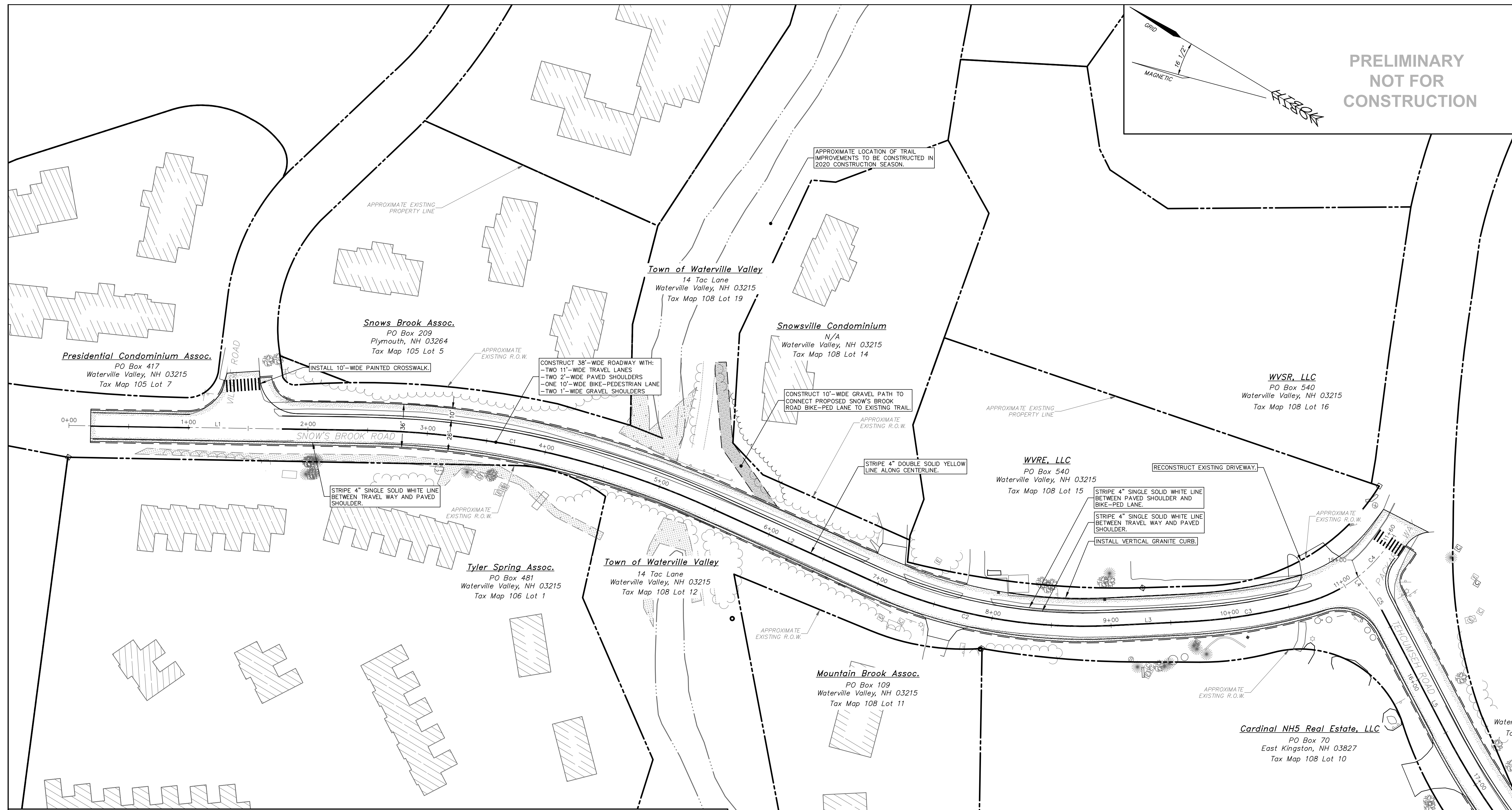


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C1.21  
SHEET 6 OF 21

2020-036  
Roadway Layout Plan - Snow's Brook Road  
Bike-Ped & Roadway Improvements

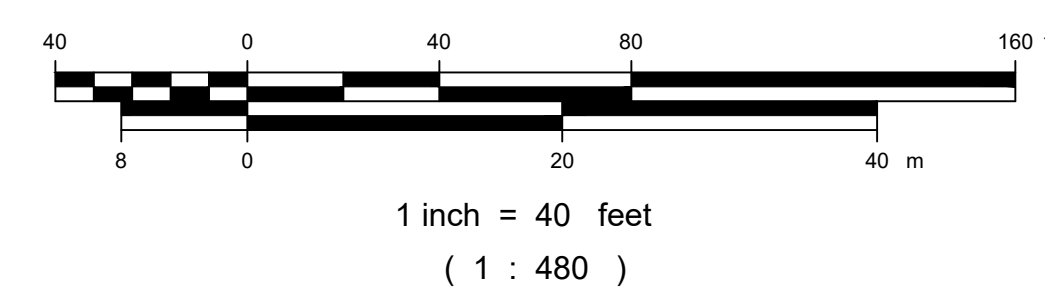


Line Table: Alignments

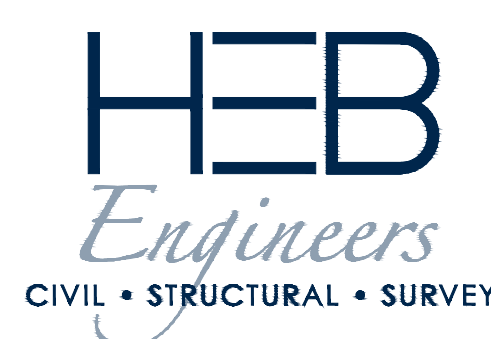
Line #	Length	Direction	Start Point	End Point
L1	248.85	S30° 03' 45.65"E	(N=528806.55 E=1025894.85)	(N=528591.17 E=1026019.51)
L2	146.46	S6° 36' 41.70"E	(N=528311.46 E=1026112.21)	(N=528165.97 E=1026129.08)
L3	65.34	S33° 49' 25.99"E	(N=527973.92 E=1026199.81)	(N=527919.64 E=1026236.18)

Curve Table: Alignments

Curve #	Radius	Length	Chord Direction	Chord Length	Start Point	End Point
C1	725.00	296.74	S18° 20' 13.68"E	294.67	(N=528591.17 E=1026019.51)	(N=528311.46 E=1026112.21)
C2	435.00	206.60	S20° 13' 03.85"E	204.66	(N=528165.97 E=1026129.08)	(N=527973.92 E=1026199.81)
C3	450.00	103.38	S40° 24' 18.75"E	103.15	(N=527919.64 E=1026236.18)	(N=527841.09 E=1026303.04)
C4	120.47	92.25	S68° 55' 21.50"E	90.01	(N=527841.09 E=1026303.04)	(N=527808.72 E=1026387.03)



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2020-036  
C1.21  
SHEET 6 OF 21

**WVSR, LLC**  
PO Box 540  
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Tax Map 108 Lot 16

**Cardinal NH5 Real Estate, LLC**  
PO Box 70  
East Kingston, NH 03827  
Tax Map 108 Lot 10

**WVSR, LLC**  
PO Box 540  
Waterville Valley, NH 03215  
Tax Map 108 Lot 16

**Summit View Townhouses  
Condominium Assoc.**  
4 Wind Chime Way  
Walpole, MA 02081  
Tax Map 108 Lot 9

**Mountain Sun Assoc.**  
N/A  
Waterville Valley, NH 03215  
Tax Map 108 Lot 8

**Mountain Garages Assoc.**  
N/A  
Waterville Valley, NH 03215  
Tax Map 108 Lot 7

**Town of Waterville Valley**  
14 Tac Lane  
Waterville Valley, NH 03215  
Tax Map 107 Lot 5

**Town of Waterville Valley**  
14 Tac Lane  
Waterville Valley, NH 03215  
Tax Map 108 Lot 6

**35 Tecumseh Realty, LLC**  
PO Box 333  
Waterville Valley, NH 03215  
Tax Map 108 Lot 5

**Forest Knoll Two**  
17 Commerce Drive, Suite 3  
Merrimack, NH 03110  
Tax Map 108 Lot 3

**Forest Knoll One**  
PO Box 20  
Waterville Valley, NH 03215  
Tax Map 108 Lot 2

**Village Condo**  
PO Box 499  
Waterville Valley, NH 03215  
Tax Map 108 Lot 23

CONSTRUCT 38'-WIDE ROADWAY WITH:  
- TWO 11'-WIDE TRAVEL LANES  
- TWO 2'-WIDE PAVED SHOULDERS  
- ONE 10'-WIDE BIKE-PEDESTRIAN LANE  
- TWO 1'-WIDE GRAVEL SHOULDERS

INSTALL WOODEN GUARDRAIL WITH  
POSTS CAST INTO RETAINING WALL.

STRIPE 4" SINGLE SOLID WHITE LINE BETWEEN  
TRAVEL WAY AND PAVED SHOULDER.

STRIPE 4" SINGLE SOLID WHITE LINE  
BETWEEN PAVED SHOULDER AND  
BIKE-PEDESTRIAN LANE.

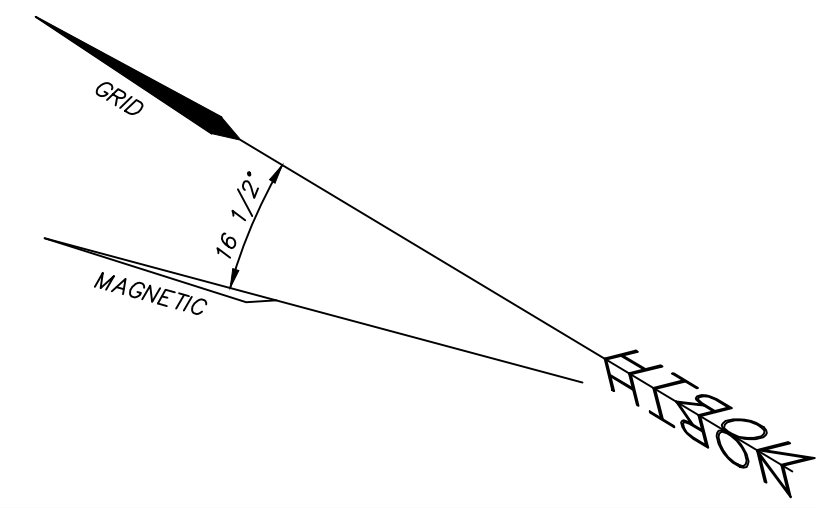
STRIPE 4" SINGLE SOLID WHITE LINE  
BETWEEN TRAVEL WAY AND PAVED  
SHOULDER.

STRIPE 4" DOUBLE SOLID YELLOW  
LINE ALONG CENTERLINE.

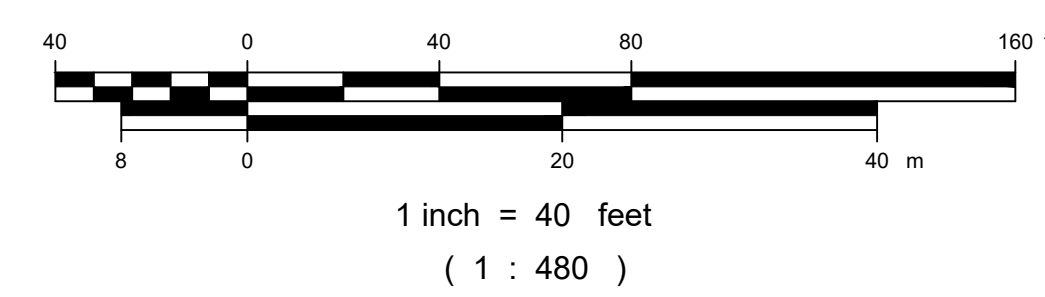
INSTALL 10'-WIDE PAINTED CROSSWALK.

Line Table: Alignments				
Line #	Length	Direction	Start Point	End Point
L4	9.03	S21° 06' 08.39"W	(N=527816.78 E=1026341.85)	(N=527808.36 E=1026338.60)
L5	106.03	S31° 29' 04.31"W	(N=527775.91 E=1026322.57)	(N=527685.49 E=1026267.19)
L6	62.80	S0° 06' 40.42"W	(N=527386.31 E=1026182.54)	(N=527323.51 E=1026182.42)
L7	300.62	S61° 00' 53.84"E	(N=527148.17 E=1026285.50)	(N=527002.50 E=1026548.47)
L8	167.20	S52° 31' 38.19"E	(N=526937.62 E=1026647.51)	(N=526835.89 E=1026780.21)

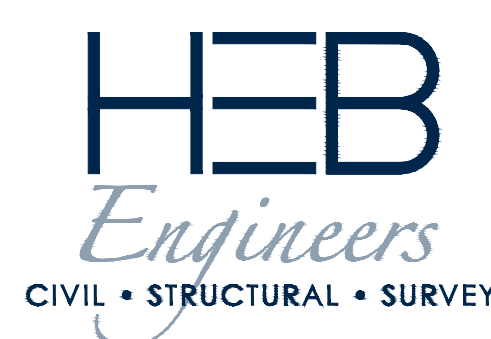
Curve Table: Alignments						
Curve #	Radius	Length	Chord Direction	Chord Length	Start Point	End Point
C5	200.00	36.24	S26° 17' 36.35"W	36.19	(N=527808.36 E=1026338.60)	(N=527775.91 E=1026322.57)
C6	575.00	314.85	S15° 47' 52.37"W	310.93	(N=527685.49 E=1026267.19)	(N=527386.31 E=1026182.54)
C7	200.00	213.37	S30° 27' 06.71"E	203.39	(N=527323.51 E=1026182.42)	(N=527148.17 E=1026285.50)
C8	800.00	118.51	S56° 46' 16.02"E	118.40	(N=527002.50 E=1026548.47)	(N=526937.62 E=1026647.51)



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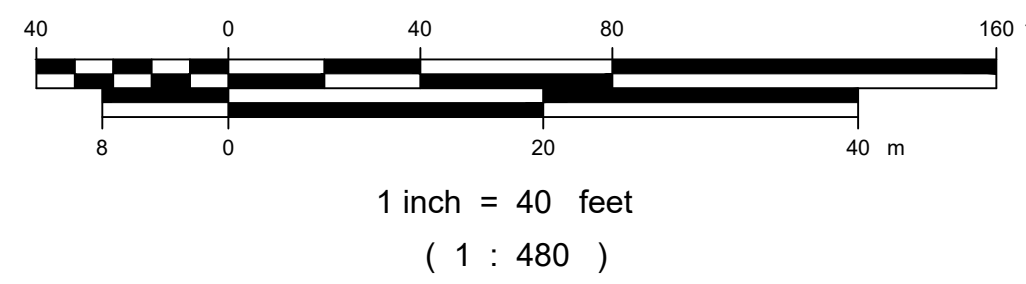
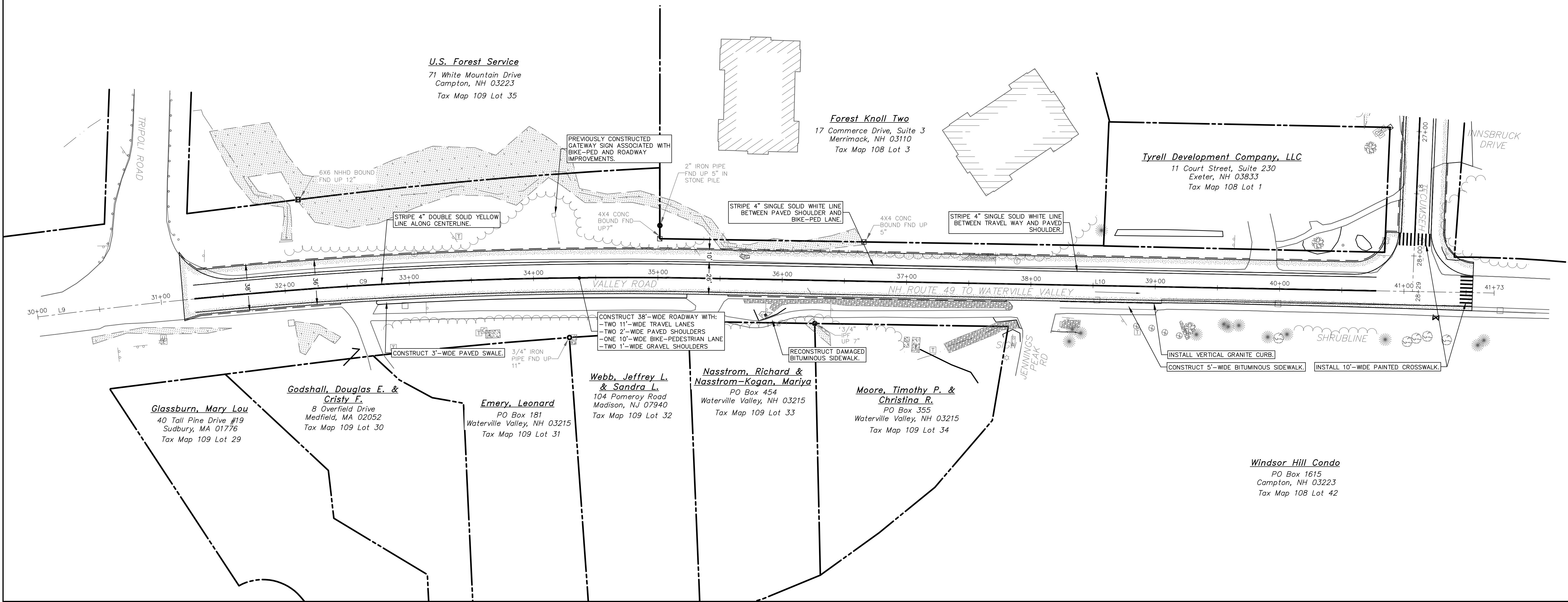
**Roadway Layout Plan - Tecumseh Road**  
for the  
**Bike-Ped & Roadway Improvements**  
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prepared for  
**Town of Waterville Valley**

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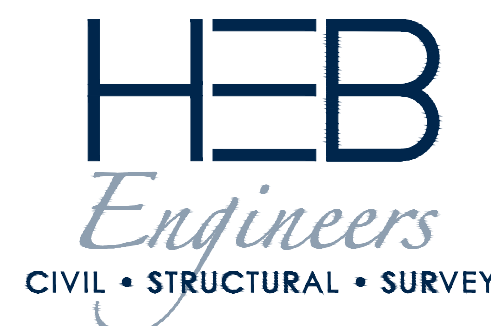
Line Table: Alignments				
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L9	39.70	N27° 54' 06.59"E	(N=525918.72 E=1026163.00)	(N=525953.81 E=1026181.58)
L10	633.72	N36° 04' 23.73"E	(N=526376.82 E=1026445.78)	(N=526889.03 E=1026818.92)

Curve Table: Alignments						
Curve #	Radius	Length	Chord Direction	Chord Length	Start Point	End Point
C9	3500.00	499.16	N31° 59' 15.16"E	498.74	(N=525953.81 E=1026181.58)	(N=526376.82 E=1026445.78)

2020-036  
Roadway Layout Plan - Valley Road  
Bike-Ped & Roadway Improvements  
C1.23  
SHEET 8 OF 21



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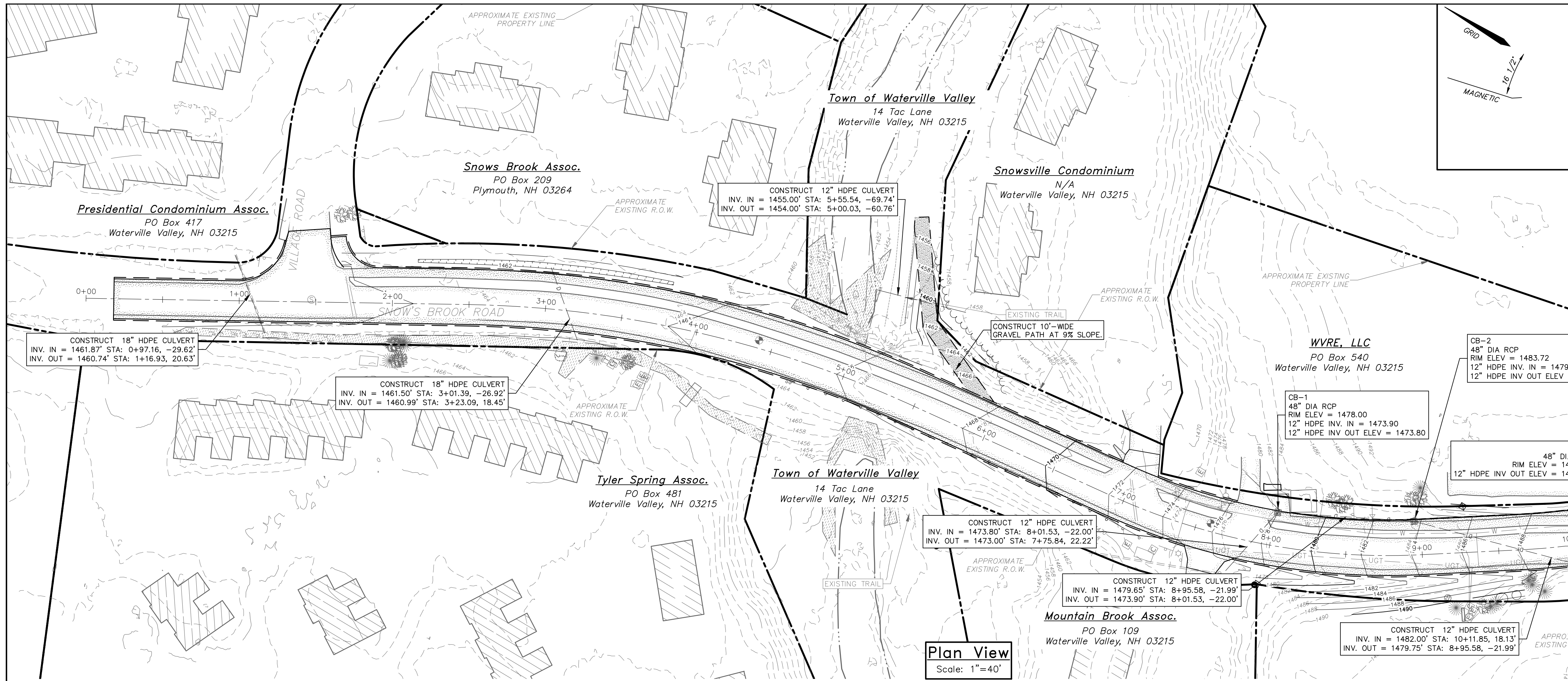


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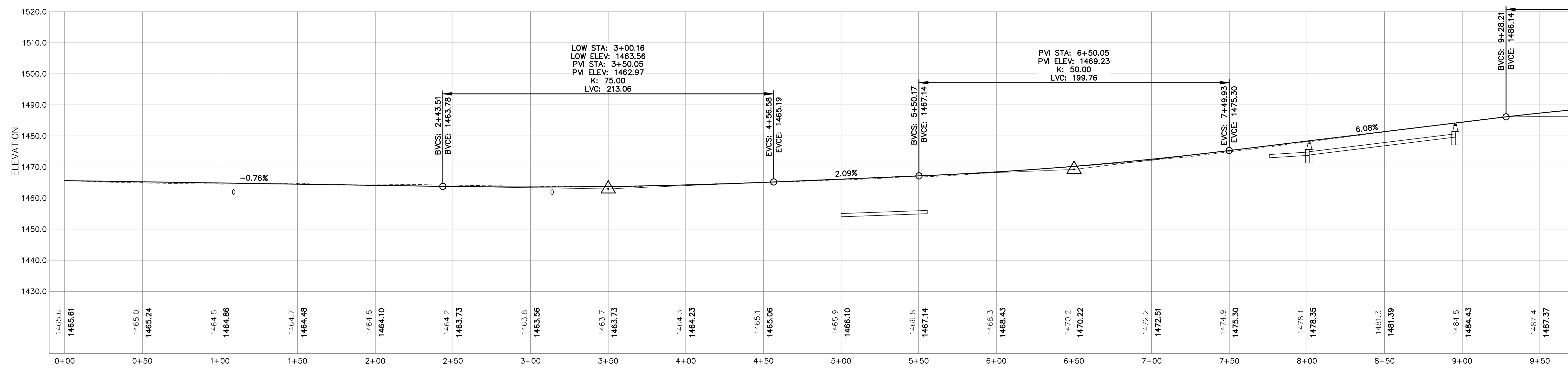
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2020-036  
C1.23  
SHEET 8 OF 21

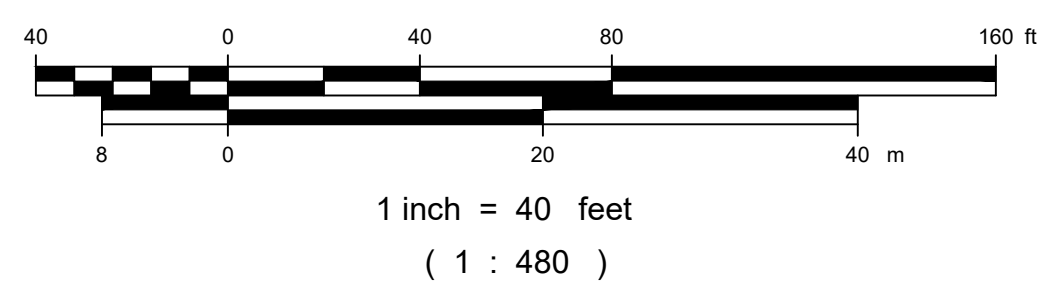


Plan View  
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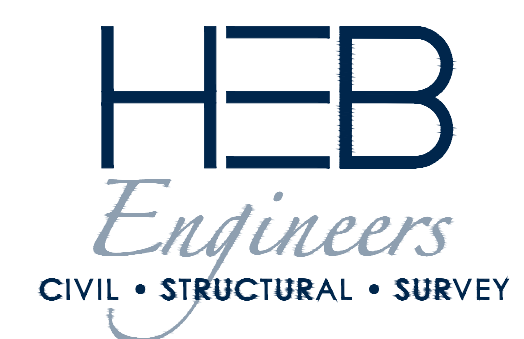


Snow's Brook Road Centerline Profile

Scale:  
Horizontal: 1"=40'  
Vertical: 1"=20'



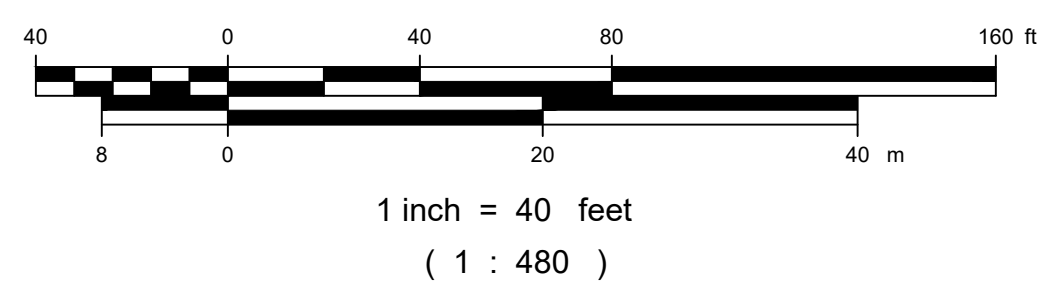
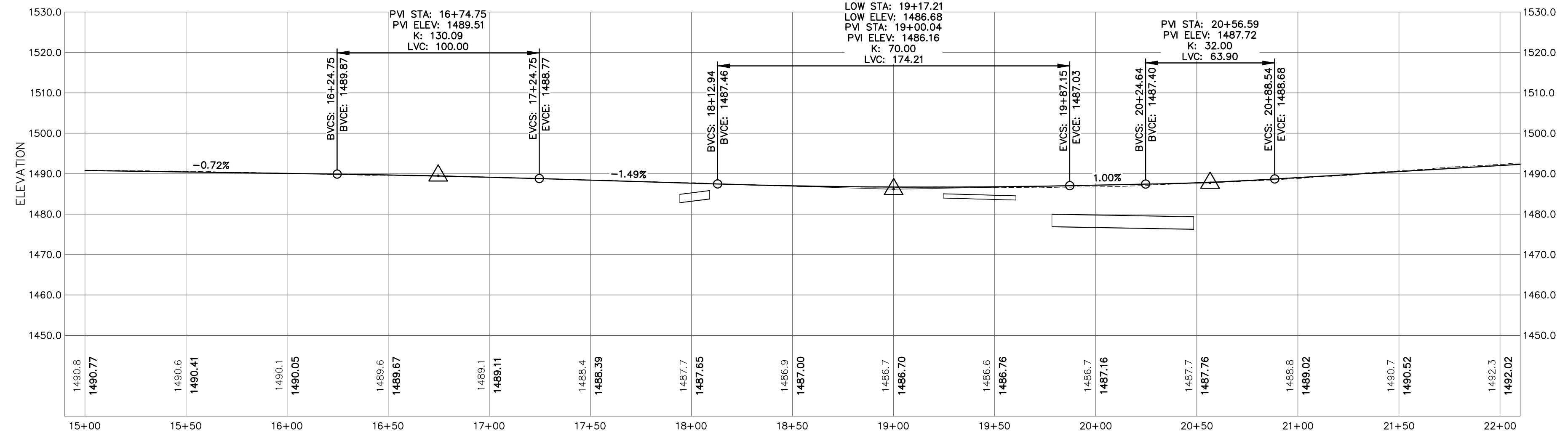
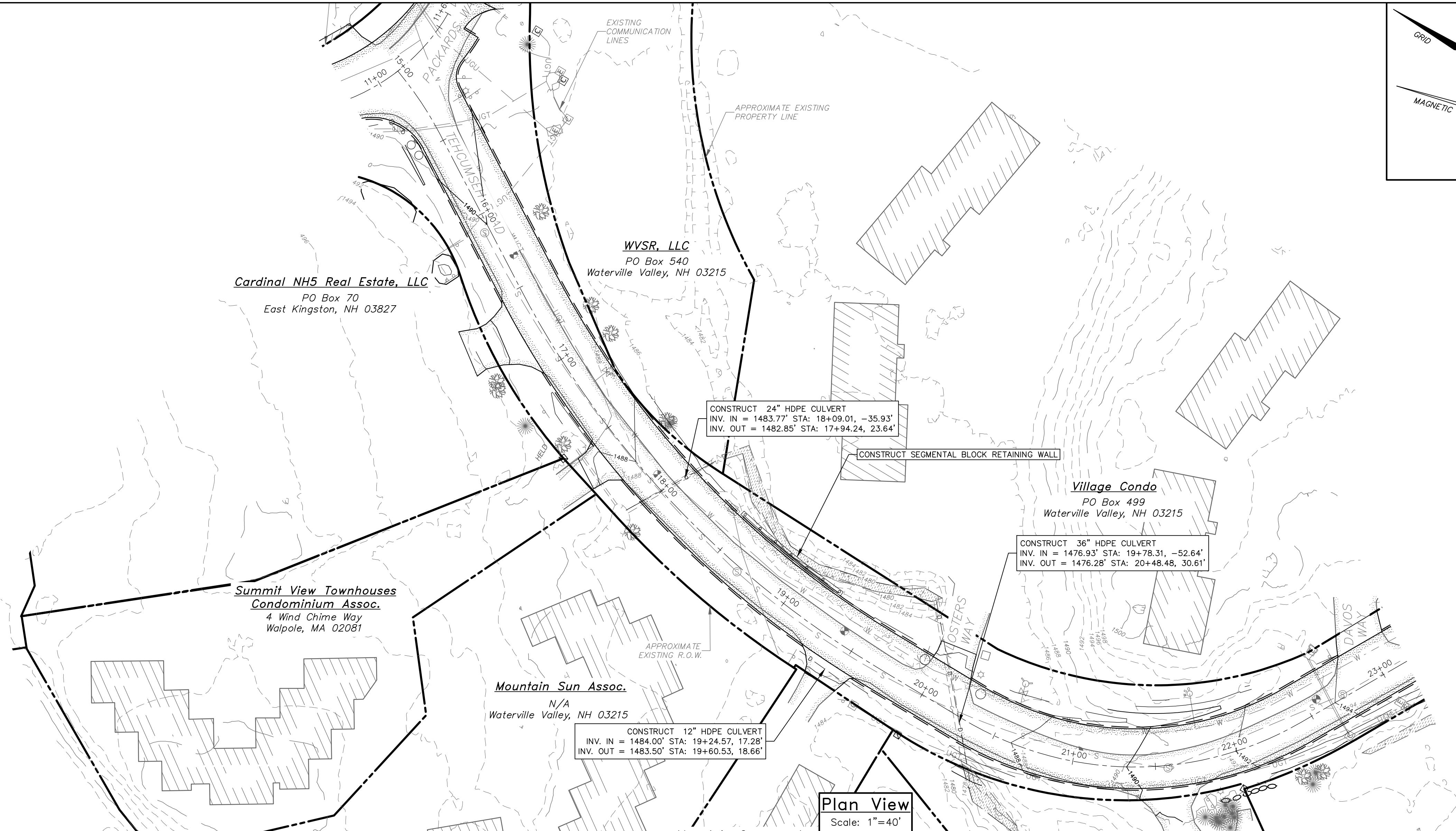
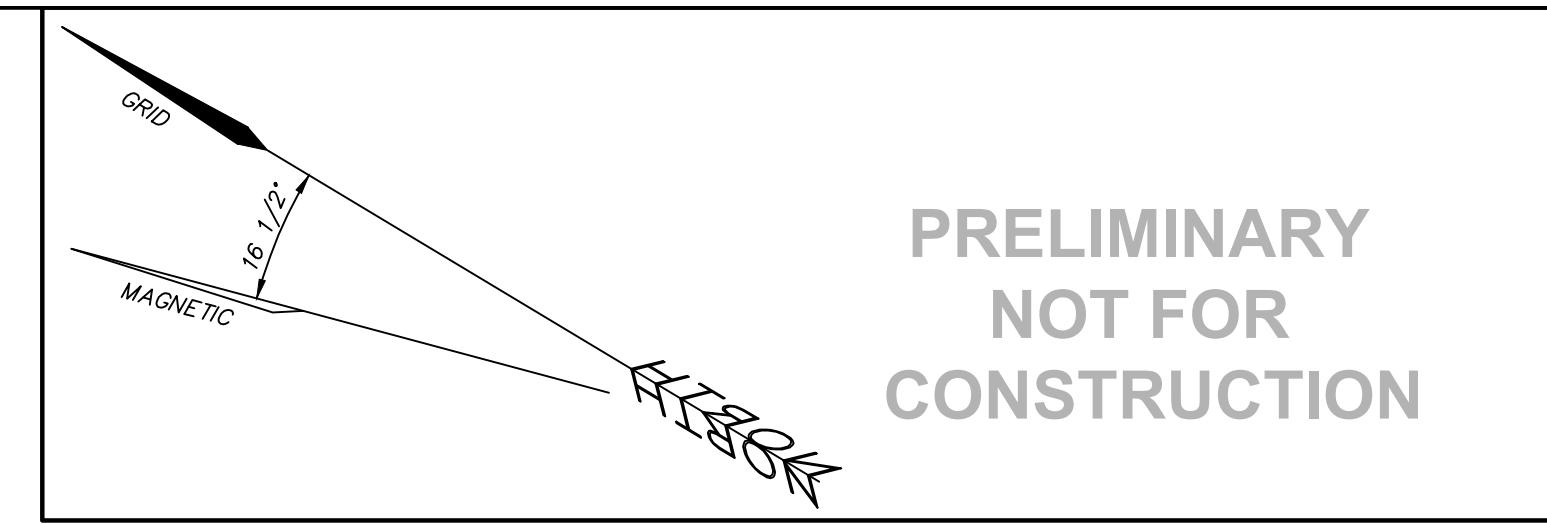
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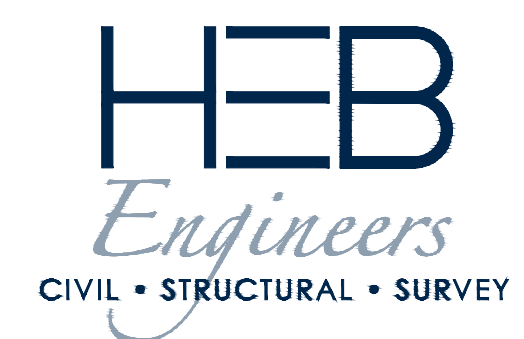
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Plan & Profile  
Bike-Ped  
Waterville  
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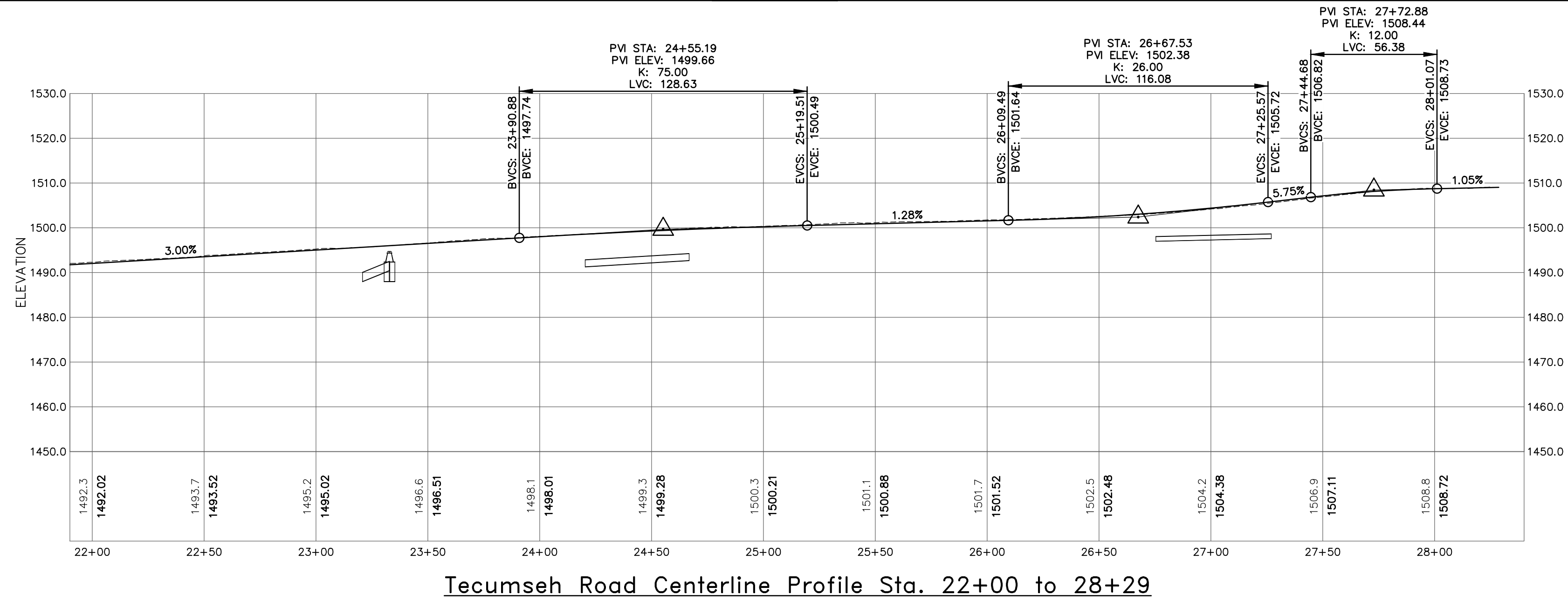
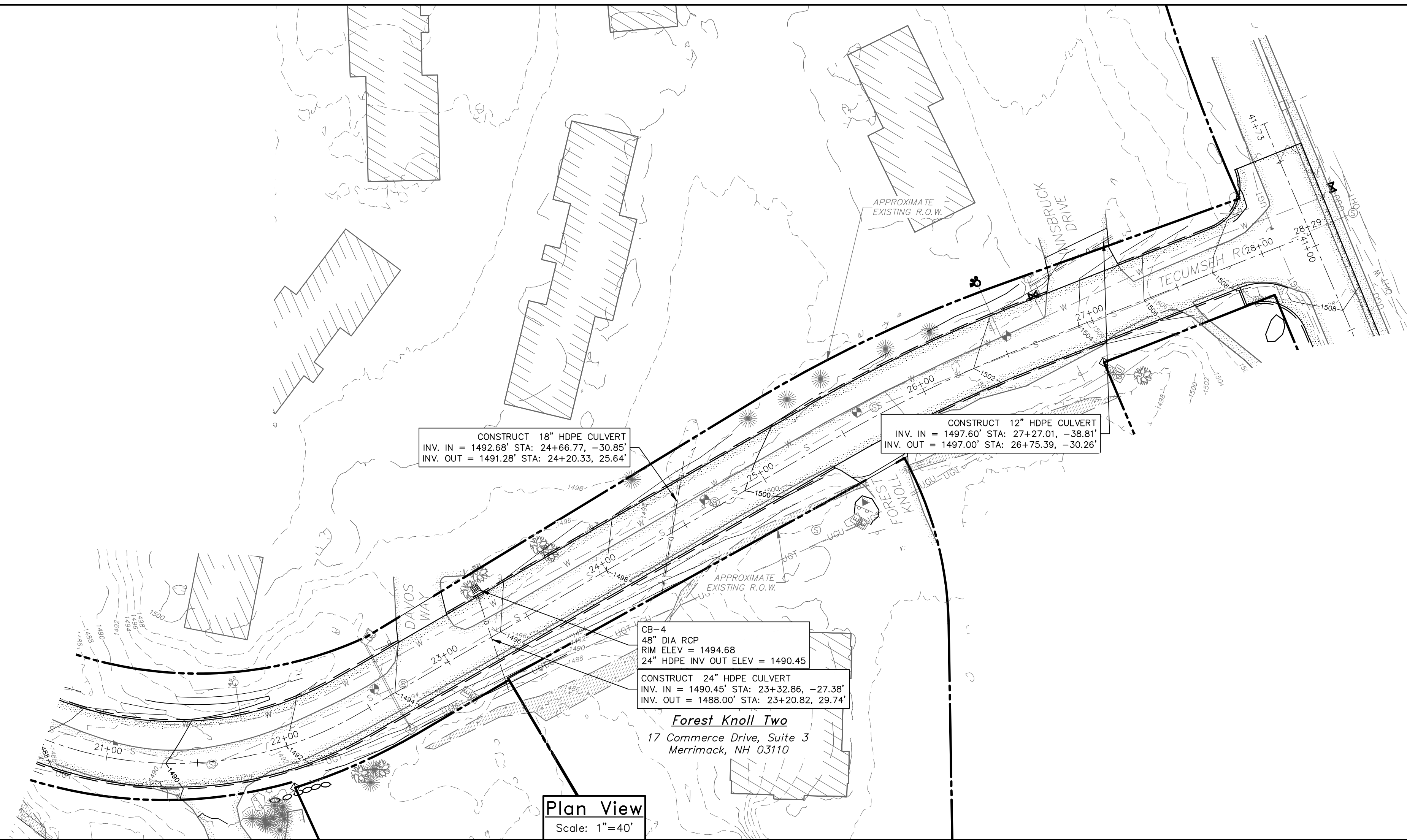
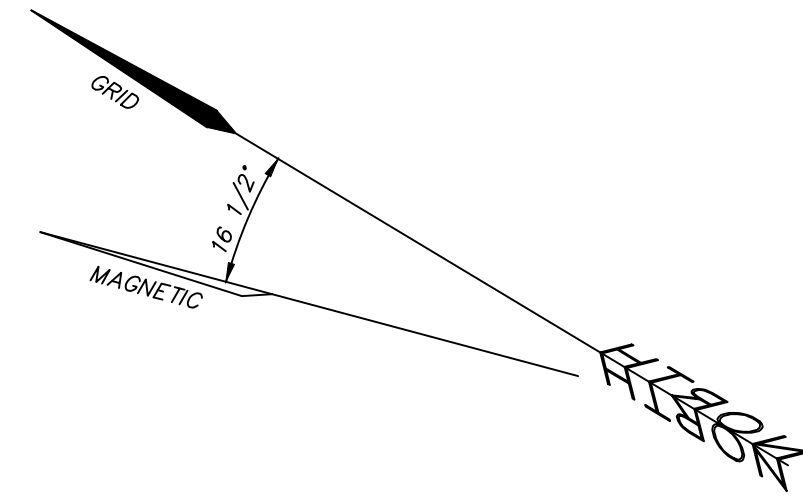


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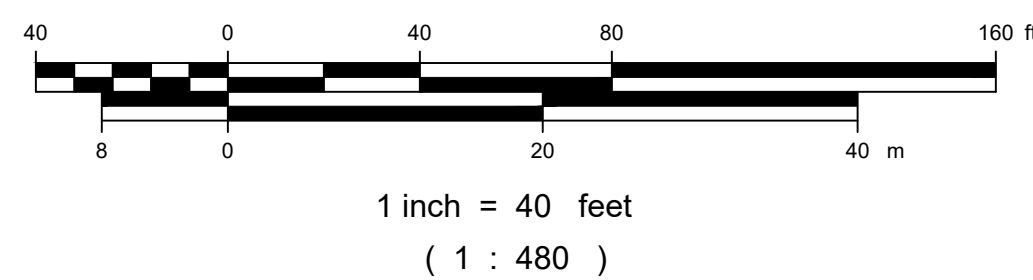
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Tecumseh Road Centerline Profile Sta. 22+00 to 28+29

Scale:  
Horizontal: 1"=40'  
Vertical: 1"=20'



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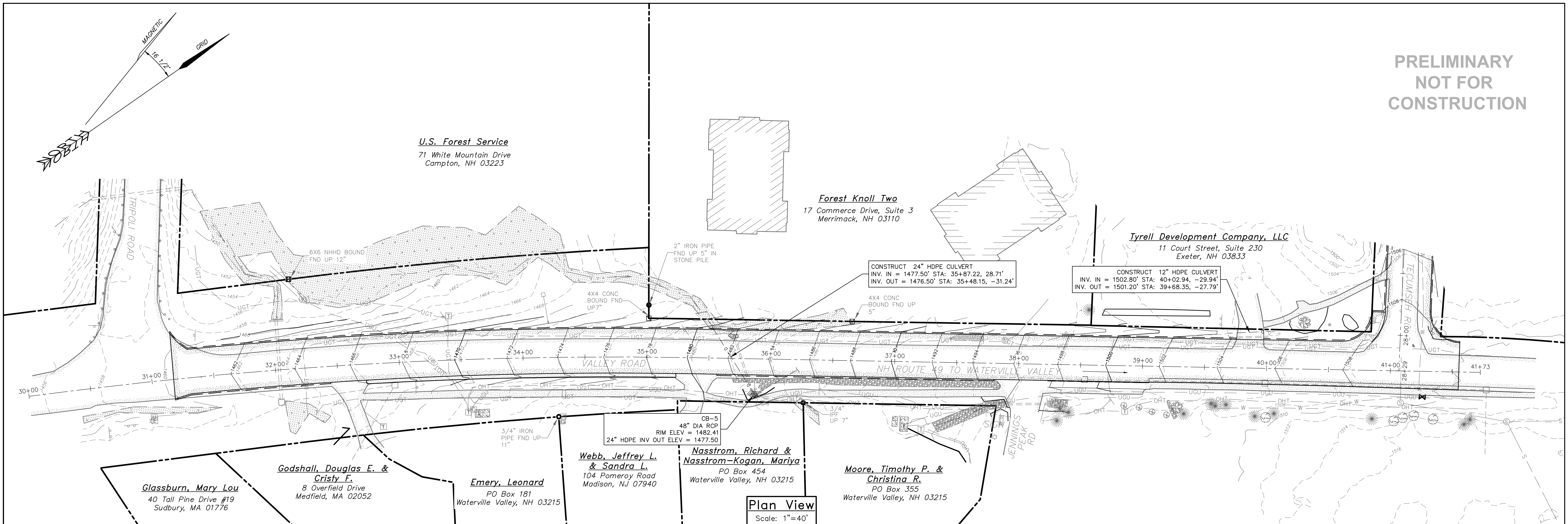
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DESIGNED BY	AMS
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CHECKED BY	JMM
FIELD BOOK	-
SCALE	1" = 40'
DATE	05/22/2020

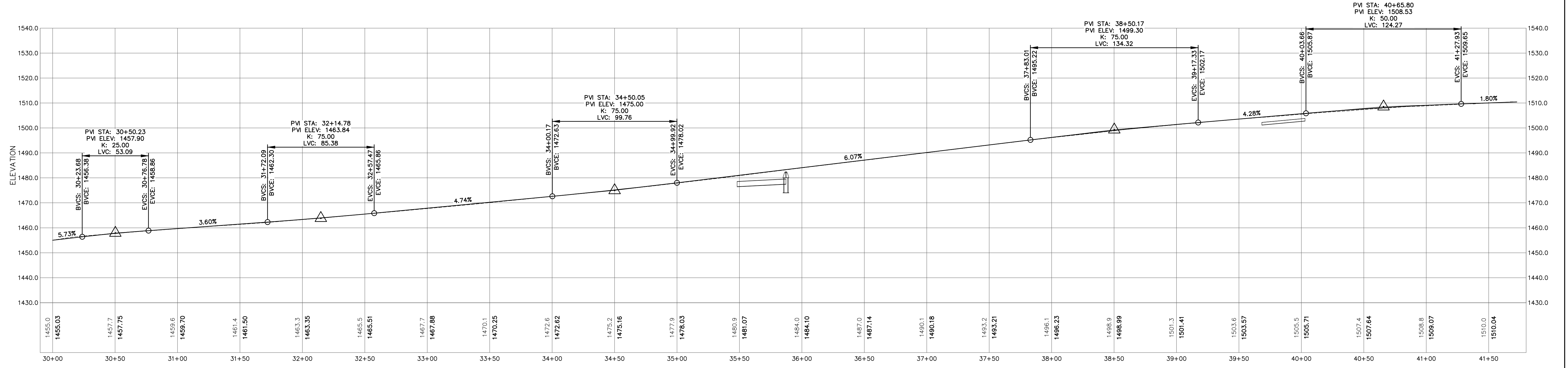
Plan & Profile - Tecumseh Road  
for the  
Bike-Ped & Roadway Improvements  
located in  
Waterville Valley, New Hampshire  
prepared for  
Town of Waterville Valley

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NOT FOR  
CONSTRUCTION

C2.14  
SHEET 12 OF 21

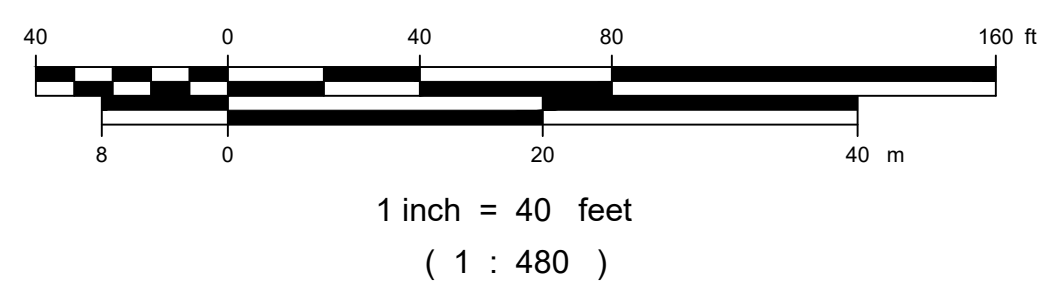


Plan View  
Scale: 1"=40'

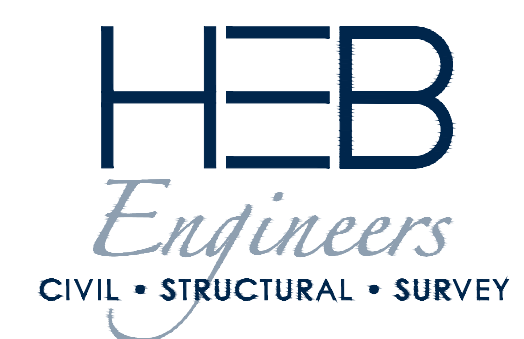


Valley Road Centerline Profile

Scale:  
Horizontal: 1"=40'  
Vertical: 1"=20'



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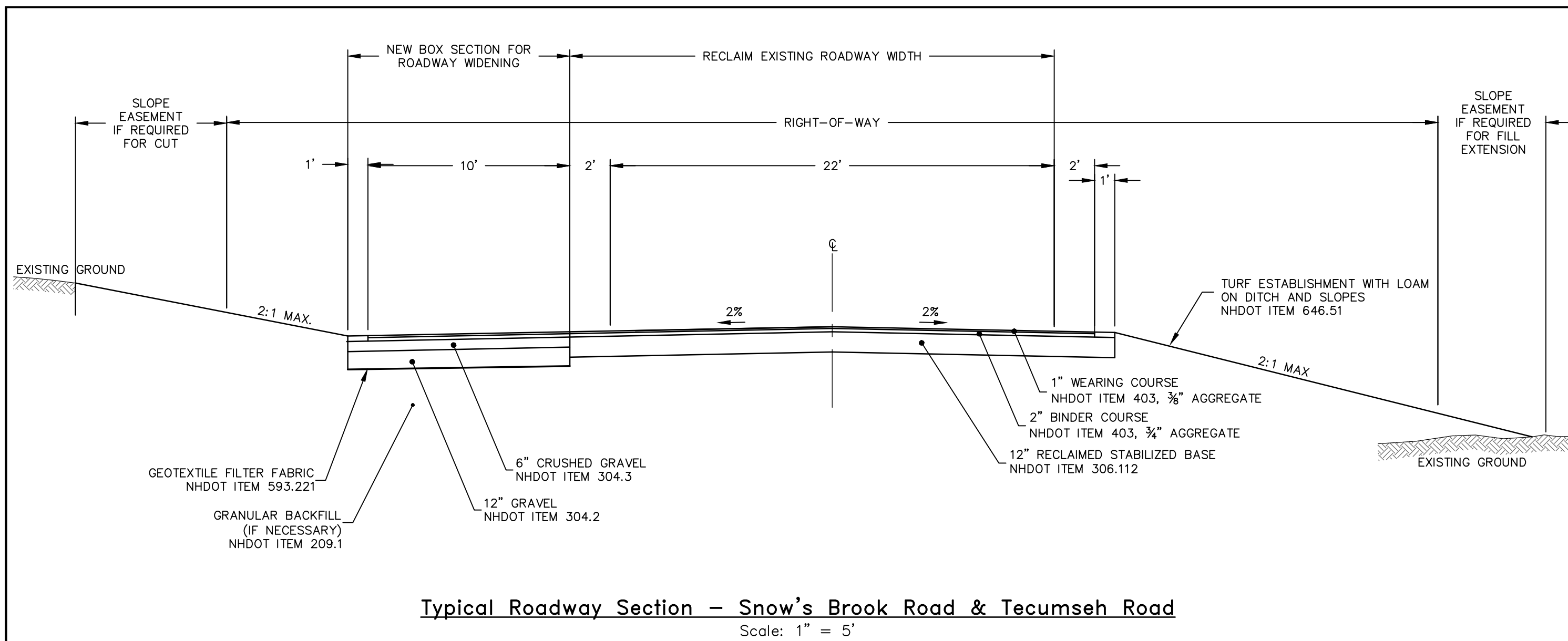


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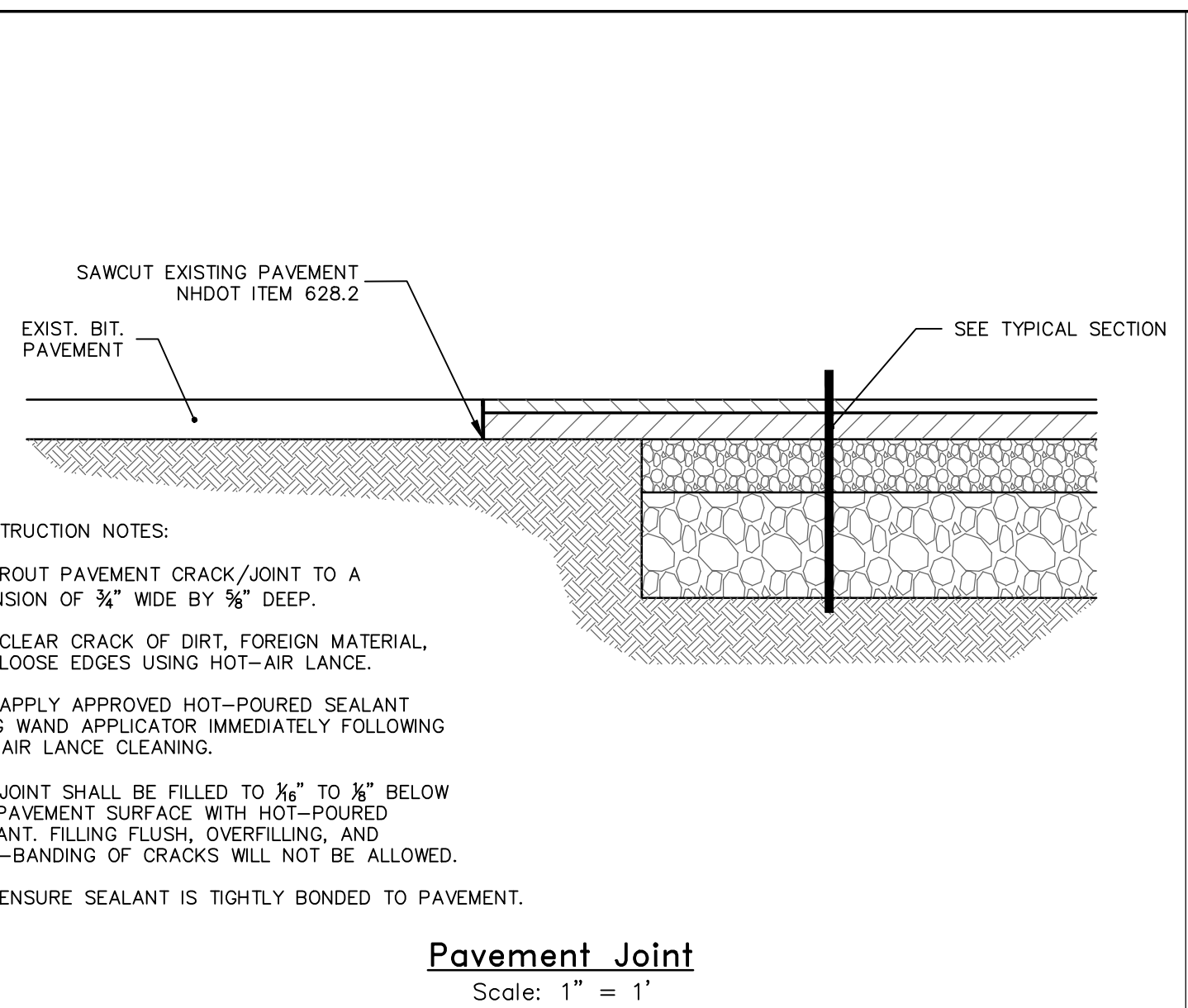
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FIELD BOOK	-
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Plan & Profile – Valley Road  
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2020-036  
C2.14  
SHEET 12 OF 21



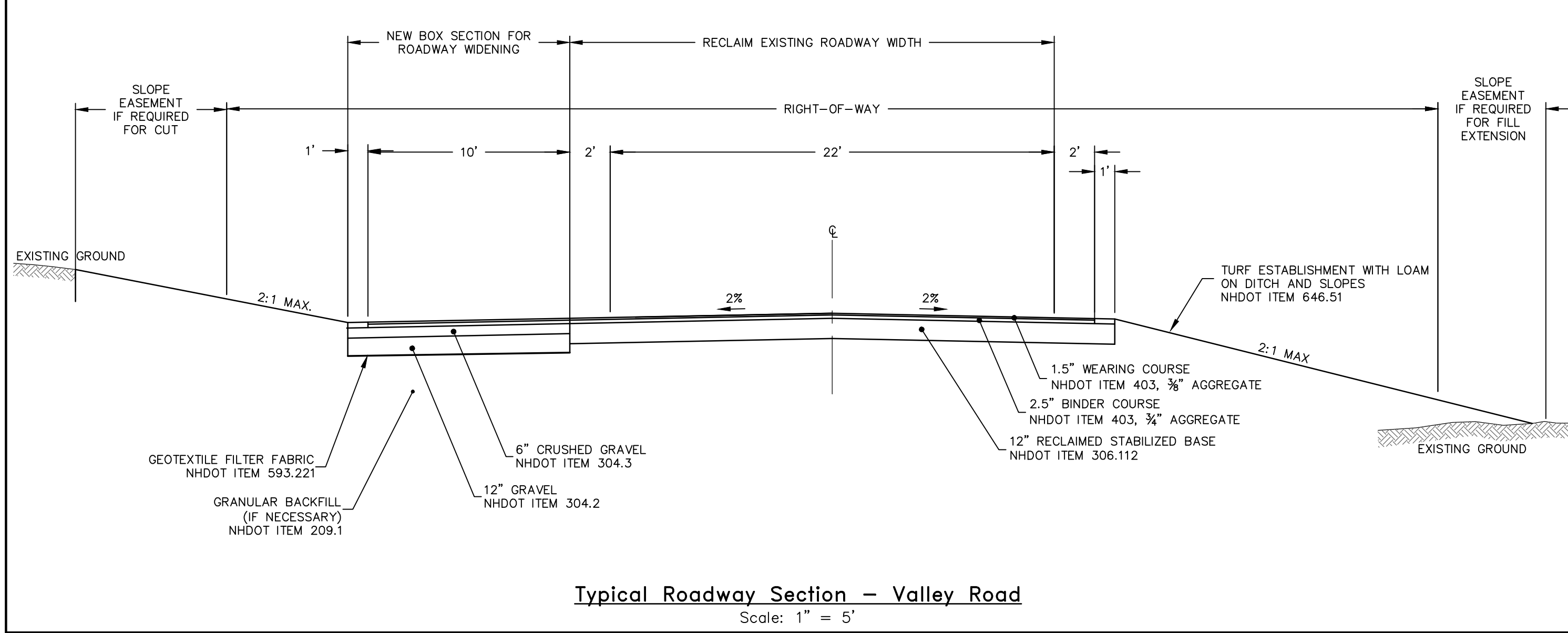
**Typical Roadway Section - Snow's Brook Road & Tecumseh Road**  
Scale: 1" = 5'



**Pavement Joint**  
Scale: 1" = 1'

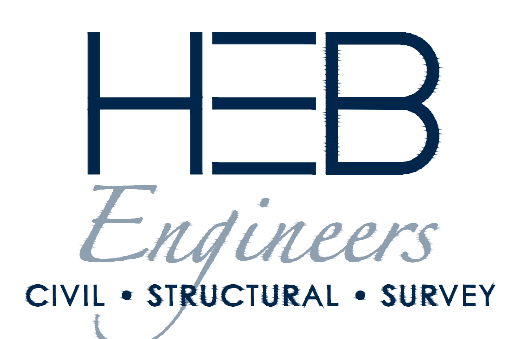
- CONSTRUCTION NOTES:
1. ROUT PAVEMENT CRACK/JOINT TO A DIMENSION OF 3/4" WIDE BY 3/8" DEEP.
  2. CLEAR CRACK OF DIRT, FOREIGN MATERIAL, AND LOOSE EDGES USING HOT-AIR LANCE.
  3. APPLY APPROVED HOT-POURED SEALANT USING WAND APPLICATOR IMMEDIATELY FOLLOWING HOT-AIR LANCE CLEANING.
  4. JOINT SHALL BE FILLED TO 1/8" TO 3/8" BELOW THE PAVEMENT SURFACE WITH HOT-POURED SEALANT. FILLING FLUSH, OVERFILLING, AND OVER-BANDING OF CRACKS WILL NOT BE ALLOWED.
  5. ENSURE SEALANT IS TIGHTLY BONDED TO PAVEMENT.

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**Typical Roadway Section - Valley Road**  
Scale: 1" = 5'

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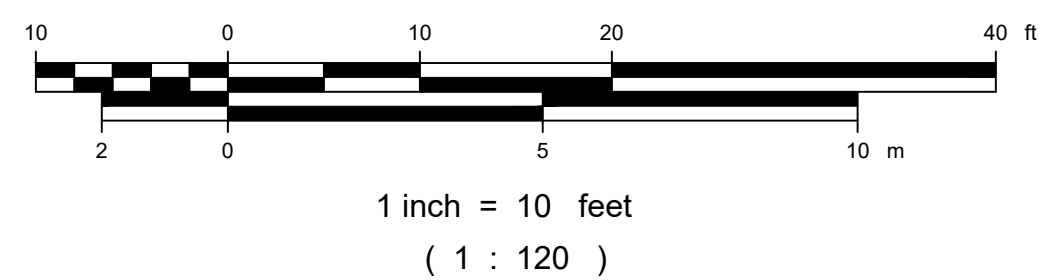
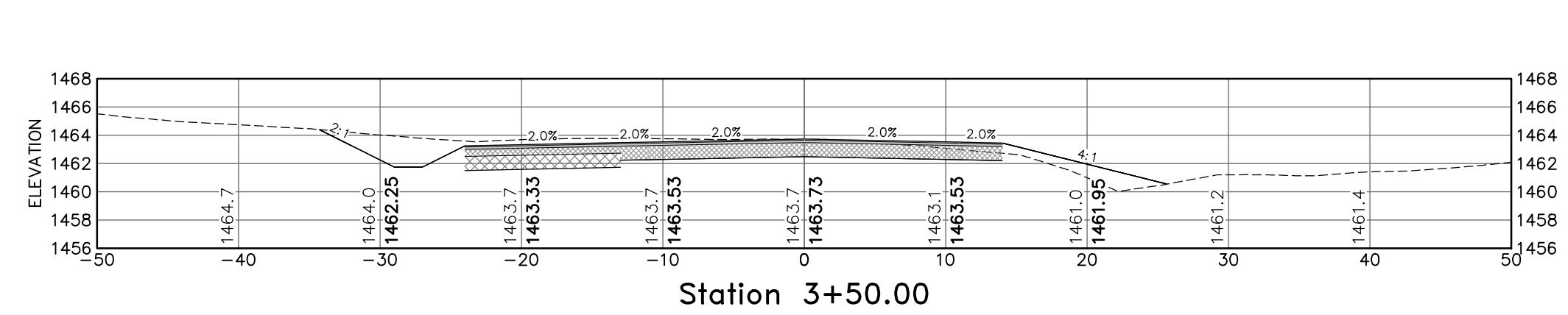
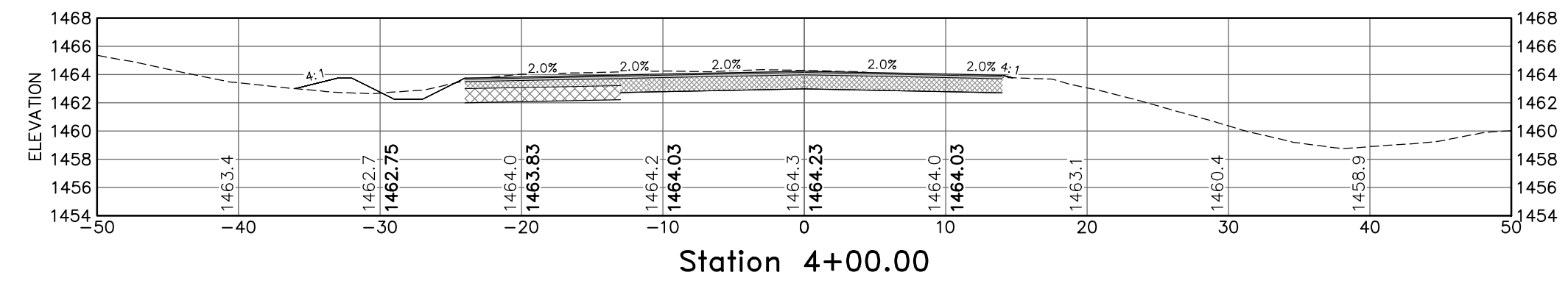
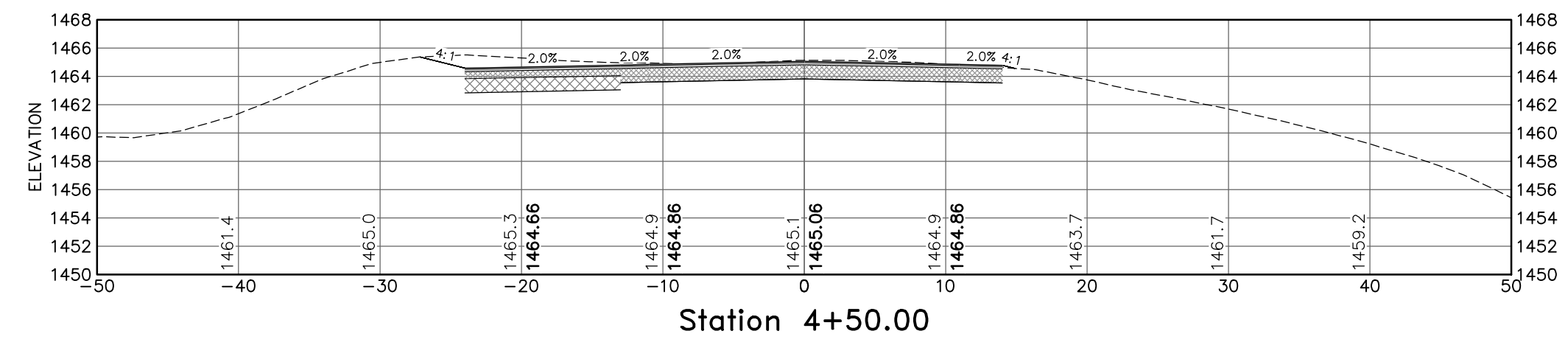
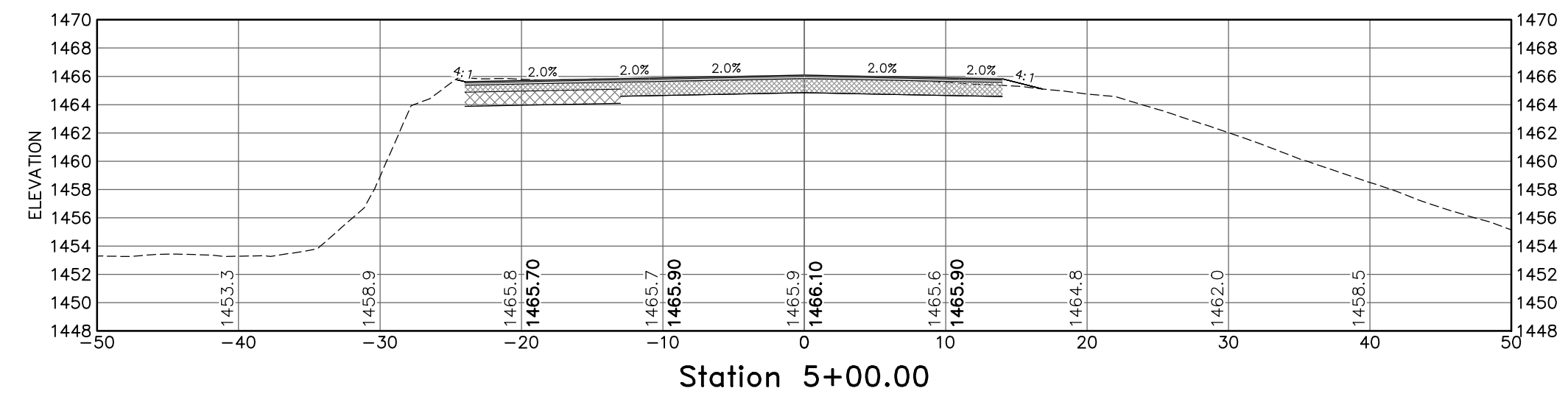
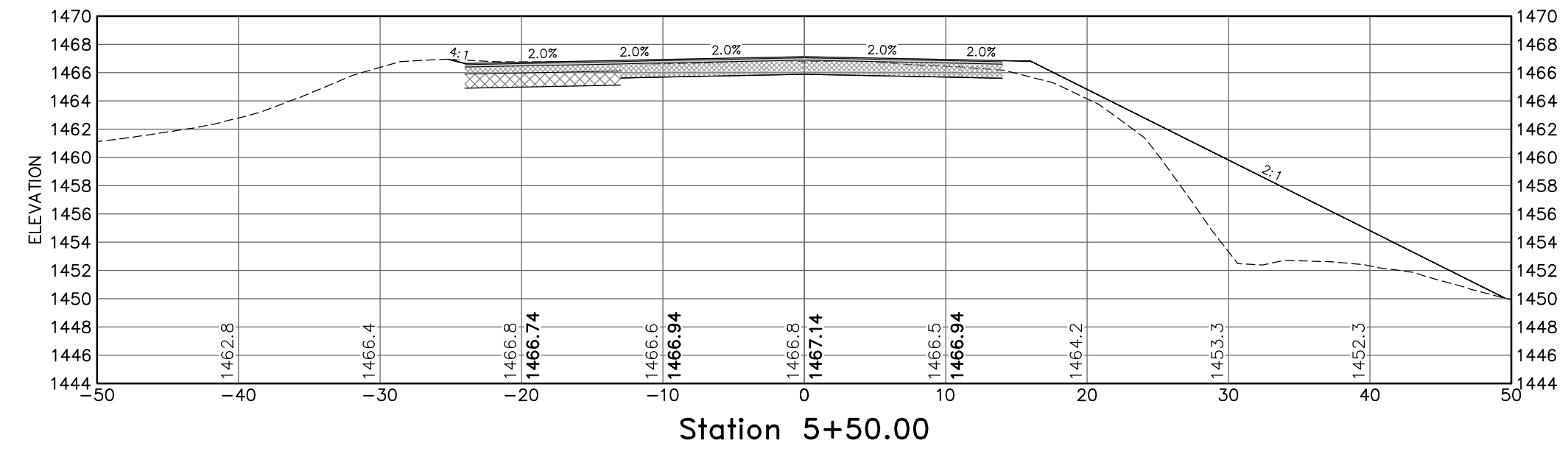
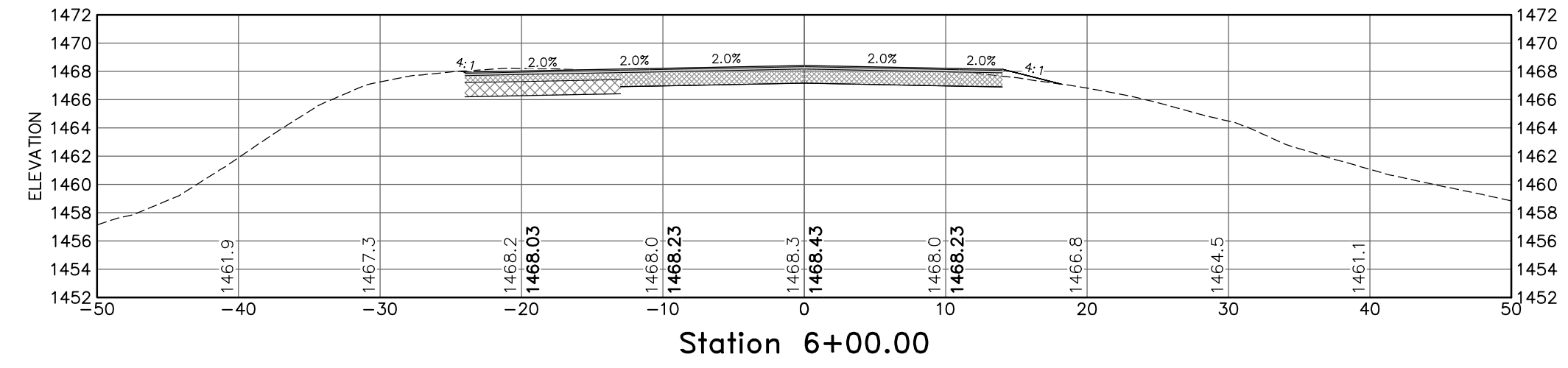
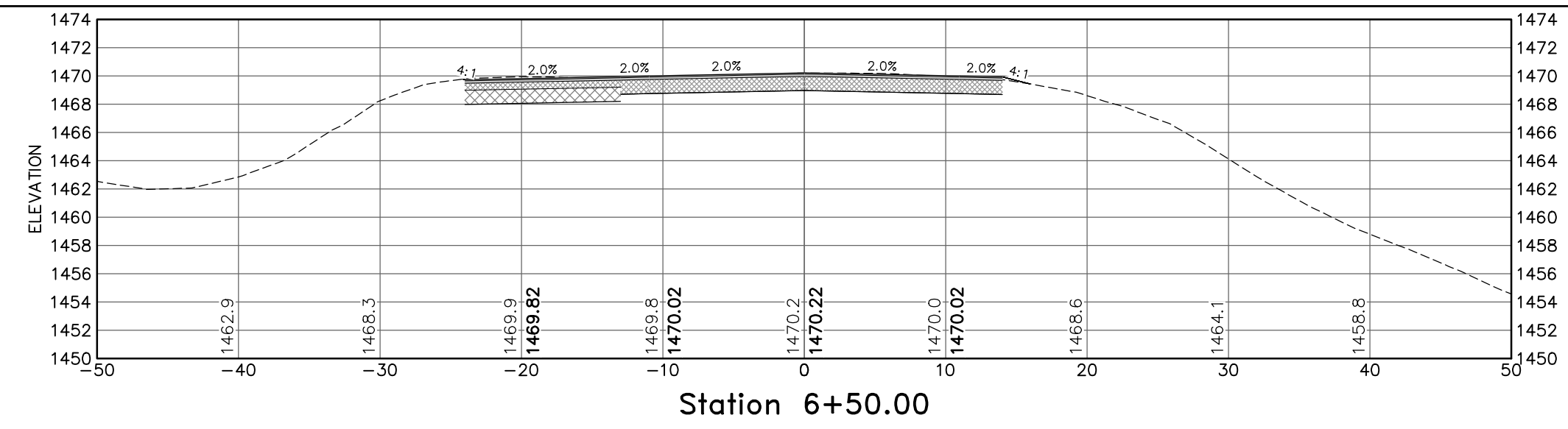
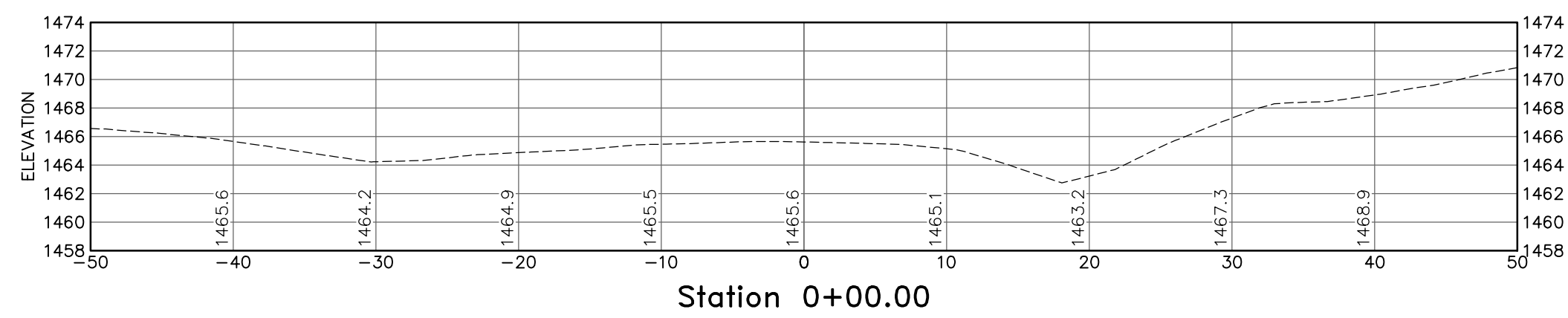
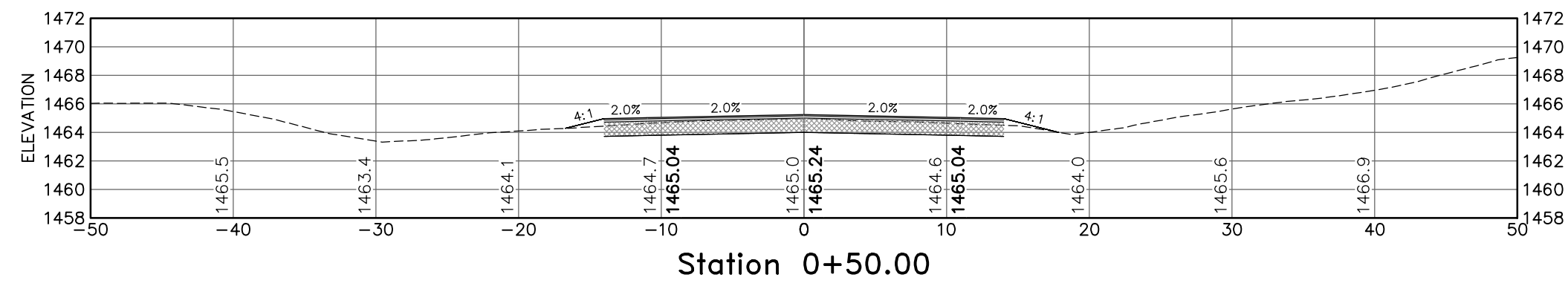
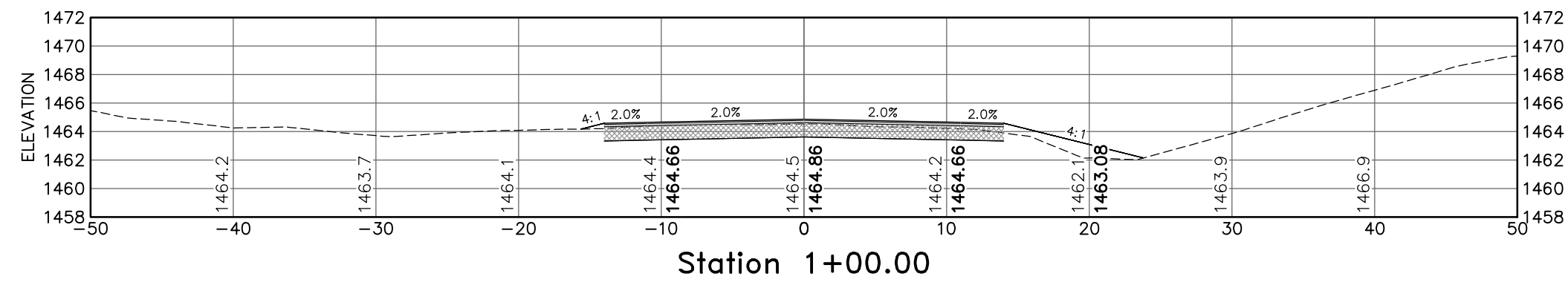
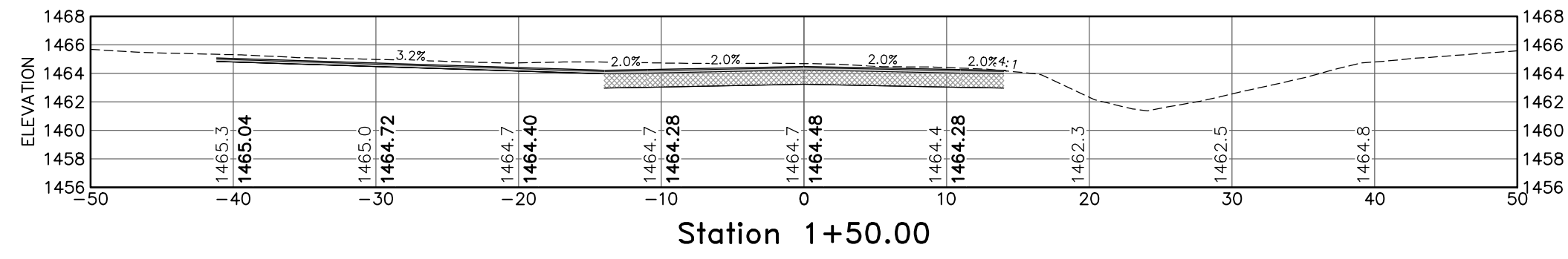
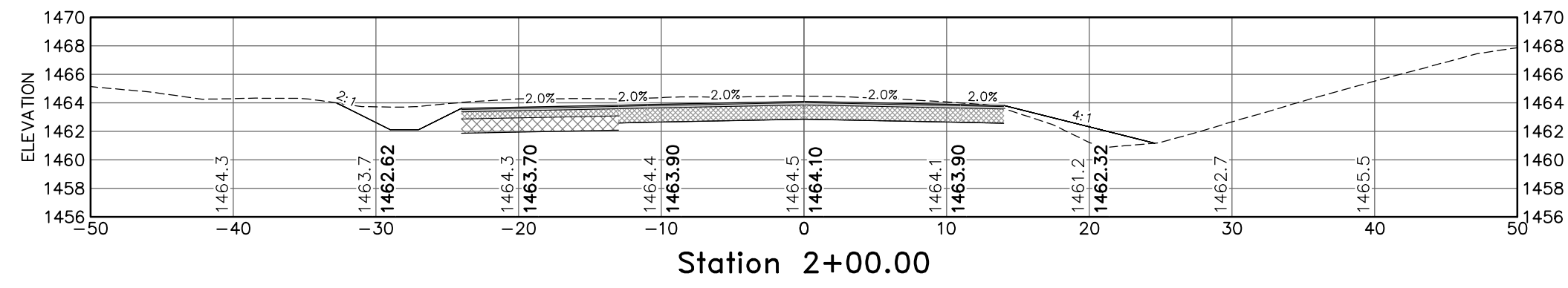
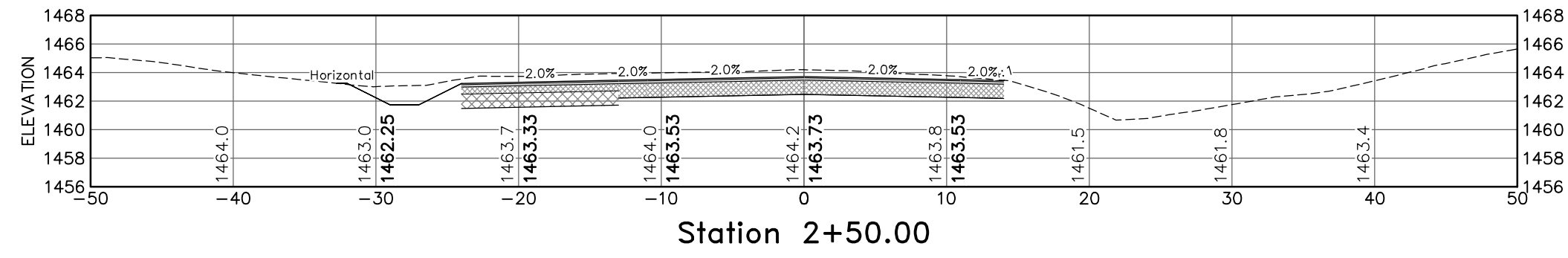
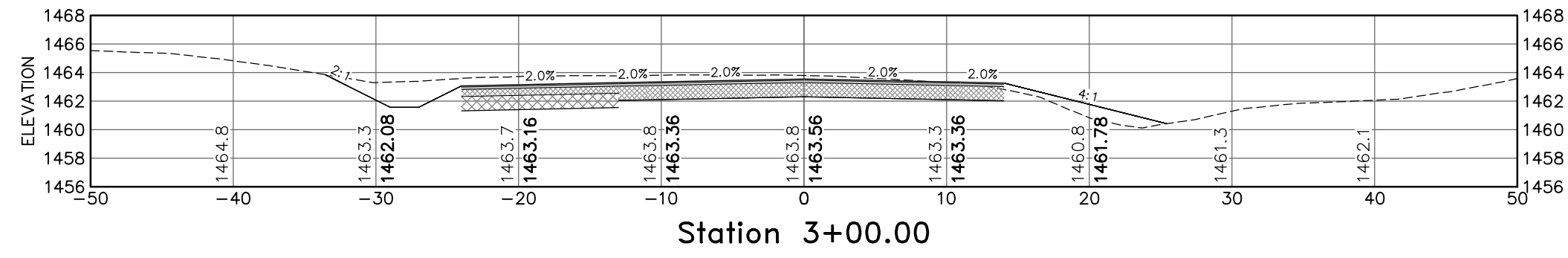
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FIELD BOOK	-
SCALE	AS NOTED
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**Typical Sections**  
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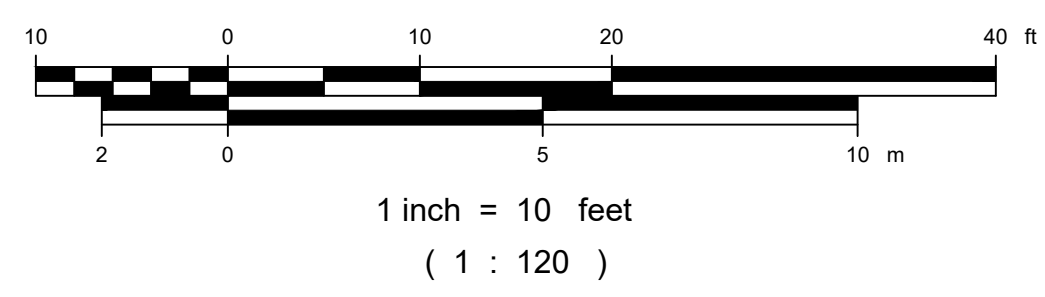
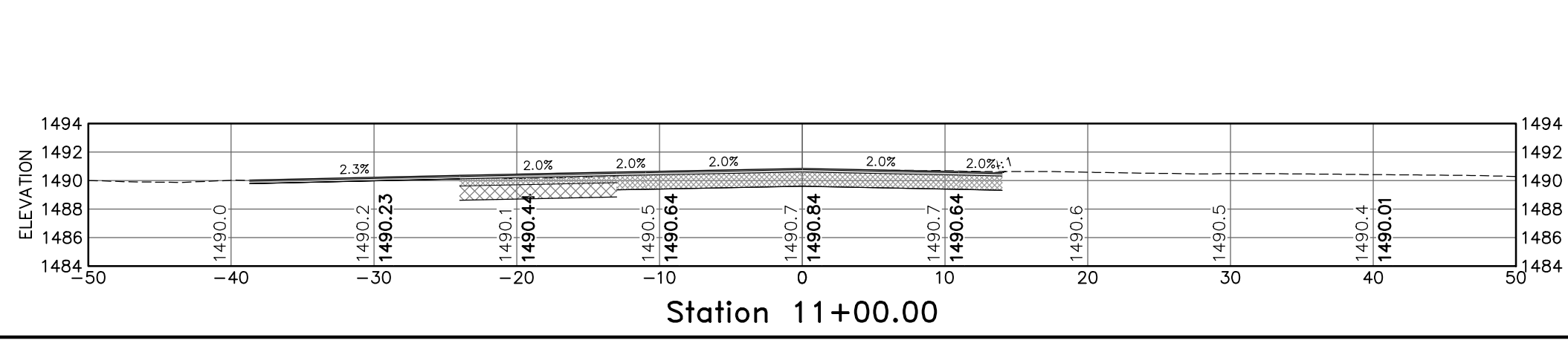
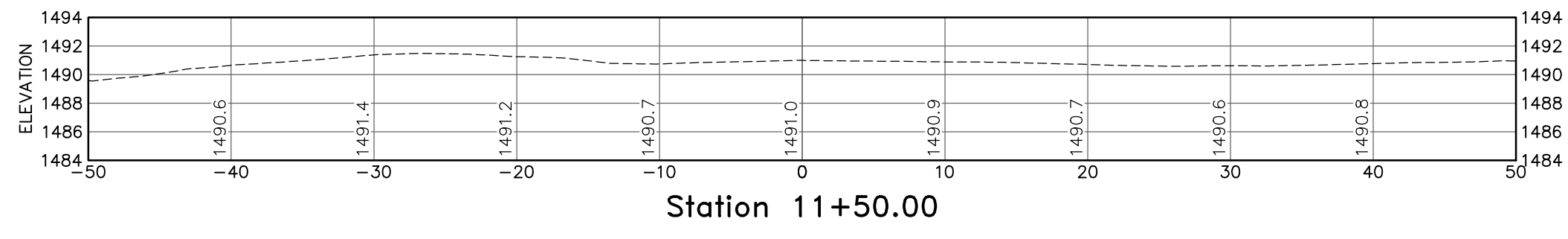
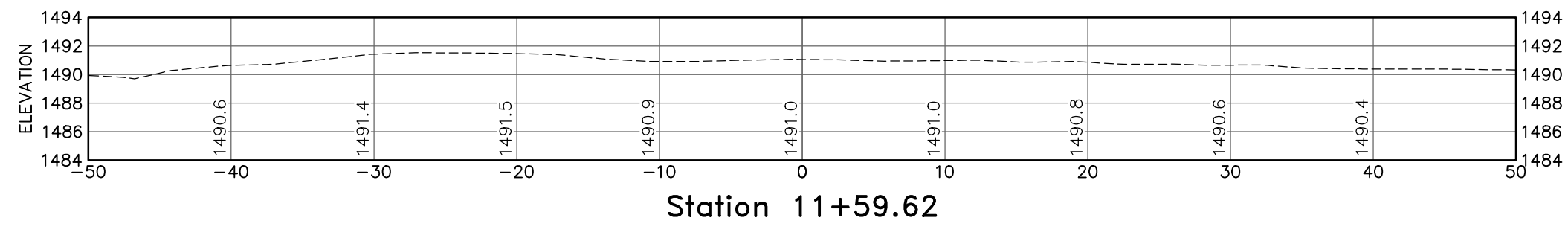
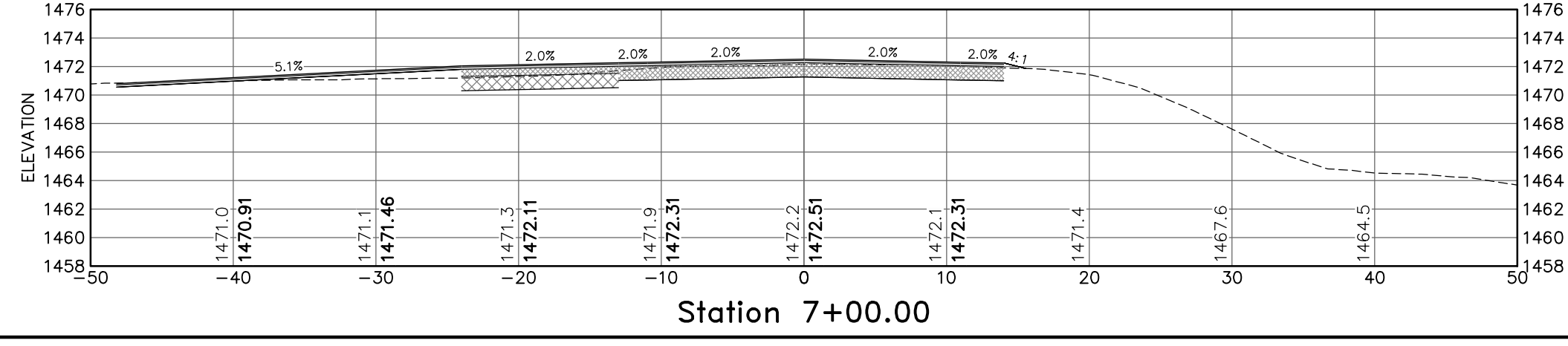
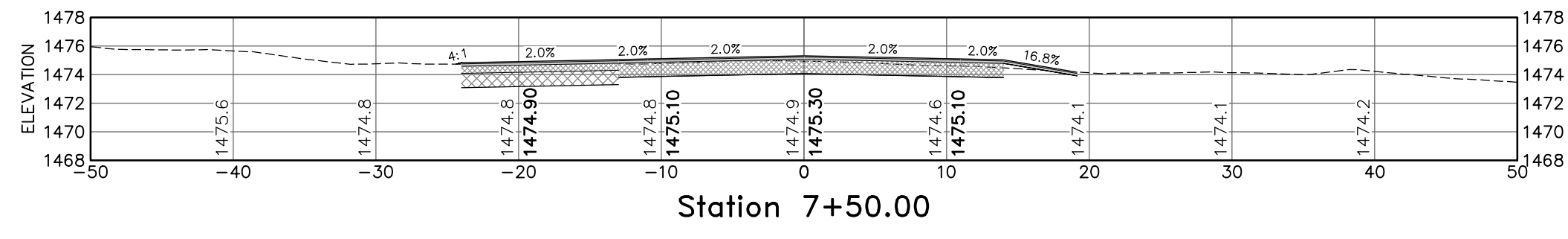
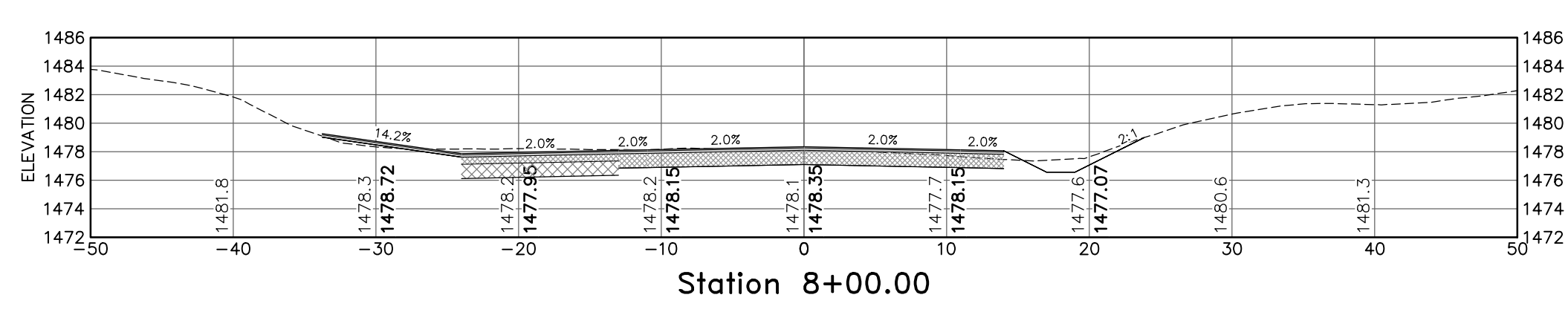
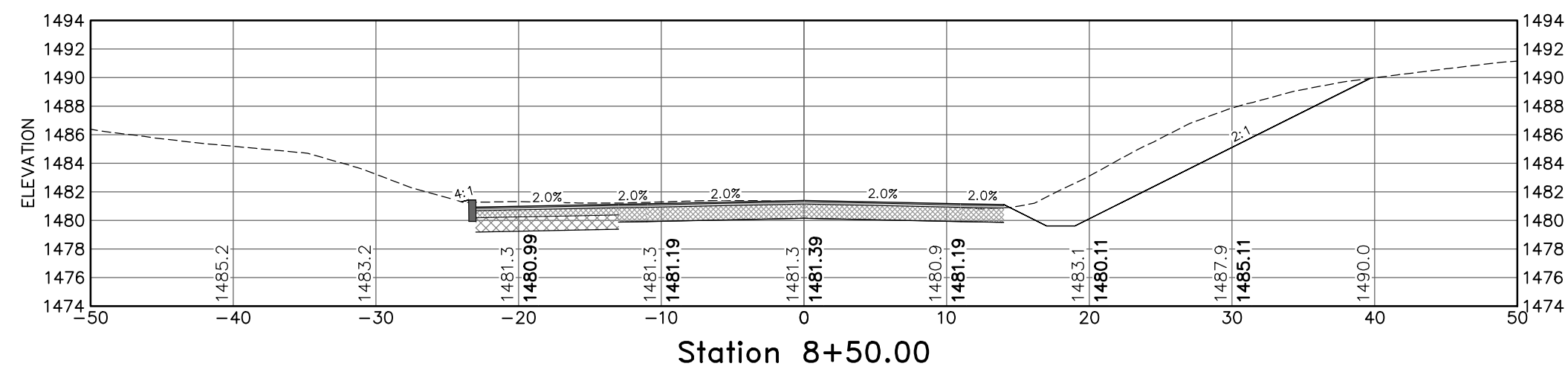
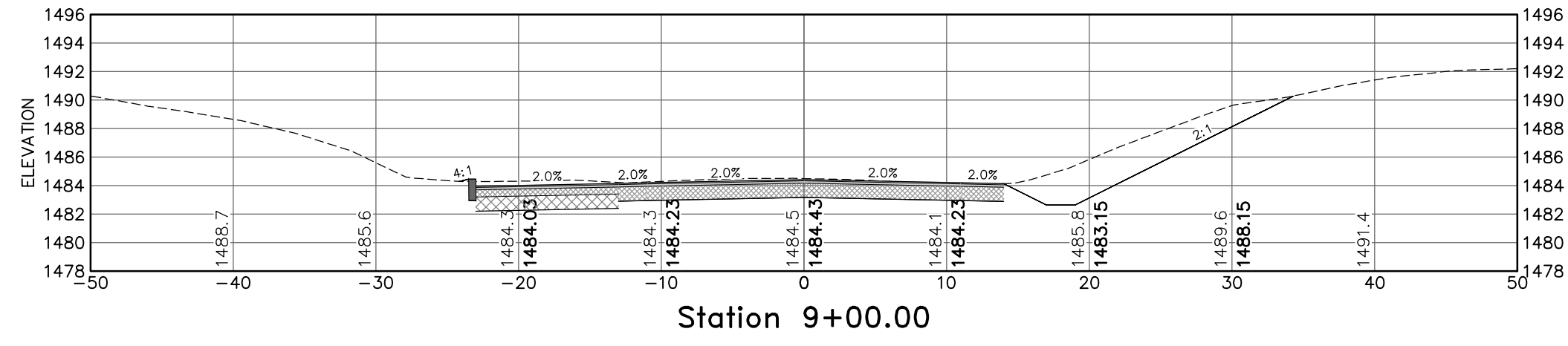
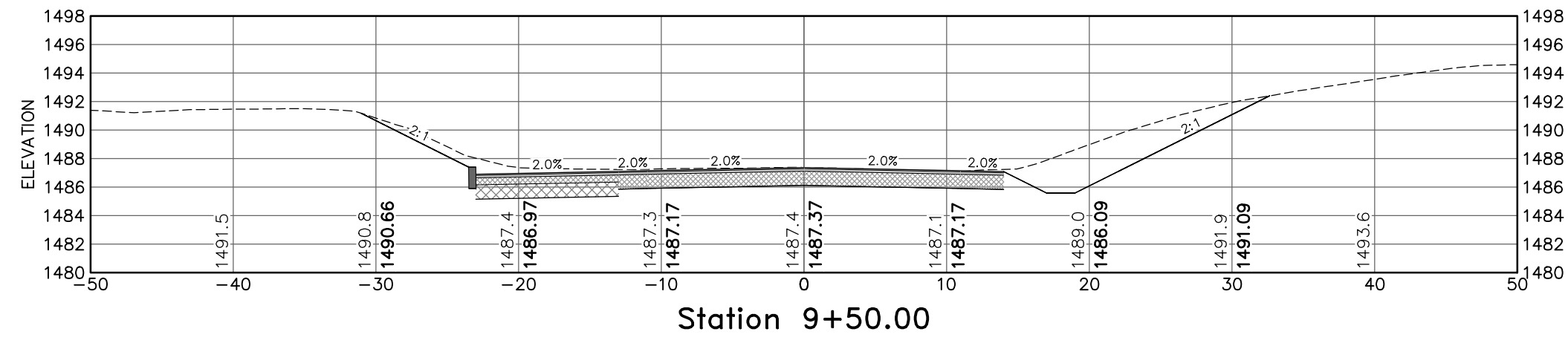
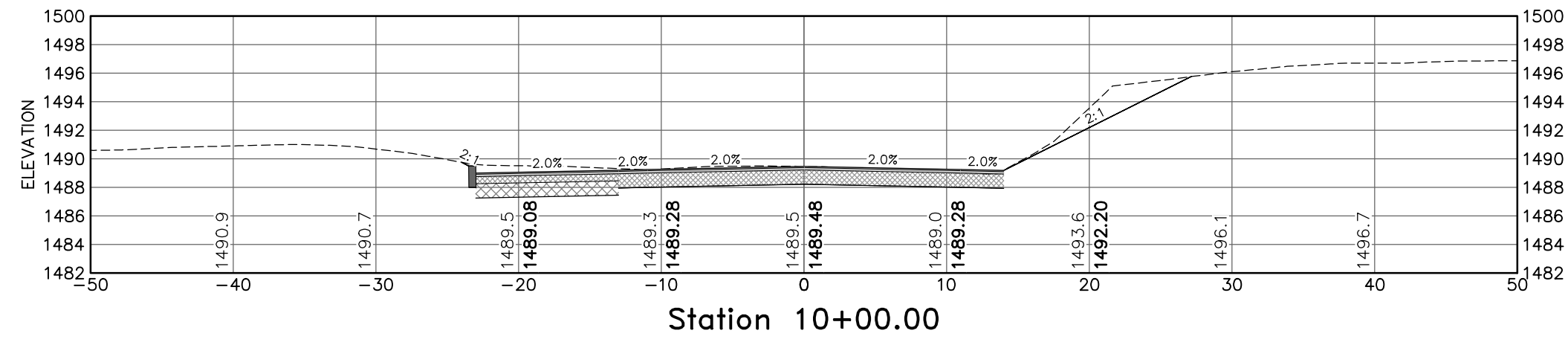
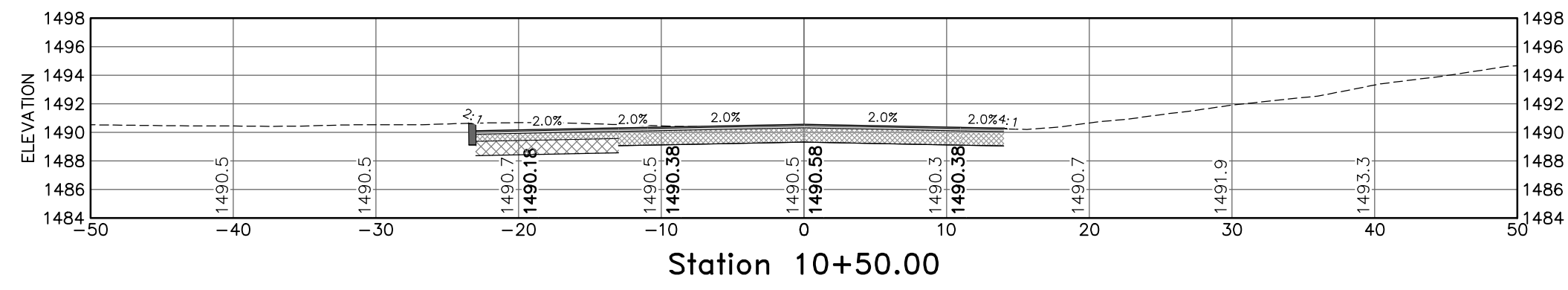


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Cross Sections - Snow's Brook Road  
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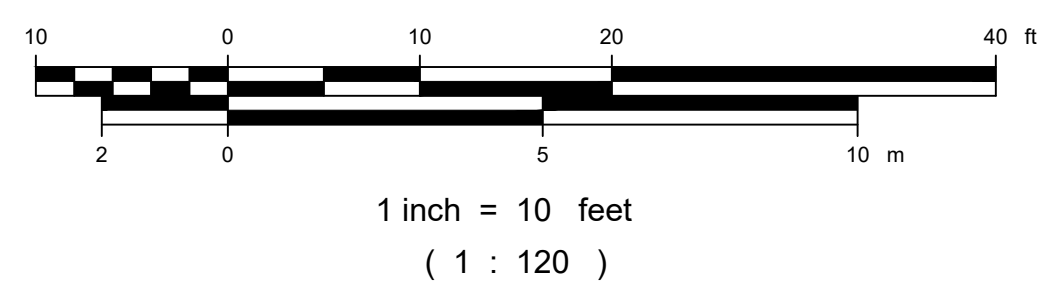
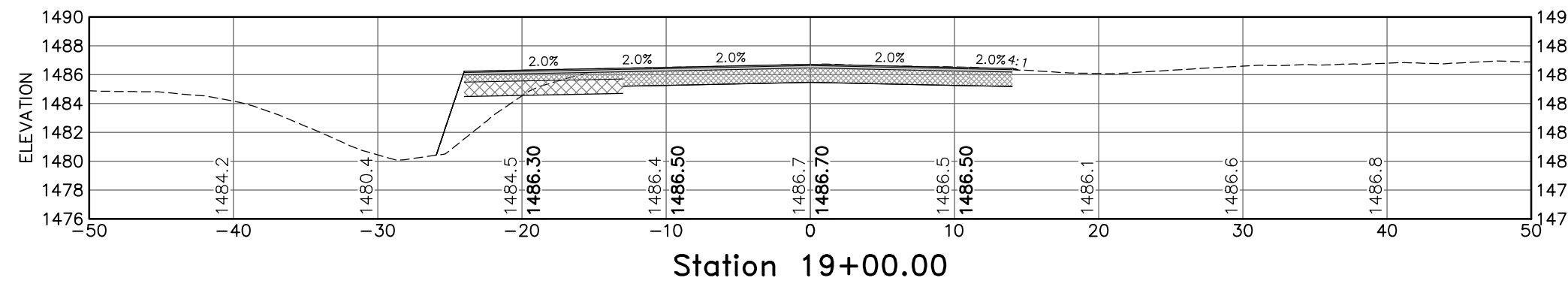
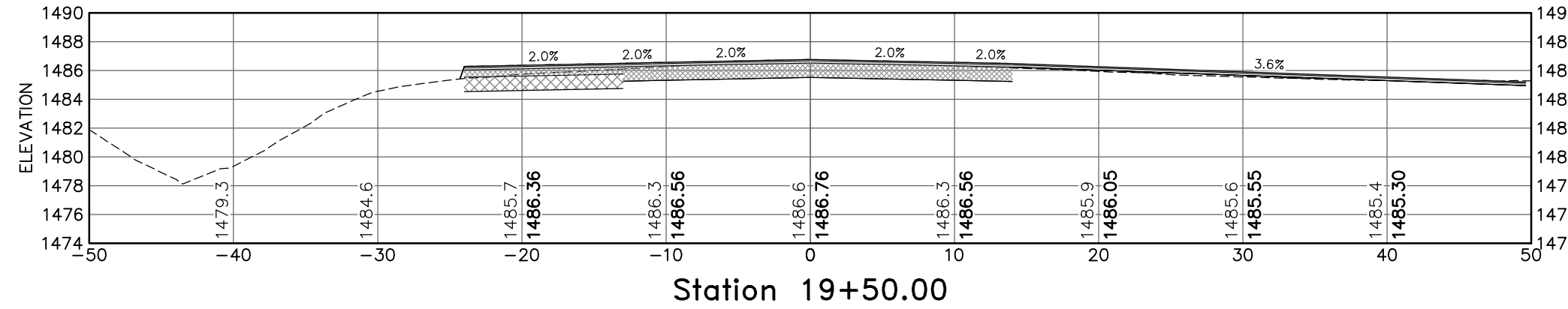
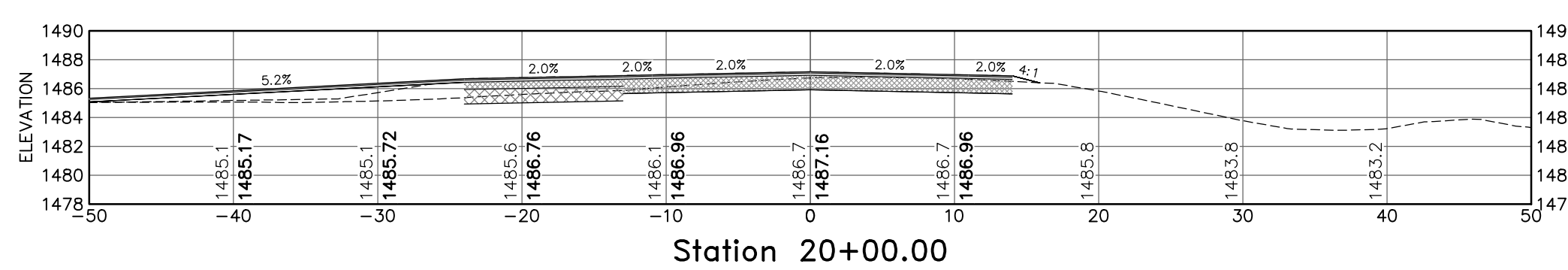
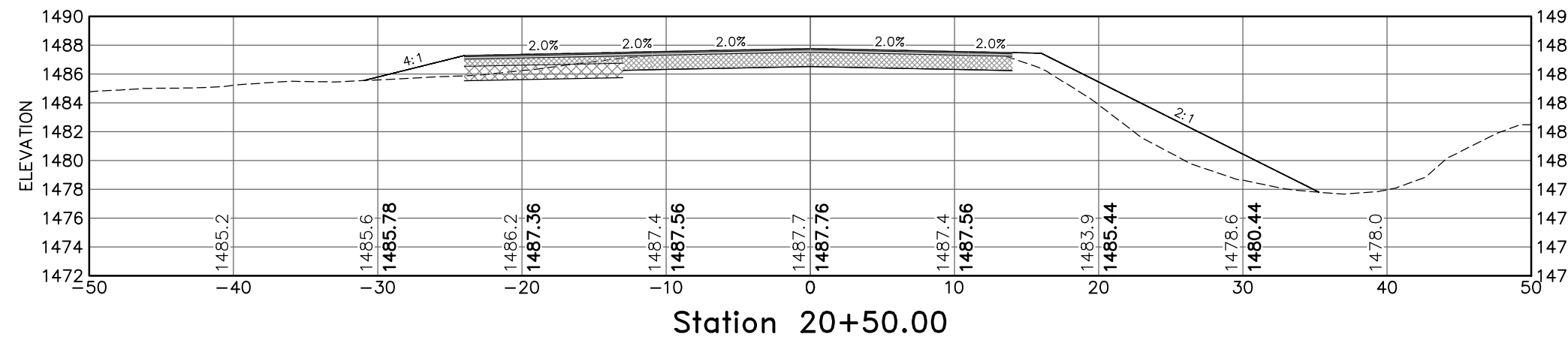
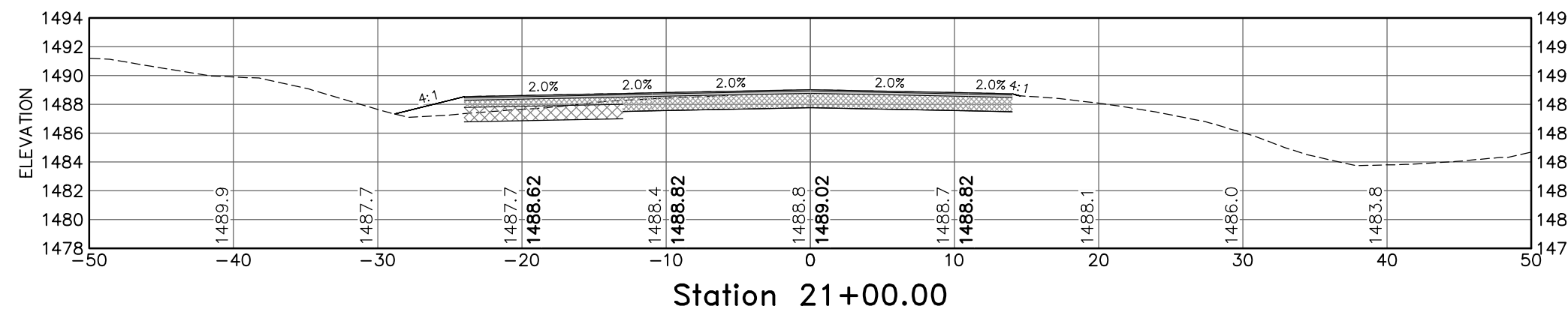
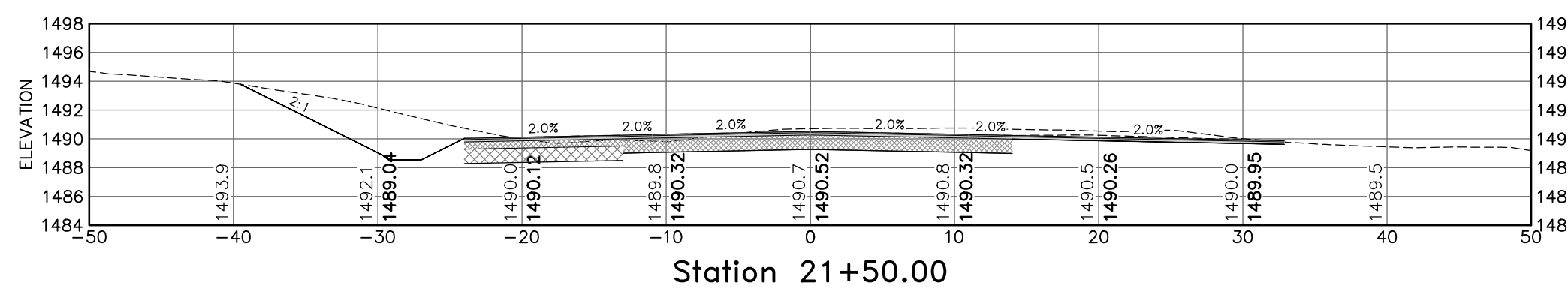
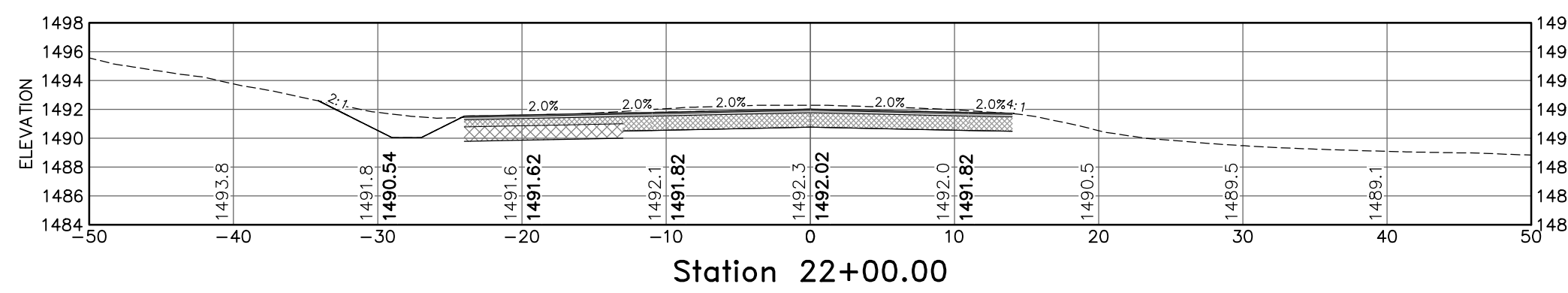
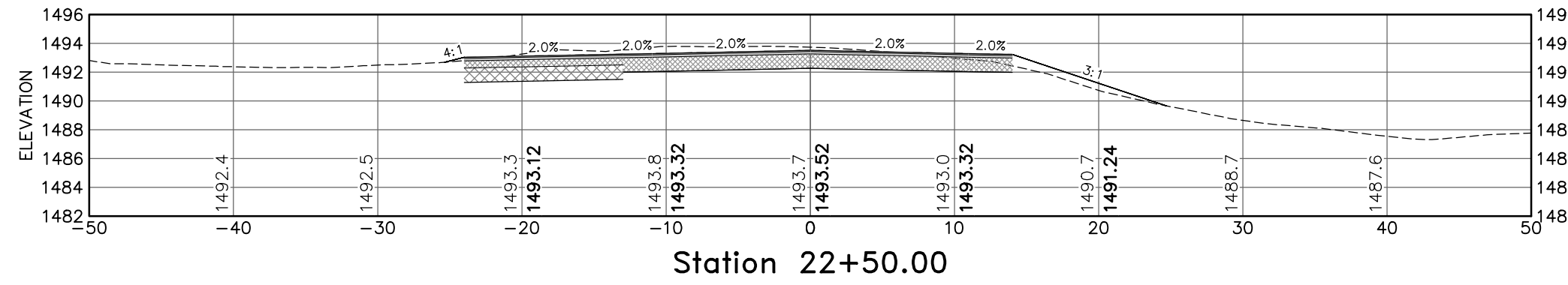
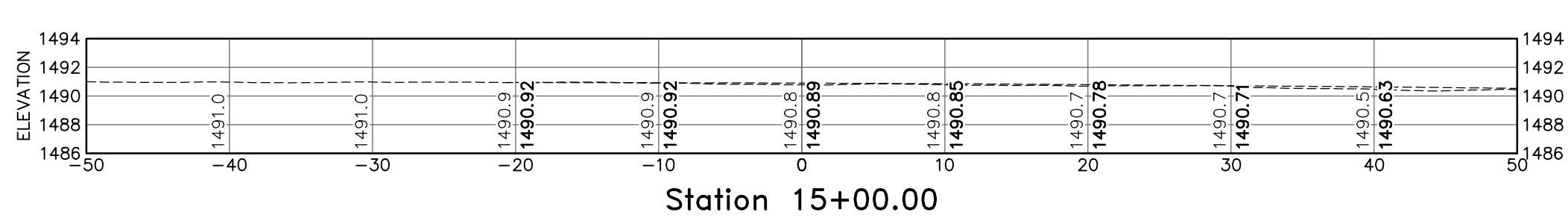
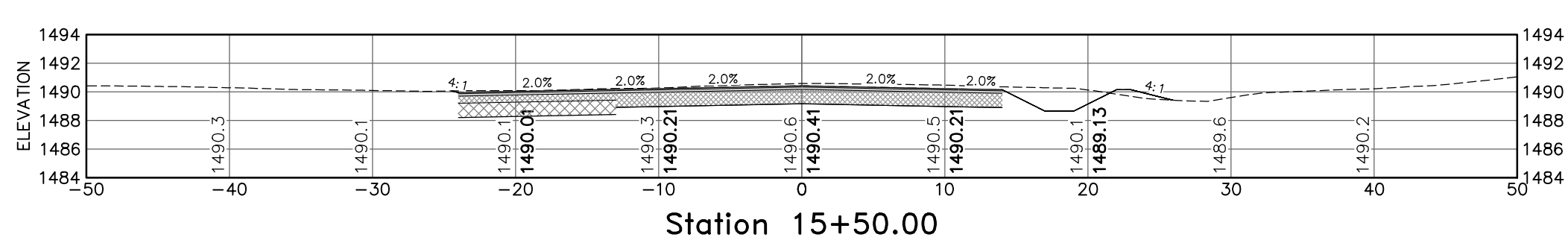
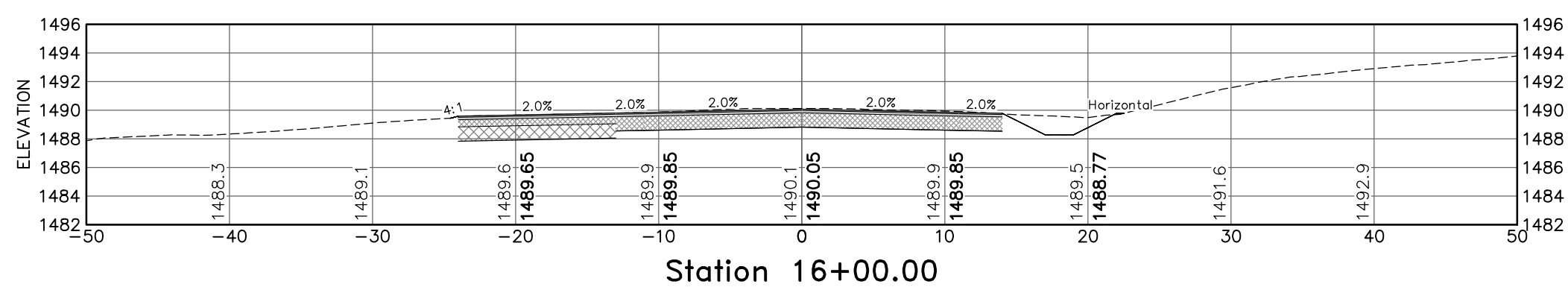
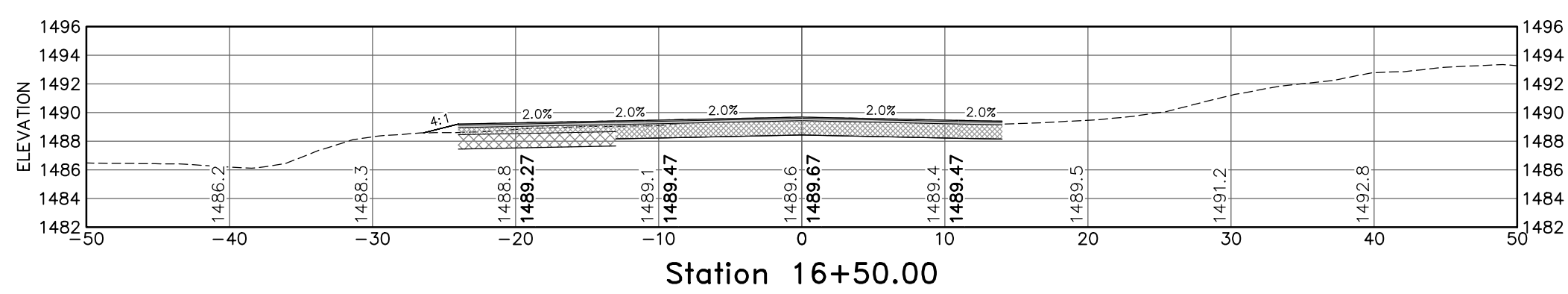
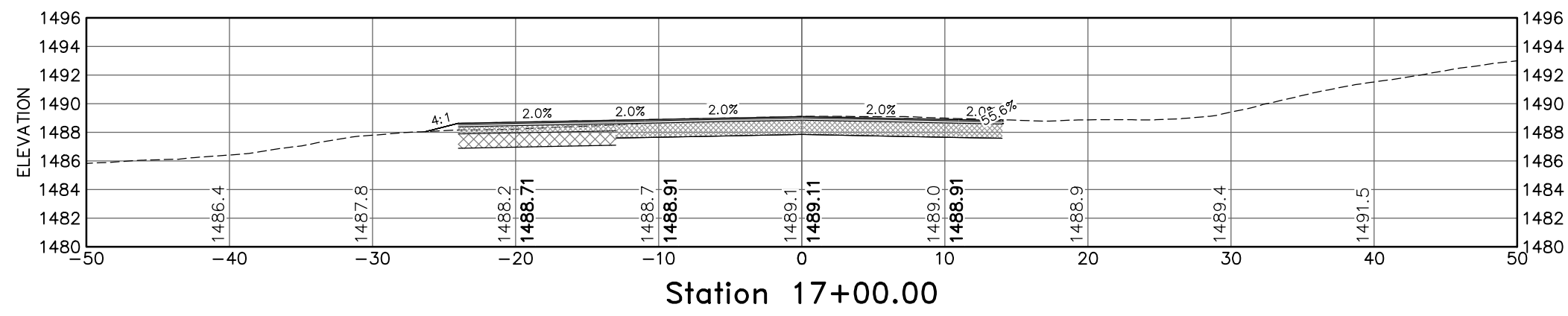
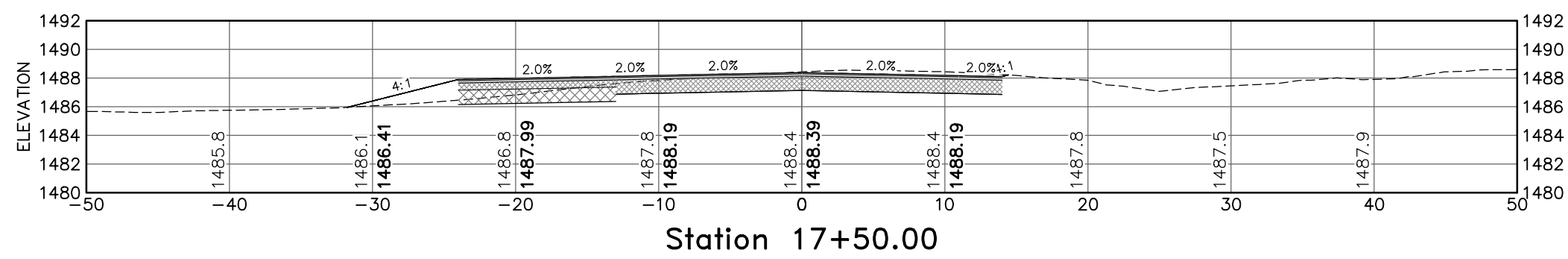
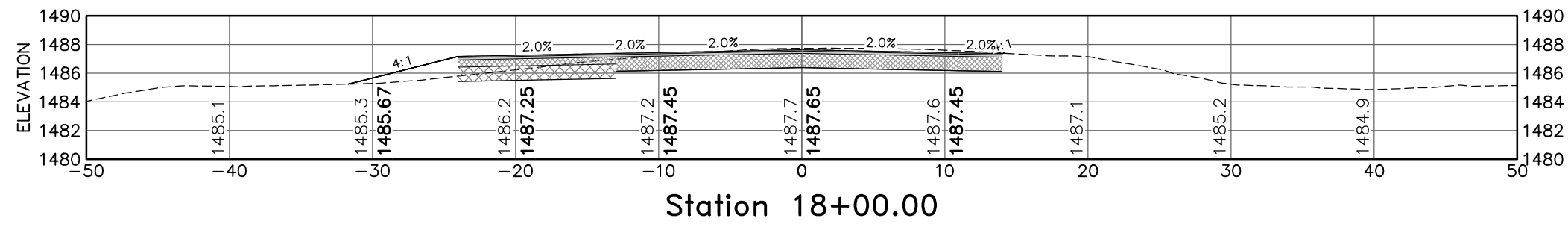
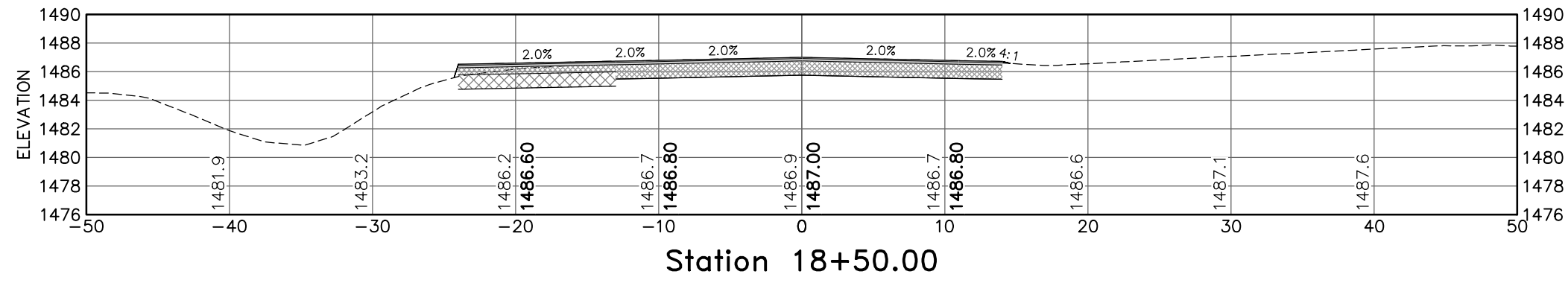
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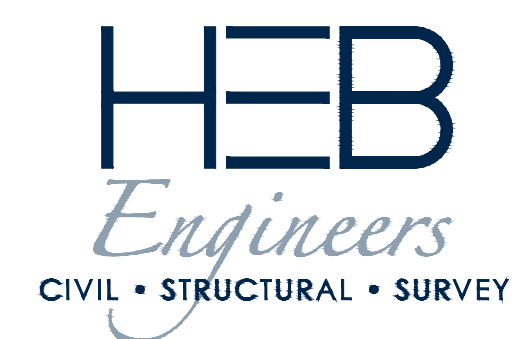
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Cross Sections - Snow Brook's Road  
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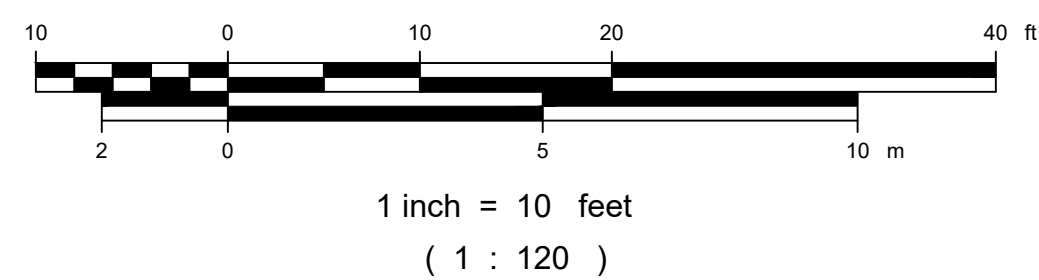
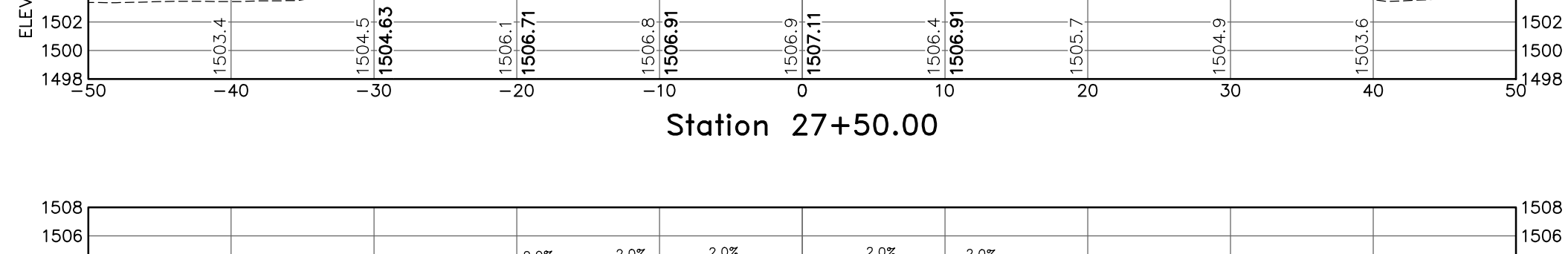
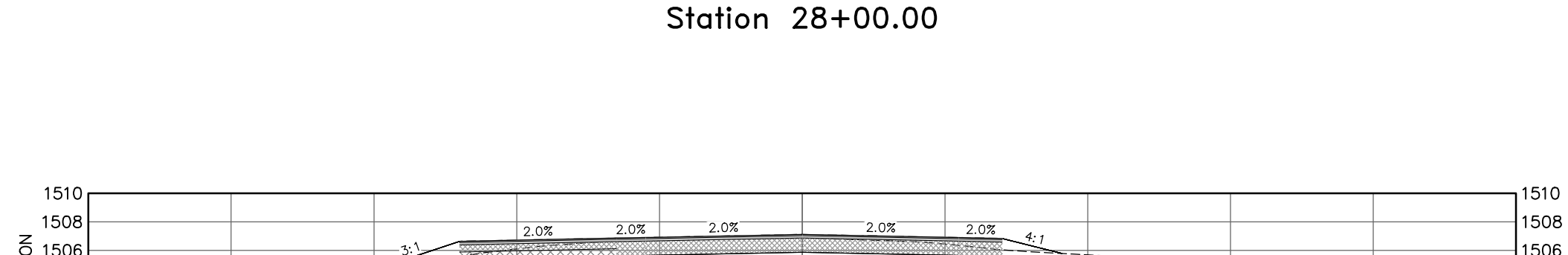
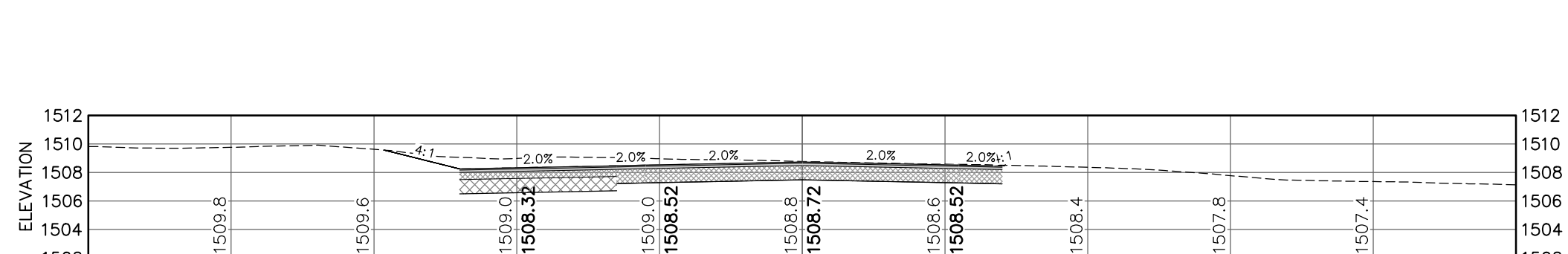
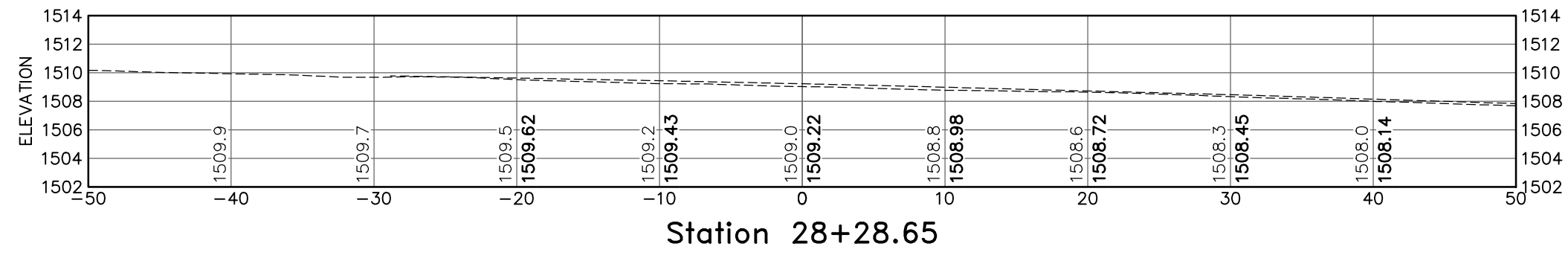
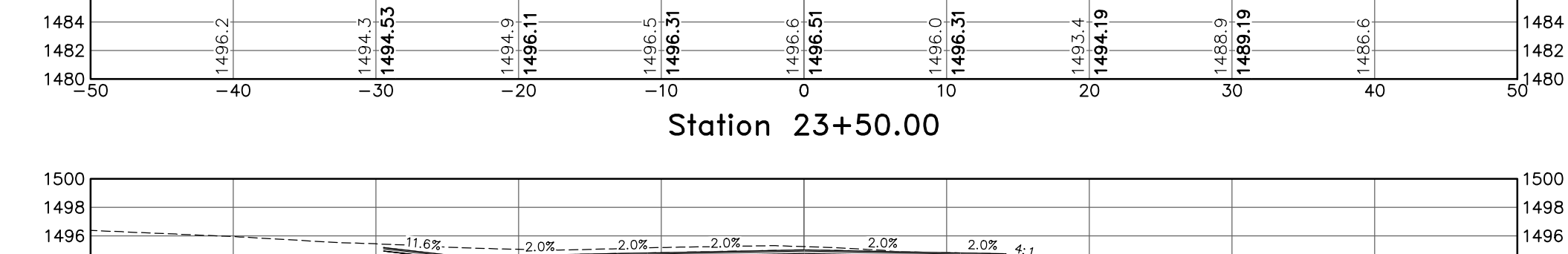
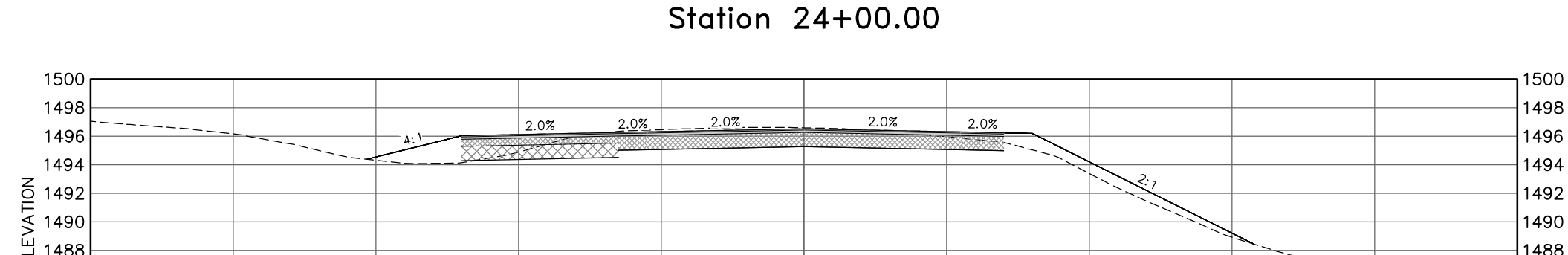
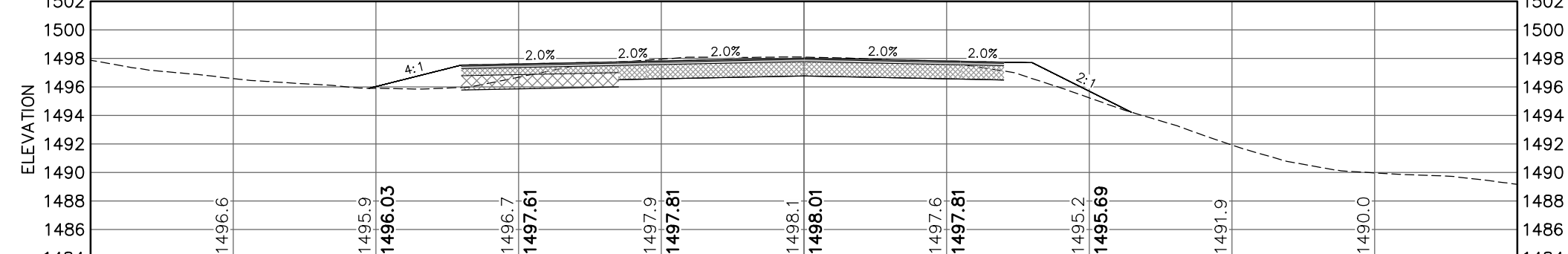
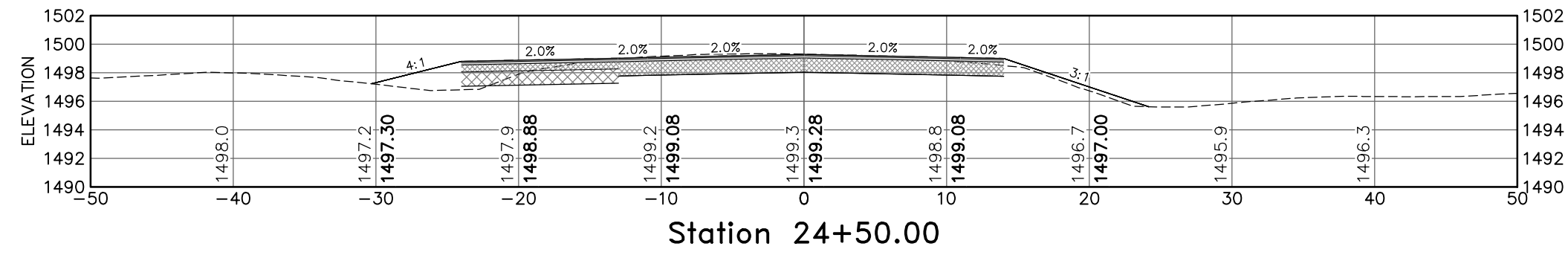
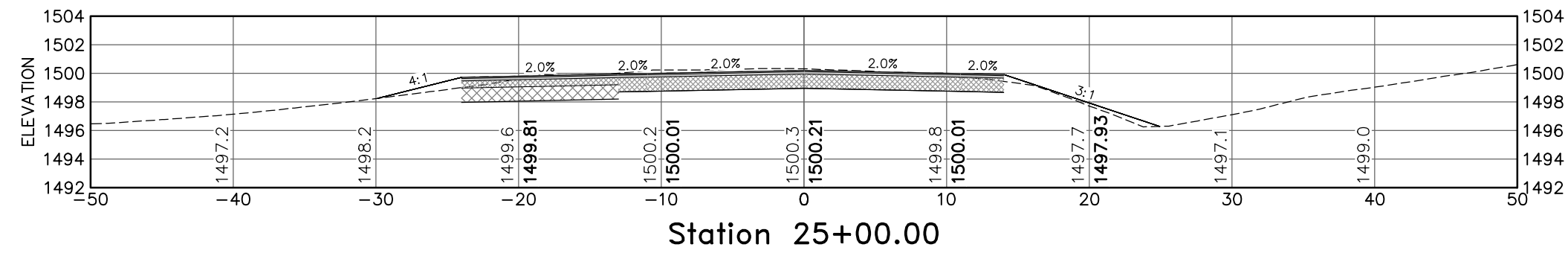
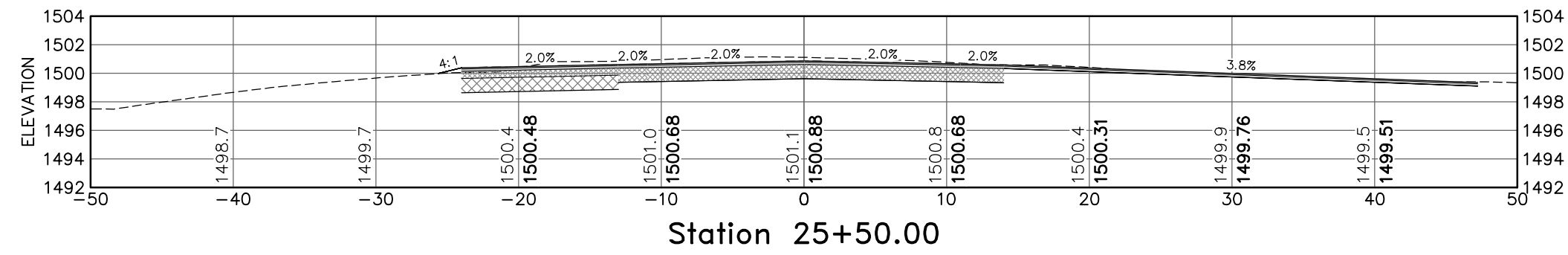
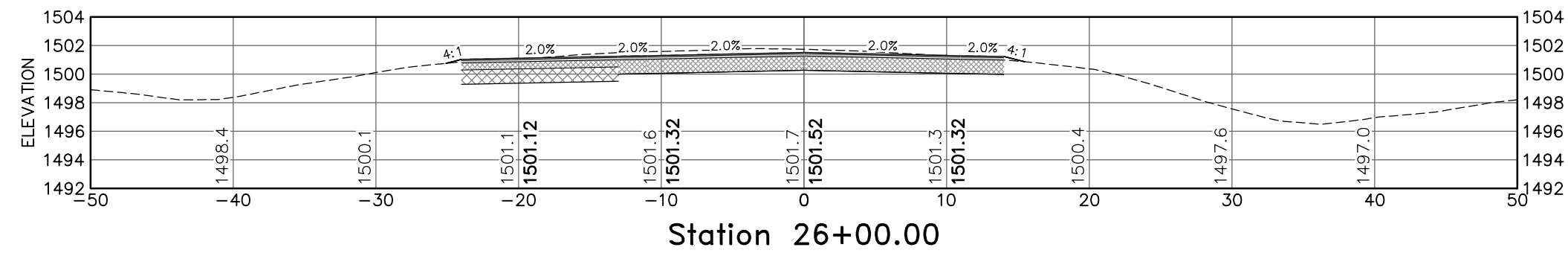
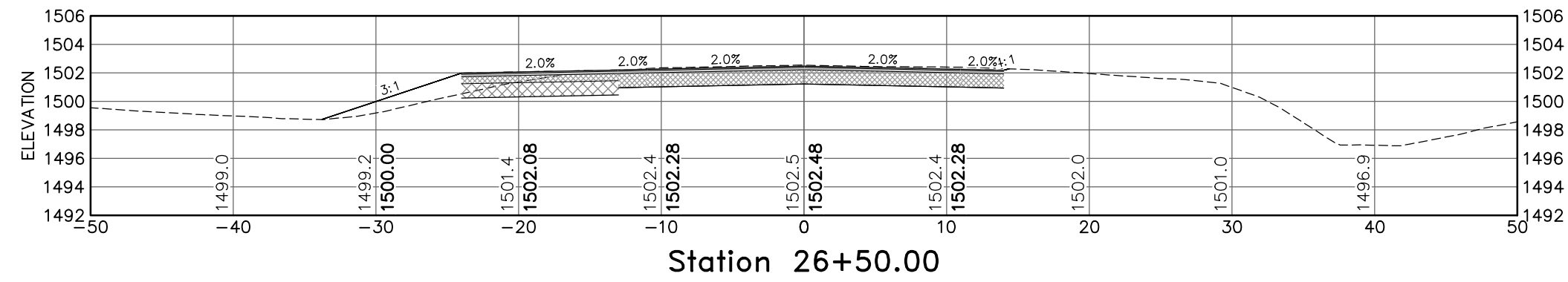
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SHEET 17 OF 21

2020-036  
Cross Sections - Tecumseh Road  
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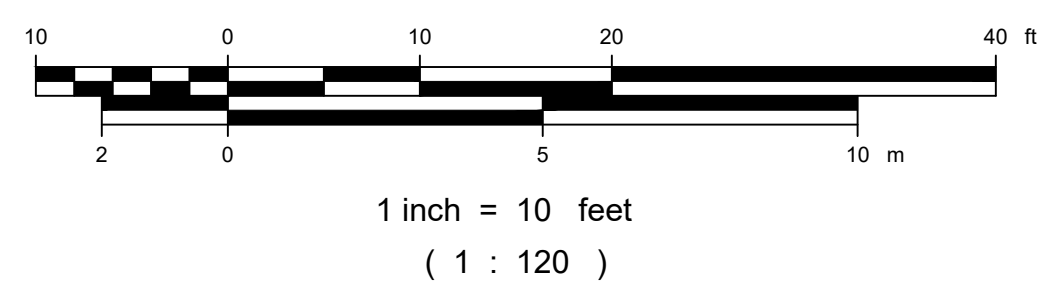
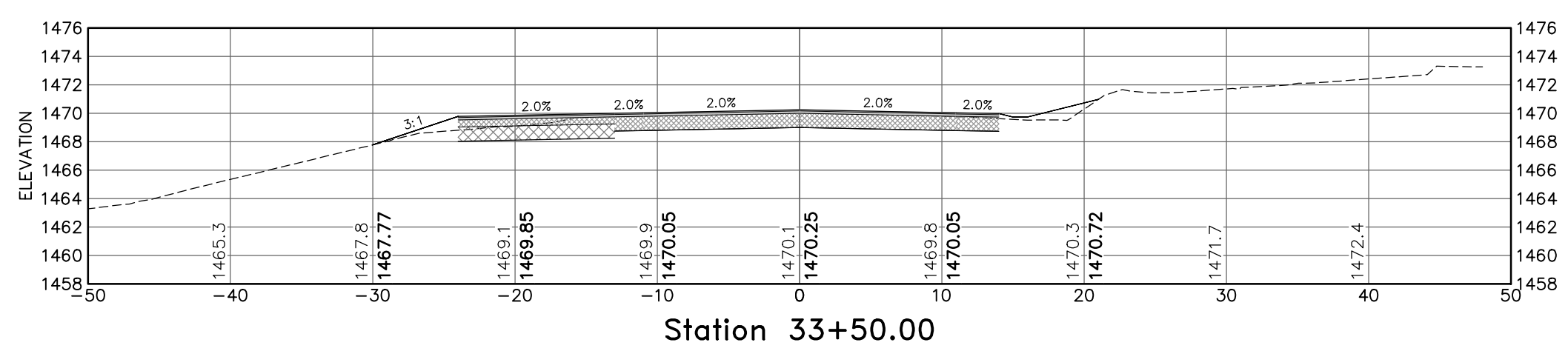
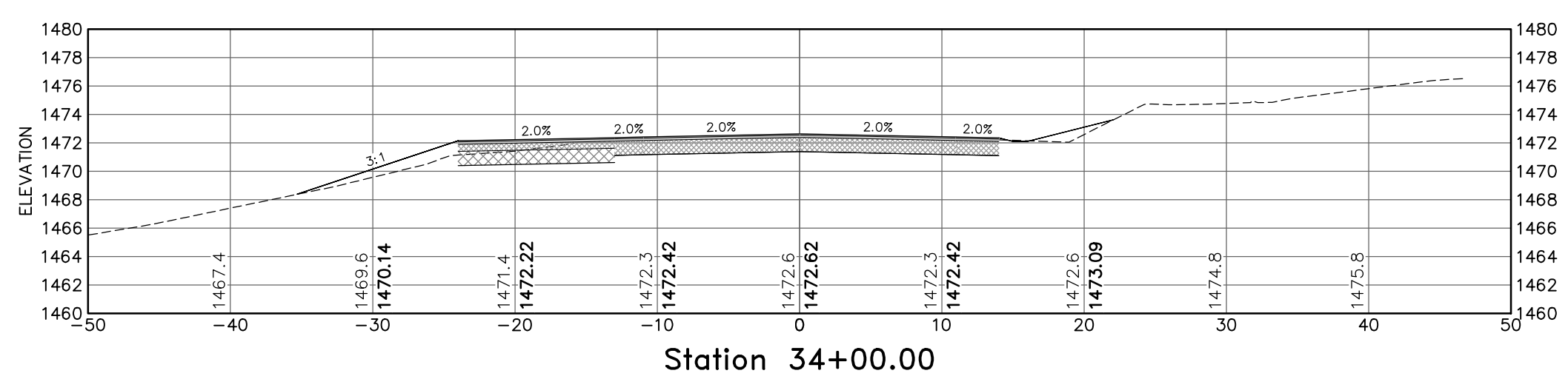
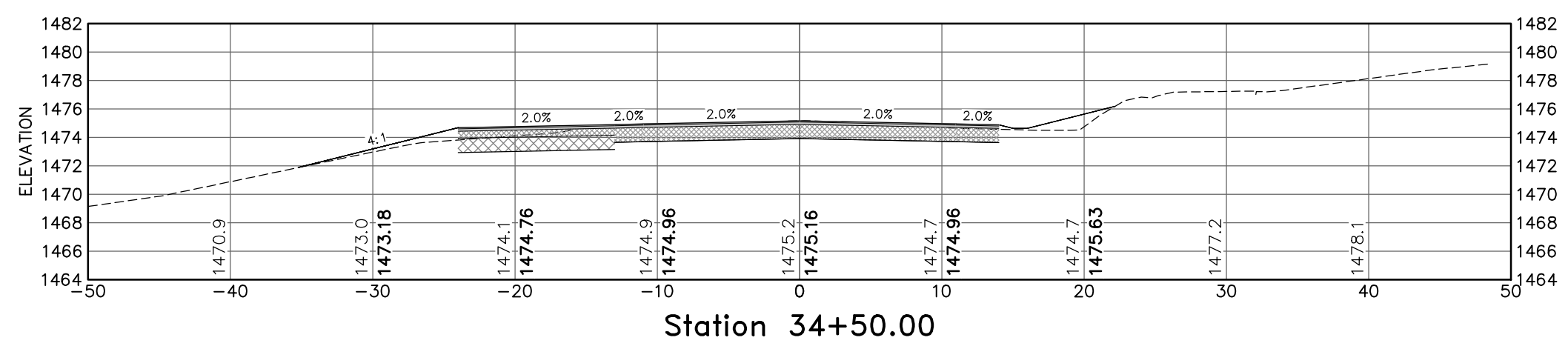
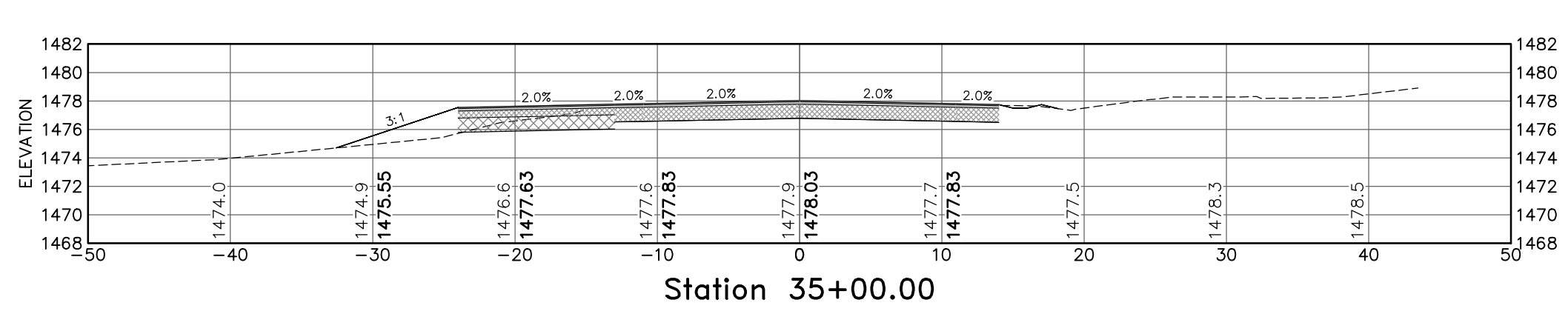
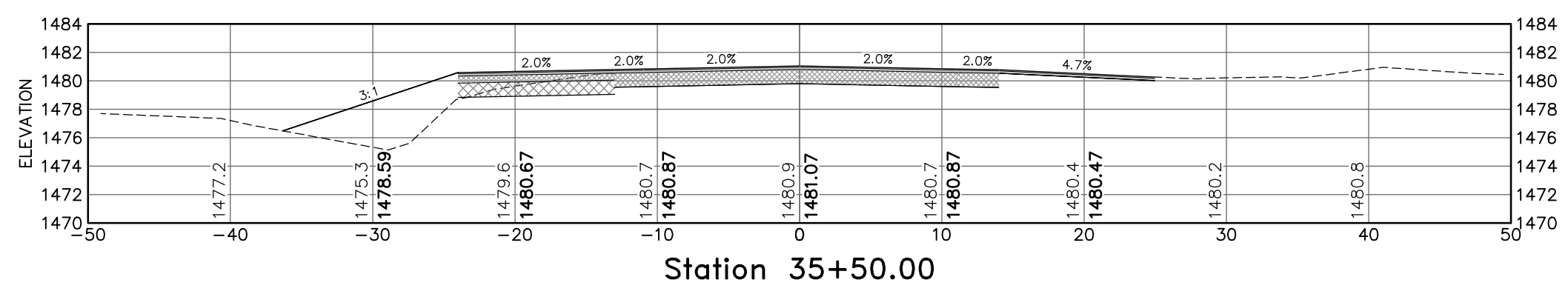
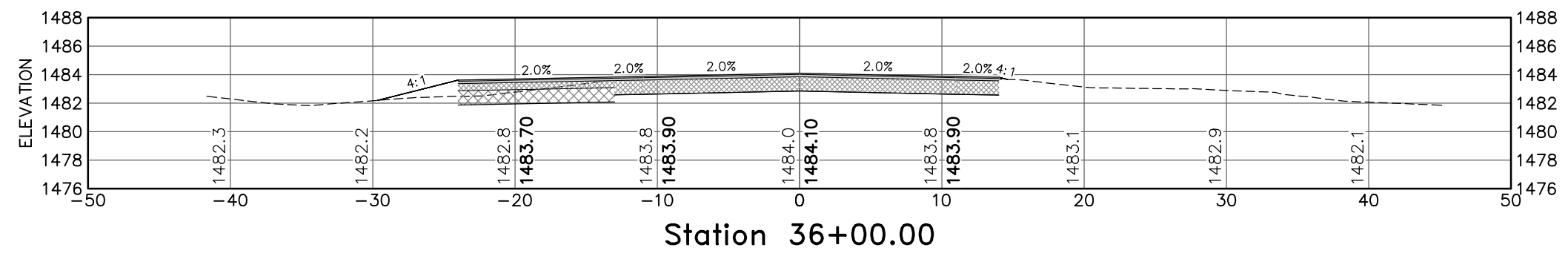
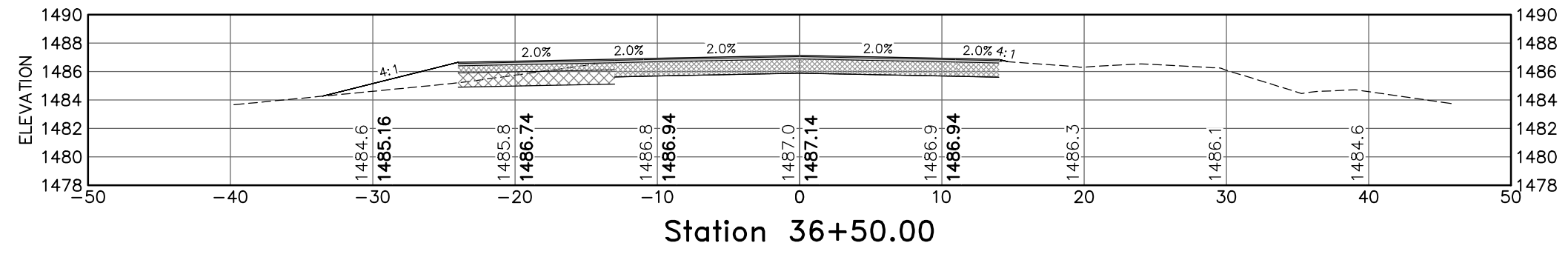
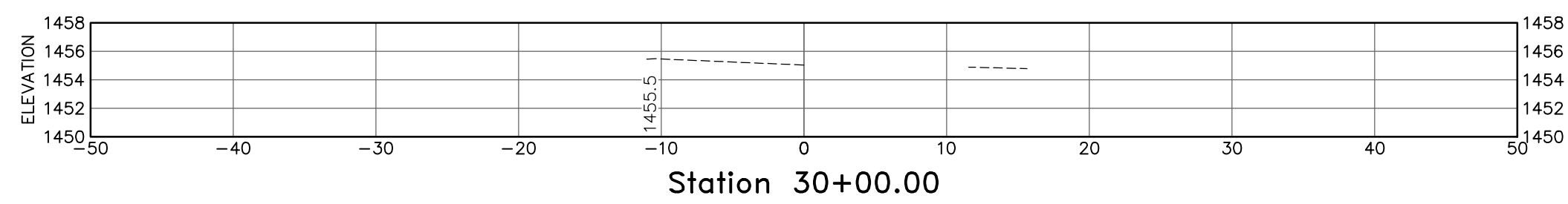
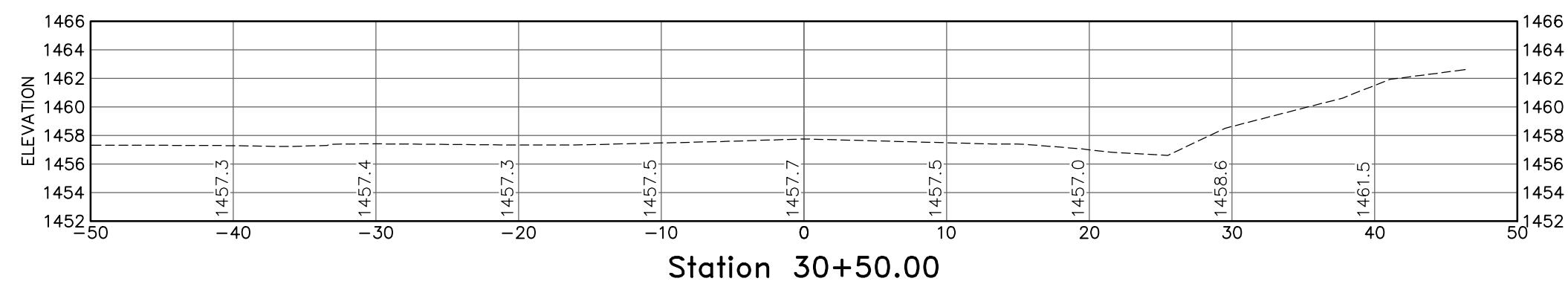
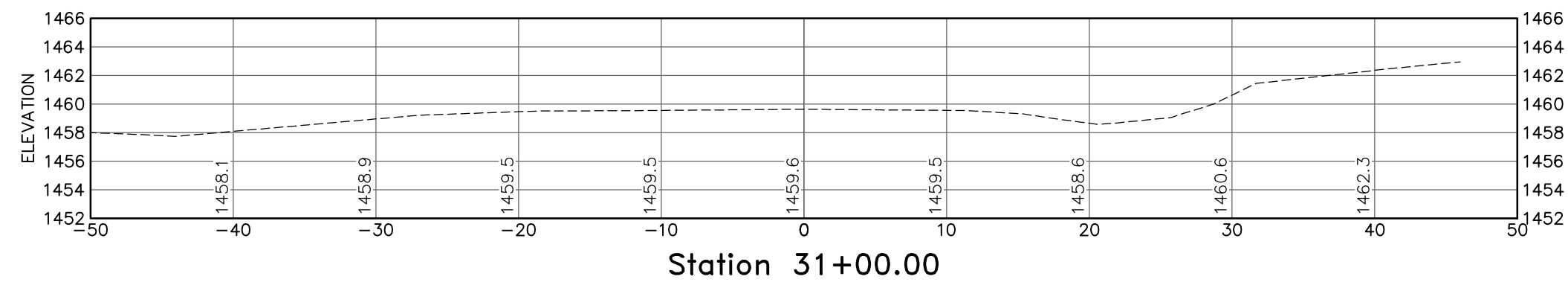
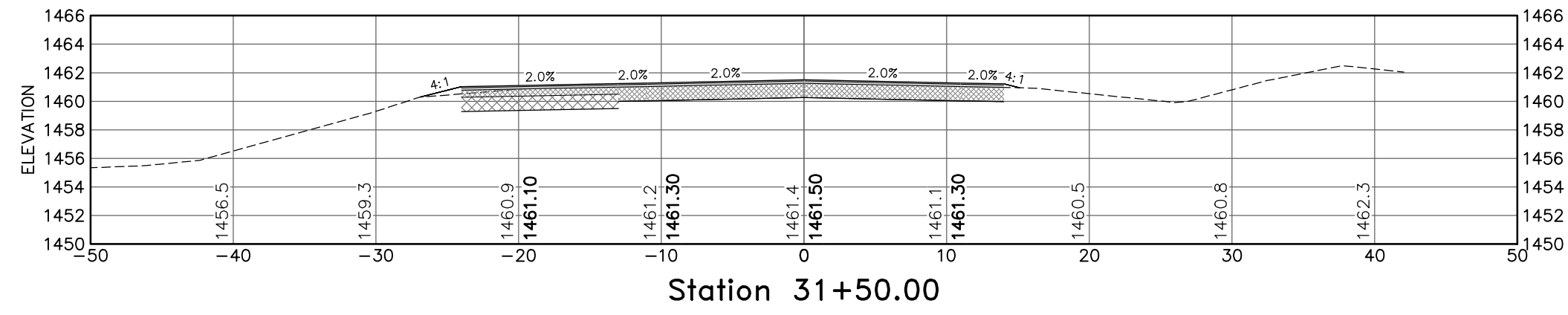
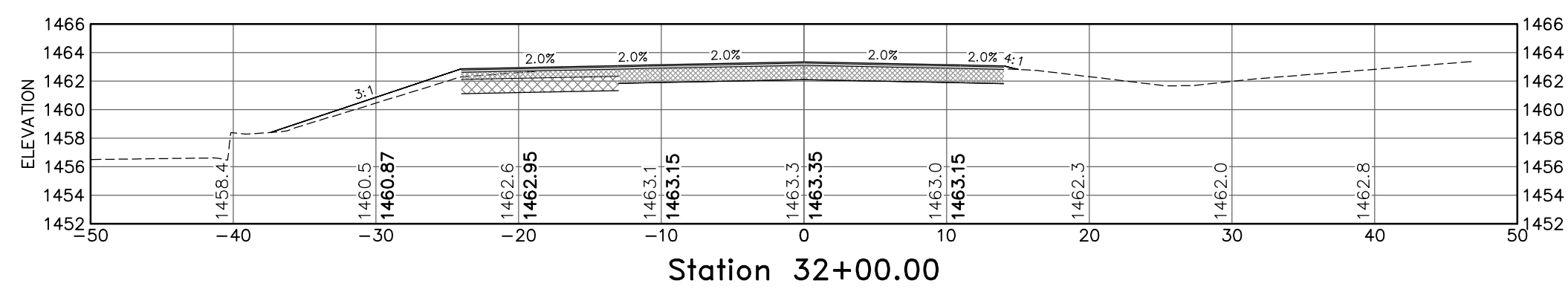
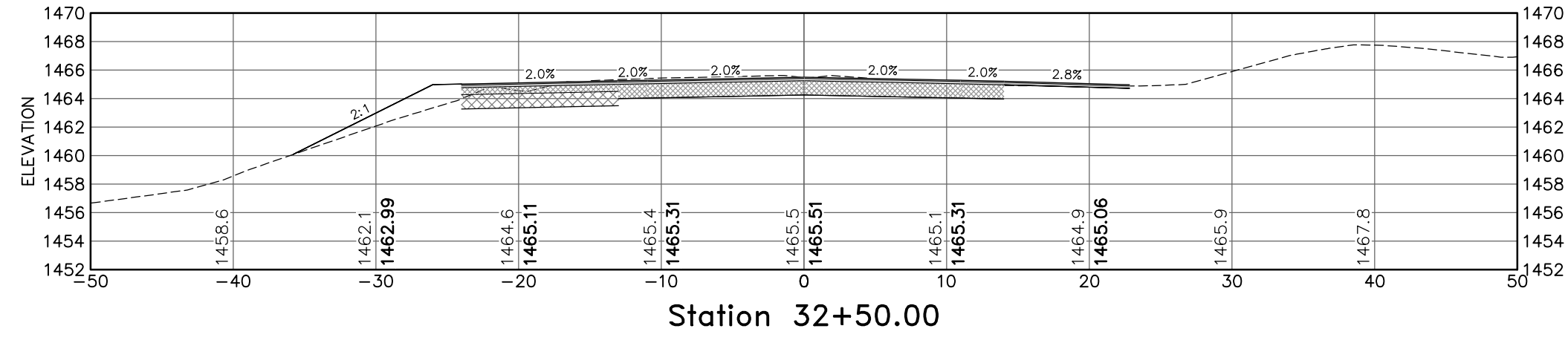
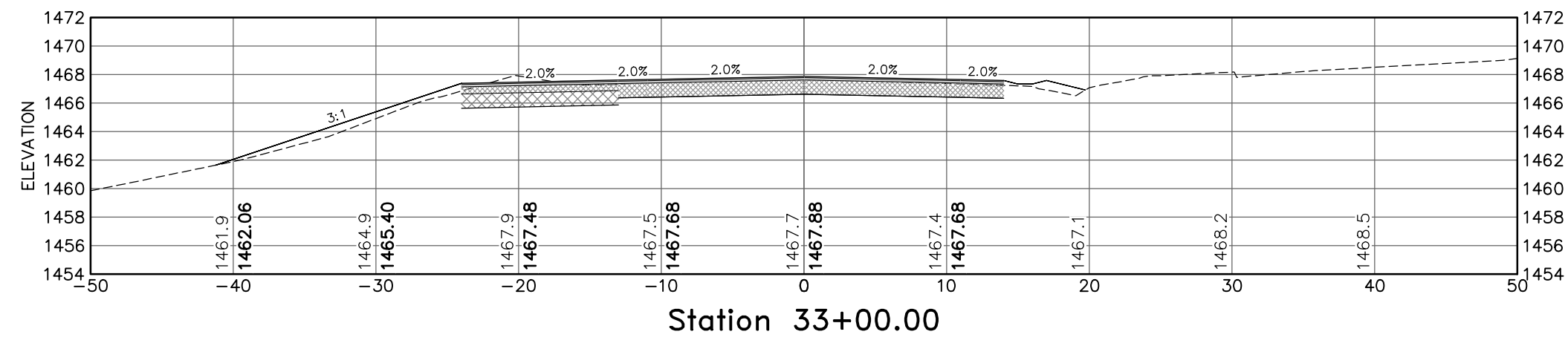
Cross Sections - Tecumseh Road  
for the  
Bike-Ped & Roadway Improvements  
located in  
Waterville Valley, New Hampshire  
prepared for  
Town of Waterville Valley

2020-036  
C3.22  
SHEET 17 OF 21

PRELIMINARY  
NOT FOR  
CONSTRUCTION

C3.31  
SHEET 18 OF 21

2020-036  
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Bike-Ped & Roadway Improvements



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DRAWN BY	AMS
CHECKED BY	JMM
FIELD BOOK	-
SCALE	1" = 10'
DATE	05/22/2020

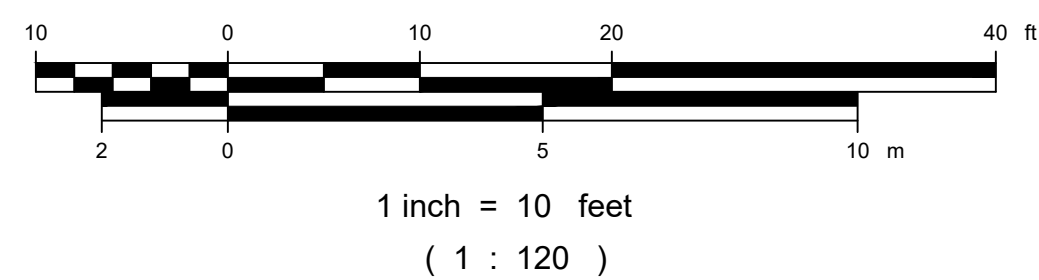
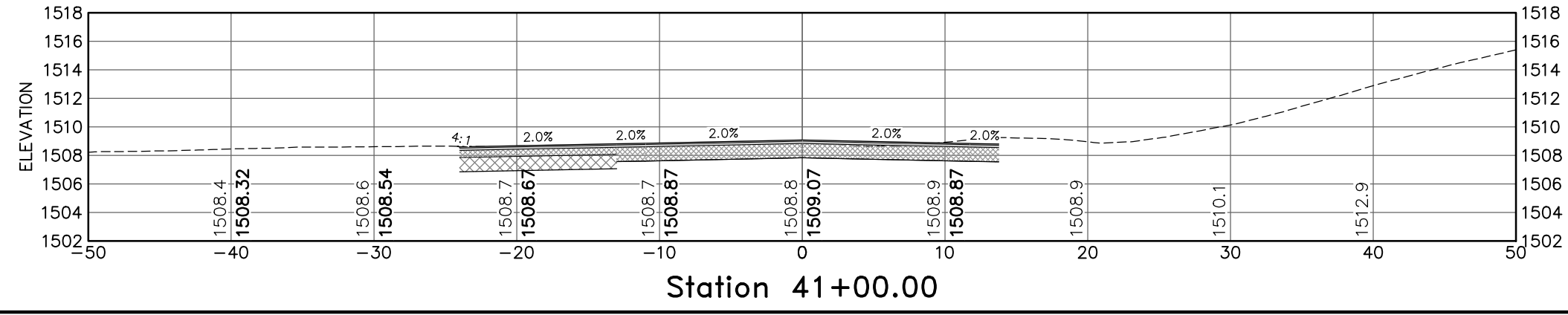
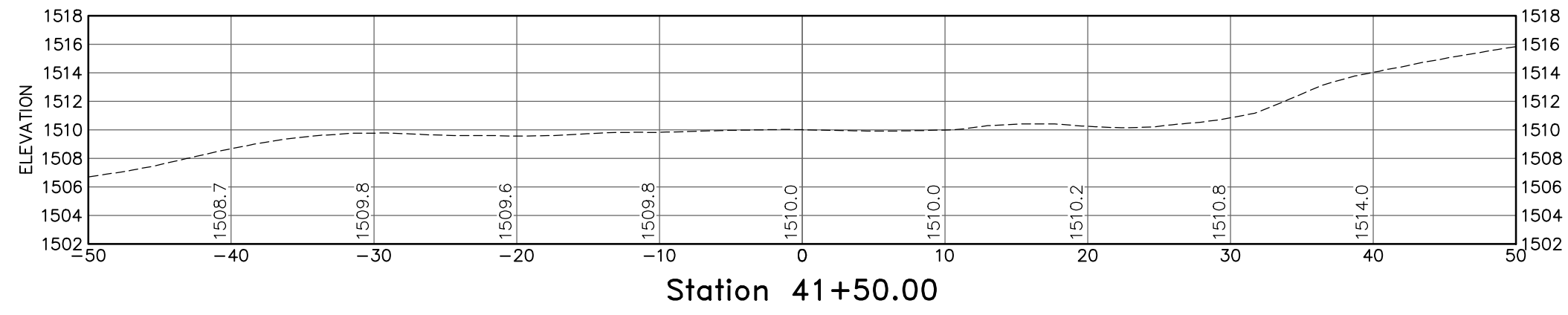
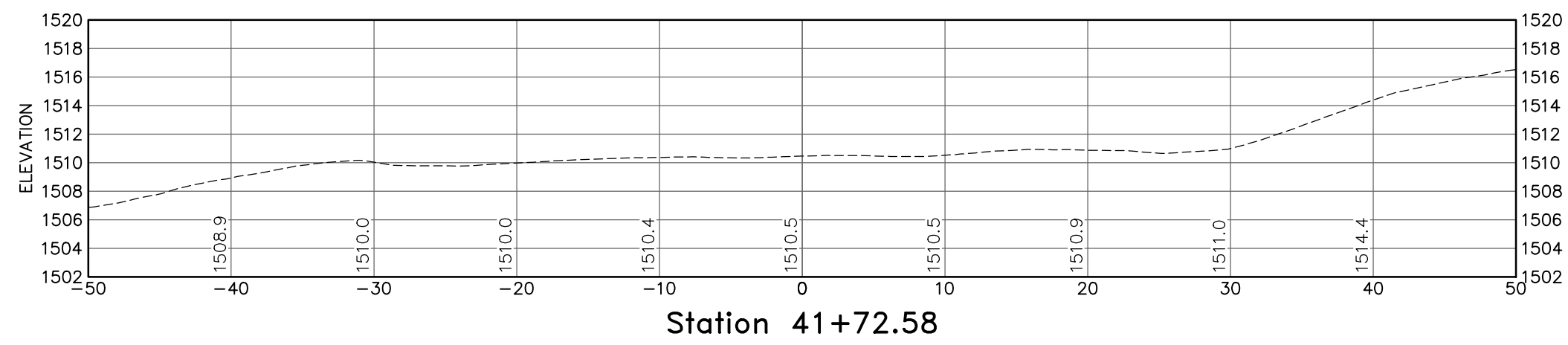
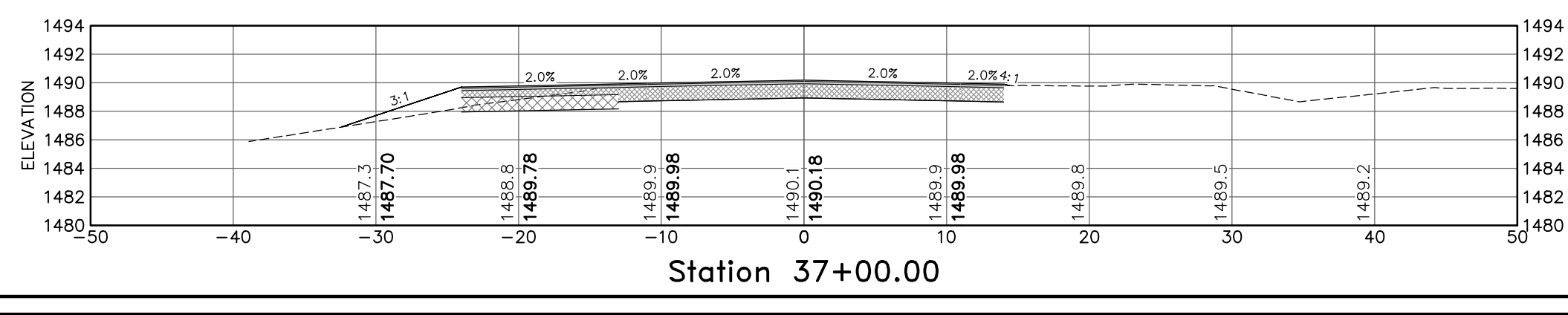
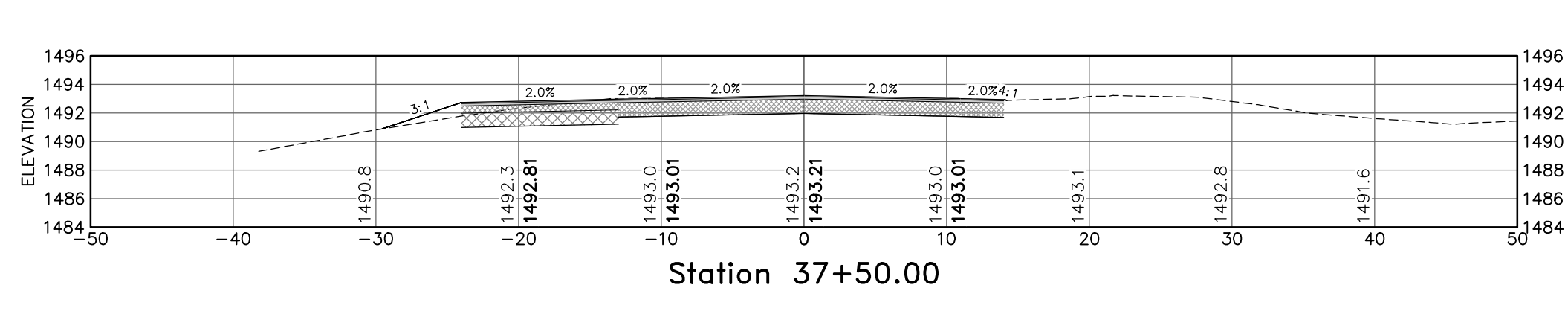
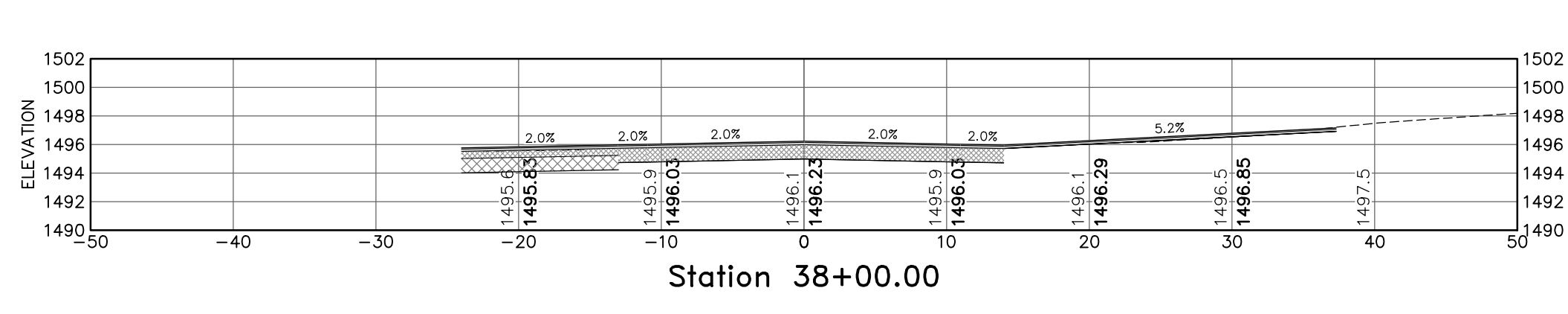
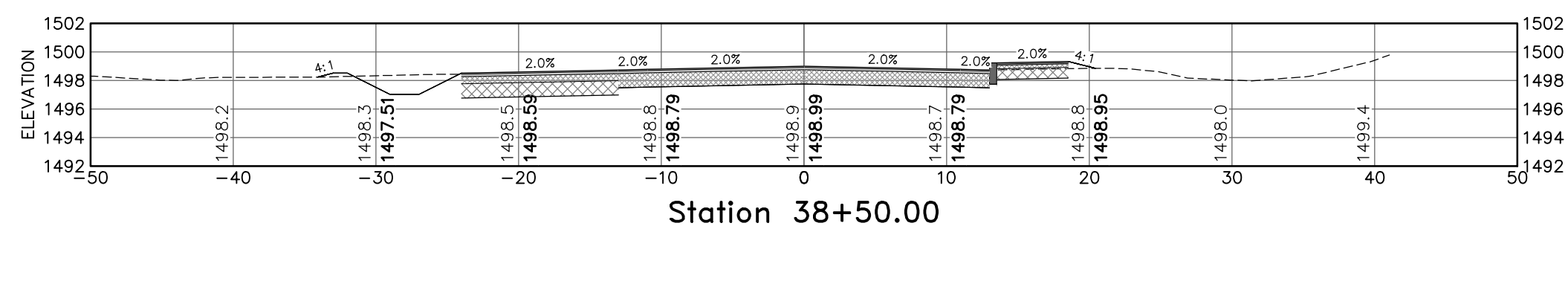
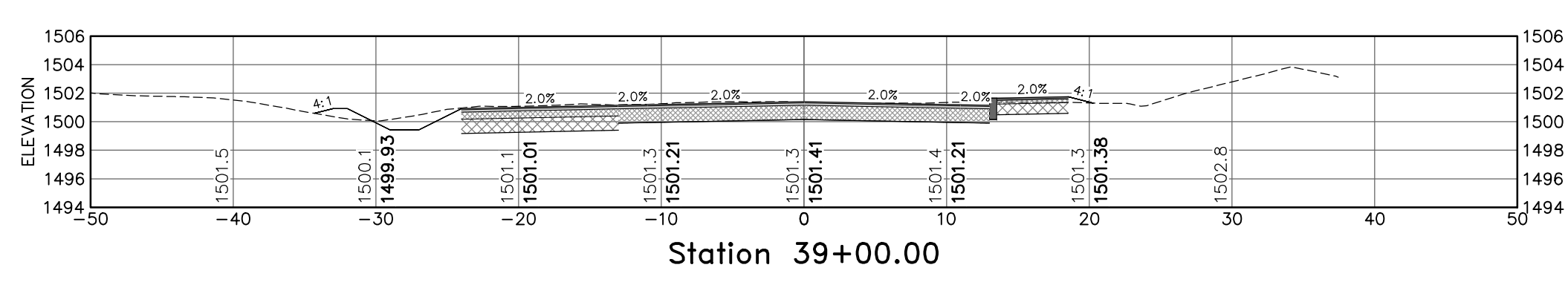
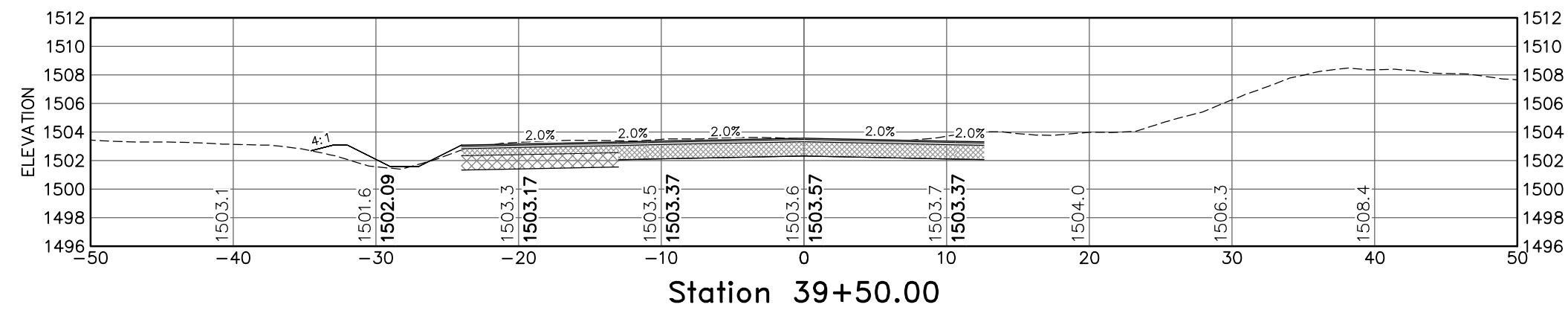
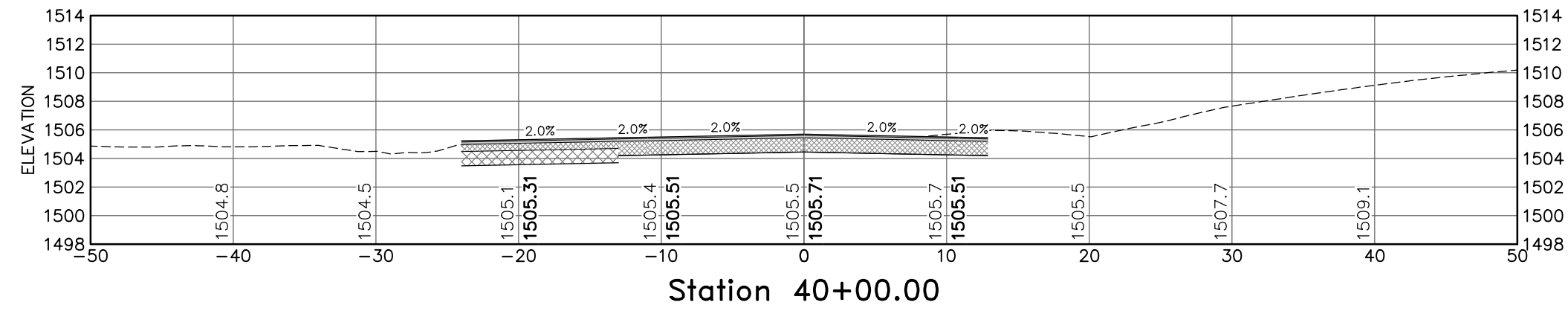
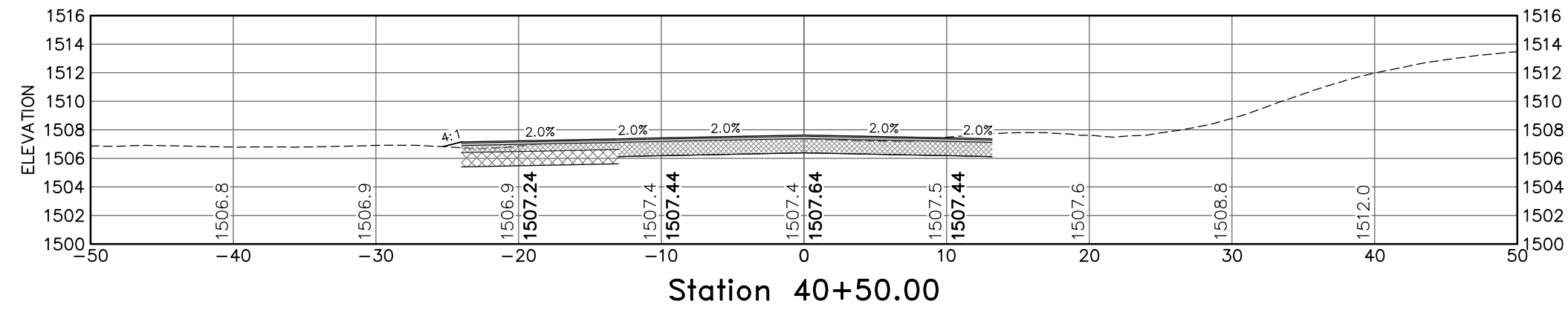
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2020-036  
C3.31  
SHEET 18 OF 21

PRELIMINARY  
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CONSTRUCTION

C3.32  
SHEET 19 OF 21

2020-036  
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Bike-Ped & Roadway Improvements



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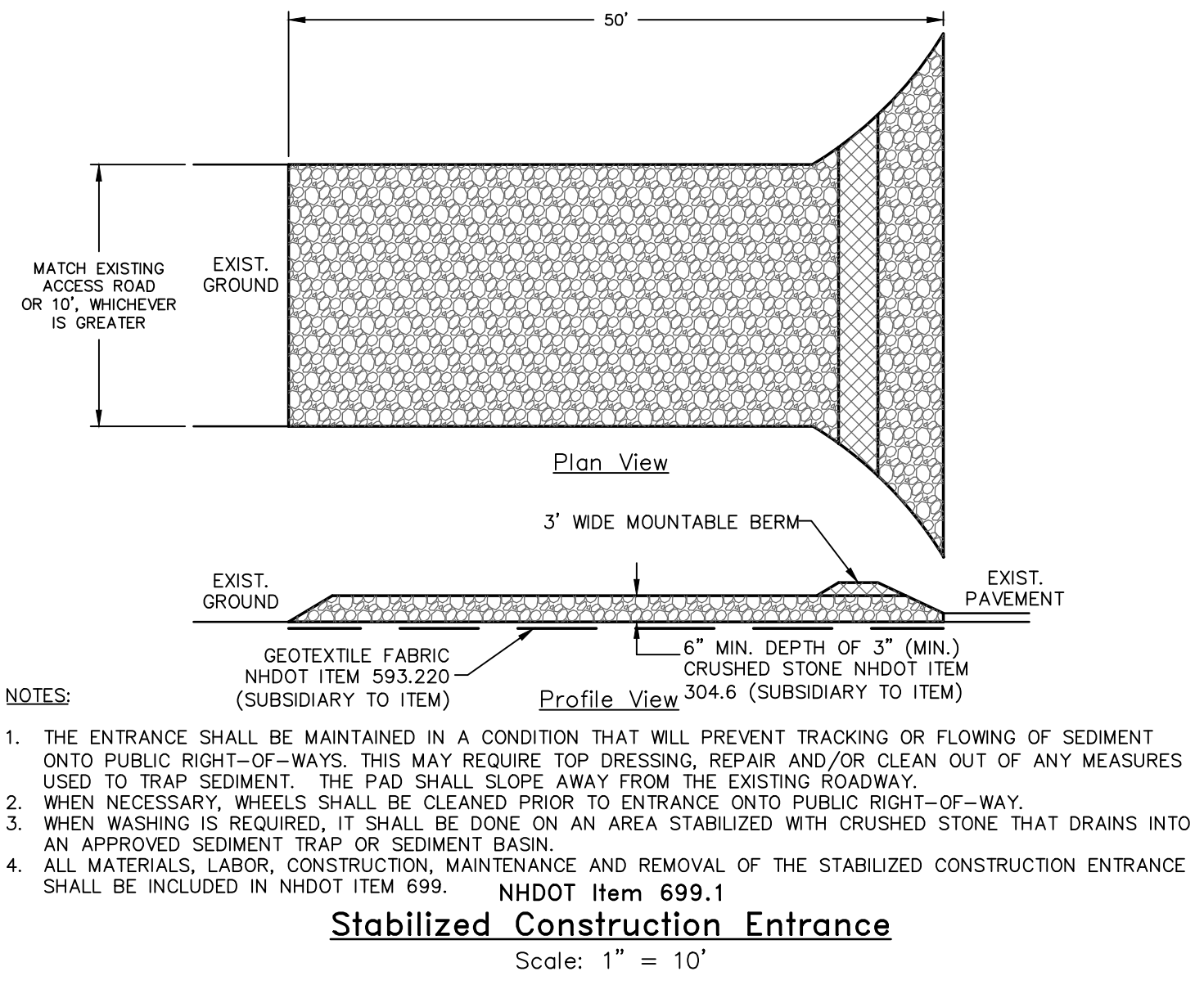
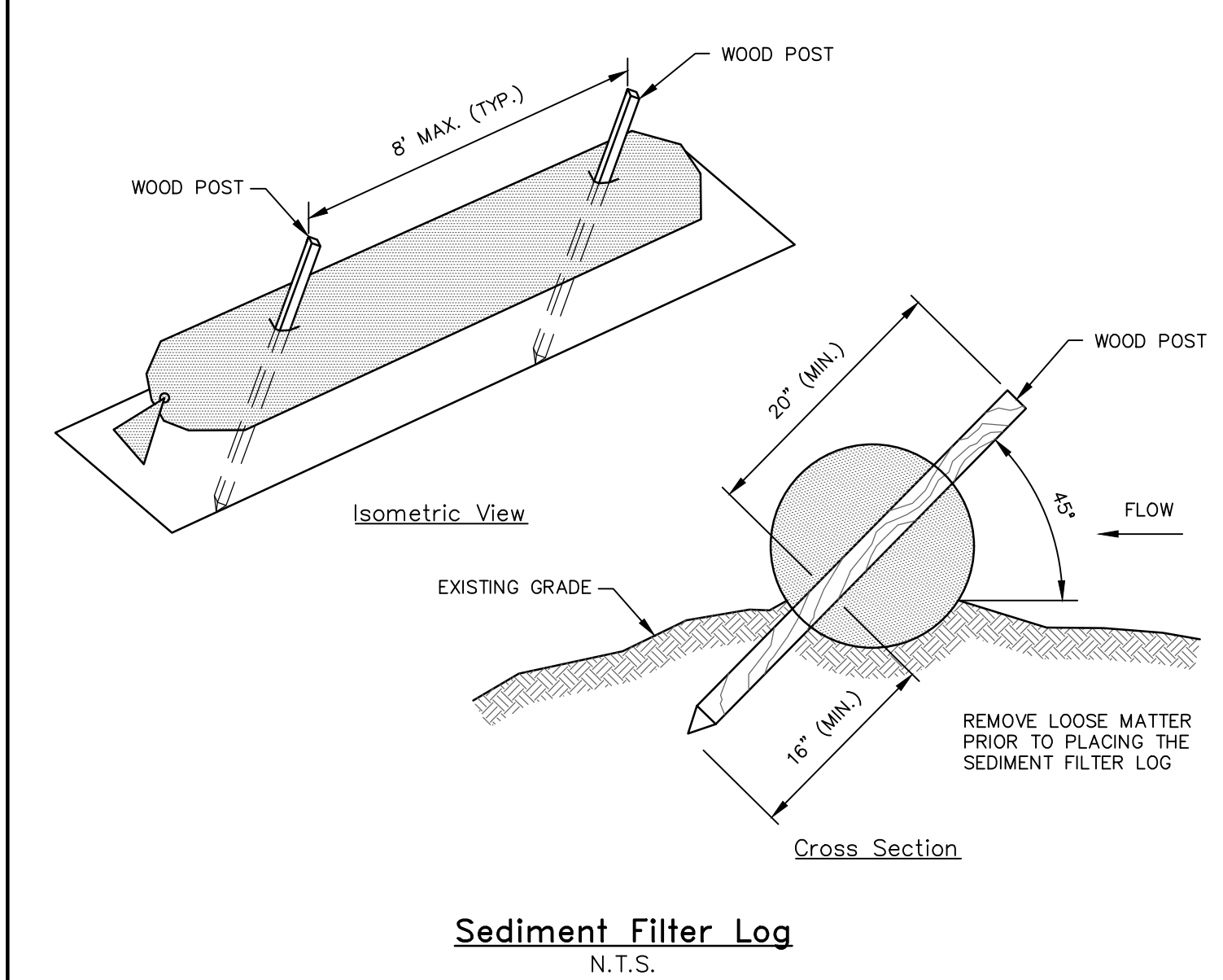
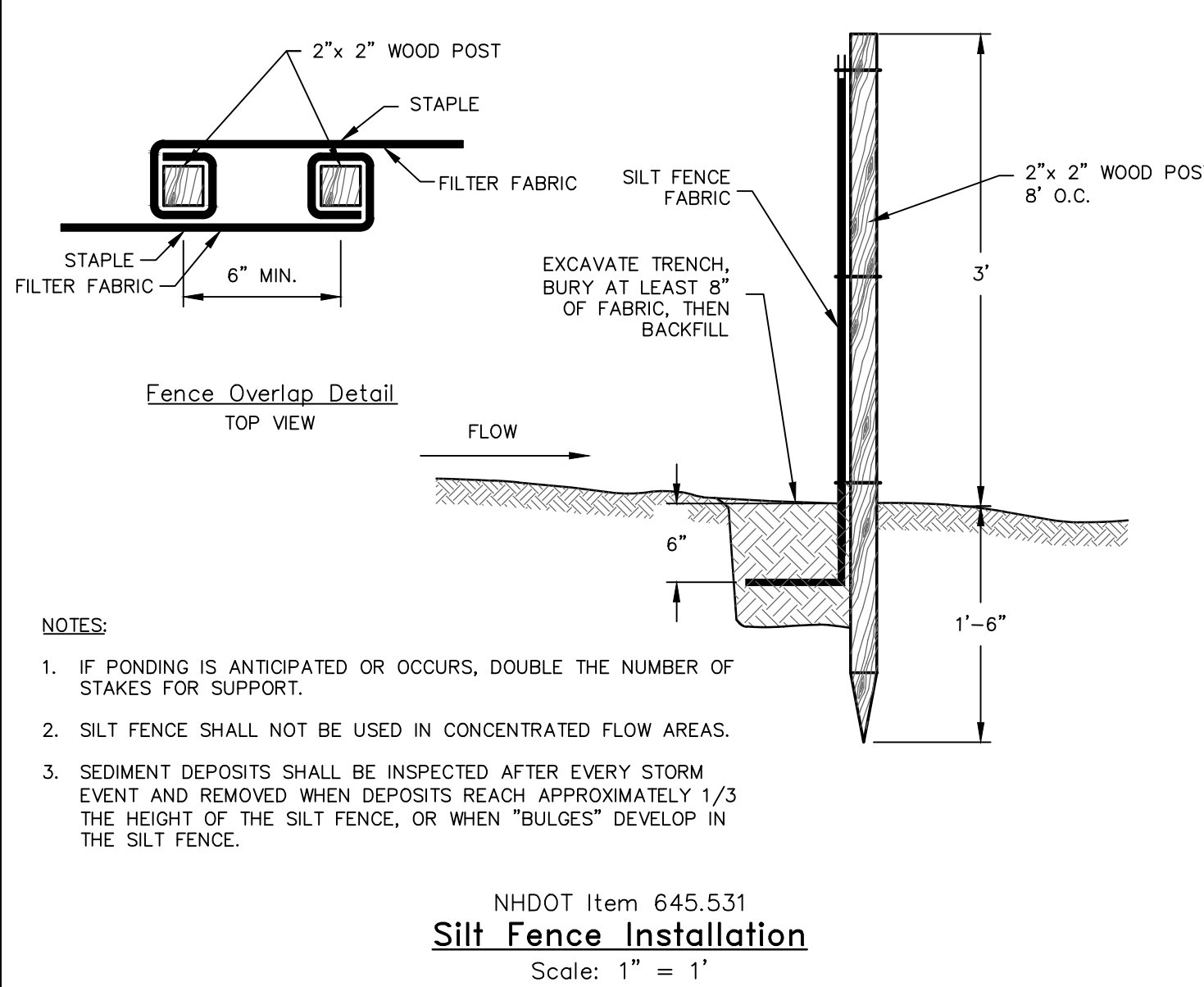
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2020-036

C3.32

SHEET 19 OF 21



**General Erosion-Control Requirements:**

The primary intent of the erosion control requirements and the construction sequence is to stage the project in a manner that will minimize the potential for erosion and the potential negative effects associated therewith. The Engineer shall be contacted and the plan shall be amended if the intent is not being achieved.

1. Erosion control definitions:  
 "Strip topsoil": Excavate topsoil, screen, and stockpile.  
 "Seed(ng)": Adjust ph, apply fertilizer, sow the seed mixture, apply mulch or erosion control matting, apply tackifier.  
 "Significant rainfall event": more than 1/4-inch of rain.

**PRELIMINARY NOT FOR CONSTRUCTION**

2. Install all erosion control measures prior to earthwork operation and maintain all erosion control measures and seeded embankments during construction. Erosion control shall be removed only upon the establishment of all vegetated areas.

3. All drainage structure inlets shall be protected using inlet protection or catch basin inserts.

4. Erosion control measures shall be implemented complying with the Best Management Practices (BMPs) of the New Hampshire Stormwater Management Manual, Volume 2, Post-Construction Best Management Practices Section & Design, by the NHDES, USDA SCS, and Rockingham County Conservation District, latest edition.

5. Do not disturb areas outside the limits of proposed work. Areas disturbed by the Contractor's operations shall be restored to their original condition at the Contractor's expense. All areas disturbed during construction not covered with buildings, structures or pavement shall receive four (4) inches of loam and seed.

6. The downhill side of all stockpiles shall be encircled with silt fence.

7. All ditches, swales, and other areas of concentrated flow shall be stabilized prior to directing flow to them. Inlet protection to be installed prior to directing flow to storm drains.

8. Before weekends, and if a significant rainfall event is anticipated during the construction of the cut/fill embankments, a temporary berm shall be constructed along the top of the fill embankments, and temporary slope drains (pipes) with temporary stone outlet aprons shall be installed at the base of the slopes.

9. The maximum time that any disturbed areas shall be left unstabilized shall be 14 days.

10. The smallest practical area shall be disturbed to complete the required construction, but no more than 5 acres at any one time.

11. Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway and the associated drainage is complete and stable.

12. An area shall be considered stable if one of the following has occurred:  
 A. Base course gravels have been installed in areas to be paved;  
 B. A minimum of 85 percent vegetated growth has been established;  
 C. A minimum of 3 inches of non-erosive material such as stone or riprap has been installed; or  
 D. Erosion control blankets have been properly installed.

13. All erosion control measures shall be inspected weekly, and after every 0.25 inches or greater rainfall within a 24-hour period.

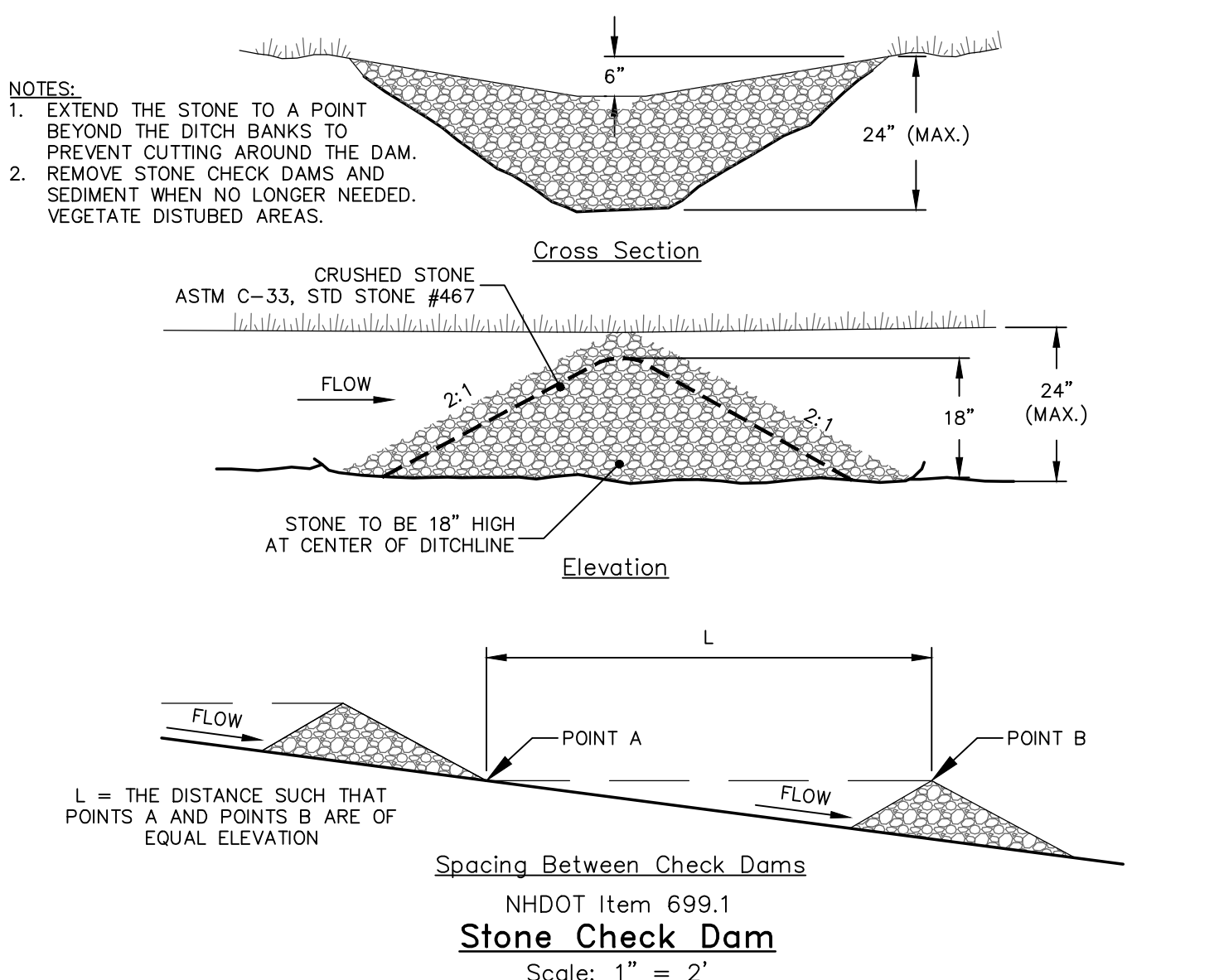
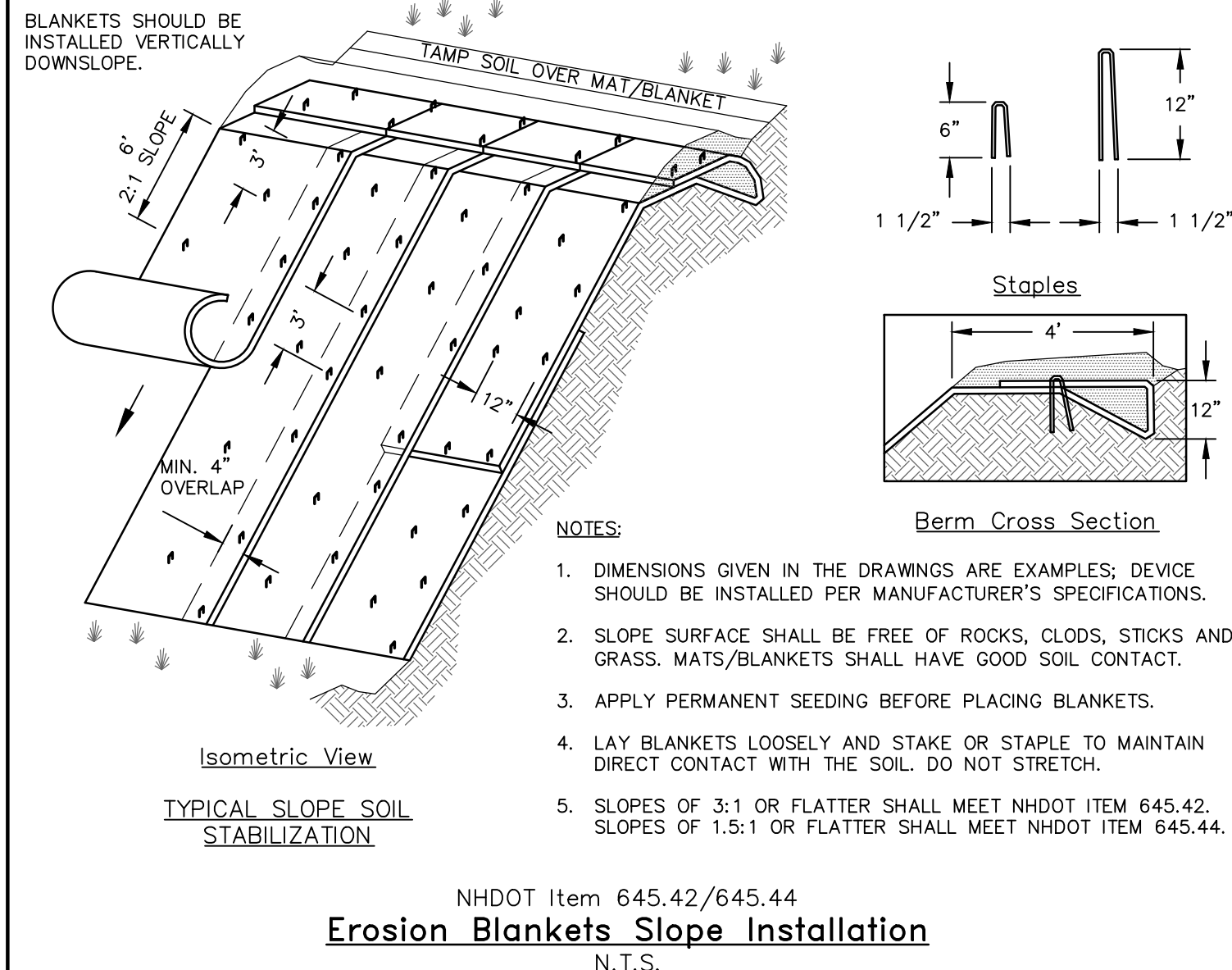
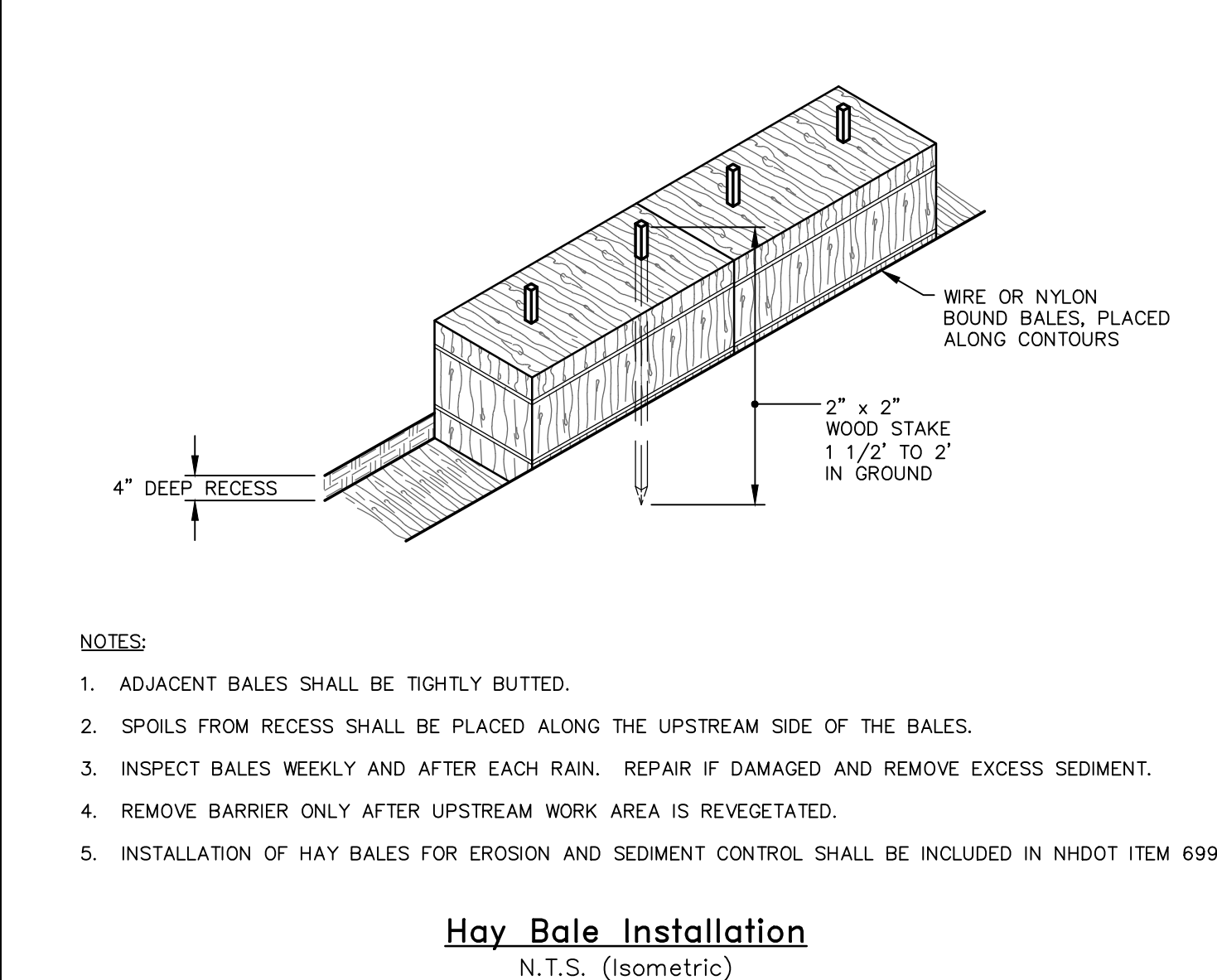
14. All roadways/parking areas and cut and fill slopes shall be stabilized within 72 hours of achieving finished grade.

15. Precaution shall be taken throughout the duration of construction activity to prevent, abate, and control the emission of fugitive dust, including but not limited to, wetting, covering, shielding, or vacuuming.

16. The project must meet the requirements and intent of RSA 430:53 and Agr 3800 relative to invasive species.

17. Temporary water diversions (swales, basins, etc.) must be used as necessary until areas are stabilized.

18. Detention basins and swales shall be installed before rough grading at the site.



**Seeding Notes:**

1. Seed mixture: Prior to construction, submit certification from seed supplier that the mixture complies with the requirements. Include the requirements on the certification.

2. Prepare subsoil by eliminating uneven areas; removing foreign materials, weeds, and other undesirable plants and their roots; scarifying subsoil to a depth of 3 inches.

3. Spread loam to yield a minimum depth of 4-inches after rolling. Rake smooth to remove stones and roots. Loam shall consist of loose friable topsoil with no admixture of refuse or material toxic to plant growth. Loam shall be generally free from stones, lumps, stumps, subsoil, roots, and weeds or similar objects larger than 2 inches in greatest diameter. The term as used herein shall mean that portion of the soil profile defined technically as the "A" horizon by the Soil Science Society of America. The minimum and maximum pH value shall be from 5.5 to 7.6. Loam shall contain a minimum of 3 percent, and a maximum of 10 percent, of organic matter as determined by loss by ignition. Not more than 65 percent shall pass a No. 200 sieve as determined by the wash test in accordance with ASTM D 1140. In no instance shall more than 20 percent of that material passing the No. 4 sieve consist of clay size particles.

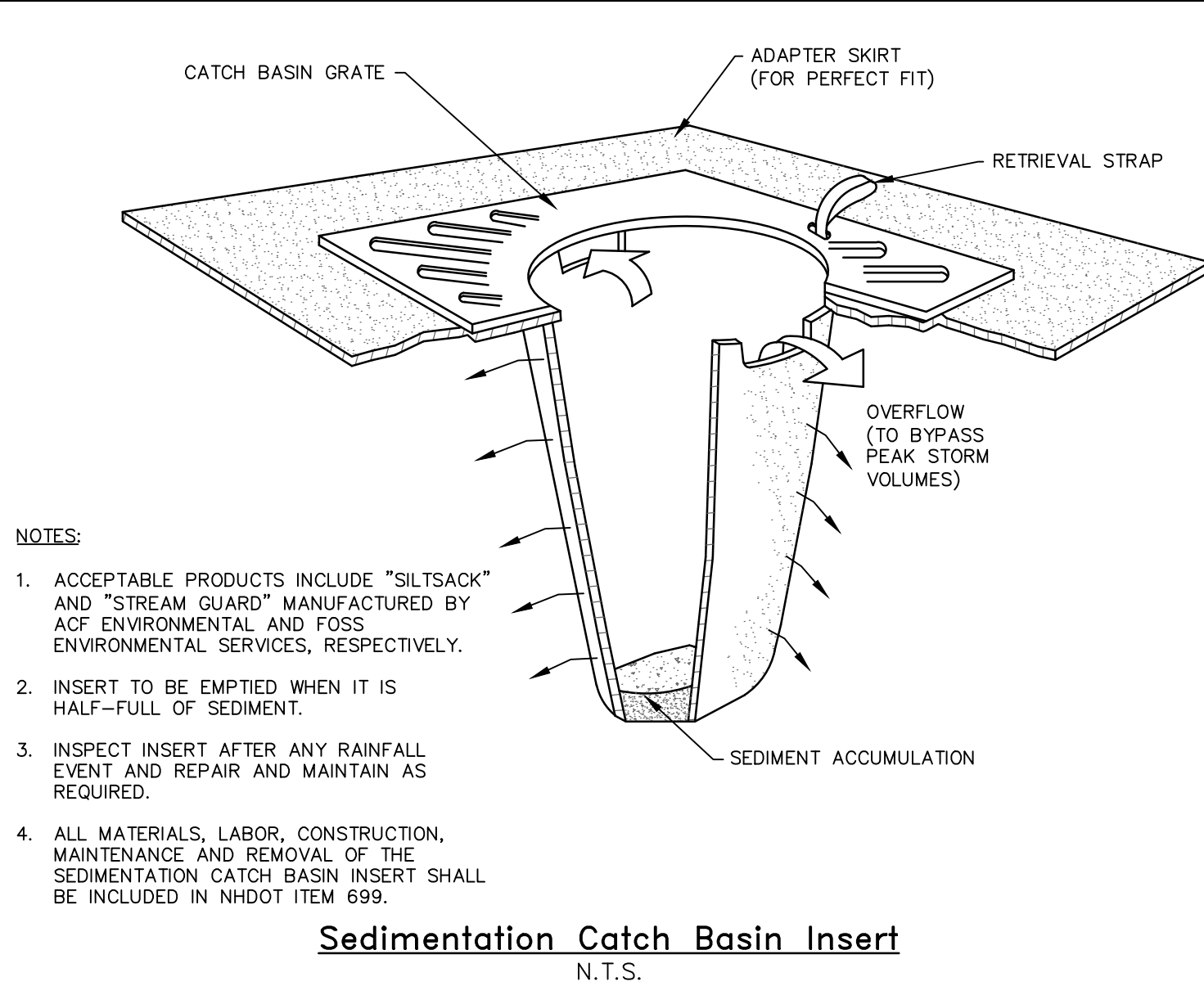
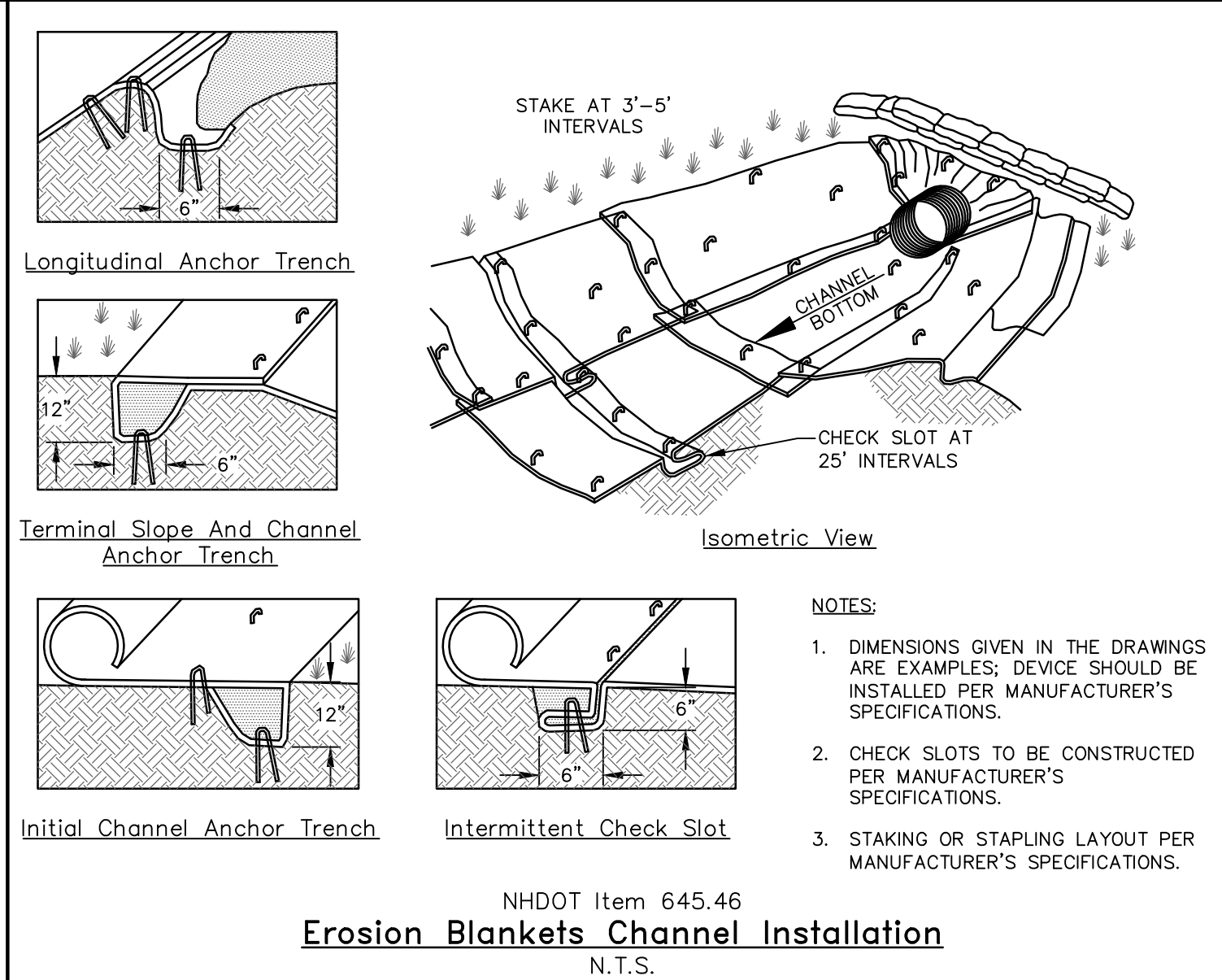
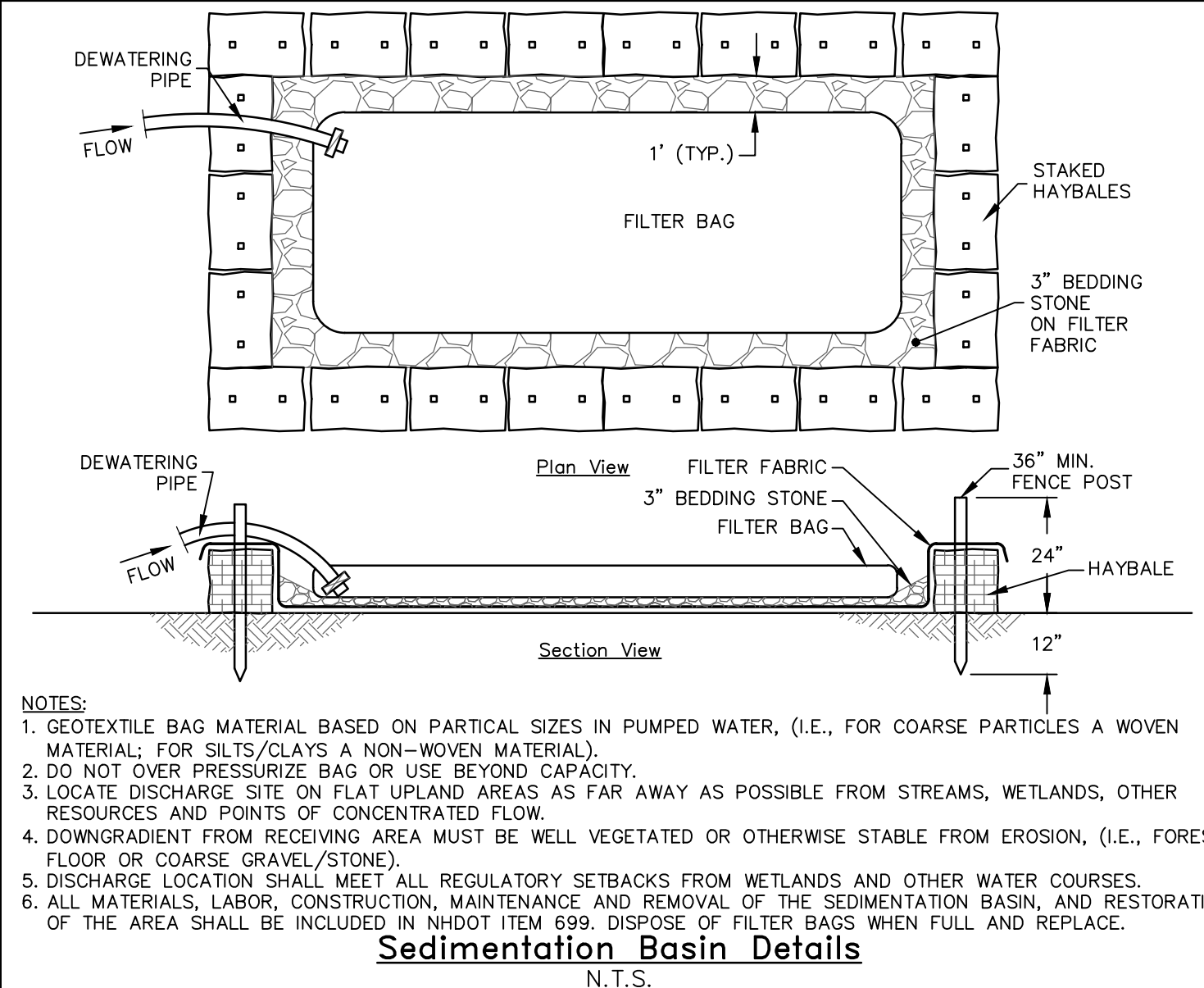
4. Apply agricultural limestone at a rate of 100 lbs, per 1000 sf.

5. Apply commercial grade 10-10-10 fertilizer at a rate of 10 lbs, per 1000 sf.

6. Sow uniformly with last year's crop of the local natural resource conservation service's "conservation mix" at a rate of 0.5lbs/1000 sf. Mixture is to have a germination rate of not less than 80 percent, and a purity of not less than 85 percent.

7. Roll seeded area with hand roller.

8. All ditches shall receive erosion control matting.



**Temporary:**

1. Bedding: Remove stones and trash that will interfere with seeding the area. Where feasible, till the soil to a depth of about 3 inches to prepare a seedbed and mix fertilizer into the soil. The seedbed should be left in a firm and smooth condition. The last tillage operation should be performed across the slope wherever practical.

2. Fertilizers: Fertilizer should be uniformly spread over the area prior to being incorporated into the soil. A minimum of 300 pounds per acre (7 pounds per 1,000 square feet) of 10-10-10 fertilizer, or its equivalent, should be applied.

3. Where it is impracticable to incorporate fertilizer and seed into moist soil, the seeded area should be mulched to facilitate germination.

4. Seed Mixture: Use any of the following:

Species	Per Acre	Per 1,000 s.f.	Dates	Depth
Winter Rye	112 lbs.	2.5 lbs.	8/15-9/5	1 inch
Oats	80 lbs.	2.0 lbs.	Spring-5/15	1 inch
Annual Ryegrass	40 lbs.	1.0 lb.	4/15-9/15	1/2 inch
Perennial Ryegrass	30 lbs.	0.7 lbs.	4/1-6/1 or 8/15-9/15	1/2 inch

5. Maintenance: If seeding fails to grow, it may need to be re-established to provide adequate erosion control. If weeds become a problem, they may need to be controlled by mowing.

**Critical Erosion Areas:**

Temporary seeding and/or mulching shall be used to protect exposed critical areas during construction. The following areas are particularly susceptible to erosion and shall receive extra attention when being inspected and maintained:

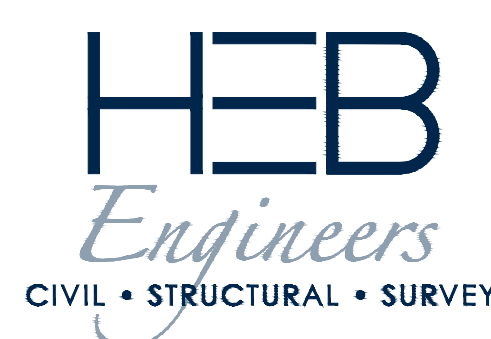
1. The larger cut and fill areas along the road and driveways.

2. Areas not worked or not to be worked for 3 weeks.

3. Areas of concentrated flow such as the ditches, swales, and toe of uphill facing slopes.

4. Stormwater ponds and level spreaders.

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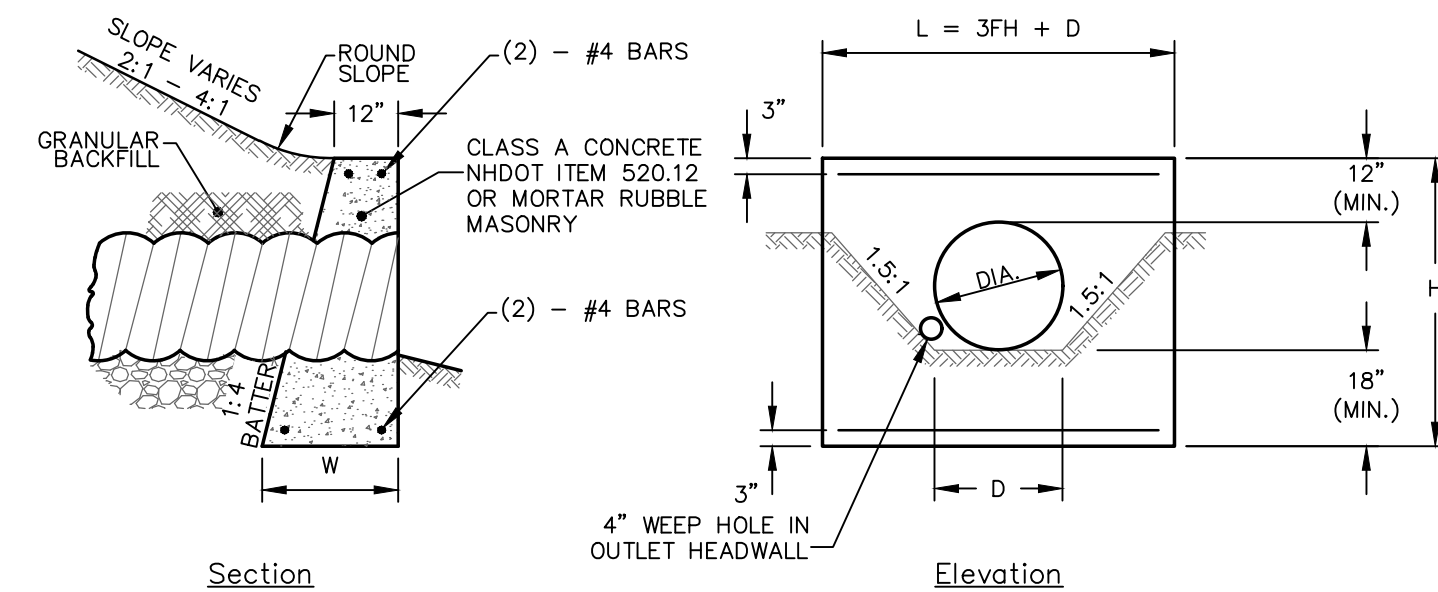
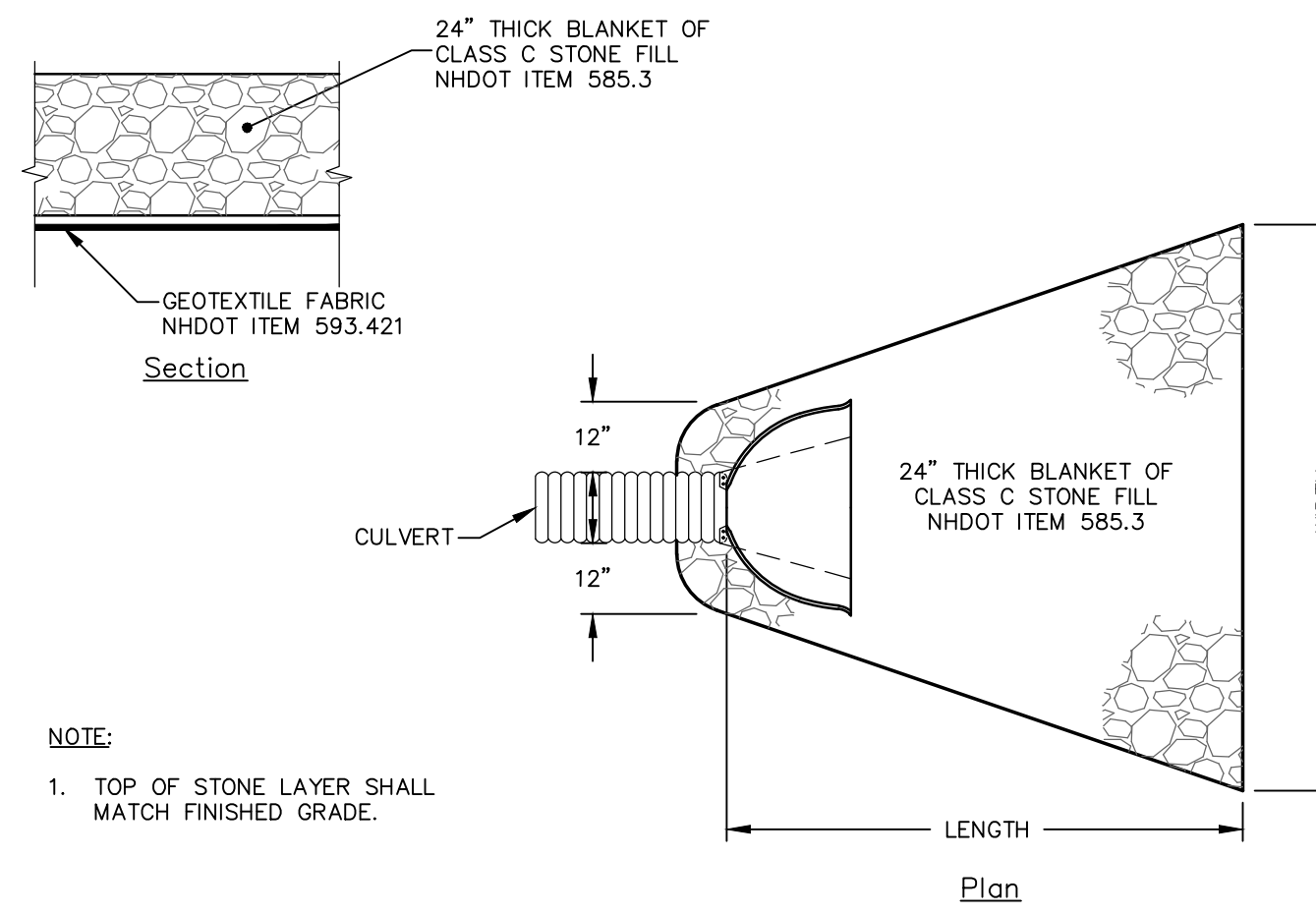


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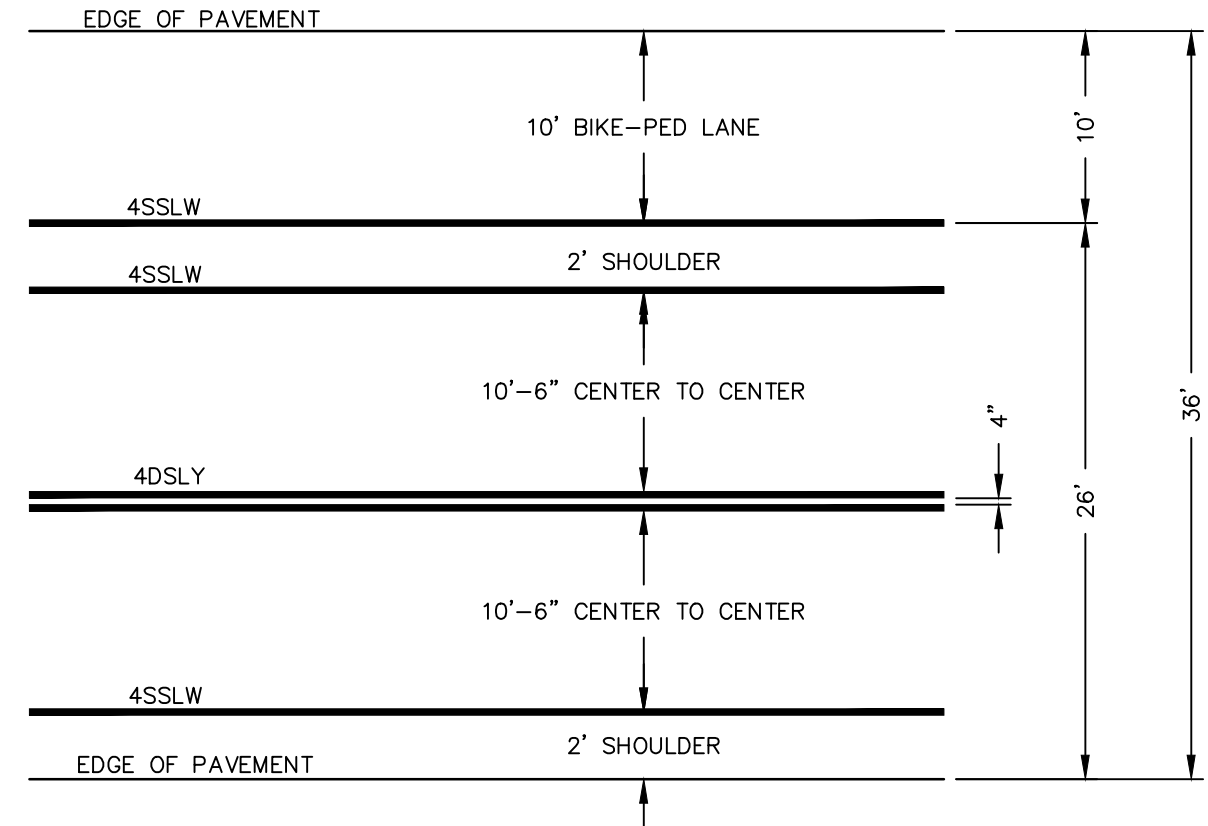
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Construction Details - General  
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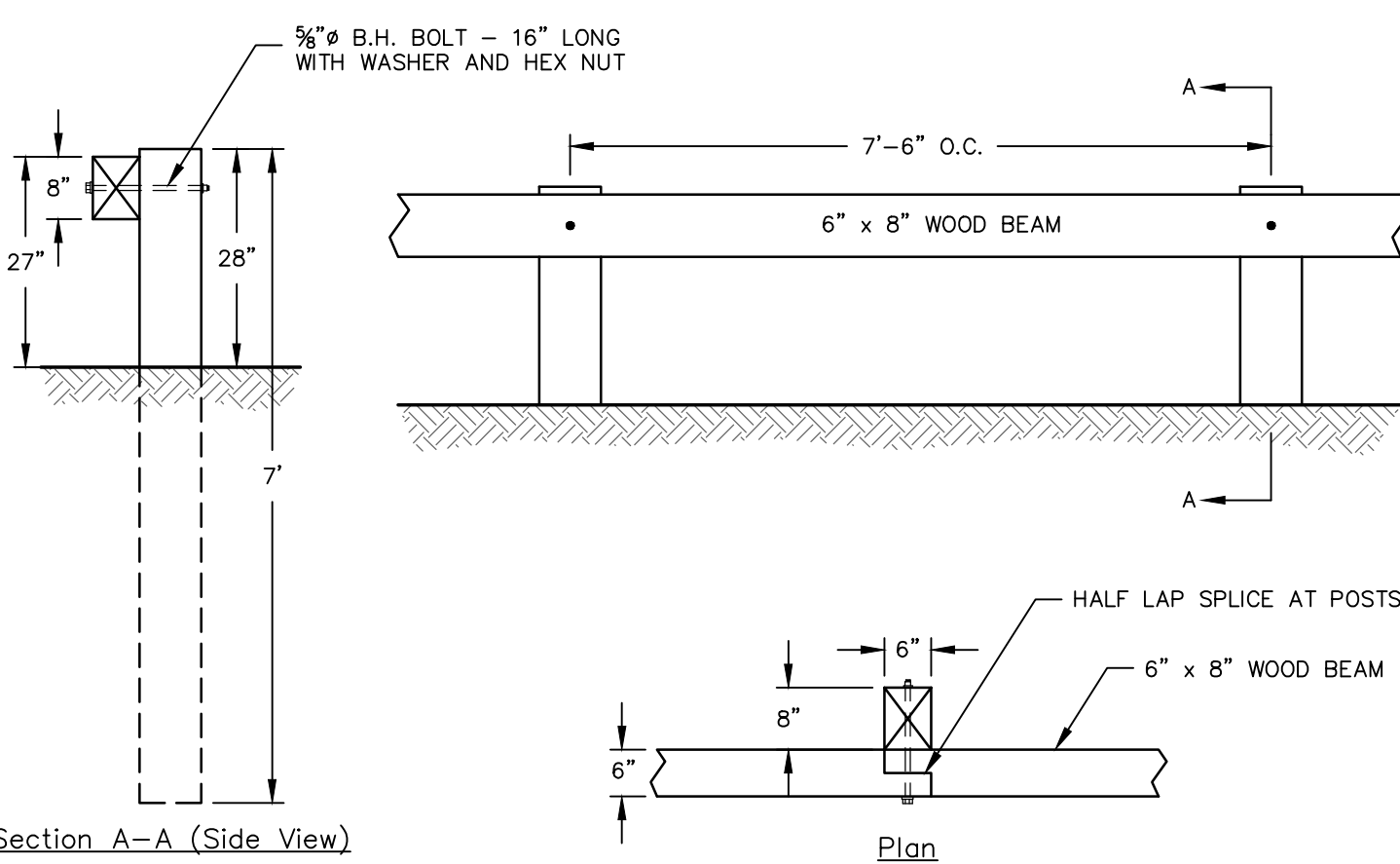
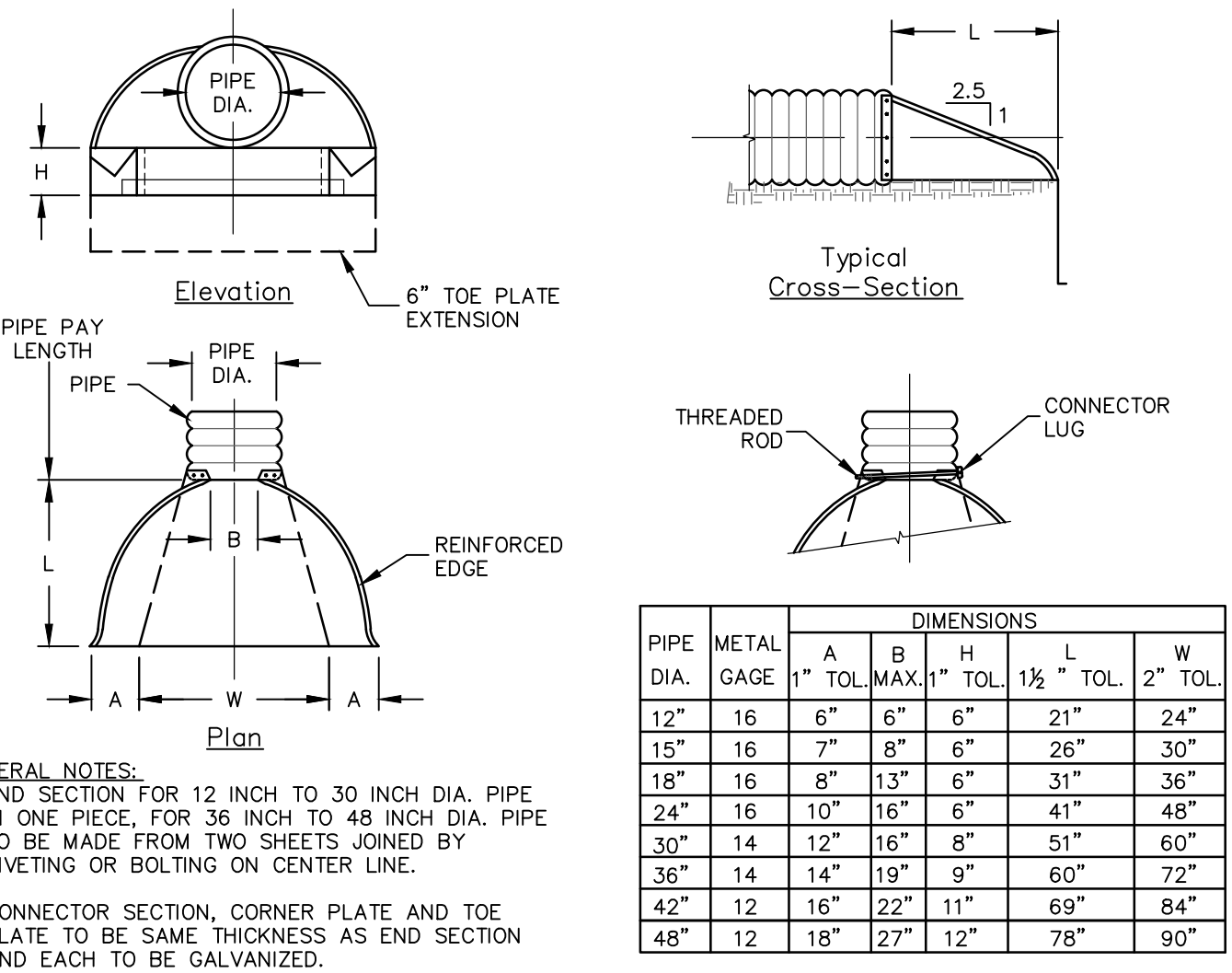
2020-036  
C5.11  
SHEET 20 OF 21



DIAMETER D INCHES	STEEL PER STANDARD HEADER LB.	LENGTH OF BARS	EXC. FOR 1' DEPTH CU. YD.	HEADER LENGTH L	HEADER HEIGHT H	FILL HEIGHT FH	WIDTH AT BOTTOM OF HEADER W	"L" ENDWALL EXC. FOR 1' DEPTH CU. YD.
12	9	3'-2"	0.789	3'-6"	3'-6"	0'-10"	0'-10 1/2"	1.057
15	11	3'-10"	0.947	4'-6"	3'-9"	1'-1"	1'-11 1/2"	1.232
18	14	5'-2"	1.111	5'-6"	4'-0"	1'-4"	2'-0"	1.406
24	20	7'-2"	1.451	7'-6"	4'-6"	1'-10"	2'-1 1/2"	1.776
30	25	9'-2"	1.810	9'-6"	5'-0"	2'-4"	2'-3"	2.164
36	31	11'-2"	2.187	11'-6"	5'-6"	2'-10"	2'-4 3/4"	2.572
42	36	13'-2"	2.581	13'-6"	6'-0"	3'-4"	2'-6"	3.000
48	42	15'-2"	3.000	15'-6"	6'-6"	3'-10"	2'-7 1/2"	3.447
54	47	17'-2"	3.432	17'-6"	7'-0"	4'-4"	2'-9"	3.914
60	52	19'-2"	3.882	19'-6"	7'-6"	4'-10"	2'-10 1/2"	4.401
66	58	21'-2"	4.350	21'-6"	8'-0"	5'-4"	3'-0"	4.907
72	63	23'-2"	4.638	23'-6"	8'-6"	5'-10"	3'-1 1/2"	5.433

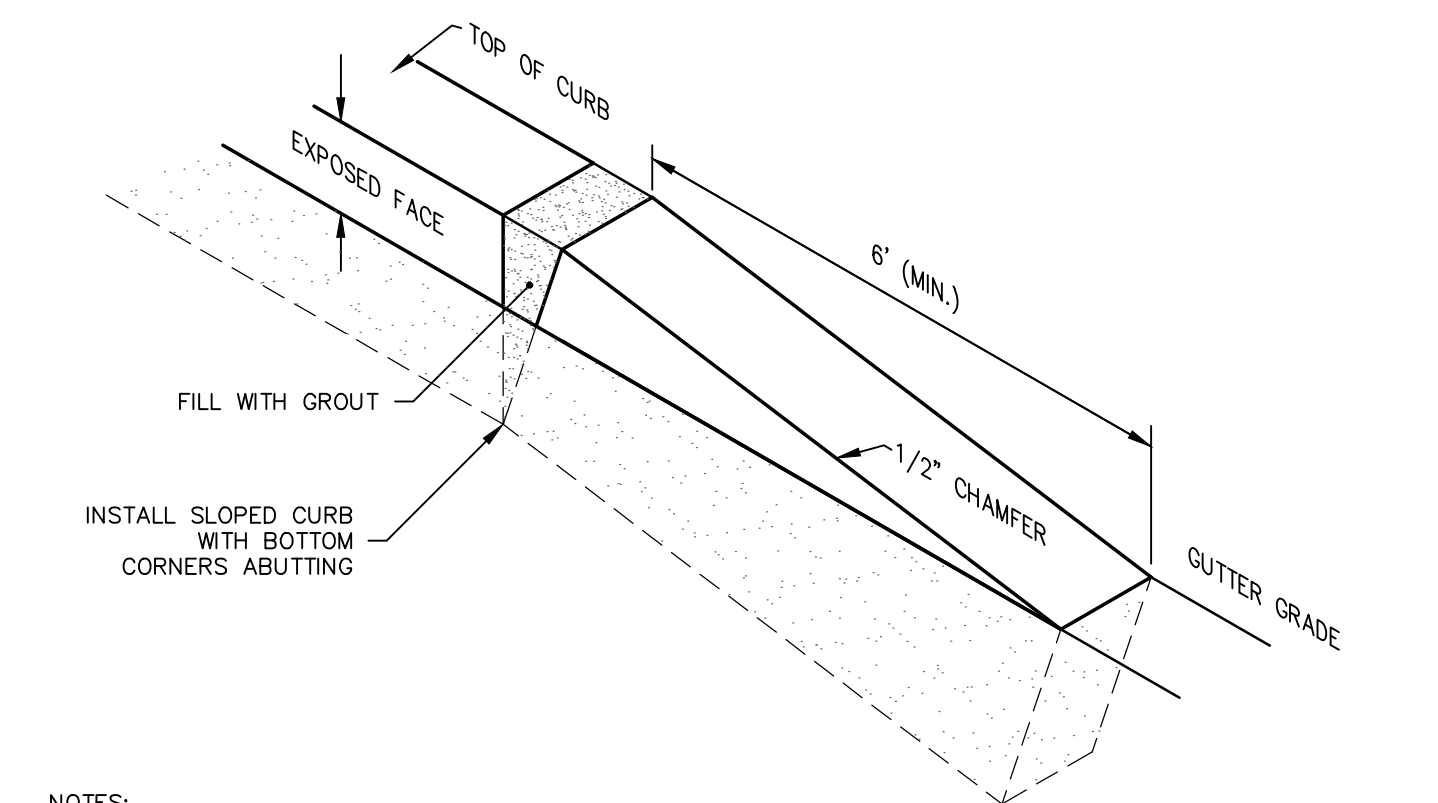
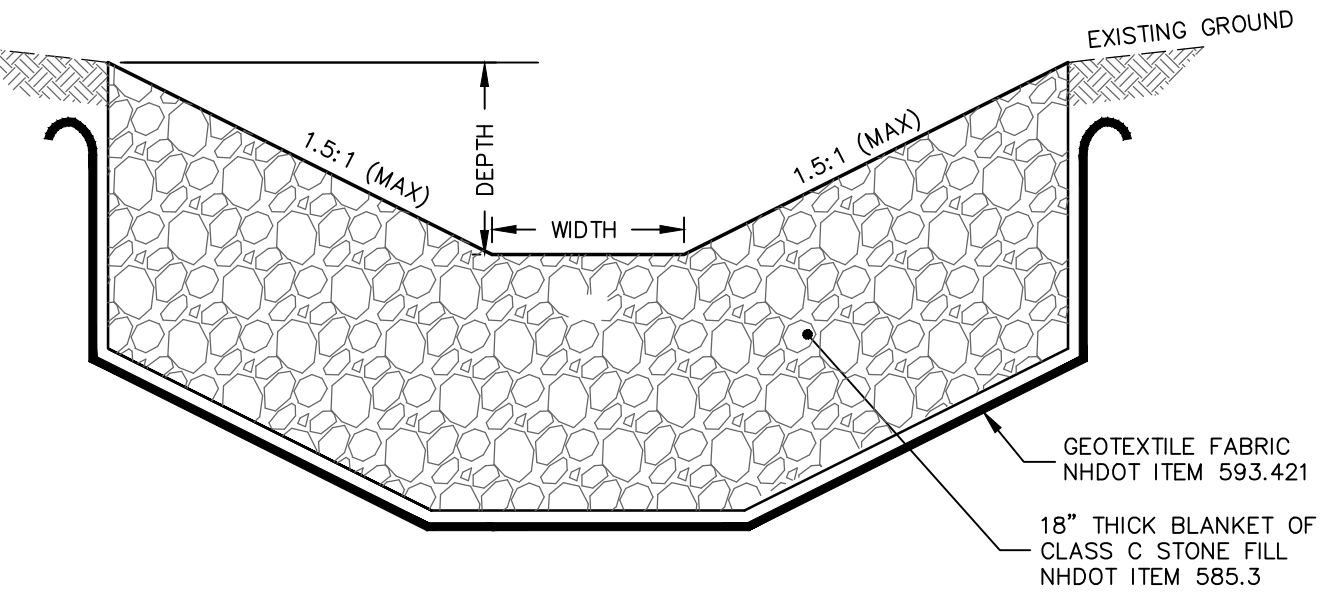
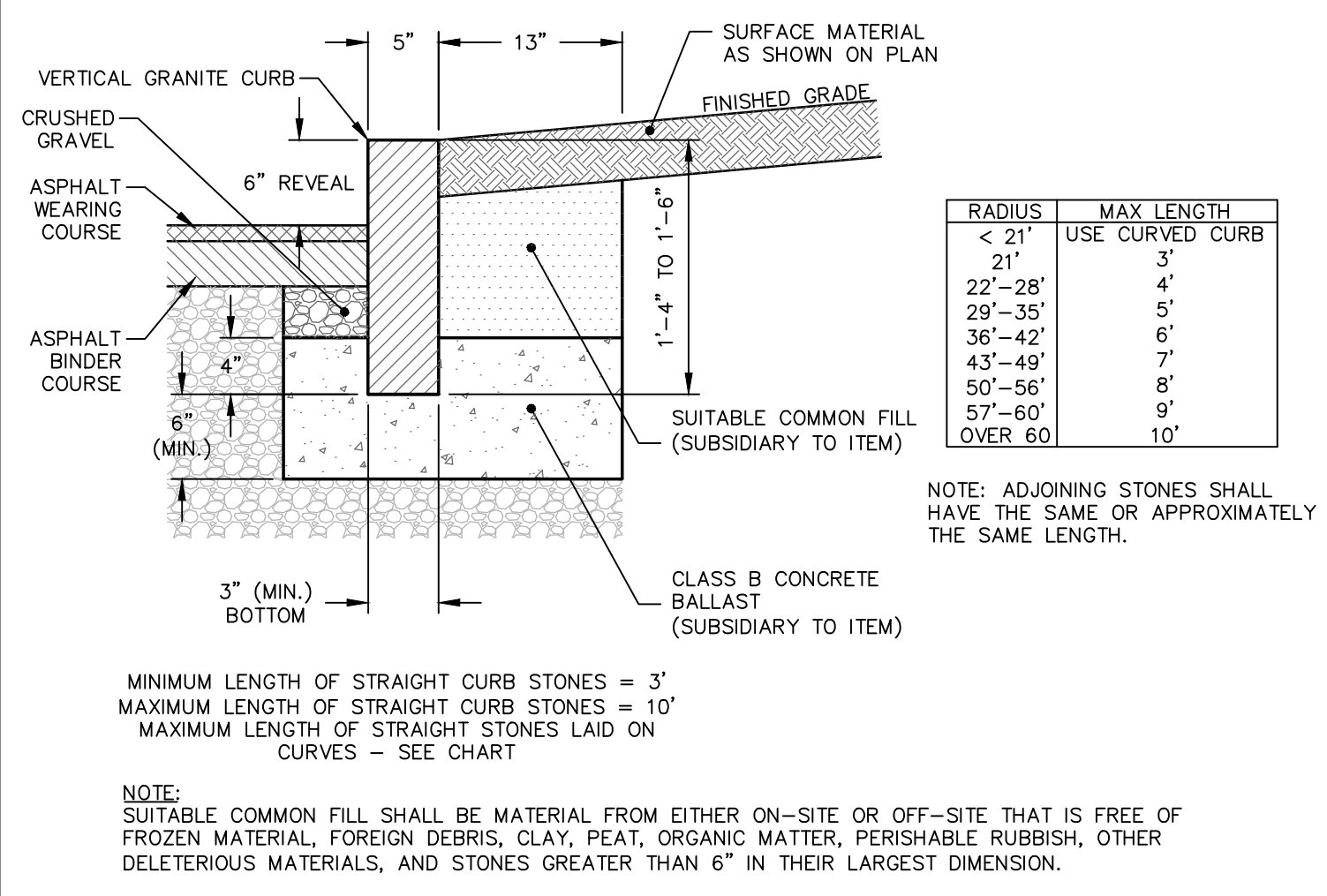
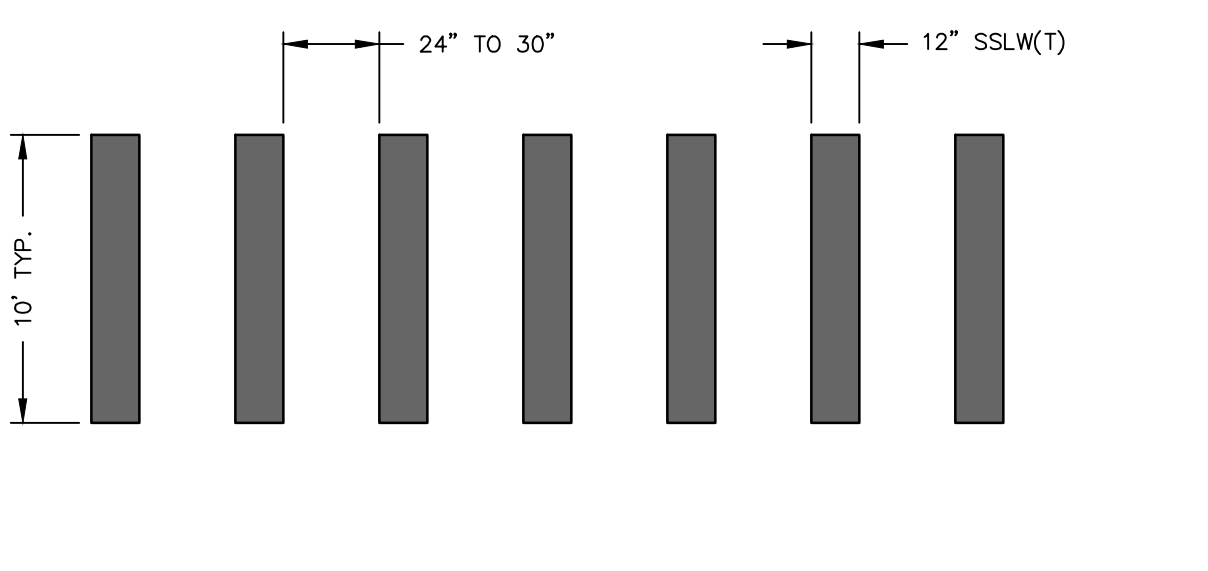


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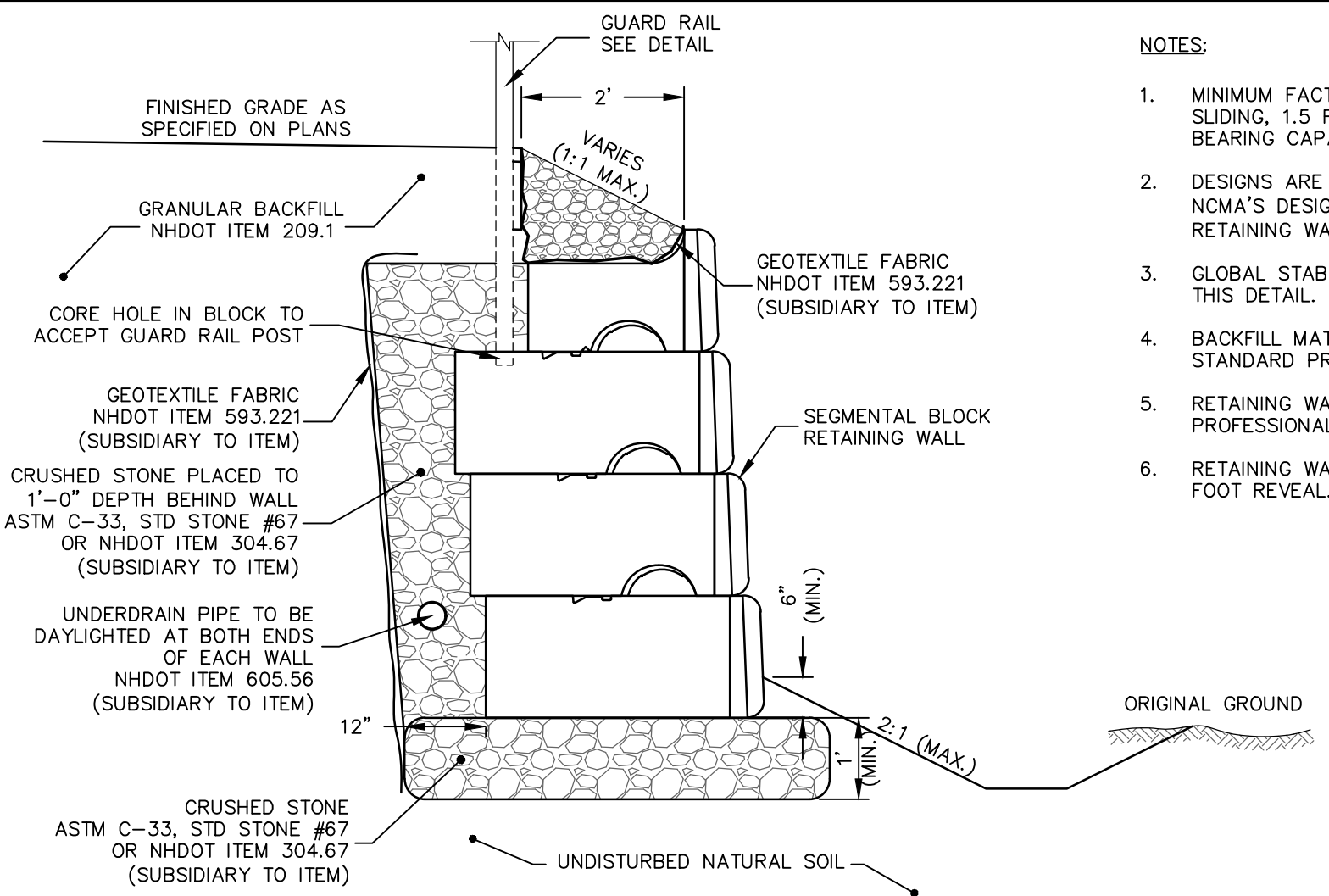


NOTE:  
1. BEAM AND POST DIMENSIONS SHOWN ARE NOMINAL.  
2. ALL WOOD MEMBERS ARE TO BE PRESSURE TREATED.

NHDOT ITEM 606.5107

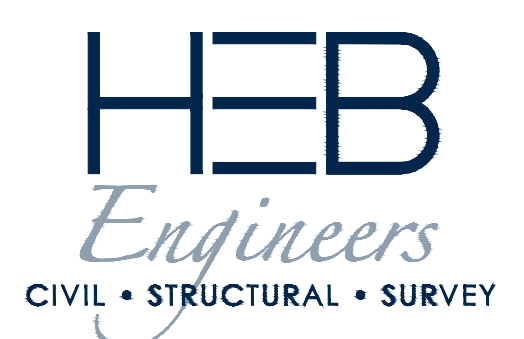


NOTE:  
1. INSTALL IN ACCORDANCE WITH VERTICAL GRANITE CURB DETAIL.  
2. GRANITE CURB "TIP-DOWNS" TO BE PROVIDED AT BEGINNING AND END OF ALL VERTICAL GRANITE CURBING.  
3. GRANITE CURB "TIP-DOWNS" TO BE PROVIDED AT ALL A.D.A. ACCESS RAMPS.



NOTE:  
1. MINIMUM FACTORS OF SAFETY ARE 1.5 FOR SLIDING, 1.5 FOR OVERTURNING AND 2.0 FOR BEARING CAPACITY.  
2. DESIGNS ARE IN GENERAL ACCORDANCE WITH NCMA'S DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS (2ND ED.).  
3. GLOBAL STABILITY HAS NOT BEEN ADDRESSED IN THIS DETAIL.  
4. BACKFILL MATERIAL TO BE COMPACTED TO 95% STANDARD PROCTOR.  
5. RETAINING WALL SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.  
6. RETAINING WALL SHALL BE PAID FOR BY SQUARE FOOT REVEAL.

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# Schematic Design Drawings

for the

# Corcoran's Pond Trail Improvements

located in and prepared for the

# Town of Waterville Valley, New Hampshire

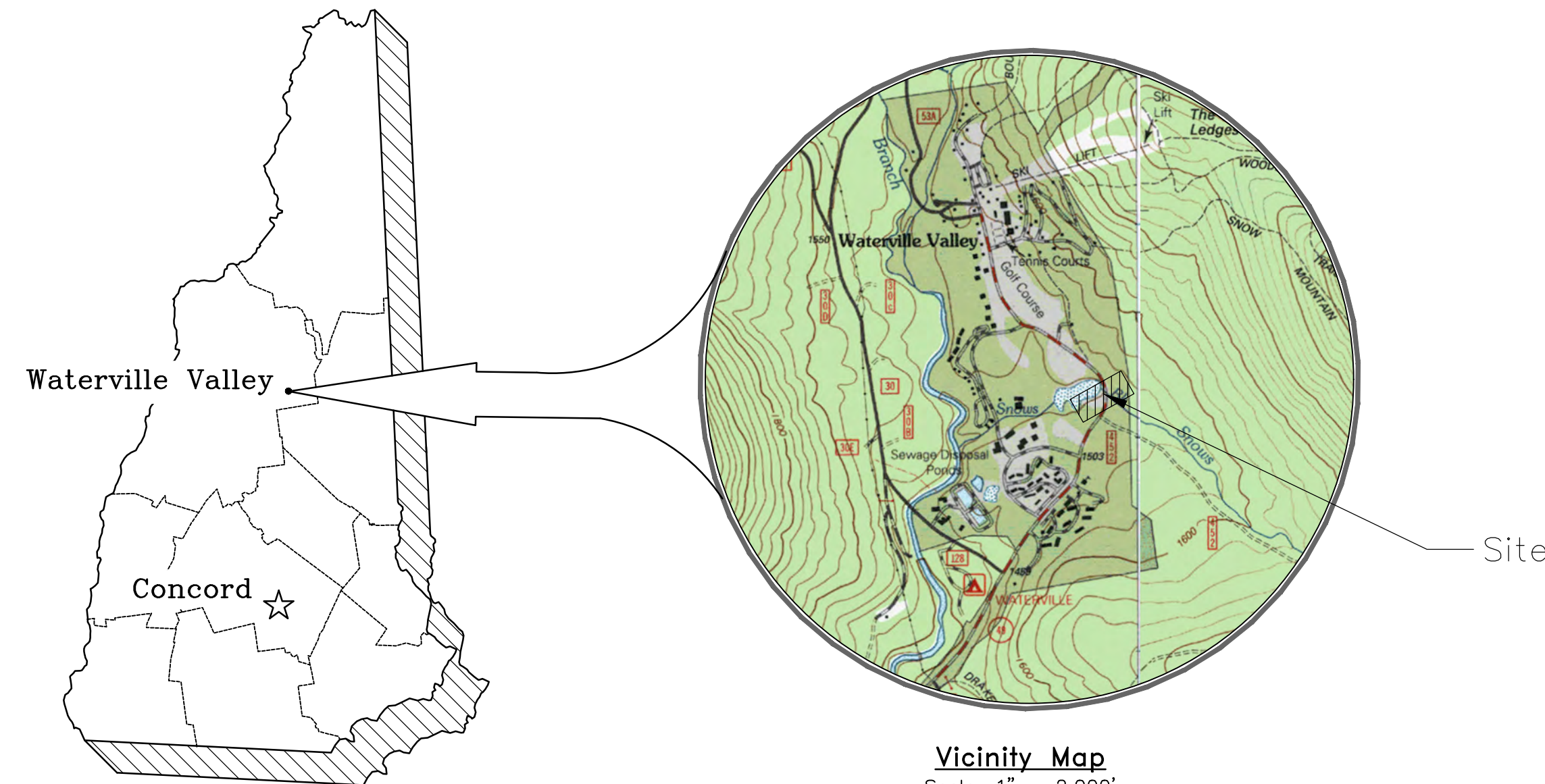
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Issued: May 22, 2020

CO.01  
SHEET 1 OF 13

2020-037  
Cover Sheet  
Corcoran's Pond Trail Improvements

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Waterville Valley, NH 03215

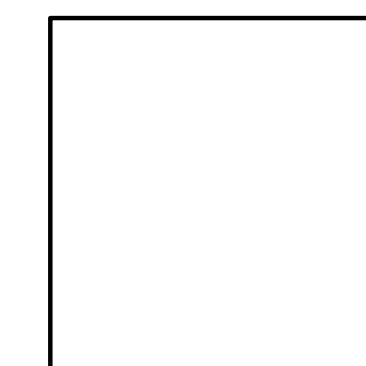


**Vicinity Map**  
Scale: 1" = 2,000'  
Source: USGS Map  
(City/Town, ST)

### Sheet Index

Number	Sheet	Sheet Name	Latest Issue
<b>Civil</b>			
1.	C0.01	Cover Sheet	05/22/2020
2.	C0.02	General Notes	05/22/2020
3.	V1.01	Existing-Features Plan	05/22/2020
4.	C1.11	Site Layout Plan	05/22/2020
5.	C2.11	Plan & Profile (Sta. 0+00 - 5+00)	05/22/2020
6.	C2.12	Plan & Profile (Sta. 5+00 - 10+00)	05/22/2020
7.	C2.13	Plan & Profile (Sta. 10+00 - 15+89)	05/22/2020
8.	C3.00	Typical Sections	05/22/2020
9.	C3.01	Cross Sections (Sta. 0+00 - 10+00)	05/22/2020
10.	C3.02	Cross Sections (Sta. 10+50 - 15+89)	05/22/2020
11.	C5.11	Construction Details - General	05/22/2020
12.	C5.12	Construction Details - General	05/22/2020
13.	S1.11	Bridge Plan & Section	05/22/2020

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**General Construction Requirements:**

- Contractor is responsible for all work shown on the drawings, unless otherwise noted. Provide all materials and labor necessary to complete site plans.
- All work shall conform to the latest edition of the NHDOT Standard Specifications for Road & Bridge Construction.
- Perform all work in compliance with Federal, State, and Local permit approvals. Copies of all permit approvals shall be maintained at the project site.
- Make all necessary construction notifications and apply for and obtain all necessary permits, pay all fees and post all bonds associated with the work indicated on the drawings.
- Site security and job safety are the sole responsibility of the Contractor. All construction activities shall comply with OSHA standards and local requirements.
- The location of existing utilities are approximate and have not been independently verified. Contact "Dig Safe" 72 hours prior to any excavation at 1-888-344-7233 and any other utility owners for accurate utility marking. Contractor to pay for all damages which may occur by the failure to locate and preserve any utilities.
- At least one (1) week prior to site clearing/demolition, request Owner's Representative to identify features to remain.
- Field-verify the location, size, inverts and types of existing pipes at all proposed points of connection prior to ordering materials. Where an existing utility is found to be in conflict with the proposed work, the location, elevation and size of the utility shall be accurately determined without delay, and the information furnished in writing to the Owner's Representative for resolution of the conflict.
- Rim elevations of proposed drainage structures are approximate in paved areas. Final elevations are to be set flush and consistent with the grading plan. Adjust all other rim elevations to finished grade within the limit of work.
- All site signage and pavement markings shall conform to the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD) and N.H. Department of Transportation Standards.
- Provide traffic control and flaggers (if required) complying with the State Department of Transportation requirements.
- Contractor shall remove and replace or repair all curbs, sidewalk, pavement and other items damaged by construction activities to, at a minimum, their original condition, and to the satisfaction of the Owner and Owner's Representative.
- Contractor shall remove and dispose of all debris and excess excavated material from within the construction limit of work, to a suitable site provided by the Contractor, in compliance with all state and local regulations. Any excess suitable material may remain on site at the request of the Owner.
- When power or telephone pole support is required, the Contractor shall provide a minimum 48-hour notification to utility agency.
- Open trenches in the roadway must be backfilled at the end of the workday. Open trenches outside of the roadway may be left open if the Contractor provides adequately safe barricading and lights. Two-way traffic must be maintained during off-work hours.
- All existing sewer, storm drain and water lines encountered during construction are to remain in service. Any lines damaged during construction shall be repaired by the Contractor at the Contractor's expense, except when in direct conflict with the new service or when not shown or indicated.
- All structures and pipelines located adjacent to the trench excavation shall be protected and firmly supported by the Contractor until the trench is backfilled. Injury to such structures caused by, or resulting from, the Contractor's operations shall be repaired at the Contractor's expense. All utilities requiring repair, relocation or adjustment as a result of the project shall be coordinated through the respective utility.
- Severing existing utilities for abandonment or removal of a segment from service shall be performed in such a manner as to allow the remaining active segment to continue in its intended service. Cap active segments with appropriate fittings, joint restraint, etc., to ensure their integrity. Plug ends of abandoned pipe segments with concrete, unless special circumstances dictate plugging abandoned pipes with blind flanges, restrained mechanical joint plugs, etc. as appropriate.
- Do not disturb areas outside the limits of proposed work. Areas disturbed by the Contractor's operations shall be restored to their original condition at the Contractor's expense. All areas disturbed during construction on the track side of the path shall be stabilized with a 4-inch thick blanket of standard stone size #357, NHDOT Item 304.357. All other disturbed areas not covered with buildings, structures or pavement shall receive 4 inches of loam and seed.
- Vehicle access to driveways and access to businesses shall be maintained at all times during construction.
- The Contractor shall provide a construction schedule to the Owner prior to commencing work and shall update the schedule monthly.
- Any contaminated materials encountered during excavation shall be re-used as fill material where possible or legally disposed of off-site.
- Pathway layout is subsidiary and is the responsibility of the Contractor.
- The Contractor shall coordinate construction activities, materials storage, and equipment staging areas with the Owner's Representative.

**As-Built Measurements and Record Drawings:**

- Record as-built dimensions on a daily basis and review with the Owner's Representative on a weekly basis. Submit complete record information on a clean set of drawings to Owner's Representative(s) upon substantial completion of work.
- As-built dimensions shall include locations of all surface features and subsurface utility systems including, but not limited to:
  - Location, size, depths, rims, angle points, and invert elevations of buried pipes, utilities, vaults, etc.
  - Field changes of dimension and detail.
  - Details not on original drawings.

**Approvals Received:**

NHDES Wetlands Permit: Pending

**Utility Notes:**

- Perform all work in compliance with federal, state, and local permit approvals. Copies of all permit approvals shall be maintained at the project site.
- Site security and job safety are the sole responsibility of the Contractor. All construction activities shall comply with OSHA standards and local requirements.
- The location of existing utilities are approximate and have not been independently verified. Contact "Dig Safe" 72 hours prior to any excavation at 1-888-344-7233 and any other utility owners for accurate utility marking. Contractor shall pay for all damages which may occur by the failure to locate and preserve any utilities.
- The location, size, depth, and specifications for construction of proposed utility services shall be installed complying with the requirements of the respective utility company (electric, telephone, cable, etc.).
- Field-verify the location, size, inverts and types of existing pipes at all proposed points of connection prior to ordering materials. Where an existing utility is found to be in conflict with the proposed work, the location, elevation and size of the utility shall be accurately determined without delay, and the information furnished in writing to the owner's representative for resolution of the conflict.
- Make all arrangements and pay any fees for relocation and/or alteration of utilities such as electric, telephone, cable, and any other private utilities.
- Make all necessary construction notifications and apply for and obtain all necessary permits not provided by owner, and pay all fees and post all bonds associated with the work indicated on the drawings.

**Project Intent Notes:**

- The intent of the project is to construct an 8-foot wide gravel pathway between the the Waterville Town Beach and the existing pathway on the north side of Corcoran's Pond including associated features such as a drainage, lighting, signage, and a bridge extension adjacent to New Hampshire Route 49.

**Material Testing:**

- It is anticipated the following material testing program will be implemented and be the responsibility of the Owner.
- Contractor shall notify Owner's Representative at least 48 hours prior to placement of materials noted below.
- Contractor is responsible for supplying and installing construction materials that meet NHDOT Specifications.
- Testing program outlined below assumes phased construction.

NHDOT Item	Description	Test Location & Frequency
TBD	TBD	TBD

**Construction Sequence:**

In addition to complying with the "General Erosion-Control Requirements", the construction sequence is based on construction beginning in the spring 2020 and completed in the summer of 2020. Should the construction take longer than assumed, the Contractor shall stabilize the site in accordance with the Winter Construction Standards at no additional cost to the Owner, and the Engineer shall be contacted to determine if additional measures are needed.

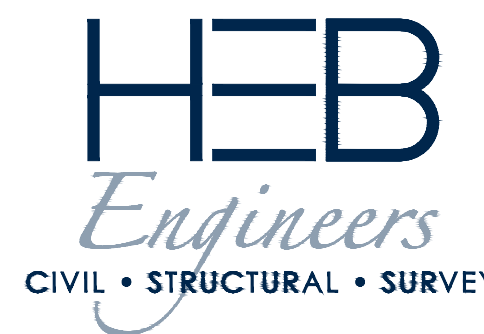
**Spring/Summer 2021:**

- Install stabilized construction entrance.
- Install silt fence and other temporary erosion-control measures.
- Strip and stockpile topsoil.
- Install new drainage controls and utilities as identified.
- Excavate pathway and concrete pad areas to subgrade and proof roll.
- Install crushed gravel for pathway and concrete pad areas and compact.
- Fine grade base gravel.
- Place the pavement and concrete as indicated on plans.
- Loam, seed, mulch, and apply tackifier to all disturbed areas. Install erosion control fabric to all 3:1 or steeper slopes and install check dams in ditches.
- After vegetation is sufficiently established in the opinion of the Engineer, remove the temporary erosion control measures.
- Site must be stabilized prior to September 2021.

**Winter Construction Notes:**

- All proposed vegetated areas which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melts.
- All ditches or swales which do not exhibit 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
- After November 15th, incomplete road or parking surfaces, where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel per NHDOT Item 304.3.

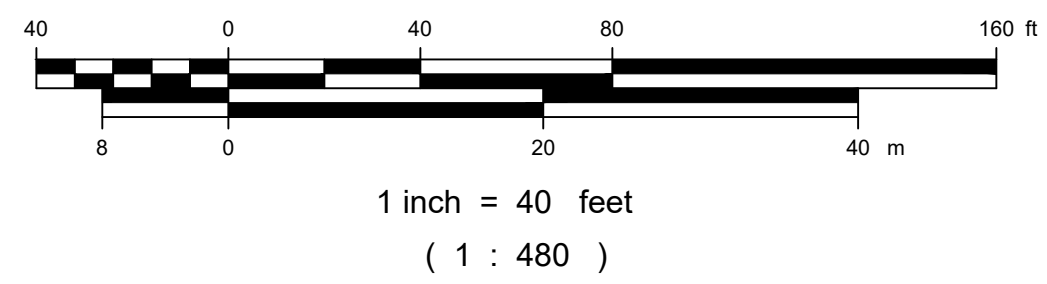
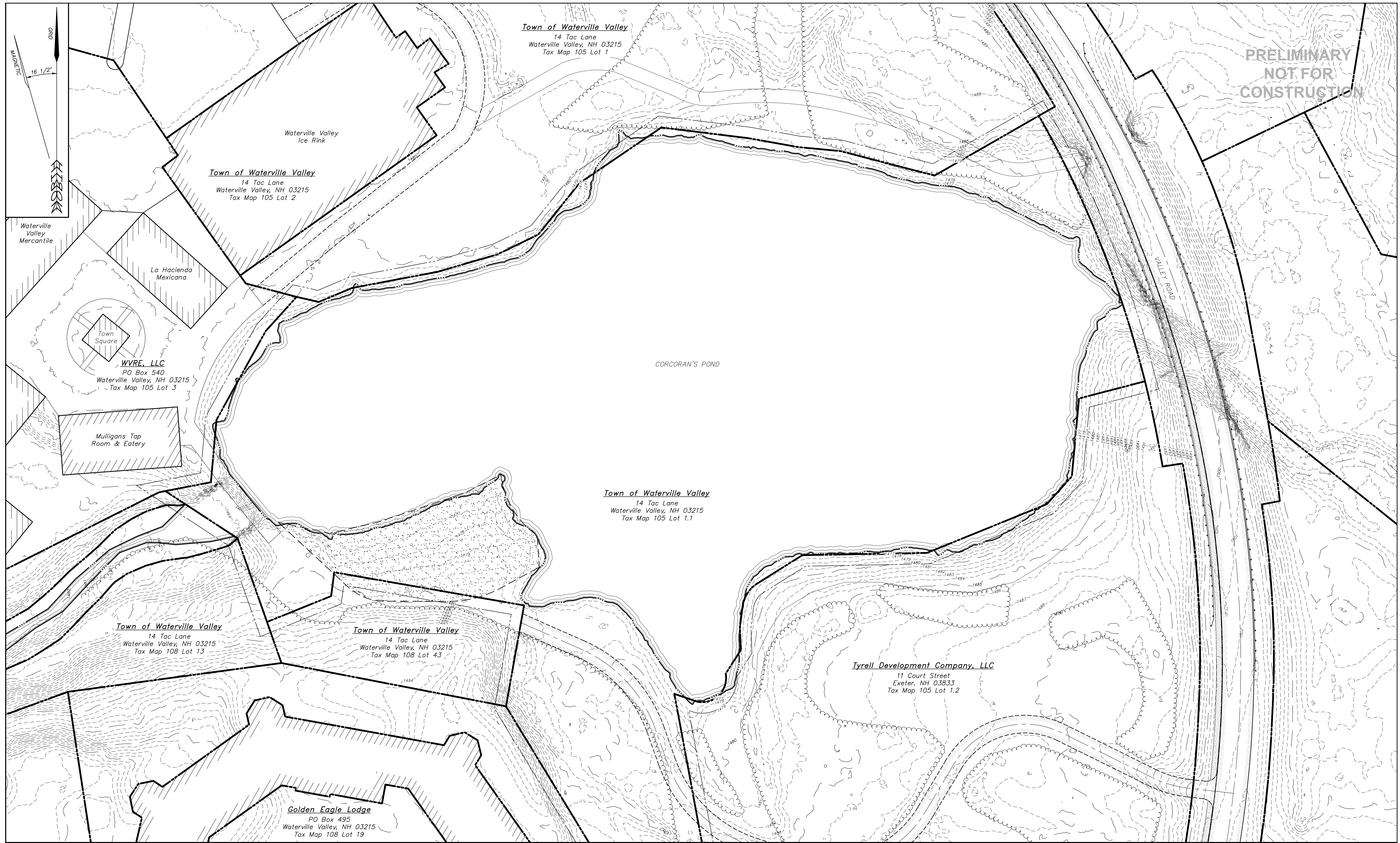
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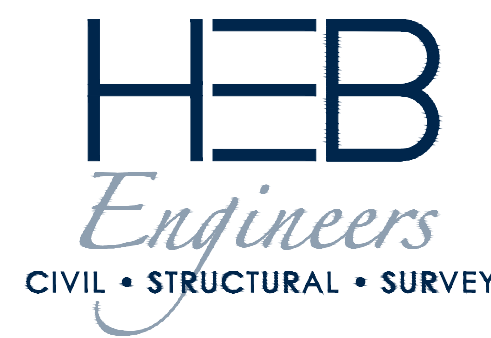
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DRAWN BY	AMS
CHECKED BY	JMM
FIELD BOOK	—
SCALE	—
DATE	05/22/2020

Corcoran  
Town of W



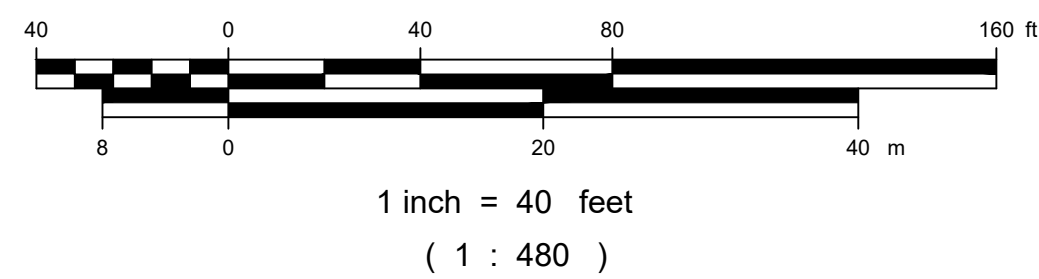
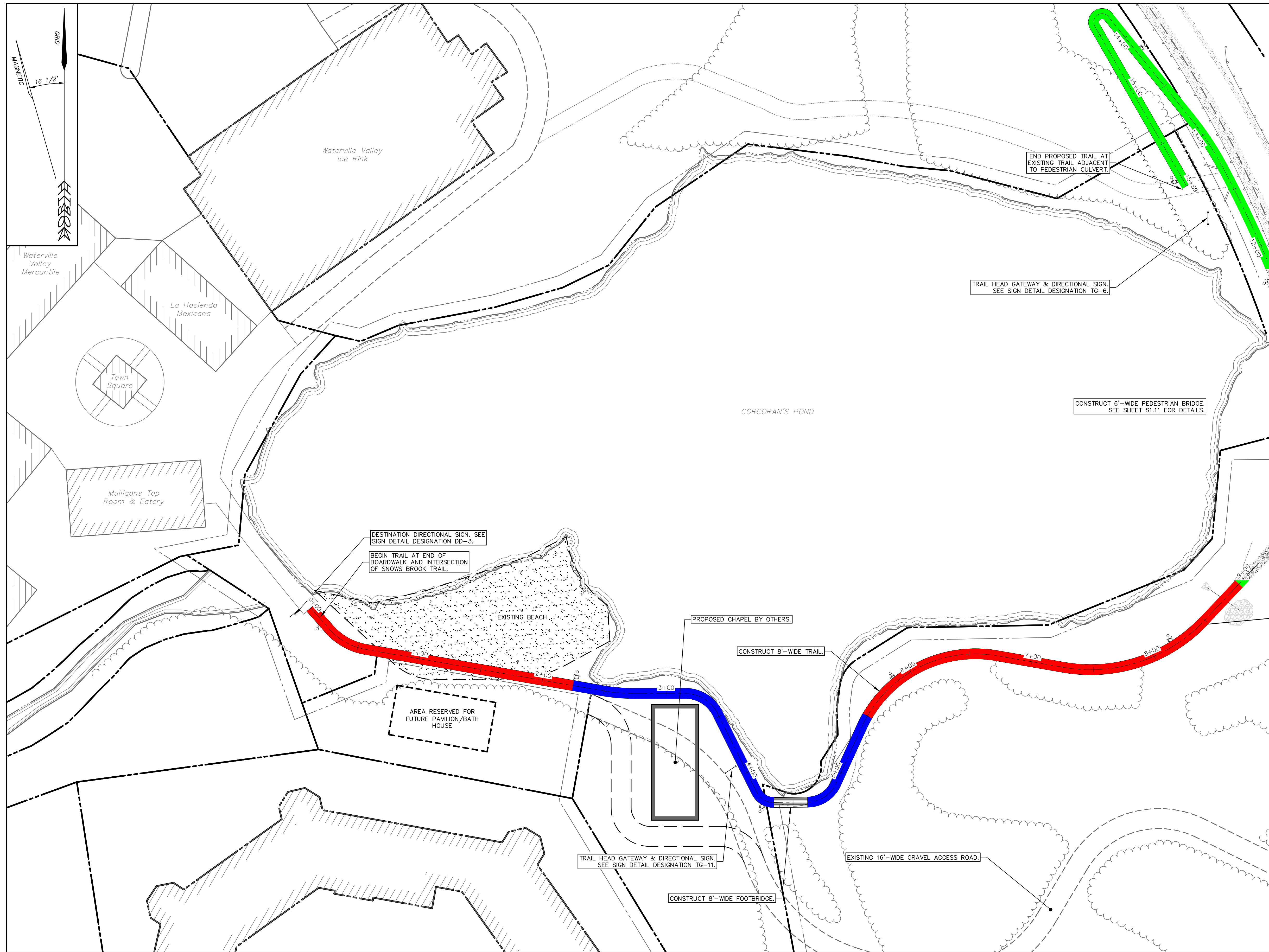
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SCALE	1" = 40'
DATE	05/22/2020

**Existing-Features Plan**  
for the  
**Corcoran's Pond Trail Improvements**  
located in and prepared for the  
**Town of Waterville Valley, New Hampshire**



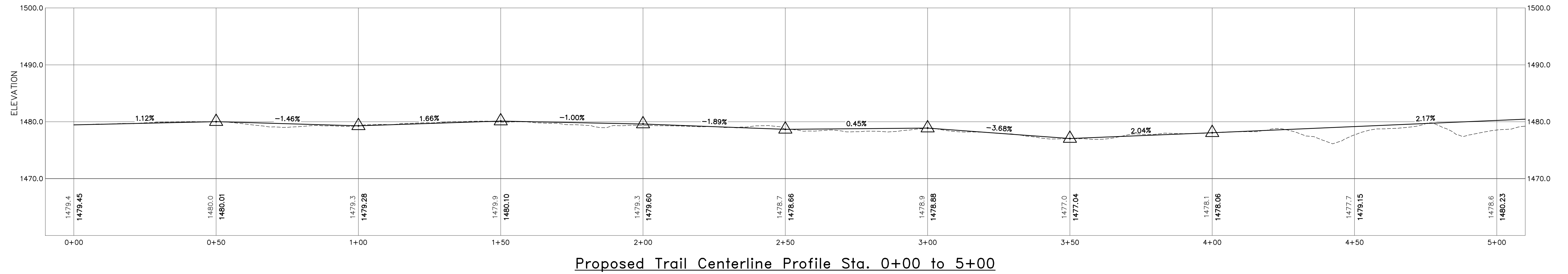
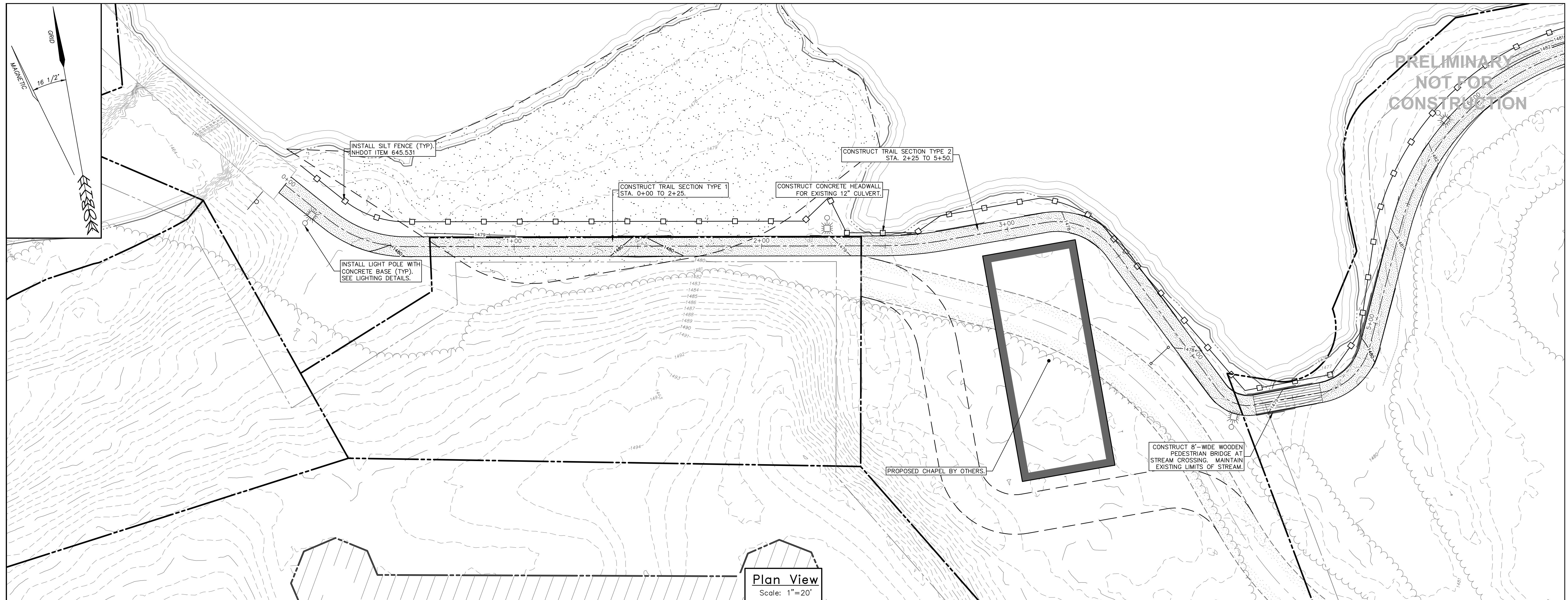
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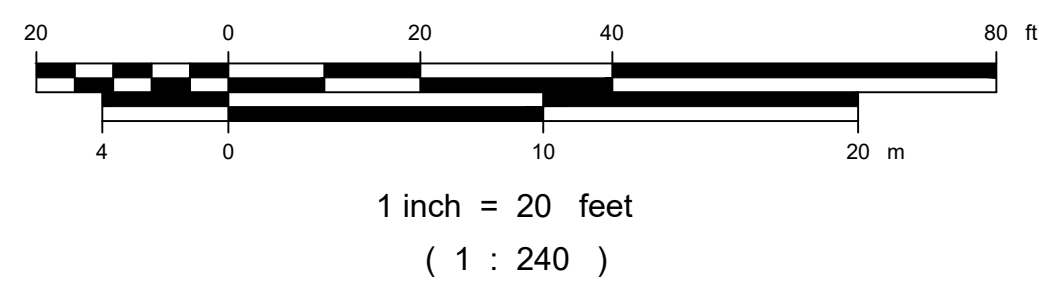
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FIELD BOOK	—
SCALE	1" = 40'
DATE	05/22/2020

Corcoran  
Town of W



Proposed Trail Centerline Profile Sta. 0+00 to 5+00

Scale:  
Horizontal: 1"=20'  
Vertical: 1"=10'



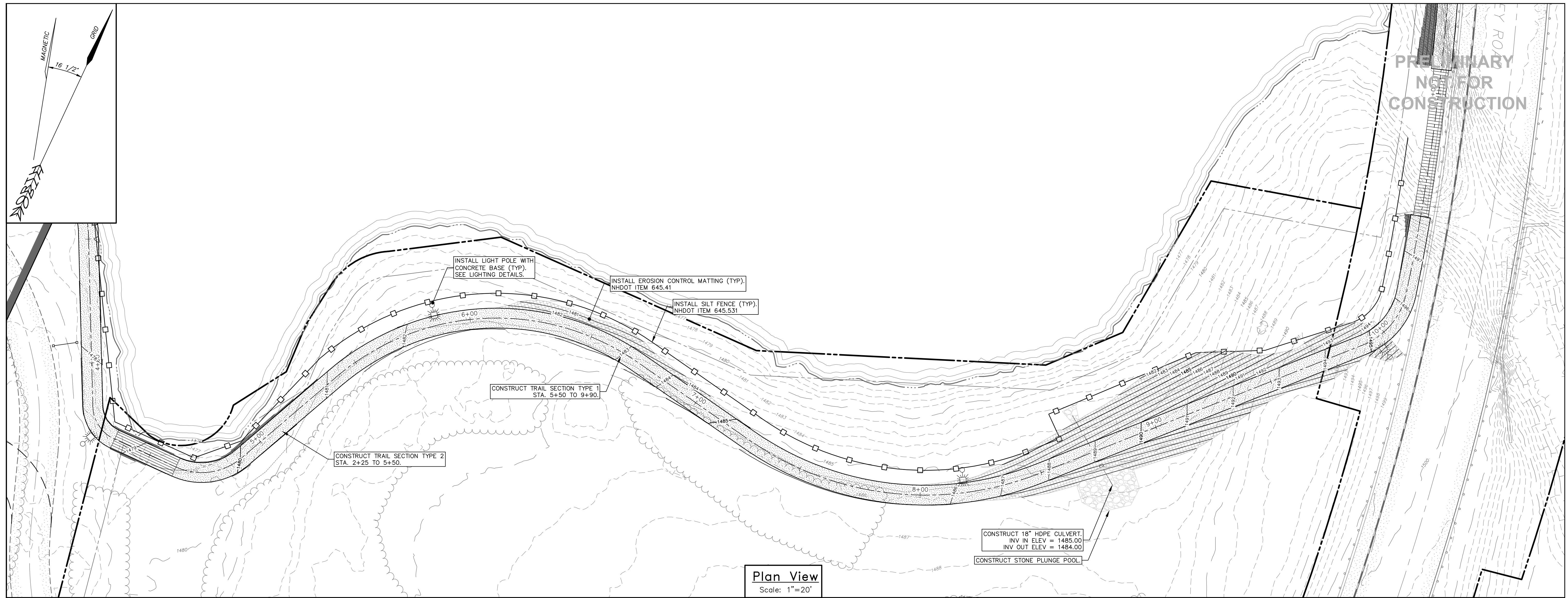
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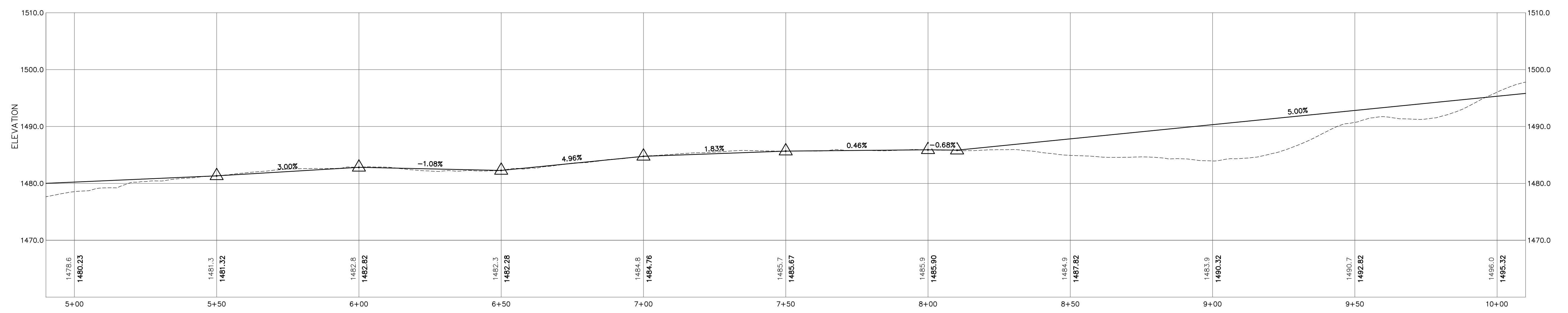
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DATE	05/22/2020

Plan & Profile (Sta. 0+00 - 5+00)  
for the  
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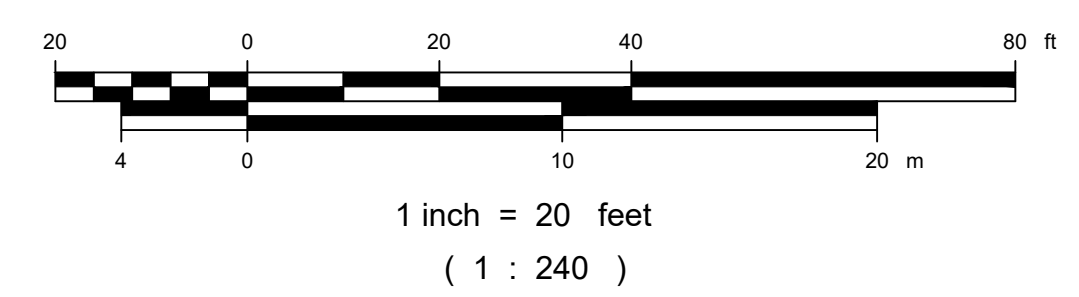


Plan View  
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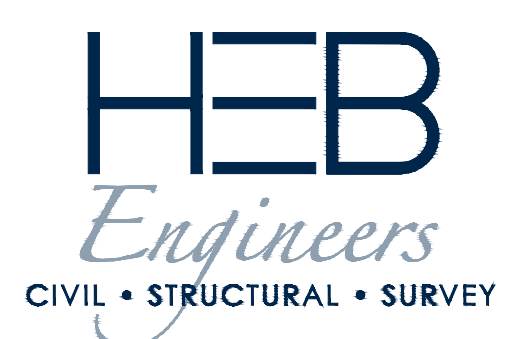


Proposed Trail Centerline Profile Sta. 5+00 to 10+00

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Vertical: 1"=10'



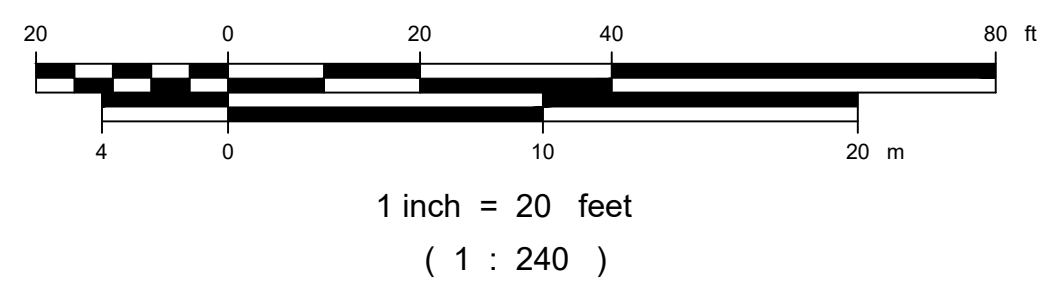
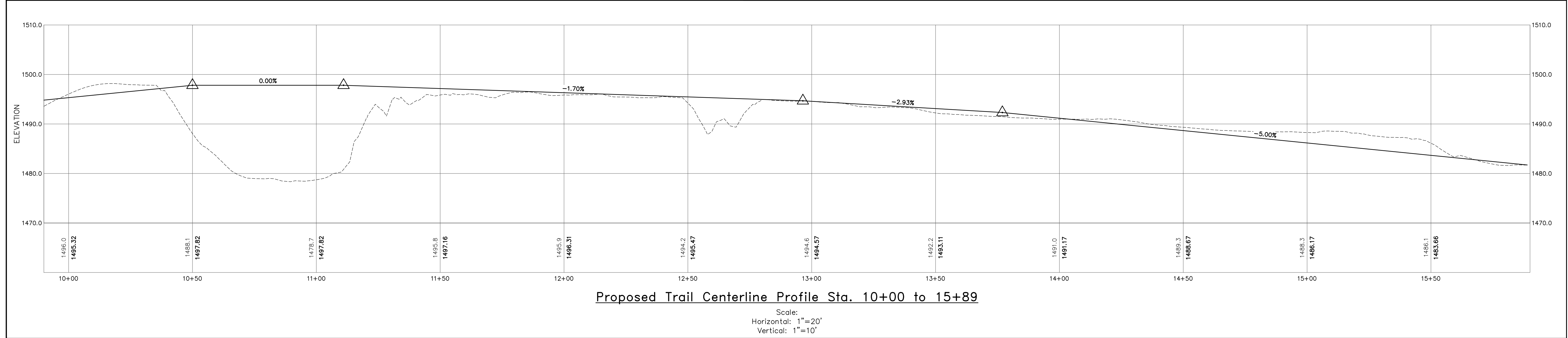
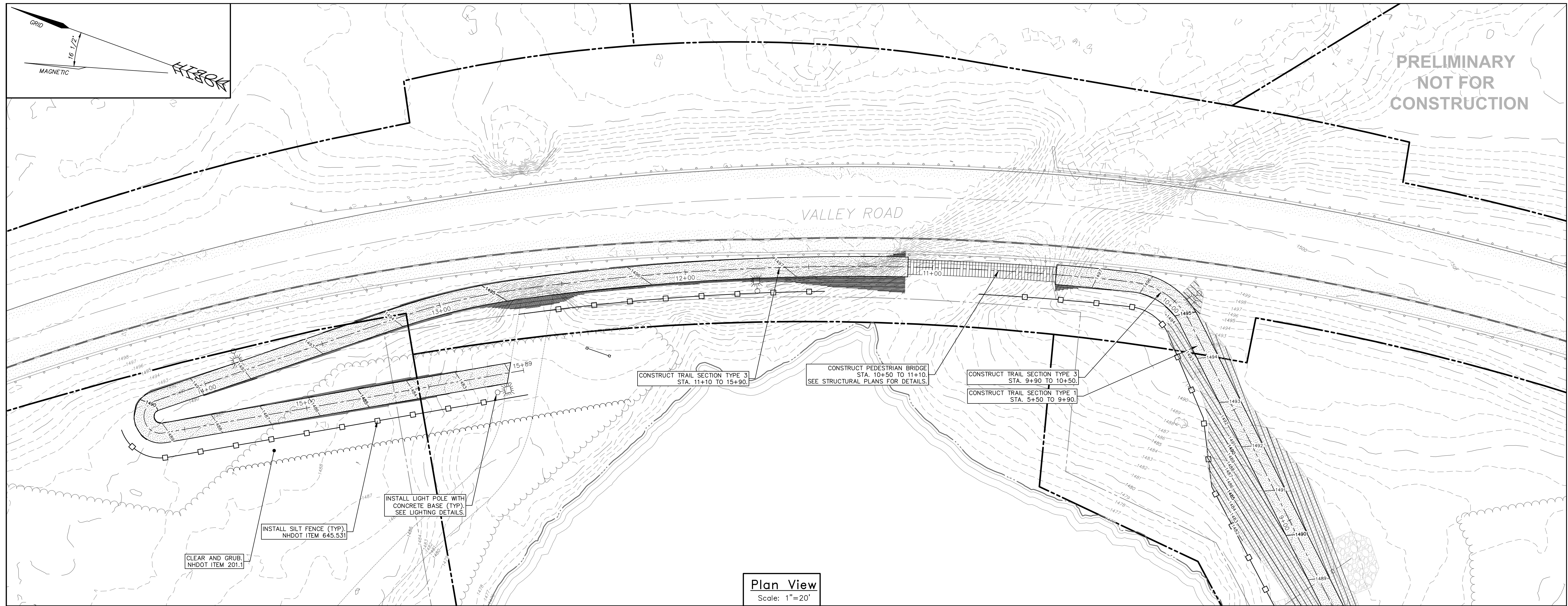
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FIELD BOOK	—
SCALE	1" = 20'
DATE	05/22/2020

Plan & Profile (Sta. 5+00 - 10+00)  
for the  
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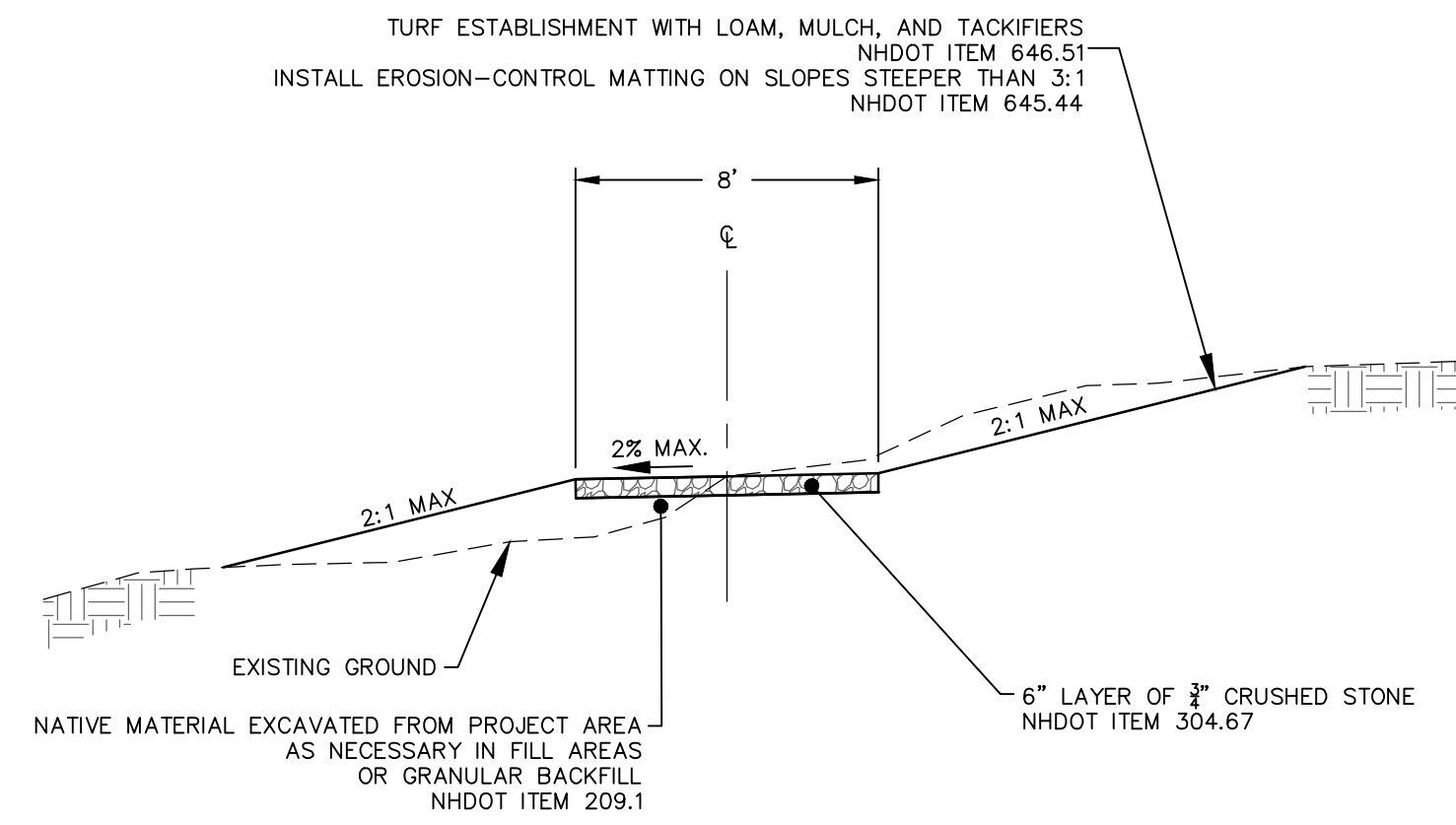


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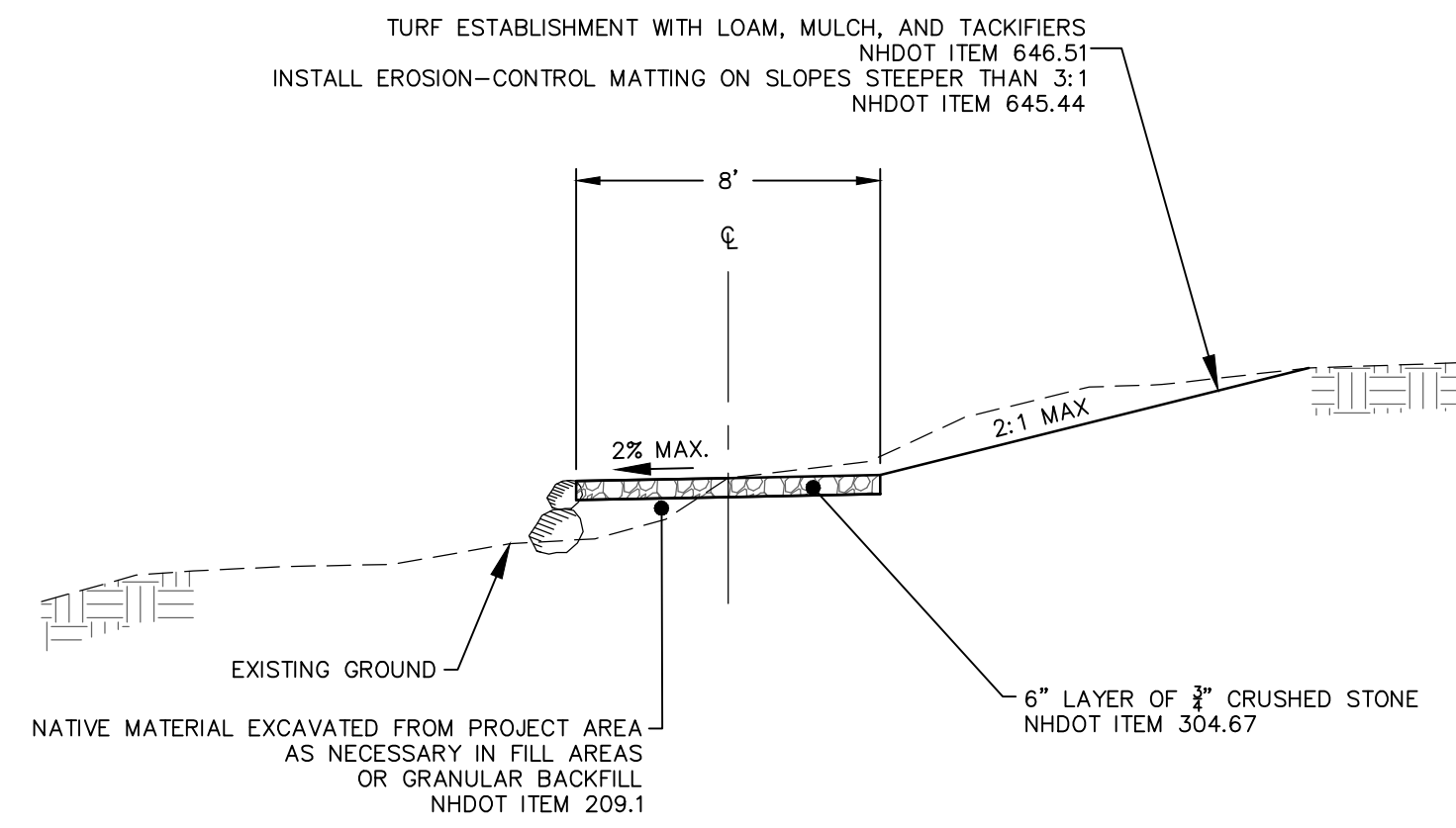
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**Plan & Profile (Sta 10+00 - 15+89)**  
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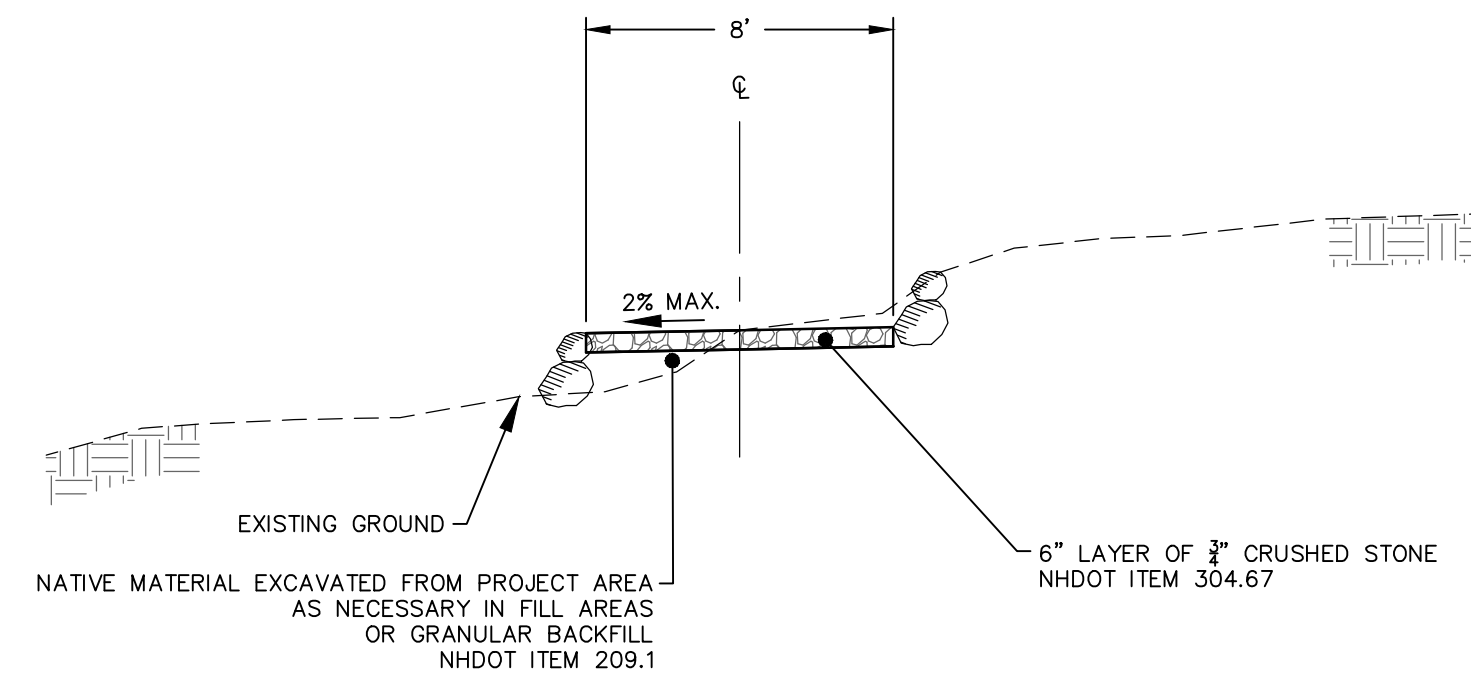
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Typical Trail Section - Type 1  
Scale: 1" = 5'



Typical Trail Section - Type 2  
Scale: 1" = 5'



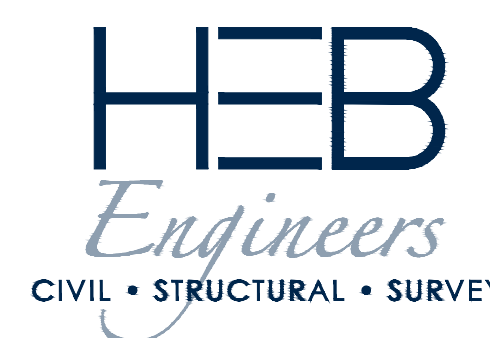
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ROCK SIZE DESIGNATION				
WALL HEIGHT (H)	A	B	C	D
0'-3'	3	2	-	-
3'-6'	4	3	2	-
6'-9'	4	4	3	2

ROCK SIZE		
ROCK SIZE PERSON	WEIGHT (LBS)	AVERAGE DIAMETER (FT)
2	200-650	1.5-2.25
3	650-2,000	2.25-3
4	2,000-4,000	3-4

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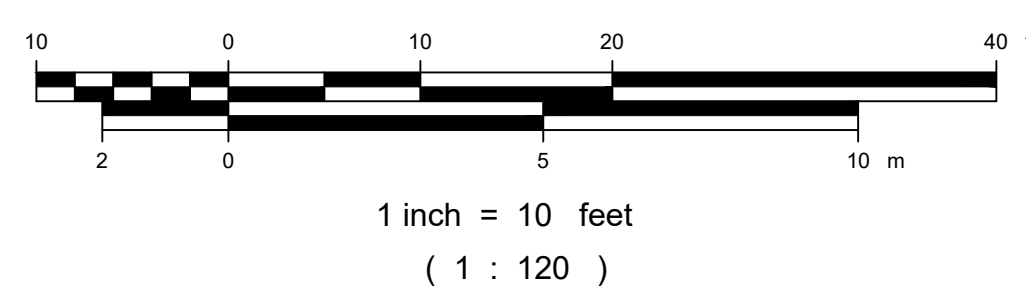
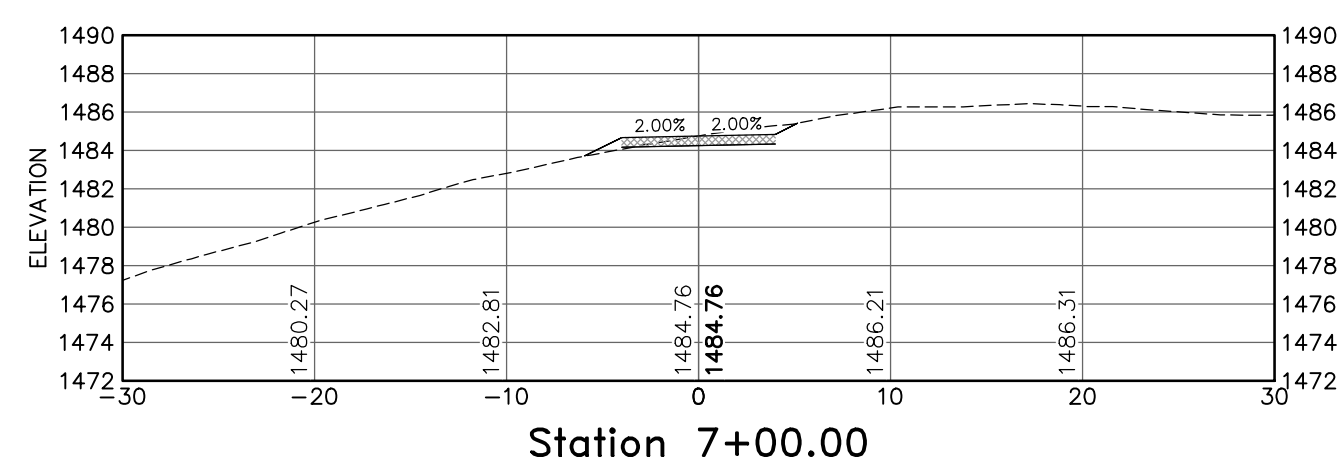
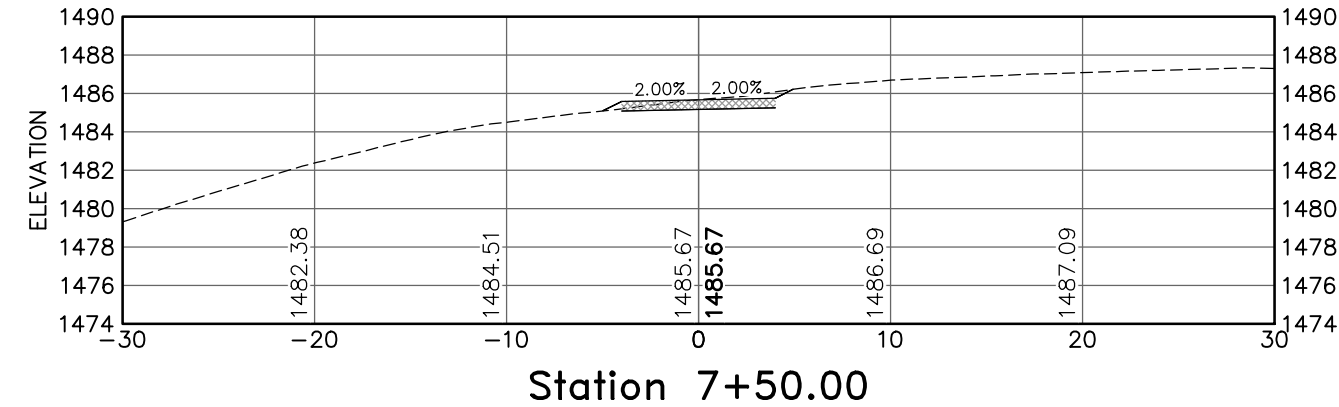
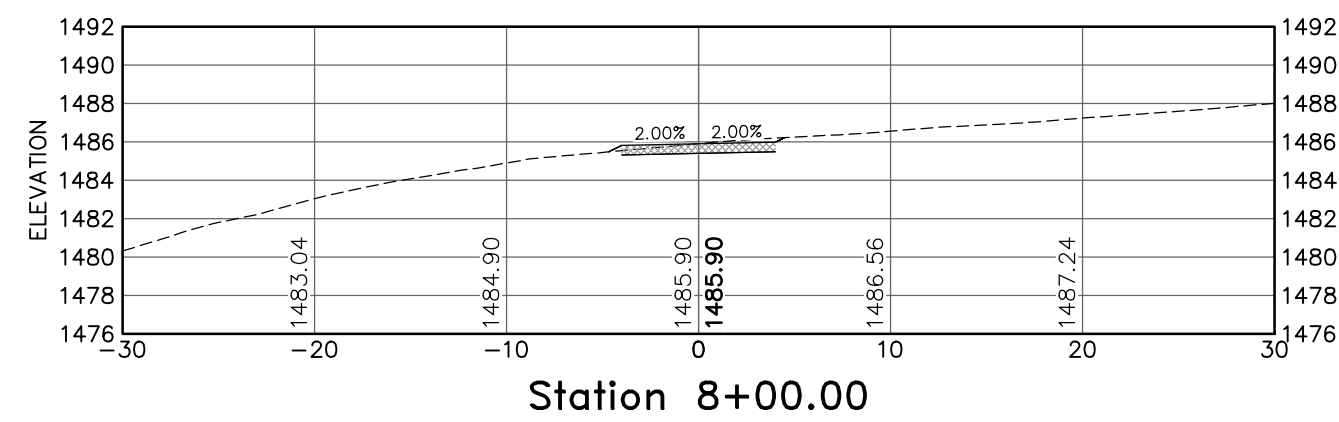
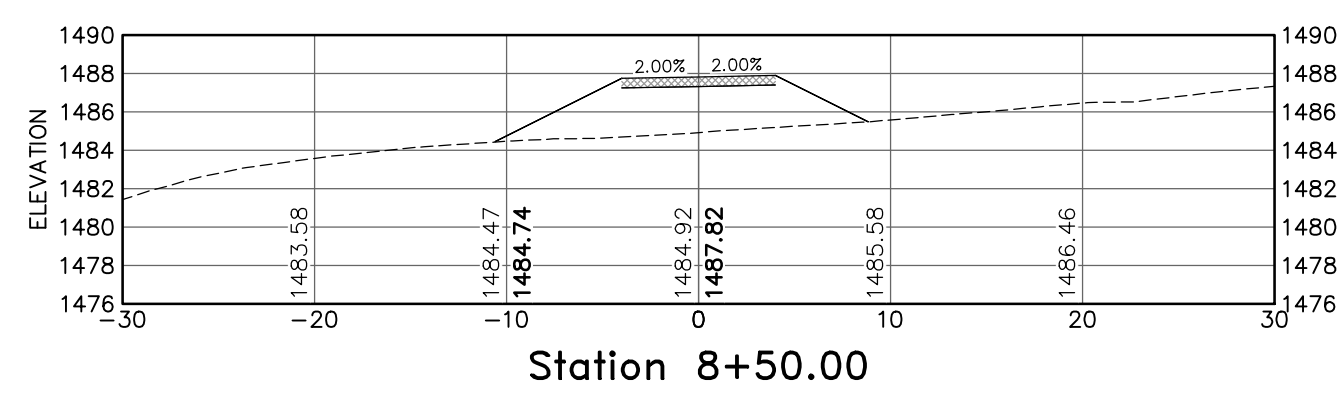
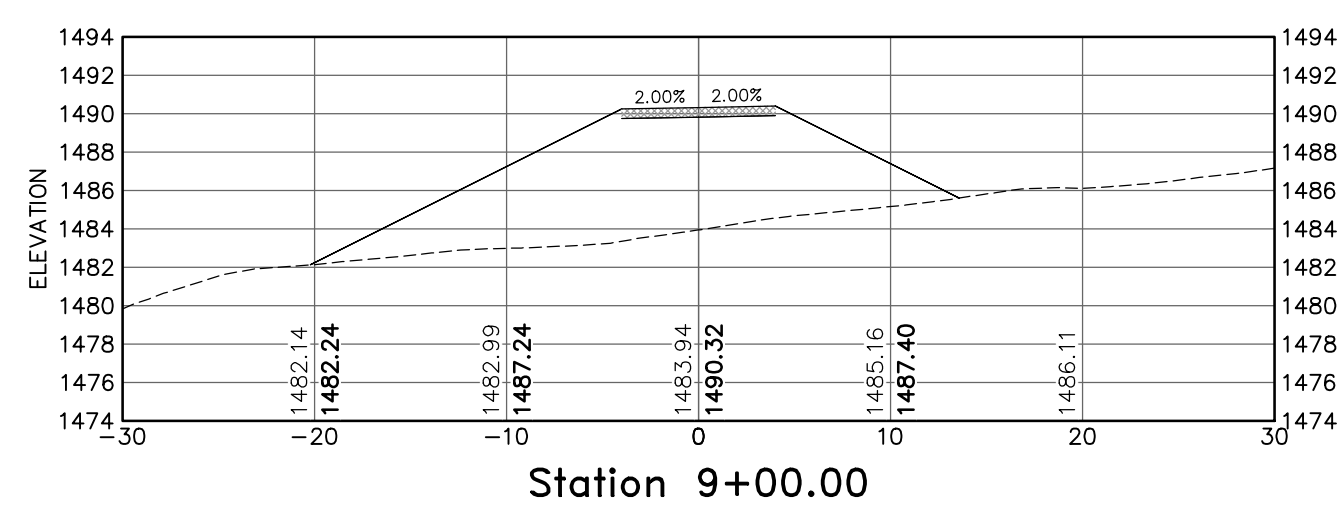
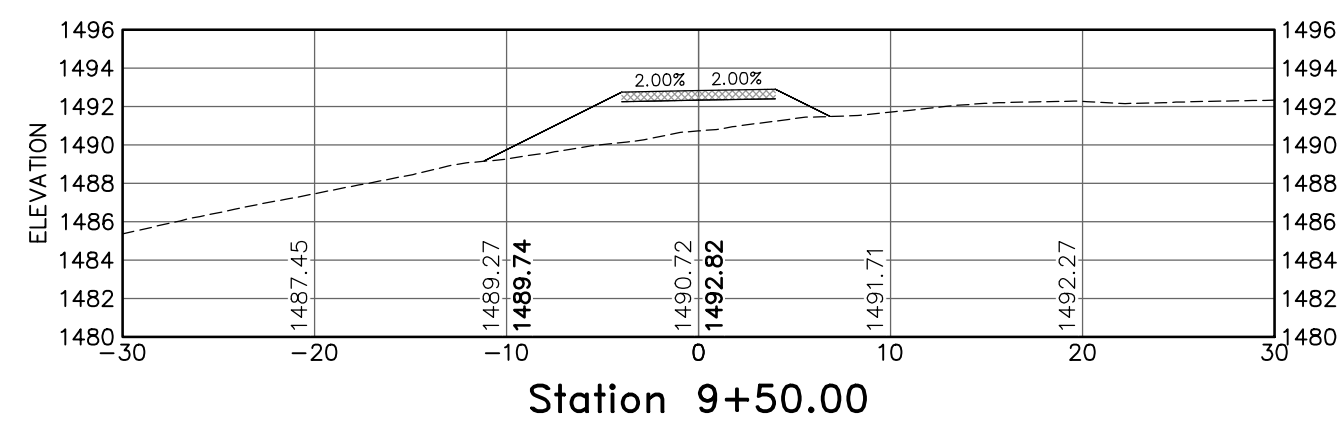
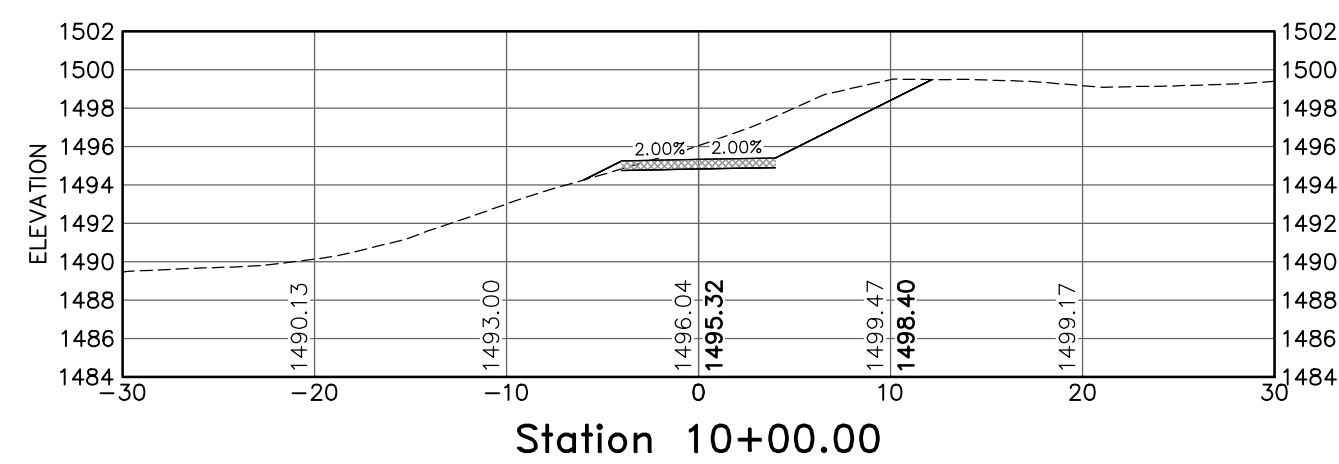
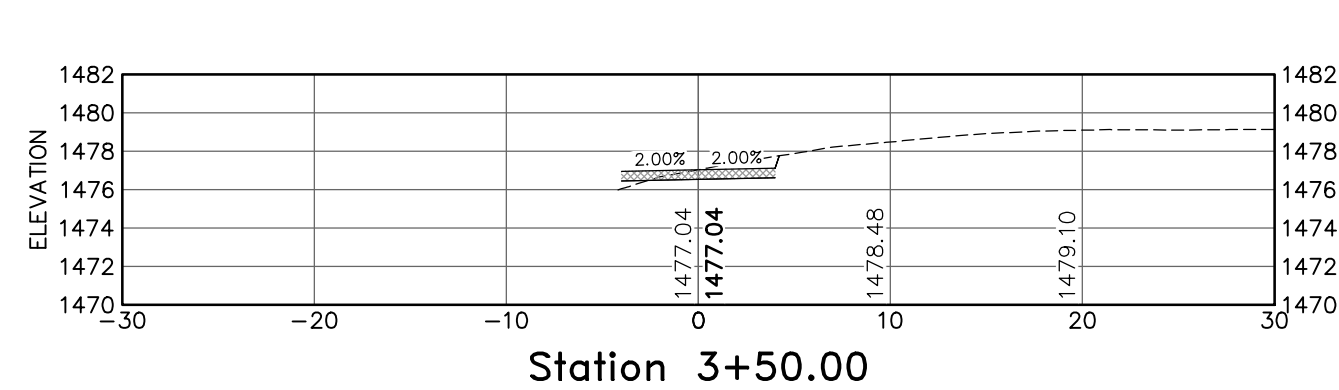
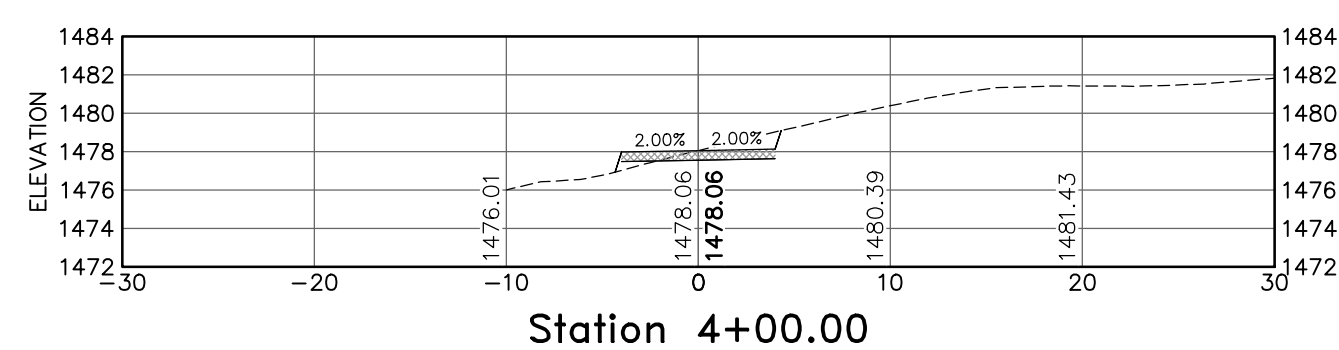
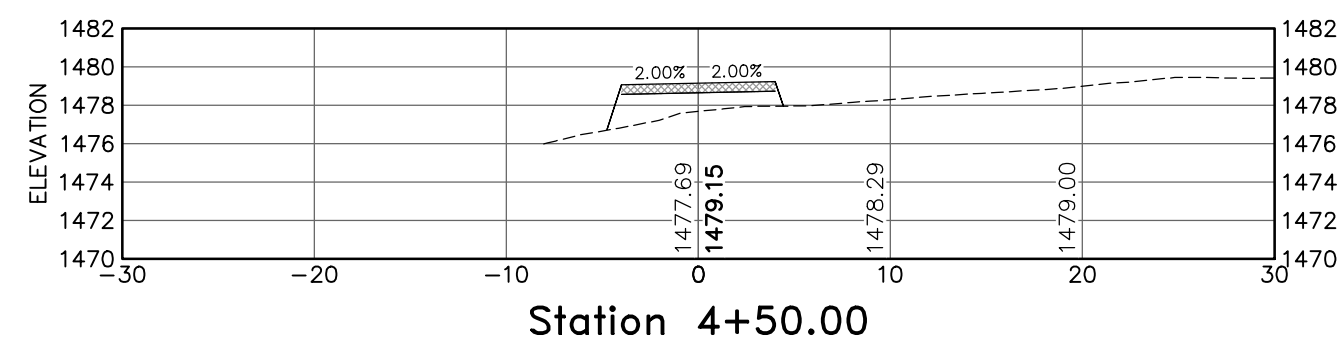
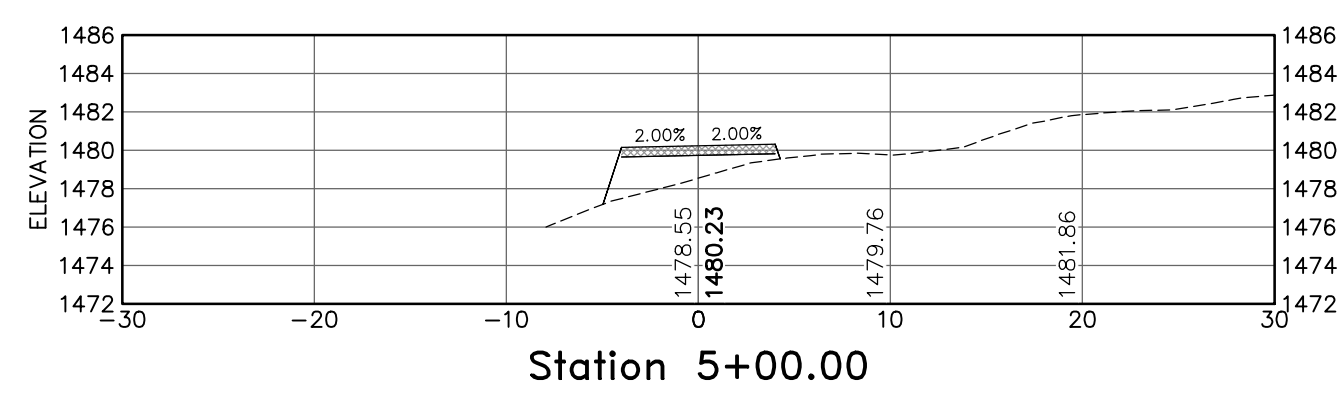
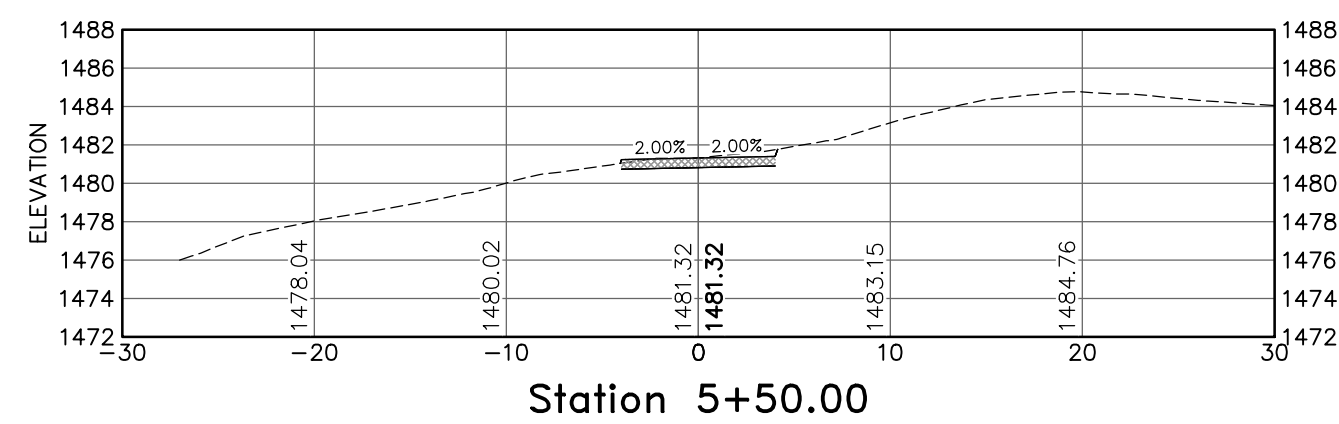
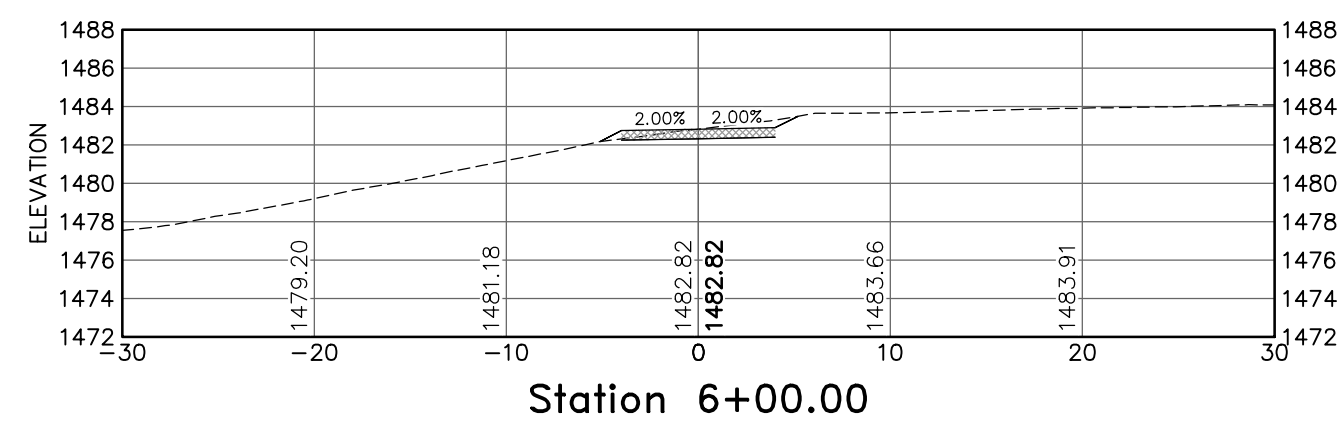
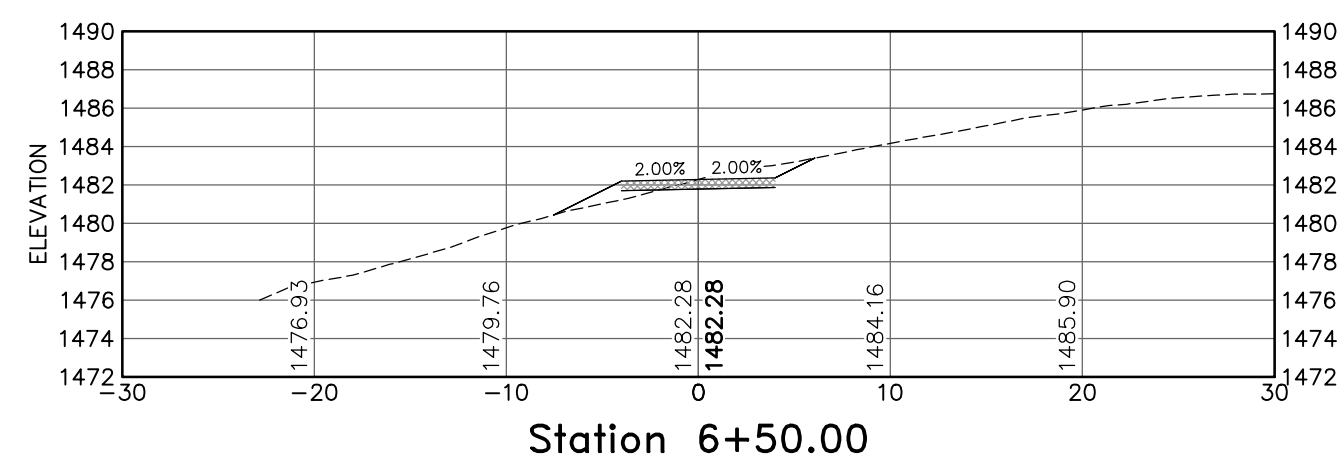
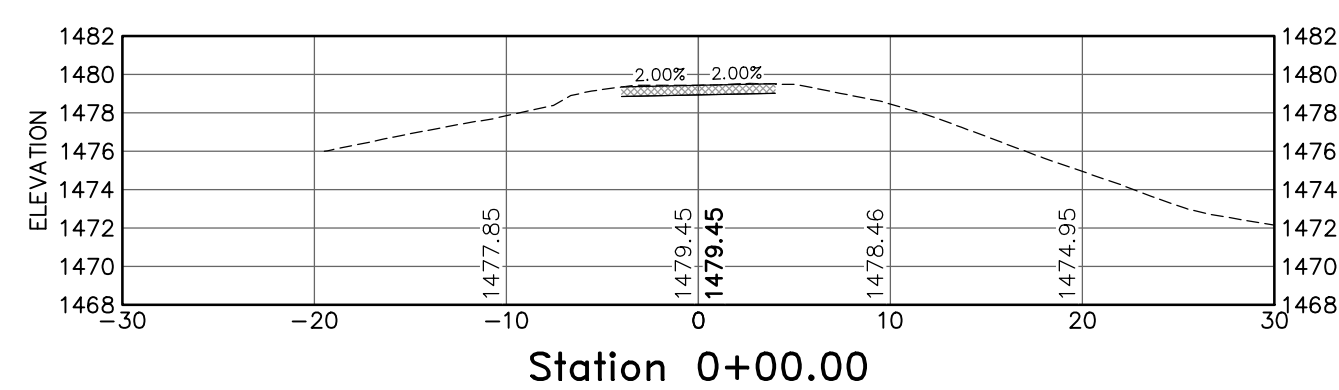
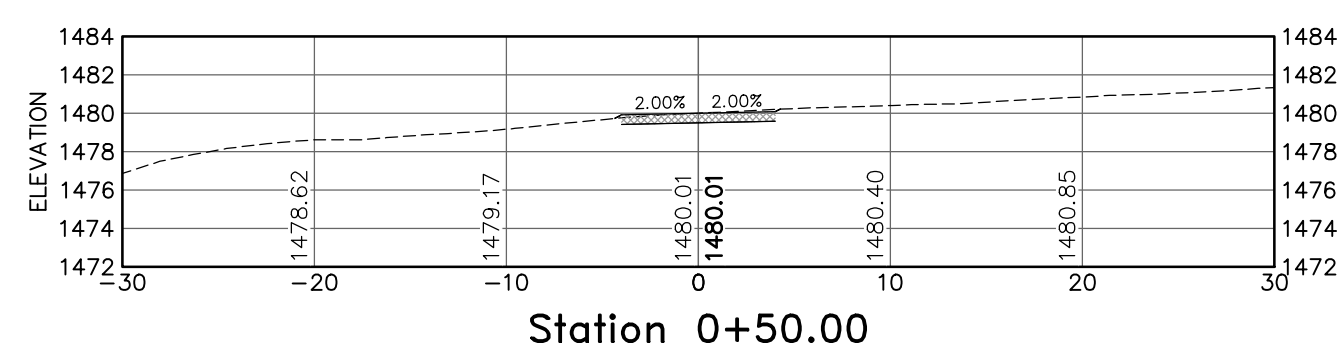
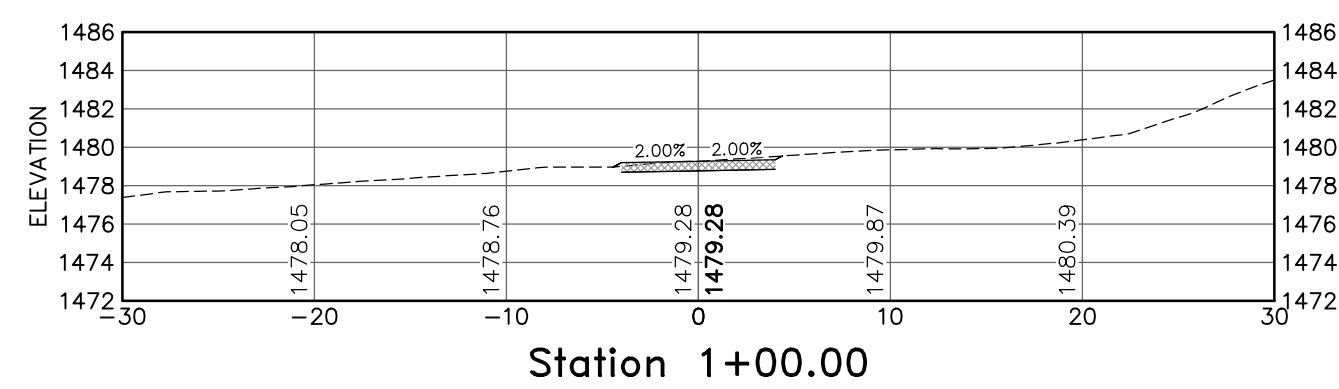
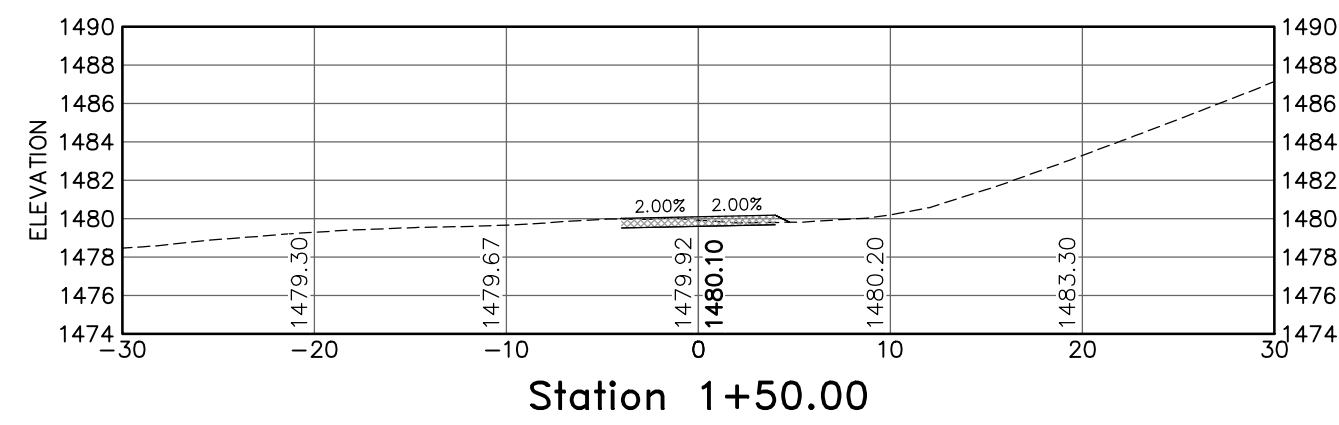
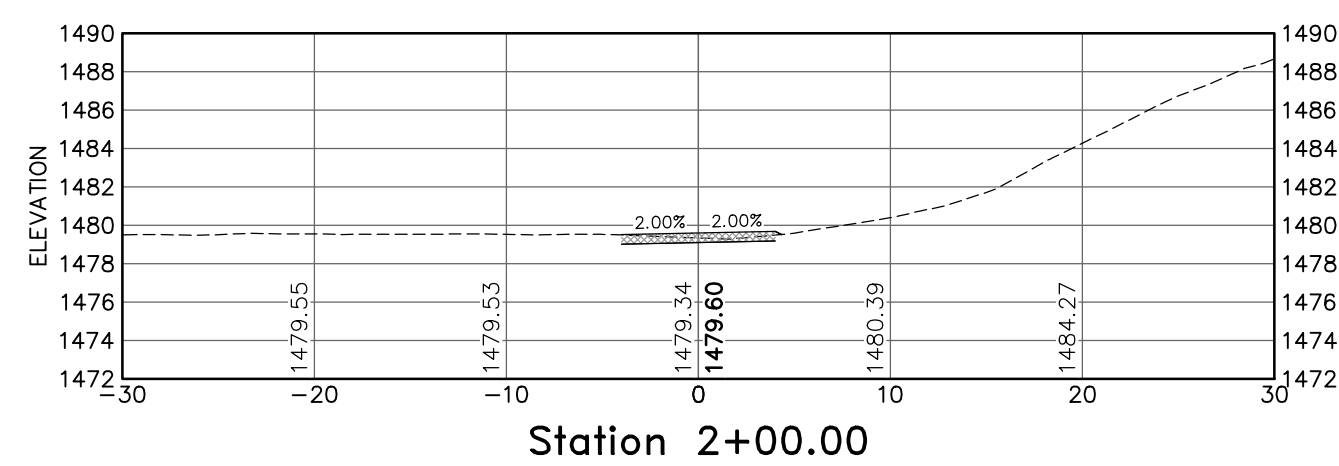
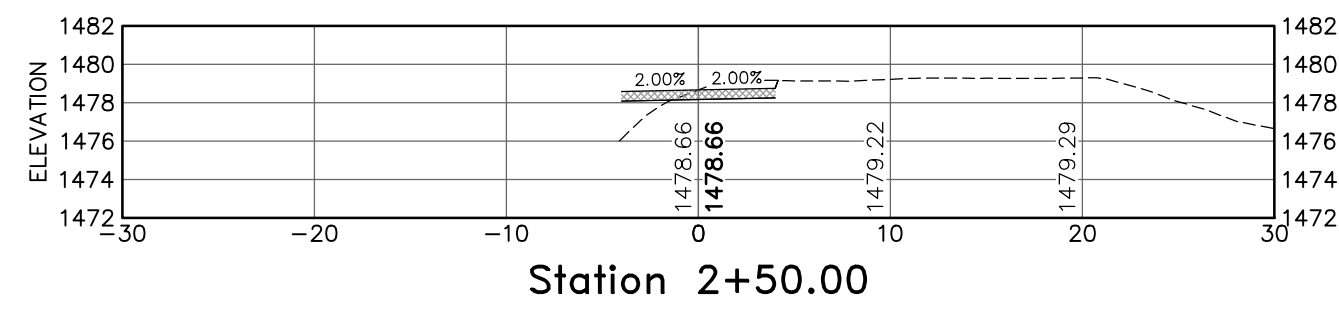
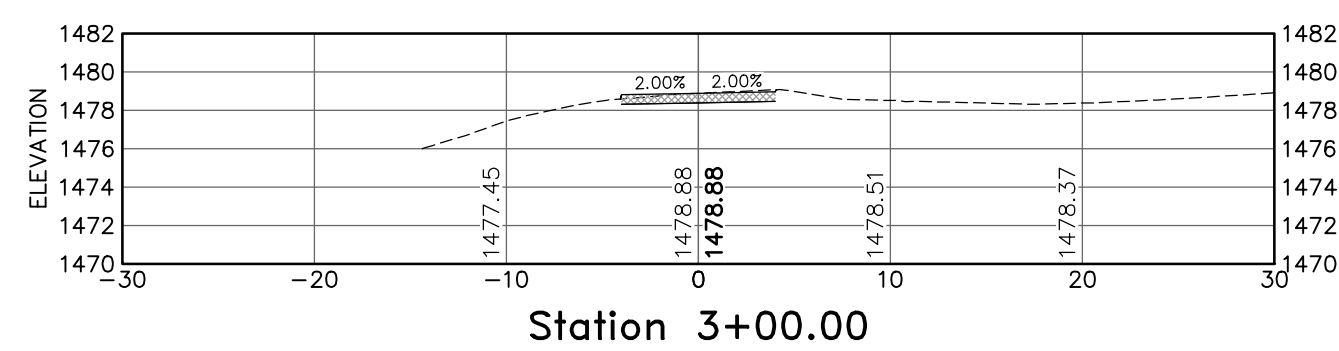


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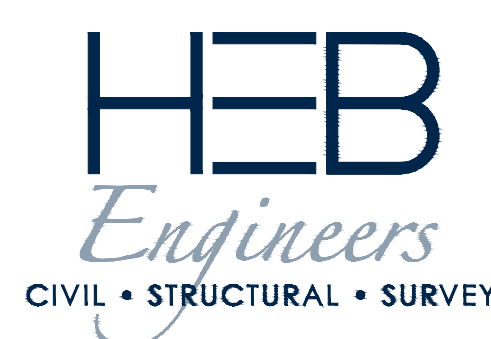
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DRAWN BY	AMS
CHECKED BY	JMM
FIELD BOOK	-
SCALE	AS NOTED
DATE	05/22/2020

Typical Sections  
for the  
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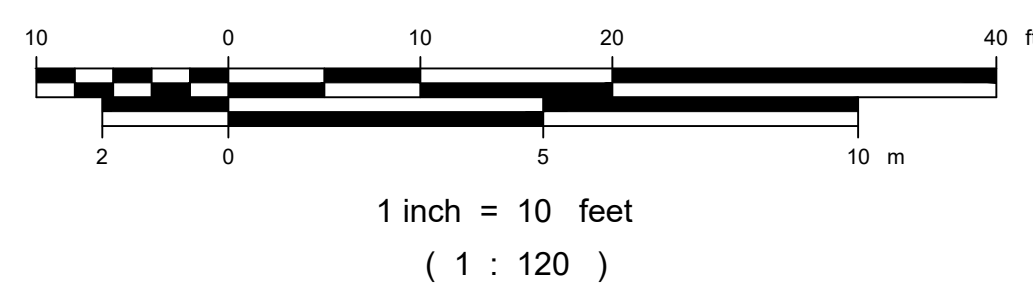
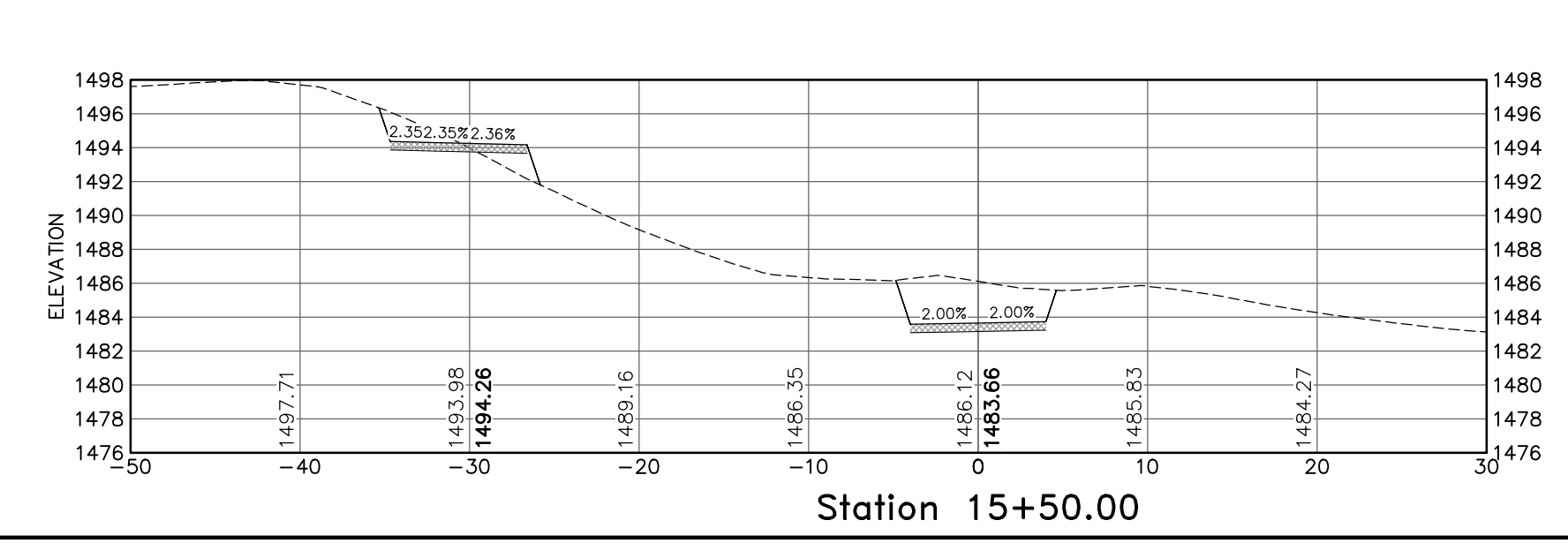
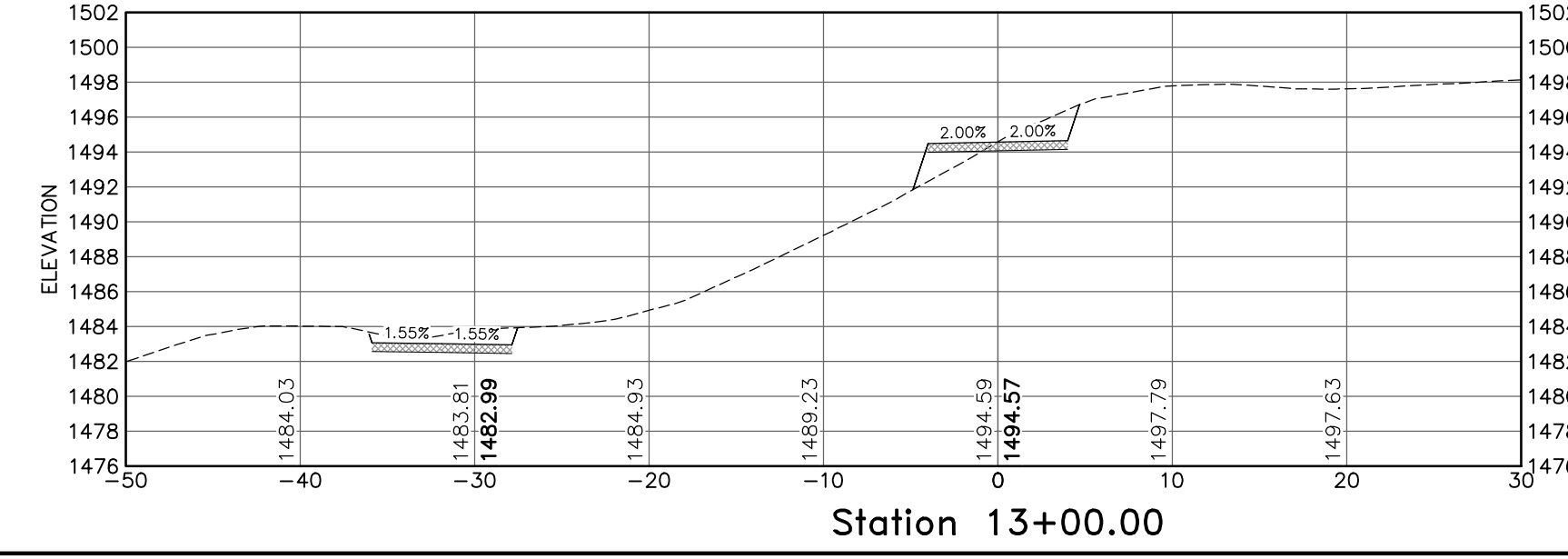
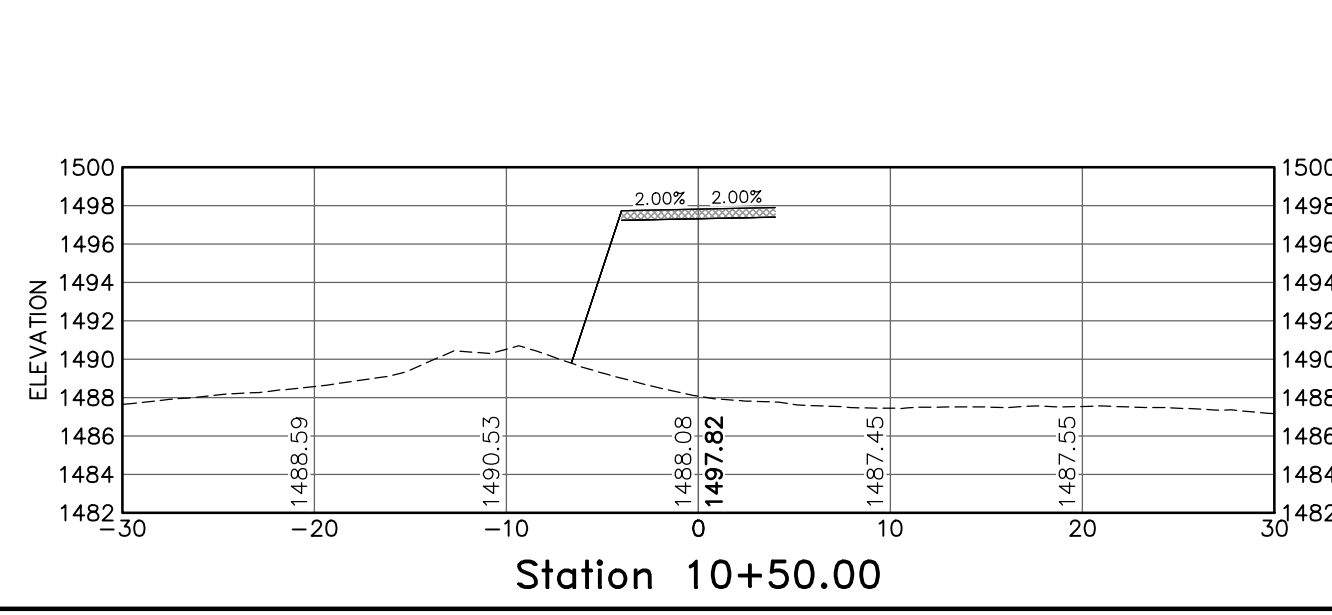
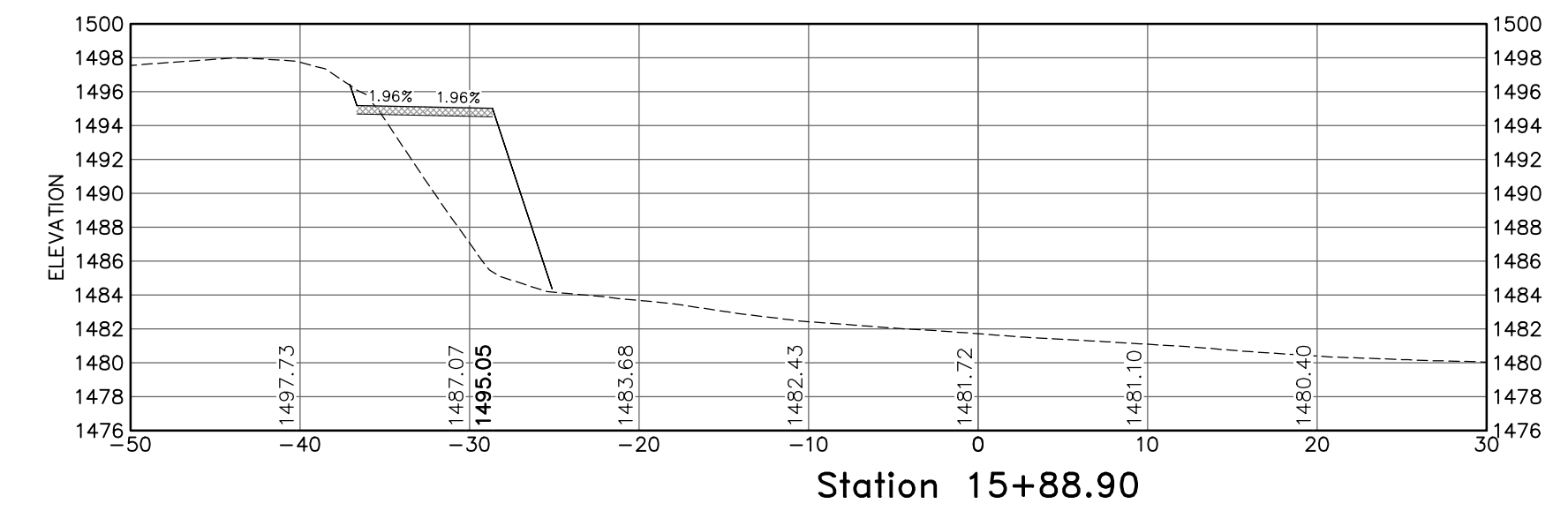
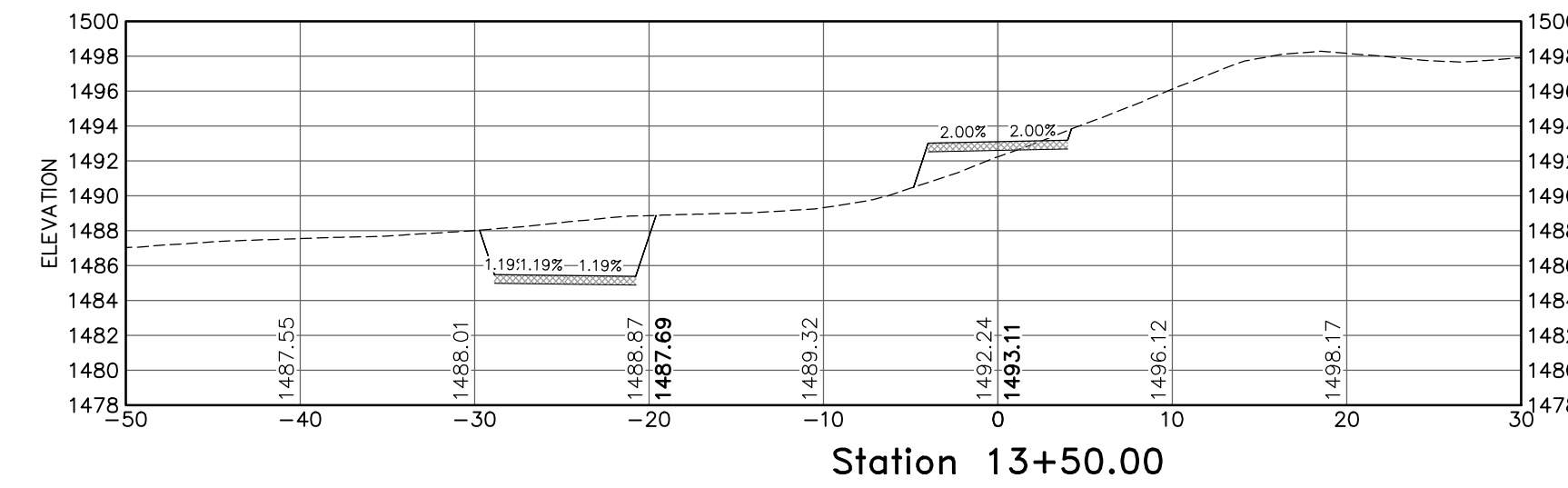
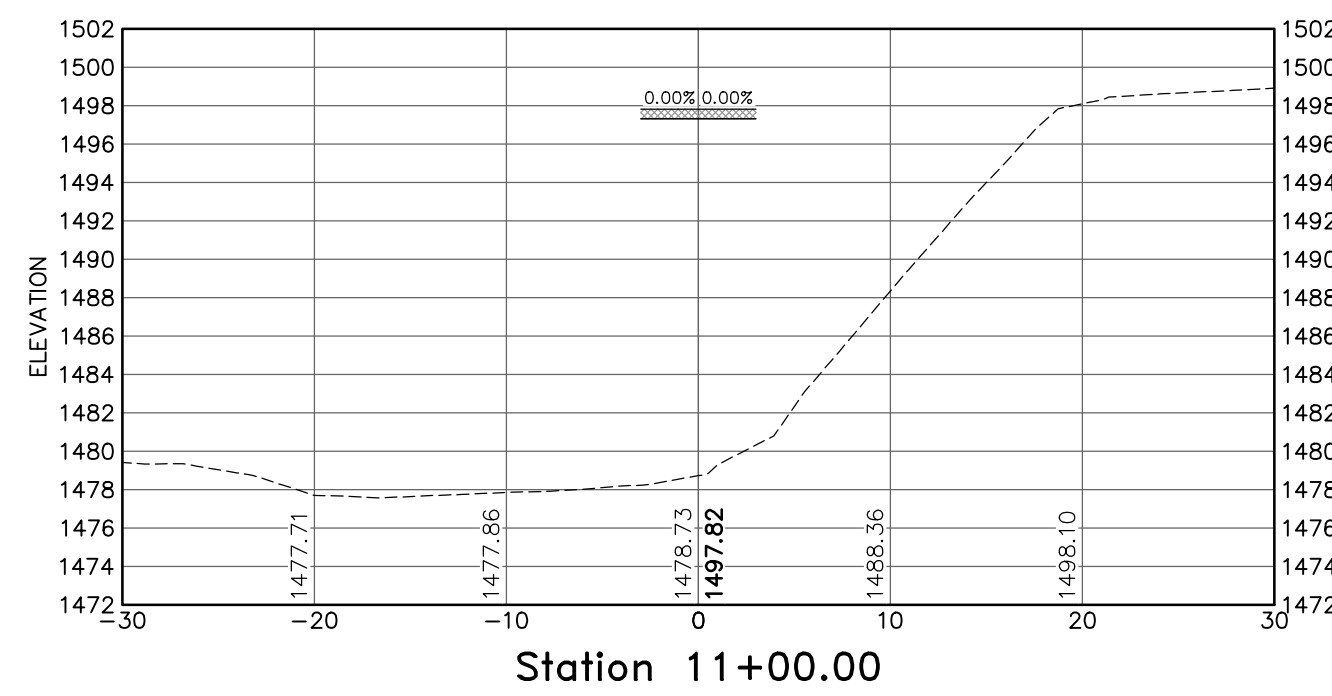
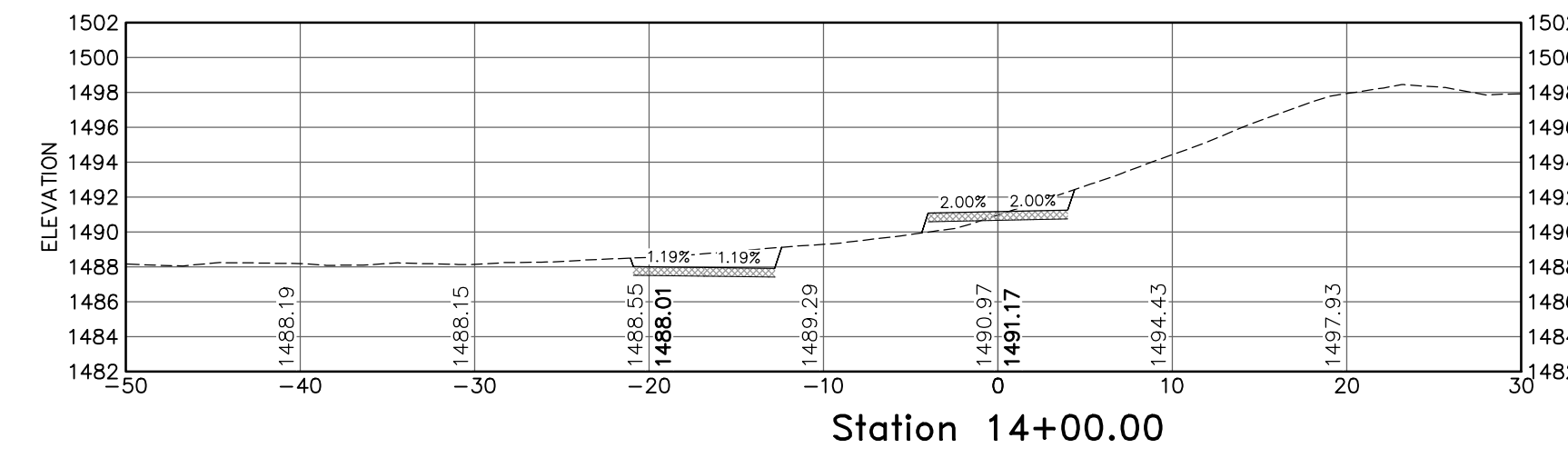
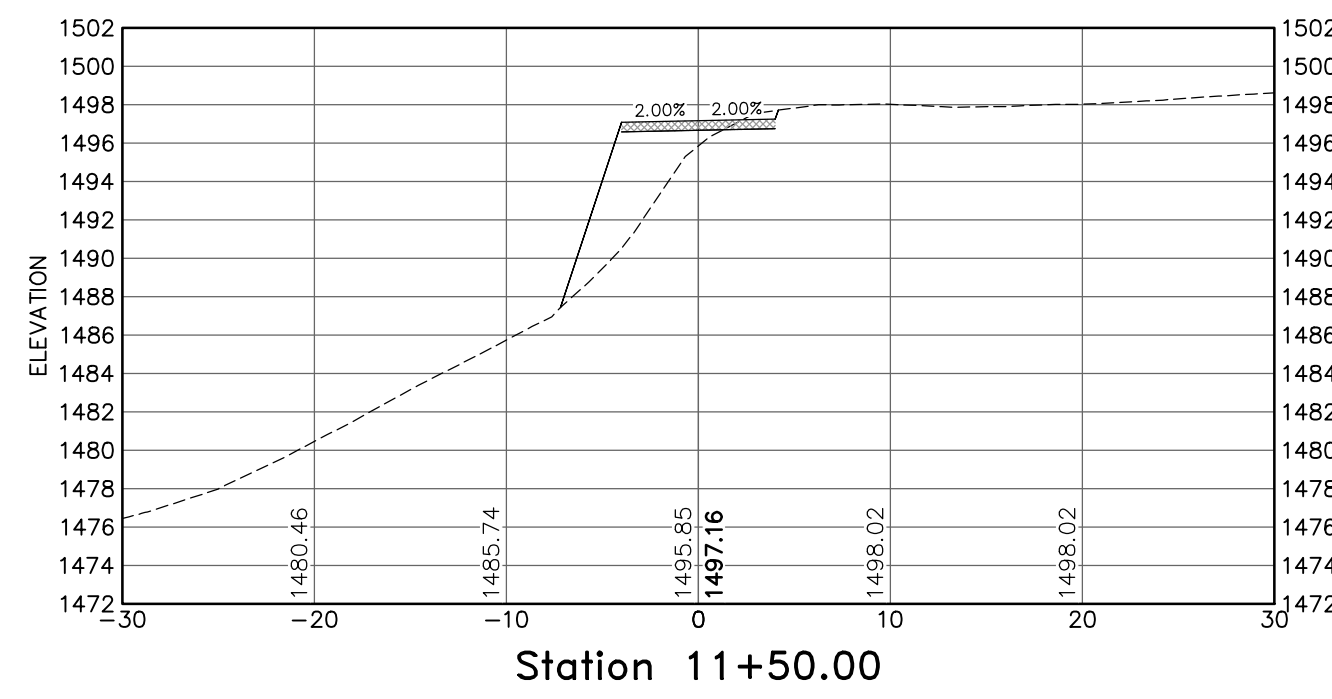
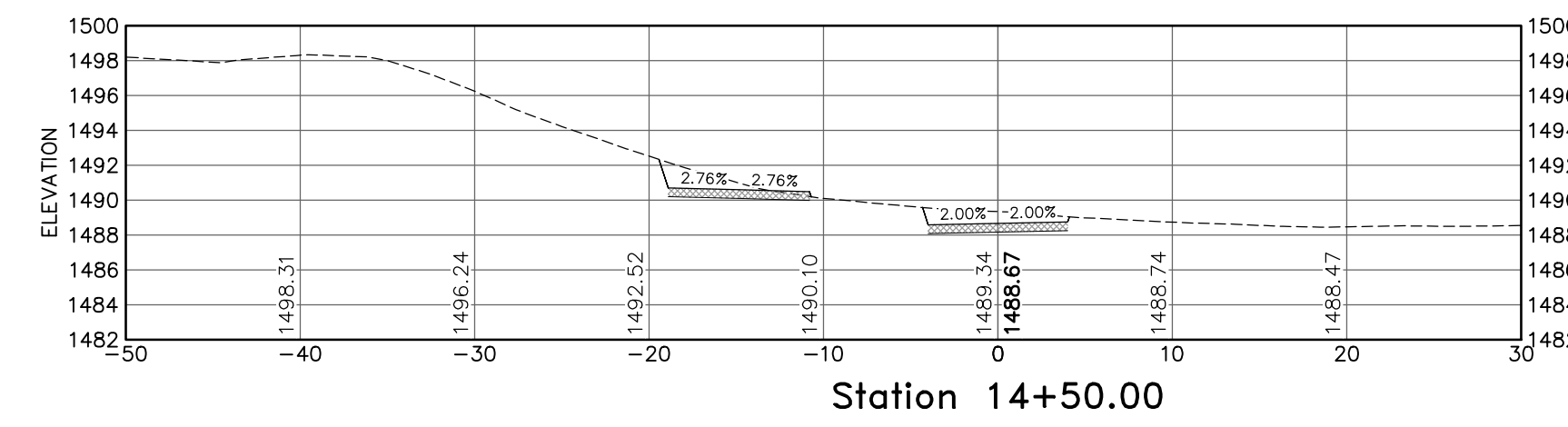
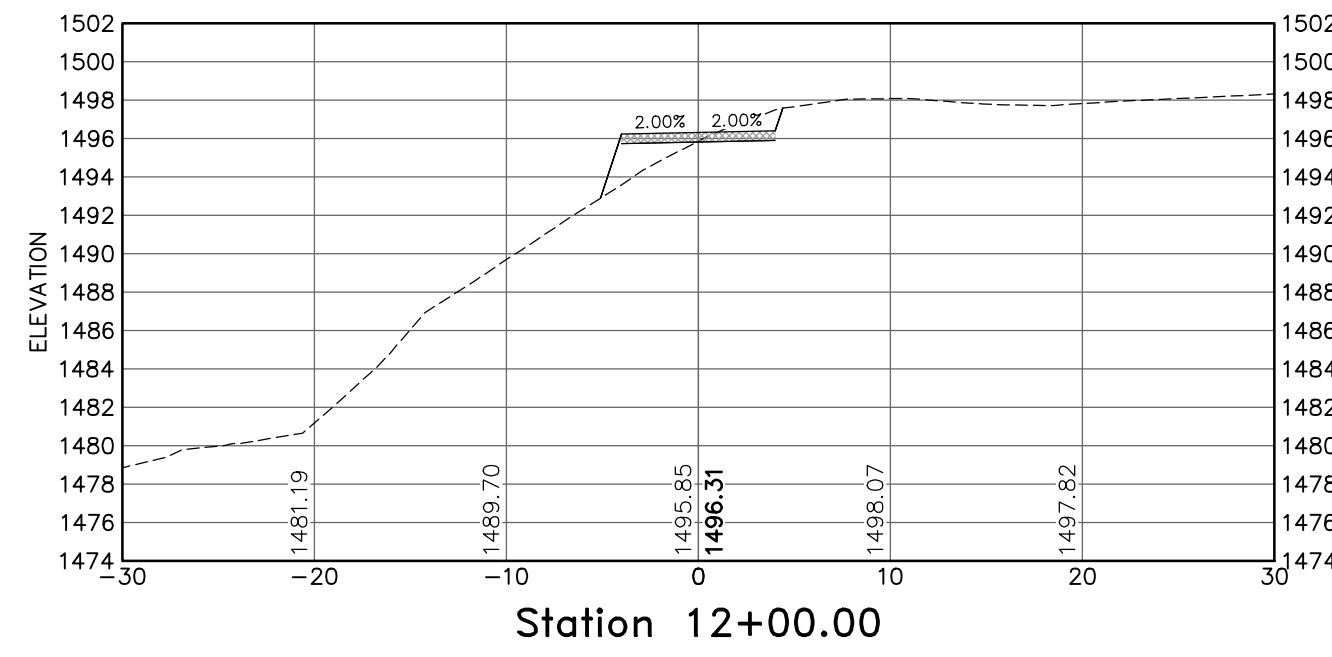
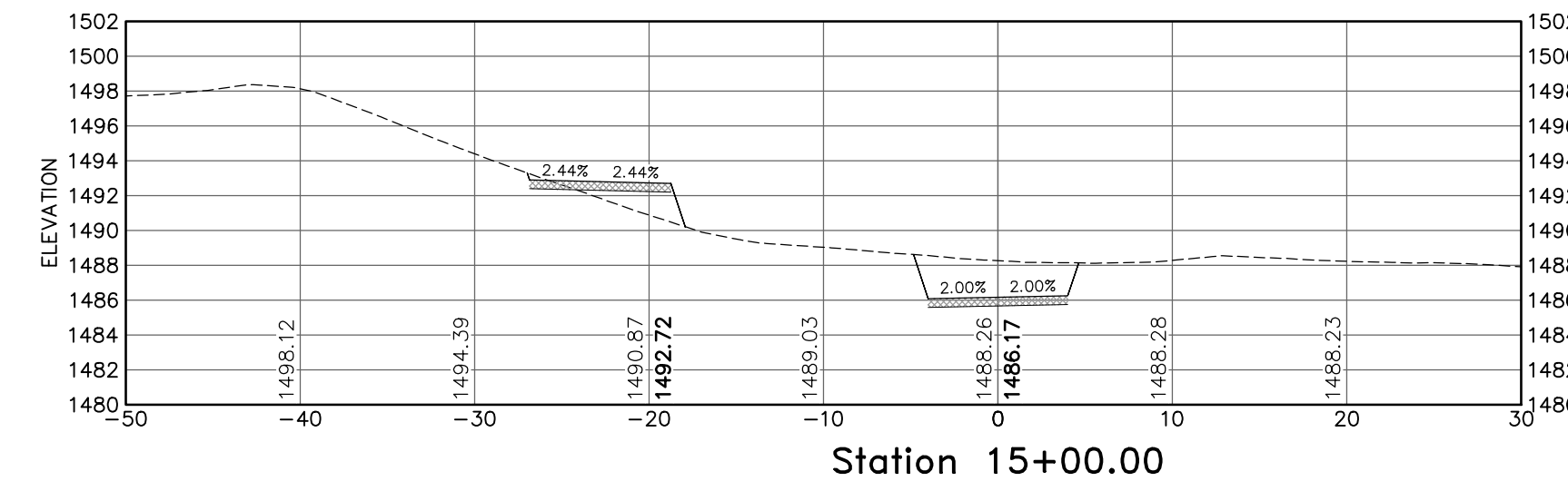
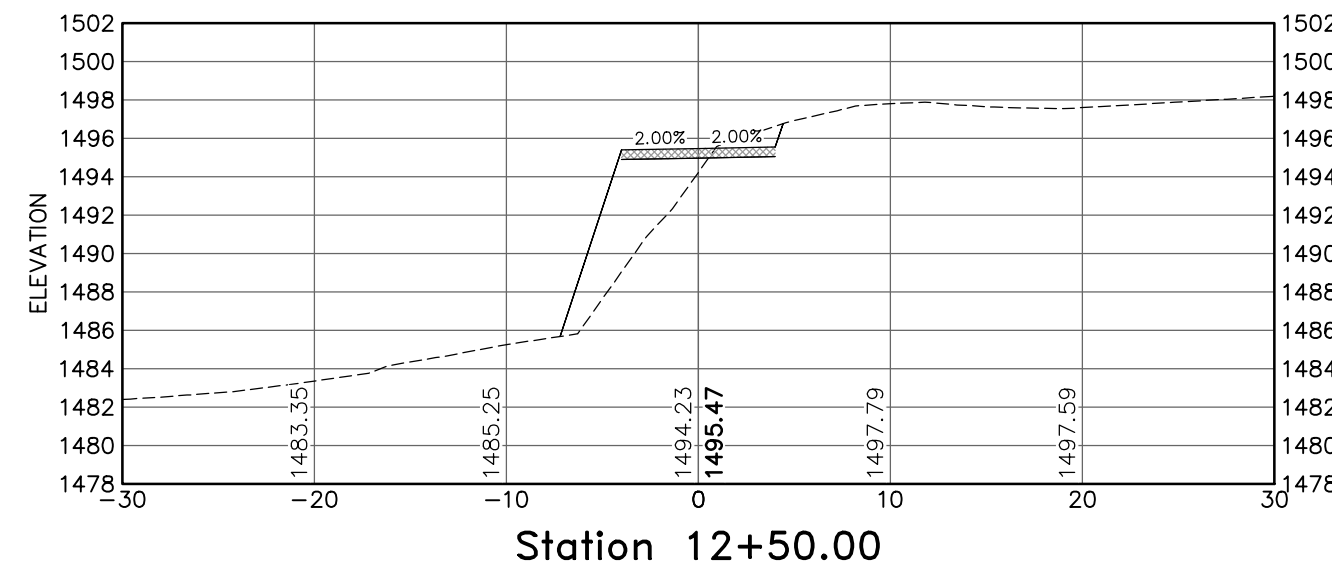
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DESIGNED BY	AMS
DRAWN BY	AMS
CHECKED BY	JMM
FIELD BOOK	—
SCALE	1" = 10'
DATE	05/22/2020

**Cross Sections (Sta. 0+00 - 10+00)**  
for the  
**Corcoran's Pond Trail Improvements**  
located in and prepared for the  
**Town of Waterville Valley, New Hampshire**

PRELIMINARY  
NOT FOR  
CONSTRUCTION

C3.02  
SHEET 10 OF 13

2020-037  
Cross Sections (Sta. 10+50 - 15+89)  
Corcoran's Pond Trail Improvements



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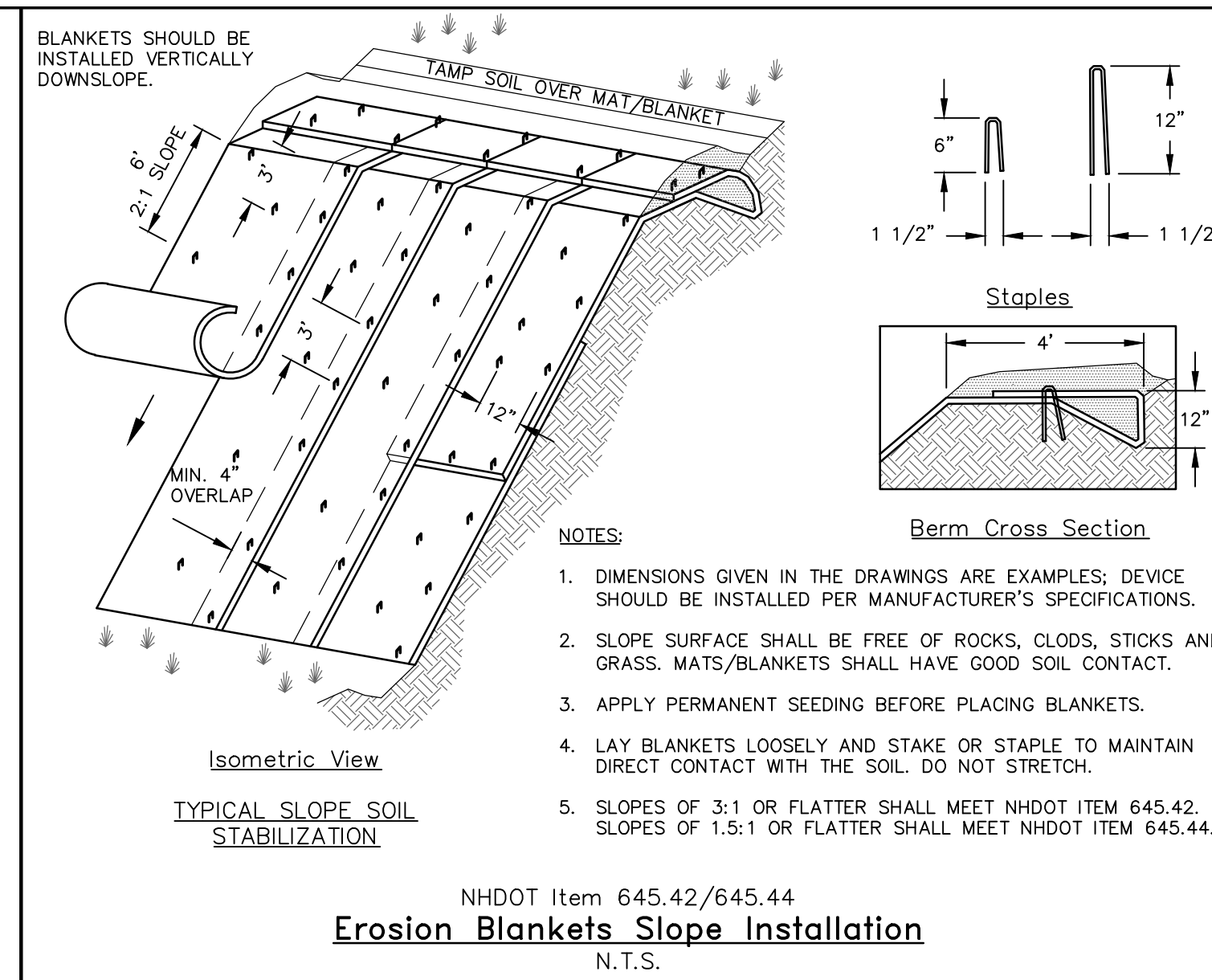
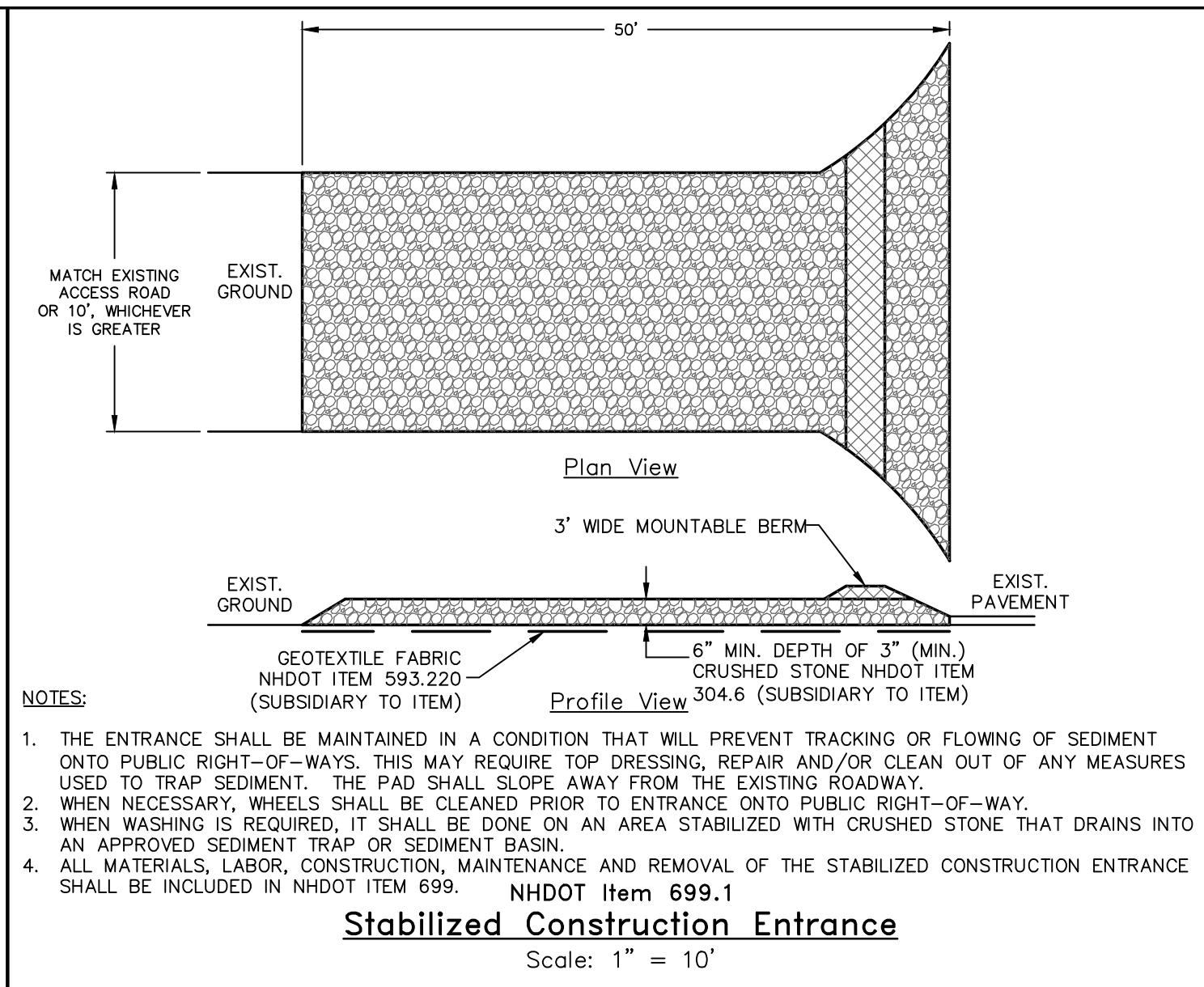
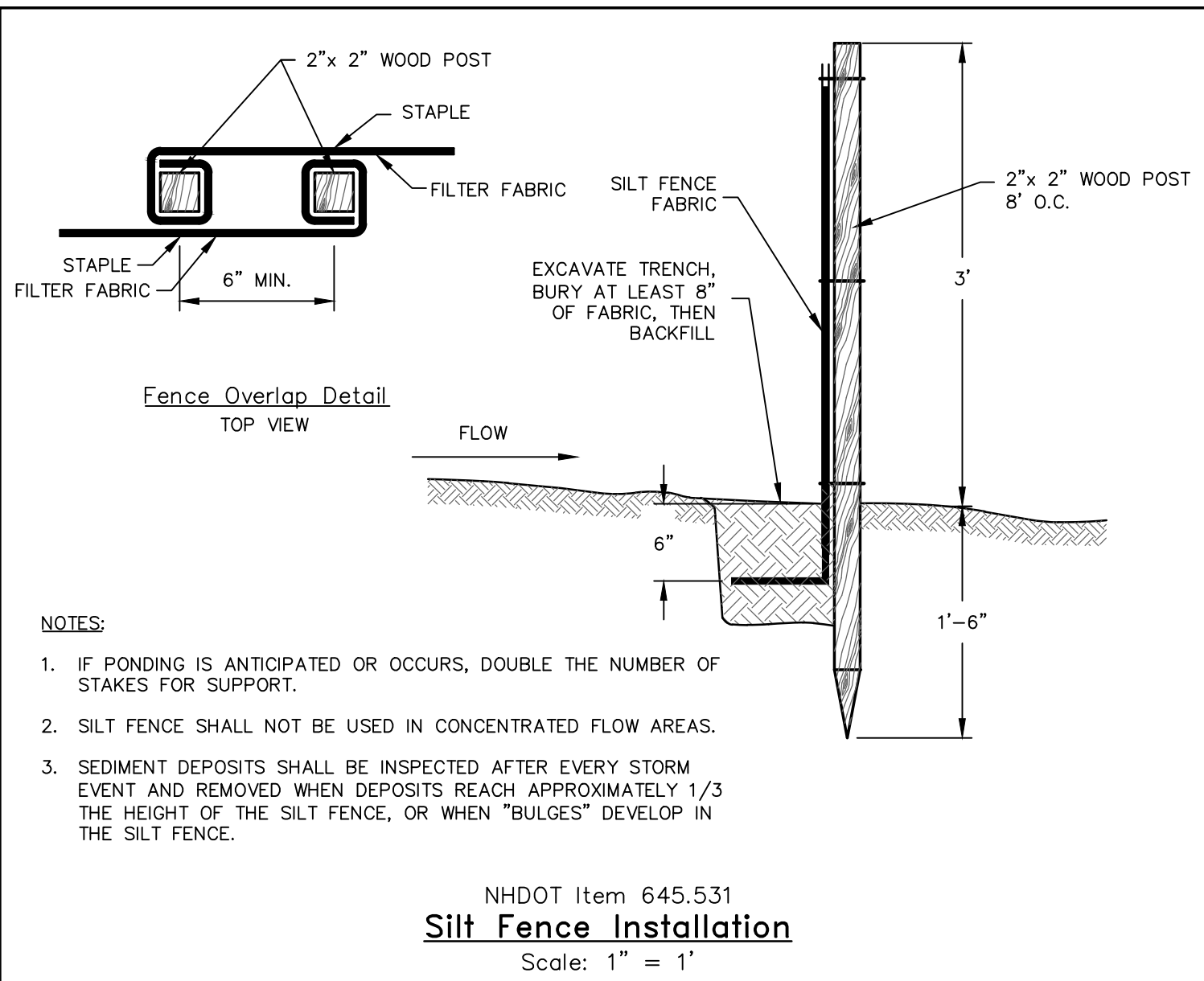


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DRAWN BY	AMS
CHECKED BY	JMM
FIELD BOOK	—
SCALE	1" = 10'
DATE	05/22/2020

**Cross Sections (Sta. 10+50 - 15+89)**  
for the  
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**Town of Waterville Valley, New Hampshire**

2020-037  
C3.02  
SHEET 10 OF 13



**General Erosion-Control Requirements:**

The primary intent of the erosion control requirements and the construction sequence is to stage the project in a manner that will minimize the potential for erosion and the potential negative effects associated therewith. The Engineer shall be contacted and the plan shall be amended if the intent is not being achieved.

1. Erosion control definitions:  
 "Strip topsoil": Excavate topsoil, screen, and stockpile.  
 "Seed(ing)": Adjust ph, apply fertilizer, sow the seed mixture, apply mulch or erosion control matting, apply topsoiler.  
 "Significant rainfall event": more than 1/4-inch of rain.

2. Install all erosion control measures prior to earthwork operation and maintain all erosion control measures and seeded embankments during construction. Erosion control shall be removed only upon the establishment of all vegetated areas.

3. All drainage structure inlets shall be protected using inlet protection or catch basin inserts.

4. Erosion control measures shall be implemented complying with the Best Management Practices (BMPs) of the New Hampshire Stormwater Management Manual, Volume 2, Post-Construction Best Management Practices Section & Design, by the NHDES, USDA SCS, and Rockingham County Conservation District, latest edition.

5. Do not disturb areas outside the limits of proposed work. Areas disturbed by the Contractor's operations shall be restored to their original condition at the Contractor's expense. All areas disturbed during construction not covered with buildings, structures or pavement shall receive four (4) inches of loam and seed.

6. The downhill side of all stockpiles shall be encircled with silt fence.

7. All ditches, swales, and other areas of concentrated flow shall be stabilized prior to directing flow to them. Inlet protection to be installed prior to directing flow to storm drains.

8. Before weekends, and if a significant rainfall event is anticipated during the construction of the cut/fill embankments, a temporary berm shall be constructed along the top of the fill embankments, and temporary slope drains (pipes) with temporary stone outlet aprons shall be installed at the base of the slopes.

9. The maximum time that any disturbed areas shall be left unstabilized shall be 14 days.

10. The smallest practical area shall be disturbed to complete the required construction, but no more than 5 acres at any one time.

11. Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway and the associated drainage is complete and stable.

12. An area shall be considered stable if one of the following has occurred:  
 A. Base course gravels have been installed in areas to be paved;  
 B. A minimum of 85 percent vegetated growth has been established;  
 C. A minimum of 3 inches of non-erosive material such as stone or riprap has been installed; or  
 D. Erosion control blankets have been properly installed.

13. All erosion control measures shall be inspected weekly, and after every 0.25 inches or greater rainfall within a 24-hour period.

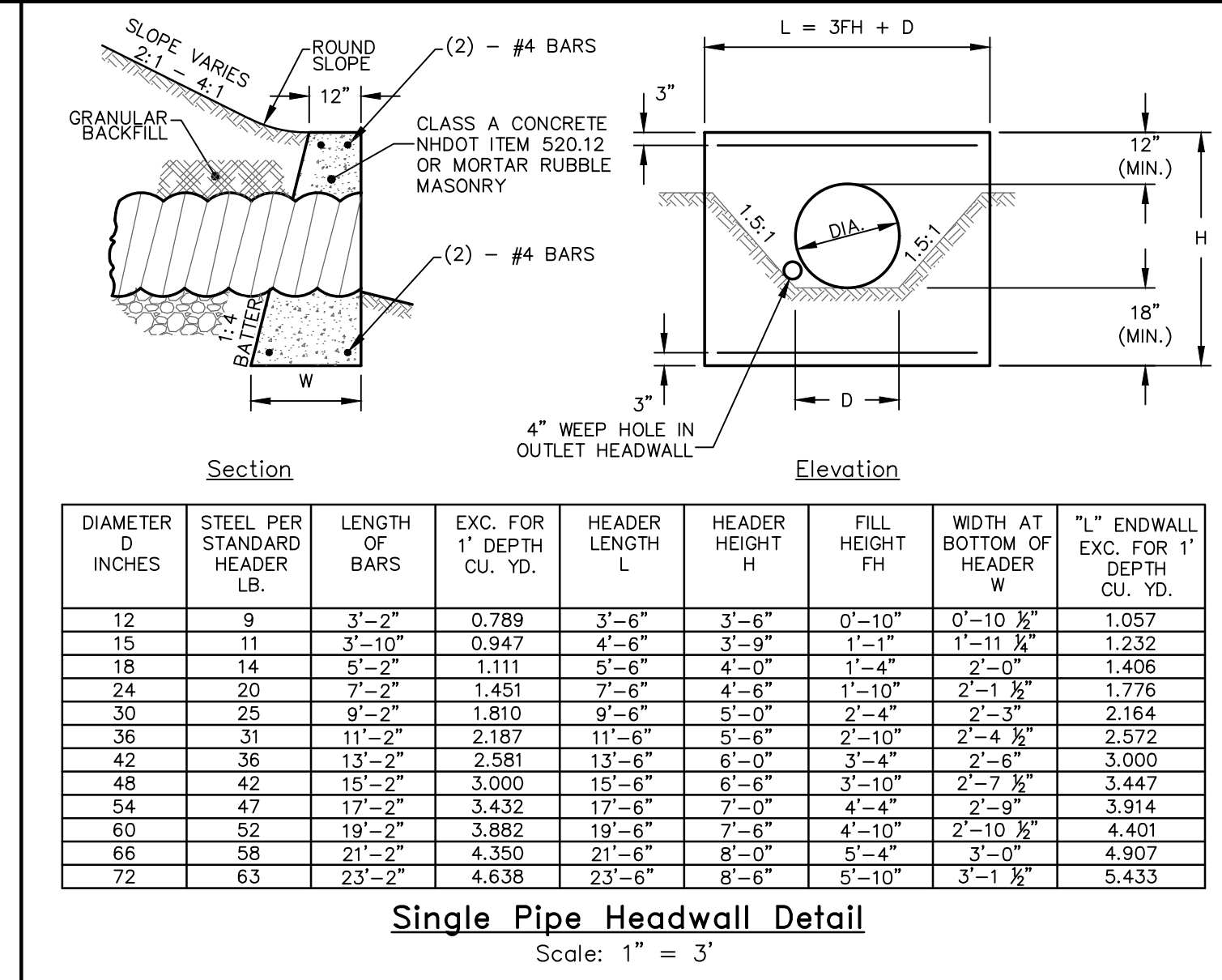
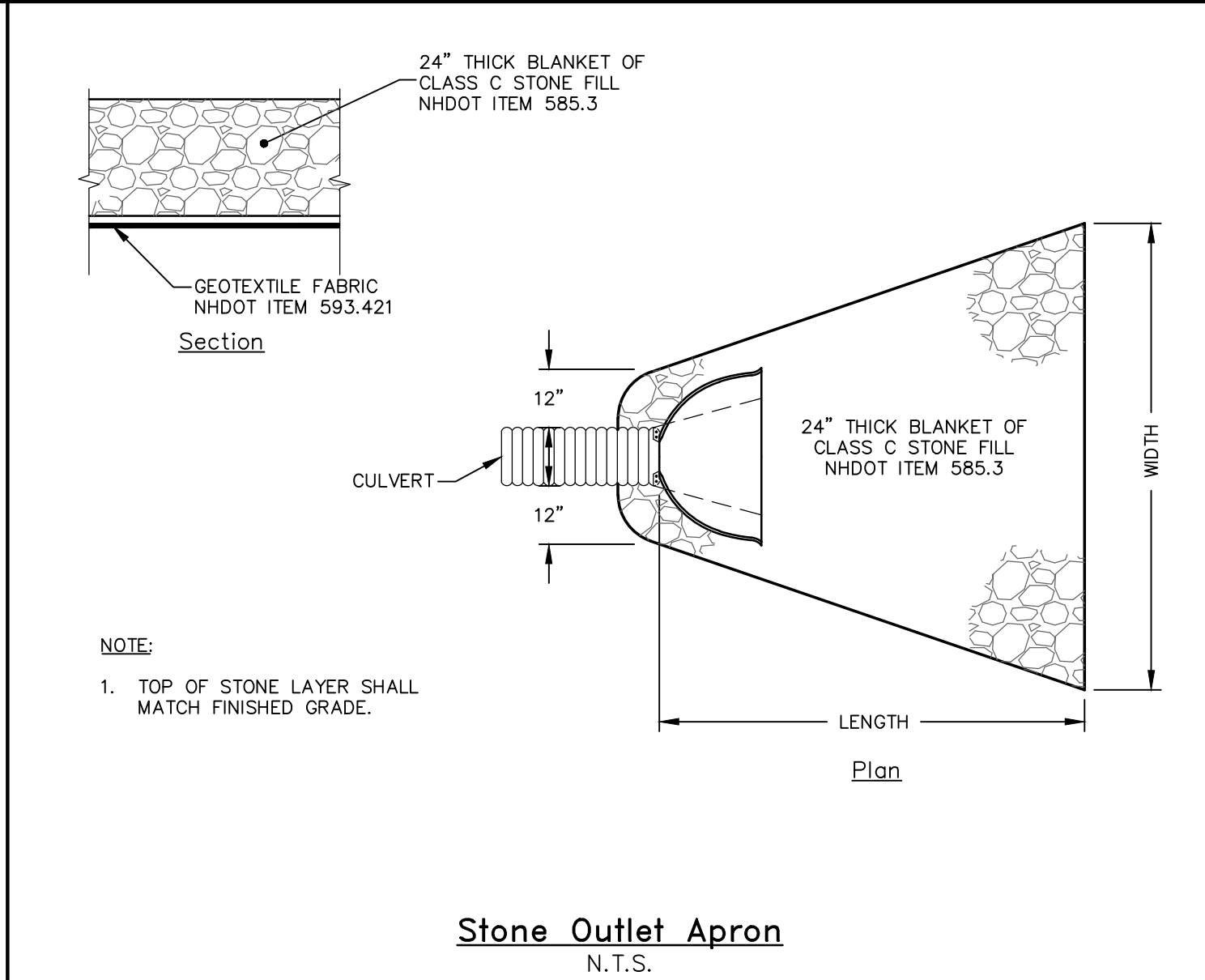
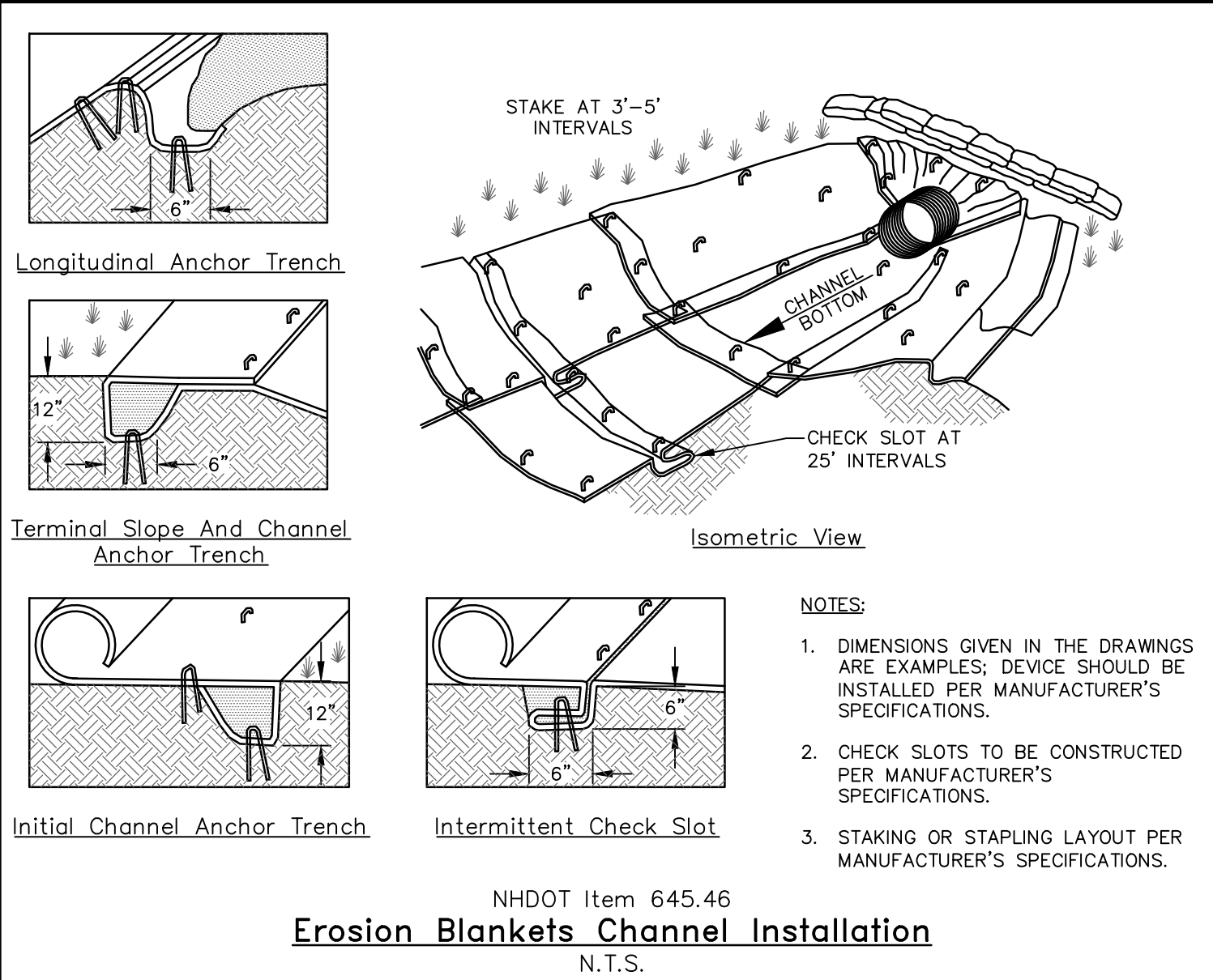
14. All roadways/parking areas and cut and fill slopes shall be stabilized within 72 hours of achieving finished grade.

15. Precaution shall be taken throughout the duration of construction activity to prevent, abate, and control the emission of fugitive dust, including but not limited to, wetting, covering, shielding, or vacuuming.

16. The project must meet the requirements and intent of RSA 430:53 and Agr 3800 relative to invasive species.

17. Temporary water diversions (swales, basins, etc.) must be used as necessary until areas are stabilized.

18. Detention basins and swales shall be installed before rough grading at the site.



**Seeding Notes:**

1. Seed mixture: Prior to construction, submit certification from seed supplier that the mixture complies with the requirements. Include the requirements on the certification.

2. Prepare subsoil by eliminating uneven areas; removing foreign materials, weeds, and other undesirable plants and their roots; scarifying subsoil to a depth of 3 inches.

3. Spread loam to yield a minimum depth of 4-inches after rolling. Rake smooth to remove stones and roots. Loam shall consist of loose friable topsoil with no admixture of refuse or material toxic to plant growth. Loam shall be generally free from stones, lumps, stumps, subsoil, roots, and weeds or similar objects larger than 2 inches in greatest diameter. The term as used herein shall mean that portion of the soil profile defined technically as the "A" horizon by the Soil Science Society of America. The minimum and maximum pH value shall be from 5.5 to 7.6. Loam shall contain a minimum of 3 percent, and a maximum of 10 percent, of organic matter as determined by loss by ignition. Not more than 65 percent shall pass a No. 200 sieve as determined by the wash test in accordance with ASTM D 1140. In no instance shall more than 20 percent of that material passing the No. 4 sieve consist of clay size particles.

4. Apply agricultural limestone at a rate of 100 lbs, per 1000 sf.

5. Apply commercial grade 10-10-10 fertilizer at a rate of 10 lbs, per 1000 sf.

6. Sow uniformly with last year's crop of the local natural resource conservation service's "conservation mix" at a rate of 0.5lbs/1000 sf. Mixture is to have a germination rate of not less than 80 percent, and a purity of not less than 85 percent.

7. Roll seeded area with hand roller.

8. All ditches shall receive erosion control matting.

**Temporary:**

1. Bedding: Remove stones and trash that will interfere with seeding the area. Where feasible, till the soil to a depth of about 3 inches to prepare a seedbed and mix fertilizer into the soil. The seedbed should be left in a firm and smooth condition. The last tillage operation should be performed across the slope wherever practical.

2. Fertilizers: Fertilizer should be uniformly spread over the area prior to being incorporated into the soil. A minimum of 300 pounds per acre (7 pounds per 1,000 square feet) of 10-10-10 fertilizer, or its equivalent, should be applied.

3. Where it is impracticable to incorporate fertilizer and seed into moist soil, the seeded area should be mulched to facilitate germination.

4. Seed Mixture: Use any of the following:

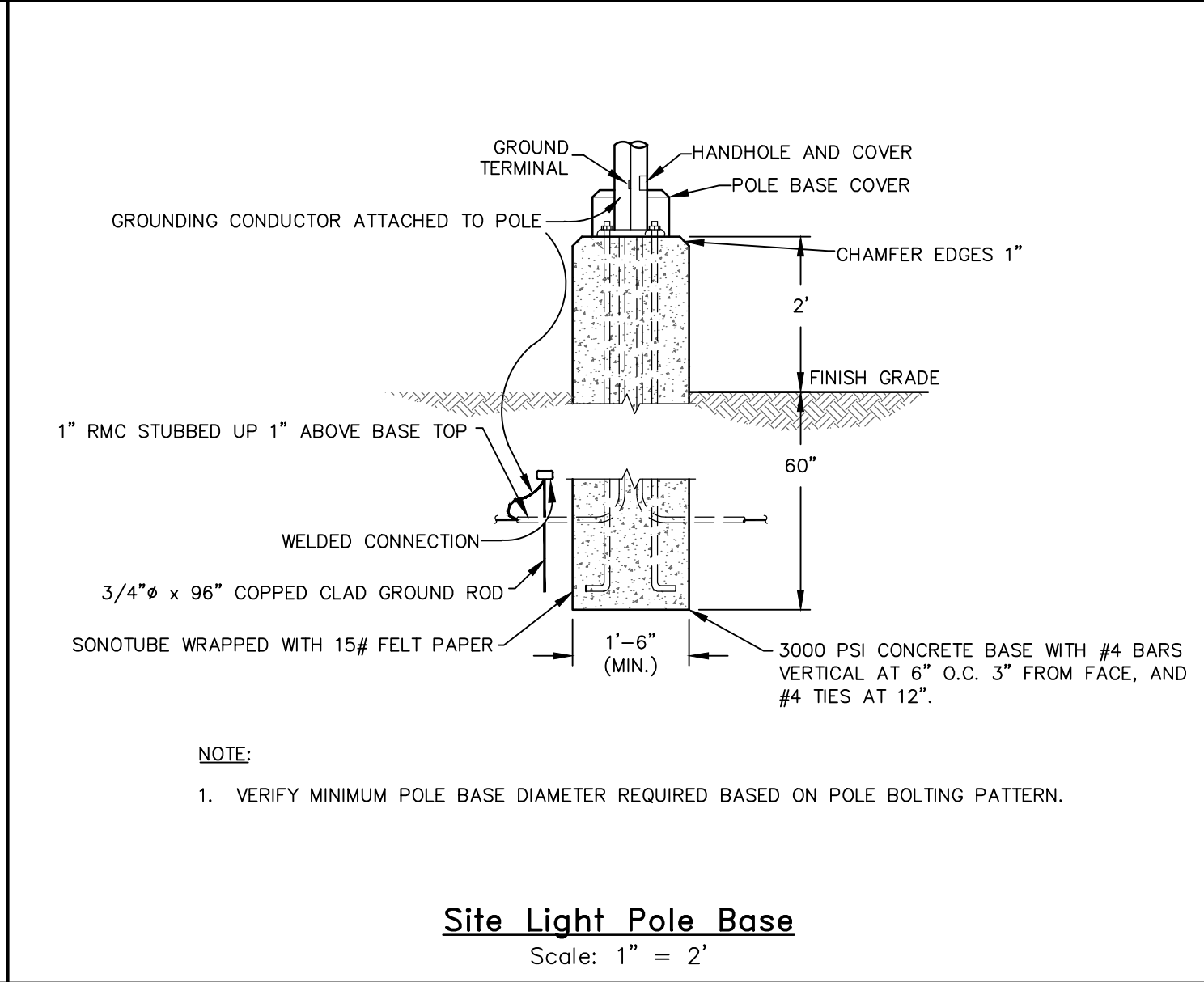
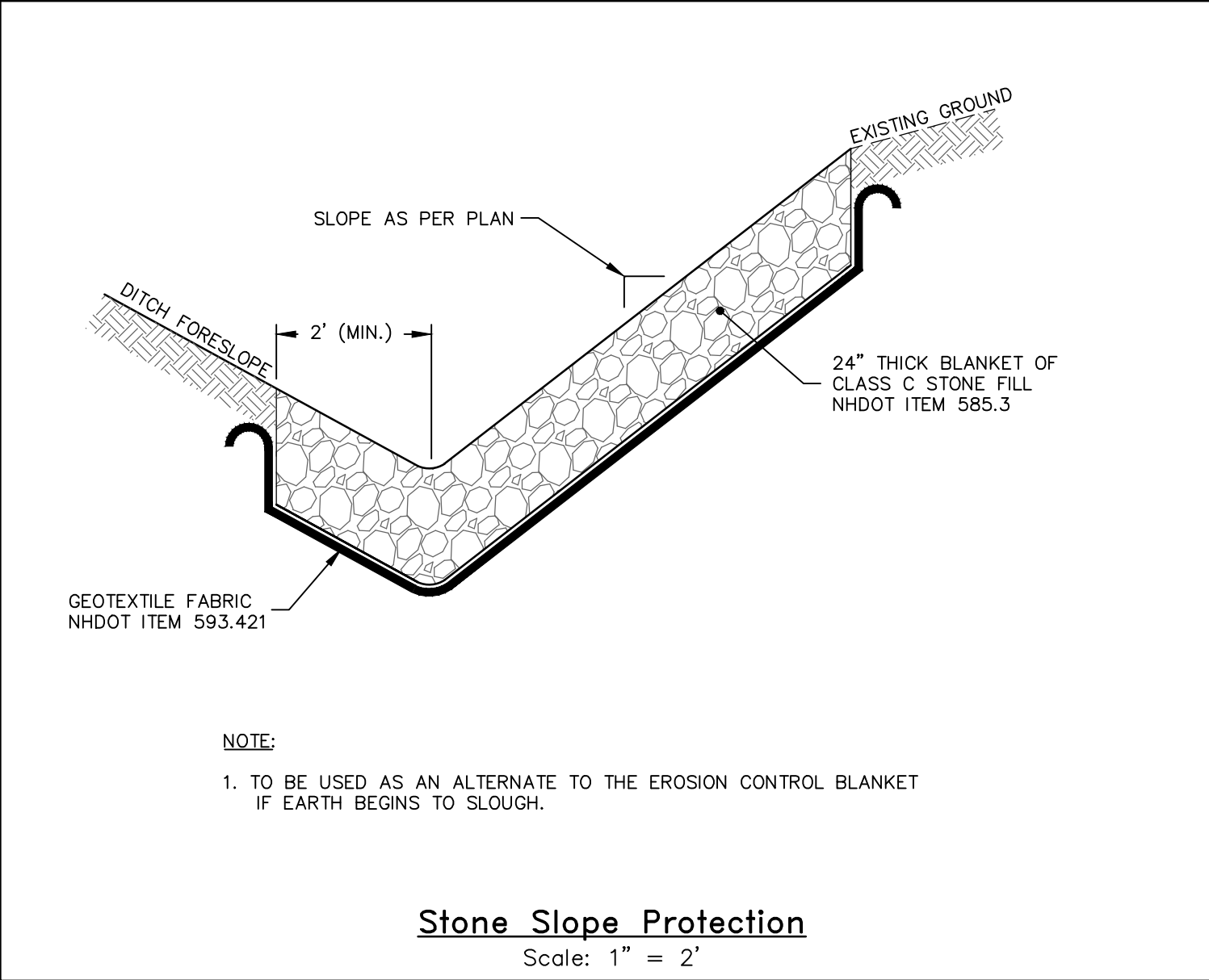
Species	Per Acre	Per 1,000 s.f.	Dates	Depth
Winter Rye	112 lbs.	2.5 lbs.	8/15-9/5	1 inch
Oats	80 lbs.	2.0 lbs.	Spring-5/15	1 inch
Annual Ryegrass	40 lbs.	1.0 lb.	4/15-9/15	1/2 inch
Perennial Ryegrass	30 lbs.	0.7 lbs.	4/1-6/1 or 8/15-9/15	1/2 inch

5. Maintenance: If seeding fails to grow, it may need to be re-established to provide adequate erosion control. If weeds become a problem, they may need to be controlled by mowing.

**Critical Erosion Areas:**

Temporary seeding and/or mulching shall be used to protect exposed critical areas during construction. The following areas are particularly susceptible to erosion and shall receive extra attention when being inspected and maintained:

1. The larger cut and fill areas along the road and driveways.  
 2. Areas not worked or not to be worked for 3 weeks.  
 3. Areas of concentrated flow such as the ditches, swales, and toe of uphill facing slopes.  
 4. Stormwater ponds and level spreaders.



DIAMETER D INCHES	STEEL PER STANDARD HEADER LB.	LENGTH OF BARS	EXC. FOR 1' DEPTH CU. YD.	HEADER LENGTH L	HEADER HEIGHT H	FILL HEIGHT FH	WIDTH AT BOTTOM OF HEADER W	"L" ENDWALL EXC. FOR 1' DEPTH CU. YD.
12	9	3'-2"	0.789	3'-6"	3'-6"	0'-10"	0'-10 1/2"	1.057
15	11	3'-10"	0.947	4'-6"	3'-9"	1'-1"	1'-11 1/2"	1.232
18	14	5'-2"	1.111	5'-6"	4'-0"	1'-4"	2'-0"	1.406
24	20	7'-2"	1.451	7'-6"	4'-6"	1'-10"	2'-1 1/2"	1.776
30	25	9'-2"	1.810	9'-6"	5'-0"	2'-4"	2'-3"	2.164
36	31	11'-2"	2.187	11'-6"	5'-6"	2'-10"	2'-4 1/2"	2.572
42	36	13'-2"	2.581	13'-6"	6'-0"	3'-4"	2'-6"	3.000
48	42	15'-2"	3.000	15'-6"	6'-6"	3'-10"	2'-7 1/2"	3.447
54	47	17'-2"	3.432	17'-6"	7'-0"	4'-4"	2'-9"	3.914
60	52	19'-2"	3.882	19'-6"	7'-6"	4'-10"	2'-10 1/2"	4.401
66	58	21'-2"	4.350	21'-6"	8'-0"	5'-4"	3'-0"	4.907
72	63	23'-2"	4.638	23'-6"	8'-6"	5'-10"	3'-1 1/2"	5.433

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No.	Revision	DATE	BY

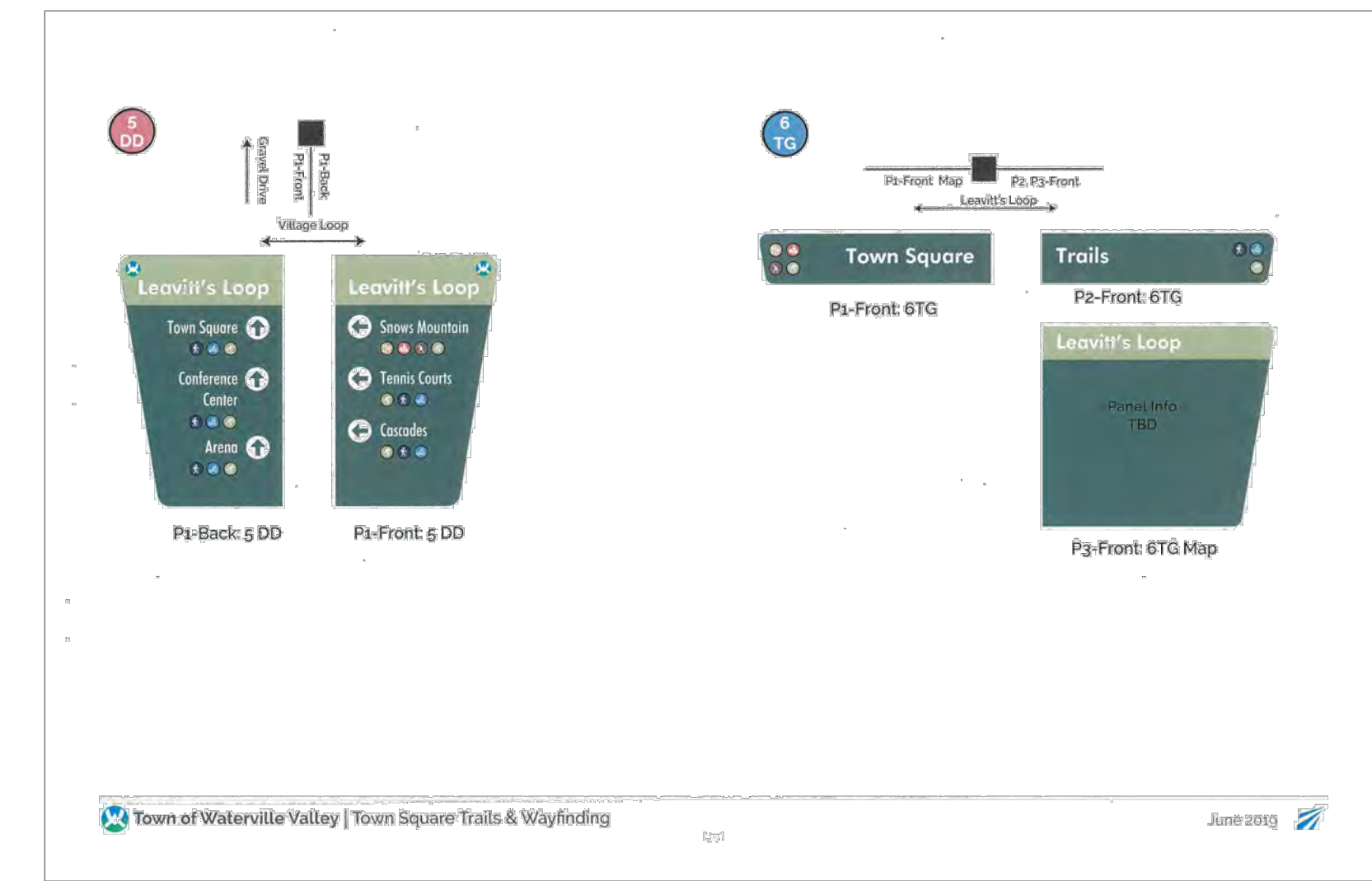
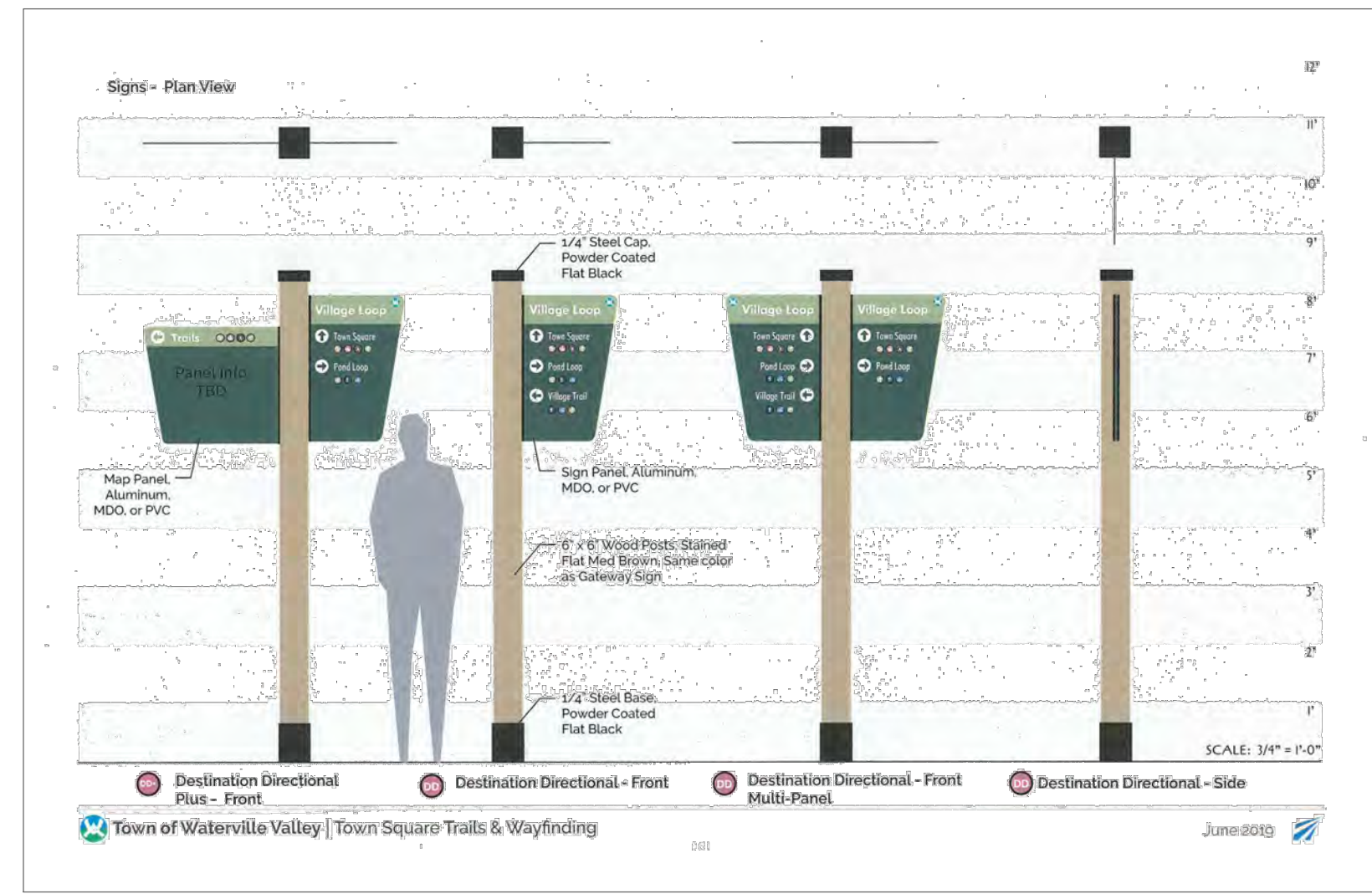


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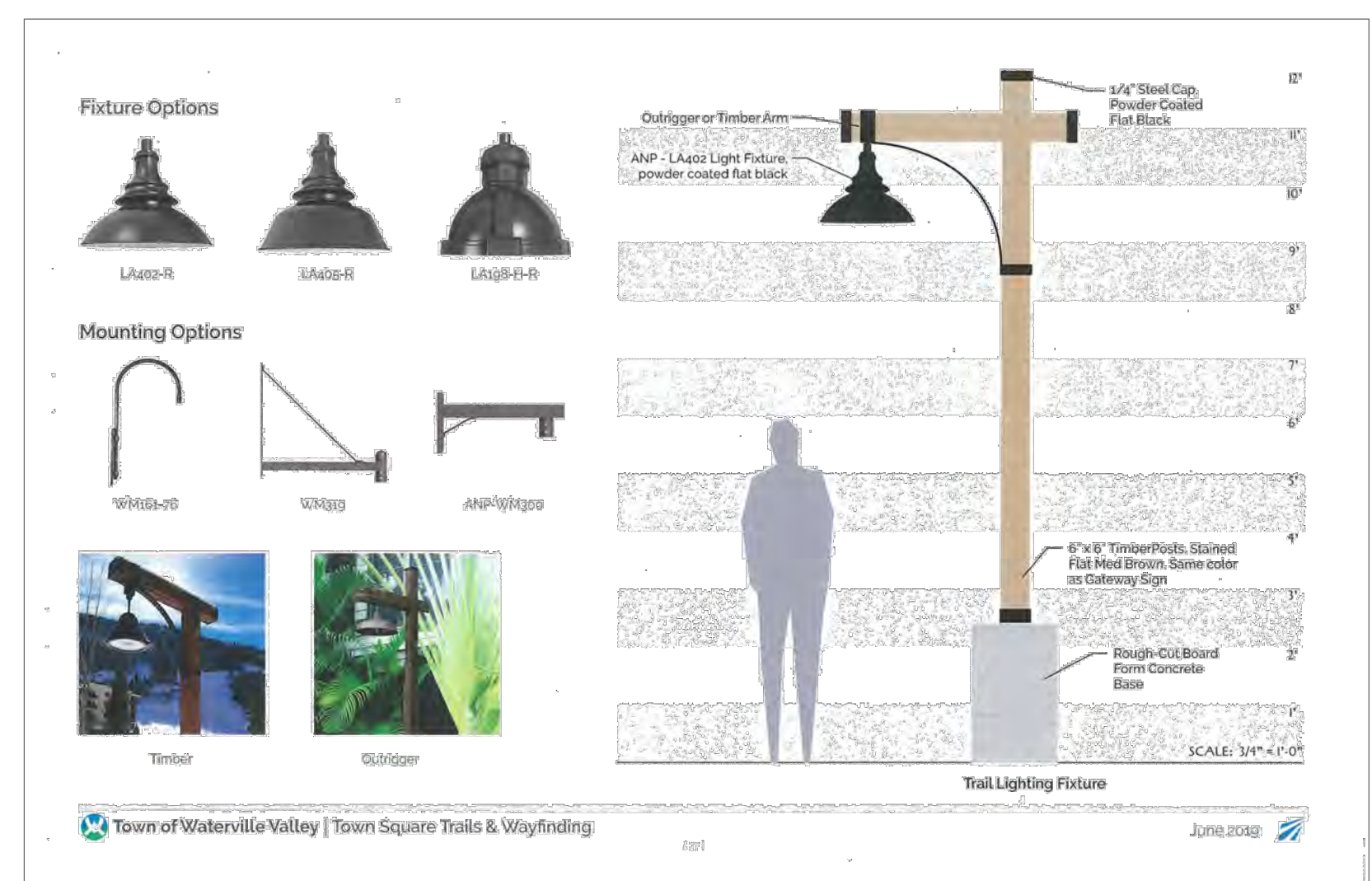
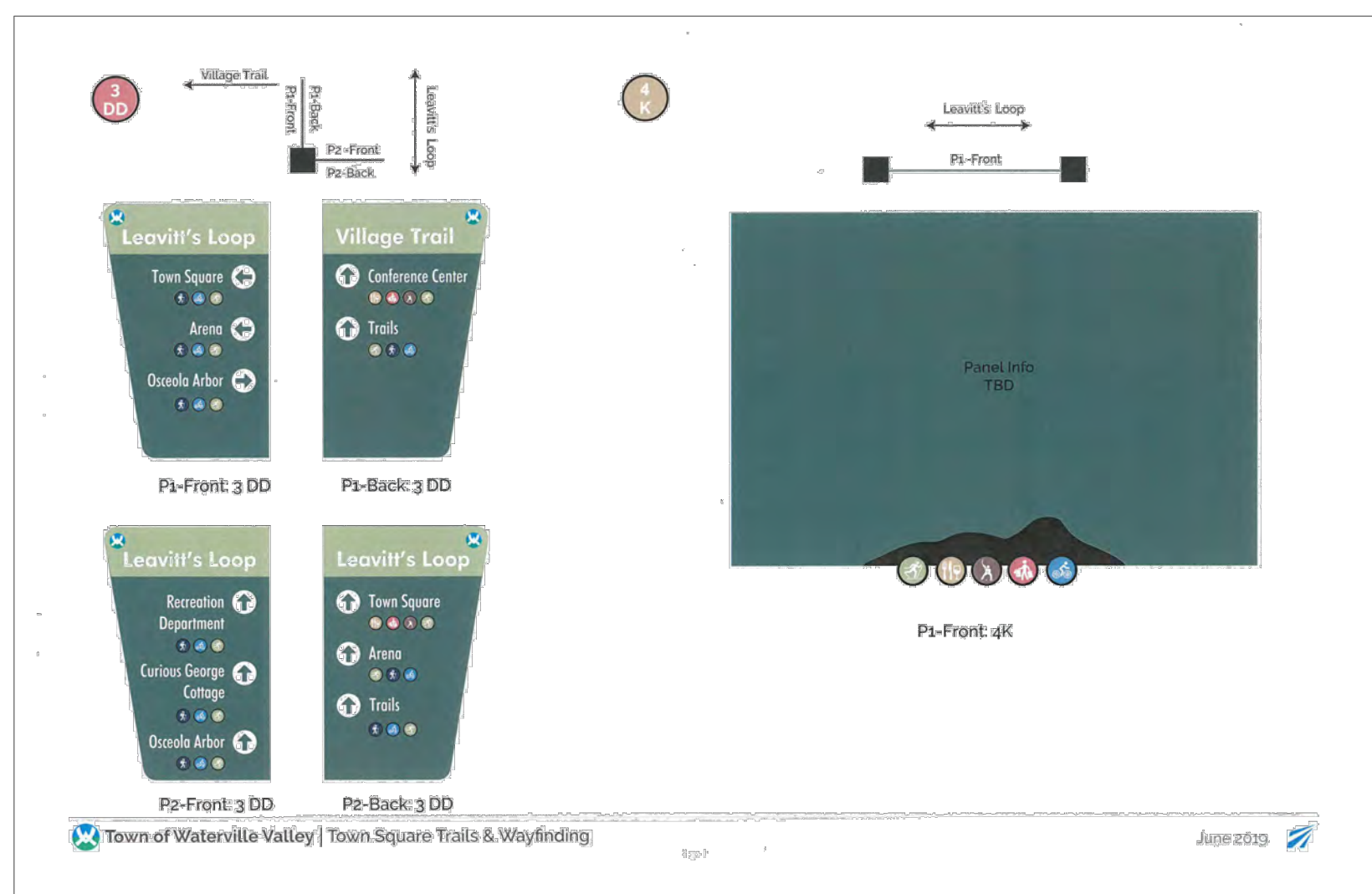
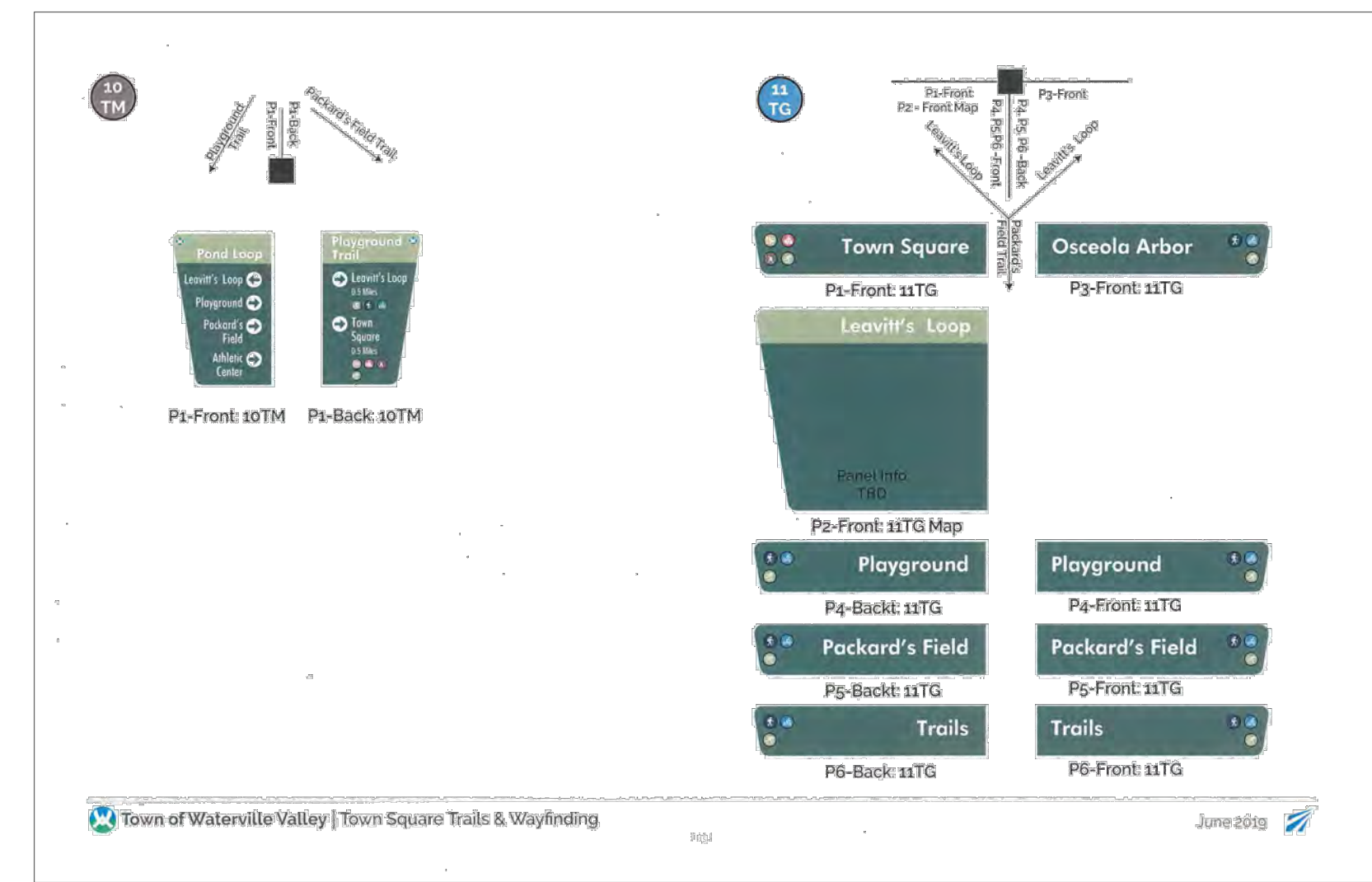
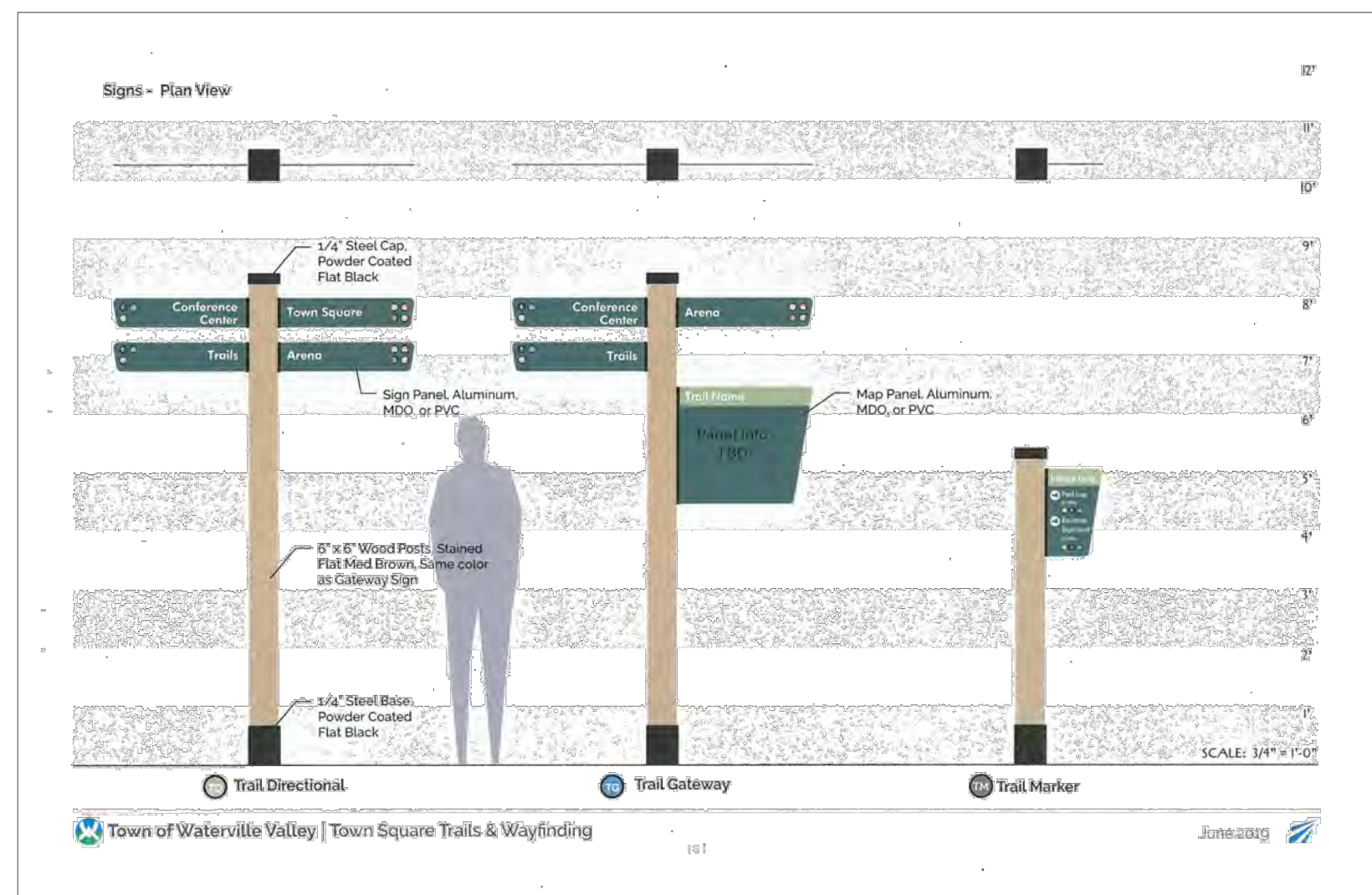
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DRAWN BY	AMS
CHECKED BY	JMM
FIELD BOOK	—
SCALE	AS NOTED
DATE	05/22/2020

**Construction Details - General**  
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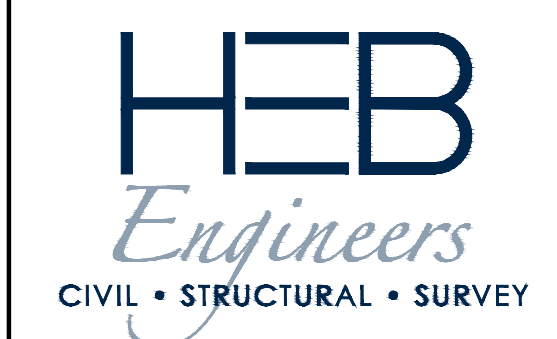
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 SHEET 11 OF 13



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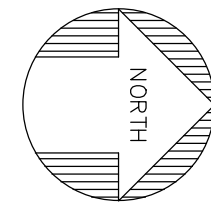
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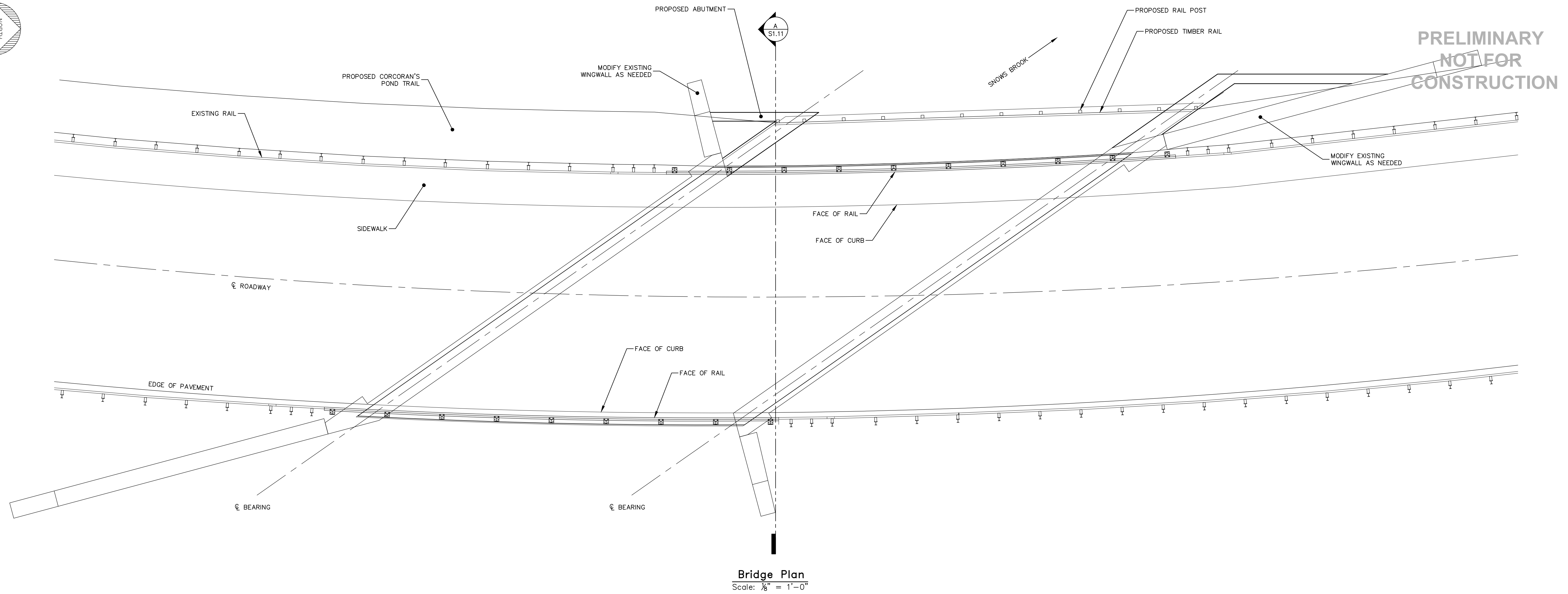
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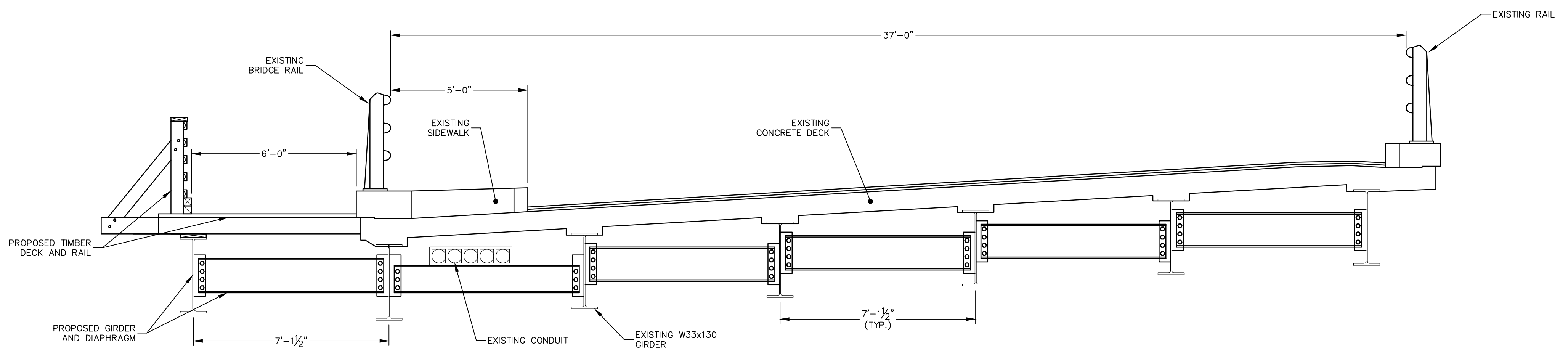
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SHEET 13 OF 13

2020-037  
Bridge Plan & Section  
Corcoran's Pond Trail Improvements



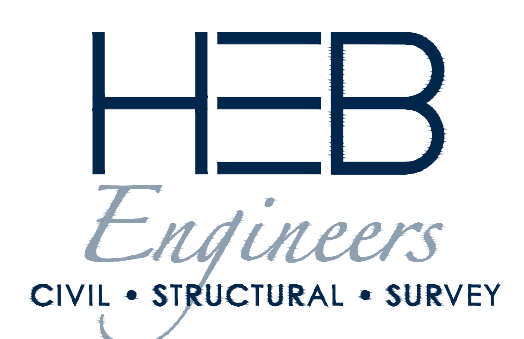
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**Bridge Plan**  
Scale: 1/8" = 1'-0"



**Bridge Section**  
Scale: 3/8" = 1'-0"

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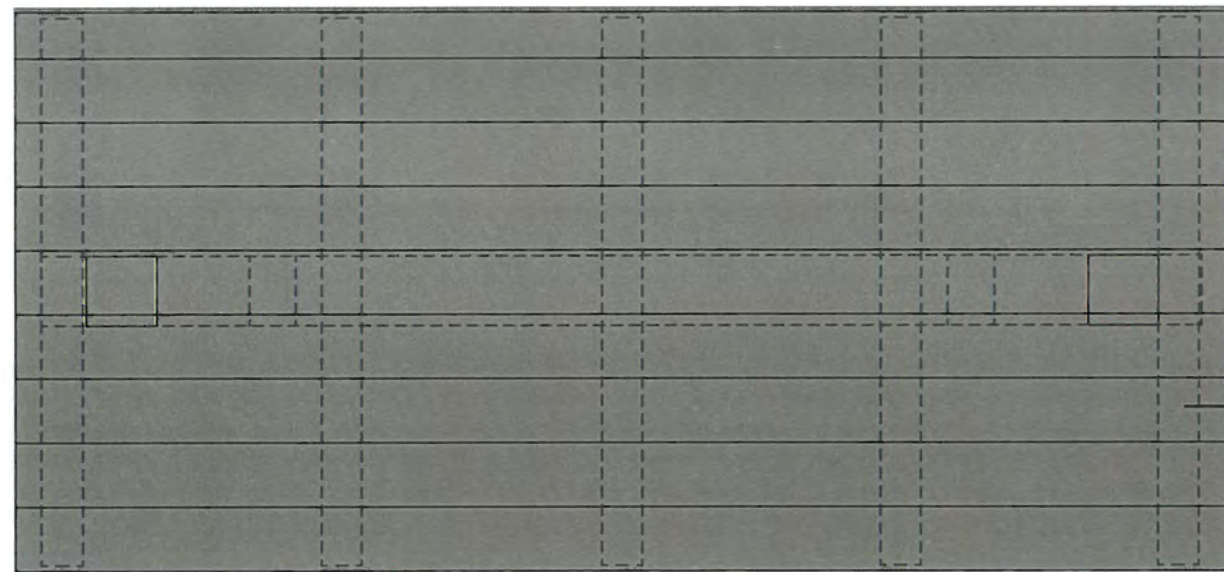
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2020-037  
S1.11  
SHEET 13 OF 13

# Wayfinding Signage Plan



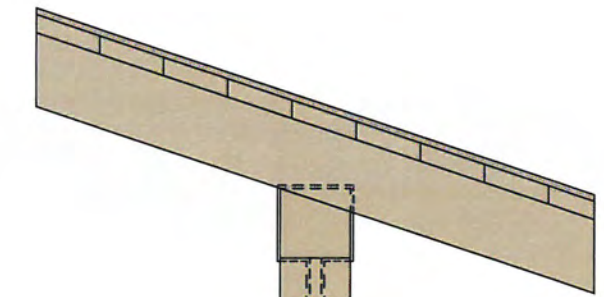
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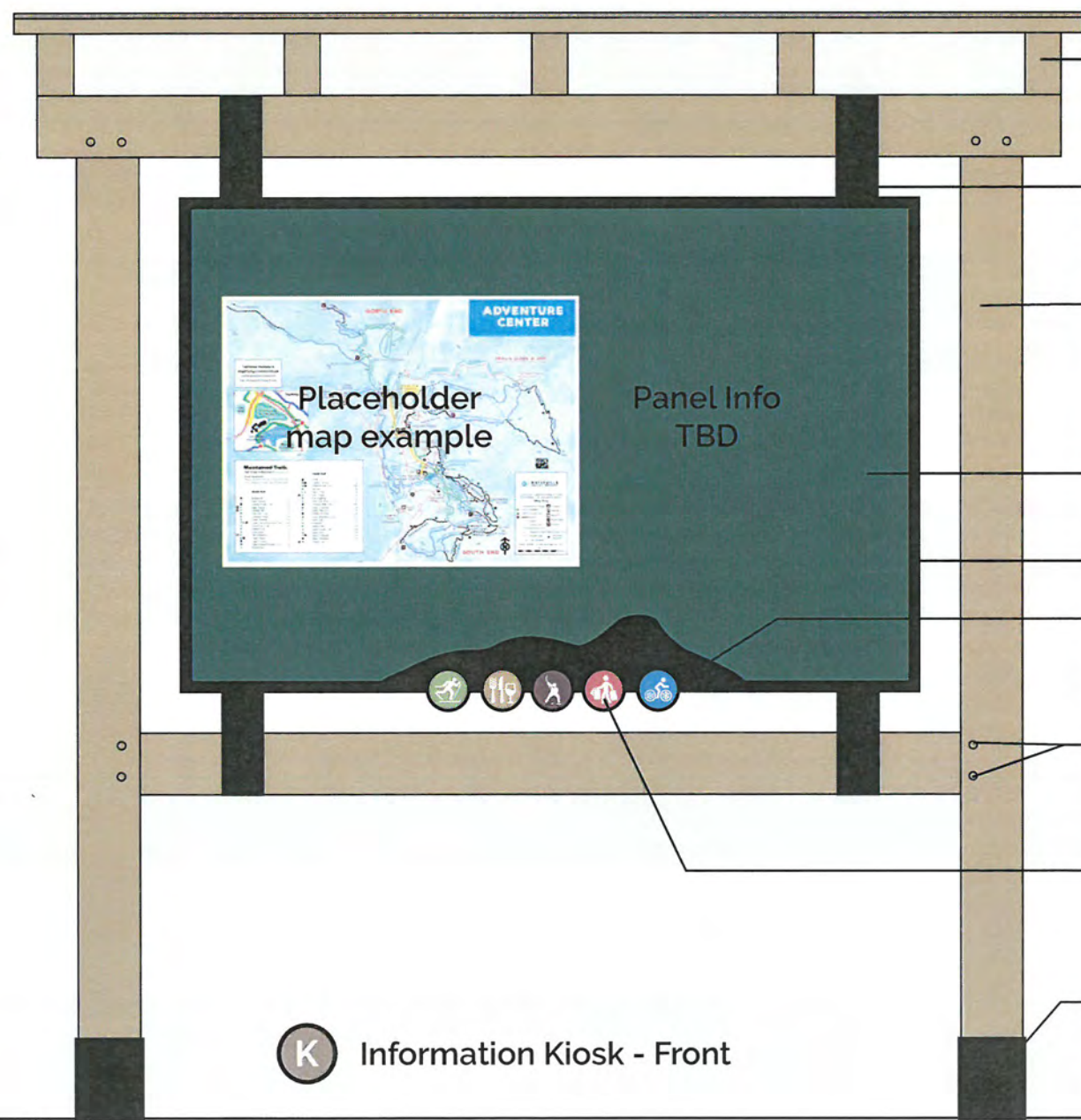
Cedar Shingle Roof

13'  
12'  
11'

**K** Information Kiosk - Side



10'  
9'  
8'  
7'  
6'  
5'  
4'  
3'  
2'  
1'



**K** Information Kiosk - Front

4" x 6" Rafter

1/4" Steel Panel Hanger, Powder Coated Flat Black

6" x 6" Wood Posts and Beams, Stained Flat Med Brown, Same color as Gateway Sign

Sign Panel, Aluminum or MDO

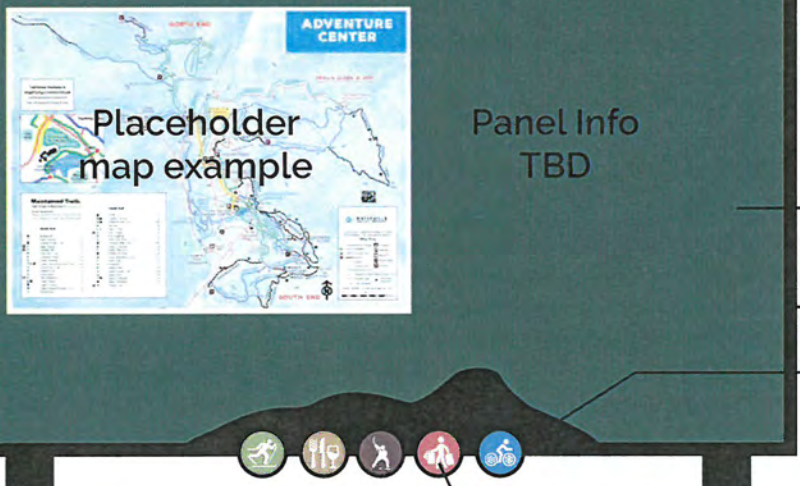
Metal Sign Panel Frame

Mountain Silhouette, Steel or Aluminum Cutout powder coated flat black

3/4" Diameter Timber Frame Wooden Pegs

4" Diameter Graphic Icons

1/4" Steel Base, Powder Coated Flat Black



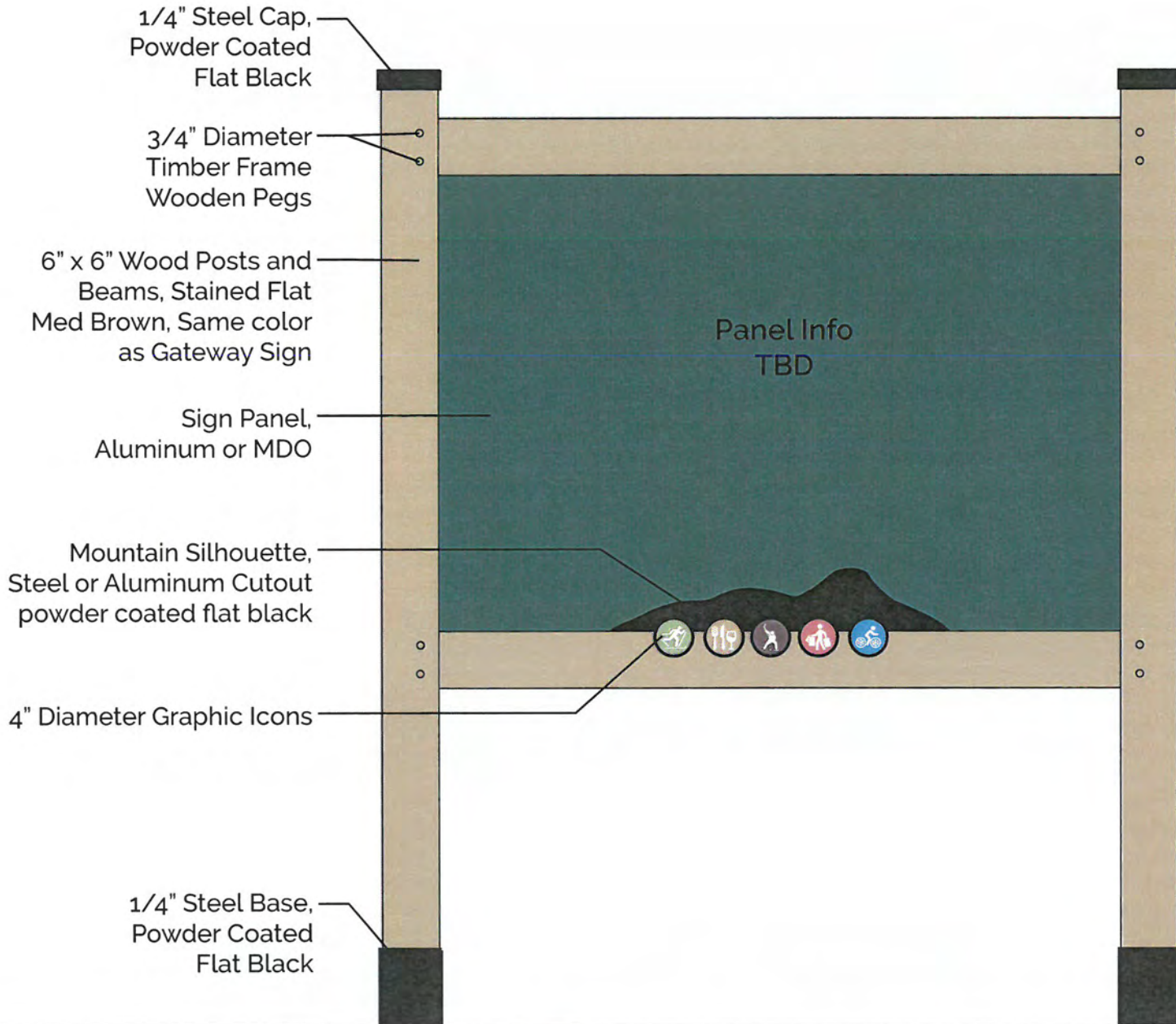
SCALE: 3/4" = 1'-0"

**K** Information Kiosk Top



12'  
11'  
10'  
9'  
8'  
7'  
6'  
5'  
4'  
3'  
2'  
1'

**K** Information Kiosk - Side

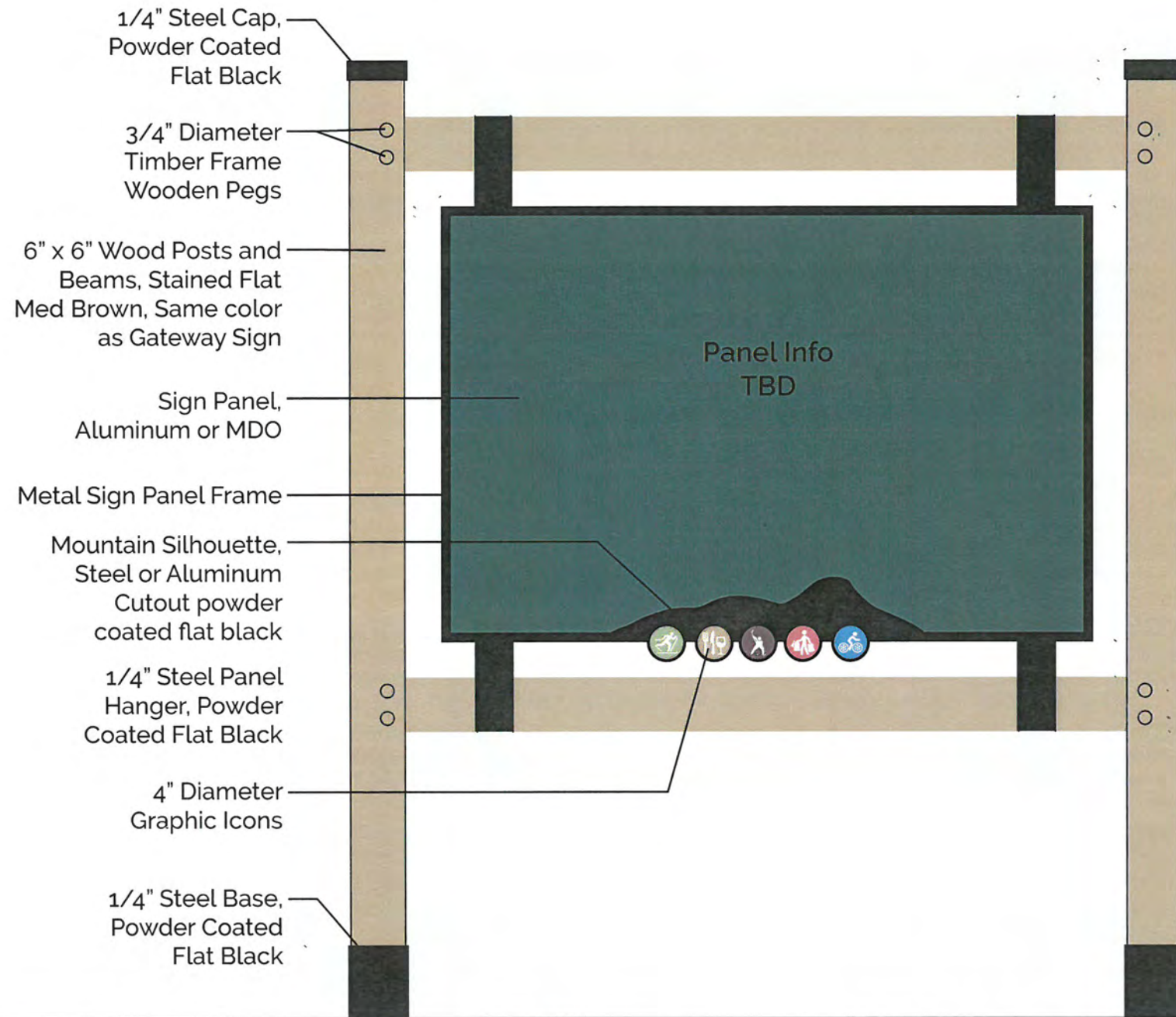


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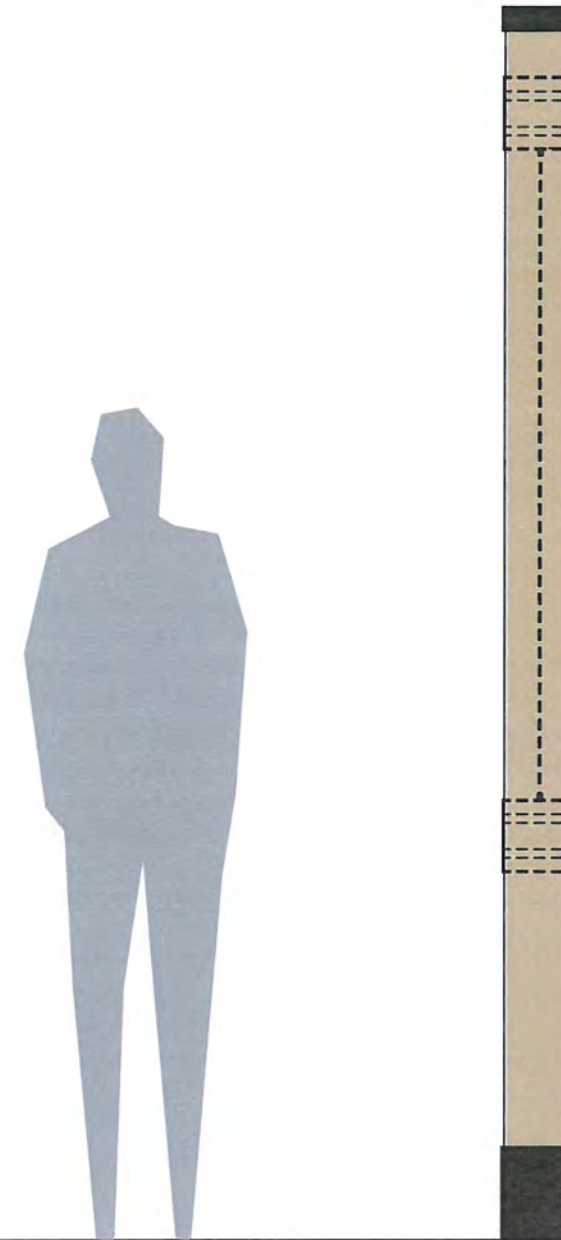
**K** Information Kiosk Alt. 1 - Front



**K** Information Kiosk Top



**K** Information Kiosk - Side

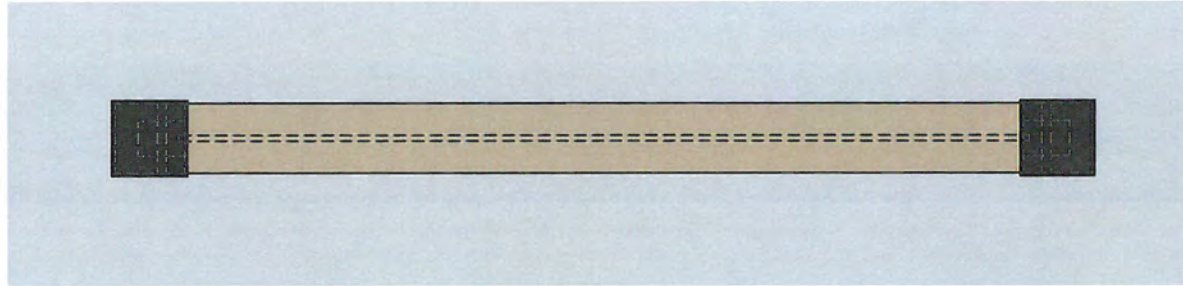


12'  
11'  
10'  
9'  
8'  
7'  
6'  
5'  
4'  
3'  
2'  
1'

SCALE: 3/4" = 1'-0"

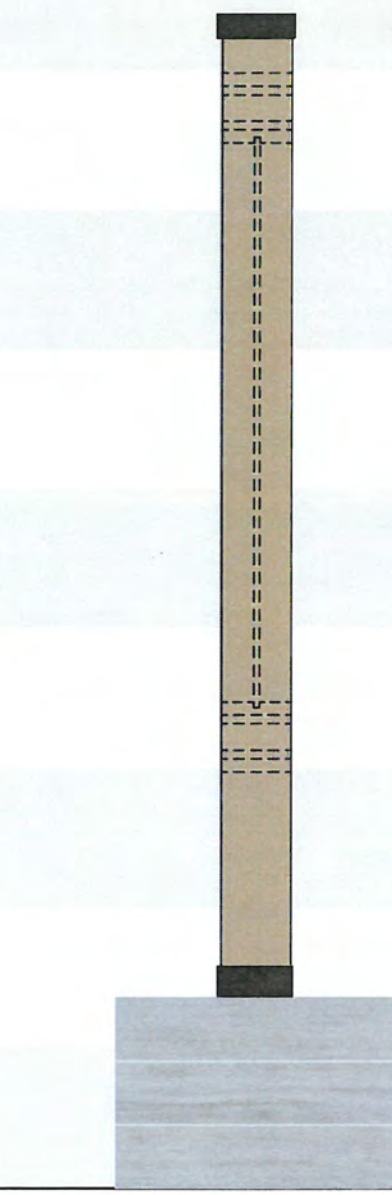
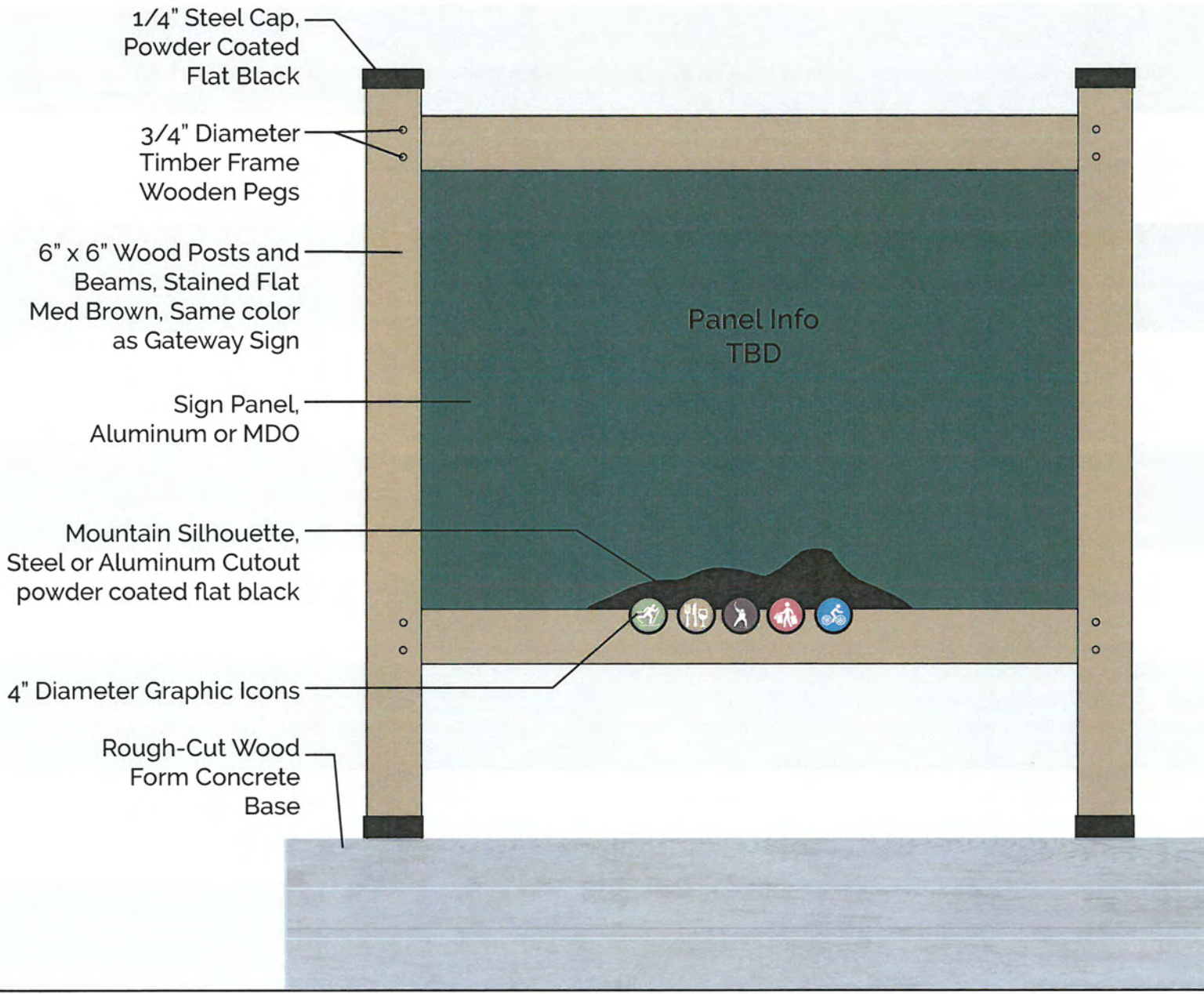
**K** Information Kiosk Alt. 2 - Front

**K** Information Kiosk Top



12'  
11'  
10'  
9'  
8'  
7'  
6'  
5'  
4'  
3'  
2'  
1'

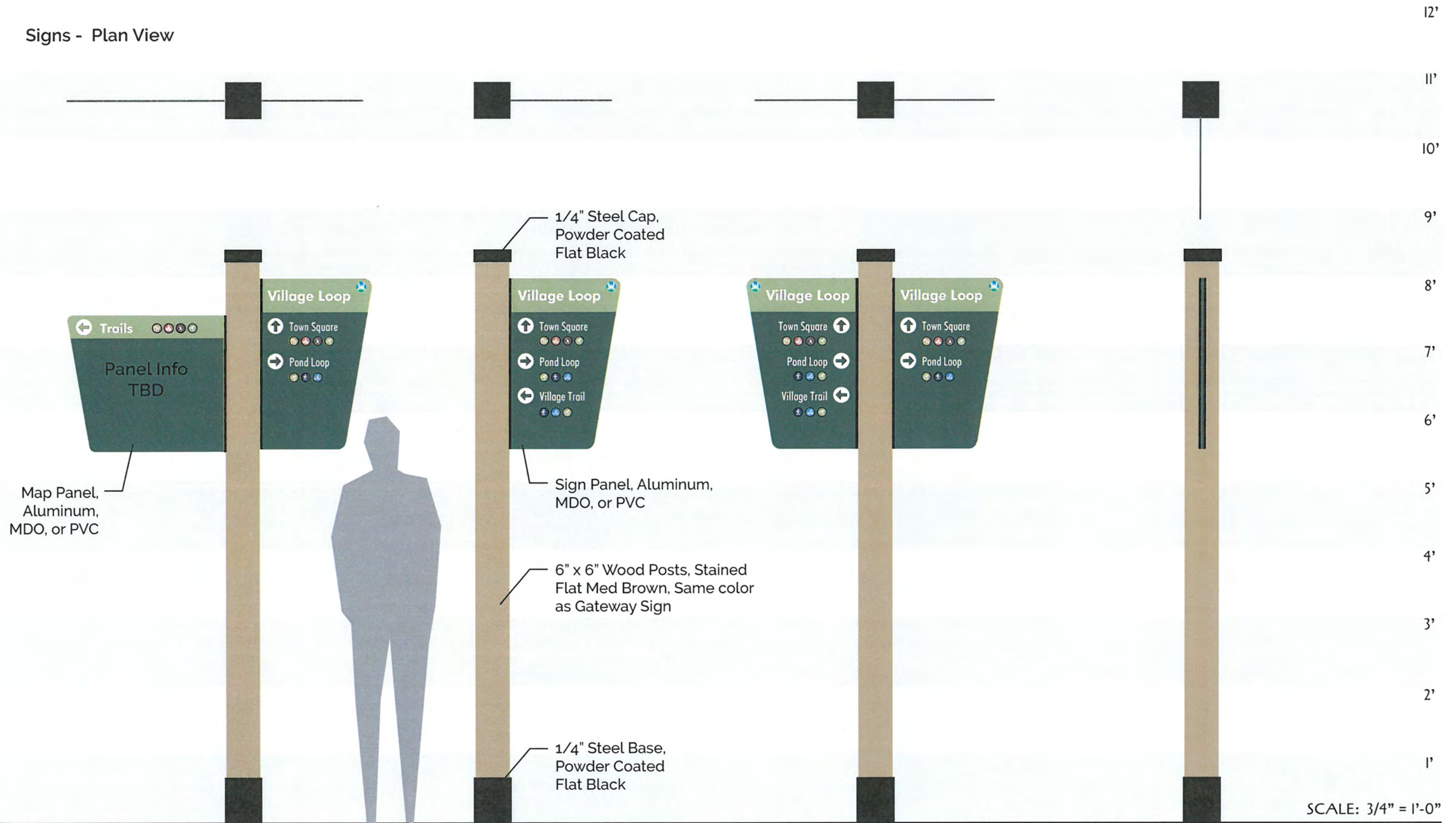
**K** Information Kiosk - Side



SCALE: 3/4" = 1'-0"

**K** Information Kiosk Alt. 3 Concrete Base - Front

Signs - Plan View



DD+ Destination Directional Plus - Front

DD Destination Directional - Front

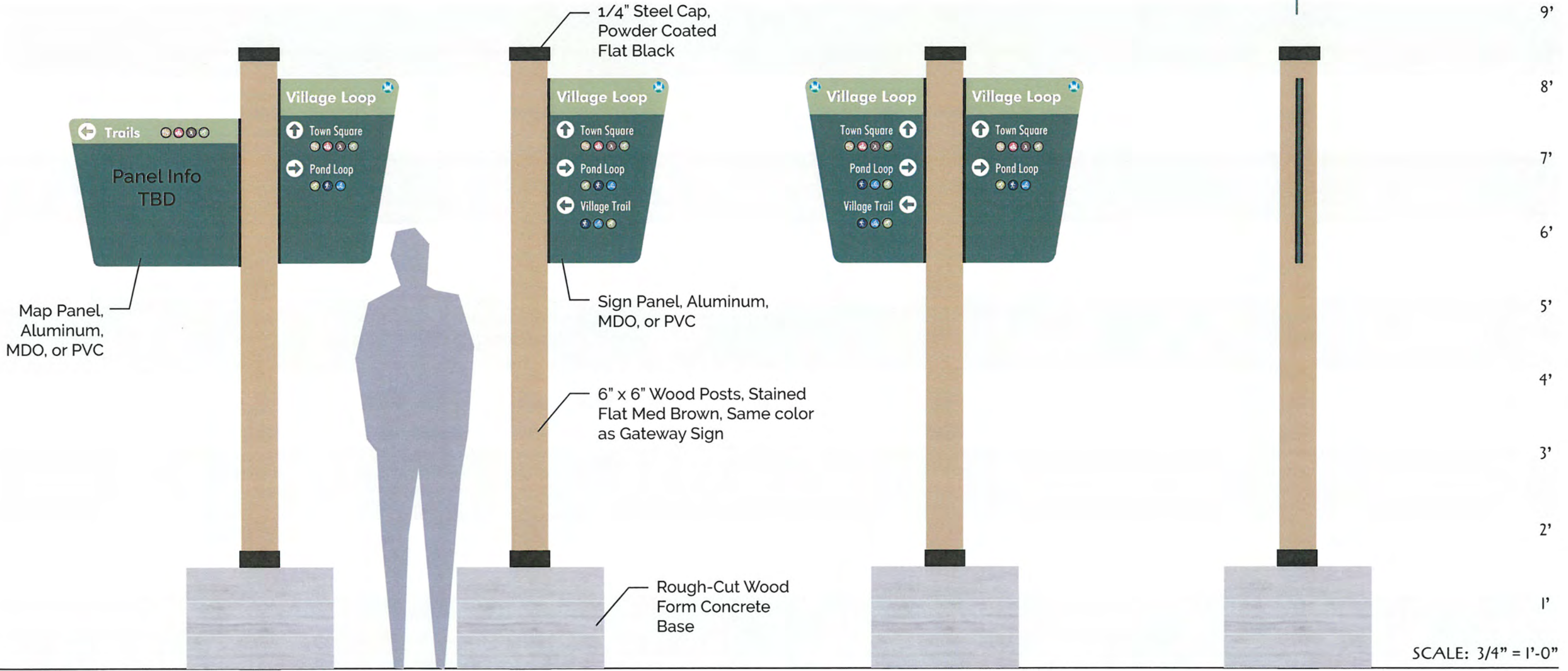
DD Destination Directional - Front Multi-Panel

DD Destination Directional - Side

Signs - Plan View



12'  
11'  
10'  
9'  
8'  
7'  
6'  
5'  
4'  
3'  
2'  
1'



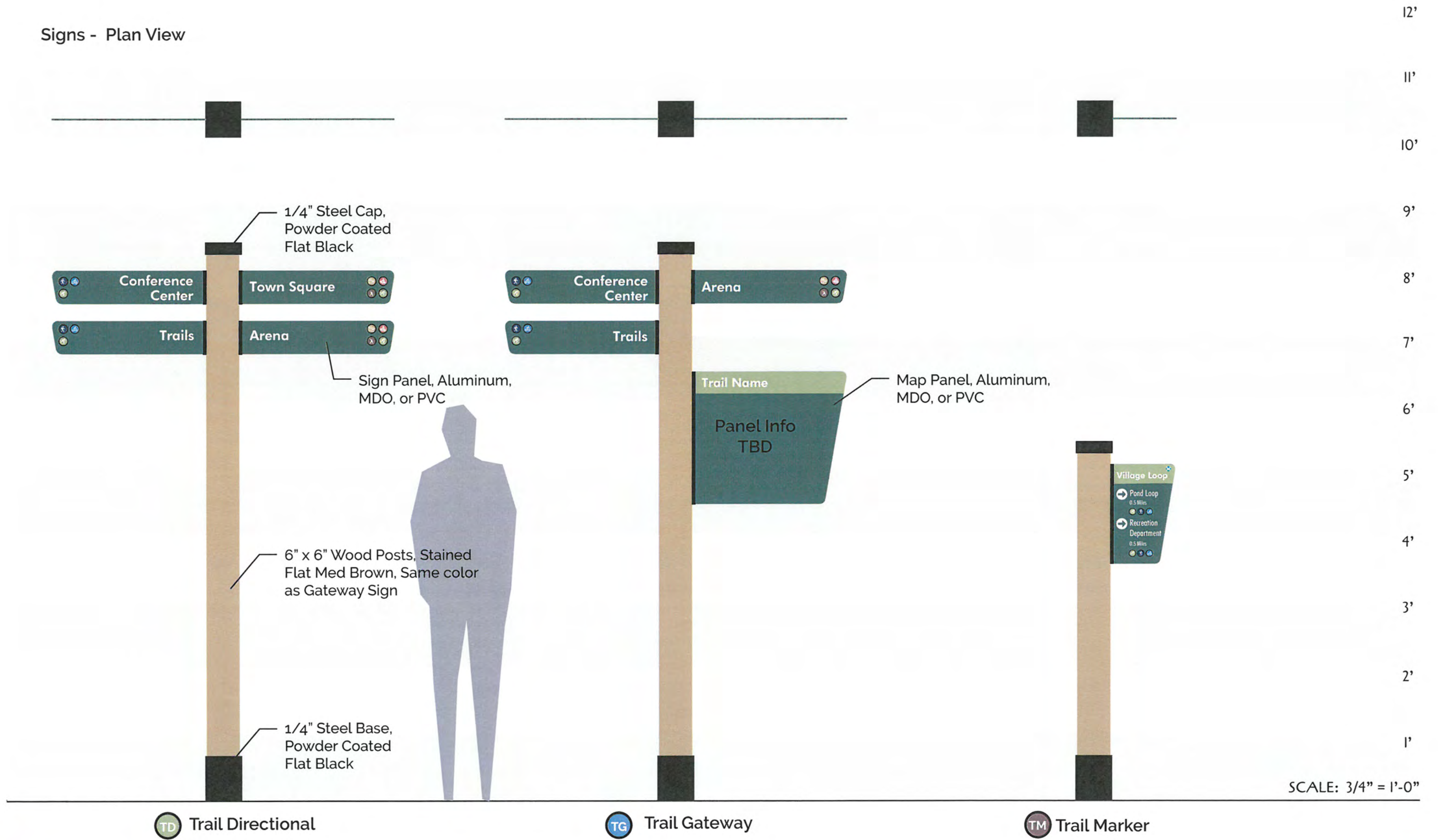
**DD+** Destination Directional Plus Concrete Base Alt.- Front

**DD** Destination Directional Concrete Base Alt.- Front

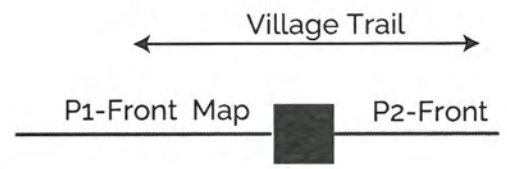
**DD** Destination Directional Concrete Base Alt.- Front Multi-Panel

**DD** Destination Directional Concrete Base Alt. - Side

Signs - Plan View



1  
DD+



**Village Trail**

Town Square ←

Corcoran's Pond ←

Conference Center ←

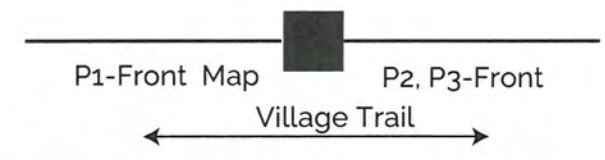
P2-Front: 1 DD+

**Trails** →

Panel Info  
TBD

P1-Front: 1 DD+ Map

2  
TD



**Trails**

P1-Front: 2 TD

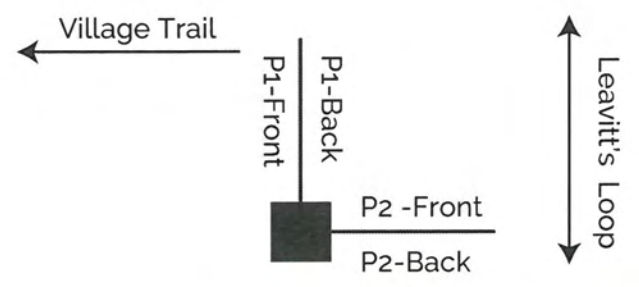
**Town Square**

P2-Front: 2TD

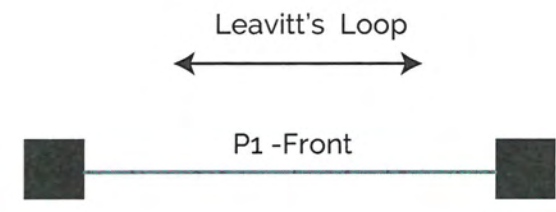
**Corcoran's Pond**

P3-Front: 2TD

3  
DD



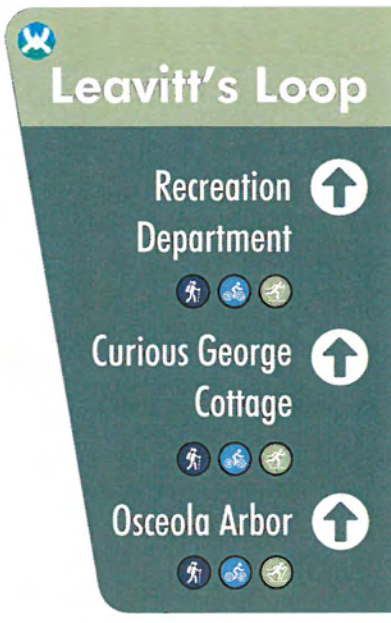
4  
K



P1-Front: 3 DD



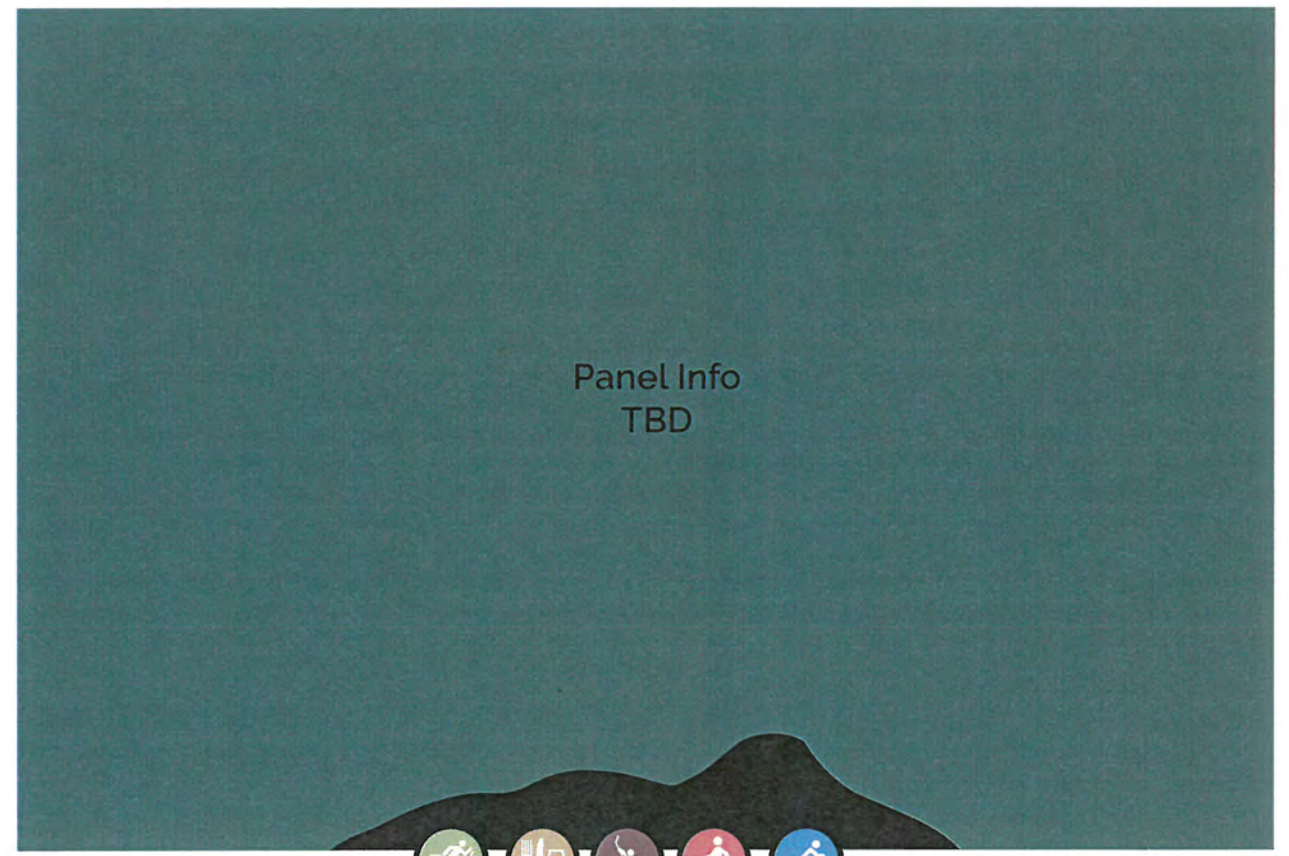
P1-Back: 3 DD



P2-Front: 3 DD

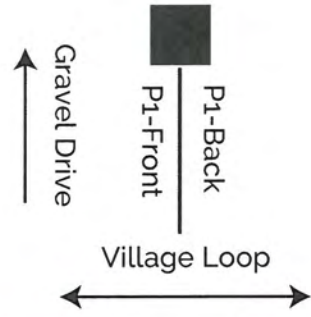


P2-Back: 3 DD



P1-Front: 4K

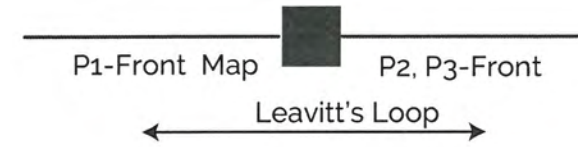
5  
DD



P1-Back: 5 DD

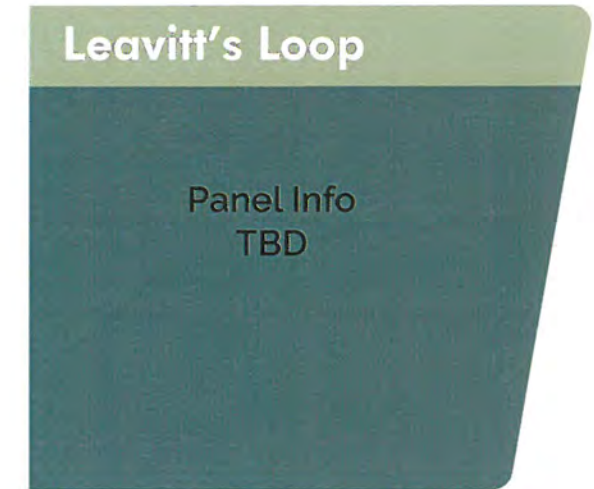
P1-Front: 5 DD

6  
TG



P1-Front: 6TG

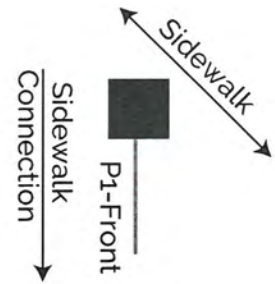
P2-Front: 6TG



P3-Front: 6TG Map

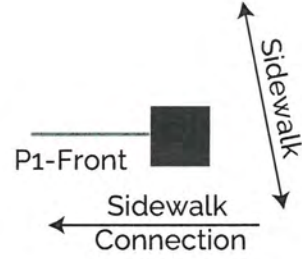


7  
TM



P1-Front: 7TM

8  
TM



P1-Front: 8TM

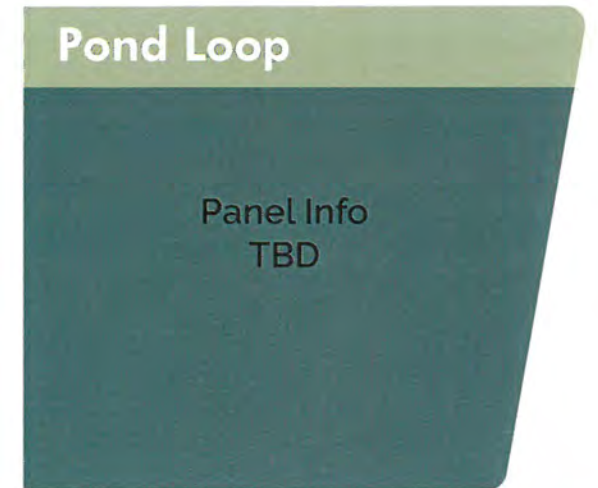
9  
TG



P1-Front: 9TG

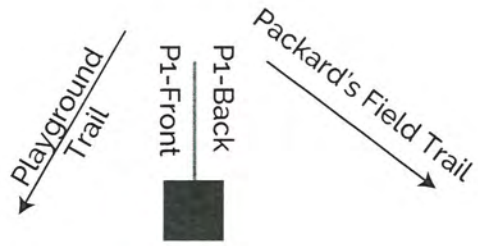


P2-Front: 9TG



P3-Front: 6TG Map

10  
TM



**Pond Loop**

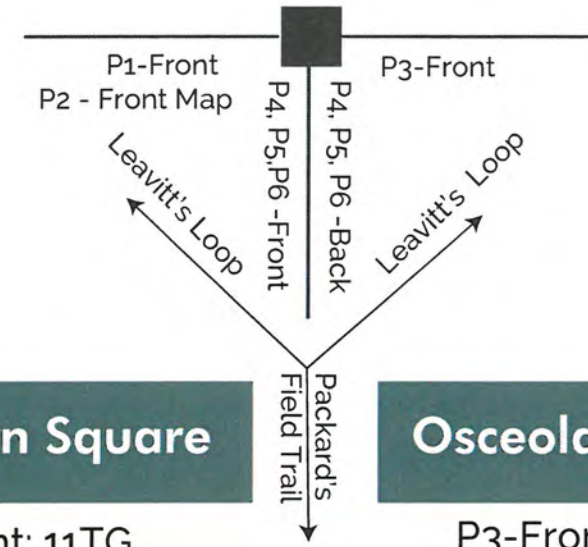
- Leavitt's Loop ←
- Playground →
- Packard's Field →
- Athletic Center →

**Playground Trail**

- Leavitt's Loop →  
0.5 Miles
- Town Square →  
0.5 Miles

P1-Front: 10TM    P1-Back: 10TM

11  
TG



**Town Square**

P1-Front: 11TG

**Osceola Arbor**

P3-Front: 11TG

**Leavitt's Loop**

Panel Info  
TBD

P2-Front: 11TG Map

**Playground**

P4-Back: 11TG

**Playground**

P4-Front: 11TG

**Packard's Field**

P5-Back: 11TG

**Packard's Field**

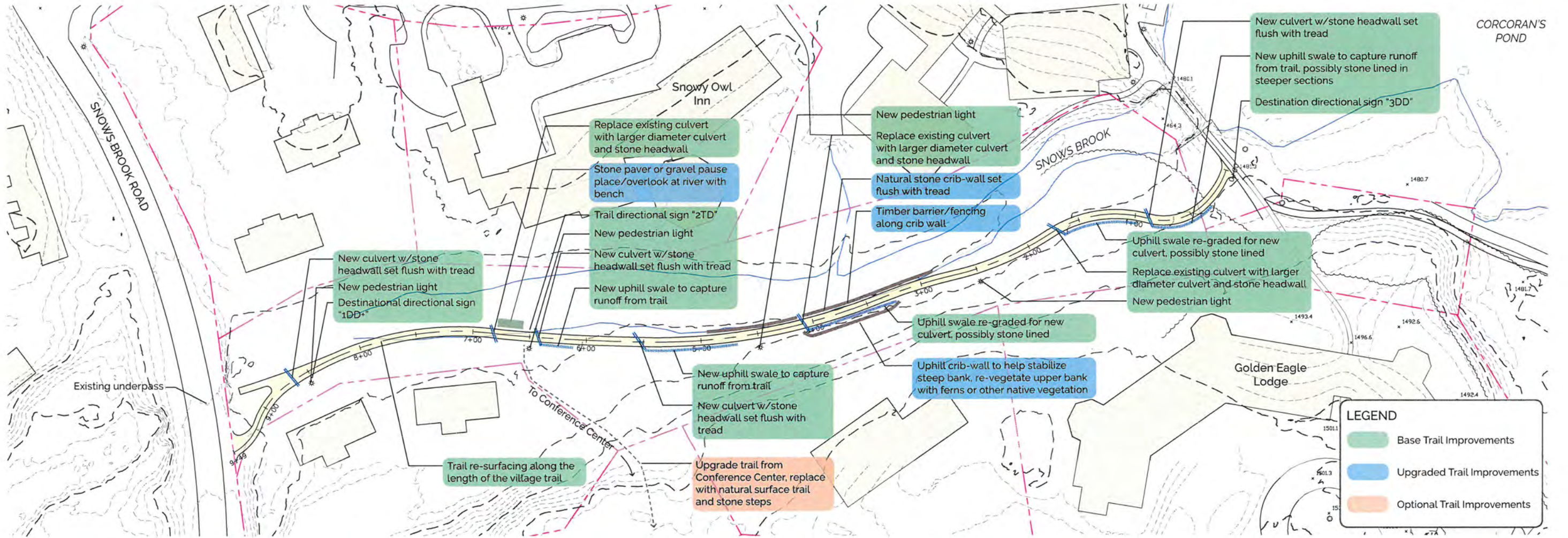
P5-Front: 11TG

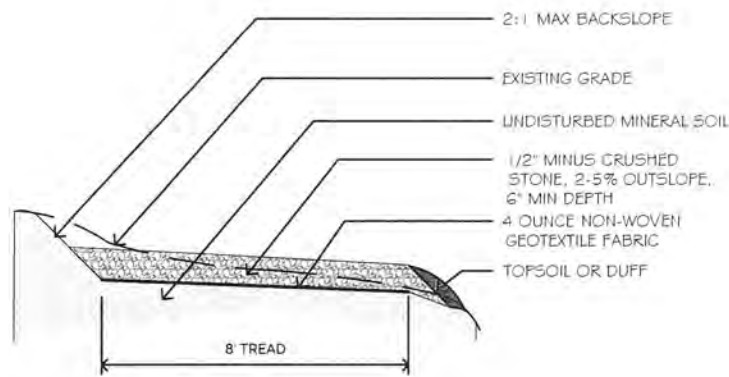
**Trails**

P6-Back: 11TG

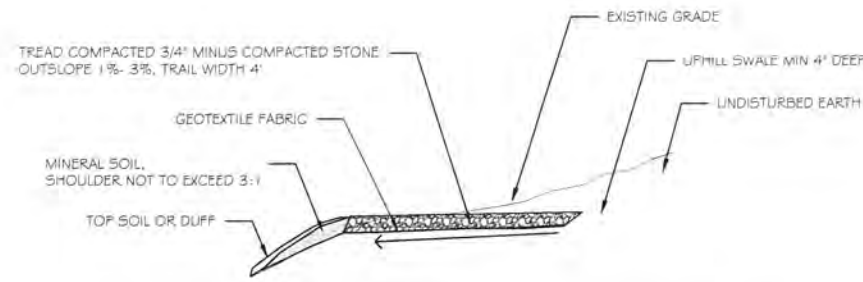
**Trails**

P6-Front: 11TG

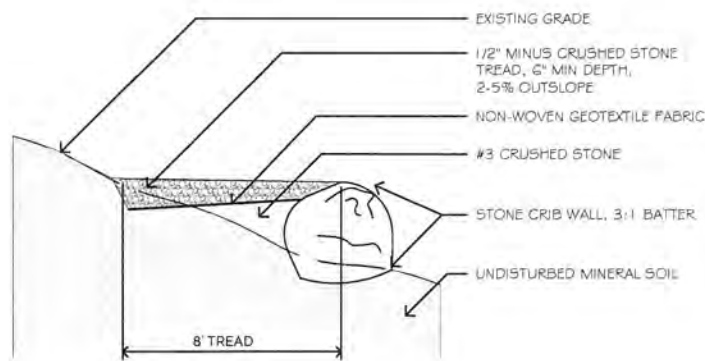




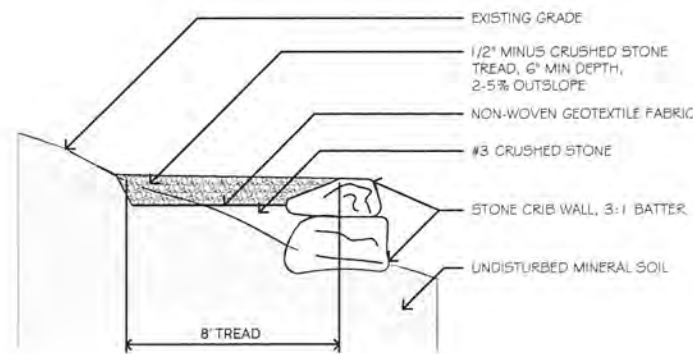
Outsloped Crushed Stone Trail



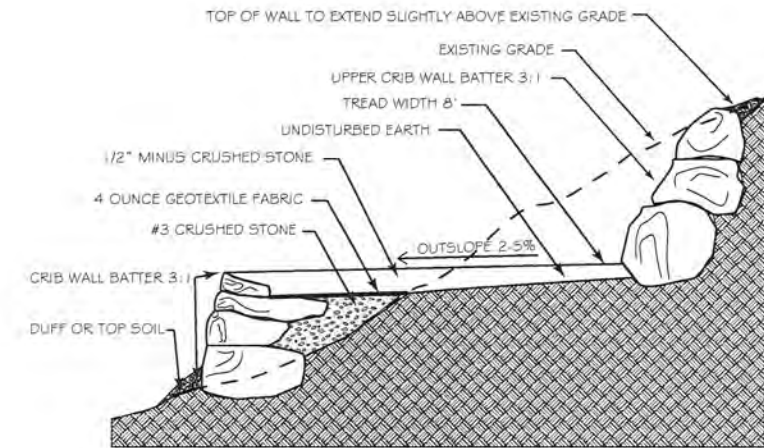
Outsloped Crushed Stone Trail With Uphill Swale



Trail with Single Tier Crib Wall



Trail with Crib Wall



Outsloped Crushed Stone Trail With Uphill and Downhill Cribwall

**Engineer's Opinion of Probable Construction Cost**

<b>Town of Waterville Valley</b> <b>Bike-Ped and Roadway Improvements</b> <b>Waterville Valley, NH</b>
--

Project #: 2020-036  
Date: 03/10/21  
Computed by: AML  
Checked by: JMM

NHDOT Item #	Description	Unit	Unit Cost	Quantity	Total Cost
<b>Earthwork</b>					
201.1	Clear and Grub	AC	\$ 13,000.00	1	\$ 13,000.00
203.1	Common Excavation	CY	\$ 15.00	2750	\$ 41,250.00
203.1	Common Structure Excavation	CY	\$ 15.00	250	\$ 3,750.00
203.2	Rock Excavation	CY	\$ 105.00	100	\$ 10,500.00
214	Fine Grading	U	\$ 10,000.00	1	\$ 10,000.00
<b>Base Courses</b>					
304.2	Gravel (F)	CY	\$ 38.00	1450	\$ 55,100.00
304.3	Crushed Gravel (F)	CY	\$ 44.00	725	\$ 31,900.00
304.33	Aggregate for Shoulder	CY	\$ 65.00	70	\$ 4,550.00
306.112	Reclaimed Stabilized Base, Processed in Place, 12"	SY	\$ 4.00	9525	\$ 38,100.00
<b>Pavements</b>					
403.11	Hot Bituminous Pavement, Machine Method	Ton	\$ 85.00	2750	\$ 233,750.00
403.12	Hot Bituminous Pavement, Hand Method	Ton	\$ 150.00	20	\$ 3,000.00
<b>Structures</b>					
592.1	MSE Wall (Segmental Small Block Retaining Wall)	SF	\$ 100.00	325	\$ 32,500.00
<b>Incidental Construction</b>					
603.82212	12" HDPE Pipe	LF	\$ 55.00	450	\$ 24,750.00
603.82218	18" HDPE Pipe	LF	\$ 60.00	180	\$ 10,800.00
603.82224	24" HDPE Pipe	LF	\$ 65.00	200	\$ 13,000.00
603.82236	36" HDPE Pipe	LF	\$ 80.00	110	\$ 8,800.00
604.114	4' Dia. Catch Basin	U	\$ 3,500.00	5	\$ 17,500.00
606.18011	Guard Rail	LF	\$ 50.00	80	\$ 4,000.00
609.01	Vertical Granite Curbing	LF	\$ 50.00	340	\$ 17,000.00
619.1	Maintenance of Traffic	U	\$ 30,000.00	1	\$ 30,000.00
632.0104	Retroreflective Paint Pavement Marking 4" Line	LF	\$ 0.75	16175	\$ 12,131.25
632.0112	Retroreflective Paint Pavement Marking 12" Line	LF	\$ 2.00	400	\$ 800.00
645.531	Turf Establishment with Mulch, Tackifiers, and Loam	SY	\$ 6.00	2050	\$ 12,300.00
692	Mobilization	U	\$ 50,494.50	1	\$ 50,494.50
699	Miscellaneous Temporary Erosion and Sediment Control	ALLOW	\$ 15,000.00	1	\$ 15,000.00
	<i>(F) Indicates final bid quantity</i>				
<b>Estimated Roadway Construction Subtotal</b>					<b>\$ 693,975.75</b>
10% Contingency					\$ 69,397.58
<b>Total Construction Cost</b>					<b>\$ 763,373.00</b>
Engineering Design, Permitting, Bidding Fee					\$ 114,506.00
Construction Administration Fee					\$ 152,675.00
<b>Total Design, Permitting, and Bidding Cost</b>					<b>\$ 267,181.00</b>
<b>Total Project Cost</b>					<b>\$ 1,030,554.00</b>

Note: In providing opinions of probable construction costs, the Client understands that HEB Engineers, Inc. has no control over the cost or availability of labor, equipment, or materials, or over market conditions or the Contractor's methods of pricing. Our Opinion of Probable Construction Costs are made on the basis of our professional judgment and experience. HEB makes no warranty, expressed or implied, that the bids or the negotiated costs of the work will not vary from the Opinion of Probable Construction Cost provided herein.

## INTRODUCTION

The Town has many paths it can take as it plans for its future. The following options and recommendations are based on the Consulting Team's review of existing conditions, the substantial public input received and our understanding of key community goals and objectives. The points below summarize the findings:

- Recommendation #1: The Town should engage the Waterville Valley Resort, WVAIA, Lodge Associations, Waterville Company and other business interests and stakeholders to explore its brand and how greater alignment and clarity can be reached.
- Recommendation #2: The Town should work to establish an arrival sequence into Town that communicates a strong brand, emphasizes good wayfinding principles, supports broad mobility and drives visitors to the Town Core. The Town should work with the US Forest Service to explore what may be possible on federal land to support a gateway feature.
- Recommendation #3: The Town should work to improve key sidewalks, crosswalks, expand bicycle facilities, improve lighting and improve the visibility of these elements to both reinforce community mobility and send a strong message to locals and visitors that Waterville Valley is "pedestrian-friendly".
- Recommendation #4: The Town should work with the Waterville Valley Resort to identify long-term objectives for the transit system that improve route efficiency, system quality, and support overall community connectivity.
- Recommendation #5: Within the Town Core, the Town should encourage and support greater flexibility in parking, promote a more pedestrian-oriented streetscape, improve access to and use of its "waterfront" resources, consider changes to exterior lighting and reinforce the use of the area as a "hub" of recreation, economy and culture.

Each of these elements will be explored more fully in both written and graphic form on the pages that follow. Case studies are also provided (See **Appendix F** for more information) to help further clarify opportunities and issues.

## #1: CREATE BETTER ALIGNMENT ON THE "WATERVILLE VALLEY" BRAND

### A: Hold a summit on "Exploring the Waterville Valley Brand":

- Get all key partners together to share their individual idea of the Waterville Valley Brand;
- Understand that all partners need to be able to communicate to their customers. Remember, however, that often they are the SAME customers;
- All voices need to be heard and concerns raised. Like it or not, you are all in the same boat.

### B: Define the "Common" story:

- Find areas of common agreement - what are the "touchstones" that everyone can agree with?;
- Explore inputs (cultural, historic, natural) that might form a unifying basis for a brand - like the "Aspen" leaf (case study below);
- Craft a "Story" for Waterville Valley. Why do people come, what do they do when they are here.

### C: Remember it is about the "experience" not the place:

- Explore the qualities that make Waterville Valley **unique** as a place;
- Focus discussions on activities and "emotion" not on specific places. People can ski, shop, dine in LOTS of places. How is that experience different in Waterville Valley;
- Explore ways to integrate the guest experience throughout the community. Can lift tickets be purchased at Town Square? Can recreation passes be purchased at the Resort? Make things easy and seamless. Consider leveraging technology to accomplish;
- Remember that for many the first impression is on the internet; does this communicate the experience?

### CASE STUDY - ASPEN, COLORADO

The Aspen brand encompasses four distinct mountains and two municipalities (the City of Aspen and the Town of Snowmass Village), as well as numerous independent businesses that contribute to the experience of the place. A unified brand for the overall destination sits at the top of the "brand architecture" for Aspen, allowing individual entities (i.e. resorts, hotels, restaurants, etc.) to have a sub-brand of their own, while reflecting and reinforcing the core purpose of the overall destination to which they belong (i.e. Aspen with capital "A"). A central component of the success of the Aspen brand is the recognition that the brand must be brought to life across all customer touch points – creating a highly differentiated destination experience. Aspen Ski Company (the resort operator) consistently works alongside the resort municipalities and independent businesses to capitalize on the overall destination brand. An excellent example of this cooperation is Aspen-Snowmass Central Reservations, which markets and books 100% of the hotels in both Aspen and Snowmass and is one of the primary web presence's for the destination brand of Aspen. Central reservations also books Aspen airfare, ground transportation and ski packages. *For more information, see Case Study Summaries in Appendix*



# Recommendations

# Arrival | Signage & Wayfinding

## #2: ENHANCE YOUR GATEWAY / DEFINE A WAYFINDING STRATEGY

### A: Conduct a full inventory of signage:

- Building upon the work of this study, document all signage (including trails) in and around town. Note the location, form and purpose (directional, informational);
- **Partner with area organizations** such as the Resort and WVAIA to build this background library of information.

### B: Prepare a Signage and Wayfinding Master Plan that achieves the following:

- Identifies **WHERE signs are most needed based** on the land uses of the community. Ideally such a plan would identify the key destinations and consistently provide direction to them. It would also establish a hierarchy of directional signage which would transition arriving guests to their destination. Primary directional signage should be focused on the Town Core. Secondary signage could be used to identify destinations (lodges, activities, etc.). The figure to the right is a general guide on where key signage might be appropriate as part of a complete wayfinding system;
- Guides **WHAT messaging needs** to be on any directional or informational signs. Determining what is most important to be directed to upon arrival is an essential part of any good wayfinding master plan process;
- Establishes a **DESIGN hierarchy of signage** forms that can help set dimensional limits, acceptable types and forms and other aesthetic considerations. A master plan would help echo the unified brand through the signage design.

### C: Explore ways to establish a “Gateway” feature at the entrance to Town:

- Review options (consistent with the Town’s master plan) that **establish an arrival or gateway feature**. Consider a primary arrival feature before Tripoli Road (joint Resort/Town) and a secondary arrival gateway as close to the entrance of Town as possible. Work with the US Forest Service to study options for placement (See figure to the right, page 33);
- Assure that gateway (and signage) systems function for “event communication”; allow banners to be erected that communicate upcoming events, activities or celebrations.

### D: Update sign standards to address the results of a Signage and Wayfinding Master Plan

- Establish policies that limit commercial signage within the public right-of-way with the exception of those in areas established by the community (from the master plan) for such purposes. For example, the Town might want to designate a portion of a sign for a “business of the month” or “sponsoring business” associated with an informational sign and/or event sign;
- In commercial/mixed use areas work to **make signage more “pedestrian friendly”** by promoting perpendicular signage along building facades, keeping blade size reasonably consistent and pressing for greater consistency in color, font, etc. Work to blend recommendations/outcomes from branding process into any regulatory requirements on signage design.

### CASE STUDY - MAMMOTH LAKES, CALIFORNIA

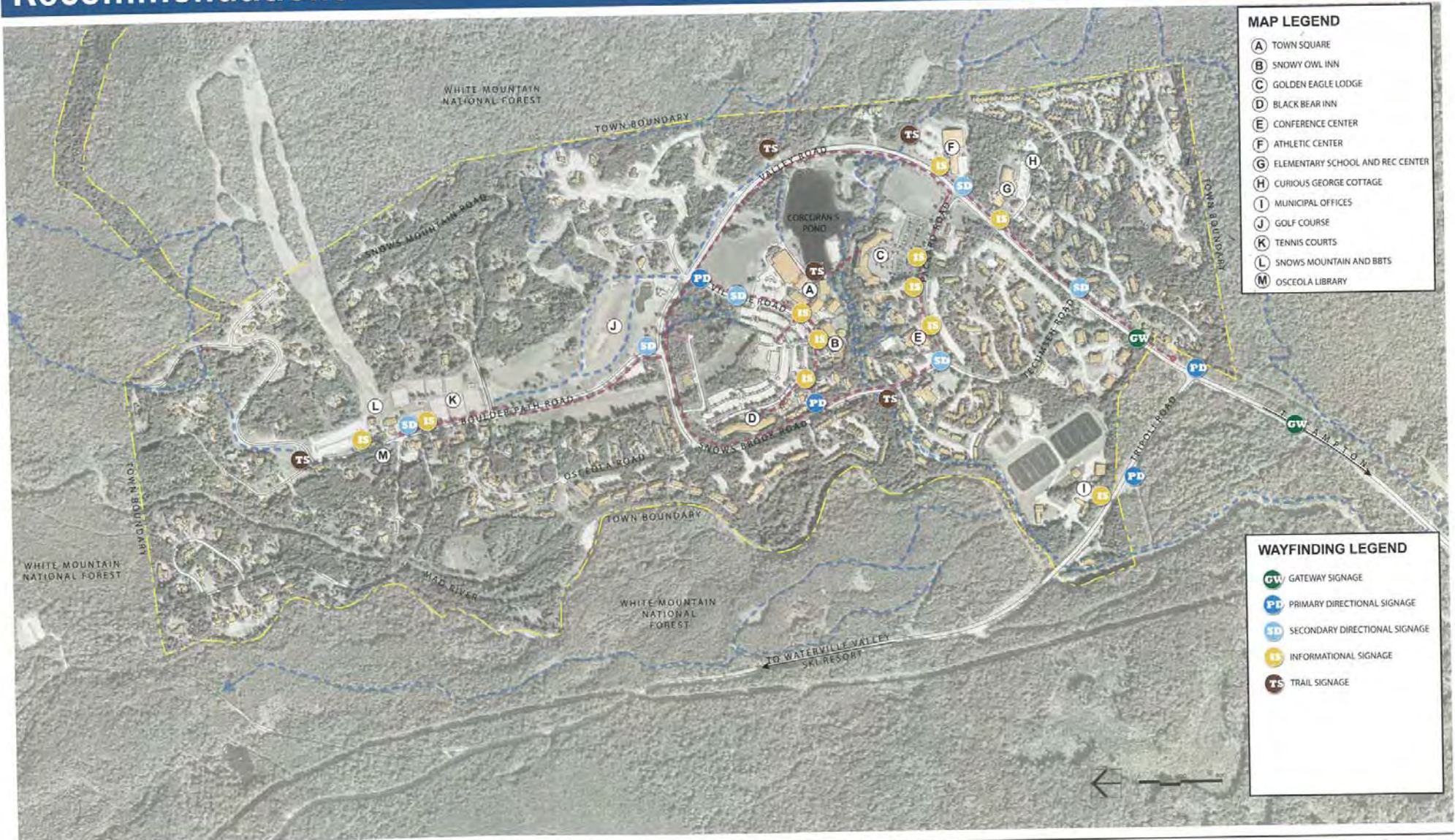
Mammoth Lakes is the only incorporated community in Mono County, California, surrounded on all sides by the Inyo National Forest. As a mountain resort community, Mammoth Lakes’ economy is primarily tourism-based, creating a strong need for effective wayfinding and consistent community branding. The Mammoth Lakes Wayfinding Plan and resulting signage has been very effective at both branding the community and directing travelers. The signs incorporate the branding and identity standards for the community, which transcend mediums extending from the web, to printed materials all the way through to the built environment, and provide a seamless journey for visitors as they transition from State Roads to their destination in the Town of Mammoth Lakes.

*For more information, see Case Study Summaries in Appendix*



# Recommendations

# Arrival | Signage & Wayfinding



MAP LEGEND	
A	TOWN SQUARE
B	SNOWY OWL INN
C	GOLDEN EAGLE LODGE
D	BLACK BEAR INN
E	CONFERENCE CENTER
F	ATHLETIC CENTER
G	ELEMENTARY SCHOOL AND REC CENTER
H	CURIIOUS GEORGE COTTAGE
I	MUNICIPAL OFFICES
J	GOLF COURSE
K	TENNIS COURTS
L	SNOWS MOUNTAIN AND BBTS
M	OSCEOLA LIBRARY

WAYFINDING LEGEND	
GW	GATEWAY SIGNAGE
PD	PRIMARY DIRECTIONAL SIGNAGE
SD	SECONDARY DIRECTIONAL SIGNAGE
IS	INFORMATIONAL SIGNAGE
TS	TRAIL SIGNAGE



# Recommendations

# Pedestrian Systems



# Recommendations

# Pedestrian Systems

## #3: IMPROVING THE USER EXPERIENCE - SIDEWALKS AND CROSSWALKS

### A: Improve accessibility to pedestrian system

- Make all pedestrian ramps Americans with Disabilities Act (ADA) compliant. This means improving the geometry and materials at the deficient ramps. It also means installing **Detectable Warning Surfaces (DWS)** in the pedestrian ramps for the benefit of vision impaired pedestrians. This includes locations where multi-use paths cross roadways. (See figure, page 34)

### B: Make pedestrian crossings more visible

- Consider Town-wide adoption of the **ladder style reflectorized crosswalk** pavement markings for new and rejuvenated crosswalks. Adjust existing and proposed skewed crosswalks to be perpendicular wherever possible. An example is the existing skewed crosswalk across Valley Road at Packard's Road opposite the athletic center;
- Install **reflectorized crossing signs** at mid-block crossings as well as at crosswalks on a main road at intersections where the main road is not stop controlled;
- Consider **Rectangular Rapid Flashing Beacons (RRFB's)** at pedestrian crossings on primary roads and where there is known pedestrian activity. We advise against overuse of RRFB's throughout the Town since it can dilute their effectiveness. Likely candidate locations for RRFB's are crosswalks on Valley Road at Tecumseh, Packard's, Village and Boulder Path Roads. The mid-block crossings on Boulder Path Road may also be appropriate locations for RRFB's. An added side benefit to adding RRFB's on Valley Road is that they will provide yet another visual key that pedestrian accommodations are important in Town;
- The addition of attractive **pedestrian scale street lighting** along key roadways such as Valley Road, Village Road and Snows Brook Road would enhance pedestrian travel within the community. It would also promote the image that pedestrian accommodations are important within the Town. Beginning the lighting on Valley Road at the gateway to Town near Tripoli Road would immediately signal the transition to a pedestrian friendly environment when people come to Town.

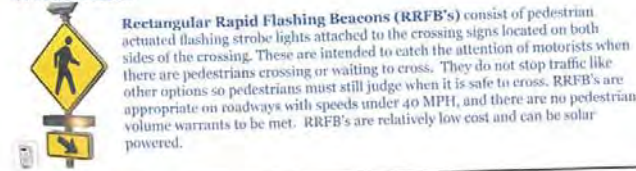
### ANATOMY OF A PEDESTRIAN CROSSING



#### KEY

- A: Ladder-style reflectorized crosswalk markings
- B: Detectable Warning Surface (DWS)
- C: Reflectorized crossing sign OR RRFB
- D: Pedestrian-scaled street lighting

#### WHAT ARE?



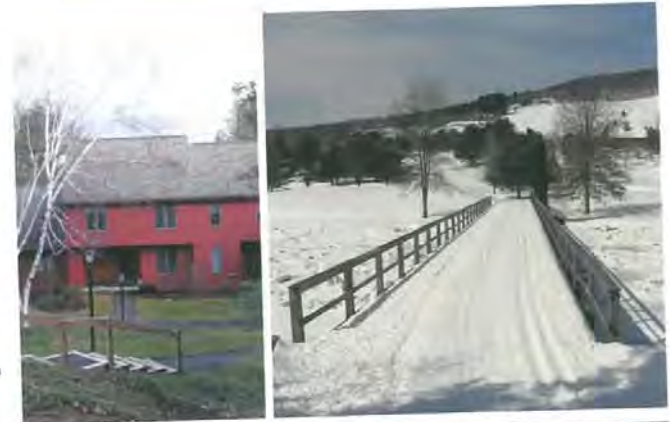
**Rectangular Rapid Flashing Beacons (RRFB's)** consist of pedestrian actuated flashing strobe lights attached to the crossing signs located on both sides of the crossing. These are intended to catch the attention of motorists when there are pedestrians crossing or waiting to cross. They do not stop traffic like there are pedestrians crossing must still judge when it is safe to cross. RRFB's are other options so pedestrians must still judge when it is safe to cross. RRFB's are appropriate on roadways with speeds under 40 MPH, and there are no pedestrian volume warrants to be met. RRFB's are relatively low cost and can be solar powered.

### CASE STUDY - QUEECHEE LAKES, VERMONT

Quechee Lakes is a four season resort community of about 650 residents with many similarities to the Town of Waterville Valley. The community is nestled in the incredible mountain environment of the Ottauquechee River Valley and contains a variety of shops and restaurants, 19 condominium villages and over 600 single-family homes. It is also home to the small Quechee Lakes Ski Area. The resort village was initially developed in 1968, and since that time has continued to evolve and continue to embrace New England influences.

Prior to 2009 the "formalized" circulation routes in Quechee Lakes were very limited, with sidewalks only at the Village center and green. Other pedestrian circulation within the remaining Core area was more informal and primarily occurred in the road right-of-way, often along golf cart paths and/or service roads. To address these pedestrian connectivity issues, the community embraced the existing informal use, creating an integrated system of primary and secondary circulation routes. The formalized or primary routes were focused within the village core area to support connection between various recreational and cultural facilities/amenities and parking areas, and secondary systems were created within common lands, adjacent to river banks, golf fairways and other 'off-road' alignments.

*For more information, see Case Study Summaries in Appendix*



## Recommendations

### #3: IMPROVING THE USER EXPERIENCE - SIDEWALKS AND CROSSWALKS (CONTINUED)

C: Seek to improve function and operational efficiency of existing facilities:

- For new or rehabilitated sidewalks meet the minimum 5 foot paved width;
- Widen the sidewalk along Snows Brook Road to a 6 foot width closer to the road to make winter maintenance by the Town possible should be explored. Refer to Section #4 in the Study (page 39) for a graphical representation of the improvements;
- Realign the crosswalk across Snows Mountain Road to cross in front of the stop line. The existing crossing is aligned behind the stop line, which is prohibited. The existing path has two mid-block crossings with the appropriate crossing signs;
- At the four-way intersection of Valley Road, Village Road and Lost Pass Road construct (in the near term) a short sidewalk from the northern crosswalk to the golf course parking lots since it is a likely destination and since pedestrians can access Lost Pass Road from there (See figure, page 34).

D: Fill in the "gaps" of the existing sidewalk system:

- Consider the construction of a new 6 foot wide sidewalk along the "inside" curve (northern edge) of Tecumseh Road. See Section #4 in this Study as a reference for this proposed condition;
- Explore improvements to the "informal" trail near the Golden Eagle to connect to Town Square. Integrate with other facilities such as sidewalks, bus stops and wayfinding;
- Upgrade (resurface, new stairs, new lighting) the existing trail from the Conference Center to Snow Brook.

E: Renew the connection across Snow's Brook

- Study engineering options for crossing Snow Brook. Consider potential reuse of existing crossing point and/or new crossing point aligned with "Golden Eagle" trail (See sketch at right and figure, page 34);
- Explore alternatives to traditional and expensive bridges; things such as rope bridges, hand carts, etc. Make crossing beneficial for mobility AND fun....draw people down to the water.



# Recommendations

# Pedestrian Systems

## #3: IMPROVING THE USER EXPERIENCE - EMBRACING BICYCLING

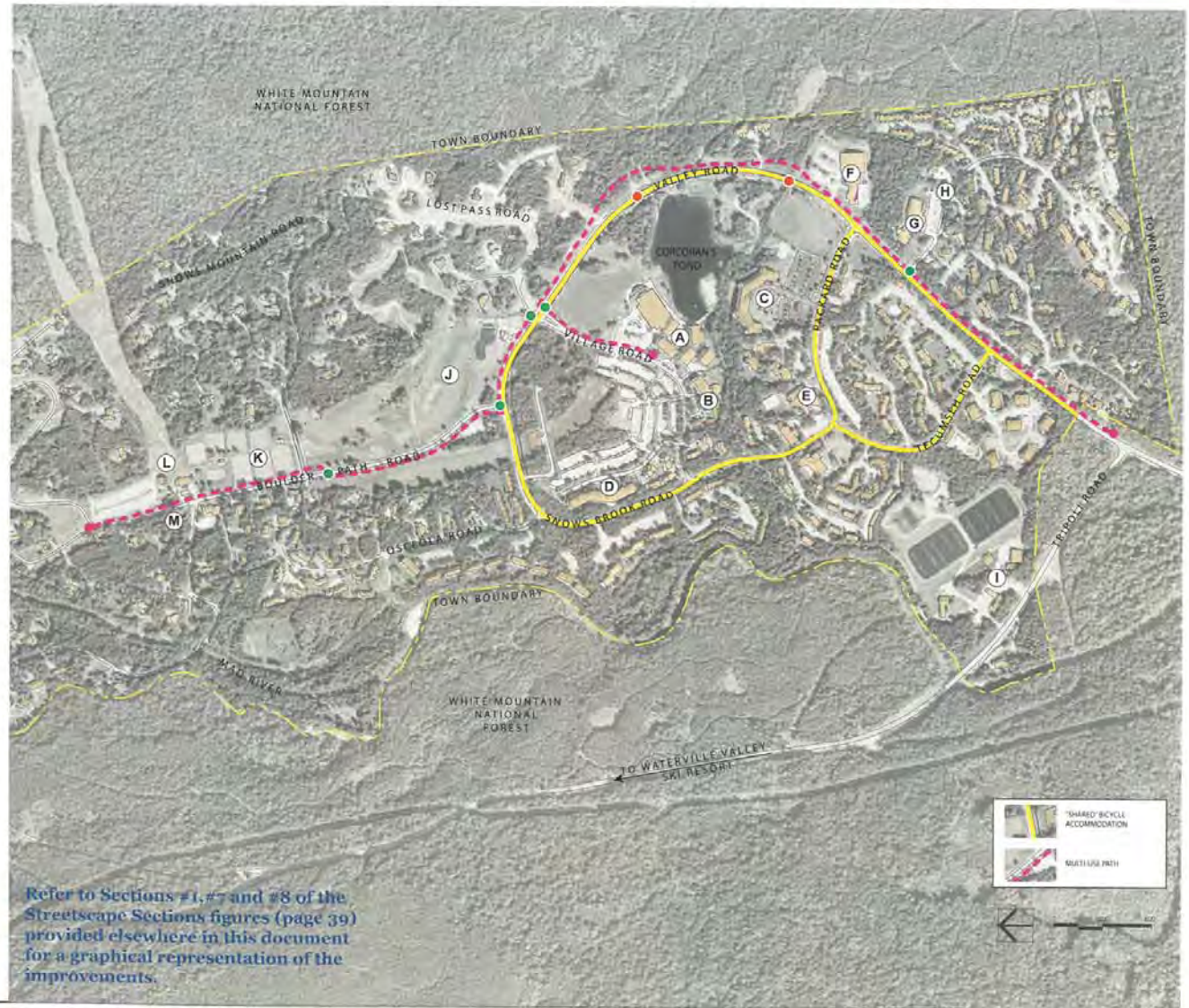
Waterville Valley has a real opportunity to expand and enhance its bicycle accommodations. While at present these facilities are sparse, both the survey results and stakeholder meetings suggest locals and visitors routinely use bicycles while in Town. Making that experience as enjoyable as possible should be a priority.

### A: Let people know bicycling is a great way to get around Waterville Valley:

- Add **secure bike parking** at key destinations. This would include destinations such as Town Square, the schools and recreation center, tennis courts, Osceola Library, Snows Mountain and BBTS. Bike parking should be encouraged at existing private establishments and lodges, and the Town may wish to consider requiring bike parking at future developments. Bike racks should also be added to transit system busses if possible.

### B: Share the Road:

- **Wider shoulders or bike lanes on Valley Road** could be considered for accommodating on-road cycling. The Development of Bicycle Facilities (the AASHTO Guide) indicates that striped shoulders and bike lanes should be a minimum of 4 feet wide without curb and 5 feet wide with curb. To accommodate these widths, the width of the travel lanes would need to be reduced to 10 feet on the uncurbed side and 9 feet on the curbed side. While changes of this nature are often considered when roadways are resurfaced, 9 foot lanes are not recommended;
- Tecumseh Road is not wide enough for bike lanes and widening for that purpose is not proposed or warranted. It is a local roadway with low volumes and speeds and the expectation is that cyclists will share the road with motor vehicles. We recommend the installation of **shared use arrows** (also referred to as "sharrows") and "Share the Road" signs. This will alert motorists to expect cyclists in the road.



# Recommendations

## #3: EMBRACE BICYCLING (CONTINUED)

This is proposed with the understanding that children and other inexperienced cyclists may still ride on the sidewalk. Expanding the sidewalk to 8 feet wide is possible if this is a strong concern.

### C: Create a Multi-Use Path to support better mobility and connectivity

- There is a great opportunity to complete a **multi-use path** along Valley Road, Snow's Brook Road and Boulder Path Road. Snows Mountain is a destination for some mountain bikers and there are hiking trails that emanate from the vicinity of Cascade Ridge Road at the end of the proposed path. Overall this path would be about 1.45 miles in length;
- The multi-use path would be constructed from Tripoli Road to Boulder Path Road. To accomplish this there will be right-of-way impacts due to added width and the required slope work. One of the benefits would be that the path would provide a connection from Valley Road to the existing trail system that does not exist today. One of the primary challenges will be the **Snows Brook crossing**. That crossing would likely require a prefabricated pedestrian bridge with a span of at least 100 feet due to the floodplain and wetlands in the area. The relatively high cost of these improvements may warrant phasing the implementation of the path;
- This path may supplant the need for wider bicycle lanes along Valley Road (See Goal B);
- **Connect a multi-use path to Village Road** when/if it is upgraded to a more pedestrian character. Bikes would share the road within the village center typical section. The expectation is that traffic volumes would be very slow through this segment. Cyclists would be very well accommodated by the planned multi-use path between Town Square and Valley Road. Inexperienced cyclists would be encouraged by signing to walk their bikes on the sidewalks through the village section. Refer to Sections #2 and #2A of the Streetscape Sections figure (page 39) in this document for a graphical representation of the improvements.

### WHAT ARE?

**"Sharrows":** Shared lane arrows or "sharrows" are painted markings that assist cyclists with lateral positioning in a shared lane. This is often done in areas with on-street parallel parking in order to reduce the chance of a bicyclist's impacting the open door of a parked vehicle. Sharrows also can assist cyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane. From a safety perspective, sharrows can alert motorists that bicyclists are likely to occupy space within the traveled way, help encourage safe passing of bicyclists by motorists and reduce the incidence of wrong-way bicycling.

### "SHARROWING" THE ROAD!



# Pedestrian Systems

## CASE STUDY - KEENE, NEW HAMPSHIRE

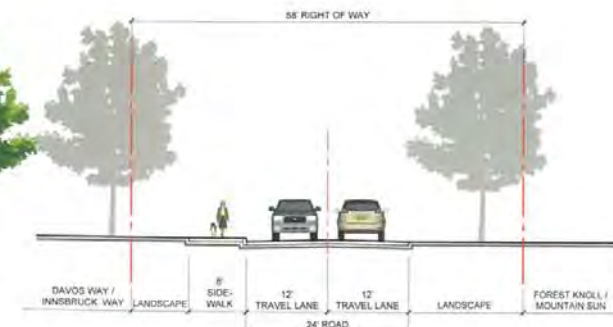
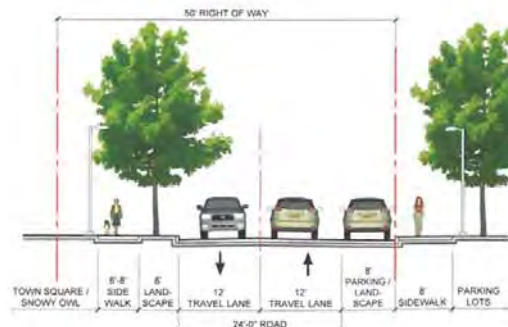
Keene is a small New Hampshire city with a big bicycle and pedestrian network. The city is home to Keene State College and Antioch University New England, and hosts tourists year round. Keene is interconnected with sidewalks, on-road routes, and multi-use paths. Supported by organizations such as Pathways for Keene and the City of Keene Bicycle / Pedestrian Path Advisory Committee, the City actively promotes the development and use of public bicycle and pedestrian pathways in the City. Sidewalks spread throughout the small city and trails connect the downtown to forested parks and active farms to accommodate all levels of experience and expectations. Trails include paved, gravel and natural surfaces to offer a variety of experiences.

*For more information, see Case Study Summaries in Appendix*



# Recommendations

# Streetscape Sections



**ABOUT THESE SECTIONS:**

THESE CROSS-SECTIONS REPRESENT "TYPICAL" DESIGN CONSIDERATIONS FOR VARIOUS ROADWAYS IN TOWN. THEY ARE REFERENCED ON THE PEDESTRIAN CIRCULATION PLAN (SEE PAGE 34). WHILE ILLUSTRATIVE OF OUR GENERAL RECOMMENDATIONS, SUBSTANTIAL DESIGN AND ENGINEERING NOT UNDERTAKEN AS PART OF THIS STUDY WOULD BE NEEDED TO VALIDATE THESE CONCEPTS.