

Preliminary Design Drawings
for the
Berlin Riverwalk
along the
Androscoggin River
located in and prepared for the
City of Berlin, New Hampshire

PRELIMINARY
NOT FOR
CONSTRUCTION

State Project No. 41367
Federal Project No. X-A004(616)
HEB Project #2018-033
Issued: September 24, 2019

Electrical Engineer

Lee Carroll, P.E., Electrical Consultants
PO Box 357
Gorham, New Hampshire 03581
(603) 466-5065

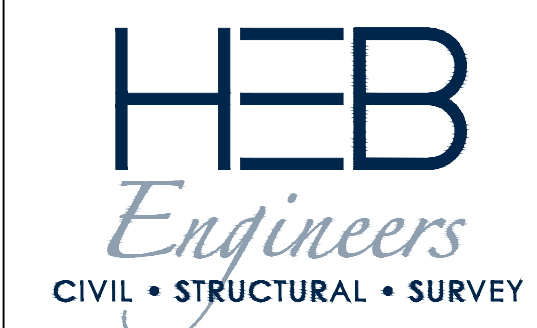
Landscape Architect



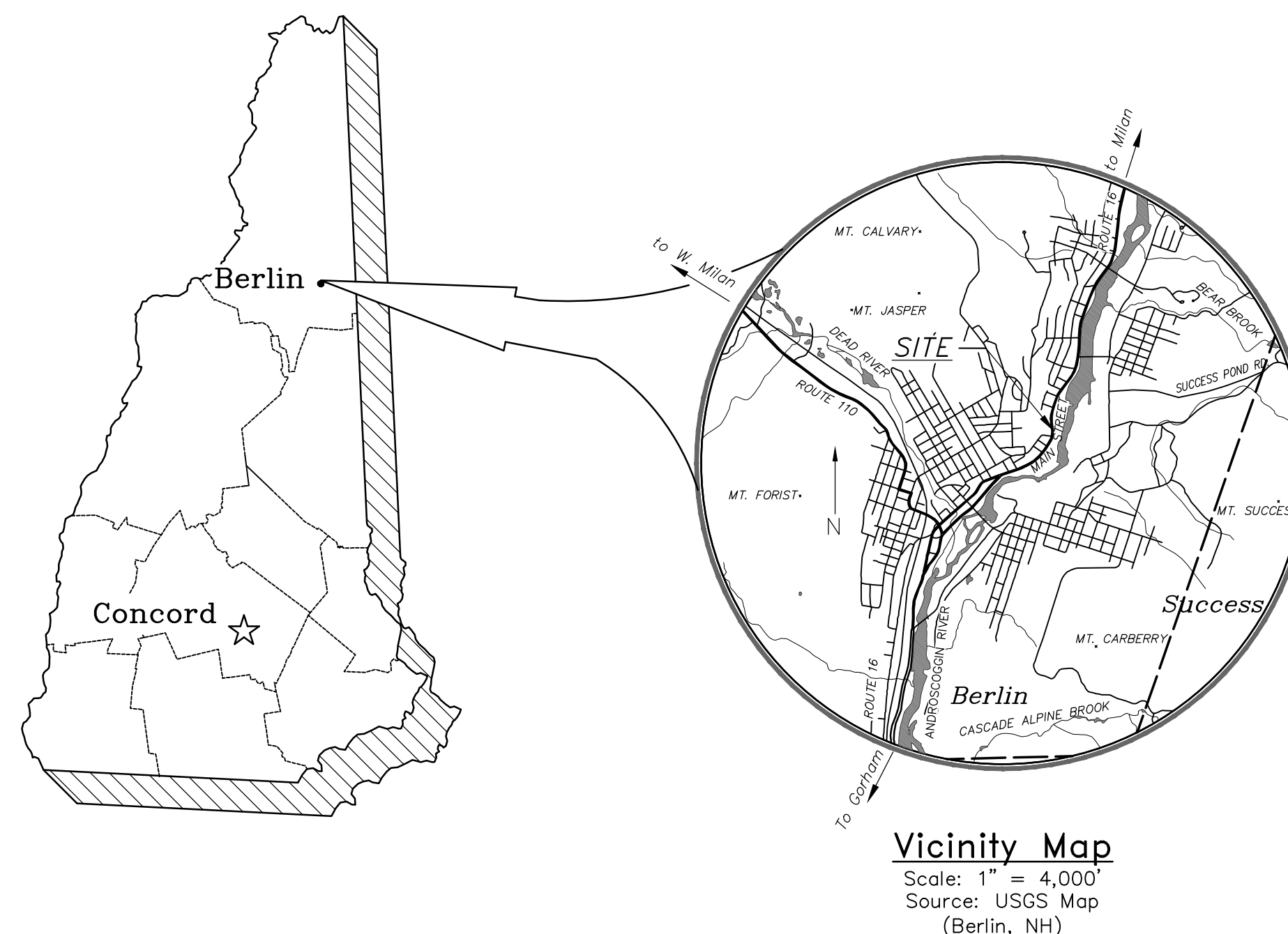
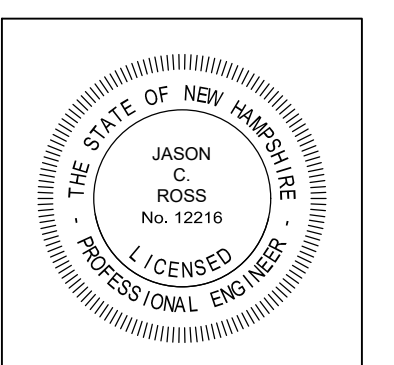
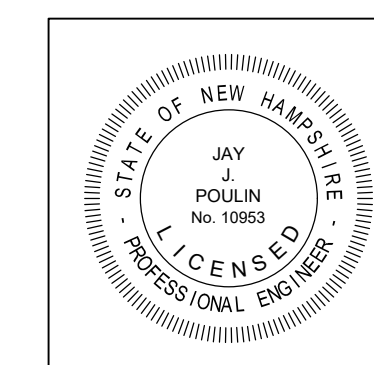
Surveyor

YORK LAND SERVICES, LLC
Riverside Courtyards, 3 Twelfth Street
Berlin, New Hampshire 03570 - (603)752-7282

Engineer



HEB Engineers, Inc.
Post Office Box 440
2605 White Mountain Hwy.
North Conway, NH 03860
www.hebengineers.com
Office (603) 356-6936
Fax (603) 356-7715



Owner: City of Berlin
168 Main Street
Berlin, NH 03570

P:\Jobs\2019\2019-033 Berlin - Multi Use Riverwalk along the Androskoggin River, Berlin, NH\Draw\Preliminary Design\Sheet Files\C0.02 General Notes.dwg C:\Users\jgall\OneDrive\Documents\2019-033 Berlin - Multi Use Riverwalk along the Androskoggin River, Berlin, NH\Draw\Preliminary Design\Sheet Files\C0.02 General Notes.dwg 01/24/2019 10:57:01 AM jgall

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 to 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 Eversource or Fairpoint Communications, respectively.
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 adequately 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 Alteration of Terrain Permit: Pending

NHDES Shoreland Permit: Pending

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 wide paved pathway between the Androskoggin River and Route 16 including associated features such as lighting, cantilevered outlooks, and landscaping from Heritage Park to Rotary Park.
2. At a minimum, one-way traffic shall be maintained at all times during construction work hours. Two-way traffic shall be maintained during non-work hours. Any variations to the traffic requirements shall be requested in writing to the Owner's Representative and approved by the Owner prior to implementation.
3. Coordination with Brookfield Power will be required should the Contractor wish to lower river levels to assist with excavations. River levels may be lowered between 1-2 feet if properly coordinated with Brookfield Power with a minimum notice of two (2) weeks.
4. Access to all existing fire hydrants within the project area must be made available throughout construction.
5. Coordination with Berlin Water Works will be required prior to any potential impacts to the existing water system including pipes, valves and services.

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 2020:

1. Install stabilized construction entrance.
2. Install silt fence other temporary erosion-control measures.
3. Strip and stockpile topsoil.
4. Install new drainage controls and utilities as identified.
5. Excavate pathway and concrete pad areas to subgrade and proof roll.
6. Install crushed gravel for pathway and concrete pad areas and compact.
7. Install granite curbing, where needed, and prepare pathway for paving.
8. Fine grade base gravel.
9. Place the pavement and concrete as indicated on plans.
10. Construct stamped asphalt border at Rotary Park parking bay.
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 2020.

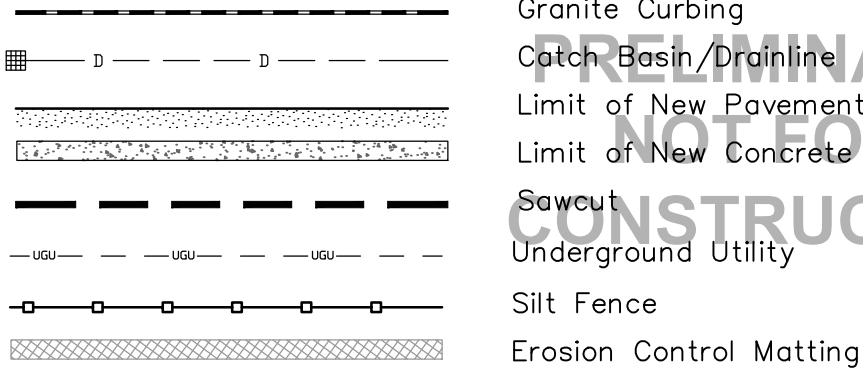
Winter Construction Notes:

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.

Sheet Index

Number	Sheet	Sheet Name	Latest Issue
1.	C0.01	Cover Sheet	09/24/2019
2.	C0.02	General Notes, Index, Legend & Summary of Quantities	09/24/2019
3.	C1.01	Overall Pathway Plan	09/24/2019
4.	C1.11	Pathway Layout Plan (Sta. 0+00 - 17+50)	09/24/2019
5.	C1.12	Pathway Layout Plan (Sta. 17+50 - 31+61)	09/24/2019
6.	C1.13	Pathway Layout Plan (11th Street - 12th Street)	09/24/2019
7.	C2.11	Pathway Plan & Profile (Sta. 0+00 - 8+50)	09/24/2019
8.	C2.12	Pathway Plan & Profile (Sta. 8+50 - 17+50)	09/24/2019
9.	C2.13	Pathway Plan & Profile (Sta. 17+50 - 26+50)	09/24/2019
10.	C2.14	Pathway Plan & Profile (Sta. 26+50 - 31+83)	09/24/2019
11.	C3.00	Typical Pathway Sections & Details	09/24/2019
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16.	C3.15	Pathway Sections (Sta. 25+50 - 31+25)	09/24/2019
17.	C5.11	Construction Details - Erosion & Sediment Control	09/24/2019
18.	C5.21	Construction Details - General	09/24/2019
19.	S1.01	Outlook 1 Plan	09/24/2019
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Legend



Summary of Quantities

To Be Determined

Supplemental Plans: Existing-Features Plans

Number	Sheet	Sheet Name	Latest Issue
1.	V1.11	Existing-Features Plan	08/30/2018
2.	V1.12	Existing-Features Plan	08/30/2018
3.	V1.13	Existing-Features Plan	08/30/2019
4.	V1.14	Existing-Features Plan	08/30/2019

Supplemental Plans: Landscaping Plans

Sheet	Sheet Name	Latest Issue
L1.1	Demo and Site Preparation	09/24/2019
L1.2	Demo and Site Preparation	09/24/2019
L1.3	Demo and Site Preparation	09/24/2019
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L1.5	Demo and Site Preparation	09/24/2019
L1.6	Demo and Site Preparation	09/24/2019
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L2.2	Landscape Plan	09/24/2019
L2.3	Landscape Plan	09/24/2019
L2.4	Landscape Plan	09/24/2019
L2.5	Landscape Plan	09/24/2019
L2.6	Landscape Plan	09/24/2019
L3.0	Landscape Details	09/24/2019
L4.0	Landscape Details	09/24/2019
L5.0	Landscape Details	09/24/2019
L6.0	Landscape Details	09/24/2019

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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

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EJG/DRL

DRAWN BY

EJG/DRL

CHECKED BY

JJP

FIELD BOOK

-

SCALE

DATE

09/24/2019

General Notes, Index, Legend & Summary of Quantities

for the

Berlin Riverwalk

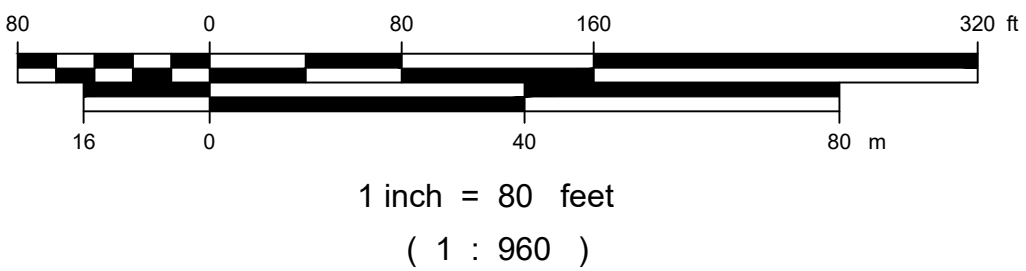
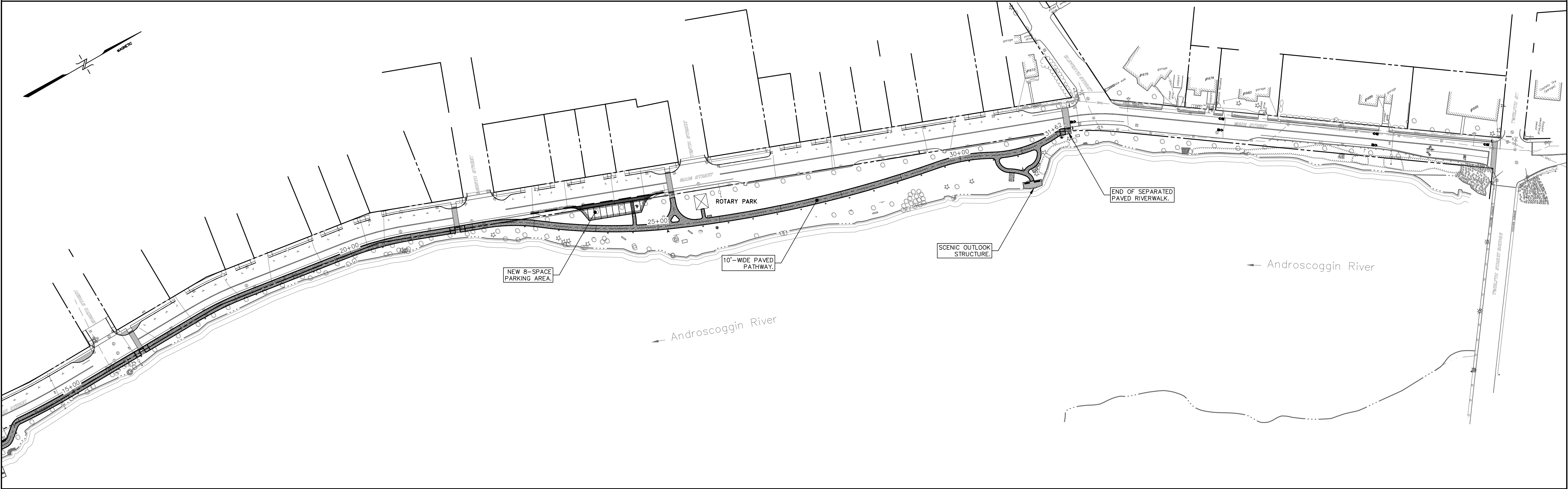
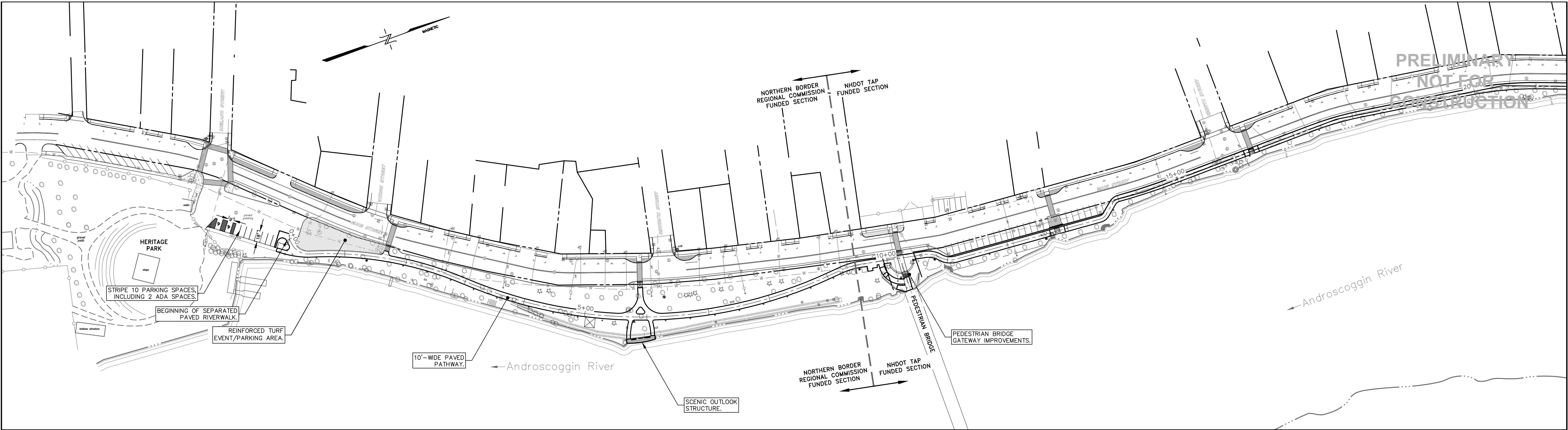
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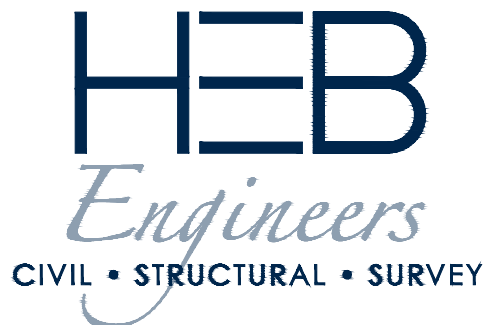
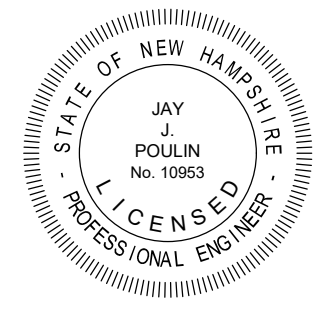
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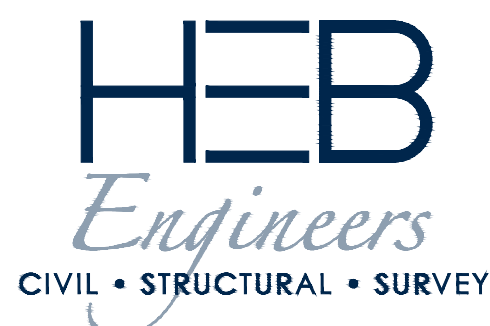
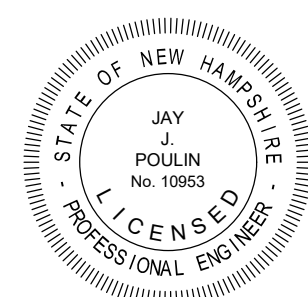
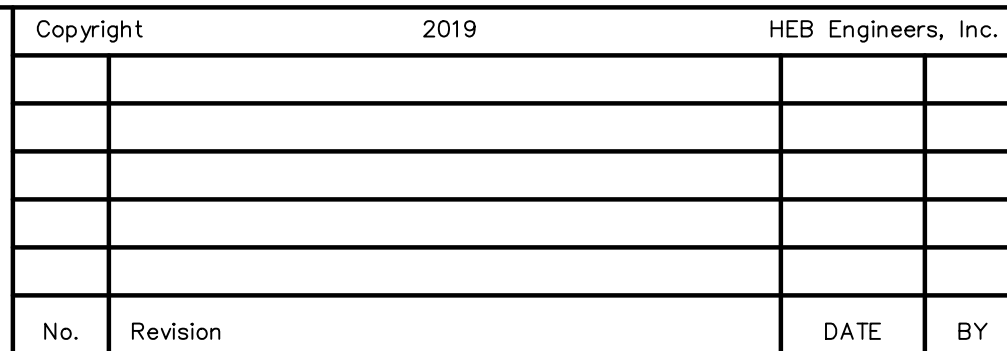
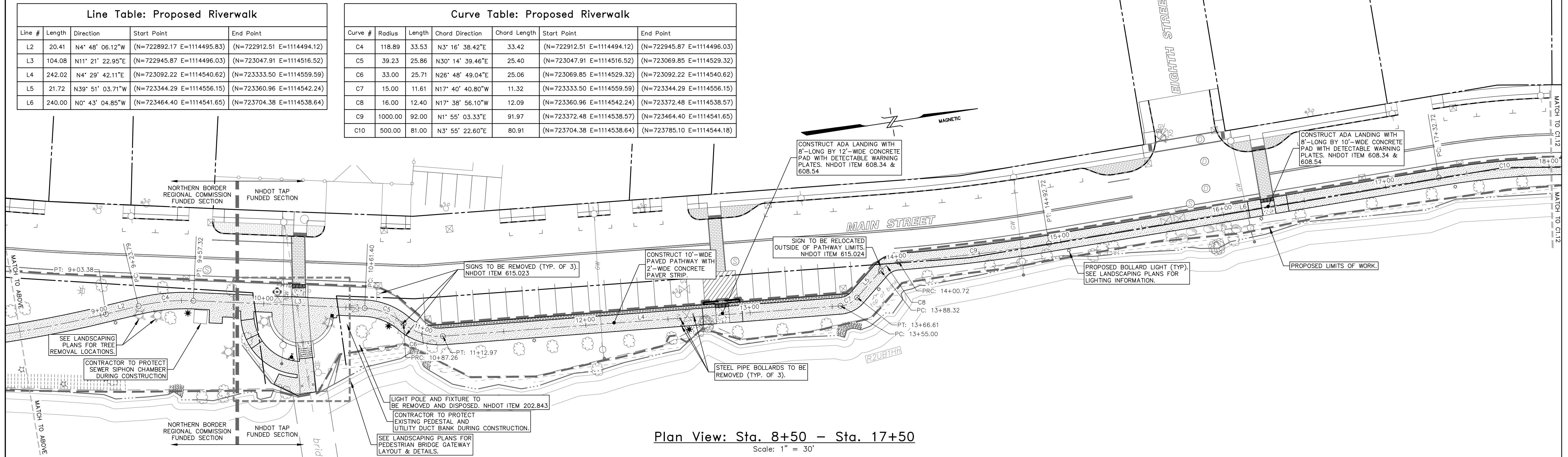
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Overall Pathway Plan
for the
Berlin Riverwalk
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2018-033

C1.01

SHEET 3 OF 21

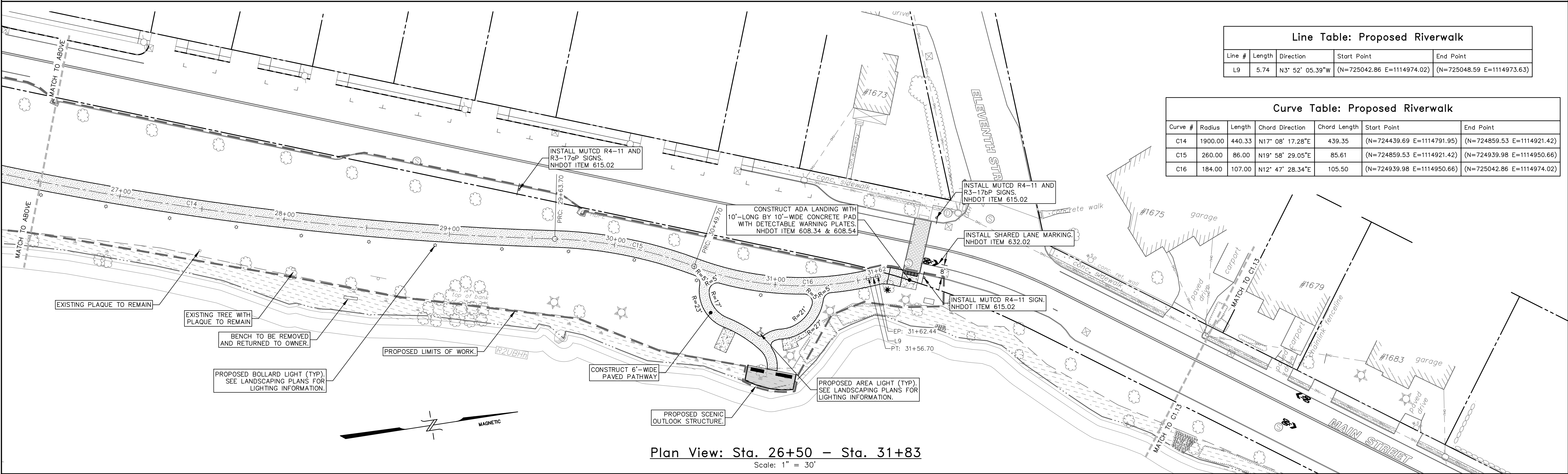
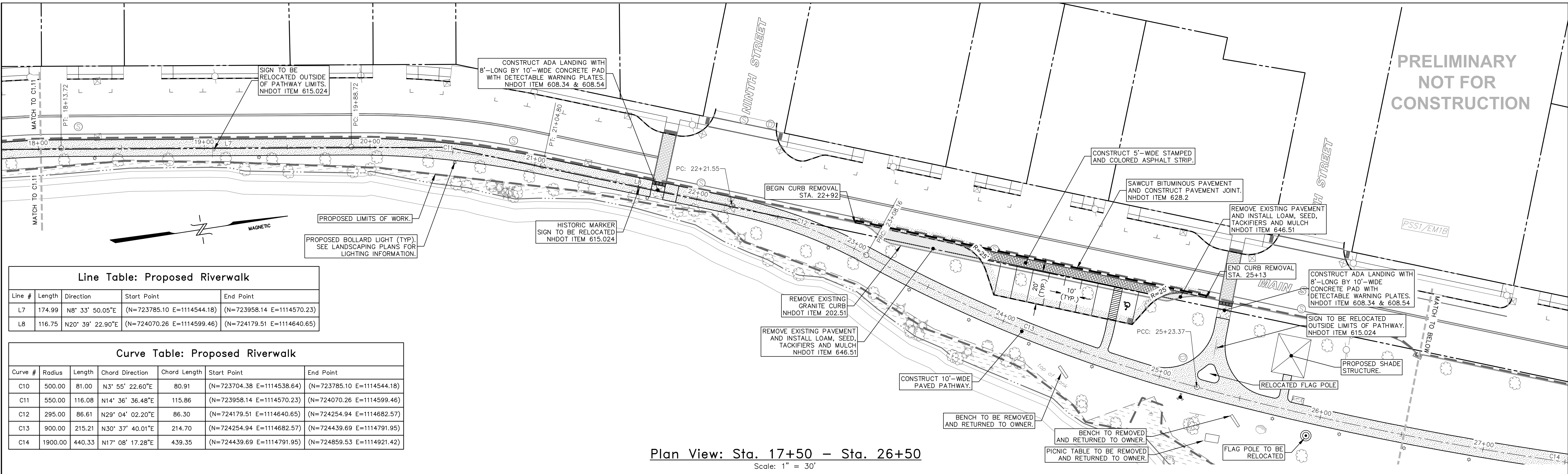


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for the
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C1.11

EET 4 OF 21



300

0

30

60

120

ft

6

0

15

30

m

1 inch = 30 feet
(1 : 360)

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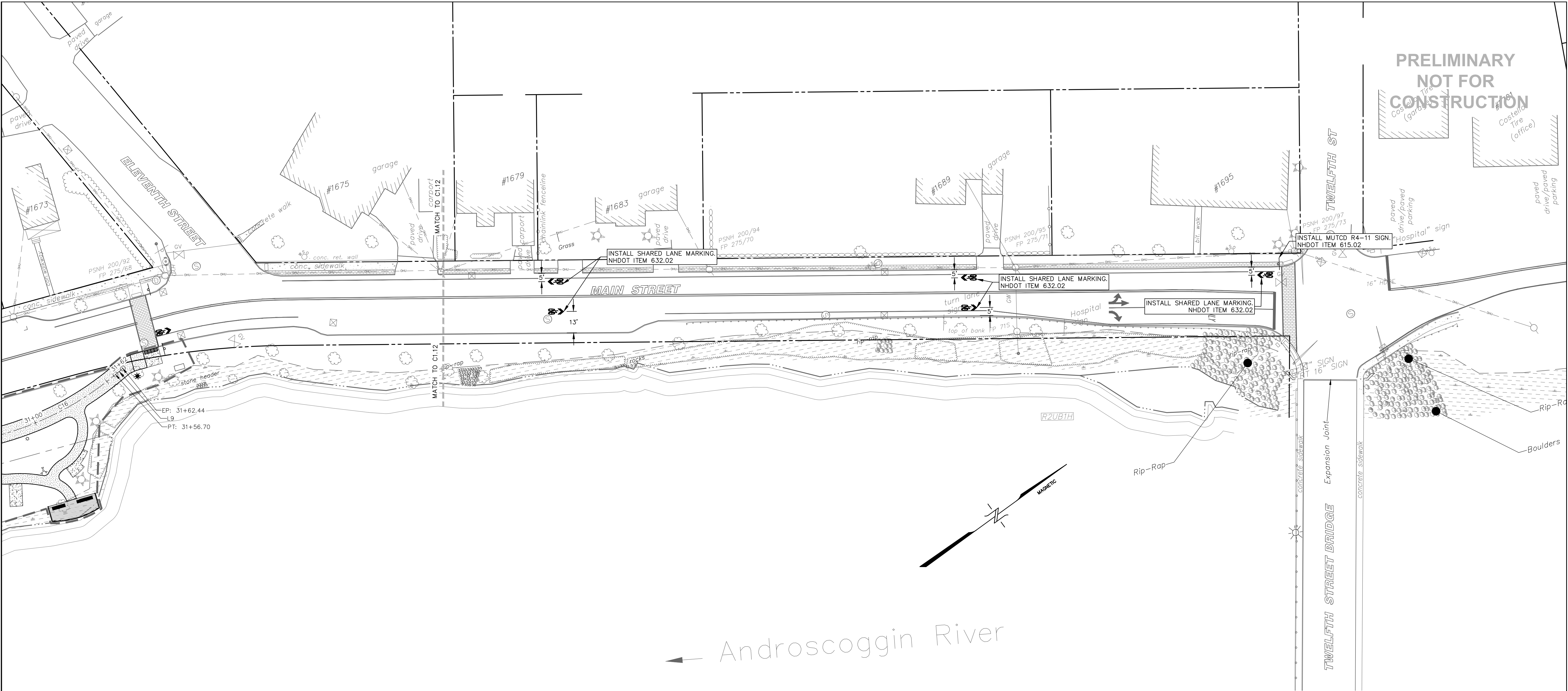
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Pathway Layout Plan Sta. (17+50 - 31+61)

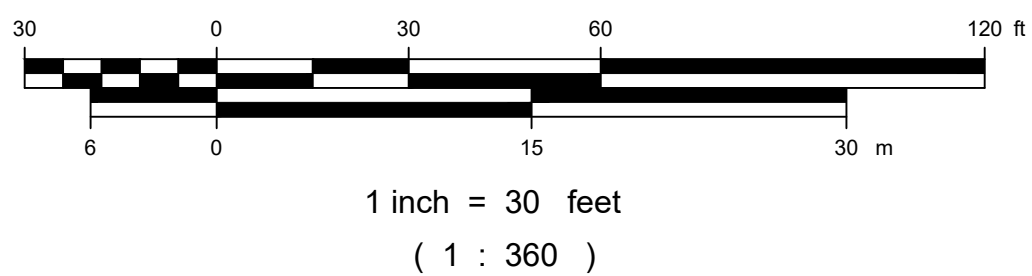
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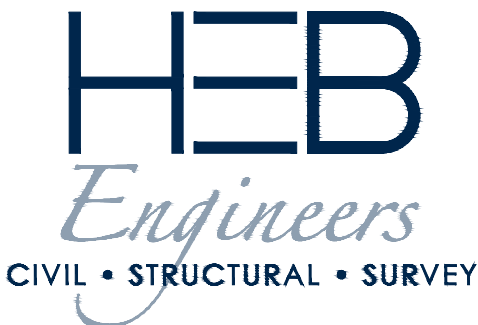
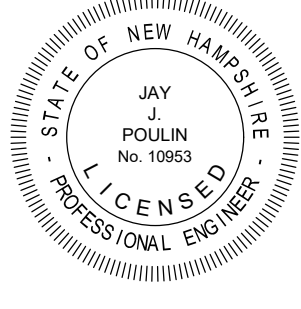
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Plan View: 11th Street - 12th Street
Scale: 1" = 30'



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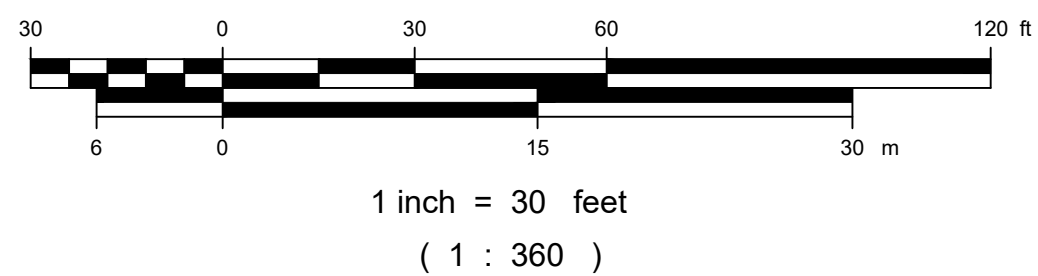
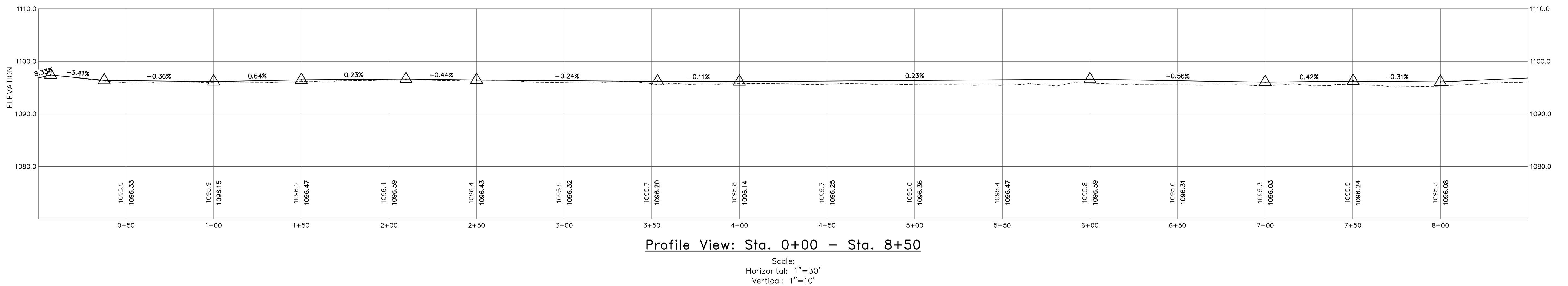
Pathway Layout Plan (11th Street - 12th Street)
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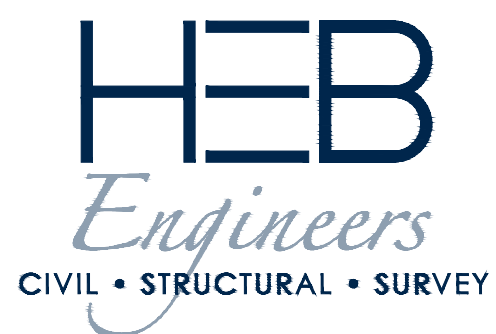
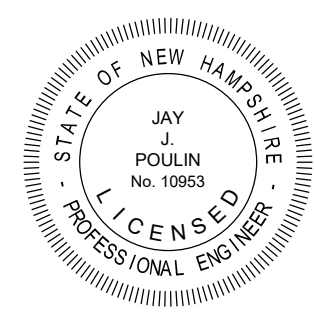
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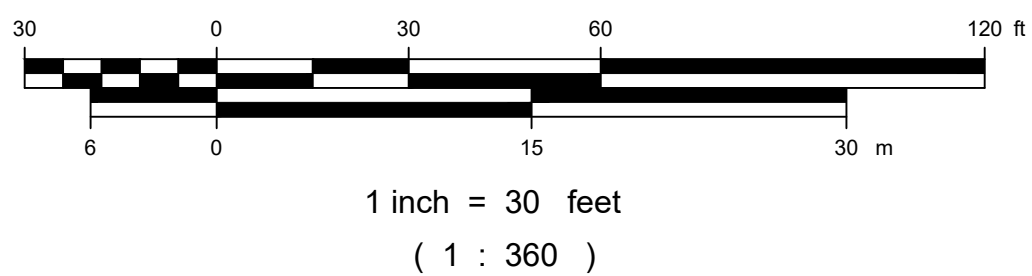
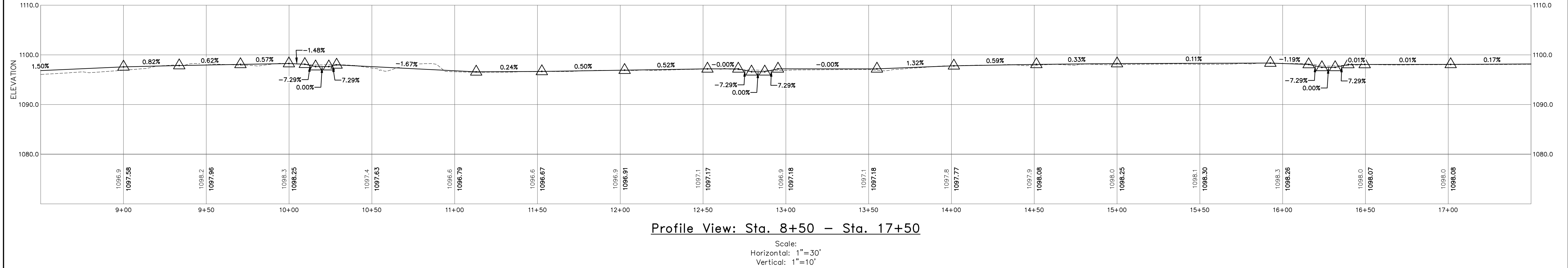
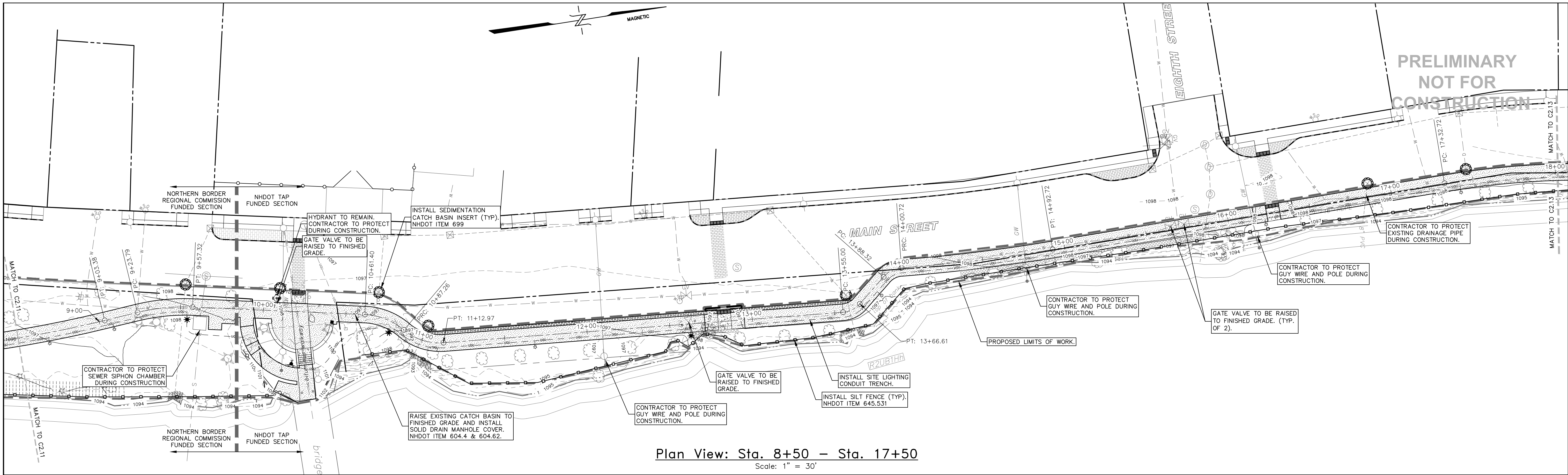
Pathway Plan & Profile (Sta. 0+00 – 8+50)

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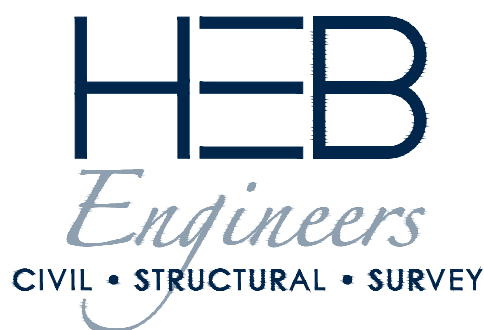
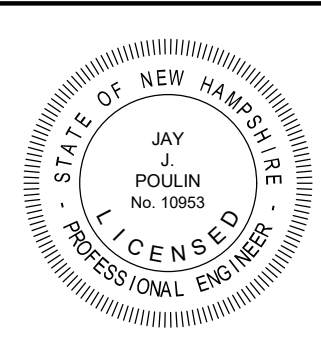
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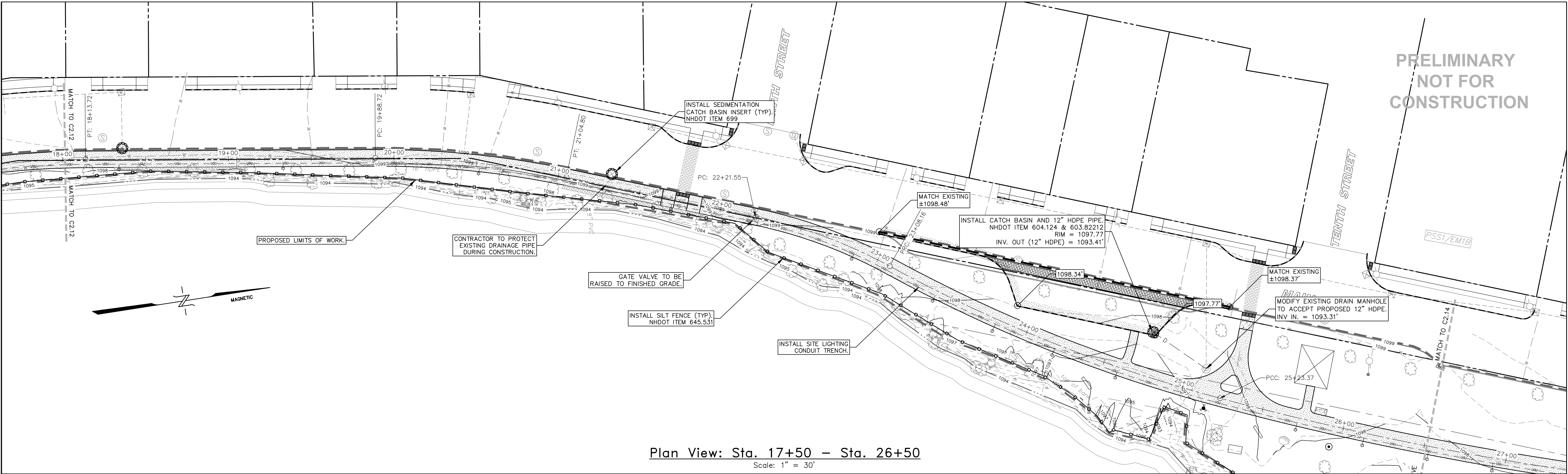
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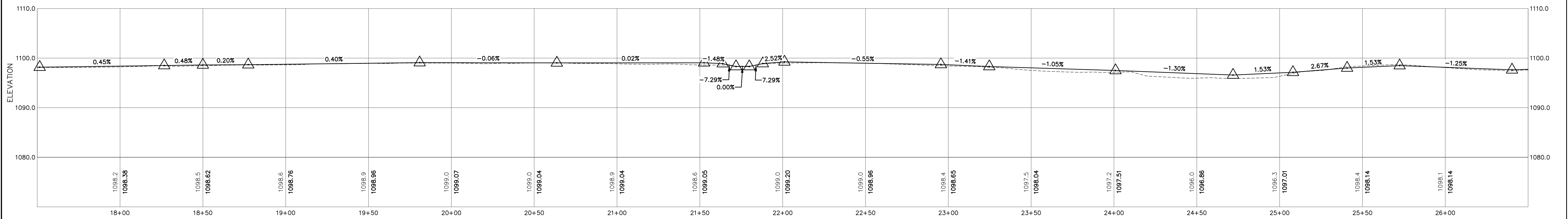
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Pathway Plan & Profile (Sta. 8+50 - 17+50)
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Plan View: Sta. 17+50 - Sta. 26+50

Scale: 1" = 30'

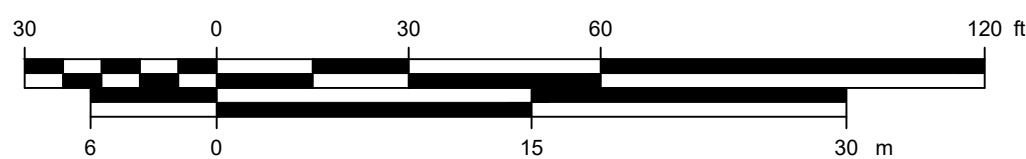


Profile View: Sta. 17+50 - Sta. 26+50

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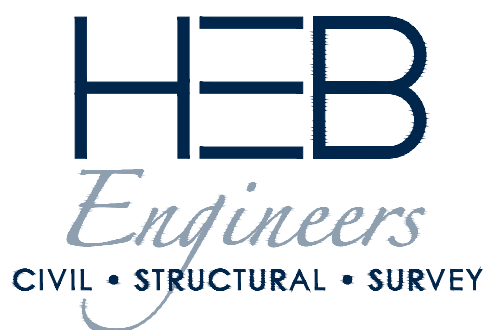
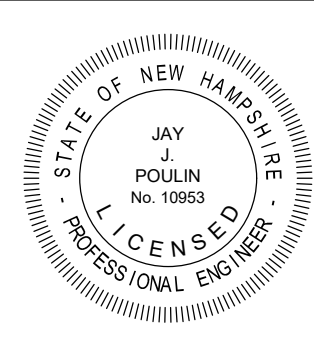
Vertical: 1"=10'



1 inch = 30 feet

(1 : 360)

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DESIGNED BY	EJG/DRL
DRAWN BY	EJG/DRL
CHECKED BY	JJP
FIELD BOOK	—
SCALE	1"=30'
DATE	09/24/2019

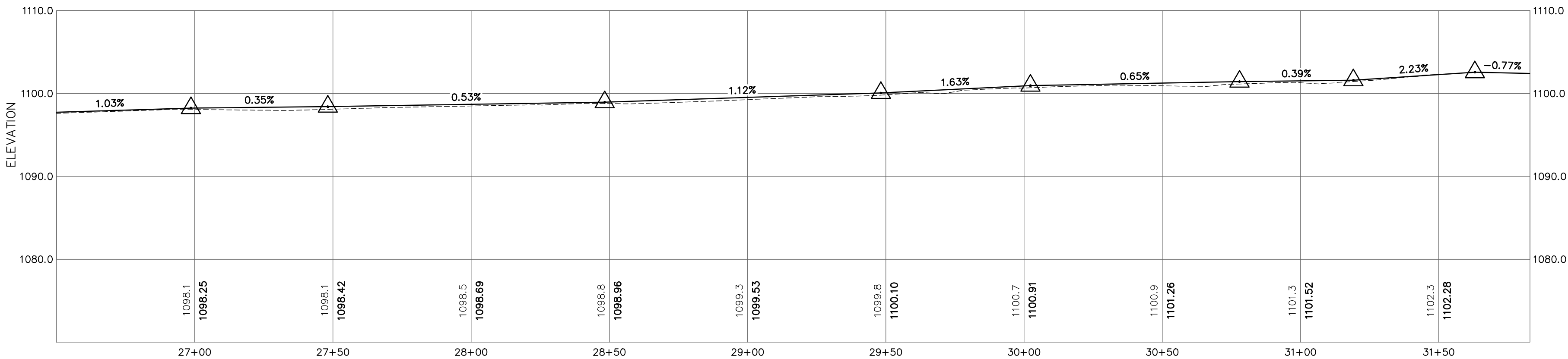
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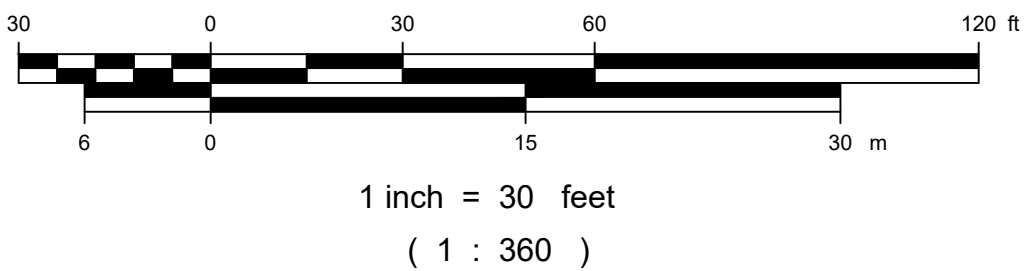
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SHEET 9 OF 21

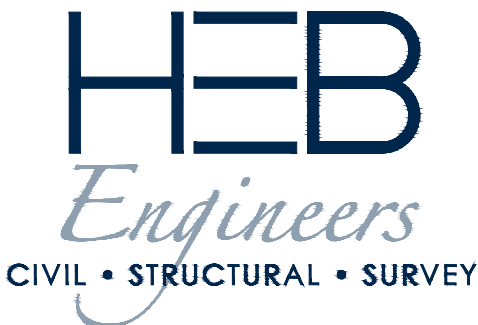
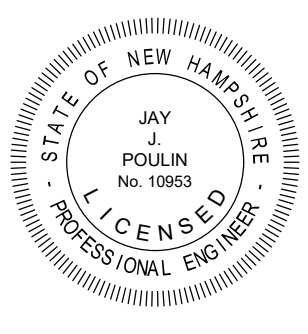


Profile View: Sta. 26+50 - Sta. 31+83

Scale:
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Vertical: 1" = 10'



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SCALE	1" = 30'
DATE	09/24/2019

Pathway Plan & Profile (Sta. 26+50 - 31+83)

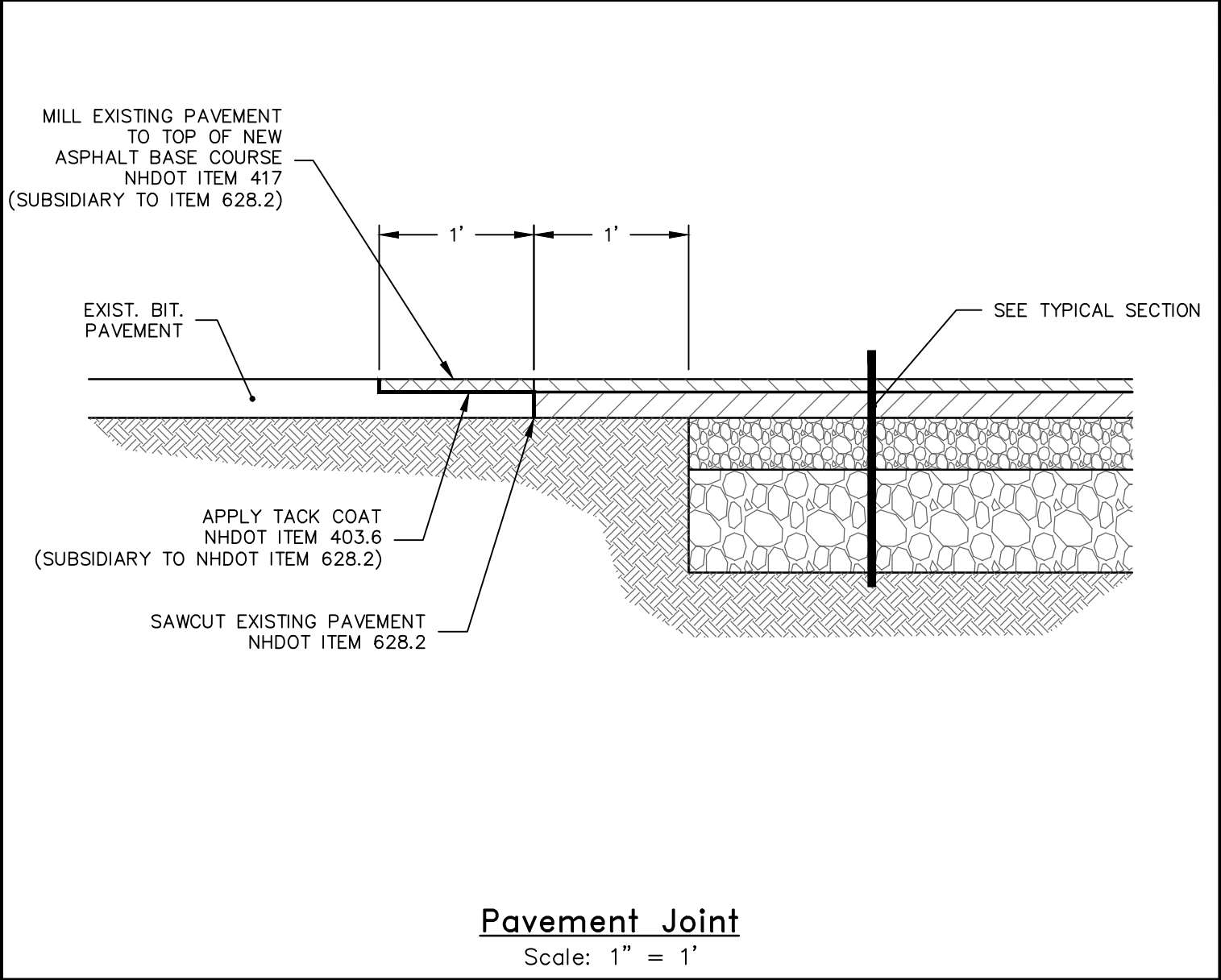
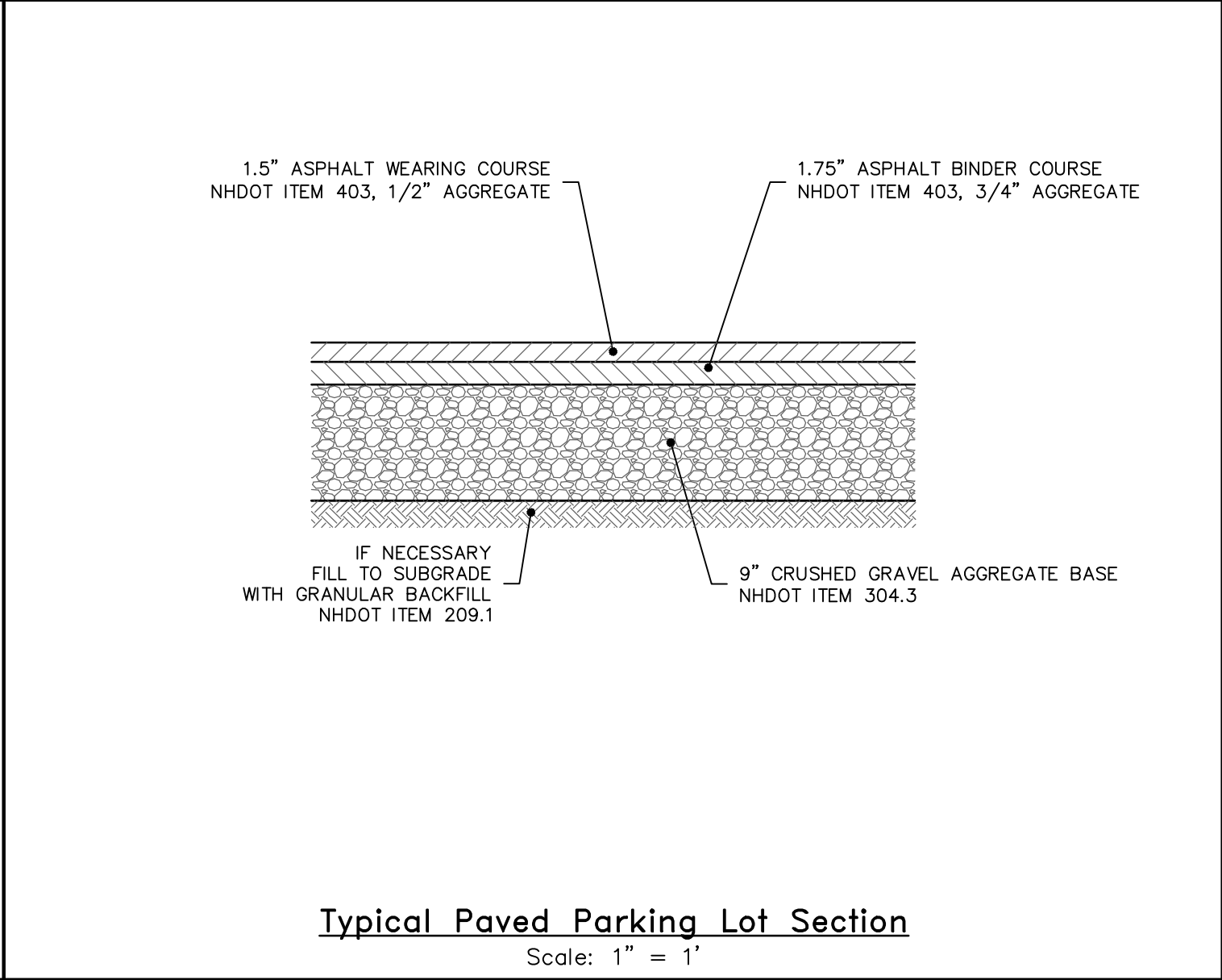
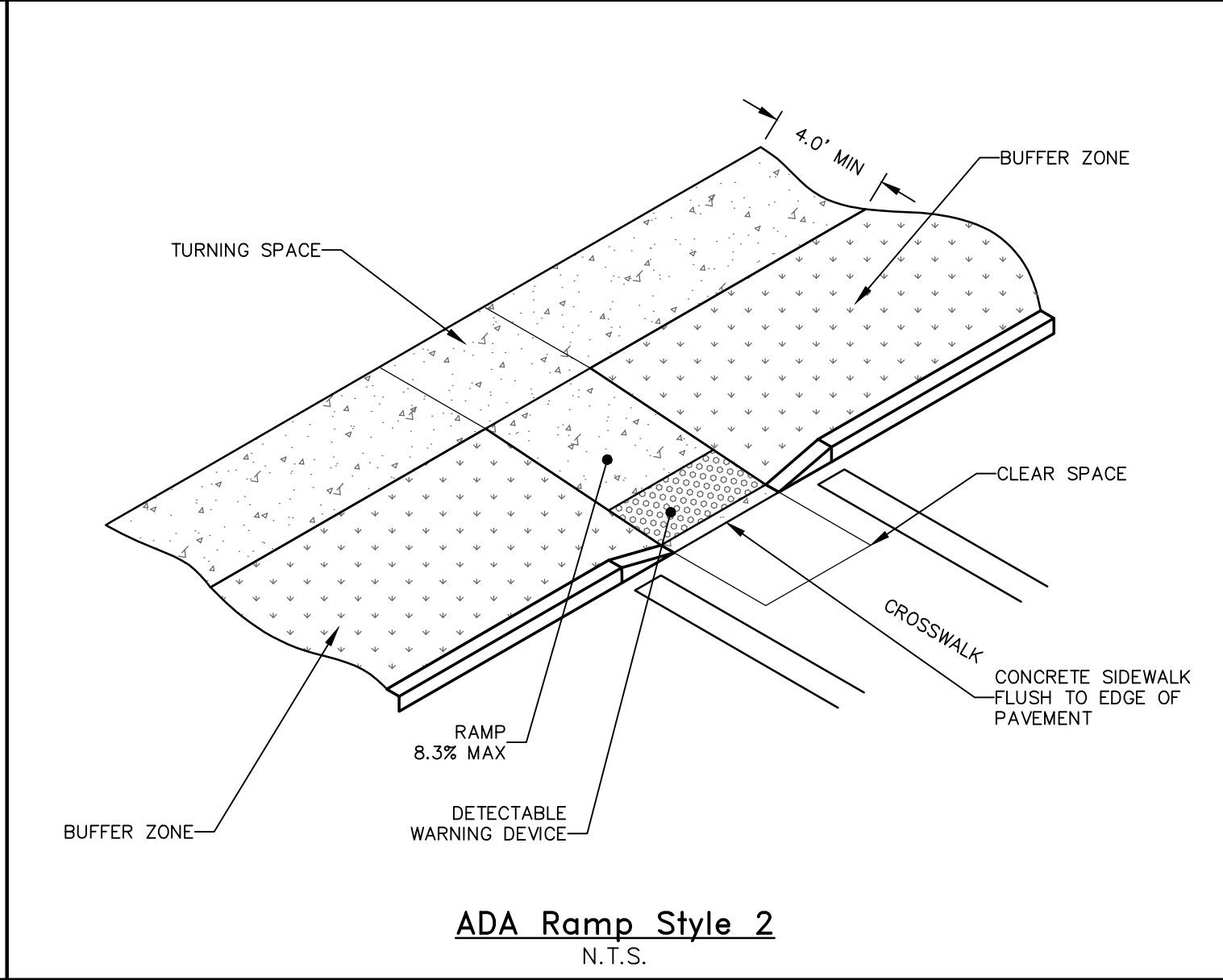
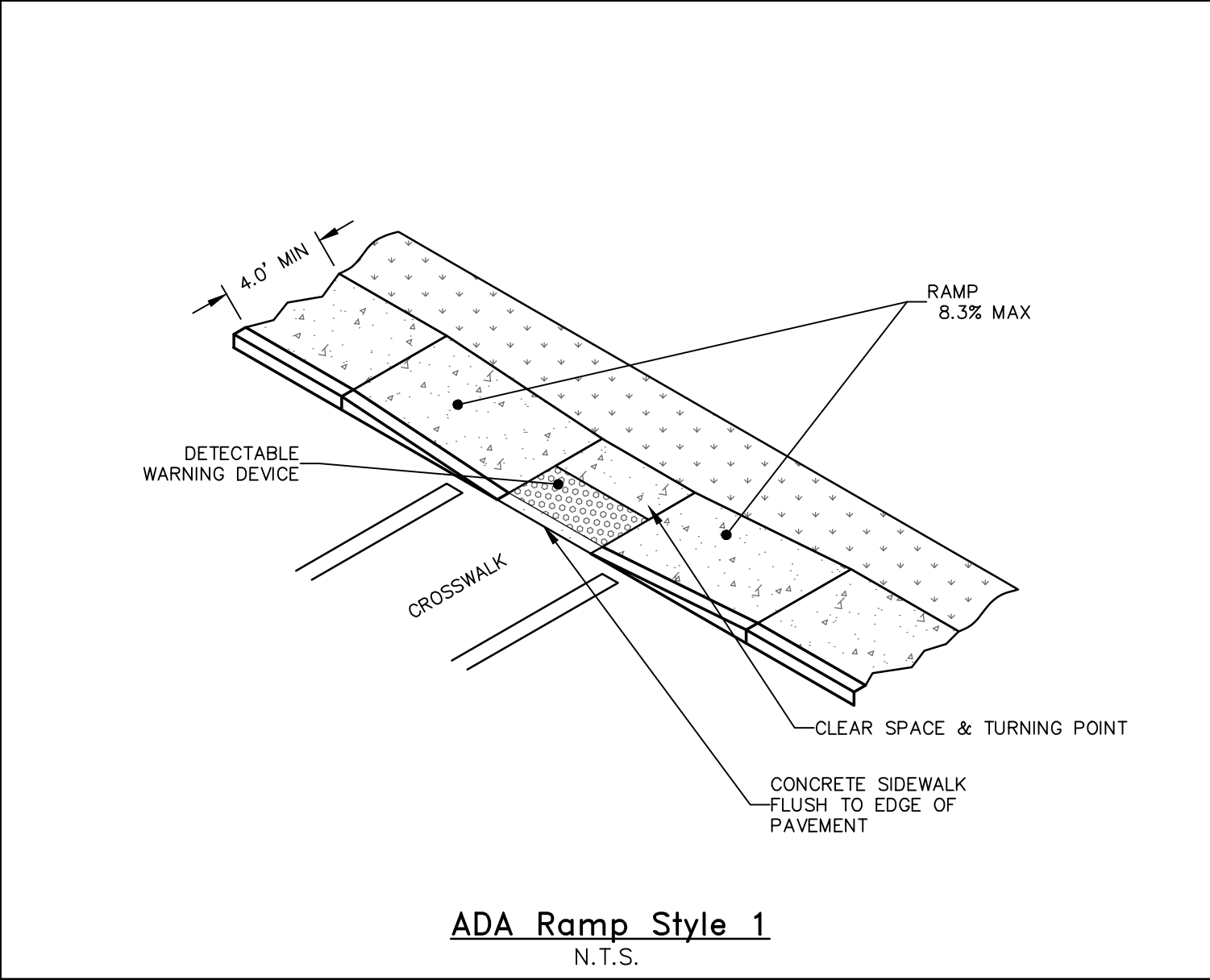
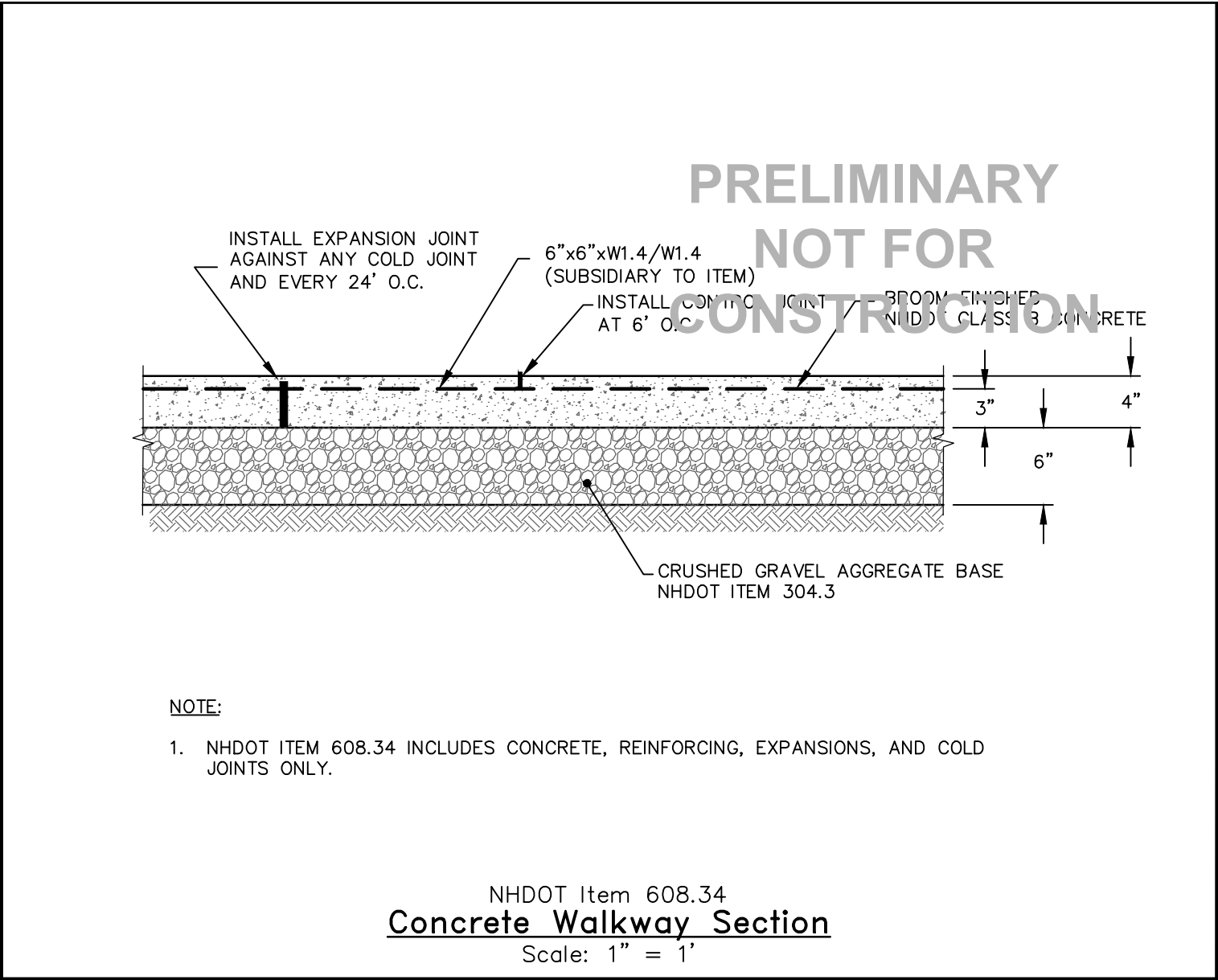
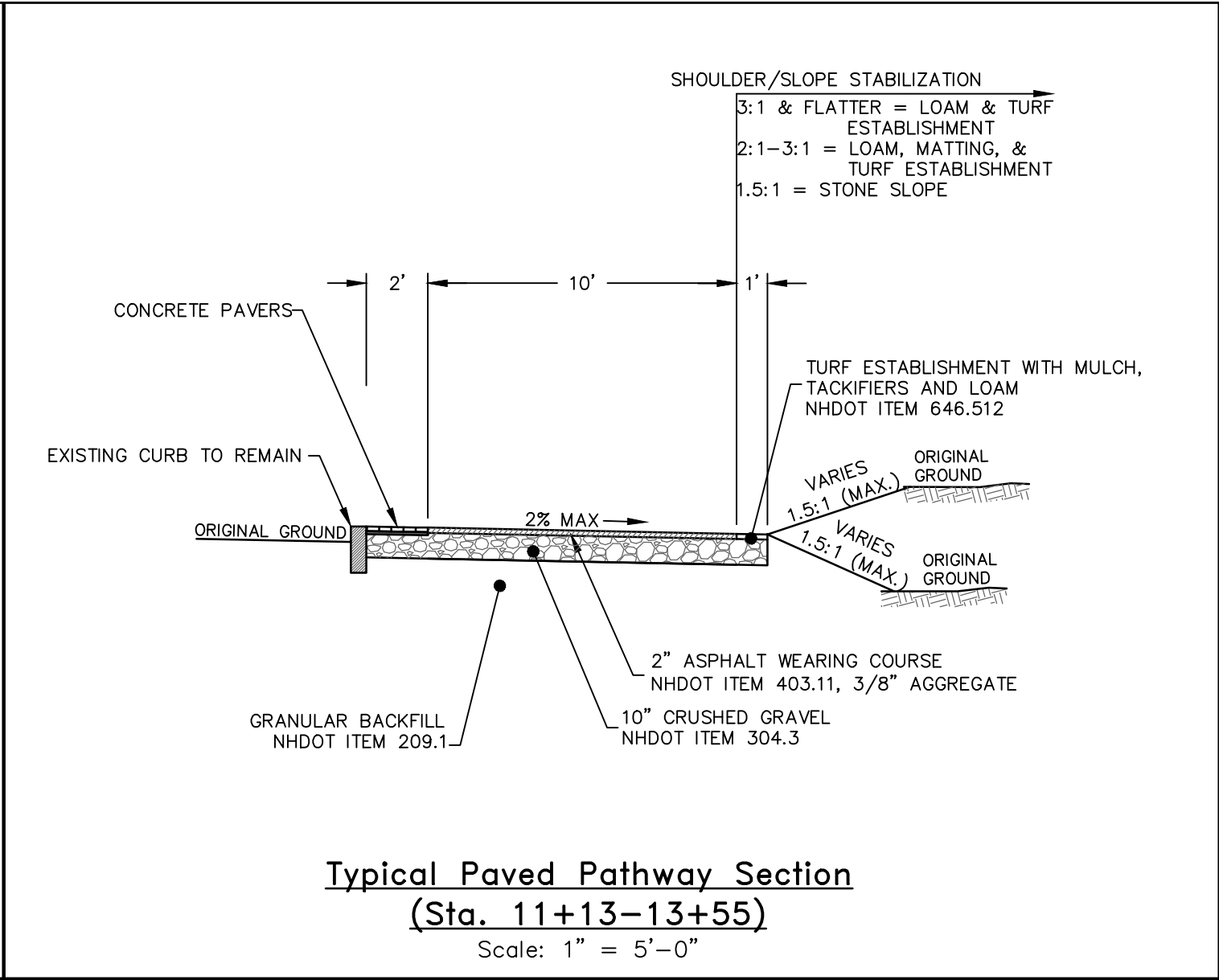
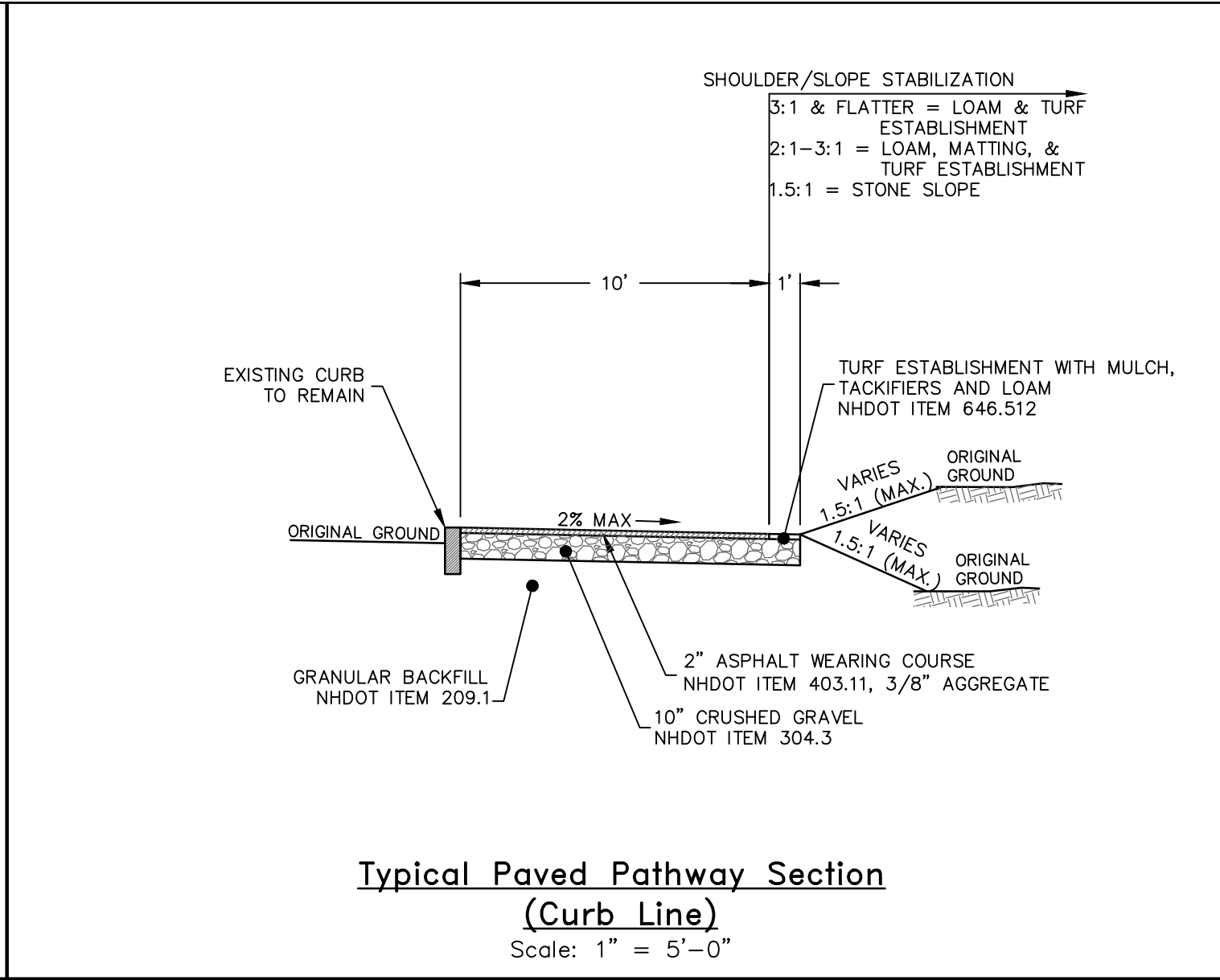
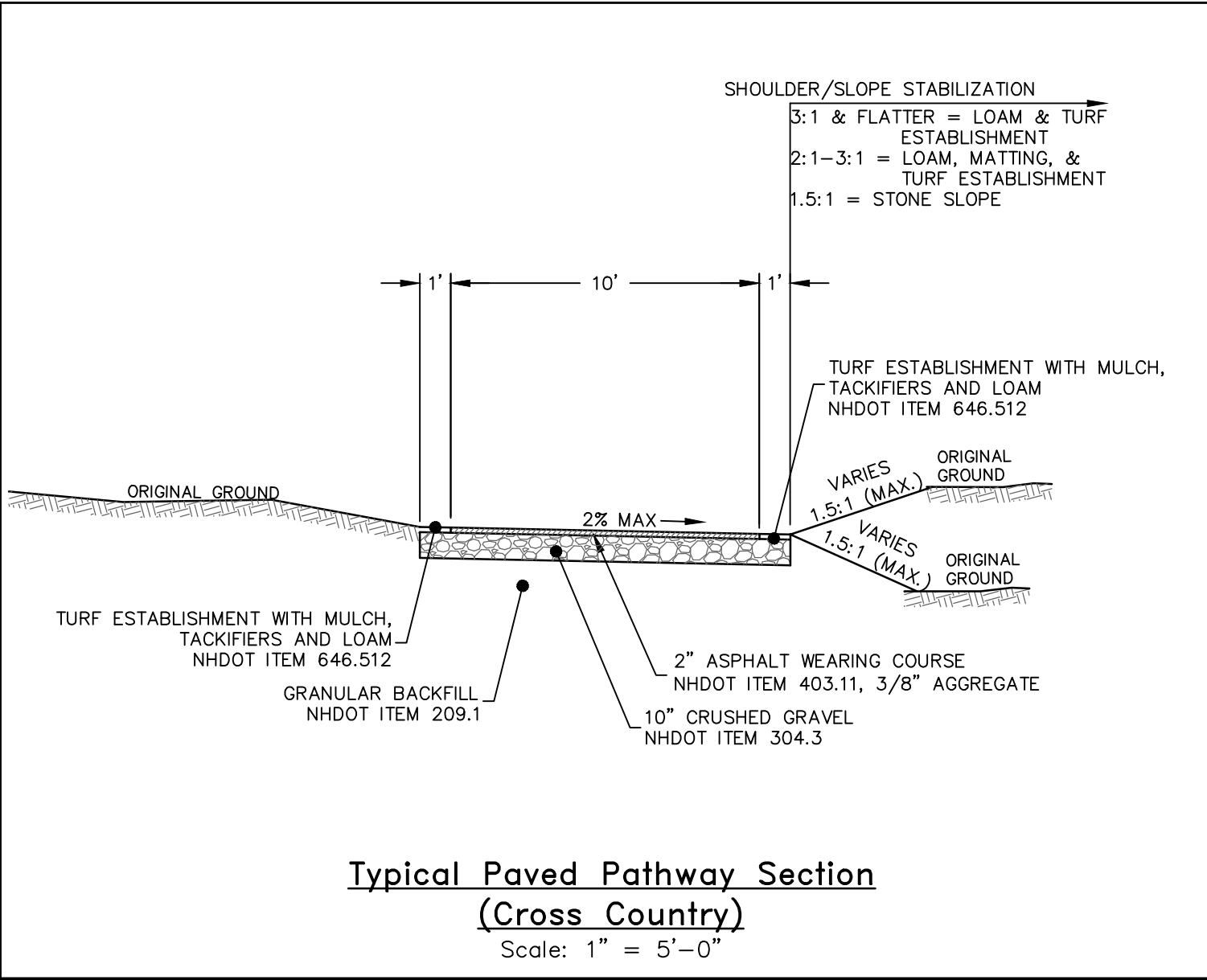
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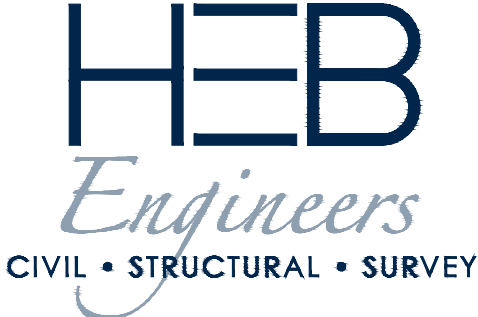
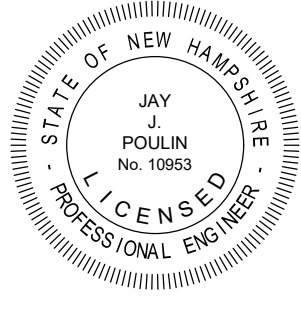
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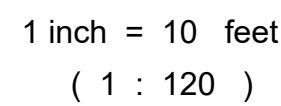
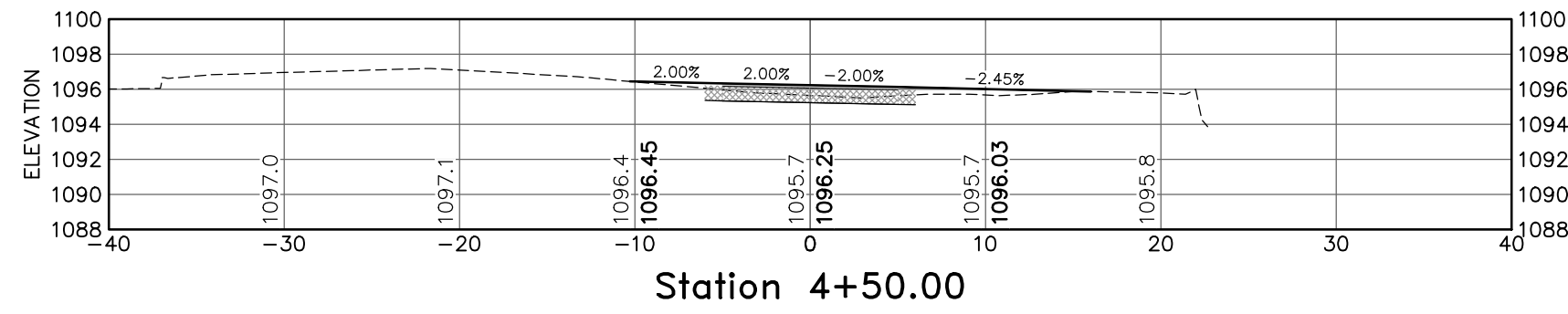
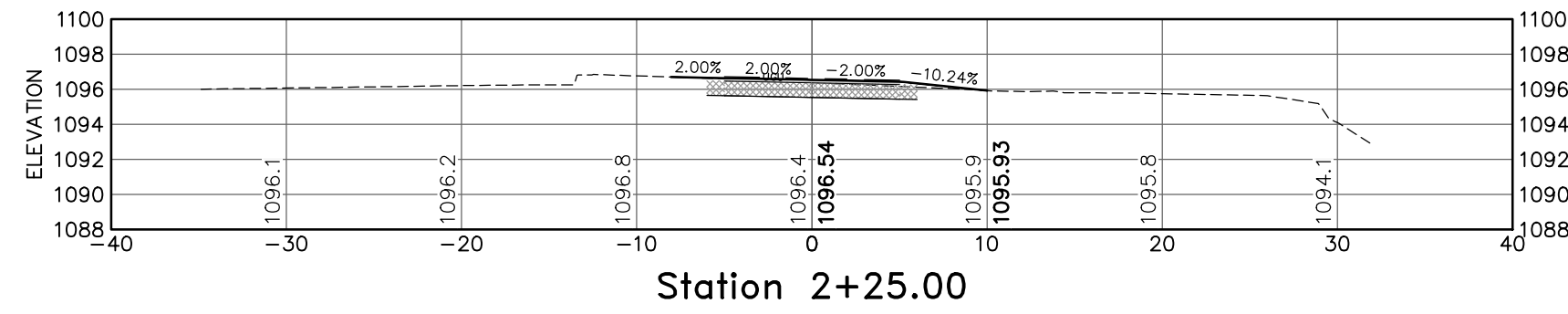
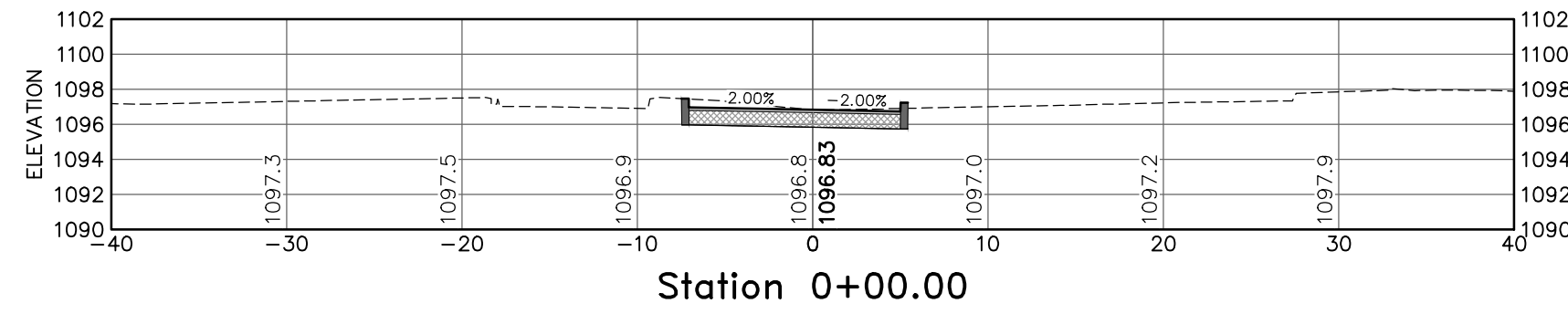
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DRAWN BY	EJG/DRL
CHECKED BY	JJP
FIELD BOOK	—
SCALE	AS NOTED
DATE	09/24/2019

Typical Pathway Sections & Details
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2018-033

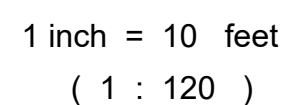
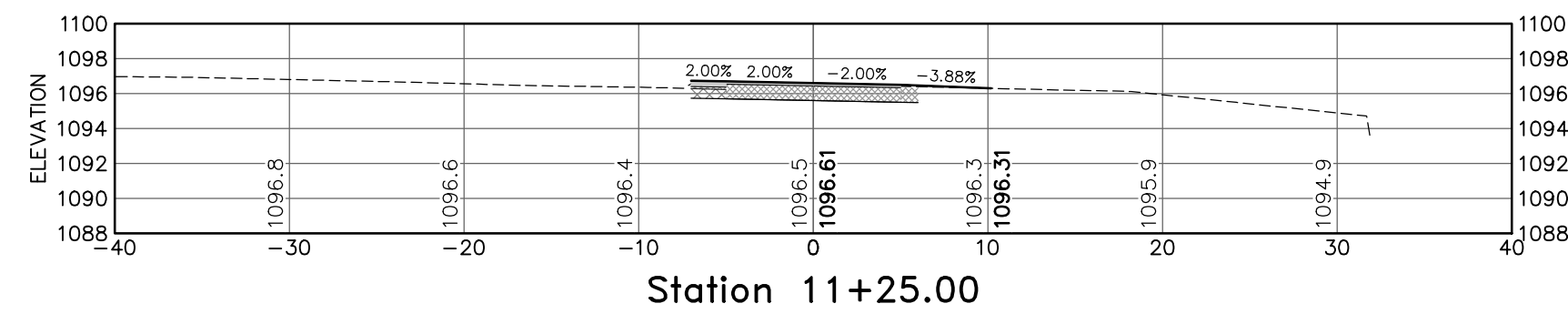
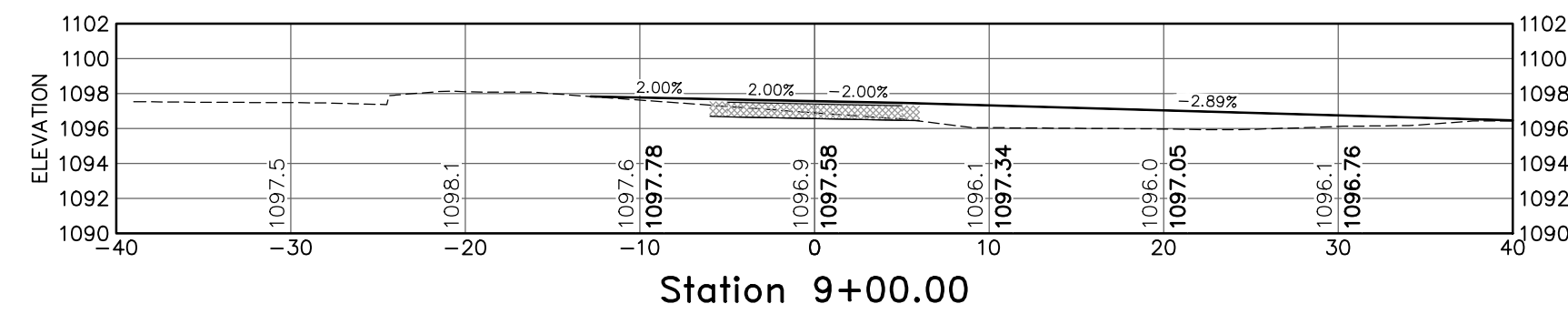
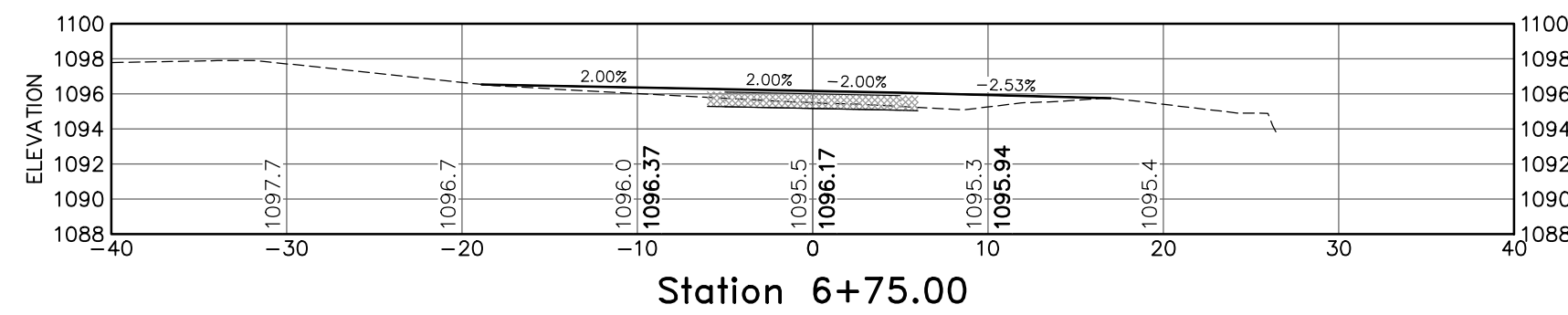
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SHEET 11 OF 21

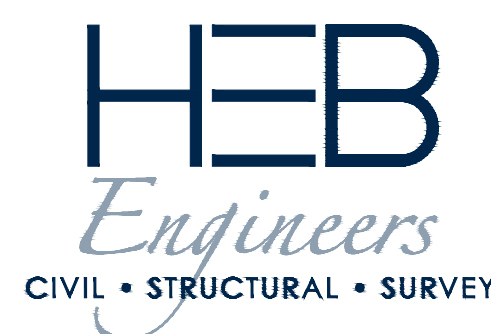
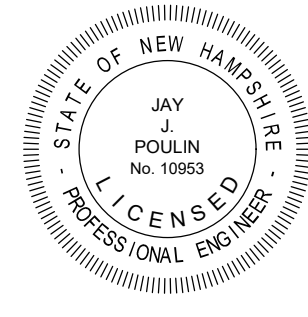


Pathway Sections (Sta. 0+00 - 6+50)

SHEET 12 OF 21



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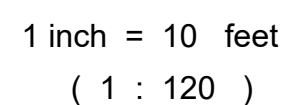
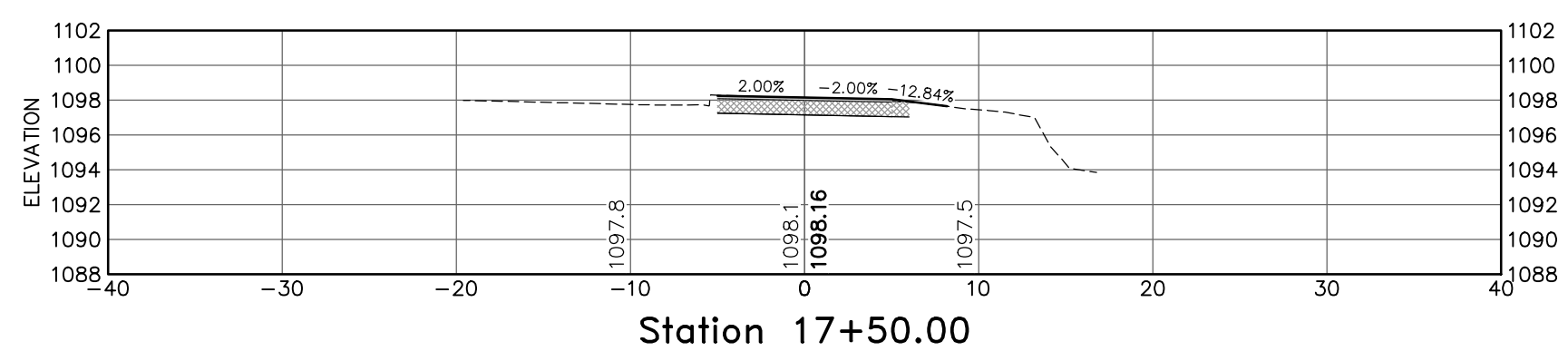
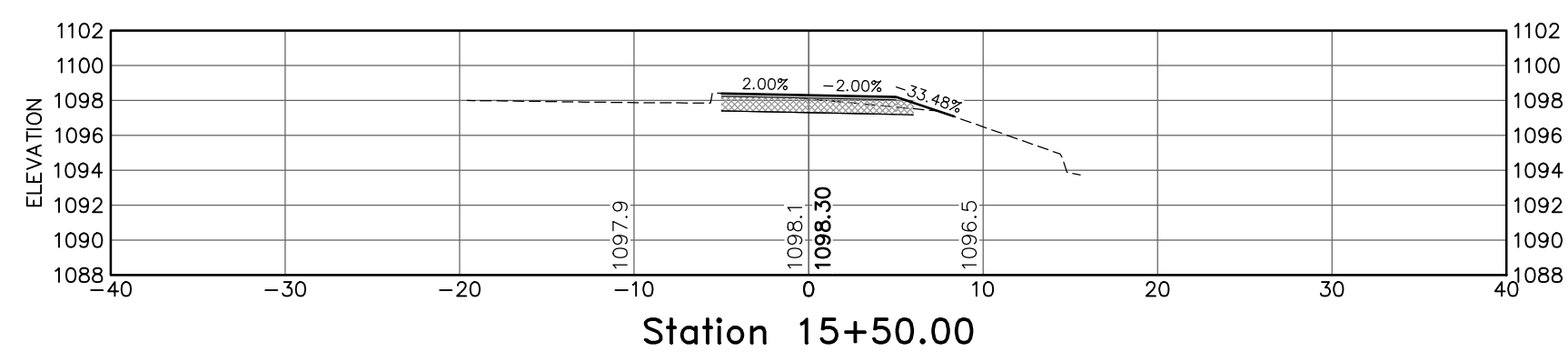
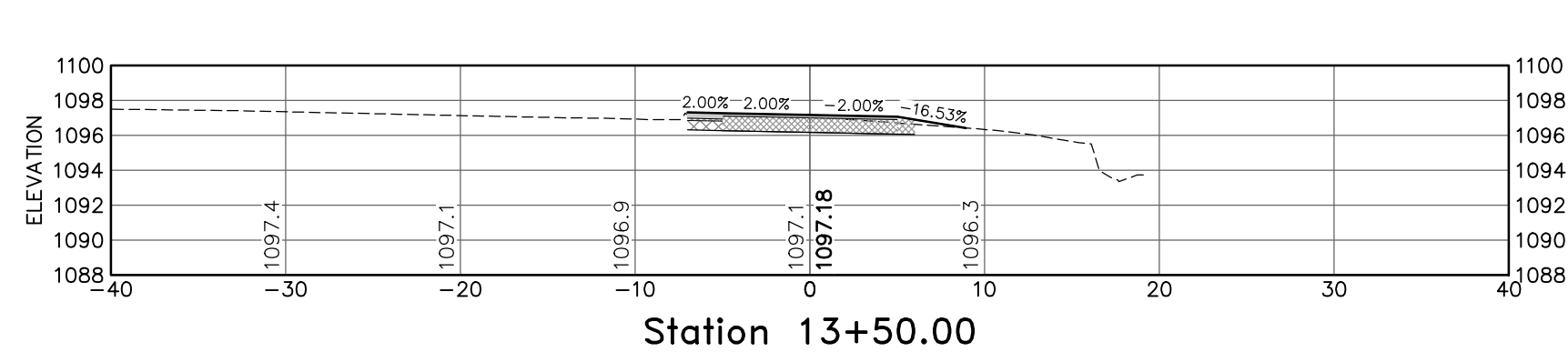
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SCALE	1" = 10'
DATE	09/24/2019

City of Berlin, New Hampshire

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Pathway Sections (Sta. 13+50 - 19+25)
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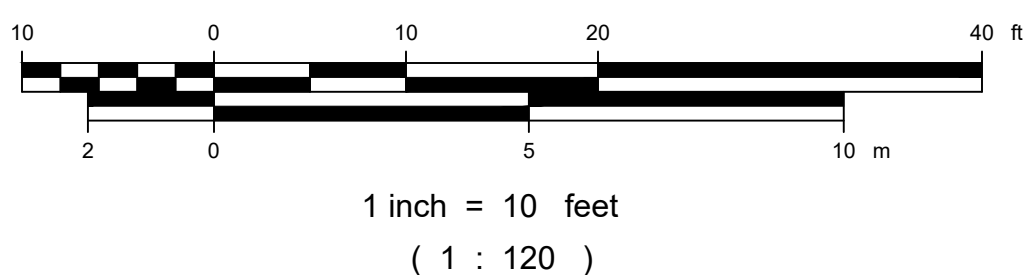
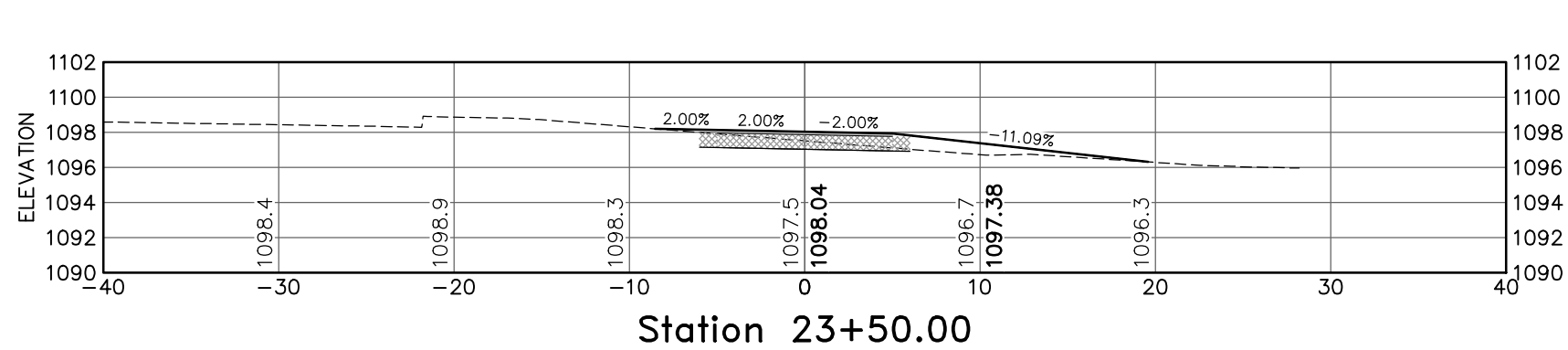
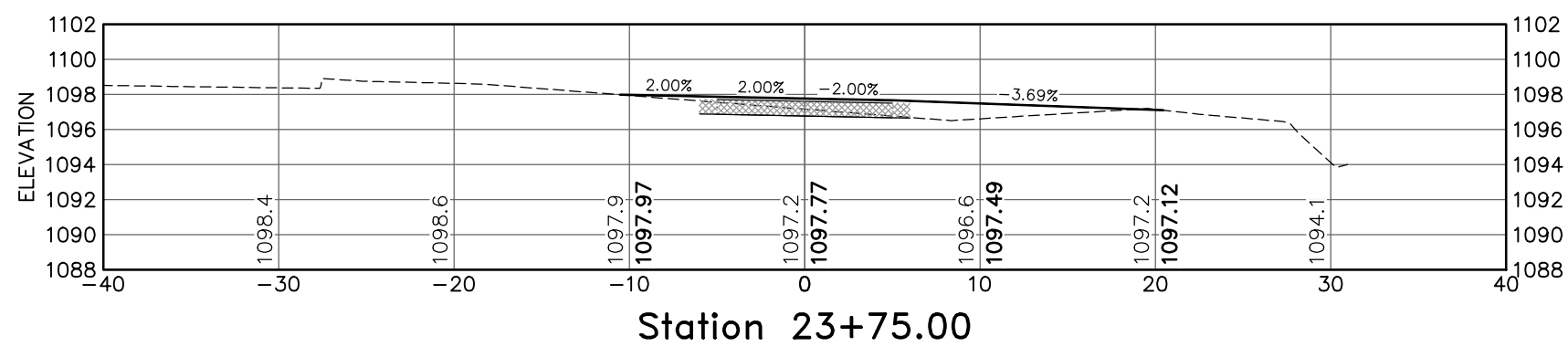
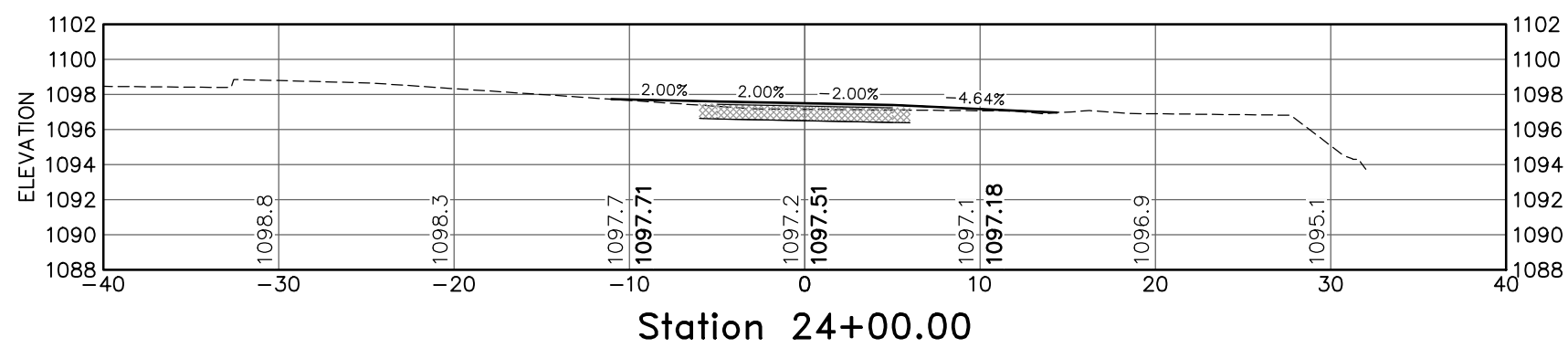
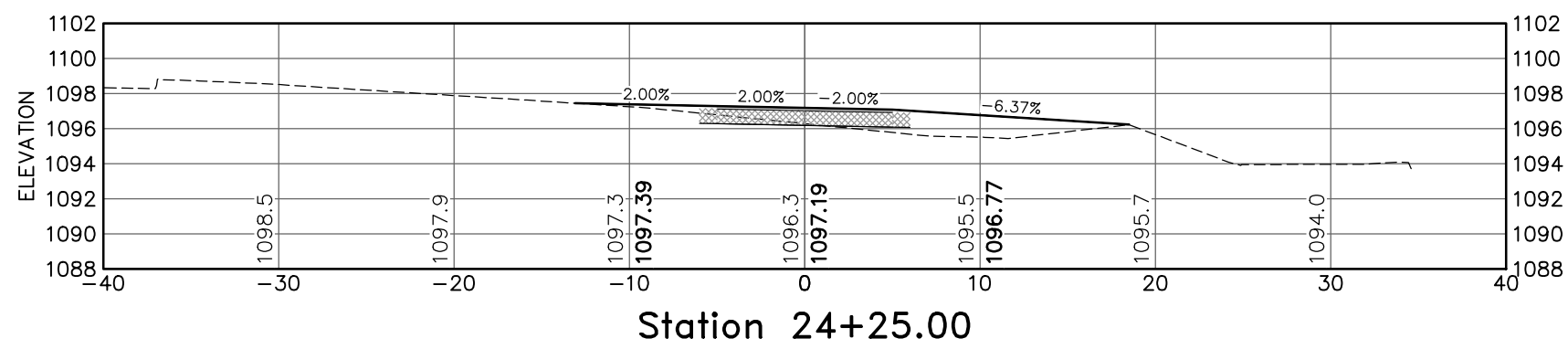
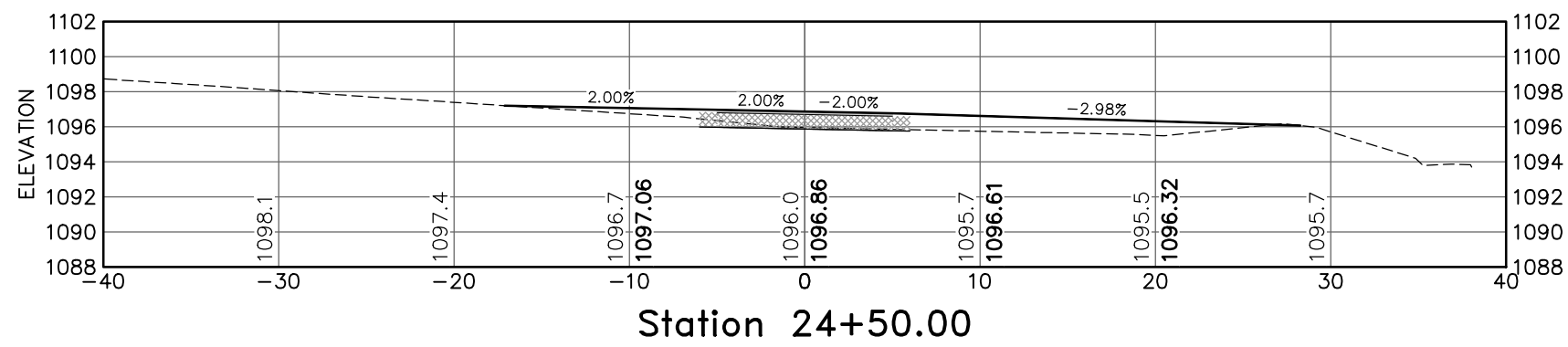
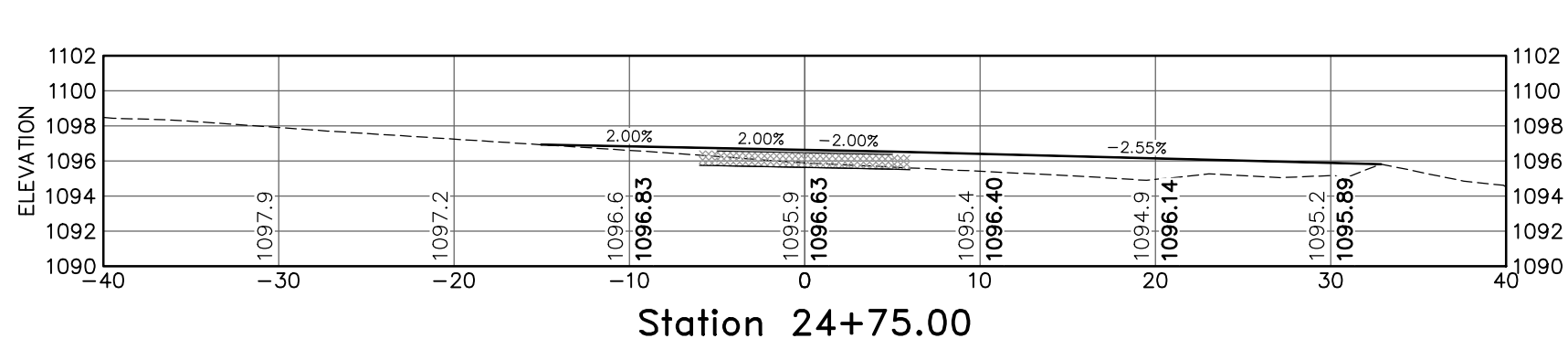
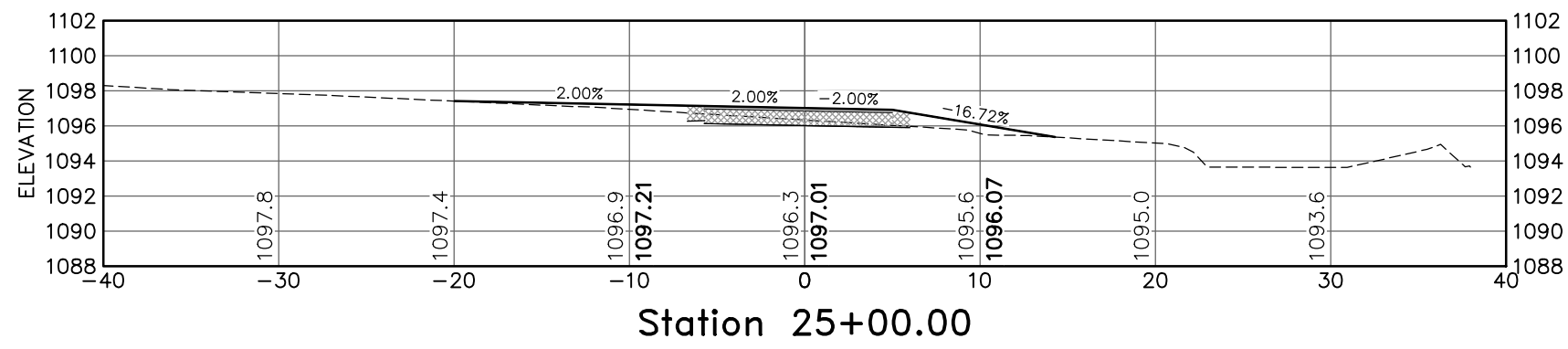
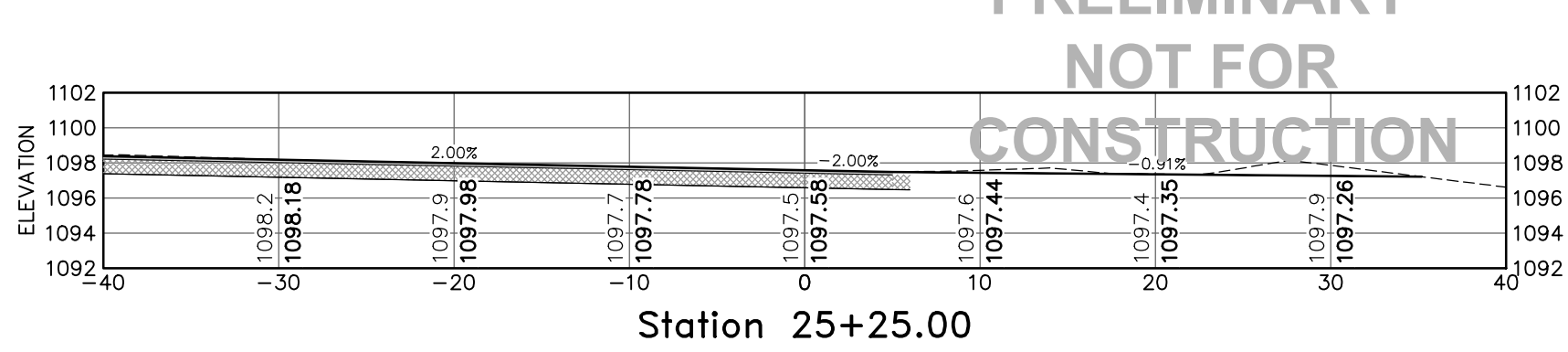
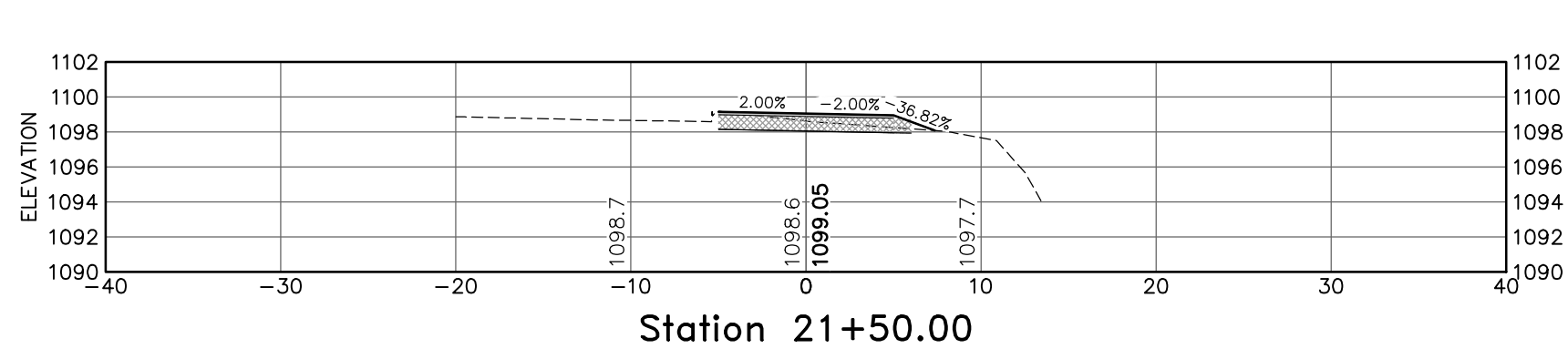
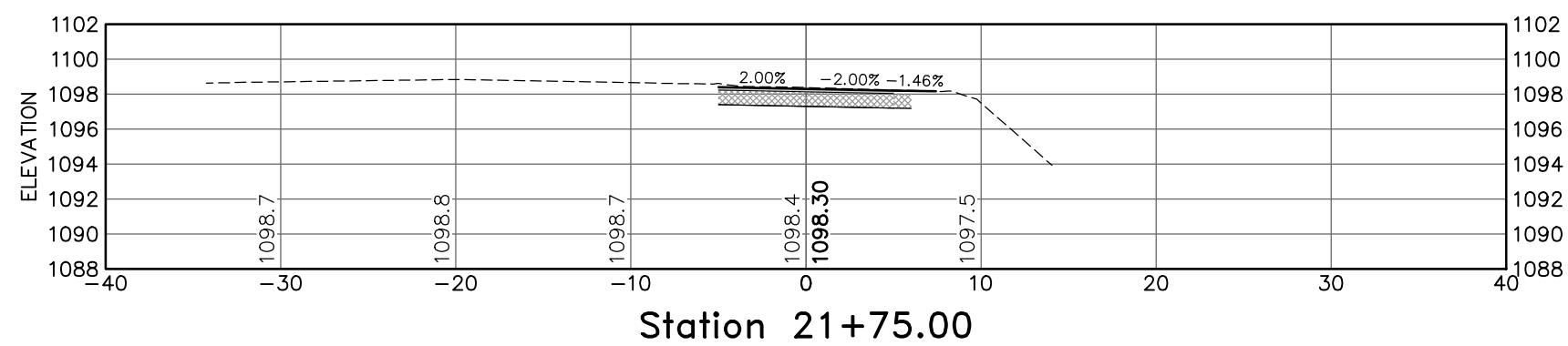
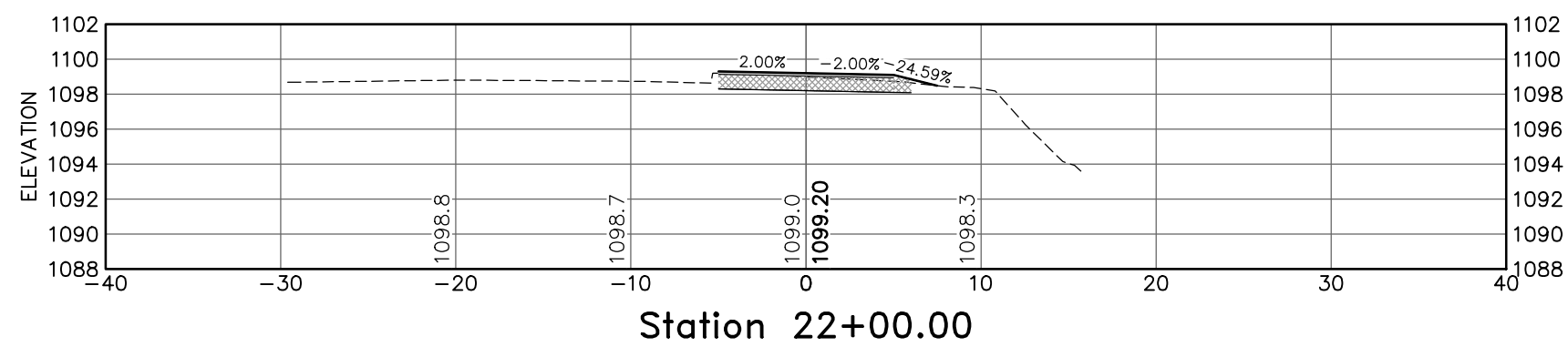
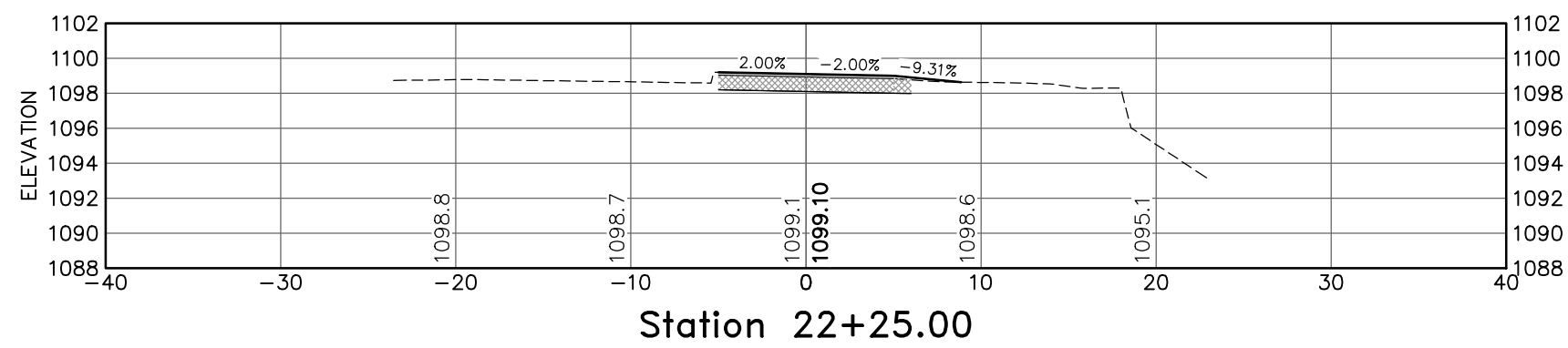
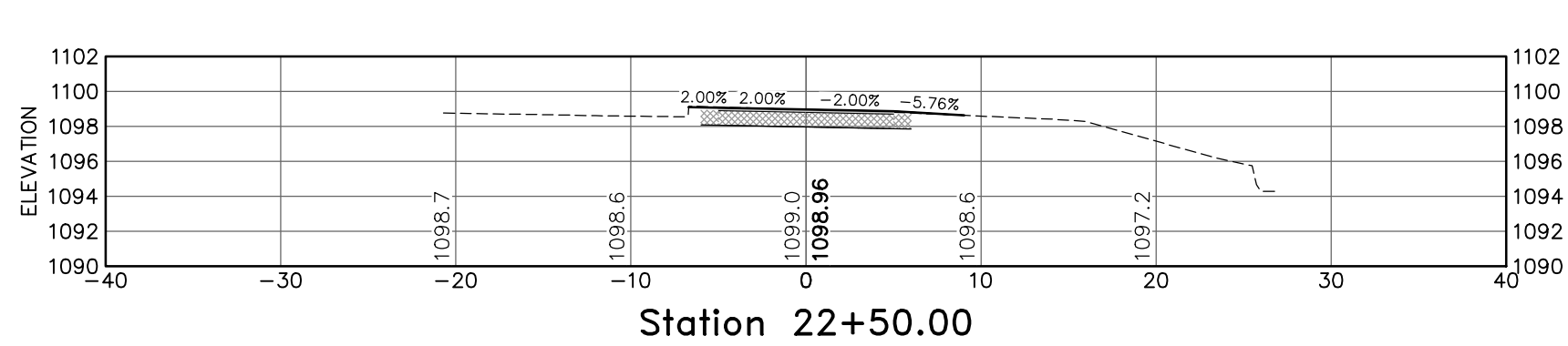
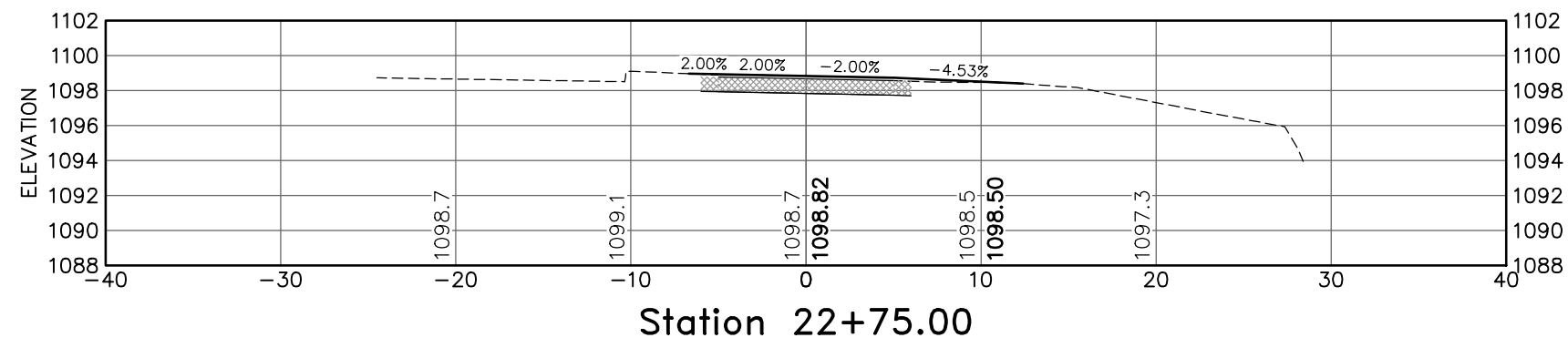
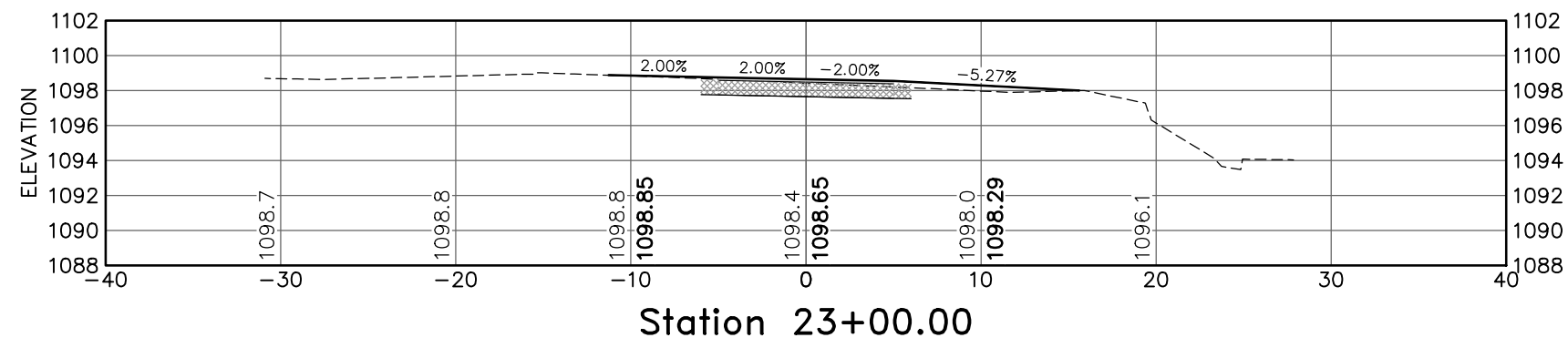
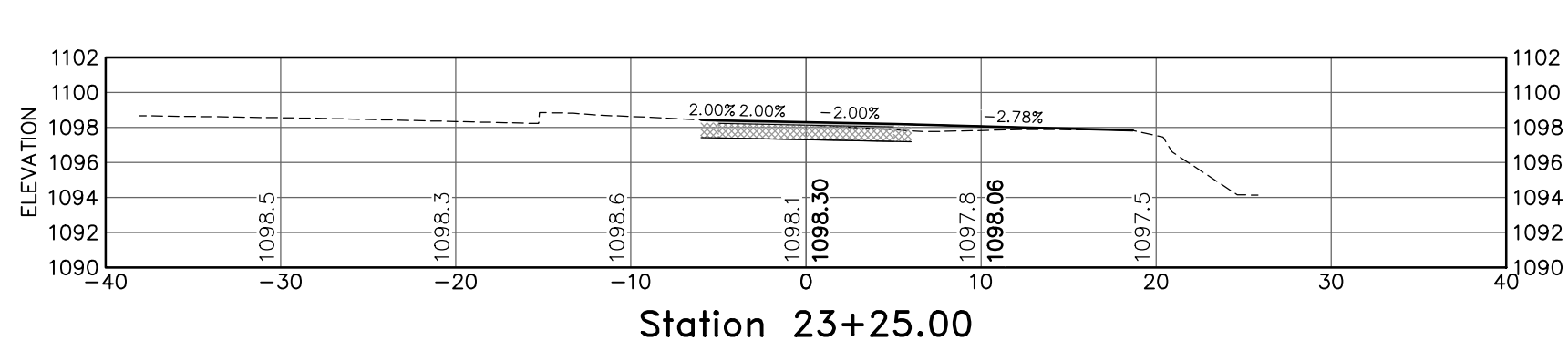
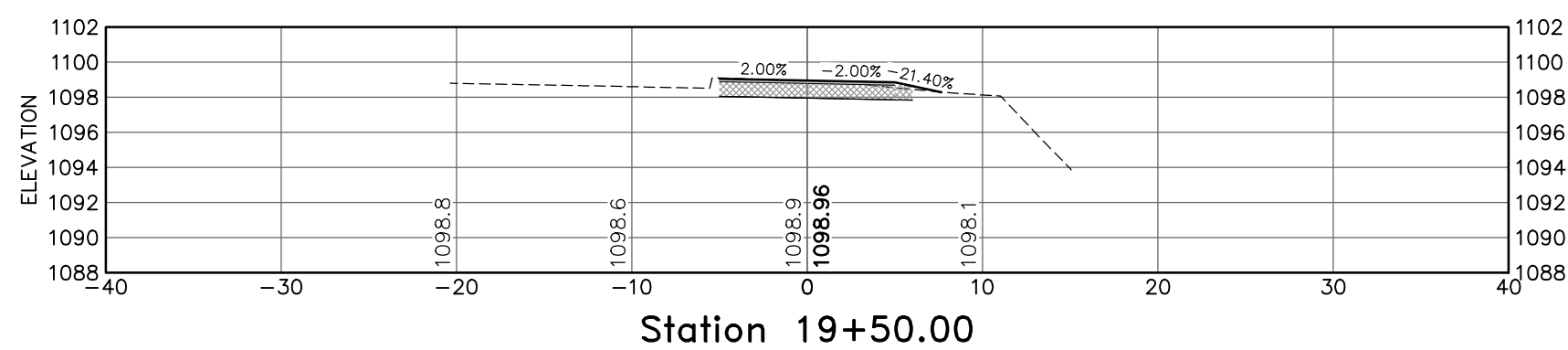
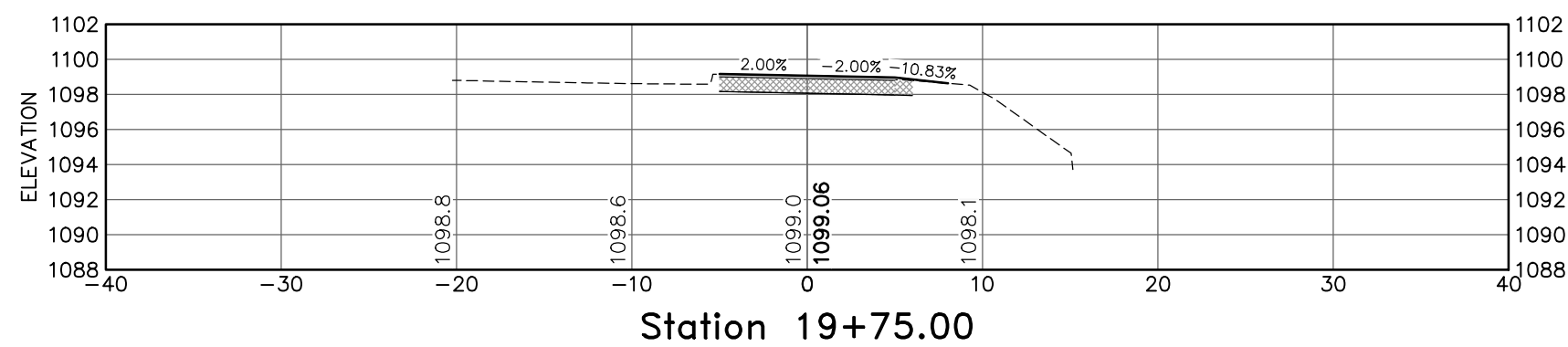
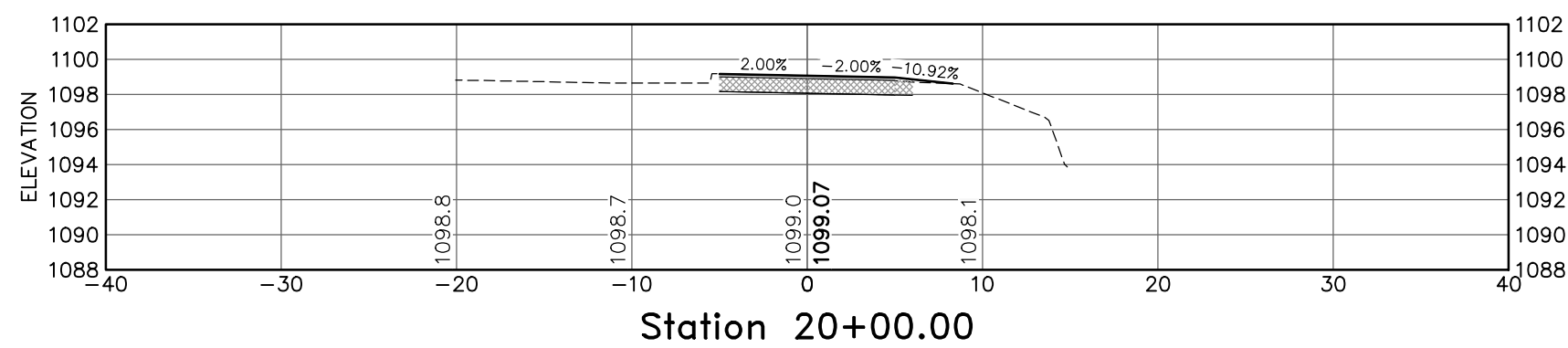
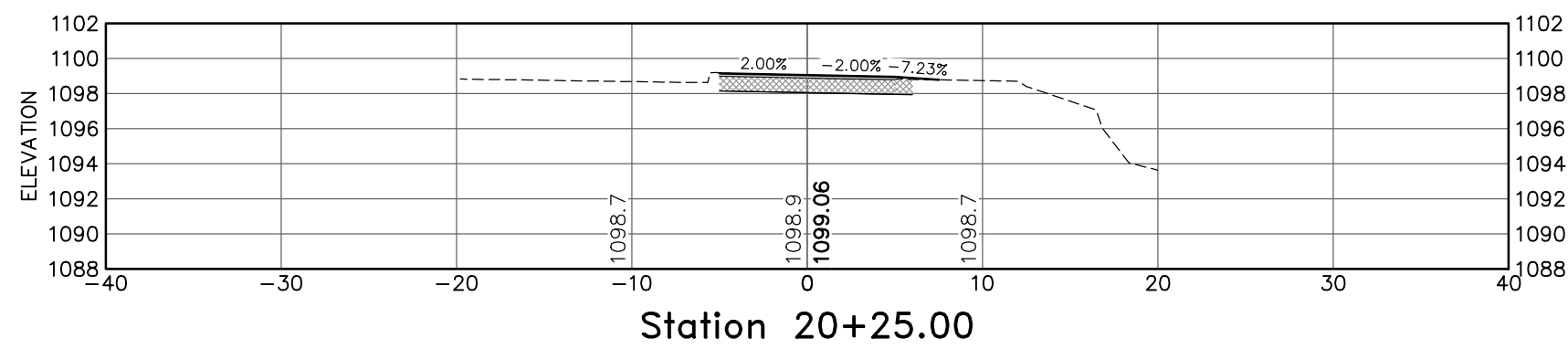
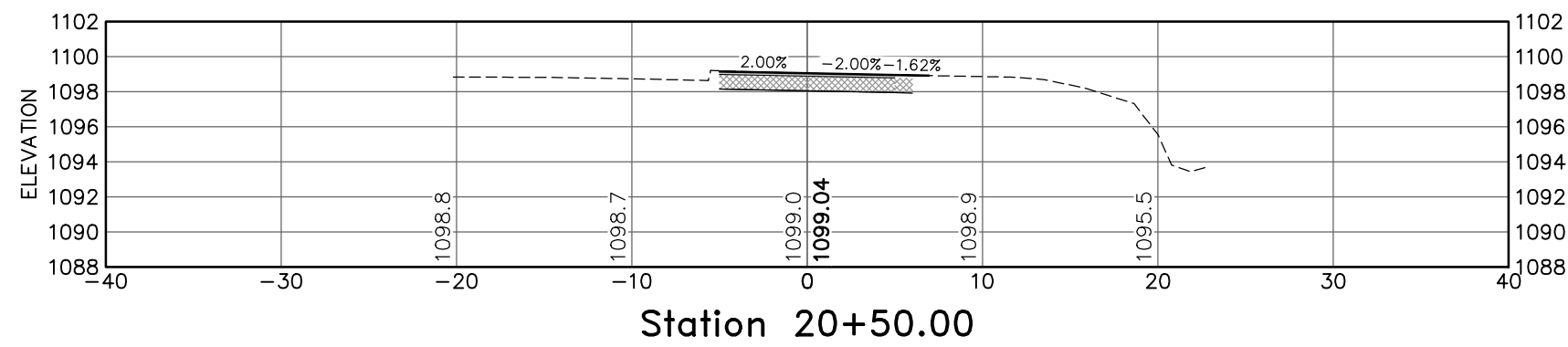
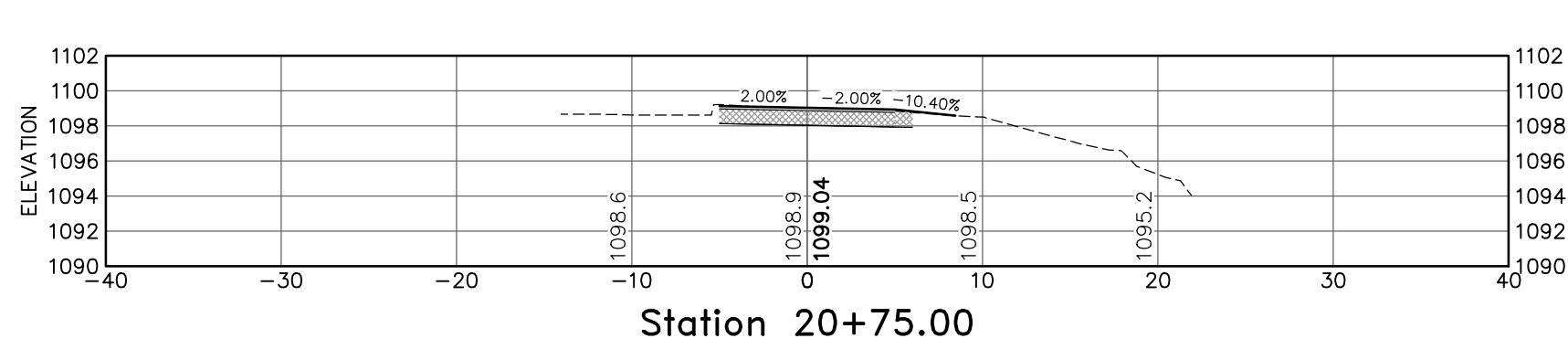
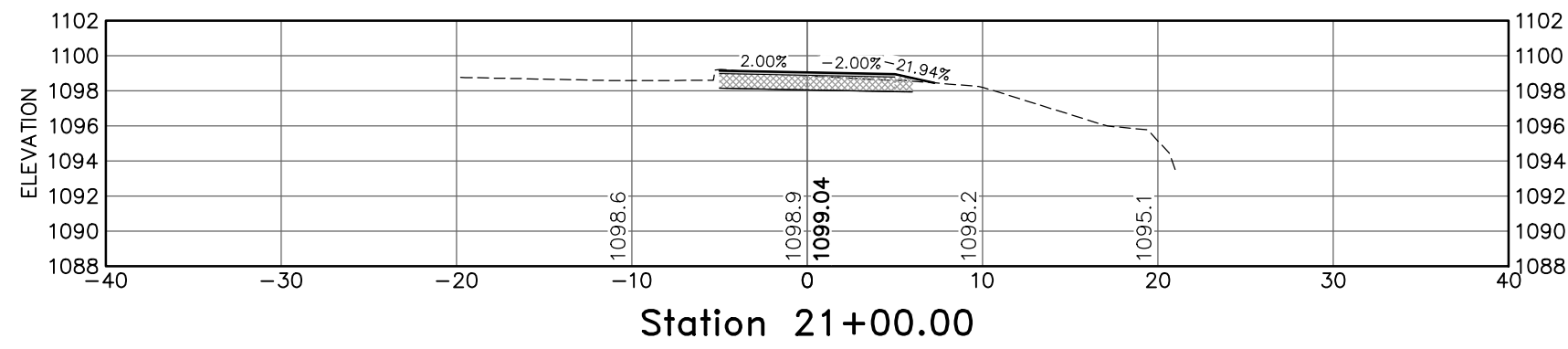
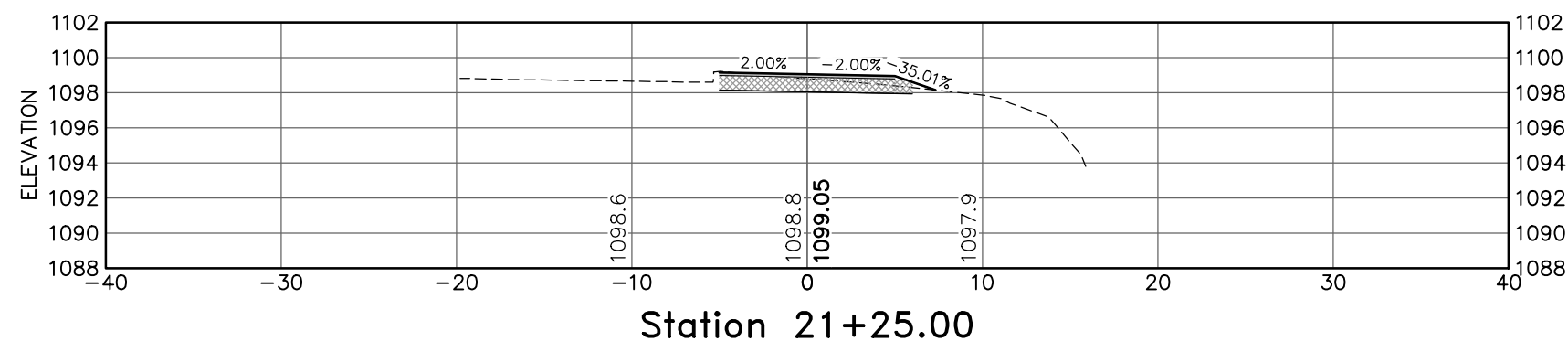
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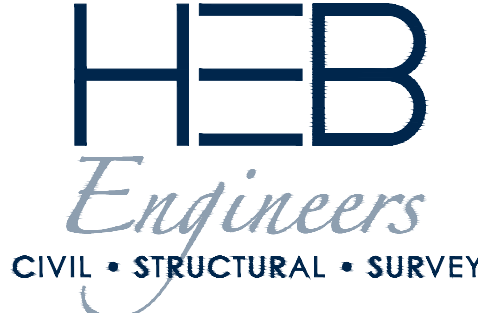
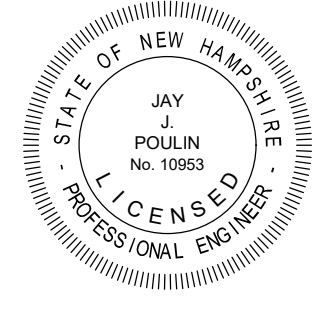
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SHEET 15 OF 21

2018-033
Pathway Sections (Sta. 19+50 - 25+25)
Berlin Riverwalk



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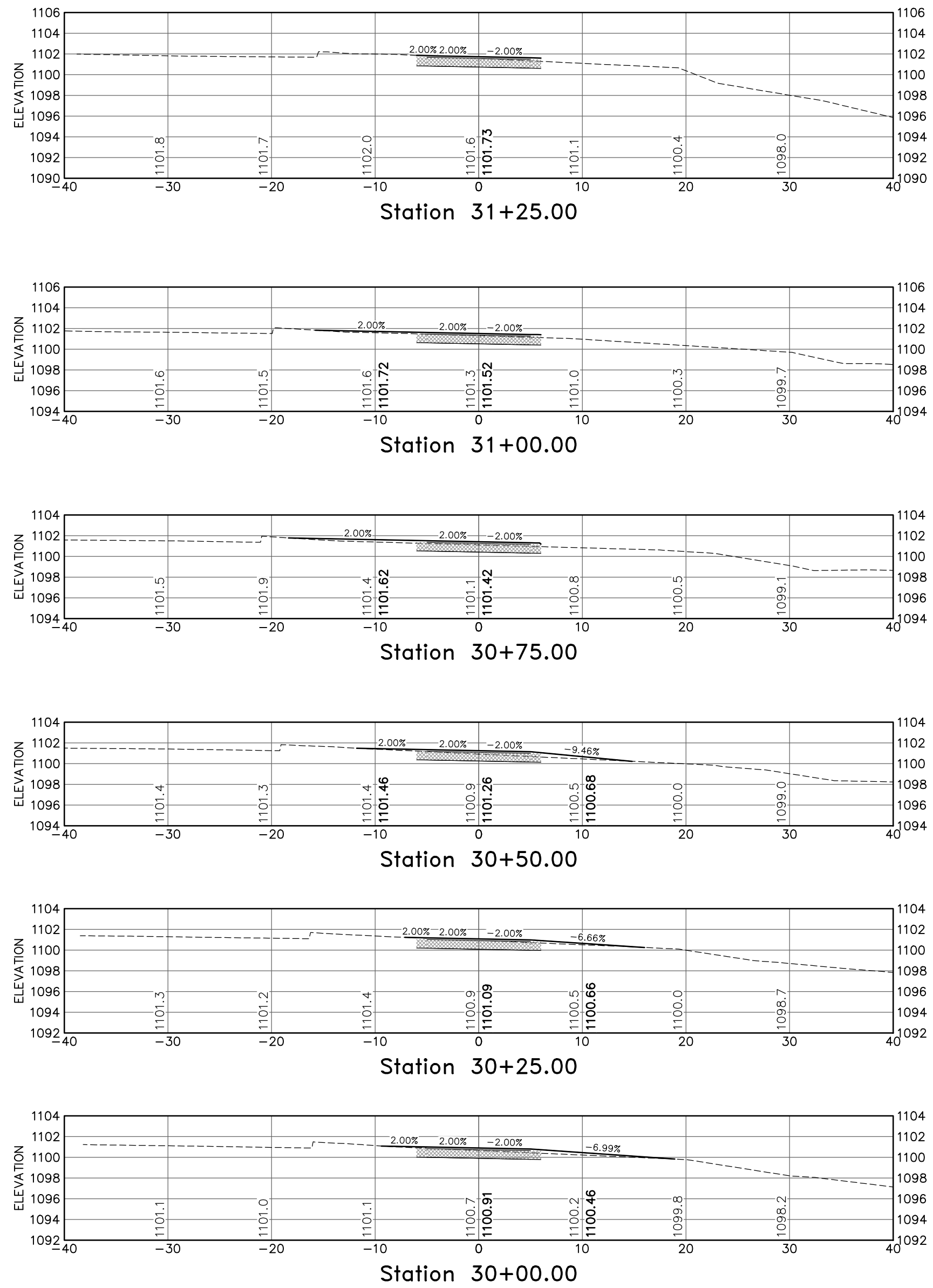
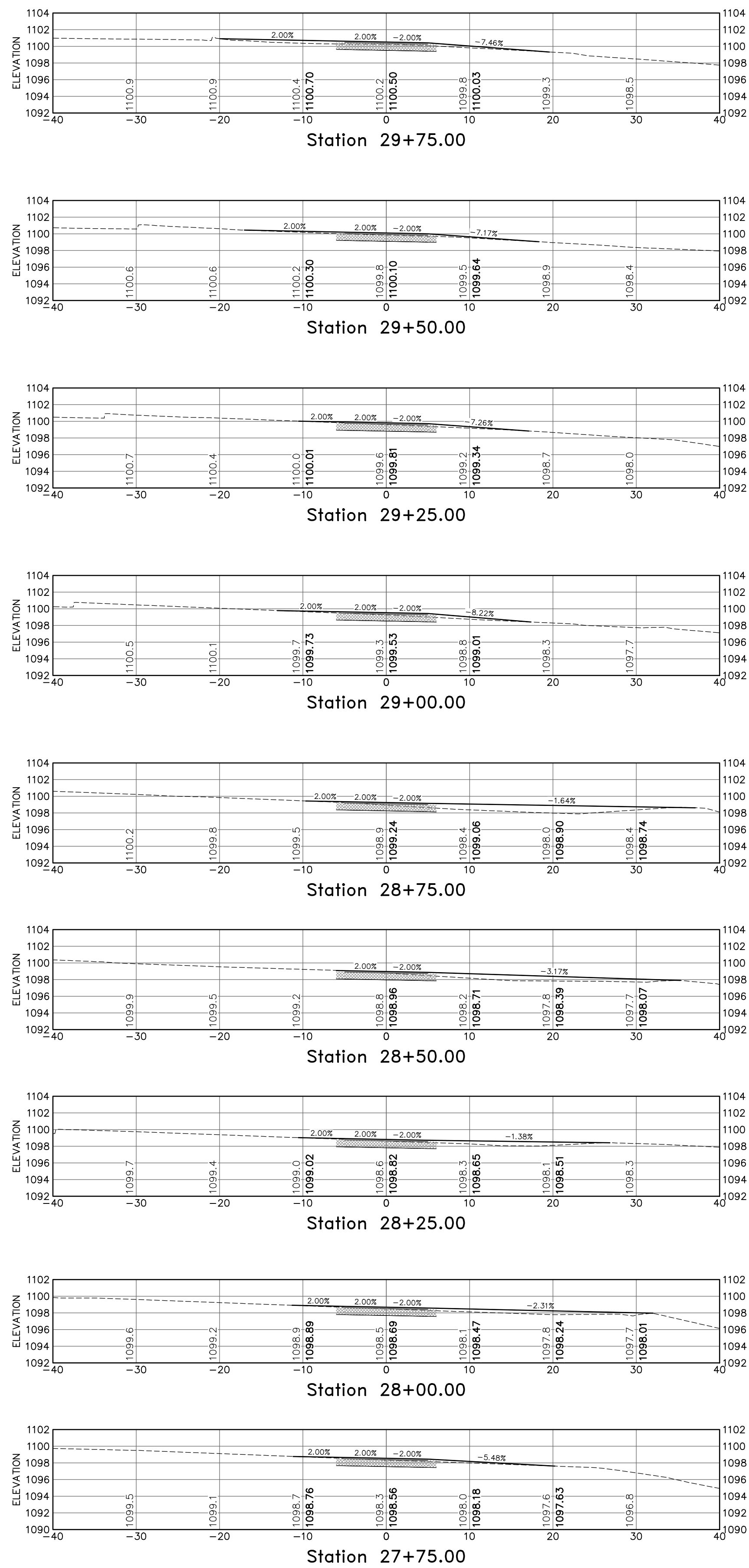


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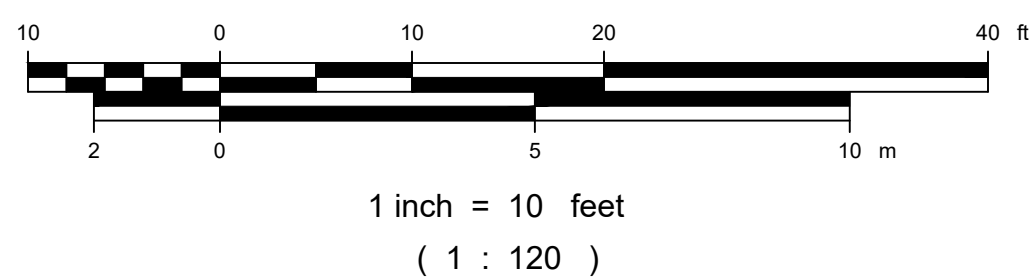
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DRAWN BY	EJG/DRL
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FIELD BOOK	--
SCALE	1"=10'
DATE	09/24/2019

Pathway Sections (Sta. 19+50 - 25+25)
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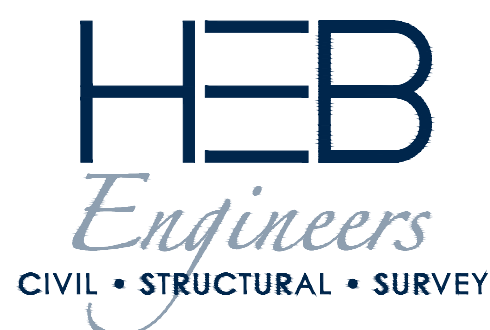
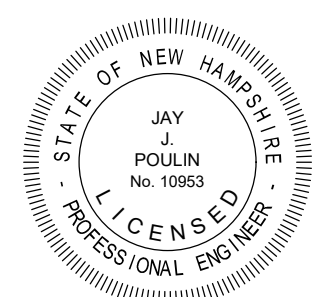
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DATE	09/24/2019

Pathway Sections (Sta. 25+50 - 31+25)

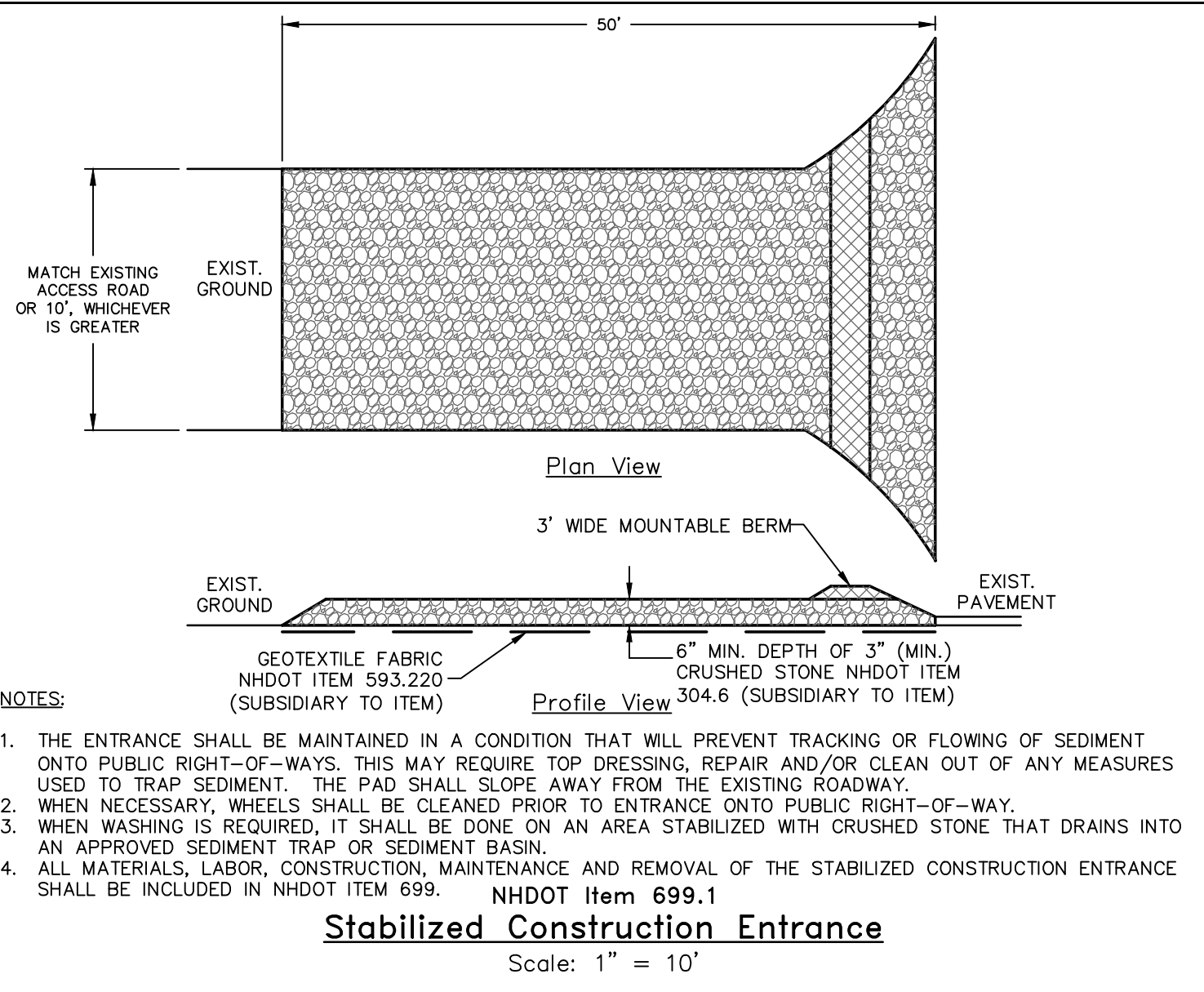
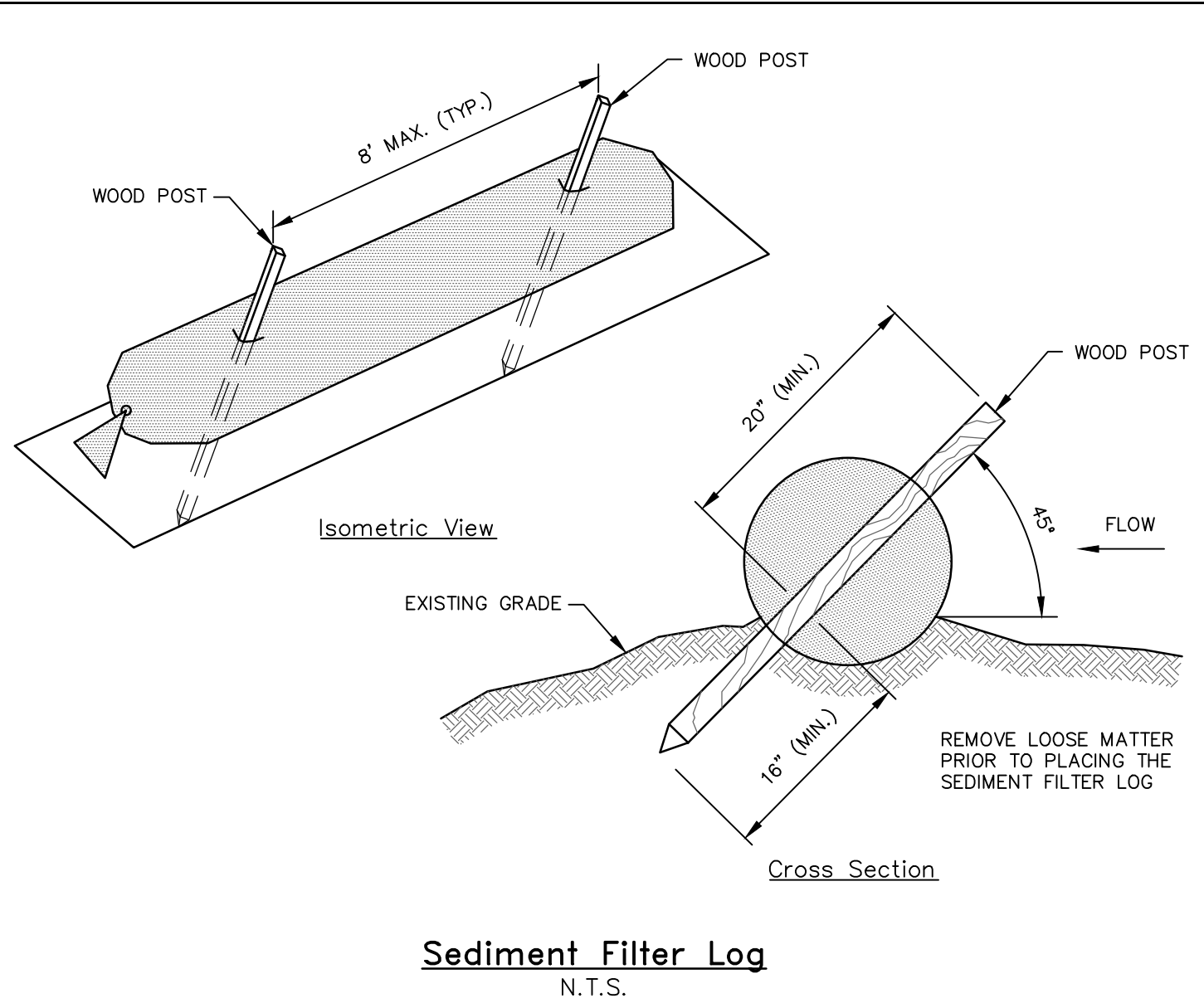
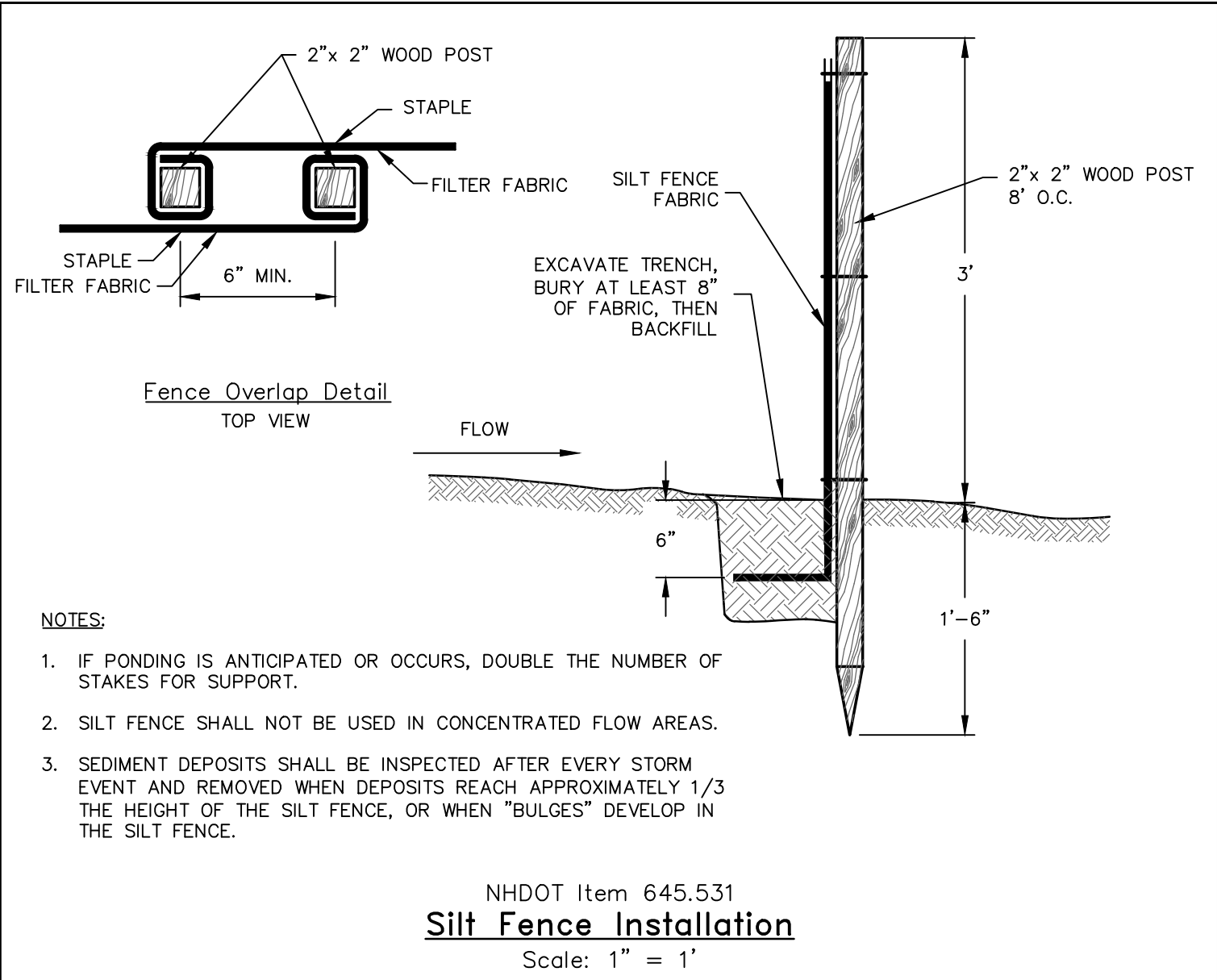
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2018-033

C3.15

SHEET 16 OF 21

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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 tackifier.

"Significant rainfall event": more than ¼-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:

- Base course gravels have been installed in areas to be paved;
- A minimum of 85 percent vegetated growth has been established;
- A minimum of 3 inches of non-erosive material such as stone or riprap has been installed; or
- Erosion control blankets have been 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:

- Seed mixture: Prior to construction, submit certification from seed supplier that the mixture complies with the requirements. Include the requirements on the certification.
- 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.
- 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.
- Apply agricultural limestone at a rate of 100 lbs, per 1000 sf.
- Apply commercial grade 10-10-10 fertilizer at a rate of 10 lbs, per 1000 sf.
- 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.
- Roll seeded area with hand roller.
- All ditches shall receive erosion control matting.

Temporary:

- 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.
- 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.
- Where it is impracticable to incorporate fertilizer and seed into moist soil, the seeded area should be mulched to facilitate germination.
- Seed Mixture: Use any of the following:

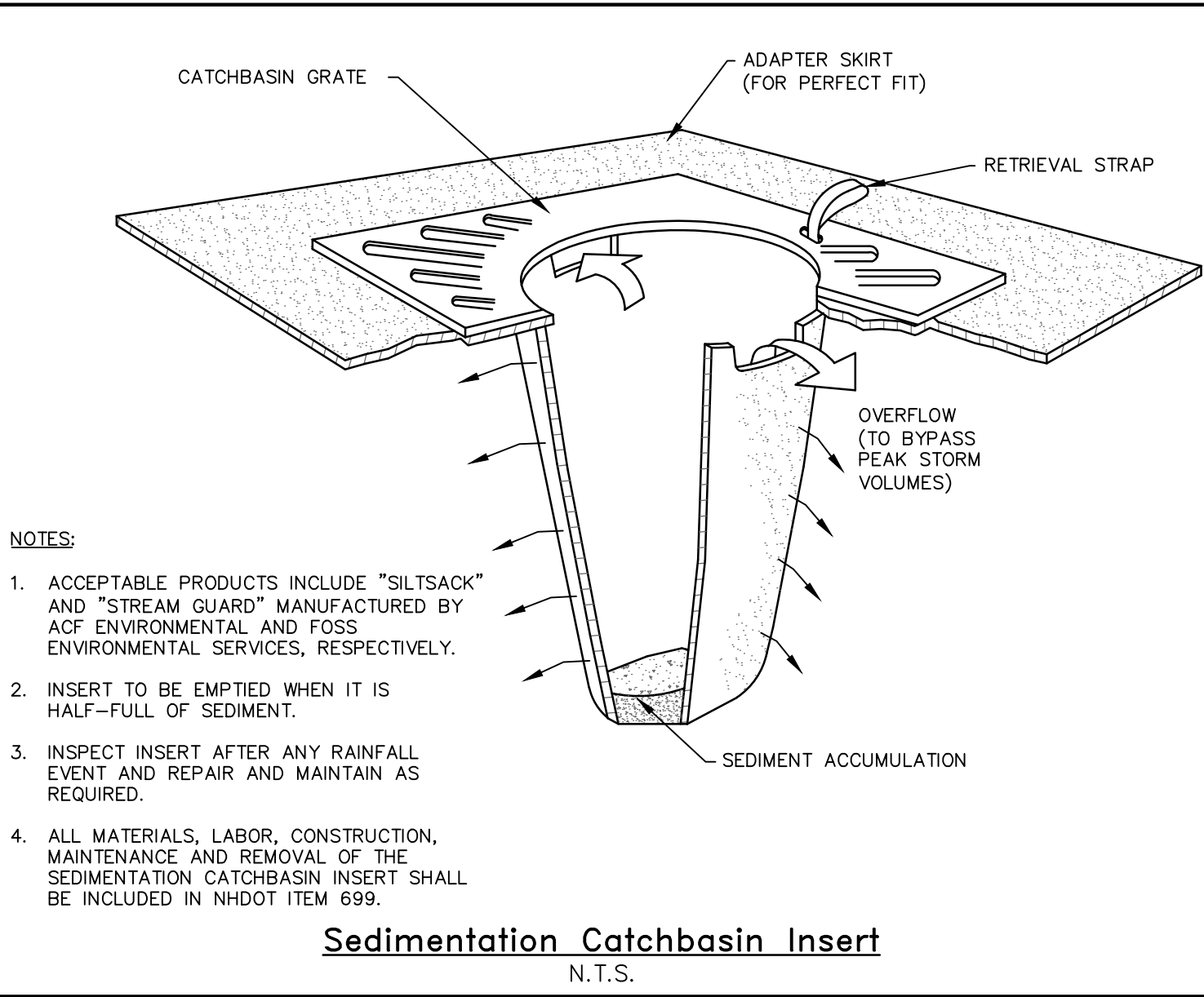
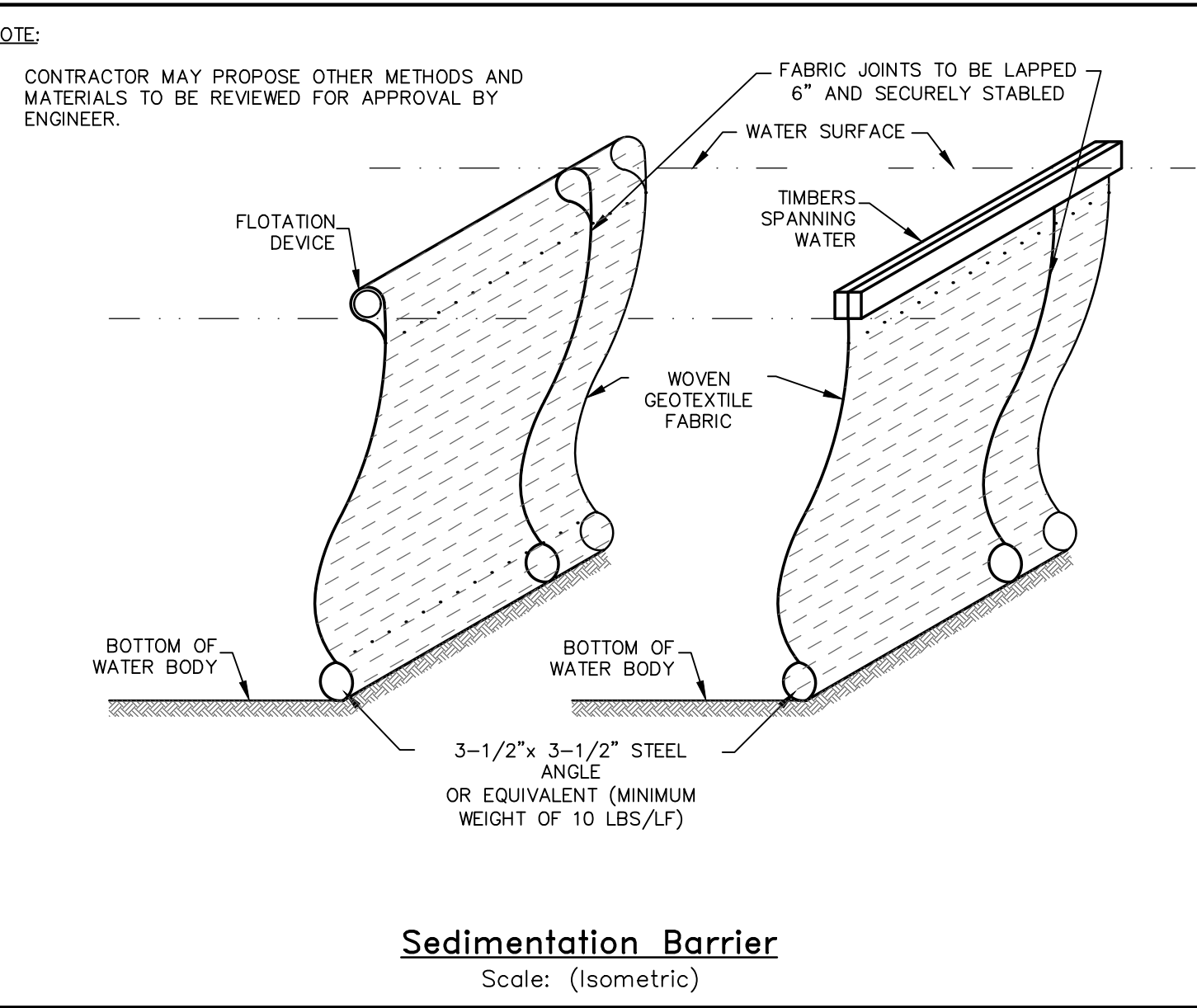
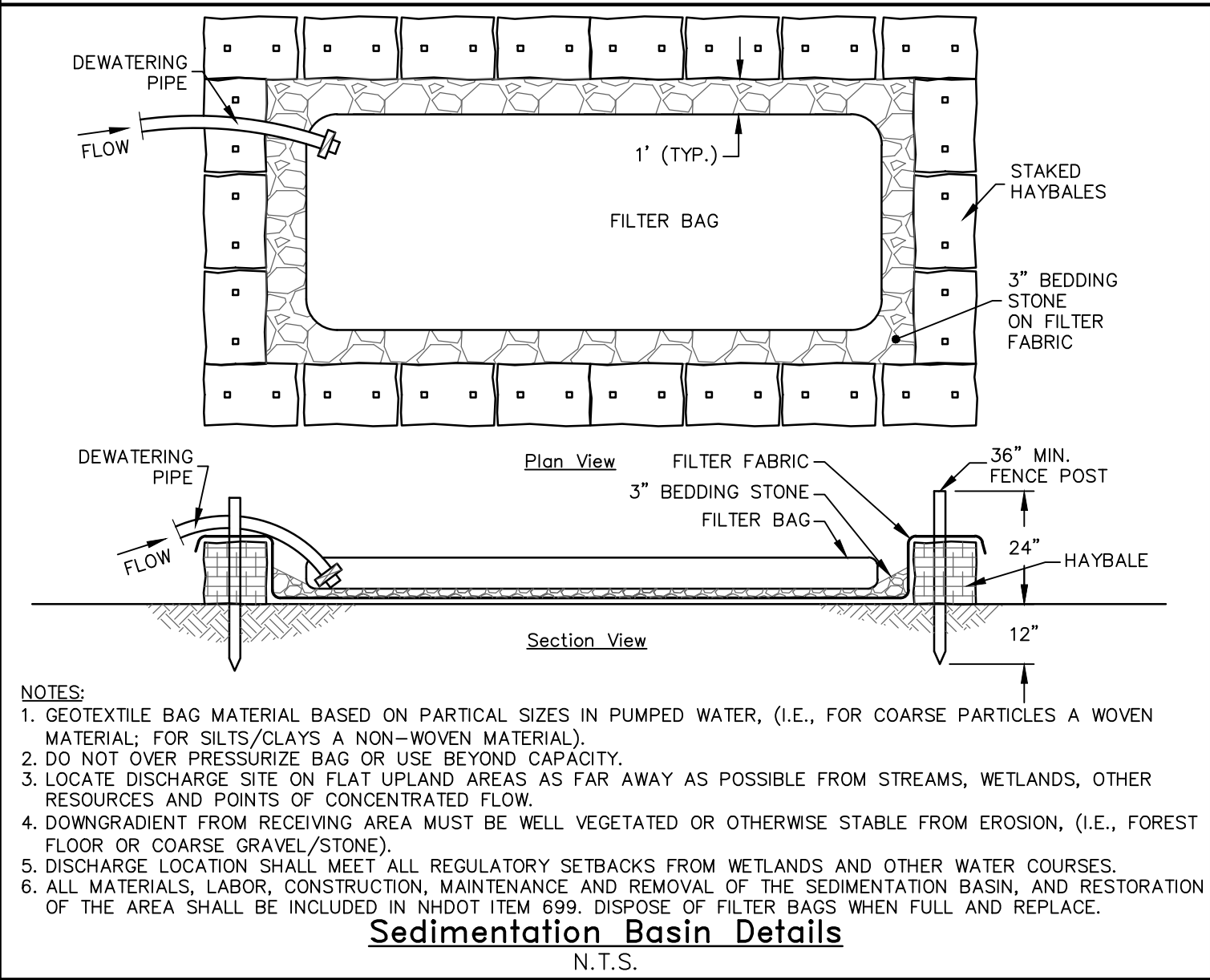
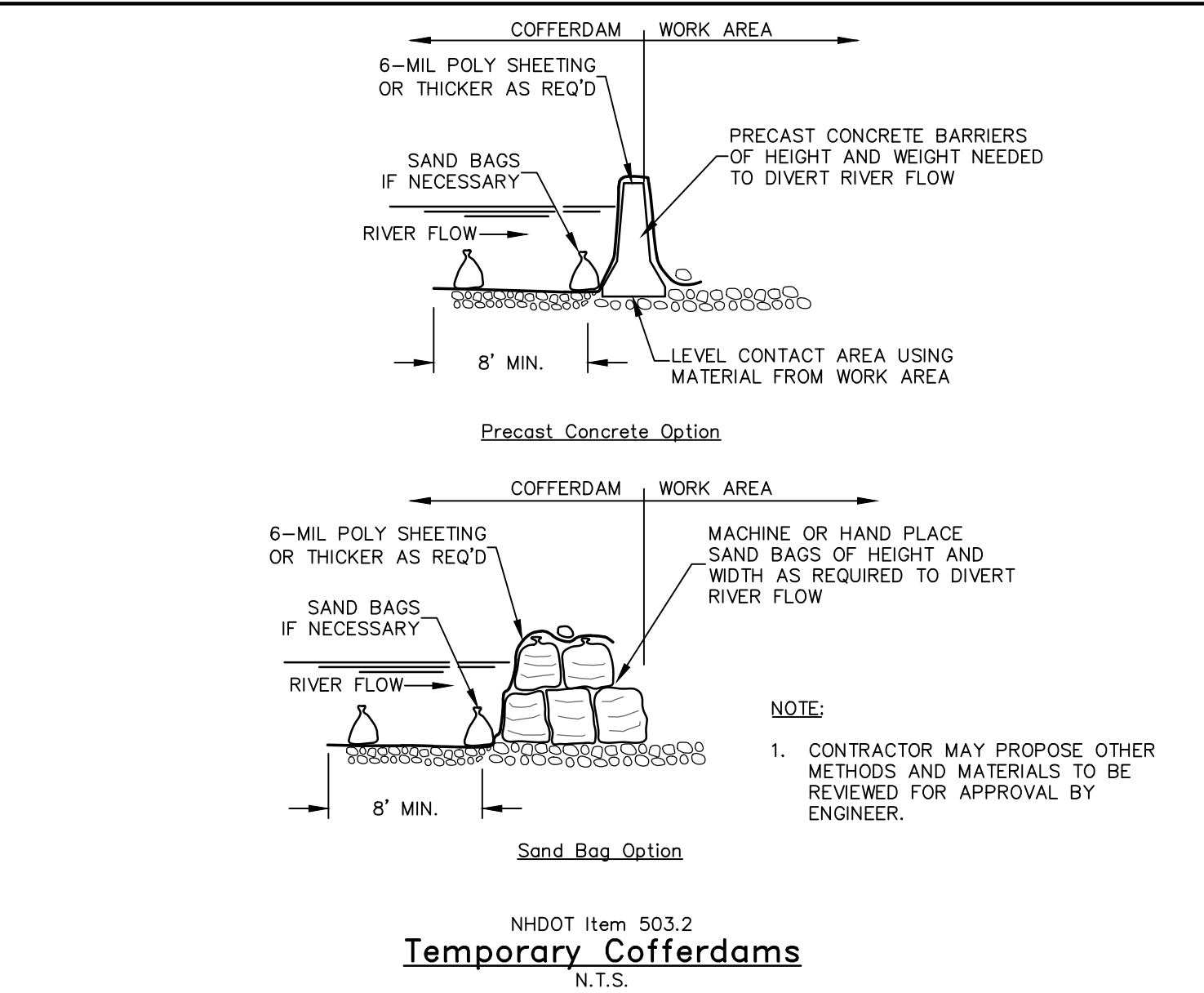
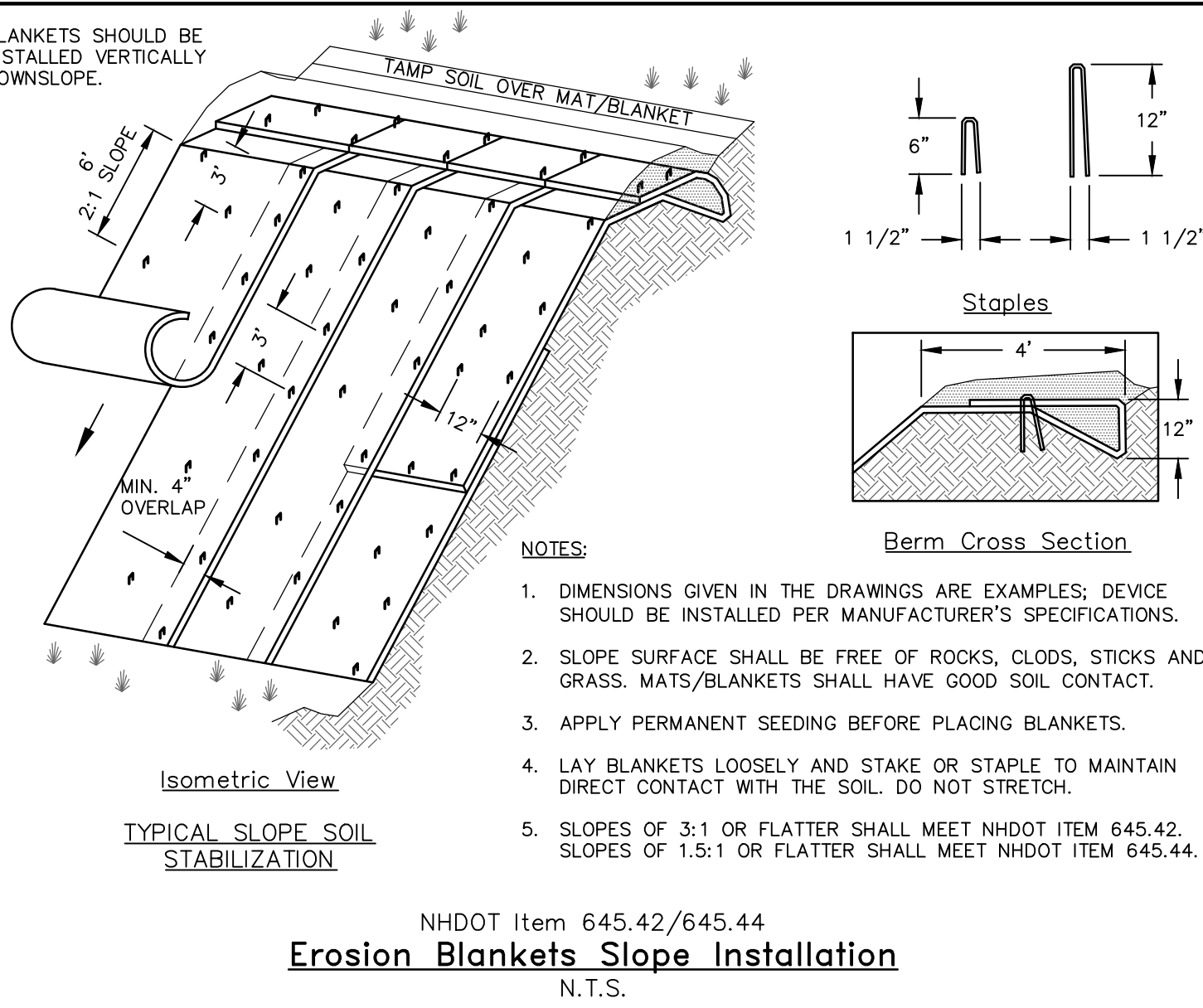
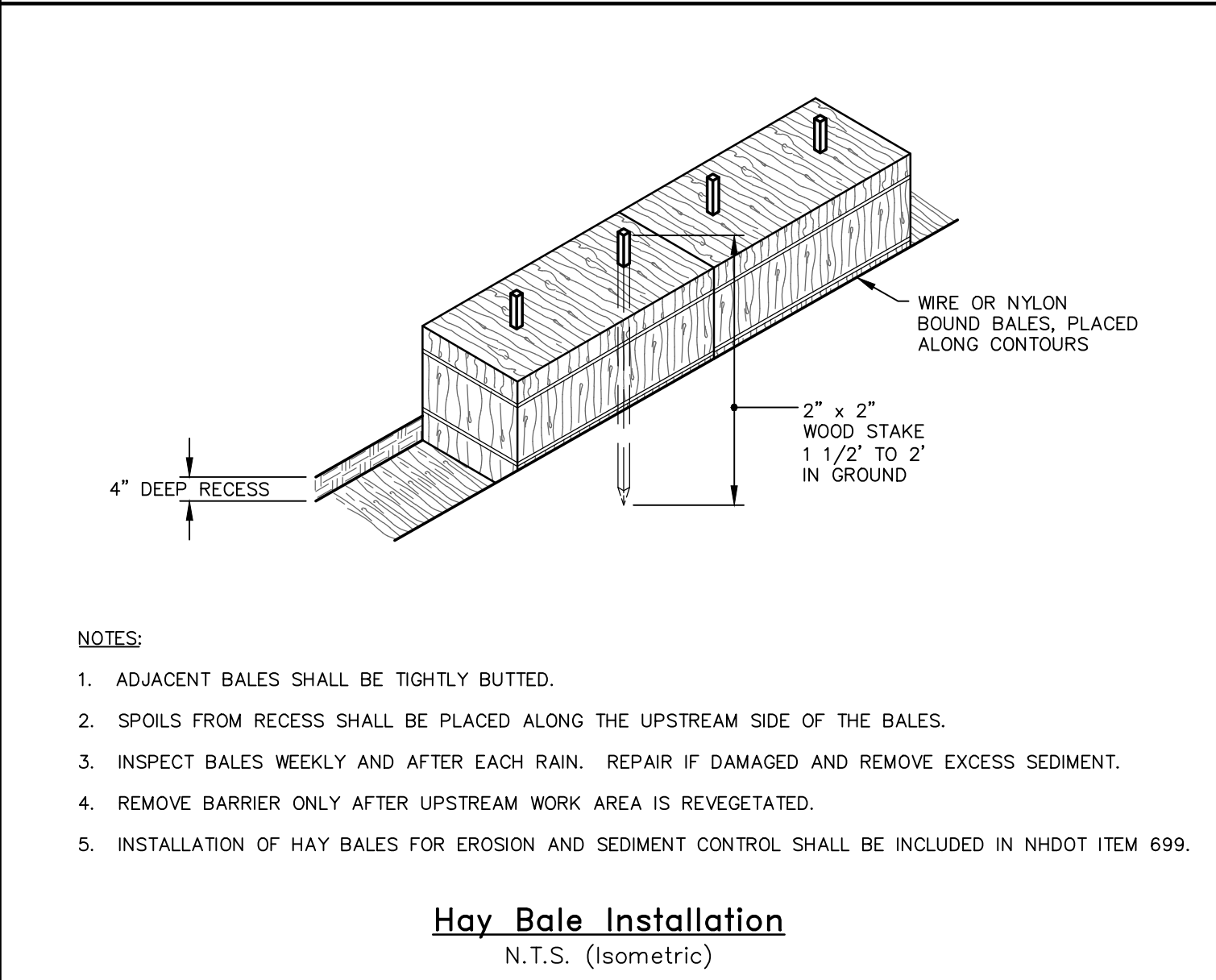
Species	Per Acre	Per 1,000 s.f.	Dates	Depth
Winter Rye	112 lbs.	2.5 lbs.	8/15-9/5	1 inch
Oats	80 lbs.	2.0 lbs.	Spring-5/15	1 inch
Annual Ryegrass	40 lbs.	1.0 lb.	4/15-9/15	¾ inch
Perennial Ryegrass	30 lbs.	0.7 lbs.	4/1-6/1 or 8/15-9/15	½ inch

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:

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

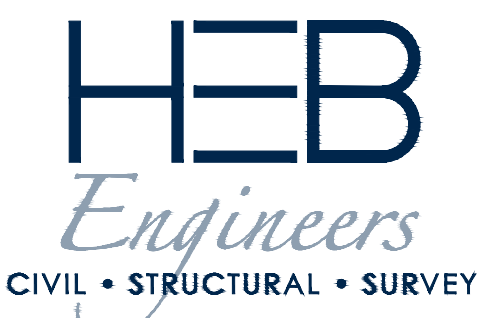
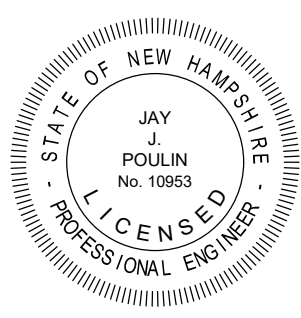


Construction Details – Erosion & Sediment Control

for the
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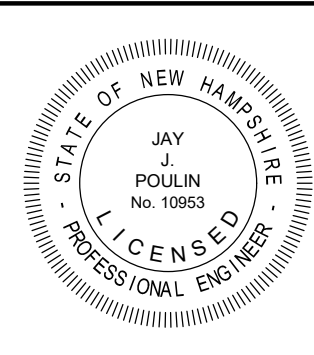
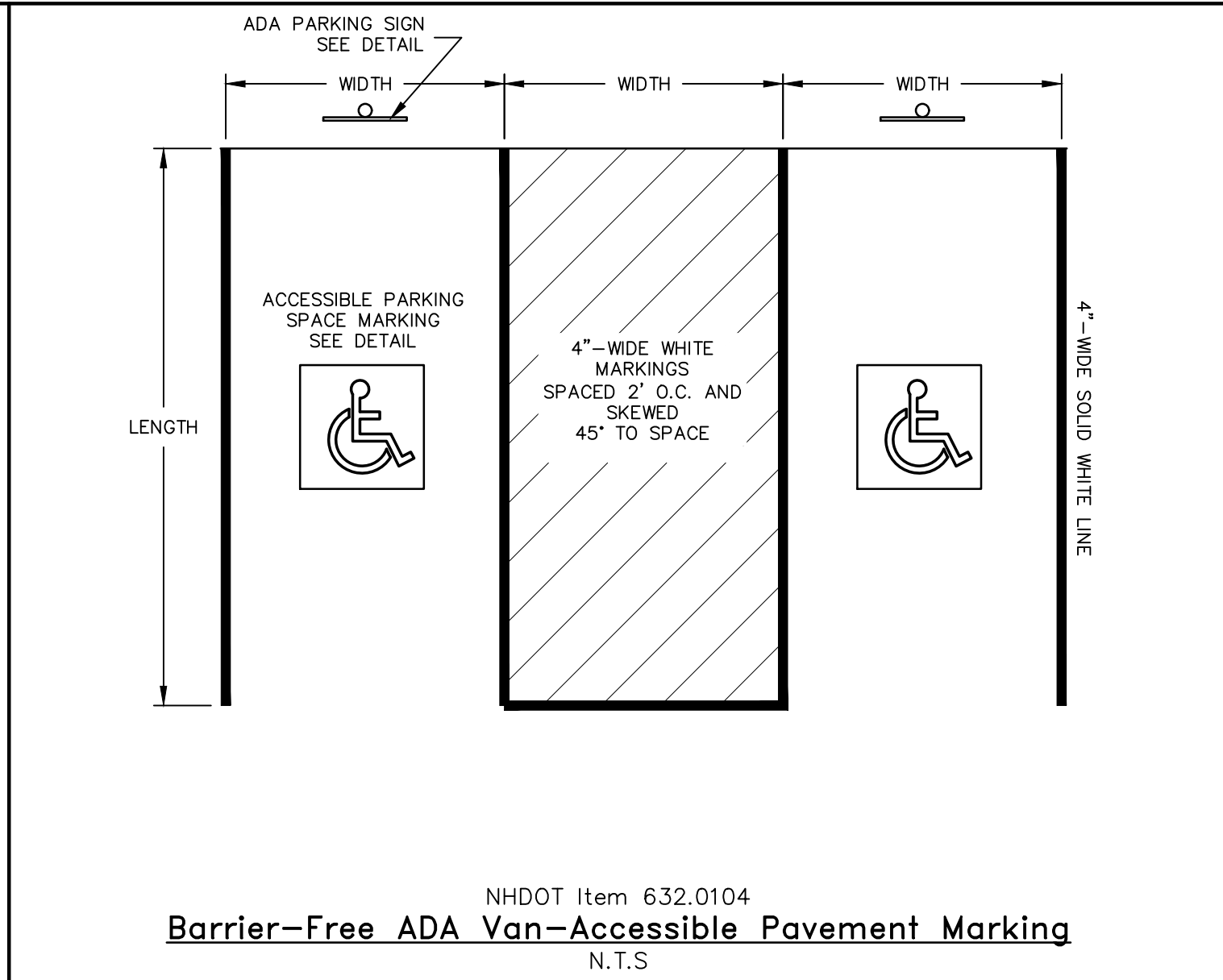
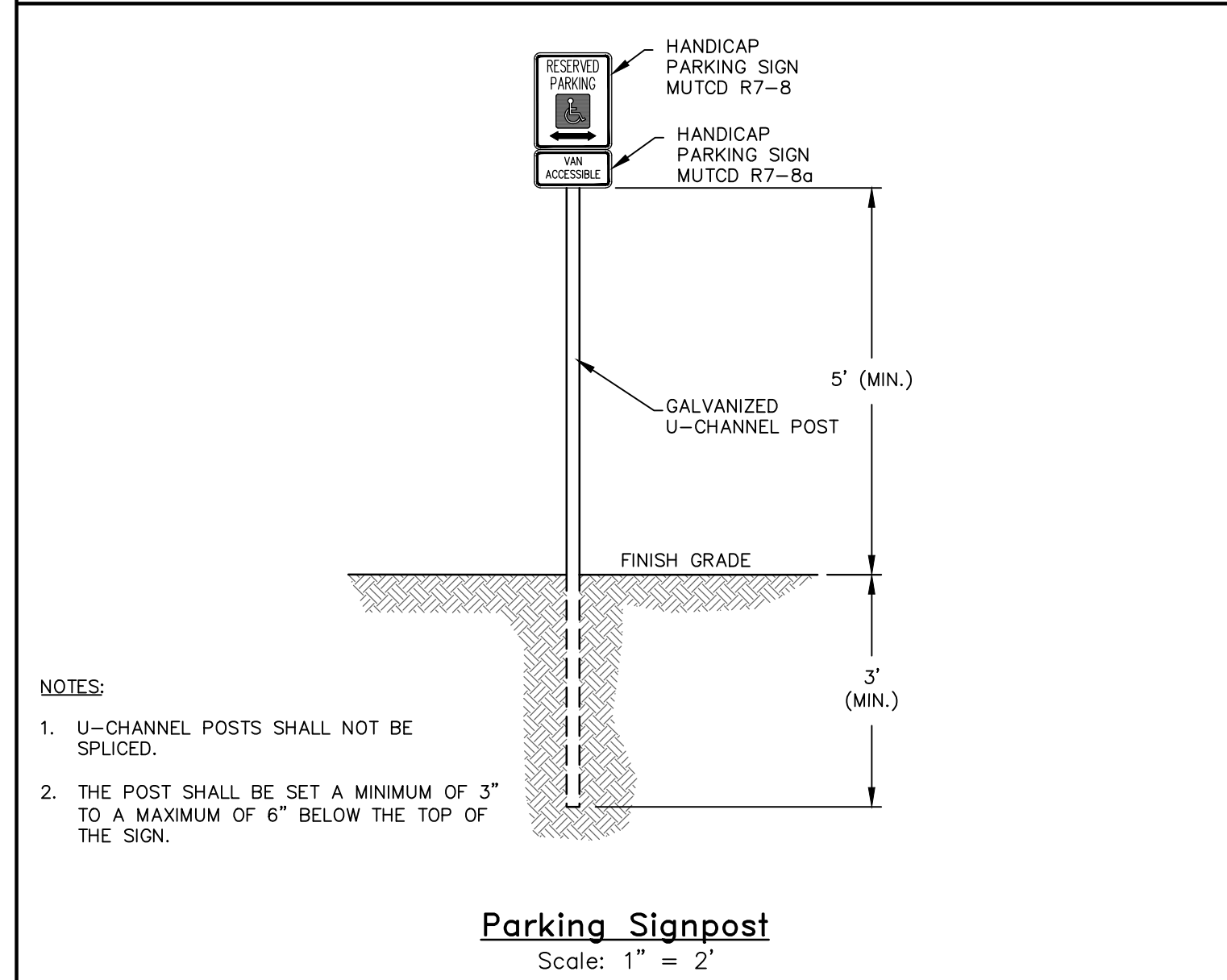
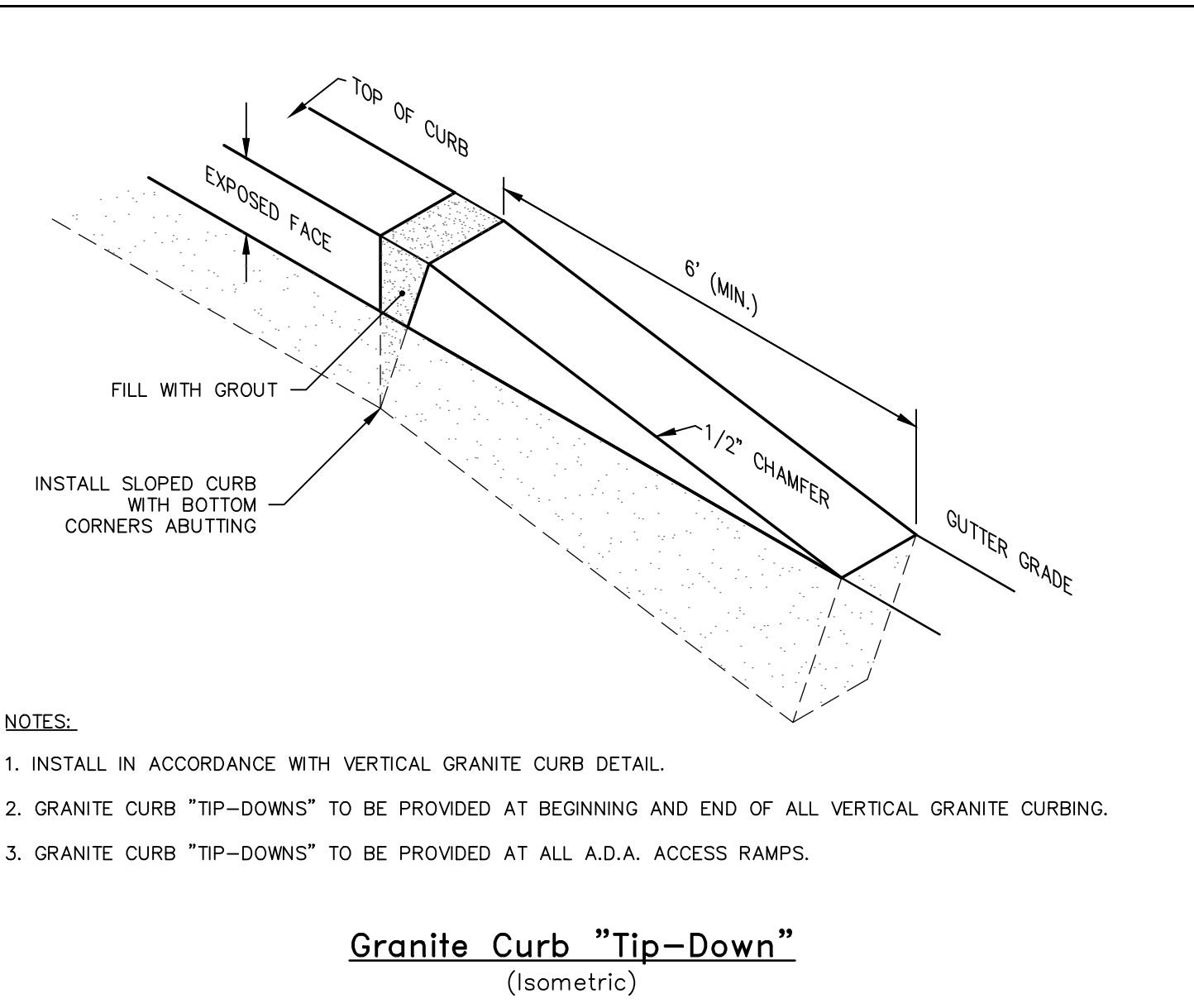
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SHEET 17 OF 21

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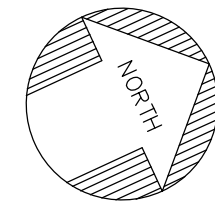
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DESIGNED BY	EJG/DRL
DRAWN BY	EJG/DRL
CHECKED BY	JJP
FIELD BOOK	--
SCALE	AS NOTED
DATE	09/24/2019



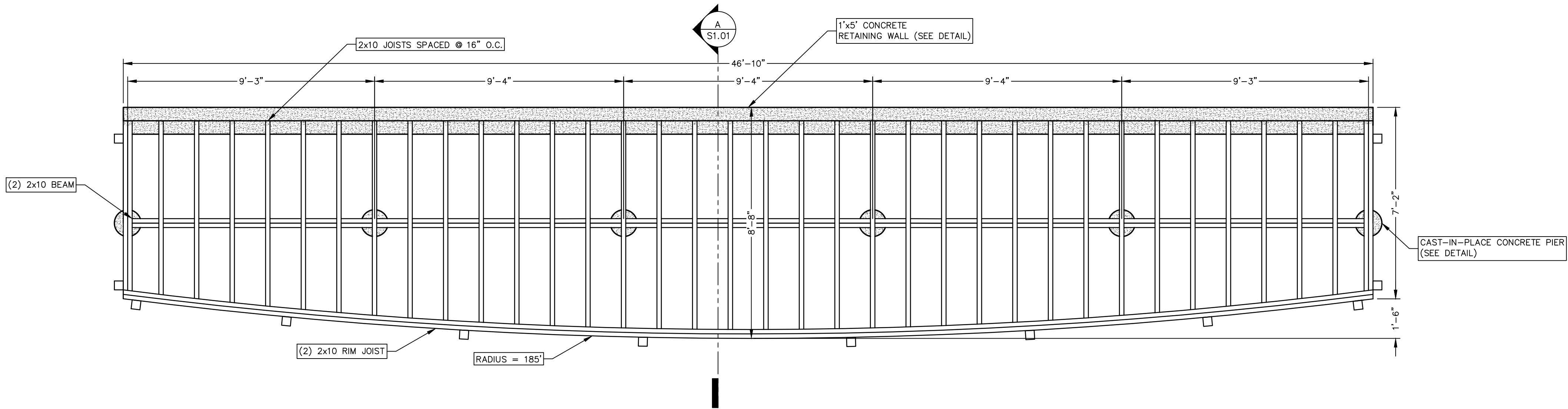
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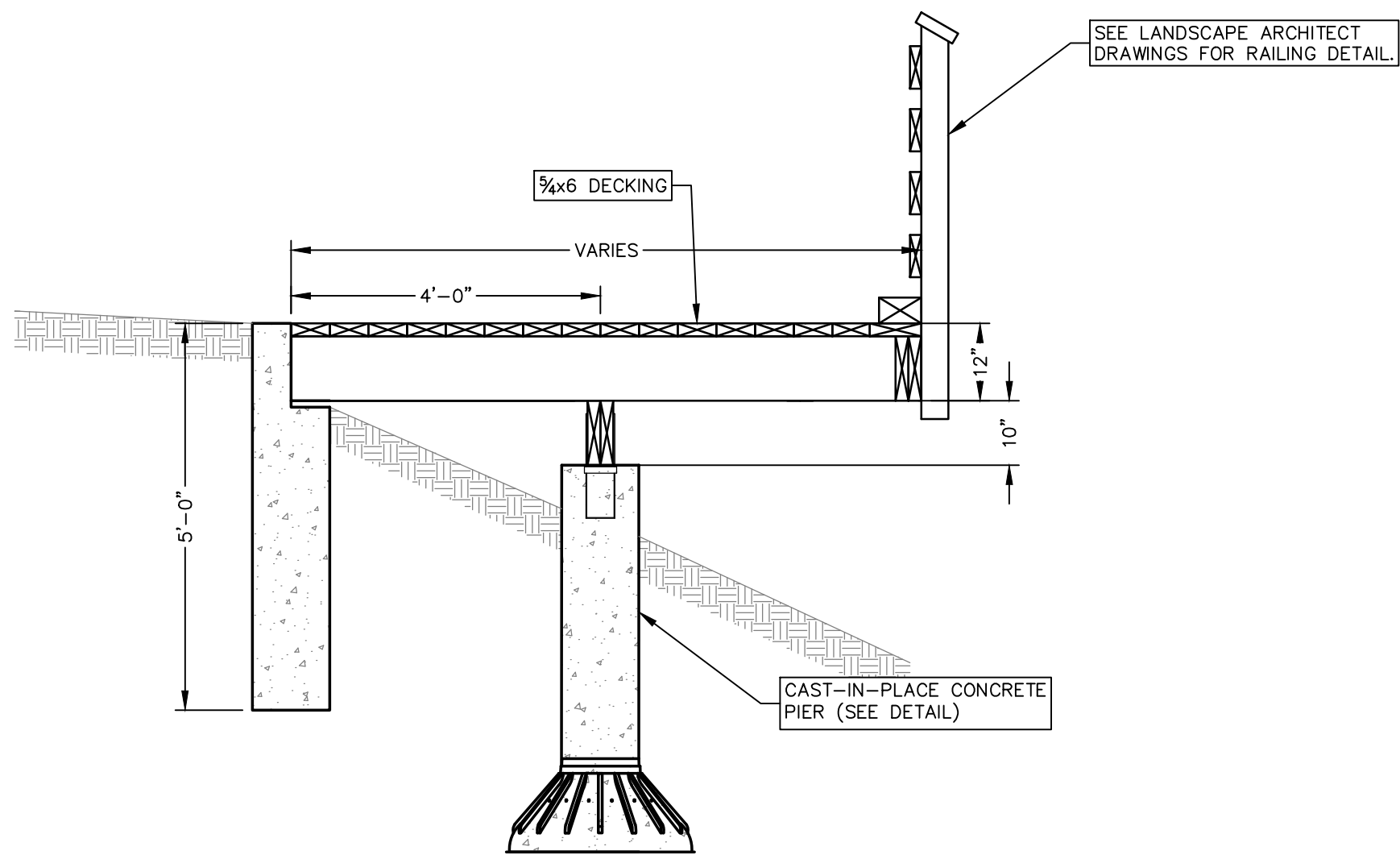
Construction Details – General
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Outlook 1 Plan View
Scale: $\frac{3}{8}'' = 1'-0''$

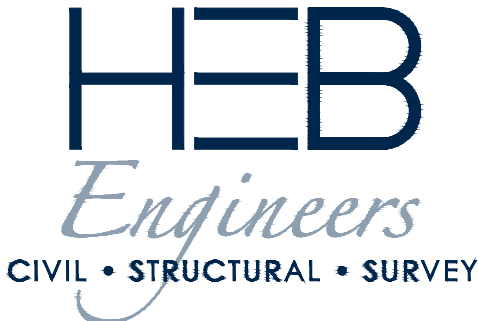
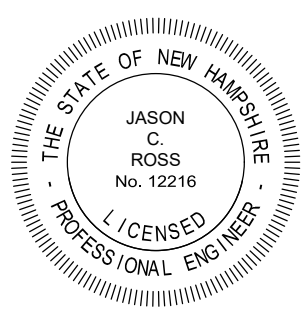


Outlook 1 Section View
Scale: $\frac{1}{2}'' = 1'-0''$

S1.01
SHEET 19 OF 21

2018-033
Outlook 1 Plan
Berlin Riverwalk

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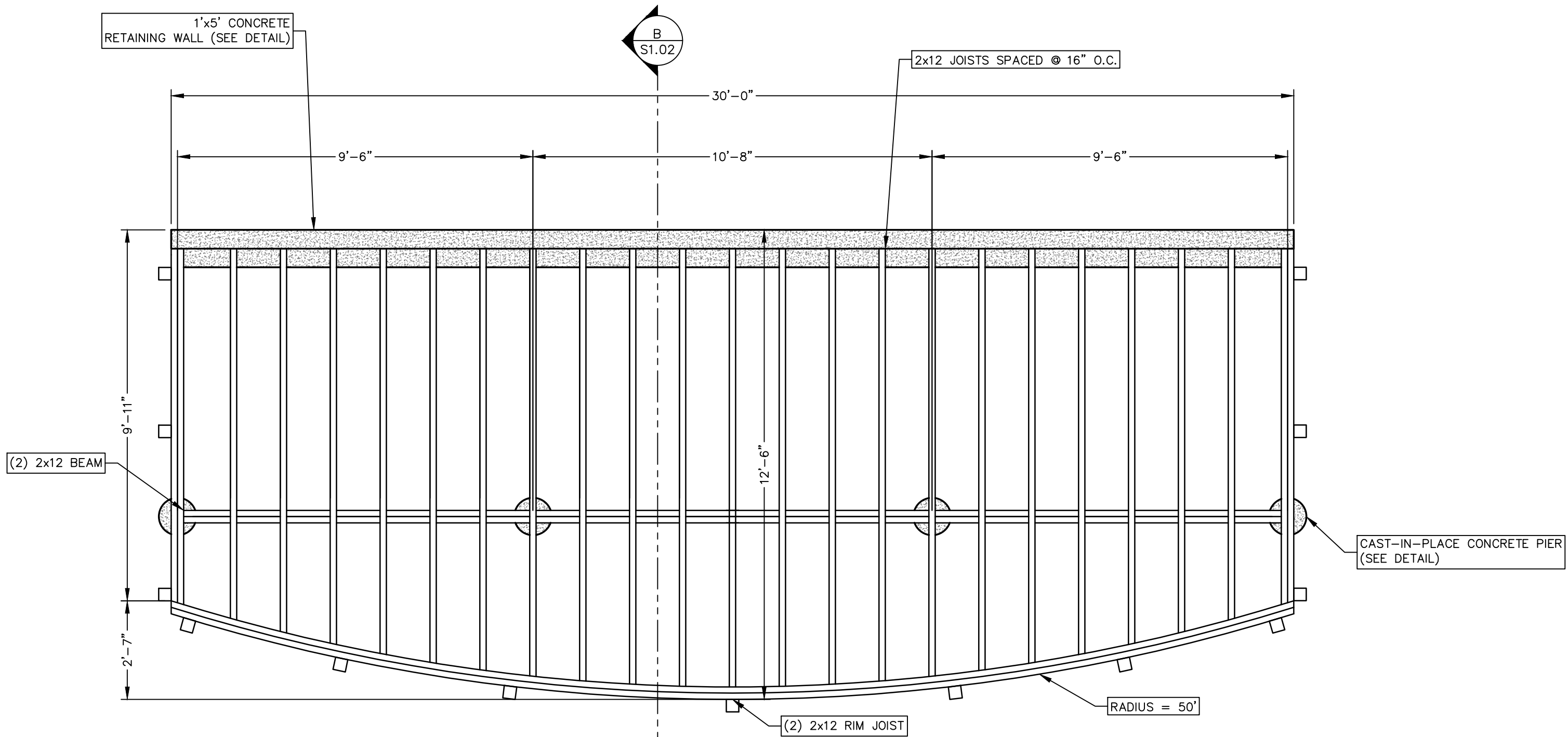
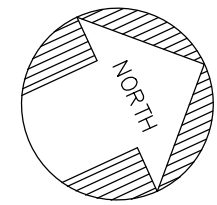
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DRAWN BY	EVS
CHECKED BY	JKM
FIELD BOOK	—
SCALE	AS SHOWN
DATE	09/24/2019

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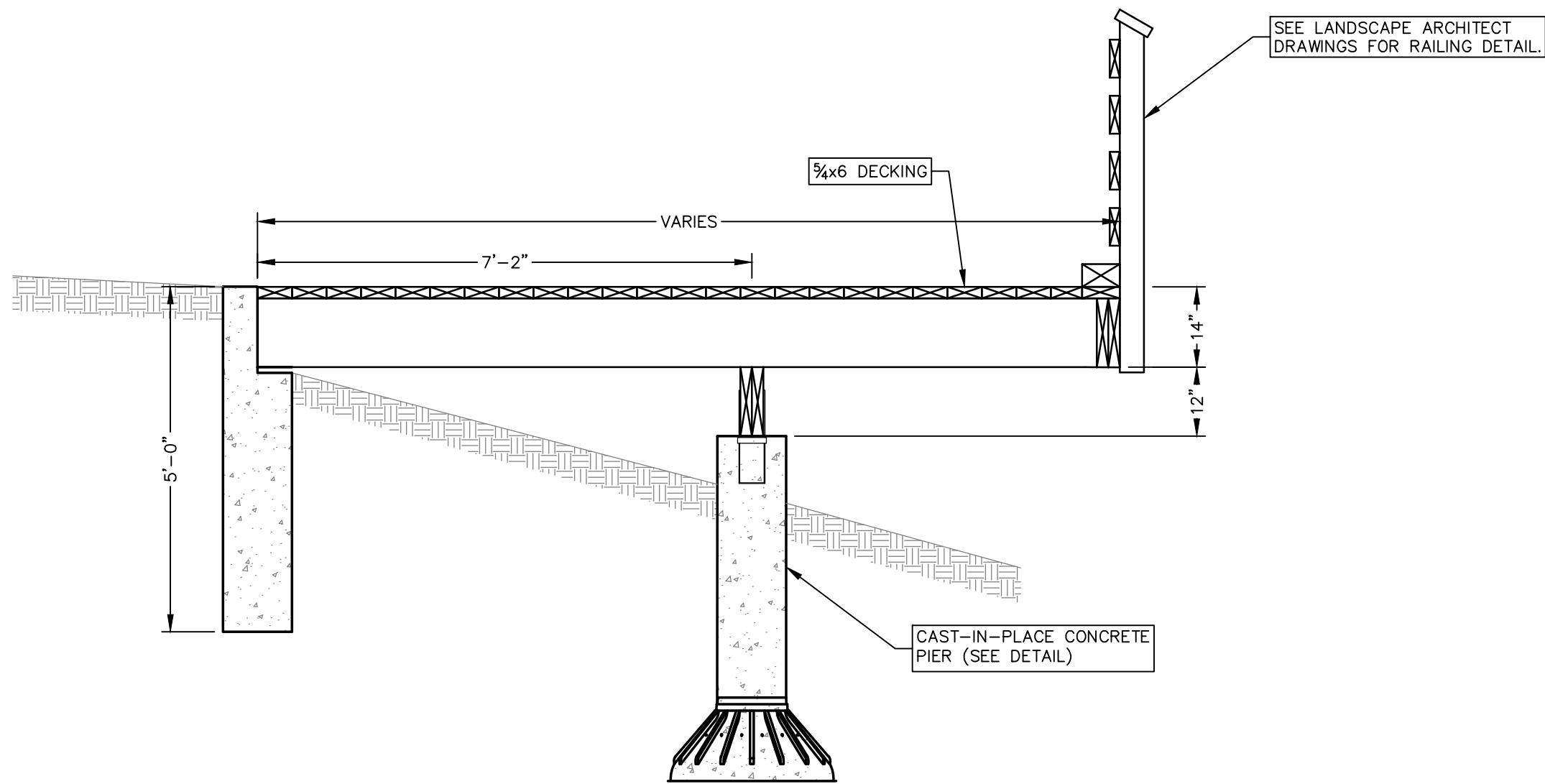
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SHEET 19 OF 21



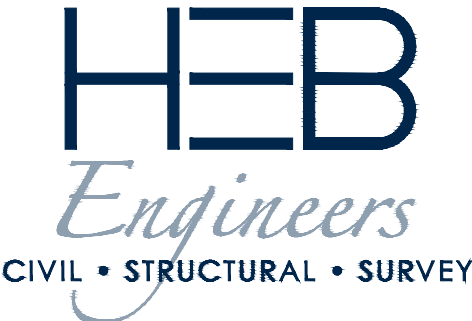
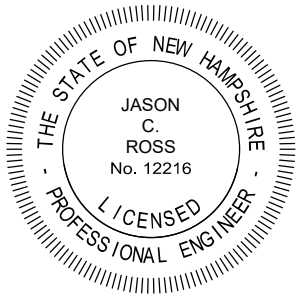
Outlook 2 Plan View
Scale: $\frac{3}{8}$ " = 1'-0"



Outlook 2 Section View
Scale: $\frac{1}{2}$ " = 1'-0"

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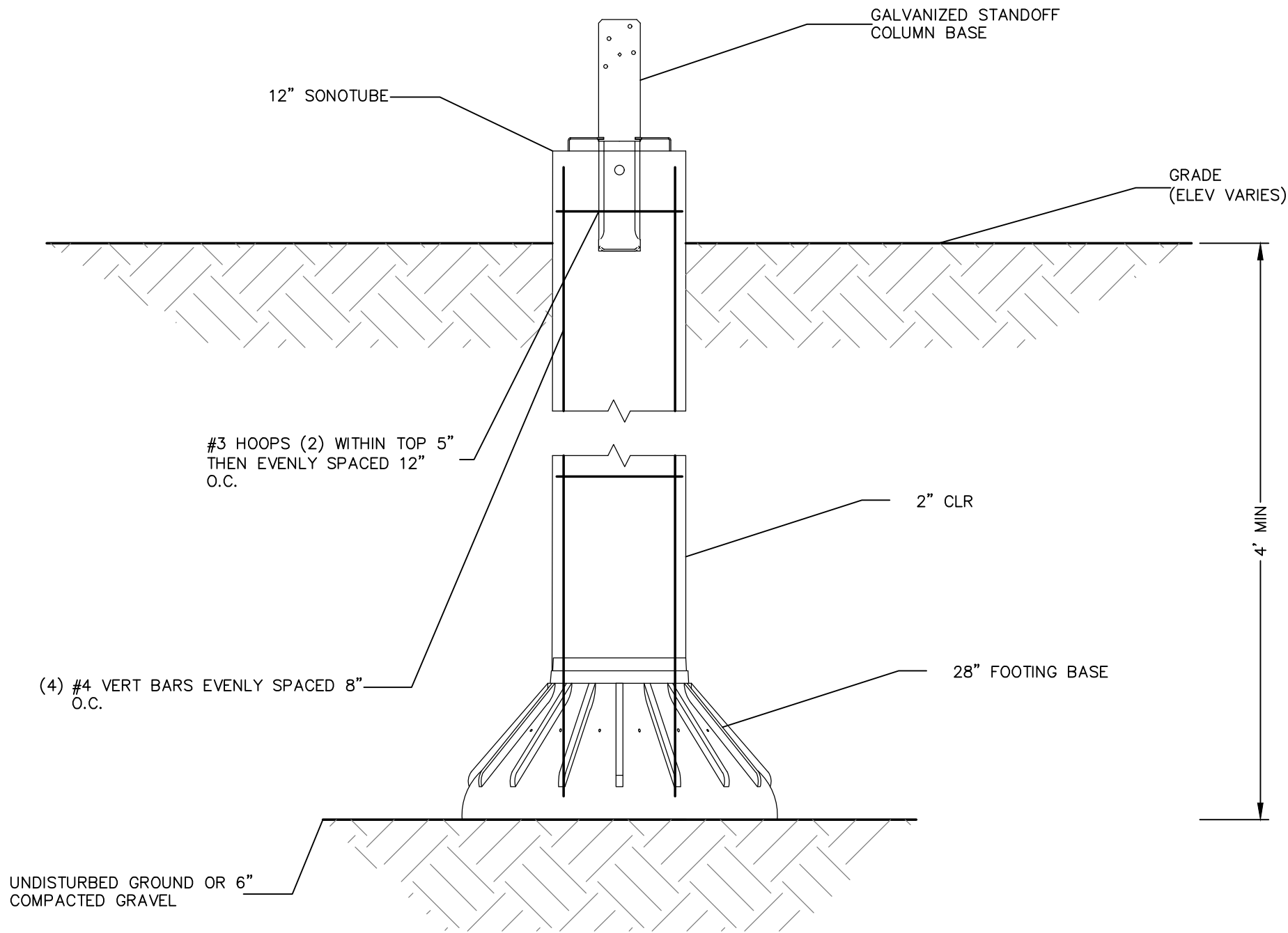
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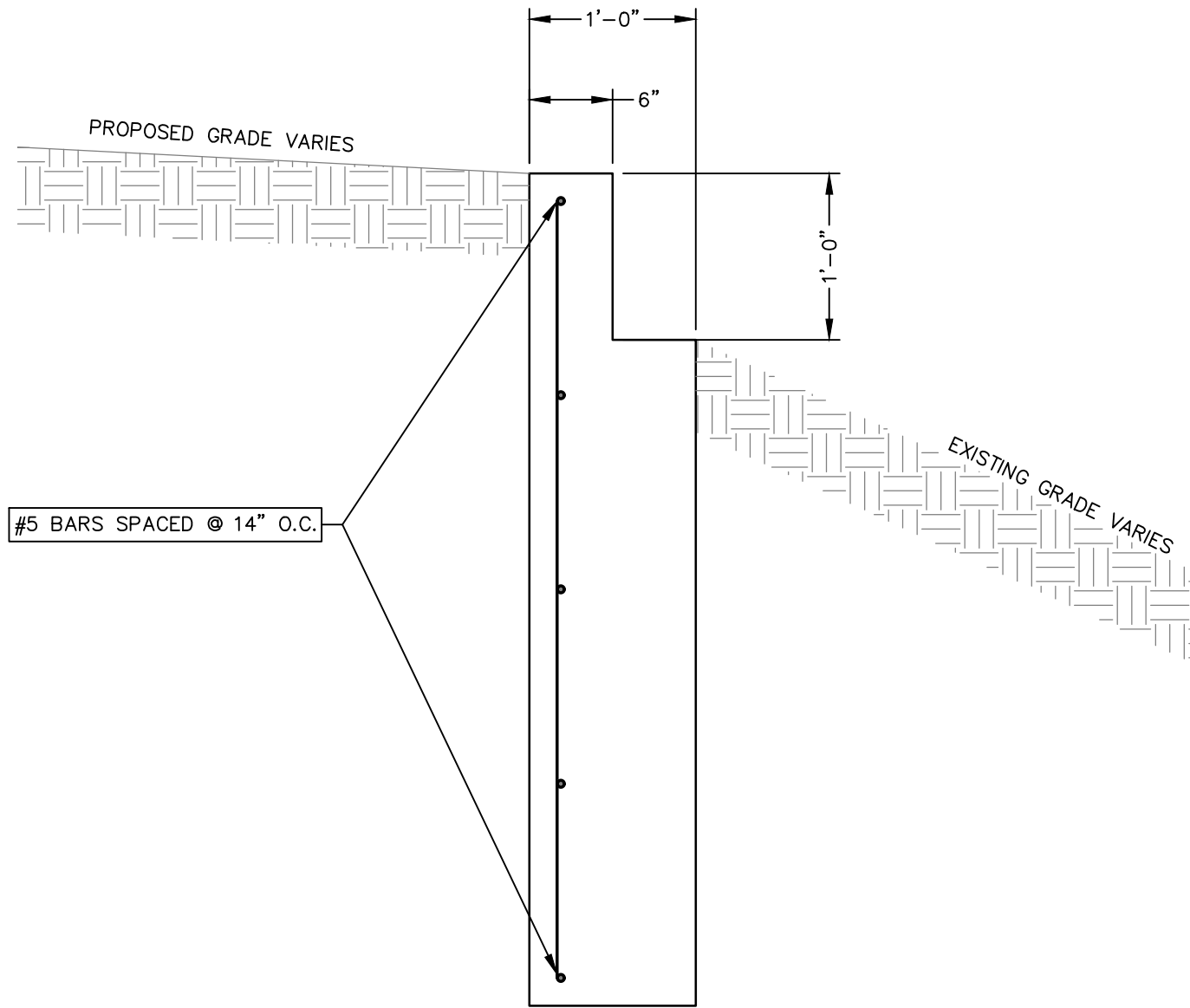
Outlook 2 Plan
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2018-033

S1.02



Cast-In-Place Pier Installation
Scale: 1" = 1'-0"



Outlook Retaining Wall Reinforcing
Scale: 1" = 1'-0"

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Structural Notes:

- All dimensions and existing conditions must be verified by the Contractor in the field. Any discrepancies shall be brought to the attention of the Engineer before proceeding with the affected portion of the work.
- All construction shall conform to the current New Hampshire State Building Code (International Code Council (ICC), International Building Code (IBC), 2015 Edition, with NH Amendments).
- All construction shall conform to the current Maine Uniform Building Code (International Code Council (ICC), International Building Code (IBC), 2015 Edition, with ME Amendments).
- Details shown on any drawing are considered typical for all similar conditions unless noted otherwise.
- The Contractor shall be responsible for any shoring or temporary bracing required to complete the work.
- Shop drawings shall be submitted to the Engineer and approved prior to fabrication or use of material on the site.
- The location of underground and overhead utilities are not shown on these drawings. Verify the location of all utilities and contact all utility companies before beginning construction. Contact DIG-SAFE at 1-888-DIG-SAFE.
- The Contractor shall use the structural drawings in coordination with the other drawings and coordinate the work of the various trades. Verify all dimensions and rough openings with the architectural drawings.
- The following criteria was used for the design of the structure:
 - Dead Loads
 - Deck = 10 psf
 - Live Loads
 - Pedestrian = 60 psf
 - Snow Loads
 - Snow Load = 90 psf

Structural Special Inspections Notes:

- Structural Special Inspections are required, by code, during construction of the types of work contained within this structure, in accordance with the Statement of Structural Special Inspections (SSSI) prepared by the Structural Engineer of Record (SER).
- A Structural Special Inspection Coordinator and Structural Special Inspectors are engaged by the Owner and report to the Building Official. All Special Inspectors shall provide written documentation demonstrating his or her competence and relevant experience or training for the types of work they have been engaged to inspect.
- The Structural Special Inspectors shall keep record of each inspection and the Structural Special Inspection Coordinator shall furnish reports to the Owner, Building Official and Structural Engineer of Record. Reports shall meet the requirements of IBC 1704.2.
- Site safety is the sole responsibility of the Contractor. Special Inspectors have no control over the means and methods of the Contractor and do not have the authority to stop work.
- The Contractor is responsible for scheduling inspections and tests and must provide sufficient notice to the Structural Special Inspectors. The Contractor is also required to provide safe access to the Structural Special Inspectors to perform their inspections, which may require the use of scaffolding, ladders, or lifts.
- After construction is completed, the Structural Special Inspection Coordinator shall submit a Final Report of Structural Special Inspections to certify that all of the required inspections and tests have been completed and that all identified deficiencies have been corrected or resolved.

Wood Framing Notes:

- All wood construction shall conform to the American National Standards Institute (ANSI) and American Forest & Paper Association (AF&PA), National Design Specification for Wood Construction (NDS), 2015 Edition with the 2012 Supplement.
- The Contractor is required to ensure a continuous load path to the foundation for all columns and jack/king studs, unless interrupted by a transfer beam or other supporting member.
- Unless noted otherwise, all fastening shall be in accordance with IBC 2015, Fastening Schedule, Table 2304.10.1.
- Bolts shall meet the requirements of ASTM A307. Anchor rods shall meet the requirements of ASTM F1554 Grade 36, unless noted otherwise.
- Wood and engineered-wood products shall bear the stamp of a recognized grading agency and have, at minimum, the following properties or classifications:
 - Dimensional Lumber - Spruce/Pine/Fir (SPF) No. 1/No. 2
 - Pressure Treated Dimensional Lumber - Southern Yellow Pine (SYP) No. 1
 - Timber Beams and Posts - Spruce/Pine/Fir (SPF) No. 1
- All wood panels for floor applications shall be $\frac{3}{32}$ " APA rated, XX" o.c.
- All sheathing construction joints shall be lapped per Manufacturer's recommendations.
- Mechanical connectors shall be Simpson Strong-Tie or approved equivalent.
- Holes or cuts shall not be made in beams or joists without the Engineer's approval unless noted otherwise on the plans.
- The Contractor is responsible for ensuring proper corrosion protection for fasteners, hangers, and other hardware from the elements and pressure treatment. Consult manufacturer for specifications.
- All holes or cuts, in pressure treated wood, shall be properly field treated with preservative. Consult manufacturer for recommendations.
- All handrails, including components, and connections, must comply with section 1014 of the IBC and be designed by others.

Foundation and Structural Fill Notes:

- No foundation investigation, borings, or test pits were conducted as part of this design. It is assumed that all footings will bear on undisturbed (proof-rolled) natural granular soil or structural fill having a minimum bearing capacity of 2,000 pounds per square foot. All excavation must be dry before placing concrete. The Contractor shall notify the Engineer if unsuitable natural soil conditions are encountered.
- Backfill for foundation walls and common fill for slabs shall be clean natural granular soil or clean sand or gravel. Fill shall be free of frost, loam, peat, organics, and clay.
- Backfill and common fill shall be placed in horizontal lifts not exceeding 8-inch loose thickness. Each lift shall be compacted to 95% of its maximum density determined by ASTM Test Method D-698 (Standard Proctor).
- Footings are to be placed at elevations or depths shown on this plan. All exterior footings are intended to have a minimum of 5' of soil cover below finished grade for adequate frost protection. Any adjustment of elevations or depth to footings due to field conditions must have the expressed written approval of the Engineer.
- Foundation insulation shall be provided as specified in the architectural drawings.
- No backfill shall be placed against foundation walls retaining earth unless the walls are sufficiently braced to prevent movement or structural damage. Foundation walls retaining soil are not designed to be free-standing, and are not to be backfilled until the first floor framing is installed and the concrete has reached the required design strength.
- If ledge is encountered, the ledge shall be removed down to the elevation shown on the drawings. The ledge shall be clean and free of dirt, loose rock, and debris. Where ledge is encountered, footings shall be doweled into the ledge.

Cast-in-Place Concrete Notes:

- All concrete construction shall conform to the American Concrete Institute (ACI), Building Code Requirements for Structural Concrete (ACI 318-14) and ACI Specifications for Structural Concrete for Buildings (ACI 301).
- Unless otherwise noted, all concrete shall have a compressive strength of at least 3000 psi at 28 days and air entrainment of 4-7%. Slump shall be 4-5". A mid-range water-reducing agent may be used to improve placement, workability, and increase slump to a maximum of 7". Mix shall be approved by the Engineer prior to its use on the project.
- Calcium chloride or admixtures containing calcium chloride shall not be used in any concrete mix.
- All reinforcing steel shall be deformed bars ASTM A615, Grade 60. Reinforcing shall be installed in accordance with ACI 318-14 and Details and Detailing of Concrete Reinforcement (ACI 315). Reinforcing shall be installed at the proper location and secured in place to prevent movement during placement of concrete.
- All welded wire fabric (WWF) shall conform to ASTM A185, provided in flat sheet stock. The WWF shall be installed at the proper location and secured in place to prevent movement during placement of concrete. Lap 6" at all joints and tie at 3' on center.
- Lap all continuous bars 40 diameters, unless noted otherwise.
- Clear distances for protection of reinforcing shall be as follows:
 - Footings: 3" from ground
 - Foundation Walls: 2"
 - Sonotube Pier: 2" from form
- No bars shall be cut or omitted in the field because of sleeves, ducts, openings, or recesses. Bars may be moved aside without changing level with approval of the Engineer.
- Details not shown on the drawings shall be in accordance with the ACI Detailing Manual.
- Concrete placement during cold or hot weather must follow the requirements of ACI Guide to Hot Weather Concreting (ACI 305R) and ACI Guide to Cold Weather Concreting (ACI 306R).
- Anchor bolts shall be of the size and location shown on the drawings or specified by equipment manufacturers. Bolts shall conform to ASTM A307. Headed anchor bolts shall be installed using appropriate templates to maintain spacing and alignment prior to placement of concrete. Wet-setting is unacceptable.
- Installation of reinforcement shall be completed at least 24 hours prior to scheduled concrete placement. Notify the Engineer at least 24 hours prior to completion of reinforcement placement.

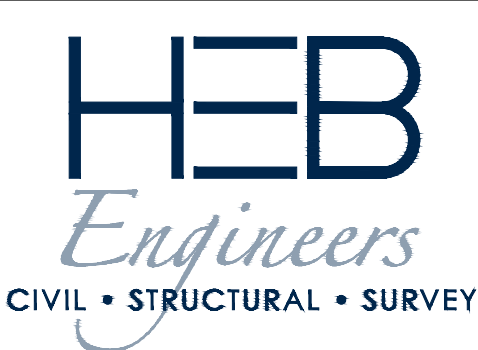
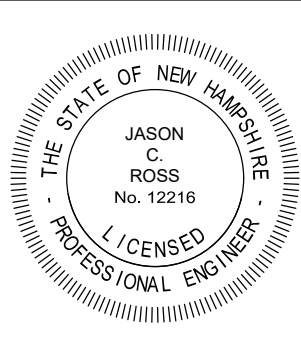
Cofferdam Notes:

- Substructures shall be constructed "in the dry." All items covered under Section 503 of the specifications shall be designed by a New Hampshire licensed professional engineer. The Contractor shall submit stamped working drawings and calculations to the Engineer for documentation, in accordance with 105.02, prior to construction.
- All costs for design, materials, installation, dewatering, maintenance, removal, and restoration shall be included in NHDOT Item 503.2.
- Limits of cofferdams detailed on the plans are approximate and may be adjusted as required to accommodate the Contractor's means and methods of construction.

Foundation Notes:

- Substructures shall be constructed "in the dry." Control of water within the excavation shall be conducted in such a manner as to prevent disturbance of the bearing soil. Pumping areas shall be located outside the footing support limits and properly filtered to prevent the pumping of fines.
- Any foundation soil weakened as a result of insufficient care taken in maintaining a dewatered condition shall be removed and replaced with structural fill at the Contractor's expense.
- Dewatering shall be continuous until the substructure is backfilled to the elevation of the surrounding water table, unless directed otherwise.
- Bearing surfaces shall be protected from freezing.

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CHECKED BY	JKM
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Outlook Details & Notes
for the
Berlin Riverwalk
located in and prepared for the
City of Berlin, New Hampshire

2018-033

S5.01

SHEET 21 OF 21



Legend

	Edge of pavement		Building		Water Curb Stop
	Edge of gravel		Concrete slab		Water line & structures
	Roadway/other centerline		Major contour		Sewer line & structures
	Trail		Minor contour		Drainage line & structures
	Granite curb		Delineated wetland		Overhead utility wires/pole/light pole/anchor
	Bituminous curb		Edge of water		Underground utility wires
	Pavement striping		Vegetation line		Gas line
	Railroad tracks		Deciduous/coniferous tree		Boring/test pit
	Guard rail		Boulder		Permeability test
	Retaining wall		Exposed ledge		Subject property line
	Stone wall				Control point/traverse line
	Signs				Mailbox
	Chainlink fence				Tax Map & Lot Number
	Wood fence				
	Wire fence				

NOTES

HORIZONTAL LOCATIONS OF YLS CONTROL POINTS ARE BASED ON OPUS POSITION AT CONTROL POINT #1. VERTICAL LOCATIONS ARE BASED ON NHDOT BENCHMARK 045-150 AT CITY HALL, VERIFIED WITH NHDOT BENCHMARK 045-140. ALL CONTROL POINTS WERE POST PROCESSED. ALL OTHER POINTS OTHER THAN BUILDING CORNERS ARE RTK GPS BASED ON PROCESSED CONTROL POINTS #1, 4, 5, & 36. EVERY NEW OCCUPATION FROM THOSE POINTS WERE CHECKED WITH AN RTK POSITION OF A YLS BENCHMARK. NORTH IS NEW HAMPSHIRE STATE PLANE GRID NAD83. VERTICAL DATUM IS NAVD83. CONTOURS ARE 1 FOOT.

ORIGINAL BASE MAPPING FROM PEAVY LANE TO WHITE MOUNTAINS COMMUNITY COLLEGE FROM PRIOR YLS SURVEY FOR BERLIN WATER WORKS WAS UTILIZED FOR DATA OUTSIDE THE TRAVELLED WAY.

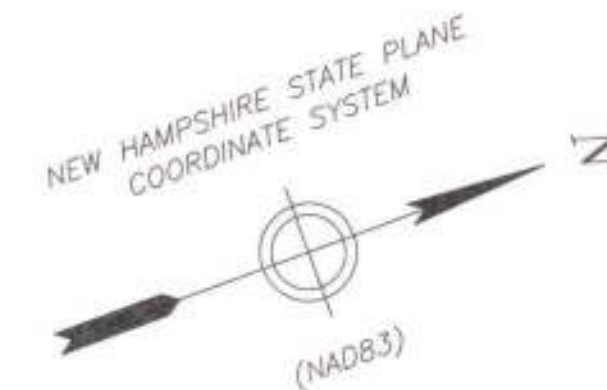
WATER LINES WERE TRACED BY BERLIN WATER WORKS DEPARTMENT MID- DECEMBER TO LATE DECEMBER. ELEVATIONS FOR WATER DATA SHOULD NOT BE UTILIZED DUE TO SIGNIFICANT SNOW/ICE DURING THIS SURVEY.

NO EXCAVATIONS WERE DONE AS PART OF THIS SURVEY TO VERIFY UNDERGROUND UTILITIES. STRUCTURES LOCATED WERE CLEARLY VISIBLE FROM THE SURFACE. UNDERGROUND PIPES SHOWN ARE APPROXIMATE ONLY. OTHERS MAY EXIST.

FLOOD ZONES ARE FROM CURRENT FEMA FLOOD ZONE MAPS.

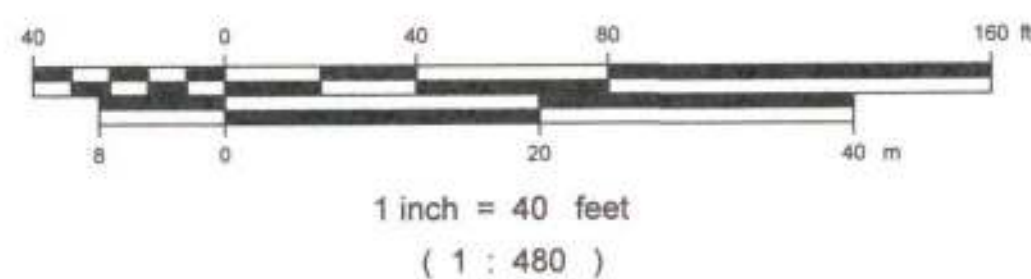
MAIN STREET--RTE. 16--RIVERSIDE DRIVE RIGHT-OF-WAY IS APPROXIMATELY 40 FEET WIDE BASED ON RECORD PLANS, DEEDS, AND OBSERVED USE. PRIVATE PROPERTY LINES ARE FROM EXISTING MULTIPLE YLS SURVEYS OR ARE APPROXIMATE BASED ON THE EXISTING SURVEY DATA.

WETLANDS WERE DELINEATED IN NOVEMBER 2014 BY RAYMOND LOBDELL, NH CERTIFIED WETLAND SCIENTIST, OF LOBDELL ASSOCIATES INC., ACCORDING TO THE DELINEATION STANDARDS IN THE REPORT "REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (VERSION 2.0-1/12) AND NH WETLANDS BUREAU RULES AND REGULATIONS. WETLAND FLAGS WERE SURVEYED ONTO THE PLAN BY YORK LAND SERVICES, LLC.

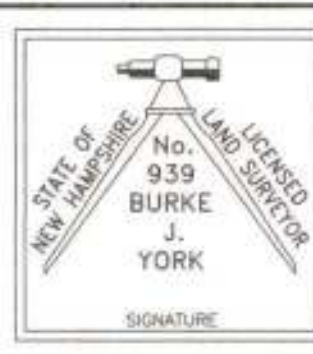


U.S. Fish and Wildlife Classification:

PSSI/EM1B Palustrine, Scrub-Shrub and emergent, Broad-Leaved Deciduous, Seasonally Flooded/Saturated
R2UB1H Riverine, Lower Perennial, Cobble-Gravel, Permanently Flooded
R2UBHh Riverine, Lower Perennial, Permanently Flooded, Impounded



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FIELD BOOK	—
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DATE	08/30/18

Existing-Features Plan

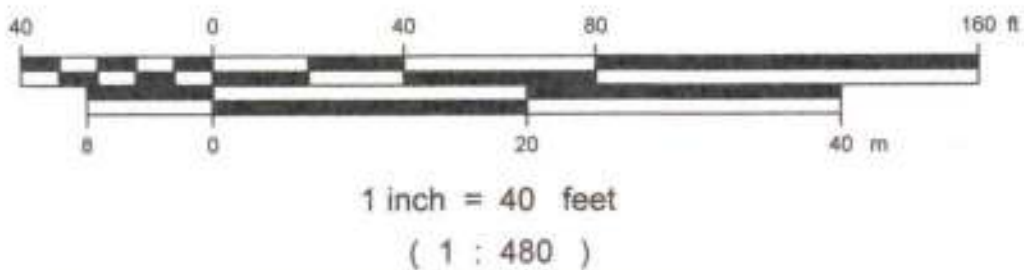
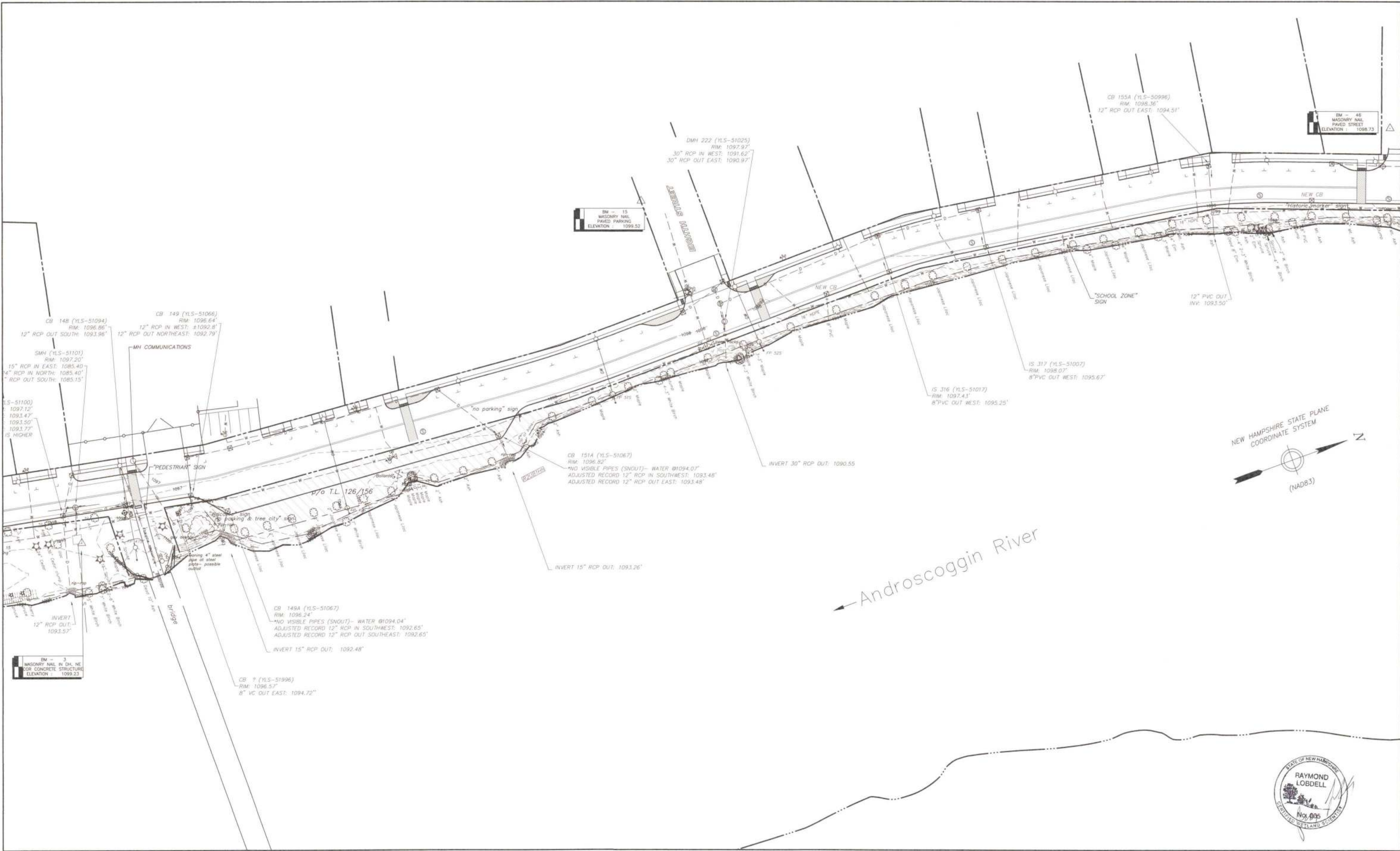
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2018-033

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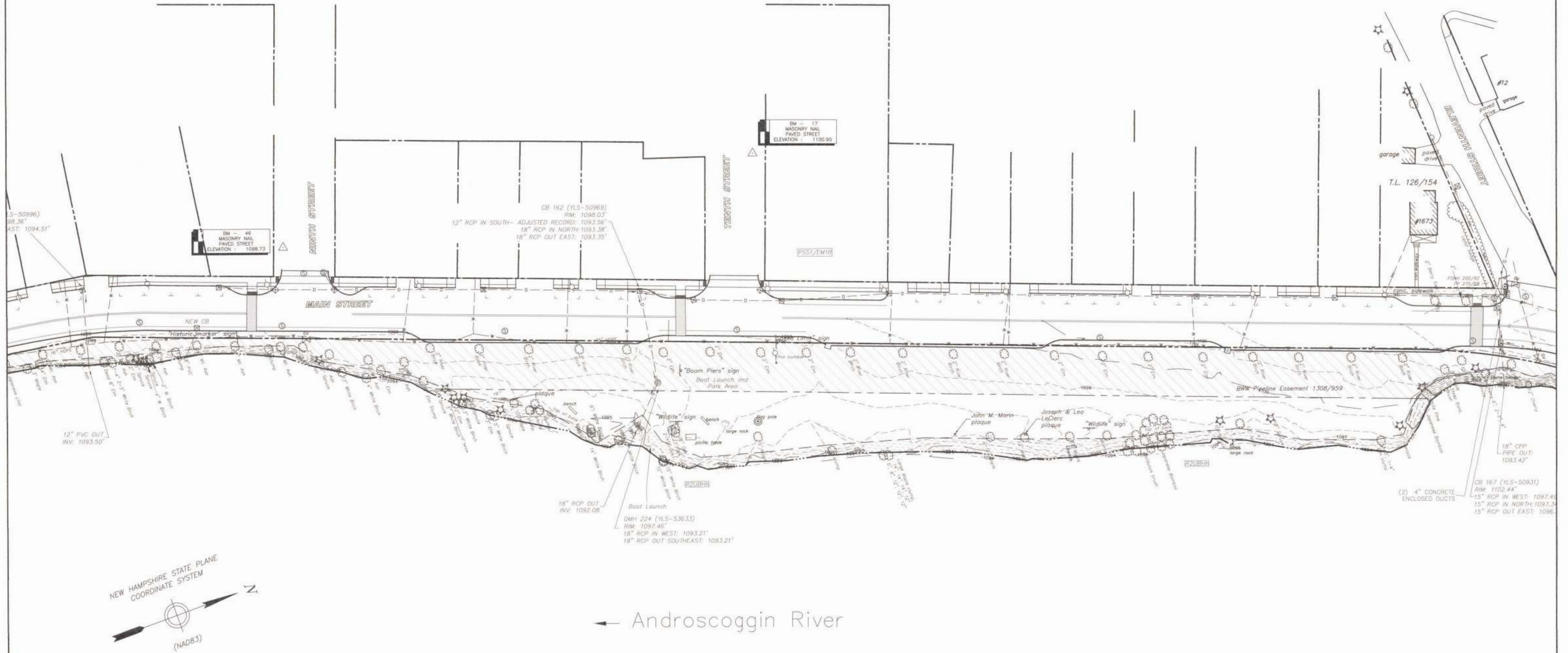


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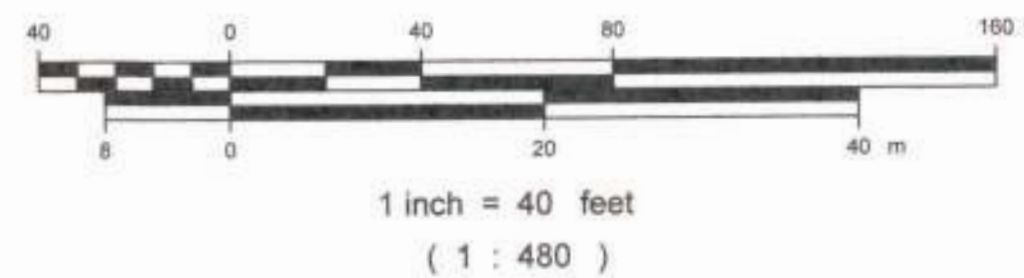
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FIELD BOOK	—
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DATE	08/30/18

Existing-Features Plan
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Route 16 Riverwalk
prepared for the
City of Berlin, New Hampshire

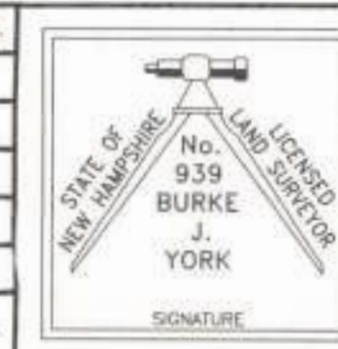
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SHEET 2 OF 4



← Androscoggin River



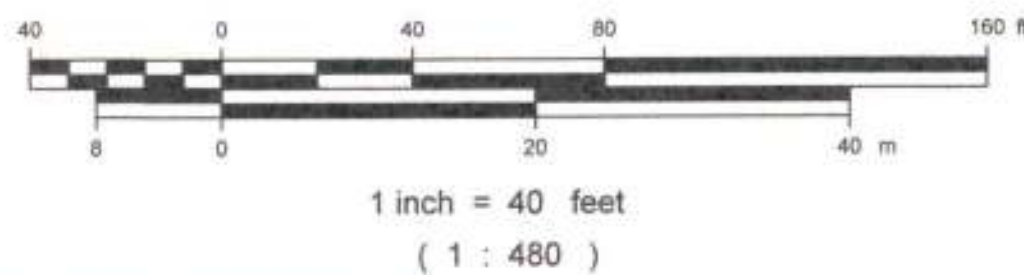
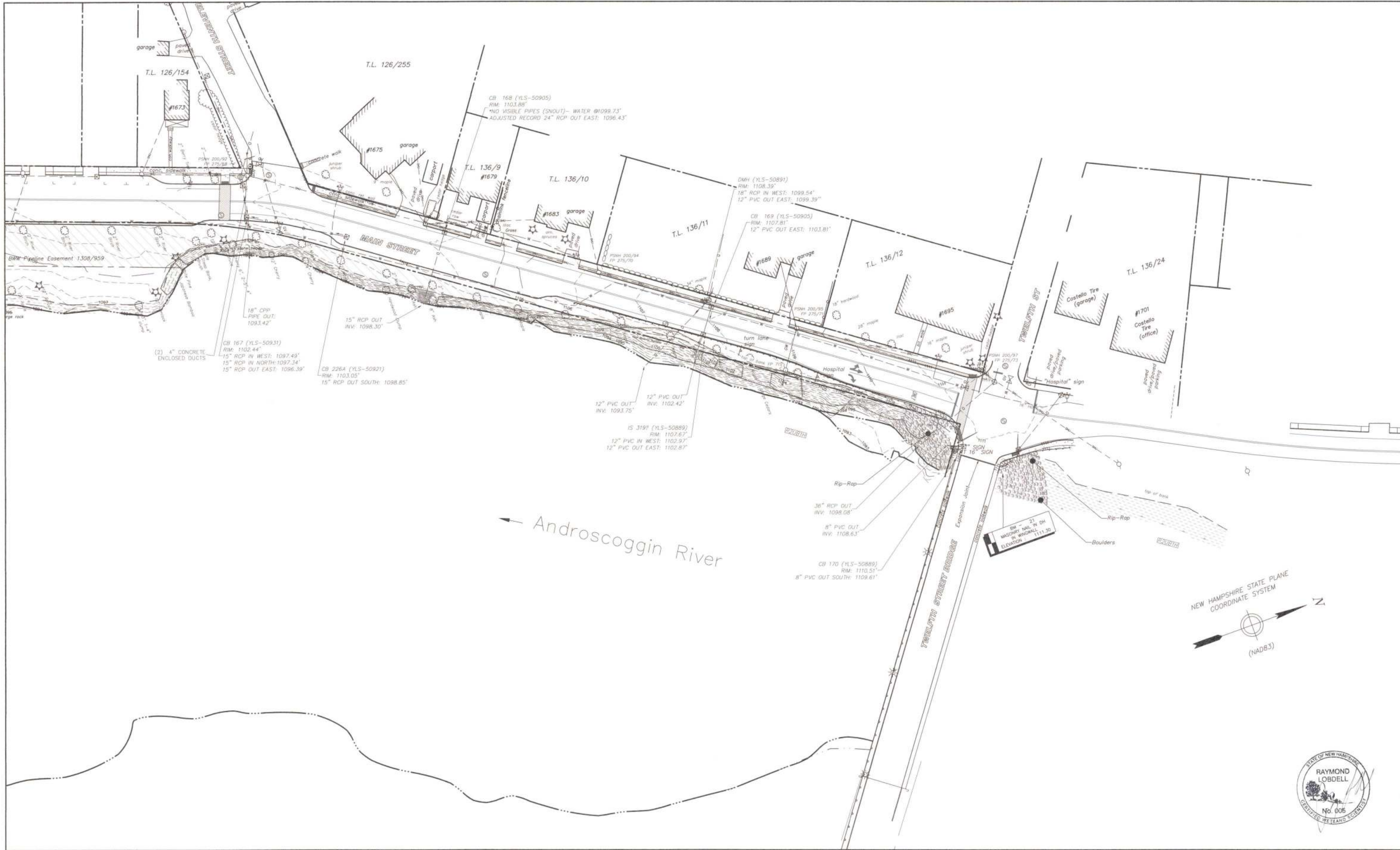
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Post Office Box 343
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SURVEYED BY	YLS
DESIGNED BY	—
DRAWN BY	—
CHECKED BY	—
FIELD BOOK	—
SCALE	1"=40'
DATE	08/30/18

Existing-Features Plan
for the
Route 16 Riverwalk
prepared for the
City of Berlin, New Hampshire



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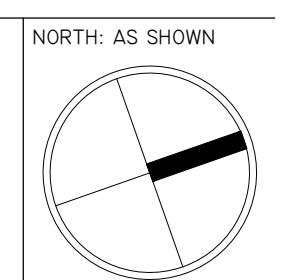
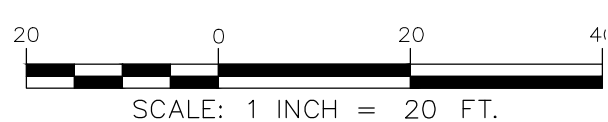
Berlin Riverwalk
NHDOT Project #41367
Berlin, New Hampshire

SHEET TITLE

DEMO AND SITE PREPARATION

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1	△	9/24/19 PRELIMINARY DESIGN SUBM.
REV. NO.	△	REV. DATE REVISION DESCRIPTION

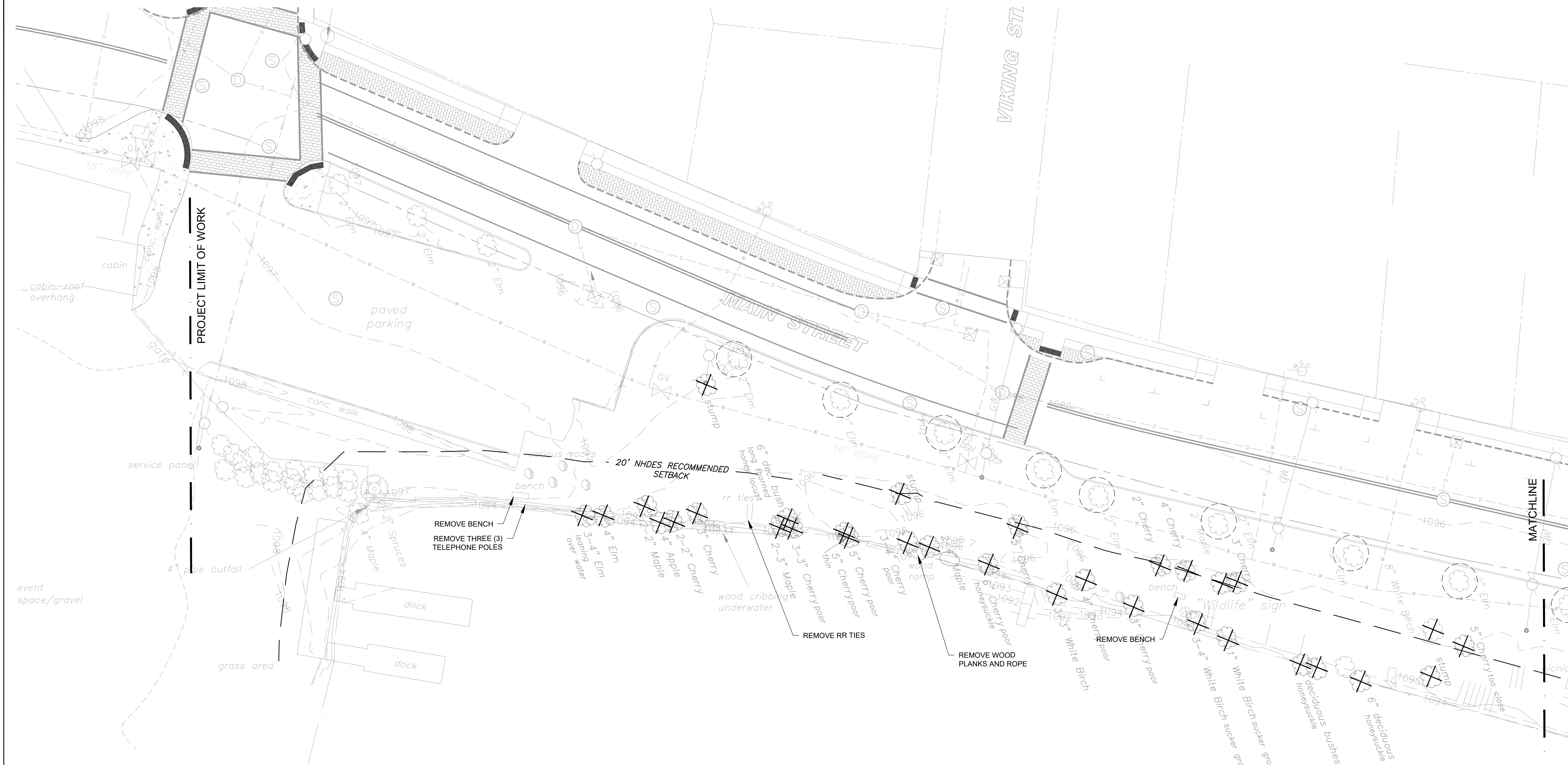
IRONWOOD PROJECT NO.	17078.0
SCALE	1"=20'-0"
DESIGN BY	J. HYLAND, J.MARTEL
DRAWN BY	J.MARTEL, J.COLLOPY
CHECKED BY	J.HYLAND
DATE	AUGUST, 2018
GRAPHIC SCALE	



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Preliminary Design Submission




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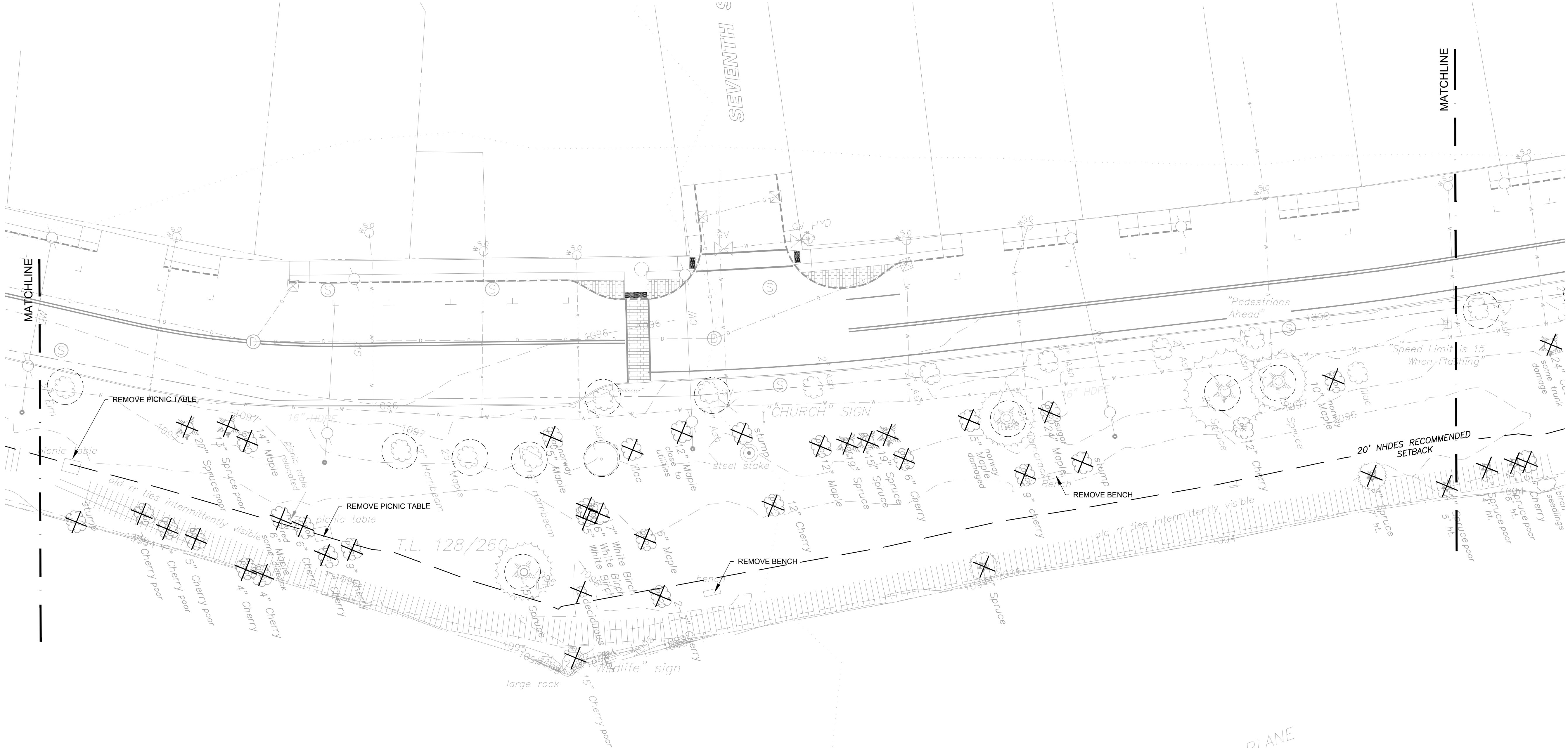
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LEGEND

	EVERGREEN TREE TO BE REMOVED
	DECIDUOUS TREE TO BE REMOVED
	EVERGREEN TREE TO BE PROTECTED
	DECIDUOUS TREE TO BE PROTECTED
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Berlin Riverwalk
NHDOT Project #41367
Berlin, New Hampshire



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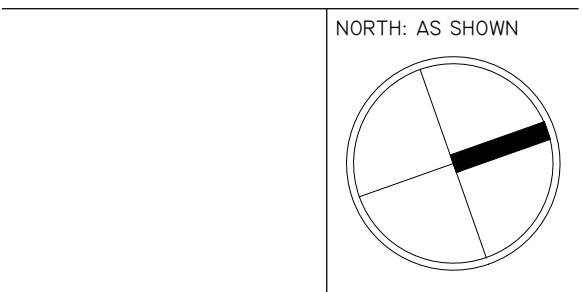
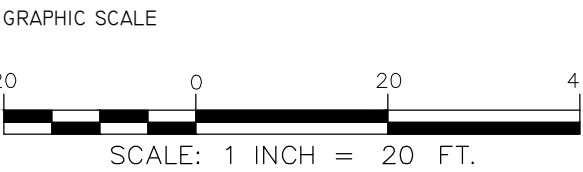
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EVERGREEN TREE TO BE REMOVED
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- INVASIVE PLANTS TO BE REMOVED
- TEMPORARY TREE PROTECTION FENCE

SHEET TITLE

DEMO AND SITE PREPARATION

REV. NO.	REV. DATE	REVISION DESCRIPTION
1	9/24/19	PRELIMINARY DESIGN SUBM.
2		
3		
4		

IRONWOOD PROJECT NO.	I7078.0
SCALE	1"=20'-0"
DESIGN BY	J. HYLAND, J.MARTEL
DRAWN BY	J.MARTEL, J.COLLOPY
CHECKED BY	J.HYLAND
DATE	AUGUST, 2018



L1.2

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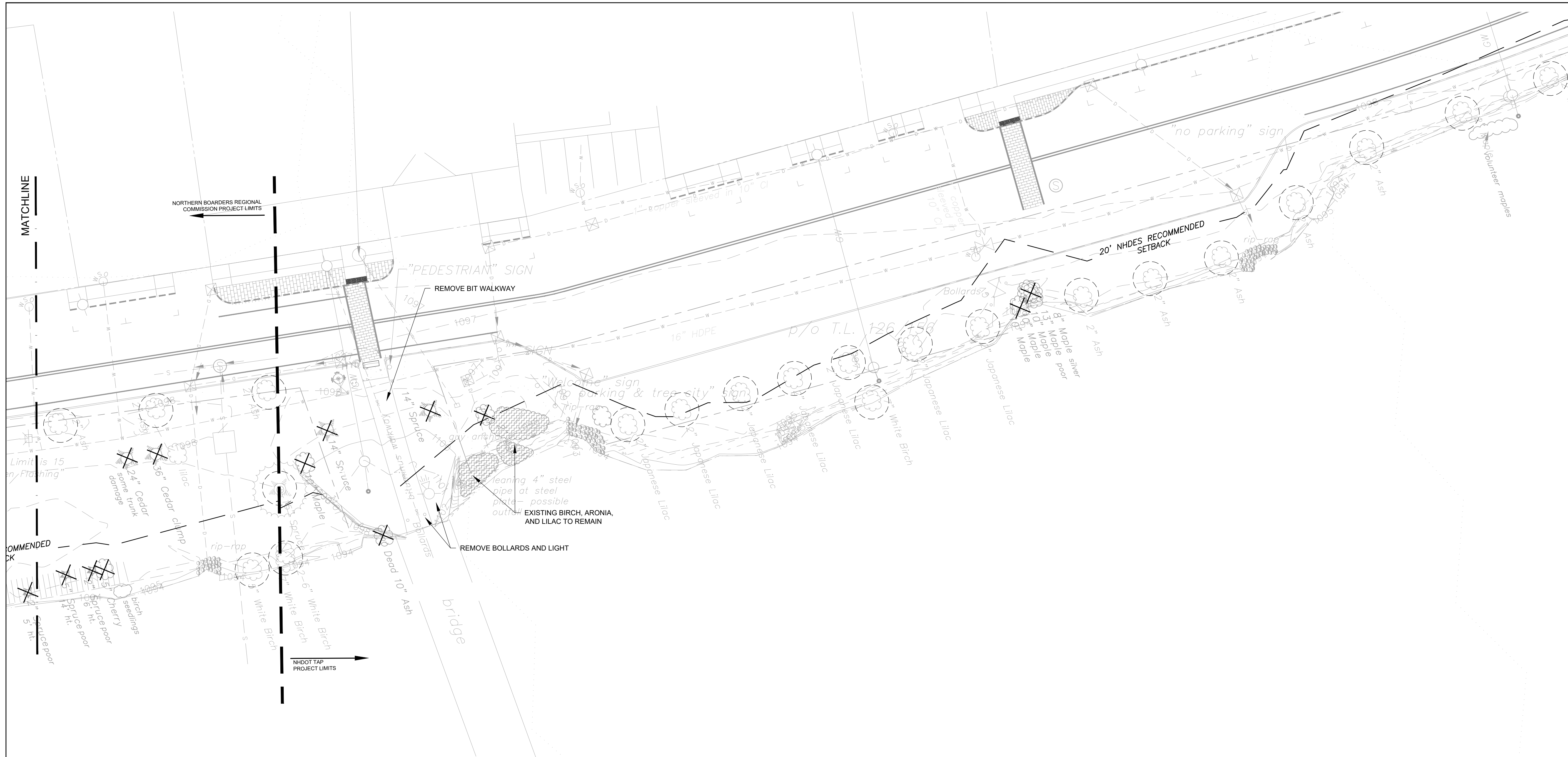
Preliminary Design Submission

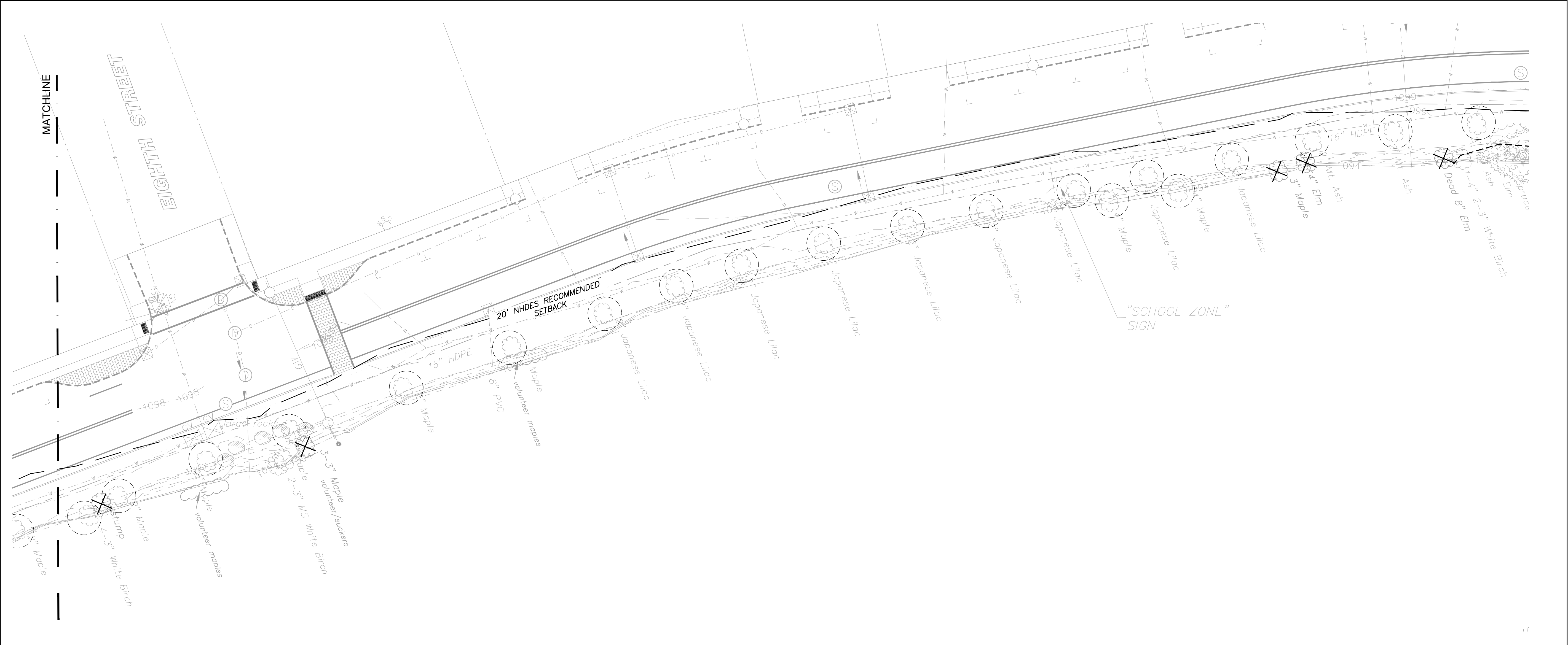
Berlin, New Hampshire

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TEMPORARY TREE
PROTECTION FENCE





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LEGEND

- 

19" Spruce
- EVERGREEN TREE TO BE REMOVED
- 

5" Maple
- DECIDUOUS TREE TO BE REMOVED
- 

15" Spruce
- EVERGREEN TREE TO BE PROTECTED
- 

16" Hornbeam
- DECIDUOUS TREE TO BE PROTECTED
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- INVASIVE PLANTS TO BE REMOVED
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- TEMPORARY TREE PROTECTION FENCE

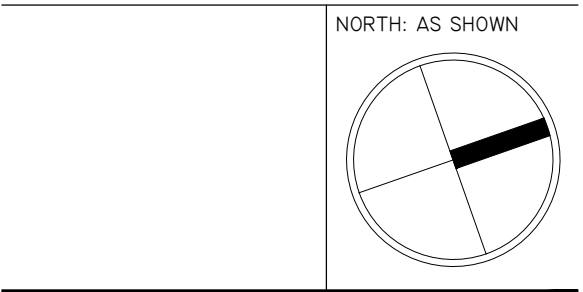
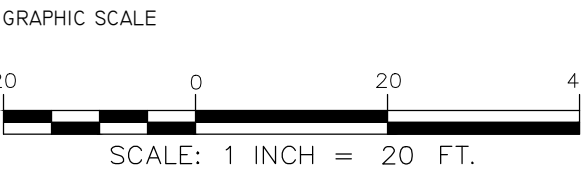
Berlin Riverwalk
NHDOT Project #41367
Berlin, New Hampshire

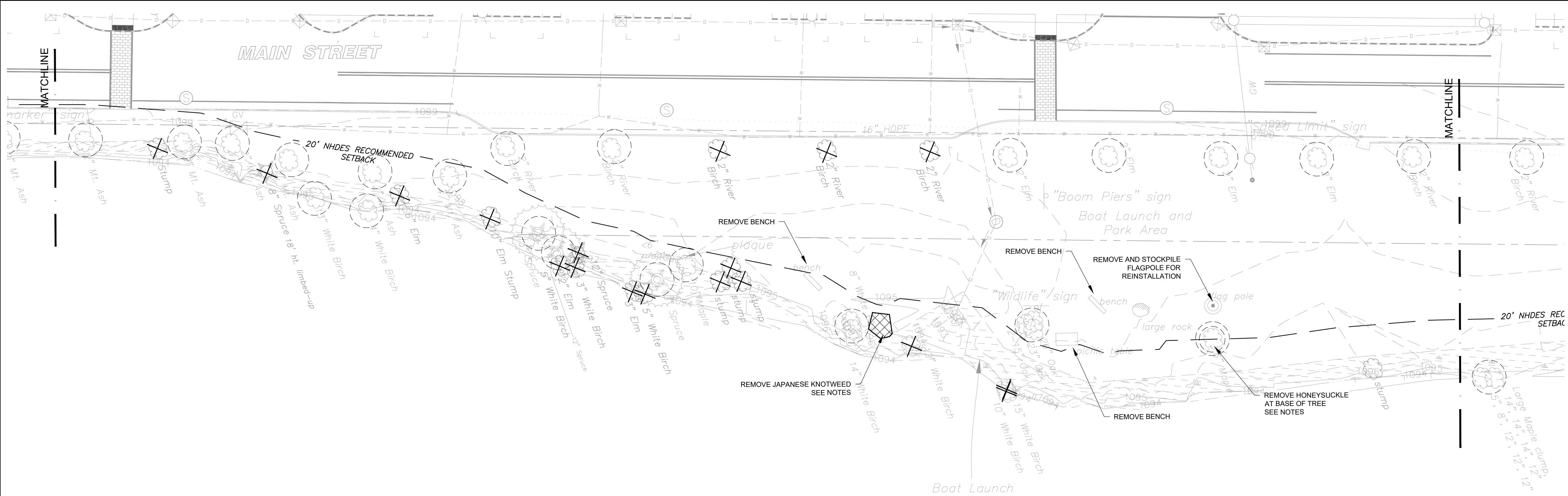
SHEET TITLE

DEMO AND SITE
PREPARATION

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△	9/24/19	PRELIMINARY DESIGN SUBM.
REV. NO.	REV. DATE	REVISION DESCRIPTION

IRONWOOD PROJECT NO.	I7078.0
SCALE	1"=20'-0"
DESIGN BY	J. HYLAND, J.MARTEL
DRAWN BY	J.MARTEL, J.COLLOPY
CHECKED BY	J.HYLAND
DATE	AUGUST, 2018






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19" Spruce

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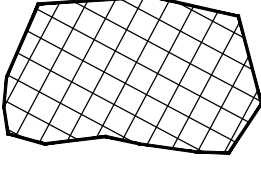
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TEMPORARY TREE PROTECTION FENCE

Berlin Riverwalk

NHDOT Project #41367

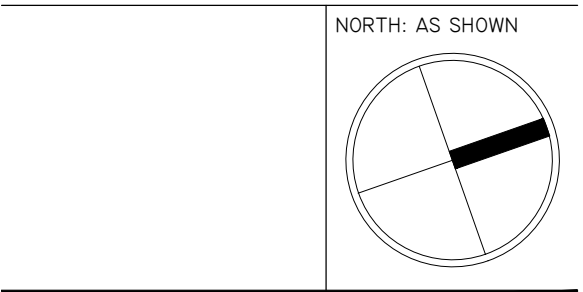
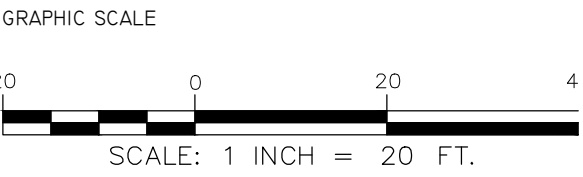
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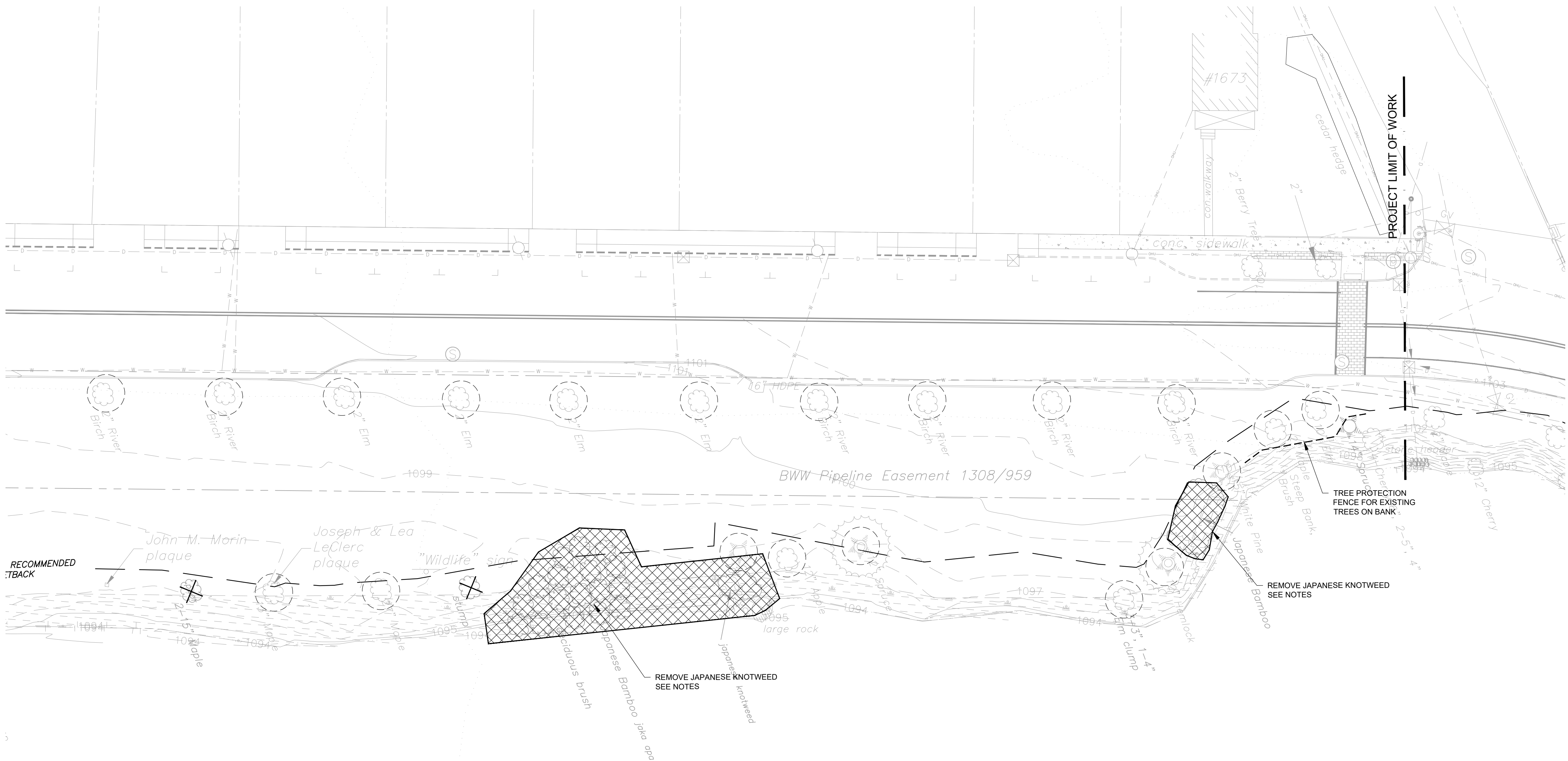
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L1.5

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Berlin Riverwalk
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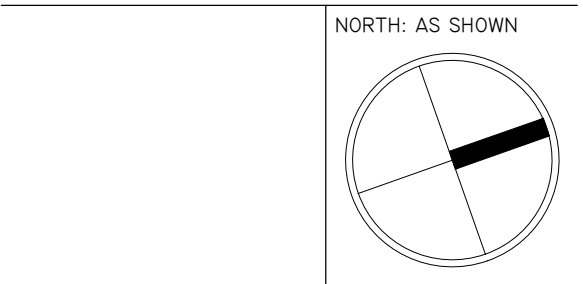
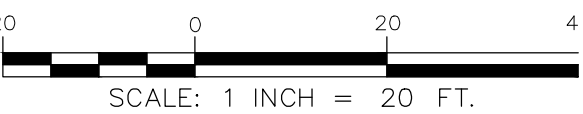
LEGEND

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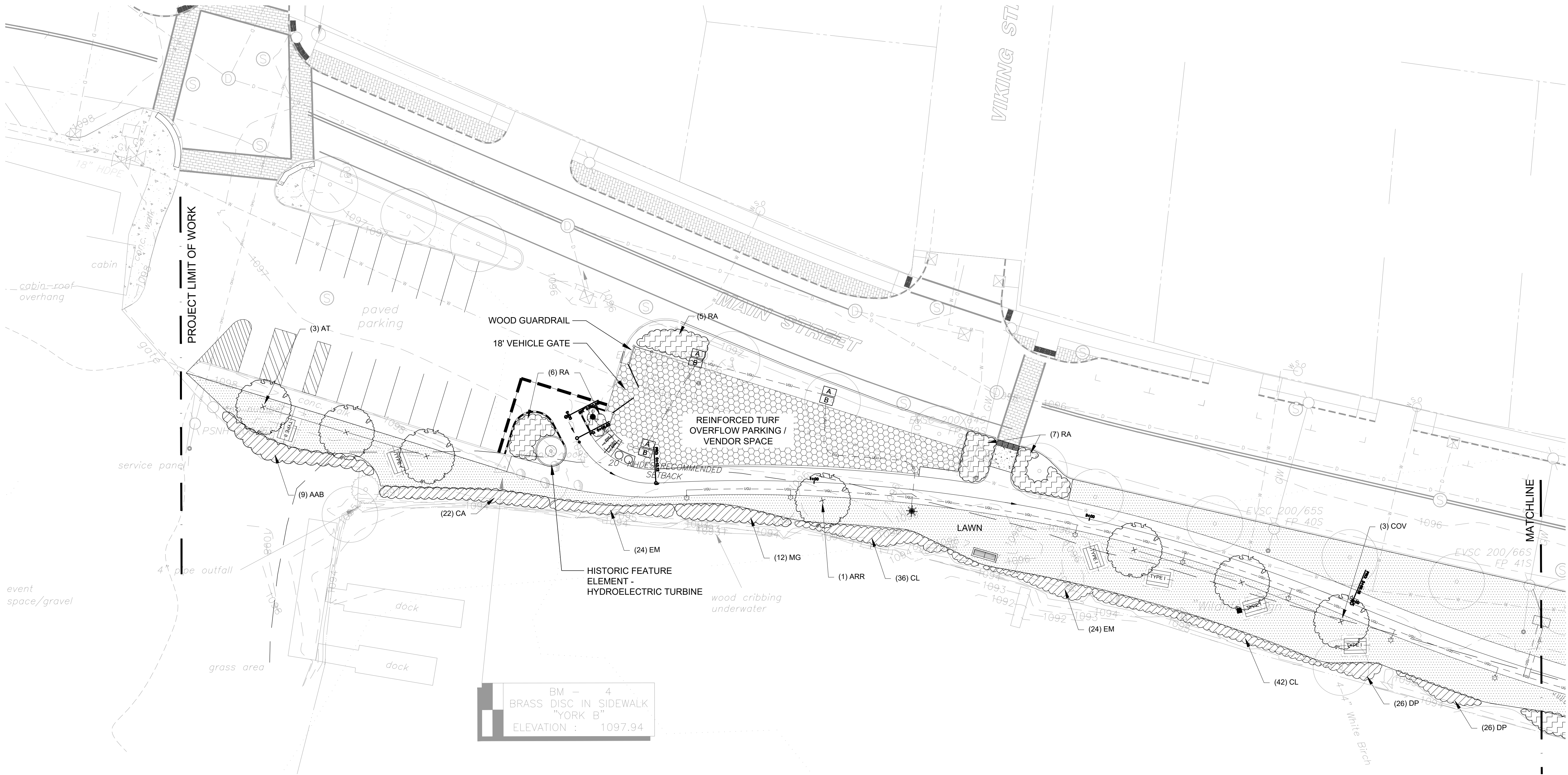
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L1.6

Berlin Riverwalk
NHDOT Project #41367
Berlin, New Hampshire



PLANT SCHEDULE

DECIDUOUS TREES					
QTY.	ABREV.	SCIENTIFIC NAME	COMMON NAME	SIZE	REMARKS
3	AC	AMELANCHIER CANADENSIS	REGENT SERVICEBERRY	6'-7"	B&B, MULTI-STEM
6	ASB	ACER SACCHARUM 'BONFIRE'	BONFIRE SUGAR MAPLE	3-3.5" C.	B&B
3	ARR	ACER RUBRUM 'REDPOINTE'	REDPOINTE RED MAPLE	3-3.5" C.	B&B
3	AT	ACER TATARICUM 'HOT WINGS'	TARTARIAN MAPLE	2-2.5"	B&B SINGLE STEM
3	COV	CARYA OVATA	SHAGBARK HICKORY	3-3.5" C.	B&B
2	GD	GYMNOCLADUS DIOICUS 'ESPRESSO'	FRUITLESS KENTUCKY COFFEE TREE	3-3.5" C.	B&B
3	GT	GLEDITSIA TRIACANTHOS 'SKYLINE'	SKYLINE HONEY LOCUST	3-3.5" C.	B&B
4	PP	PARROTIA PERSICA	PERSIAN PEROTIA	2-2.5"	B&B
5	UA	ULMUS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	3-3.5" C.	B&B

NOTES

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 - SEE SHEET L2.1 AND 2.2 FOR PLANTING SCHEDULES.
 - SEE SHEET L2.4 FOR THE LIGHTING SCHEDULE.
 - SEE SHEETS L3.0-L6.0 FOR LANDSCAPE DETAILS.

LIGHTING / ELECTRICAL KEY

- AREA LIGHT: STRUCTURA 14' ROUND TAPERED POLE (BOL) WITH SINGLE SELUX OURAY 400 LUMINAIRE (SHORT ARM, 3000K, BRONZE), AND GFCI OUTLET. SEE LIGHT SCHEDULE LINE A & D FOR ADDITIONAL INFORMATION.
- AREA AND ACCENT LIGHT: STRUCTURA 16' TAPERED POLE WITH THREE OLIVIO MEDIO LUMINAIRES (MEDIUM SPOT, 3000K, BRONZE, DIMMING), AND GFCI OUTLET. SEE LIGHT SCHEDULE LINE B & E FOR ADDITIONAL INFORMATION.
- PATH BOLLARD: STRUCTURA MAC (42", 3000K, 120V) SEE LIGHT SCHEDULE LINE C FOR ADDITIONAL INFORMATION.
- CHARGING STATION: USB (4), GFCI OUTLET (1), AND LED ACCENT LIGHT. LEGRAND MODEL XCSAL2GRU-BZ 2 1 1
- GROUND BOX: 220V/30A WITH TWIST LOCK OUTLET. LEGRAND MODEL XB814CL630BK
- LEGRAND GROUND BOX: 120V WITH GFCI OUTLETS (2). MODEL XB814C520B

LEGEND

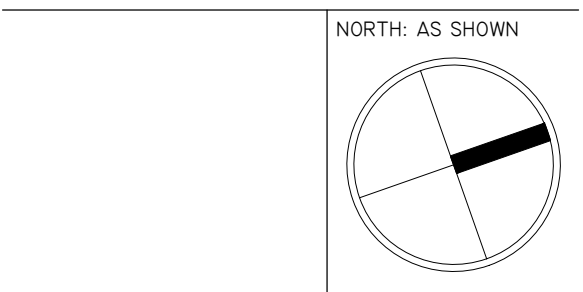
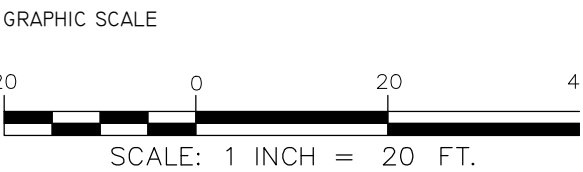
- PERENNIAL PLANTING
- SHRUB PLANTING
- ITEM 641 - LOAM AND SEED
- EROSION CONTROL PLANTING
- ITEM 662 - PICNIC TABLE
- ITEM 670.0702 - BICYCLE RACK
- ITEM 661.65 - WASTE RECEPTACLE
- POWER PEDESTAL
- WEATHERED BOULDER
- ITEM 661.26 - GRANITE BLOCK BENCH
- ITEM 661 - 6" BENCH
- SHADE TREE TO REMAIN
- EVERGREEN TREE TO REMAIN
- SHRUBS/VEGETATION TO REMAIN
- MULTISTEM TREE PLANTING
- SHADE TREE PLANTING

SHEET TITLE

LANDSCAPE
PLAN

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△	9/24/19	PRELIMINARY DESIGN SUBM.
REV. NO.	REV. DATE	REVISION DESCRIPTION

IRONWOOD PROJECT NO.	I7078.0
SCALE	1"=20'-0"
DESIGN BY	J. HYLAND, J.MARTEL
DRAWN BY	J.MARTEL, J.COLLOPY
CHECKED BY	J.HYLAND
DATE	AUGUST, 2018

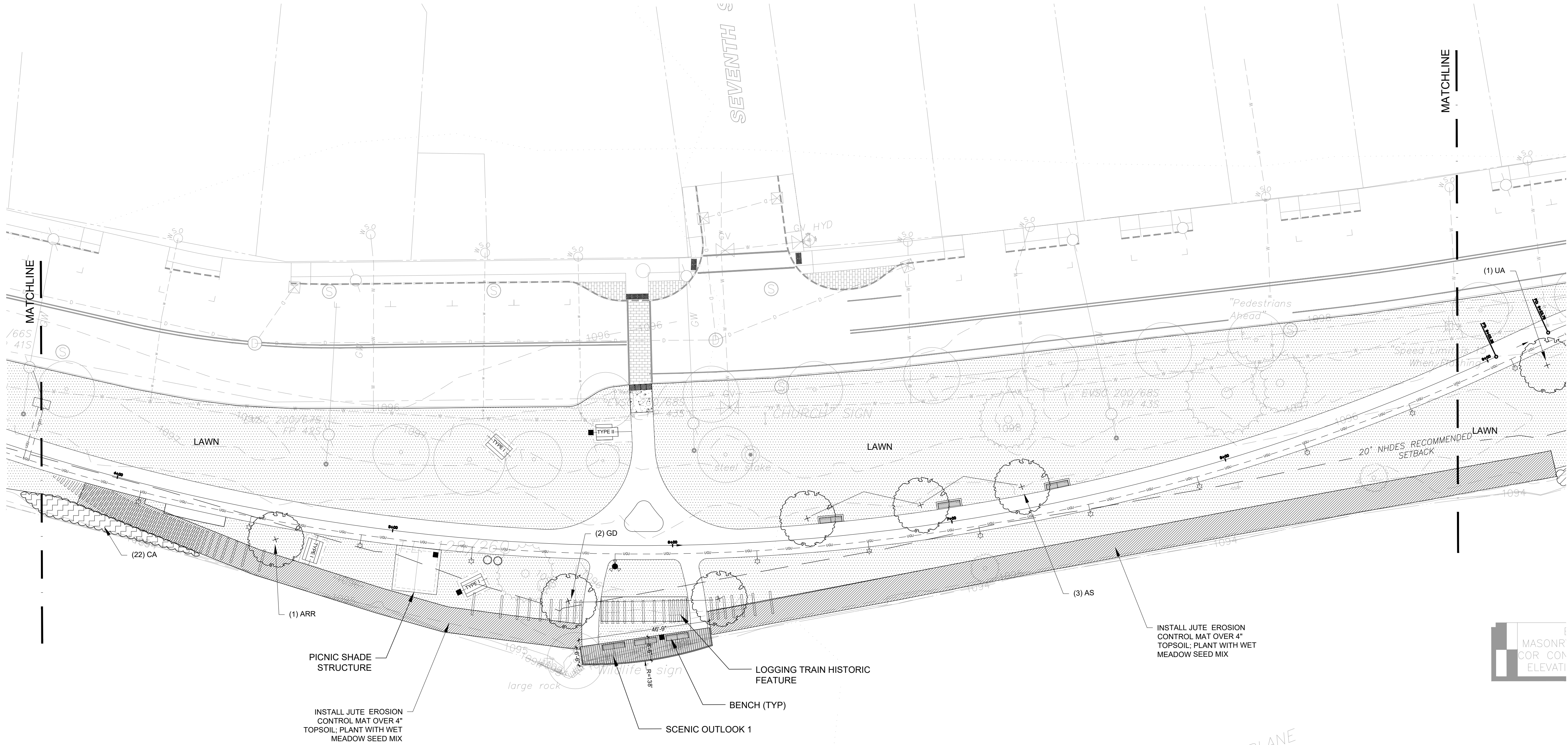


L2.1

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Preliminary Design Submission

Berlin Riverwalk
NHDOT Project #41367
Berlin, New Hampshire



PLANT SCHEDULE

SHRUBS						
QTY.	ABREV.	SCIENTIFIC NAME	COMMON NAME	SPACING	SIZE	REMARKS
70	AAP	AMELANCHIER ALNFOLIA 'PUMILA'	SERVICEBERRY	4' OC	#3	CONTAINER
9	AAB	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	BLACK CHOKEBERRY	6' OC	#3	CONTAINER
22	AM	ARONIA MELANOCARPA 'AUTUMN MAGIC'	BLACK CHOKEBERRY	6' OC	#3	CONTAINER
66	CA	CLETHRA ALNFOLIA 'HUMMINGBIRD'	SWEET PEPPERBUSH	4' OC	#3	CONTAINER
70	CS	CORNUS SERICEA 'FIREDANCE'	COMPACT RED TWIG DOGWOOD	5' OC	#3	CONTAINER
42	CP	COMPTONIA PEREGRINA	SWEET FERN	4' OC	#3	CONTAINER
4	IVH	ILEX VERTICILLATA 'LITTLE HENRY'	MALE POLLINATOR WINTERBERRY	4' OC	#3	CONTAINER
88	IVS	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY	4' OC	#3	CONTAINER
14	MP	MYRICA PENSYLVANICA	BAYBERRY	8' OC	#3	CONTAINER
56	MG	MYRICA GALE	SWEET GALE	5' OC	#3	CONTAINER
71	RA	RHUS AROMATICA 'GROW LOW'	FRAGRANT SUMAC	6' OC	#3	CONTAINER
PERENNIALS						
QTY.	ABREV.	SCIENTIFIC NAME	COMMON NAME		SIZE	REMARKS
MIXED PERENNIAL BED (PLANT EQUAL AMOUNTS OF EACH SPECIES EVENLY SPACED THROUGHOUT BED)						
38	-	RUDBECKIA 'GOLDSTRUM'	BROWN EYE SUSAN	12" OC	#1	CONTAINER
38	-	COREOPSIS 'ZAGREB'	TICKSEED	12" OC	#1	CONTAINER
38	-	AMSONIA HUBRICHTII	ARKANSAS BLUESTAR	12" OC	#1	CONTAINER
38	-	IRIS VERSICOLOR	BLUE FLAG	12" OC	#1	CONTAINER
38	-	EUPATORIUM MACULATUM	JOE PYE WEED	12" OC	#1	CONTAINER
38	-	ECHINACEA PURPUREA	PURPLE CONEFLOWER	12" OC	#1	CONTAINER
STAND-ALONE PERENNIALS						
78	CL	CHASMANTHIUM LATIFOLIUM	NORTHERN SEA OATS	24" OC	#1	CONTAINER
48	EM	EUPATORIUM MACULATUM	JOE PYE WEED	36" OC	#1	CONTAINER
330	DP	DENNSTAEDTIA PUNCTILOBULA	HAY SCENTED FERN	30" OC	#1	CONTAINER

NOTES

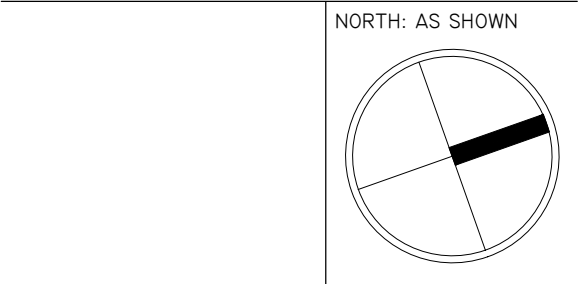
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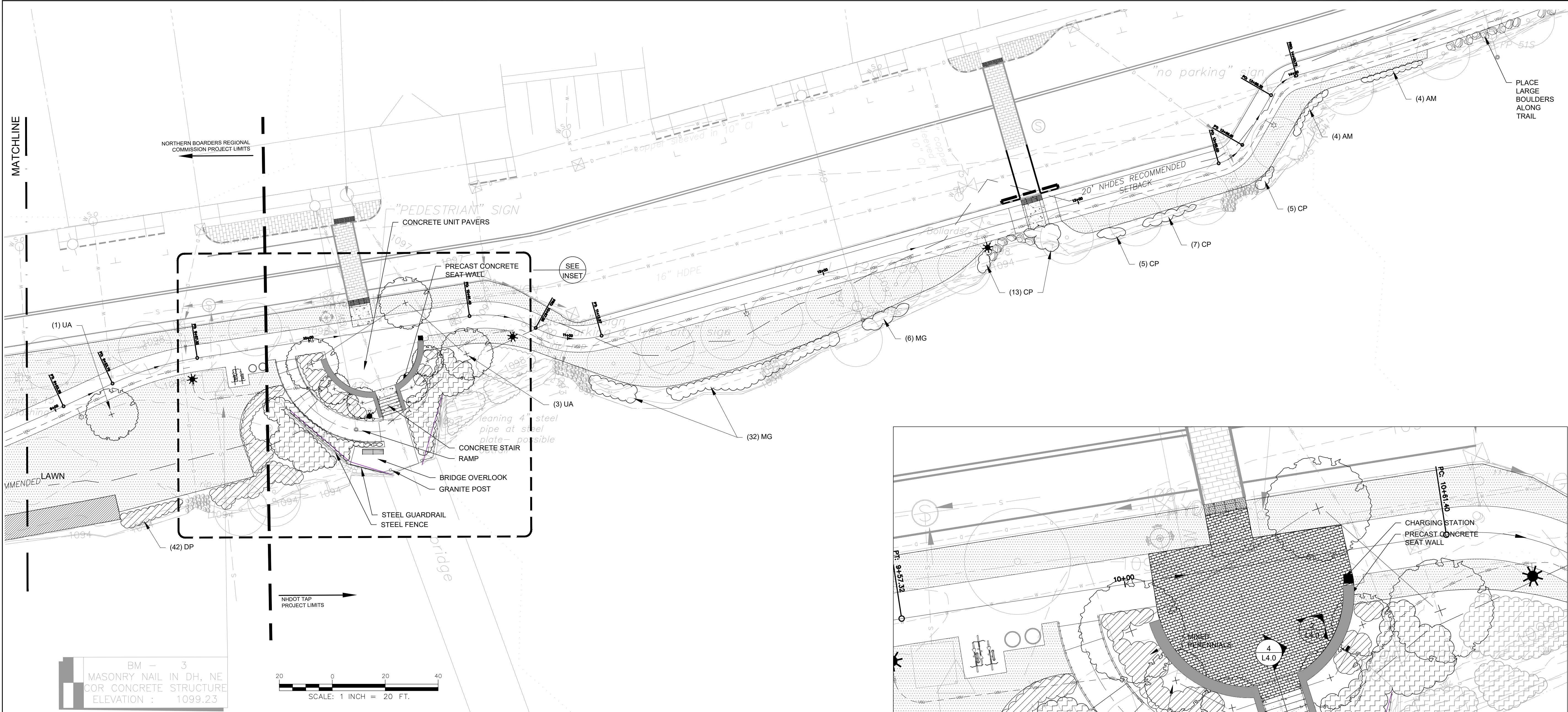
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LEGEND

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SHEET TITLE
LANDSCAPE
PLAN





NOTES

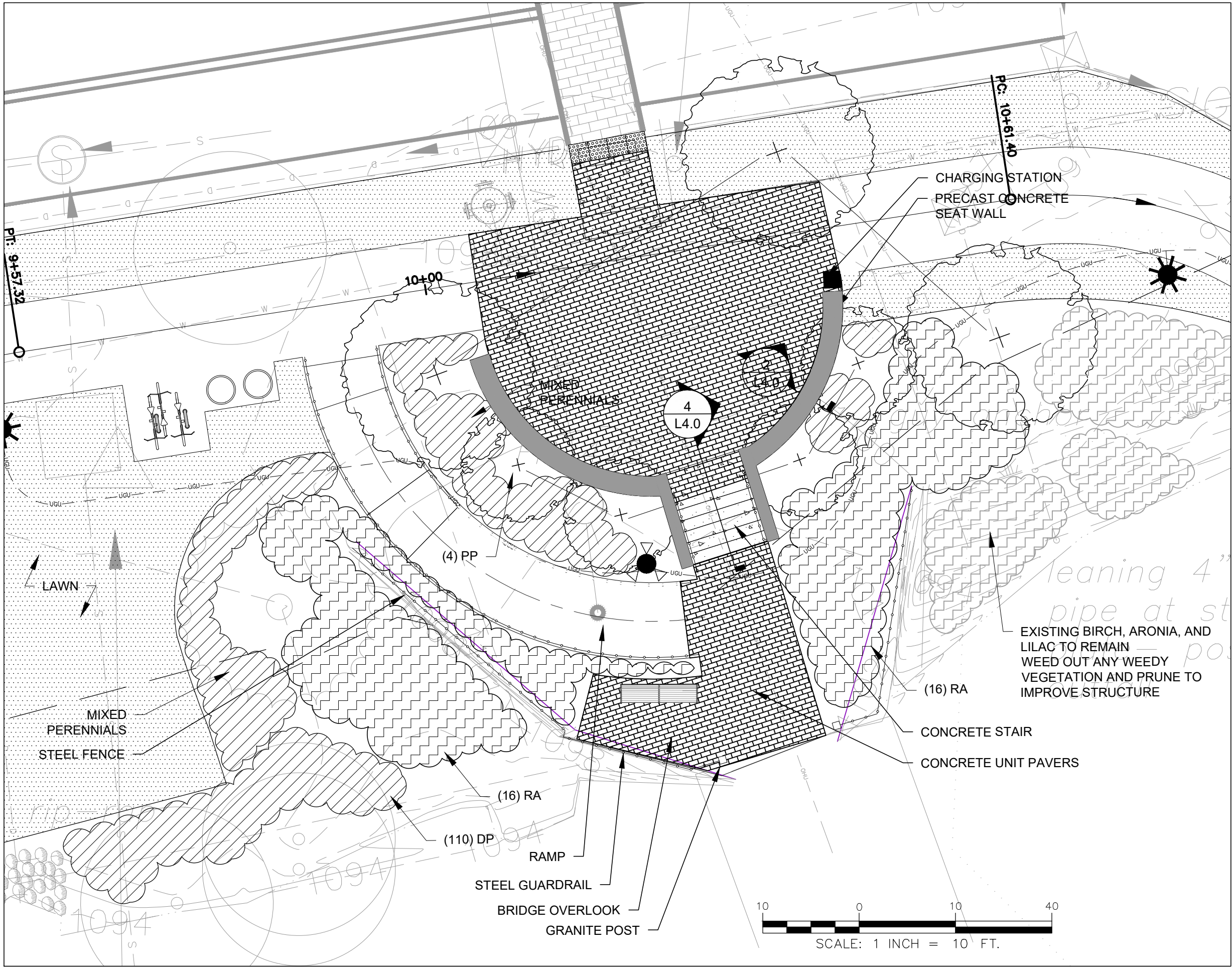
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Berlin Riverwalk

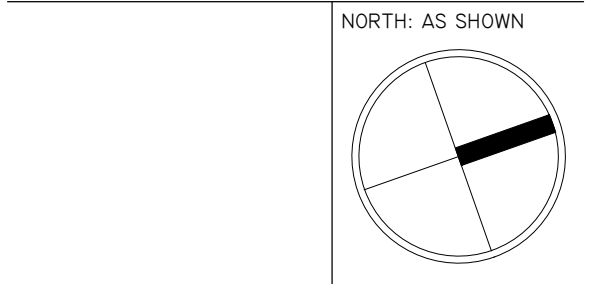
NHDOT Project #41367

Berlin, New Hampshire

SHEET TITLE

LANDSCAPE PLAN

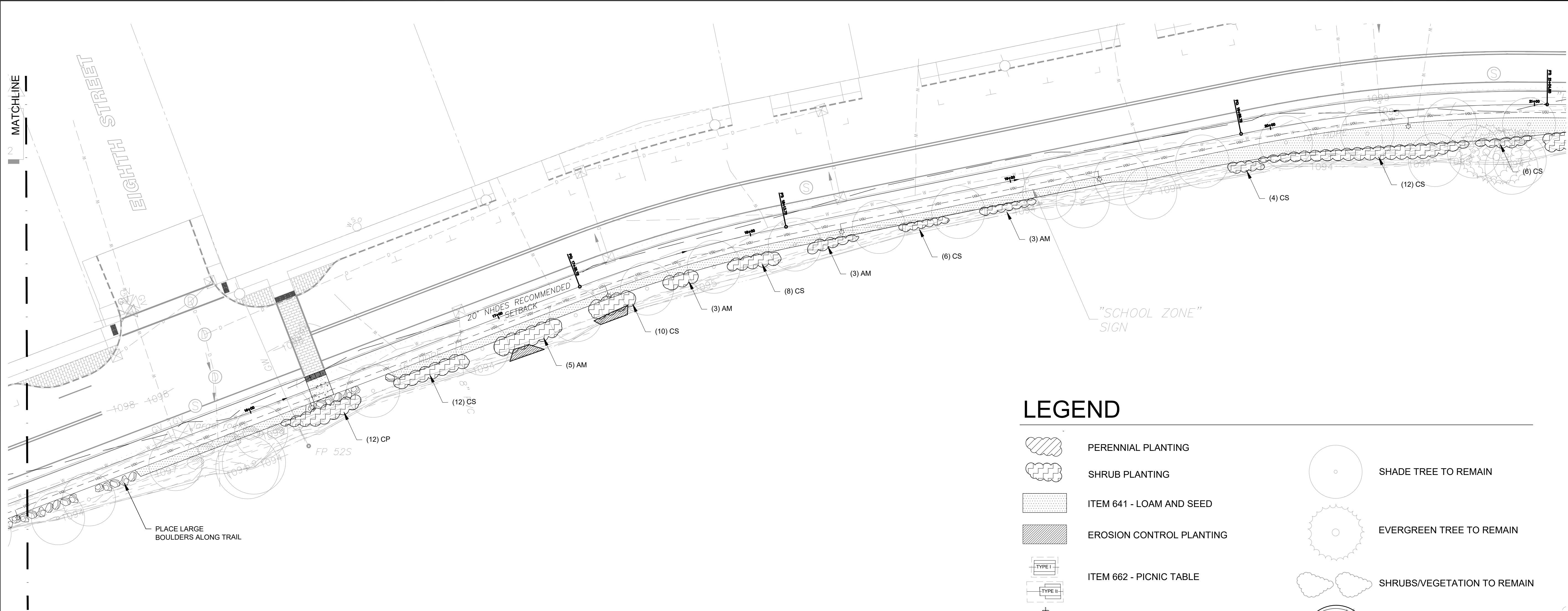
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1	9/24/19	PRELIMINARY DESIGN SUBM.
REV. NO.	REV. DATE	REVISION DESCRIPTION
IRONWOOD PROJECT NO.	I7078.0	
SCALE	AS SHOWN	
DESIGN BY	J. HYLAND, J. MARTEL	
DRAWN BY	J. MARTEL, J. COLLOPY	
CHECKED BY	J. HYLAND	
DATE	AUGUST, 2018	
GRAPHIC SCALE		



L2.3

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Preliminary Design Submission



LIGHT SCHEDULE

POLE							
KEY	QTY	MANUFACTURER	MODEL	HEIGHT	FORM	COMMENT	MODEL NUMBER
A	5	STRUCTURA	BOL	14'	ROUND TAPERED	120V GFI/15A	BOL-T-14-70-55-S2-C6-T3124-MOD
B	5	STRUCTURA	BOL	18'	ROUND TAPERED	120V GFI/15A	BOL-T-18-70-55-S2-C6-T3124-MOD

LUMINAIRE										
KEY	QTY	MANUFACTURER	MODEL	HEIGHT	VOLTAGE	WATTAGE	DESCRIPTION	DISTRIBUTION	MOUNTING	COMMENT
C	46	STRUCTURA	MAC	42"	120V	12W	BOLLARD W/LIGHT , 3000K			MAC-42-L30-SO-S2-C6-120-STD
D	5	SELUX	OURAY 400		240V	38W	AREA LIGHT, 3000K	TYPE II	SHORT ARM W. SLIP FITTER	U4-R2-S1-S-5G350-30-BZ-240-HL50-CO
E	15	SELUX	OLIVIO MEDIO		120V	23W	AREA & ACCENT LIGHT, 3000K	MEDIUM SPOT	THREADED	3 LUMINAIRES PER POLE OLML-F40-U-L23-30-BZ-120-DS-20kA

LEGEND

	PERENNIAL PLANTING		SHADE TREE TO REMAIN
	SHRUB PLANTING		EVERGREEN TREE TO REMAIN
	ITEM 641 - LOAM AND SEED		SHRUBS/VEGETATION TO REMAIN
	EROSION CONTROL PLANTING		MULTISTEM TREE PLANTING
	ITEM 662 - PICNIC TABLE		SHADE TREE PLANTING
	ITEM 670.0702 - BICYCLE RACK		
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	ITEM 661 - 6' BENCH		

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Berlin Riverwalk

NHDOT Project #41367

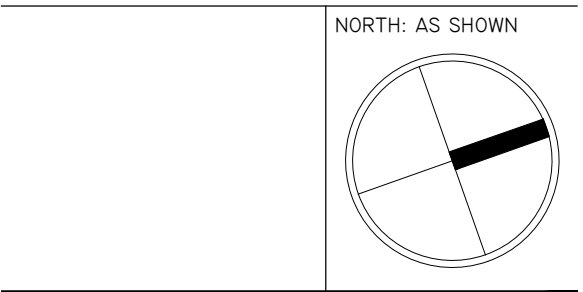
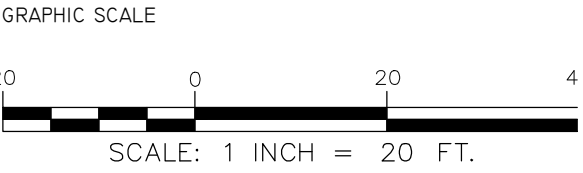
Berlin, New Hampshire

SHEET TITLE

LANDSCAPE PLAN

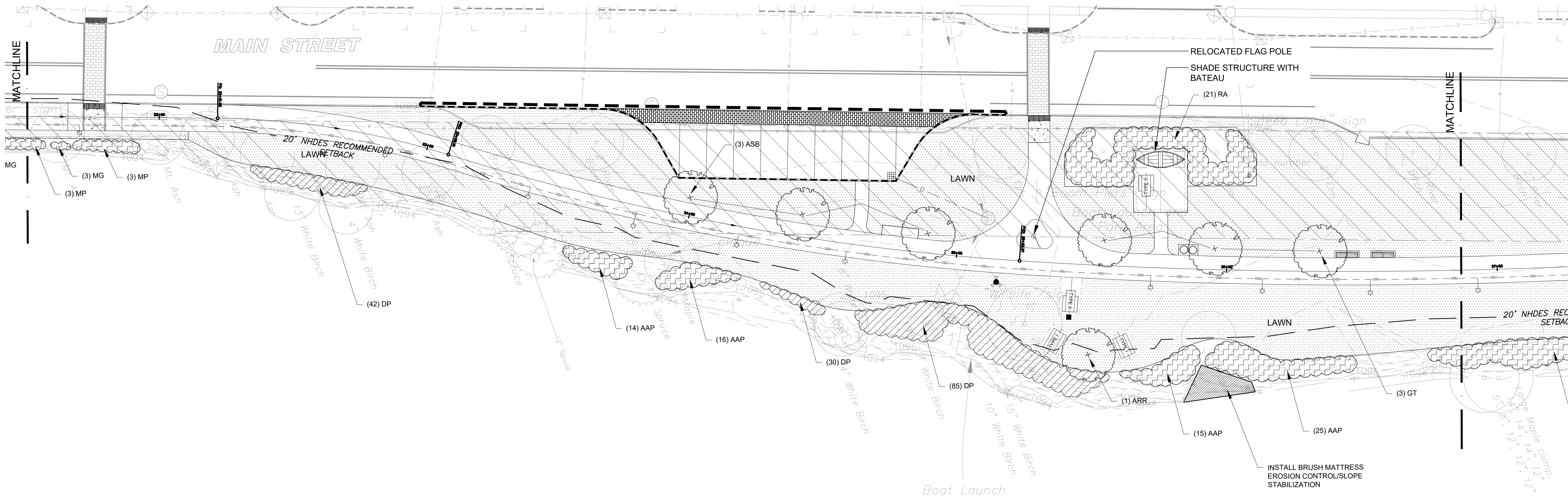
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△	9/24/19	PRELIMINARY DESIGN SUBM.
REV. NO.	REV. DATE	REVISION DESCRIPTION

IRONWOOD PROJECT NO.	I7078.0
SCALE	1"=20'-0"
DESIGN BY	J. HYLAND, J.MARTEL
DRAWN BY	J.MARTEL, J.COLLOPY
CHECKED BY	J.HYLAND
DATE	AUGUST, 2018



L2.4

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NOTES

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Preliminary Design Submission

Berlin Riverwalk

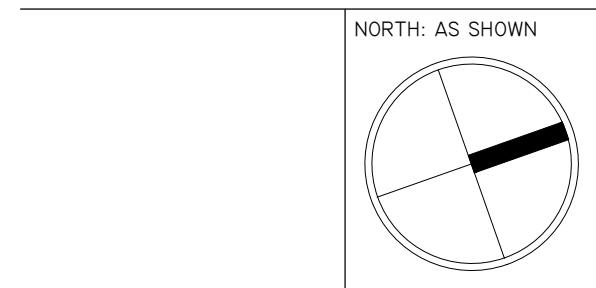
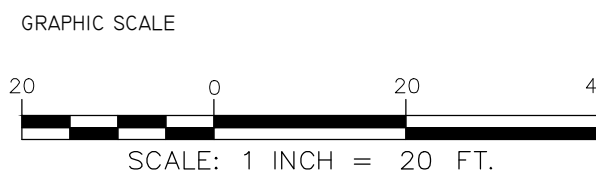
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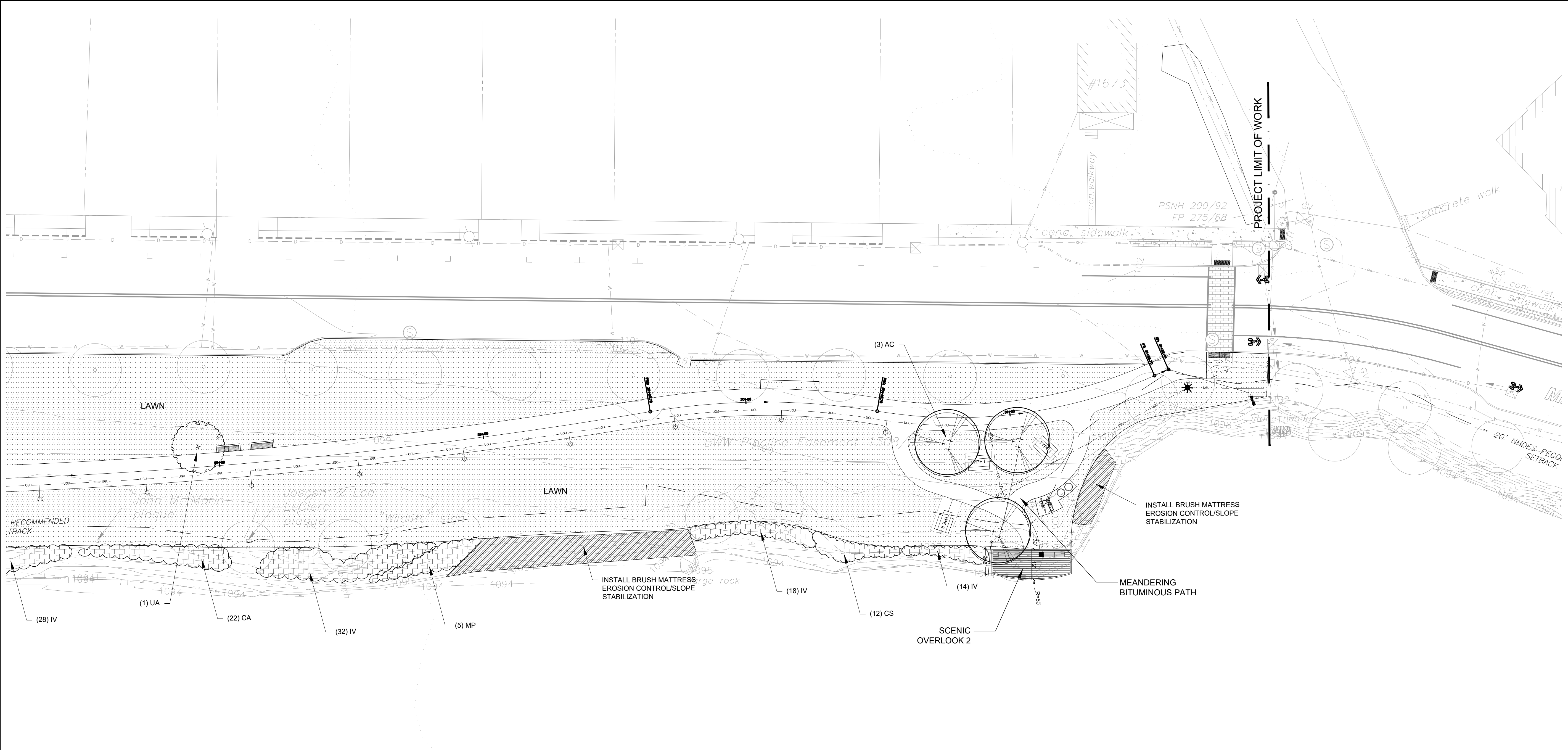
LANDSCAPE PLAN

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CHECKED BY	J.HYLAND	
DATE	AUGUST, 2018	



L2.5

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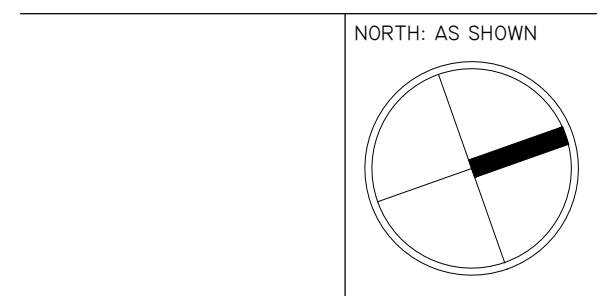
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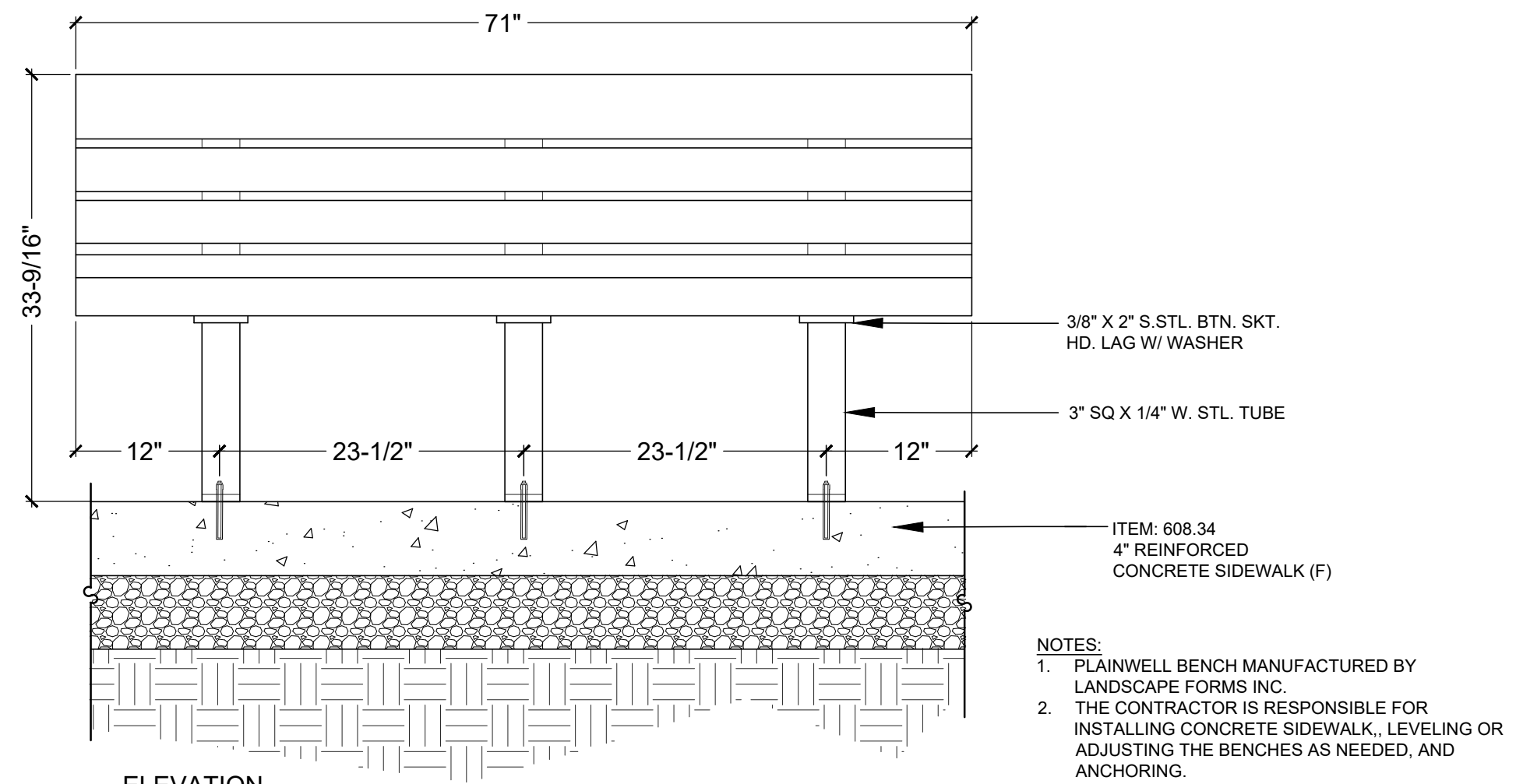
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LANDSCAPE PLAN

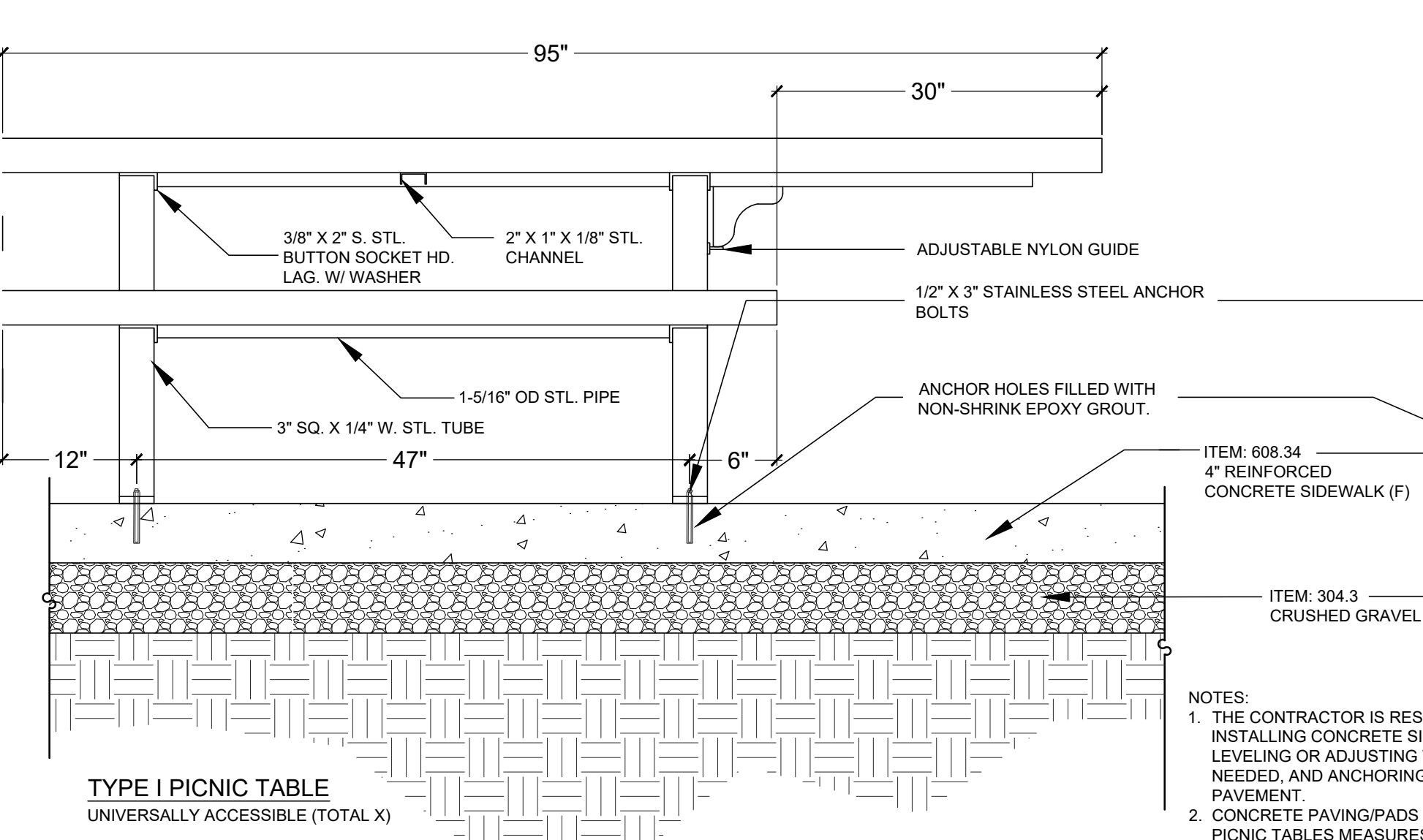
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GRAPHIC SCALE		
20	0	20 4
SCALE: 1 INCH = 20 FT.		





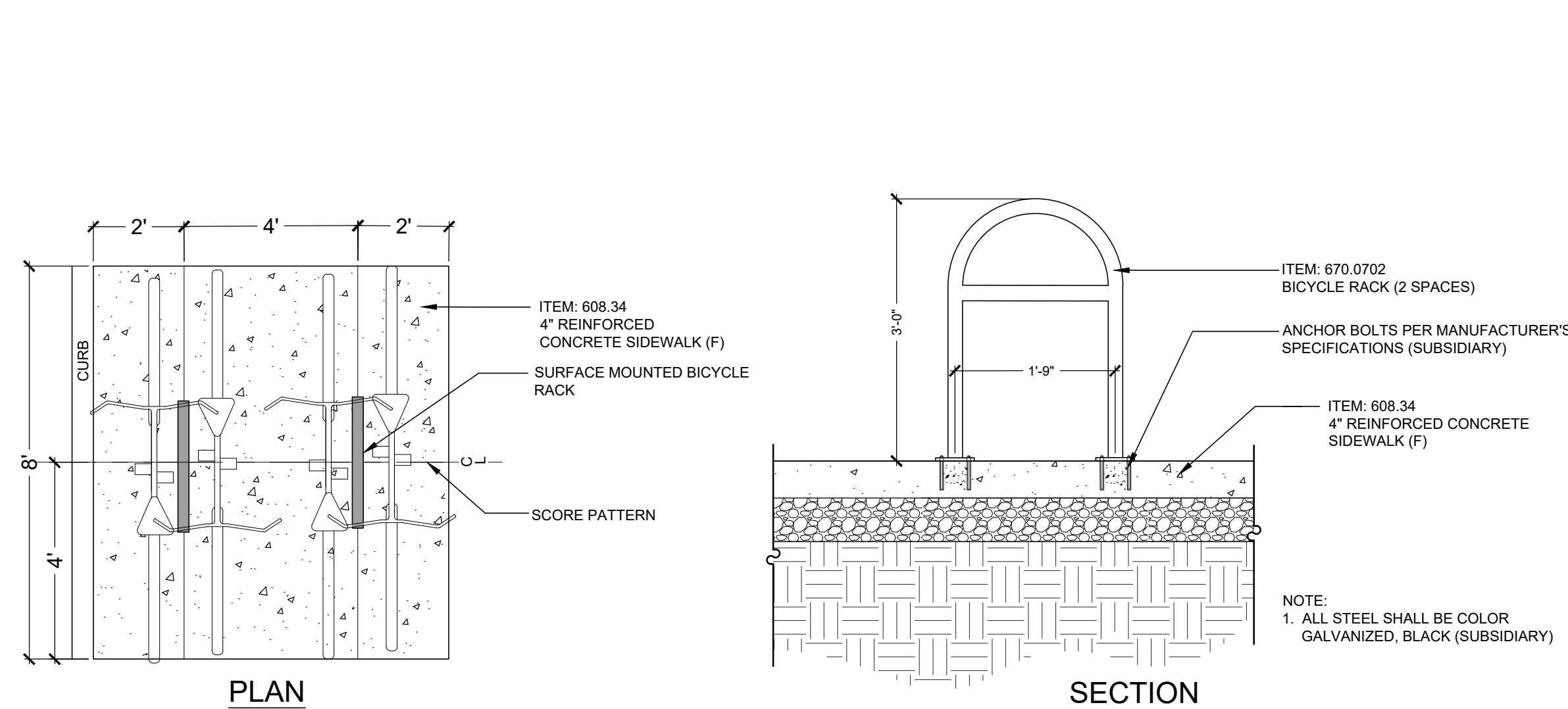
Item 661 - Bench

Not to Scale



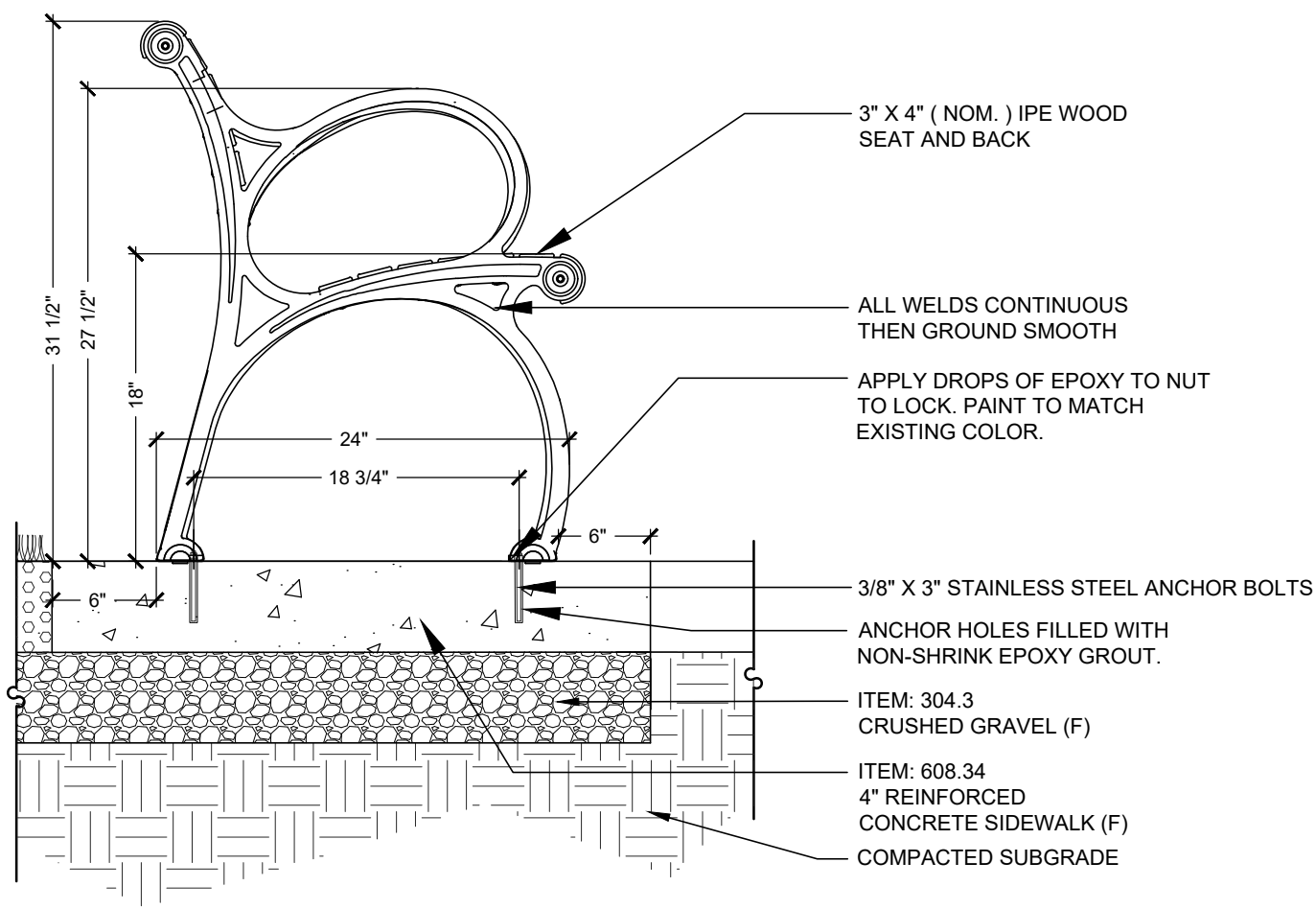
Item 662 - Picnic Table

Not to Scale



Item: 670.0702 - Bicycle Rack (2 Spaces)

Not to Scale

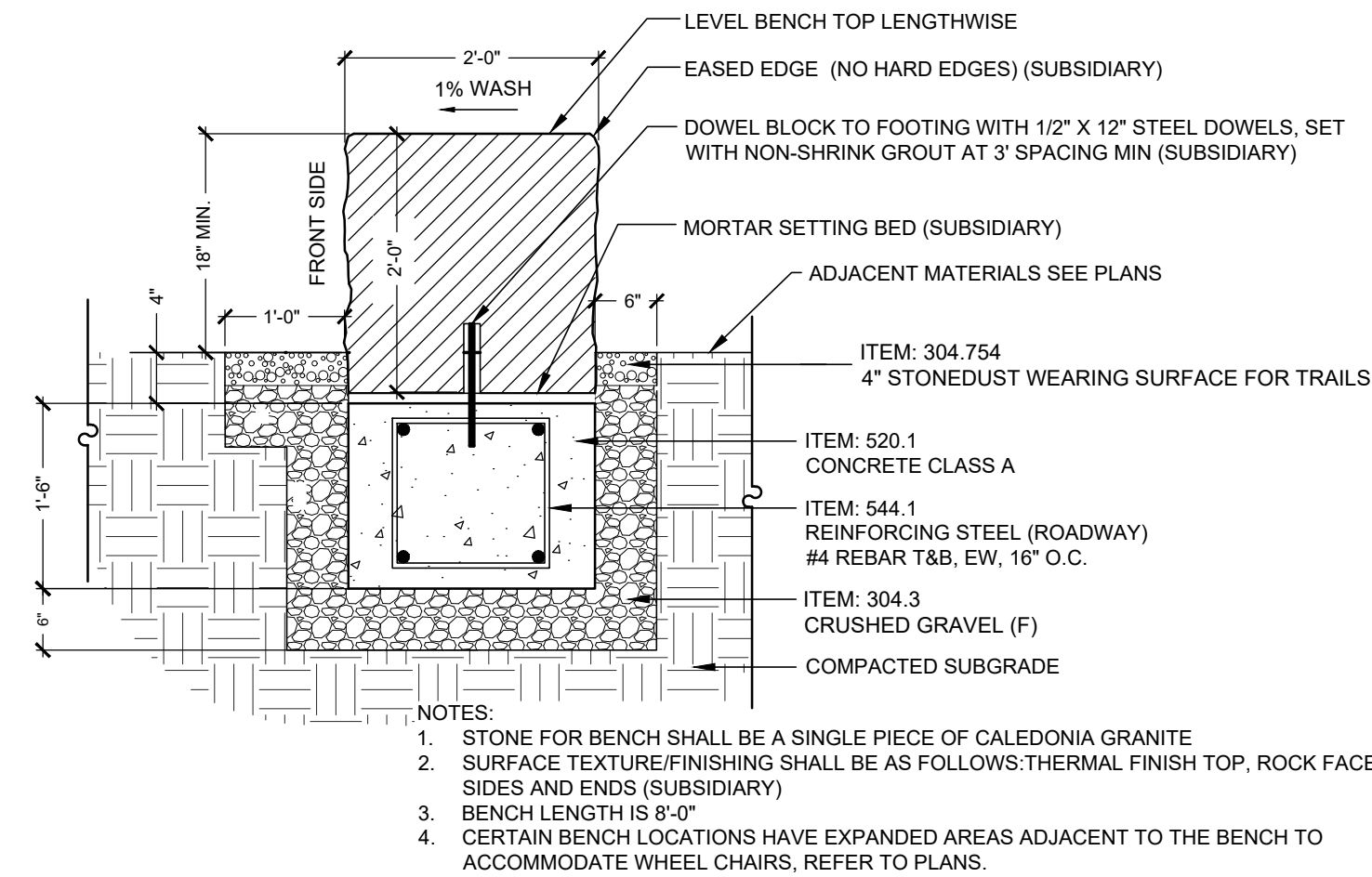


SECTION

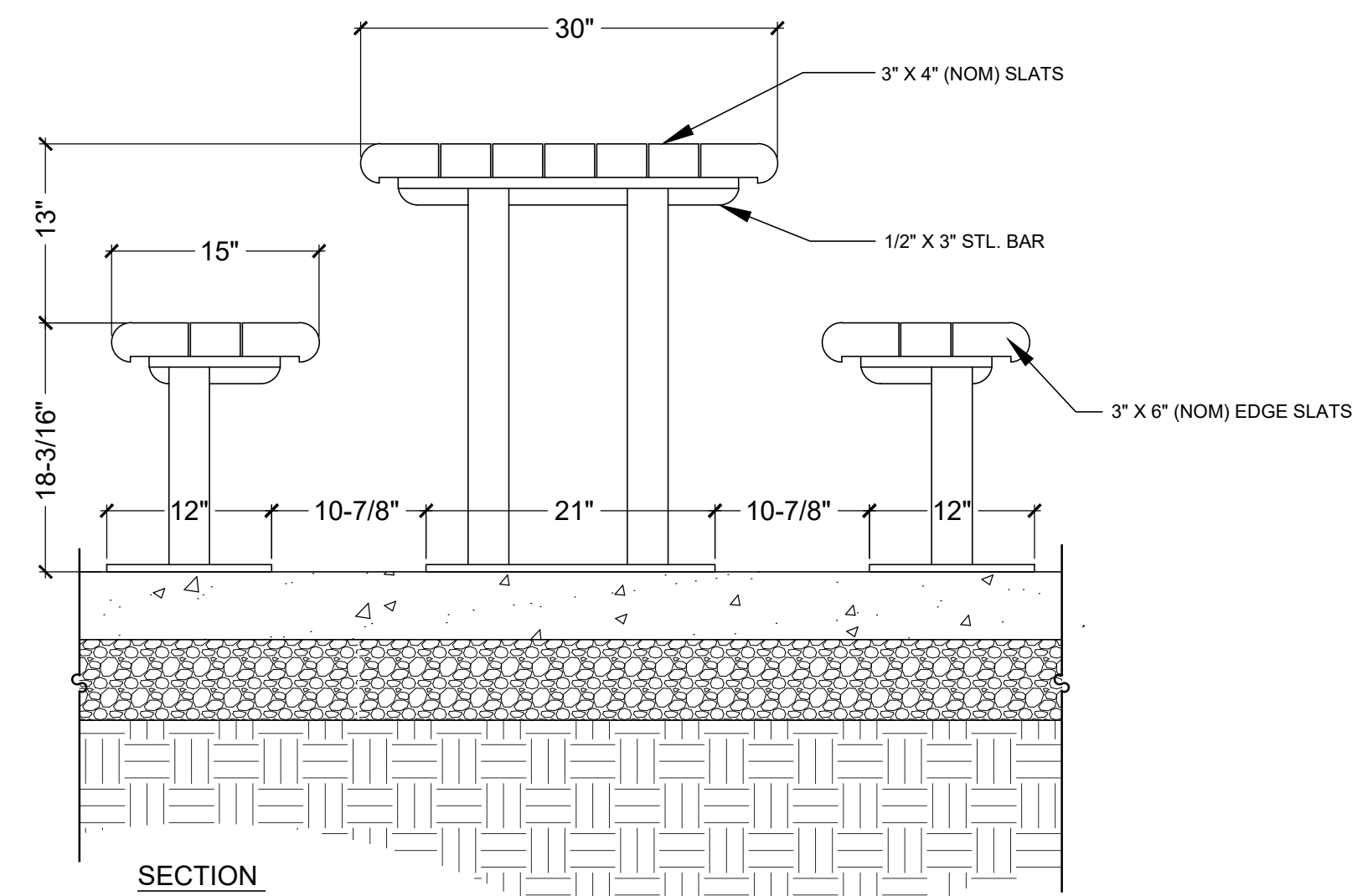
1
L3.0

Item: 661.26 - Granite Block Bench, 8 FT Long

Not to Scale



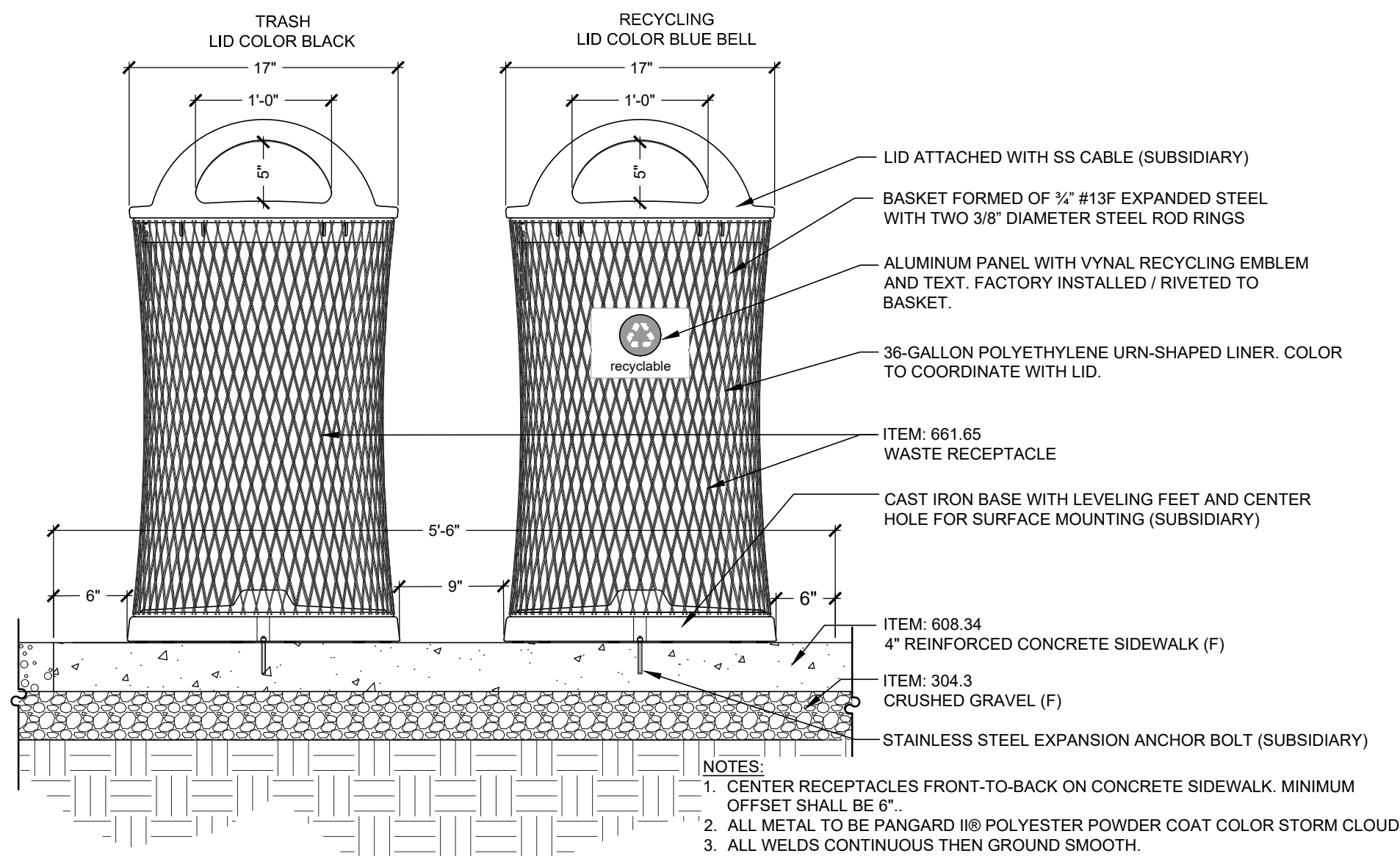
- NOTES:
1. STONE FOR BENCH SHALL BE A SINGLE PIECE OF CALEDONIA GRANITE.
 2. SURFACE TEXTURE/FINISHING SHALL BE AS FOLLOWS:THERMAL FINISH TOP, ROCK FACE SIDES AND ENDS (SUBSIDIARY)
 3. BENCH LENGTH IS 8'-0"
 4. CERTAIN BENCH LOCATIONS HAVE EXPANDED AREAS ADJACENT TO THE BENCH TO ACCOMMODATE WHEEL CHAIRS, REFER TO PLANS.



SECTION

2
L3.0

3
L3.0



- NOTES:
1. CENTER RECEPTACLES FRONT-TO-BACK ON CONCRETE SIDEWALK. MINIMUM OFFSET SHALL BE 6".
 2. ALL METAL TO BE PANGARD III® POLYESTER POWDER COAT COLOR STORM CLOUD.
 3. ALL WELDS CONTINUOUS THEN GROUND SMOOTH.

Item: 661.65 - Waste Receptacle

Not to Scale

4
L3.0

5
L3.0

SHEET TITLE

**LANDSCAPE
DETAILS**

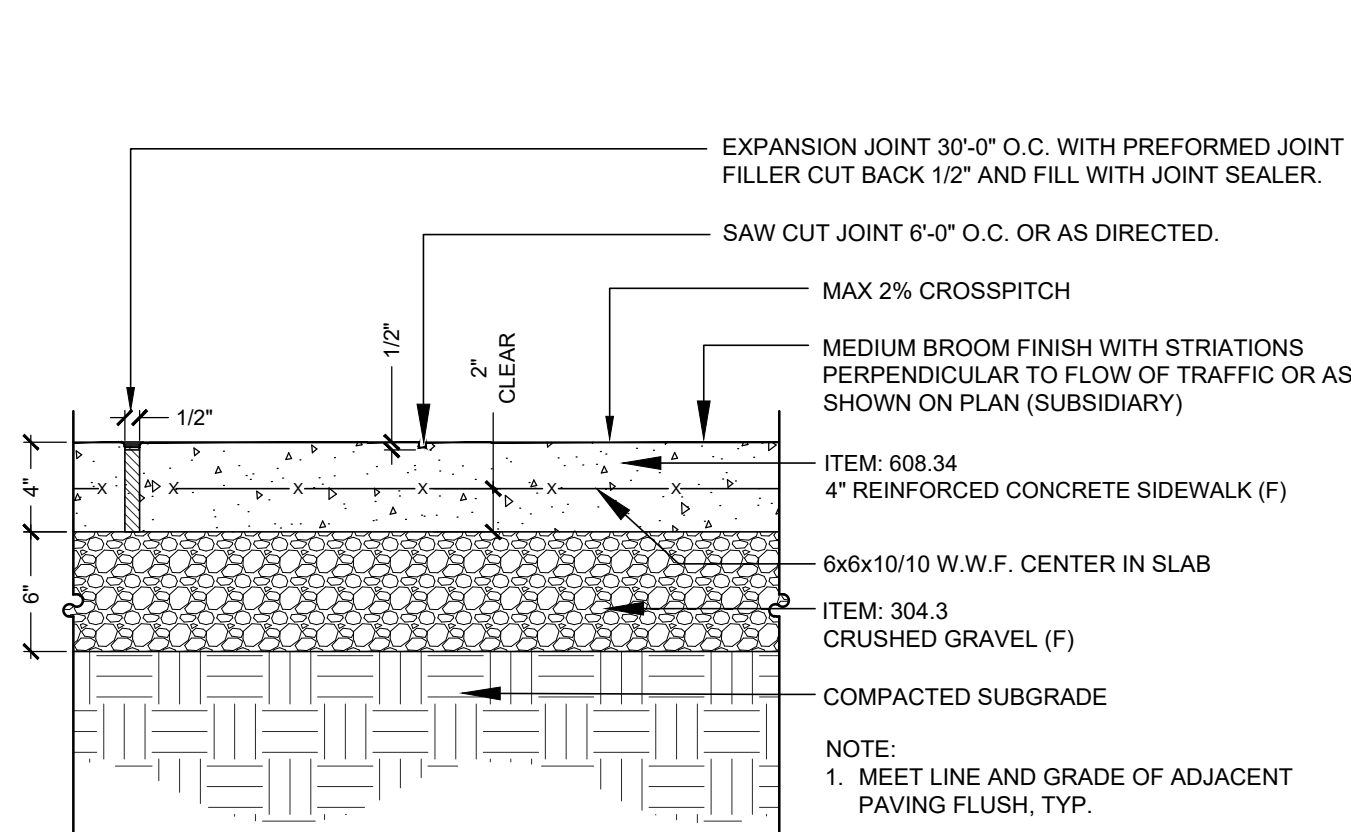
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△	9/20/19	PRELIMINARY DESIGN SUBM.
REV. NO.	REV. DATE	REVISION DESCRIPTION
IRONWOOD PROJECT NO.	17078.0	
SCALE	AS NOTED	
DESIGN BY	J. HYLAND, J. MARTEL	
DRAWN BY	J. MARTEL, J. COLLOPY	
CHECKED BY	J. HYLAND	
DATE	AUGUST, 2018	
GRAPHIC SCALE		

NORTH: AS SHOWN

L3.0

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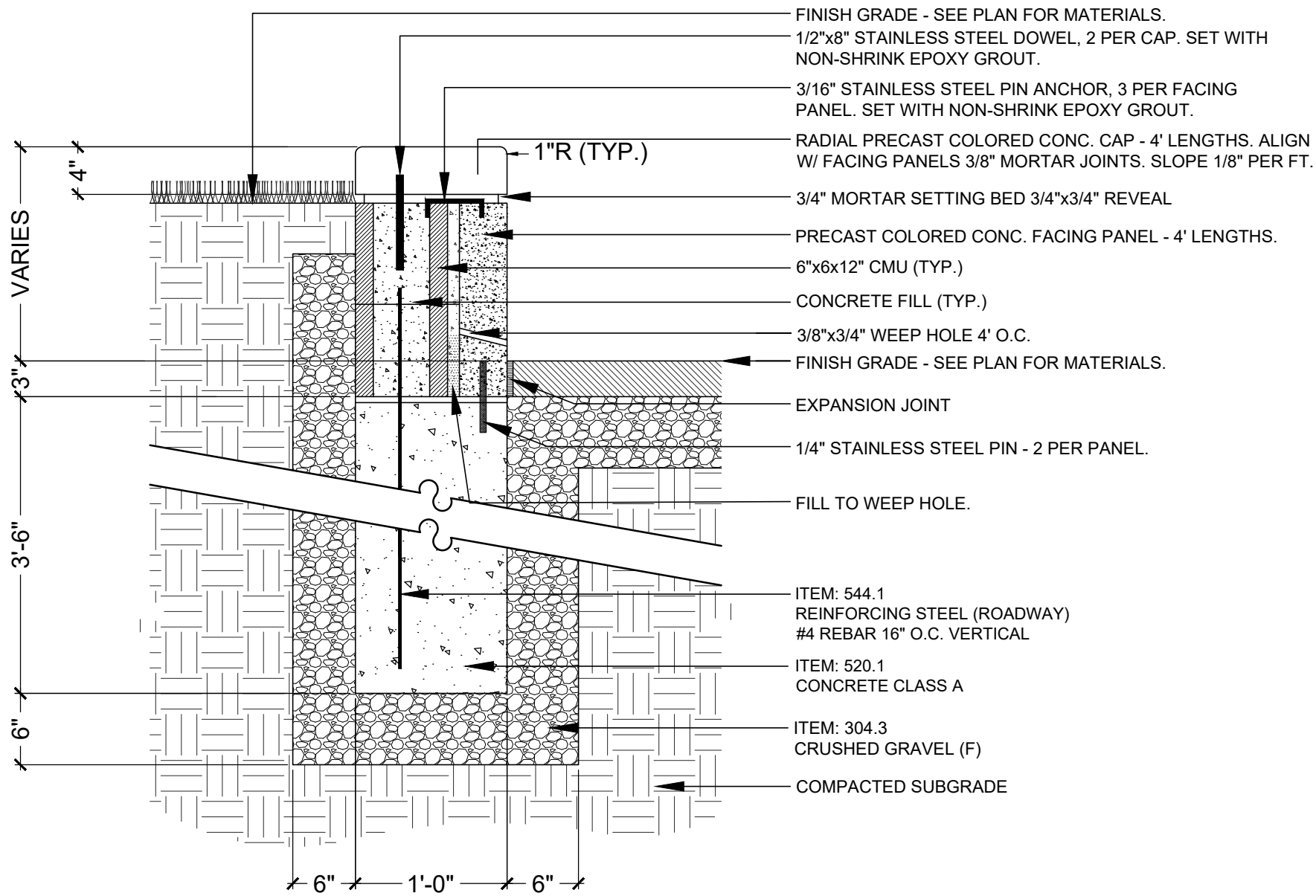


Item: 608.34 - 4" Reinforced Concrete Sidewalk (F)

Not to Scale

©IRONWOOD 2019

1
L4.0

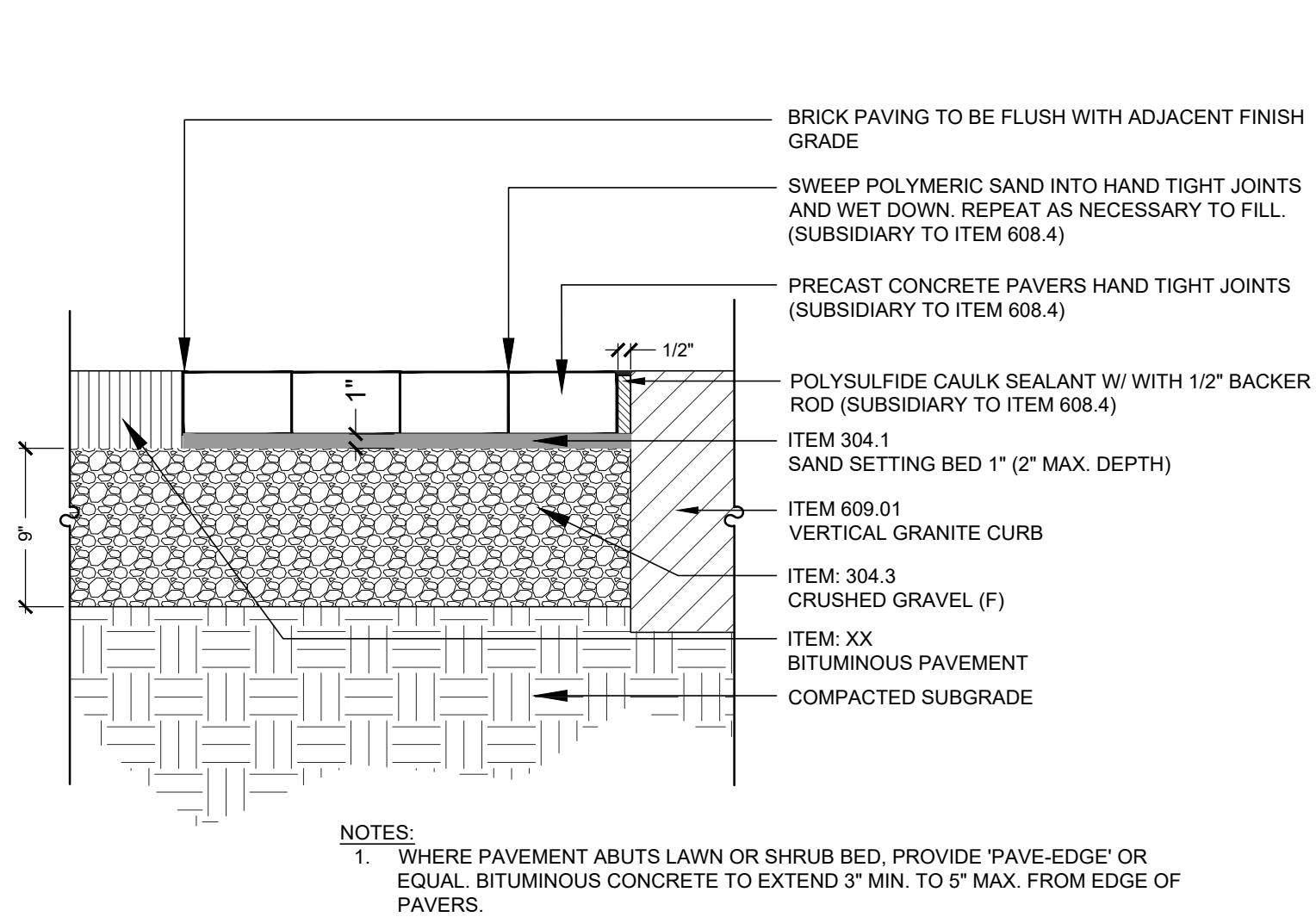


Precast Concrete Seat Wall

Not to Scale

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2
L4.0

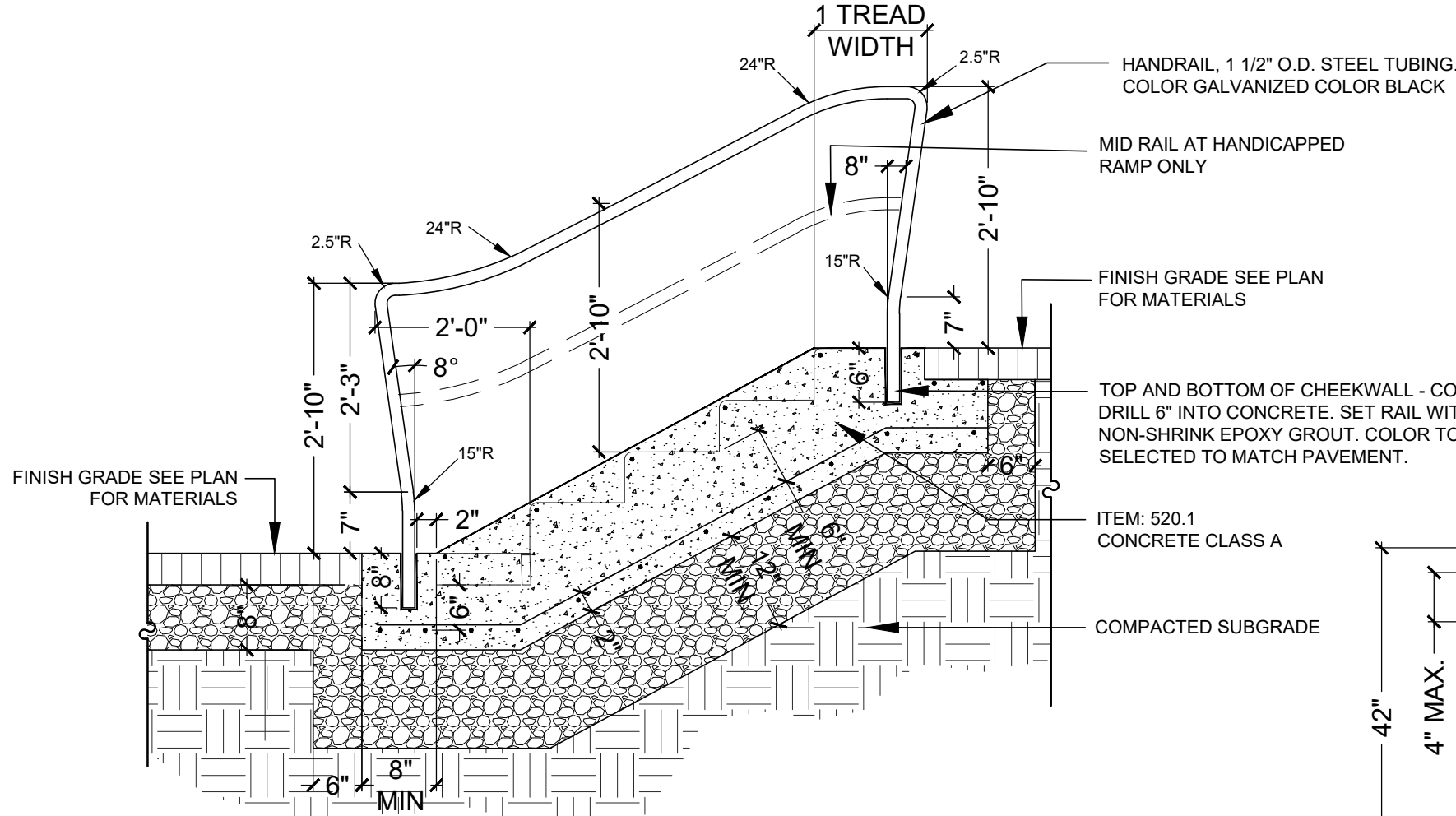


Concrete Unit Paver Accent

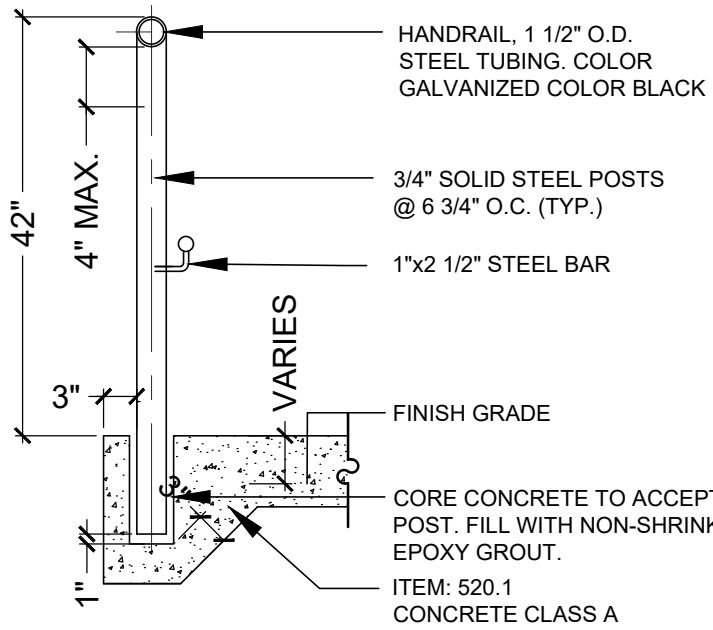
Not to Scale

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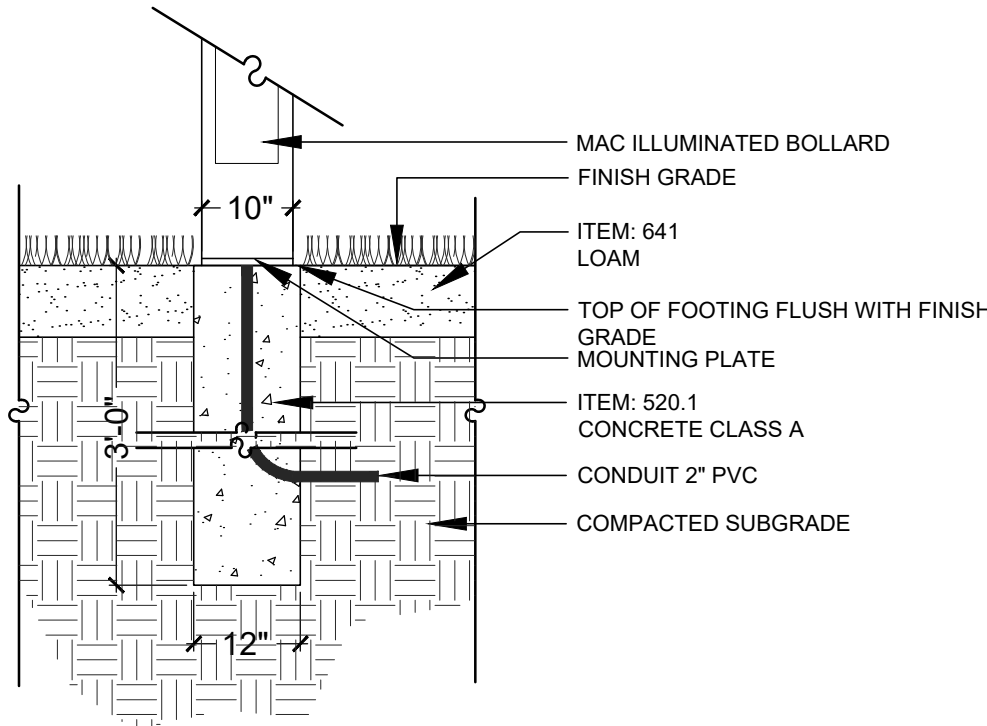
3
L4.0



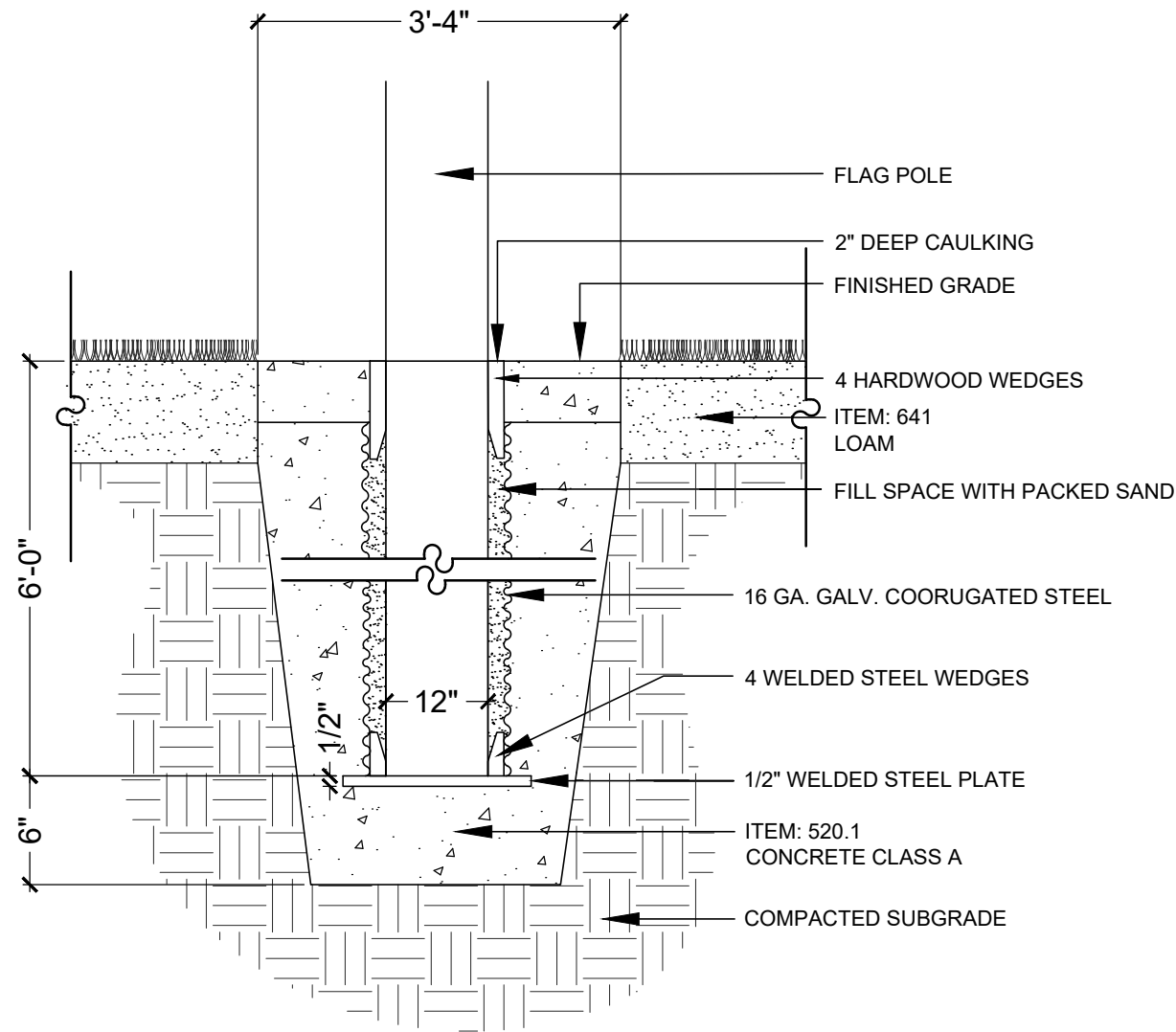
SECTION THROUGH CHEEKWALL WITH HANDRAIL



HANDRAIL SECTION AT RAMP



BOLLARD LIGHT

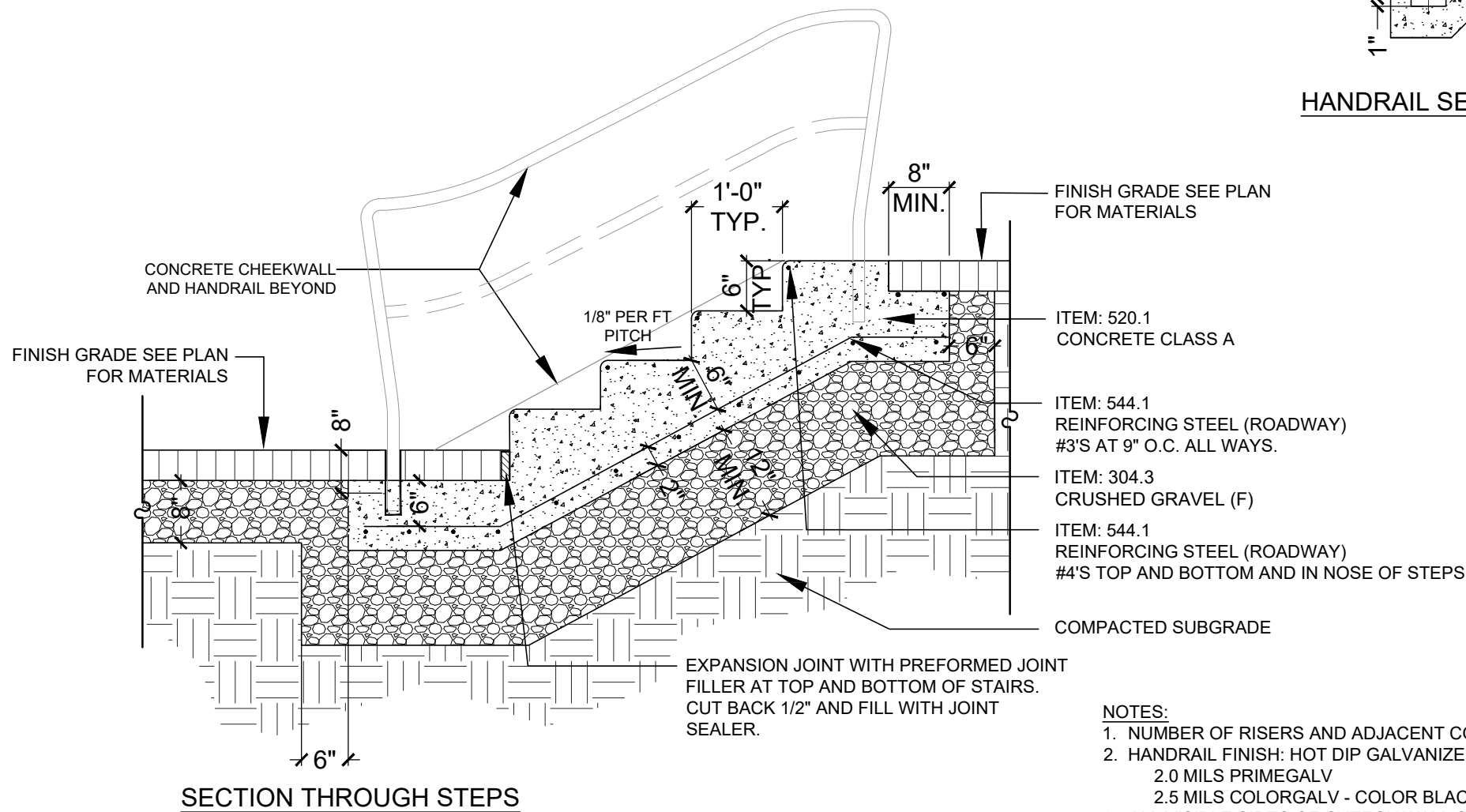


Reset Flagpole

Not to Scale

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5
L4.0



SECTION THROUGH STEPS

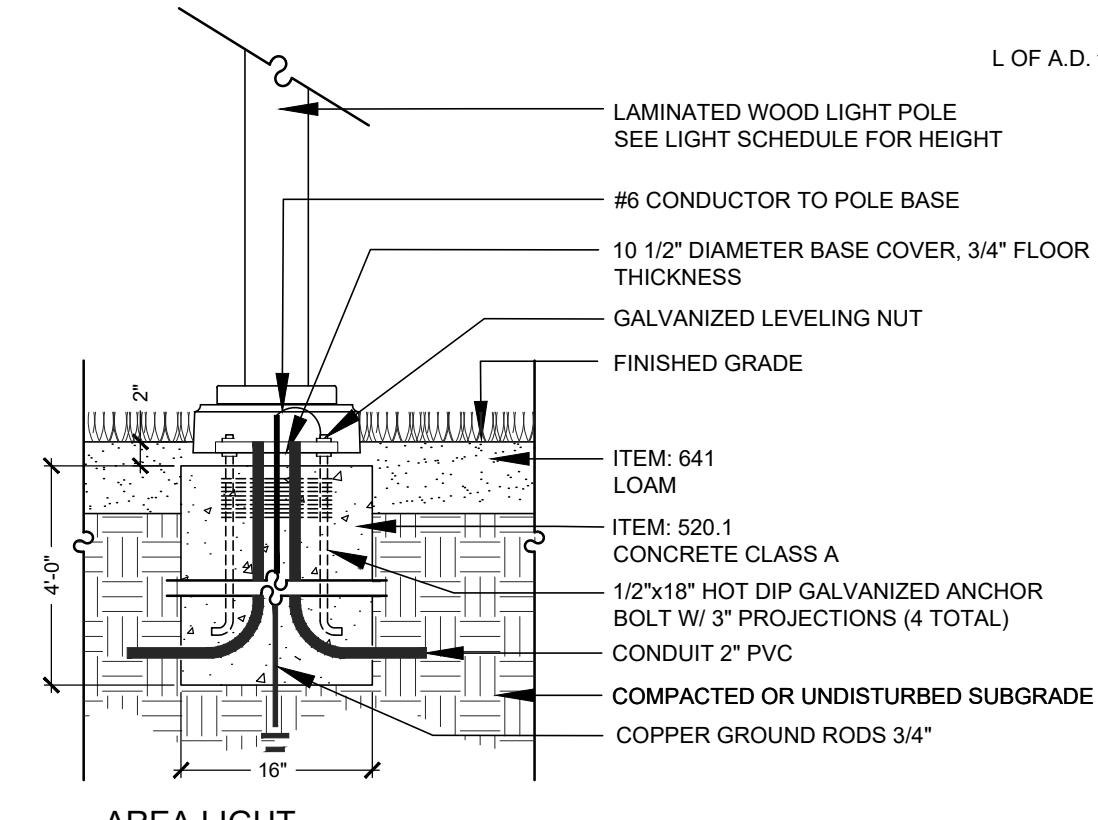
- NOTES:
1. NUMBER OF RISERS AND ADJACENT CONDITIONS VARY, SEE PLANS.
 2. HANDRAIL FINISH: HOT DIP GALVANIZED 2.0 MILS PRIMEGALV 2.5 MILS COLORGALV - COLOR BLACK BY DUNCAN GALVANIZING
 3. ALL VISIBLE SIDES OF CHEEK WALL SHALL HAVE A FINISHED SURFACE.

Concrete Steps

Not to Scale

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4
L4.0

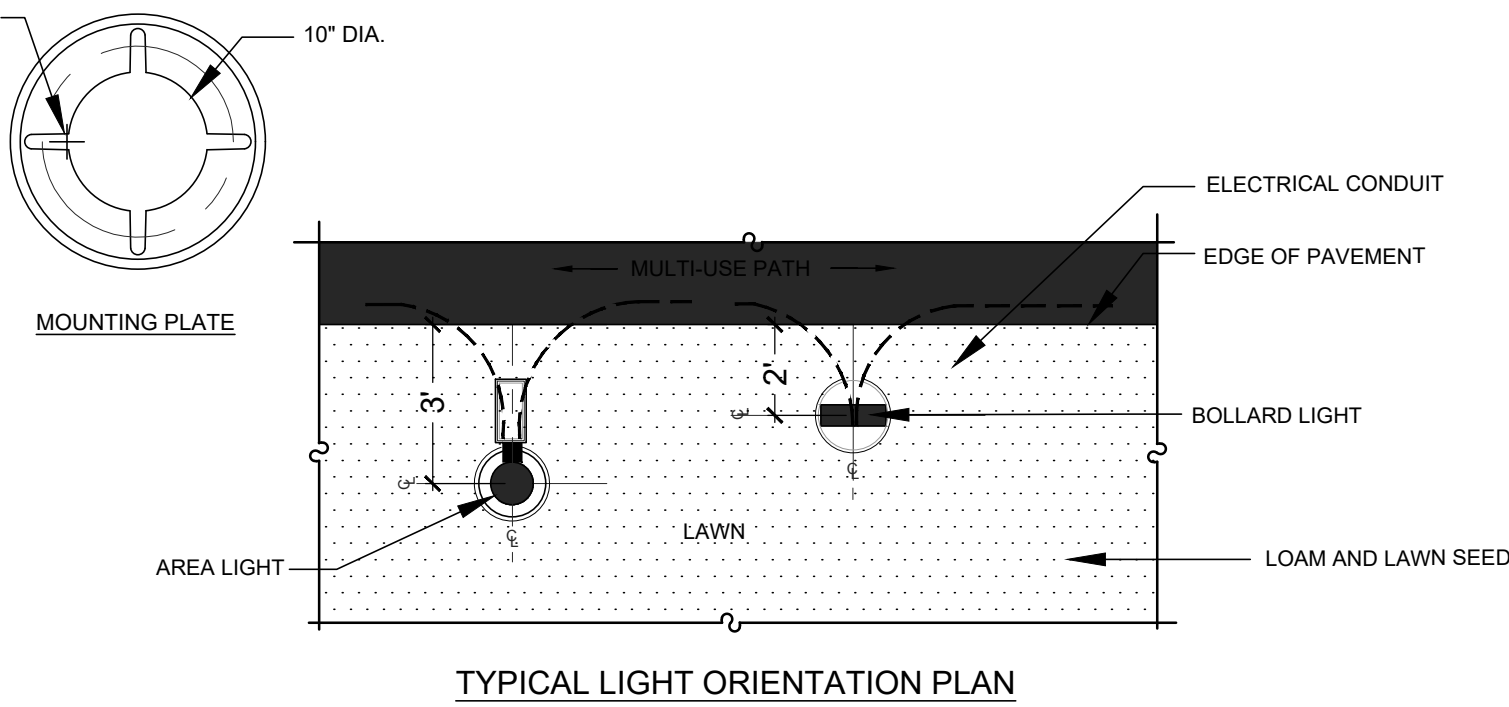


Light Fixture Footings

Not to Scale

©IRONWOOD 2019

6
L4.0



TYPICAL LIGHT ORIENTATION PLAN

- NOTES:
1. SEE SHEETS LX-LX FOR LIGHT LOCATIONS.
 2. ALL METAL TO BE FINISHED WITH A POLYESTER POWDER COAT-BLACK.

Preliminary Design Submission

SHEET TITLE

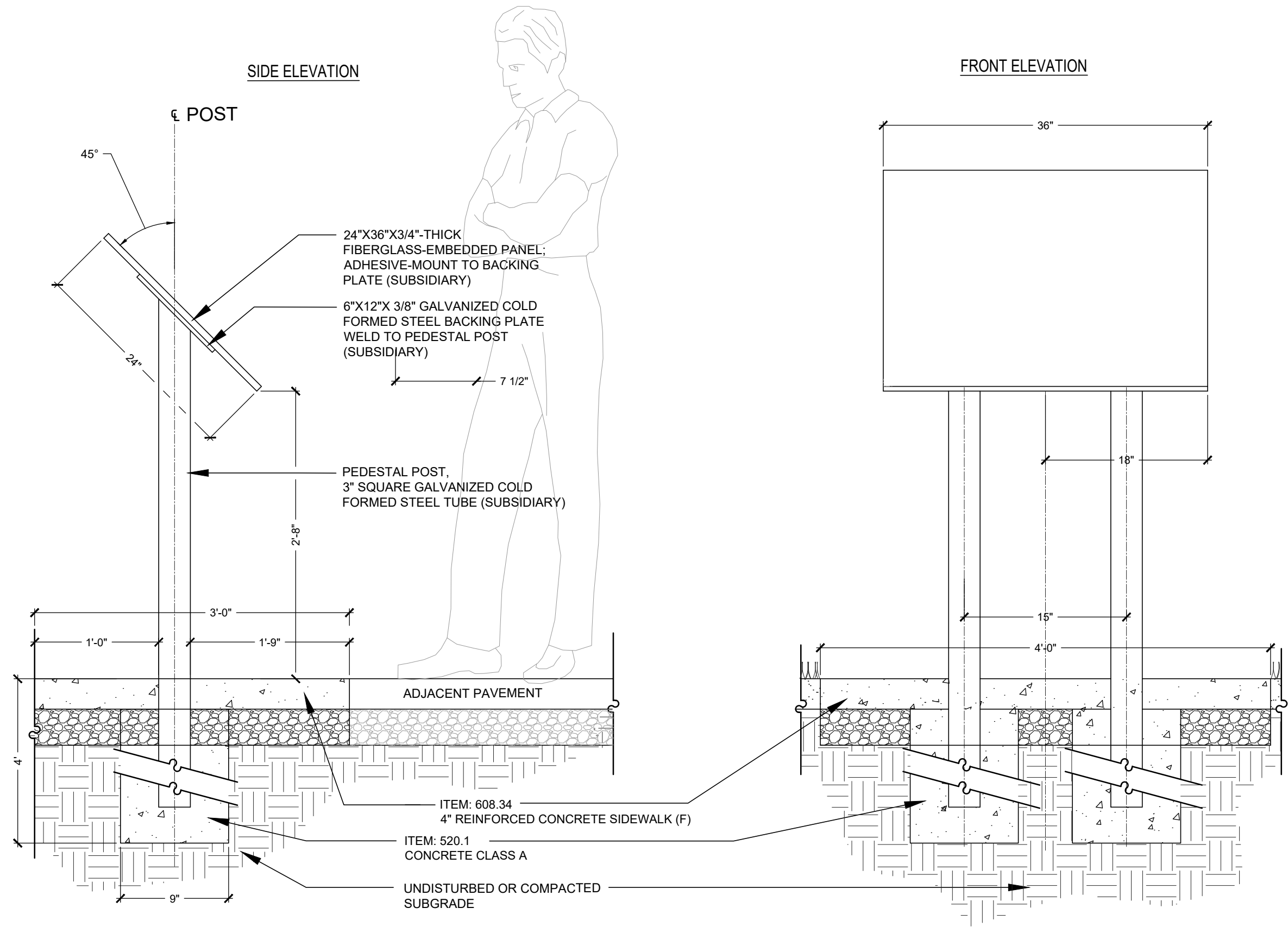
**LANDSCAPE
DETAILS**

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△	9/20/19	PRELIMINARY DESIGN SUBM.
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DESIGN BY	J. HYLAND, J. MARTEL	
DRAWN BY	J. MARTEL, J. COLLOPY	
CHECKED BY	J. HYLAND	
DATE	AUGUST, 2018	
GRAPHIC SCALE		

NORTH: AS SHOWN

L4.0

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Item: 661.001 - Interpretive Sign

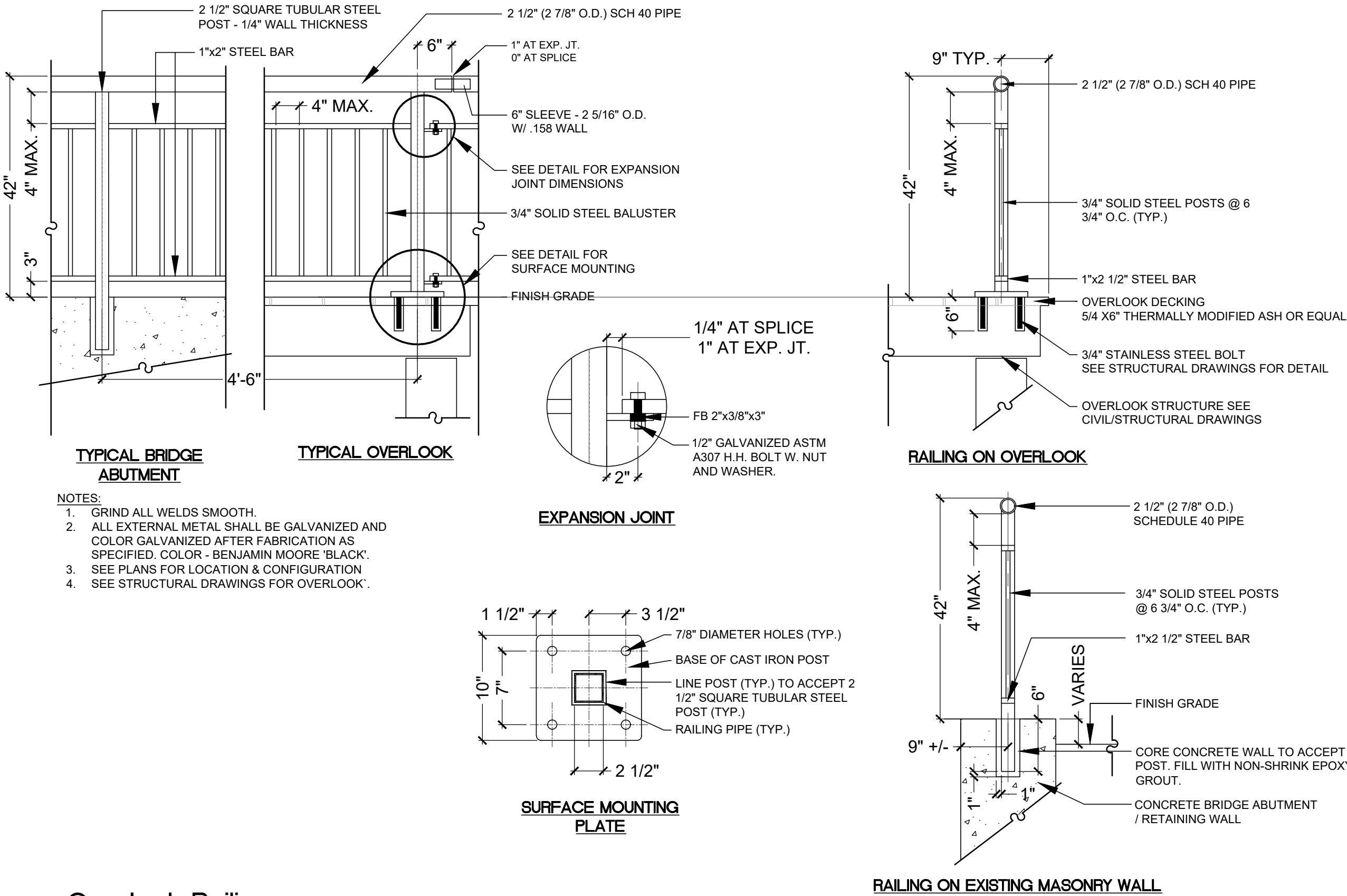
Not to Scale

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1
L5.0

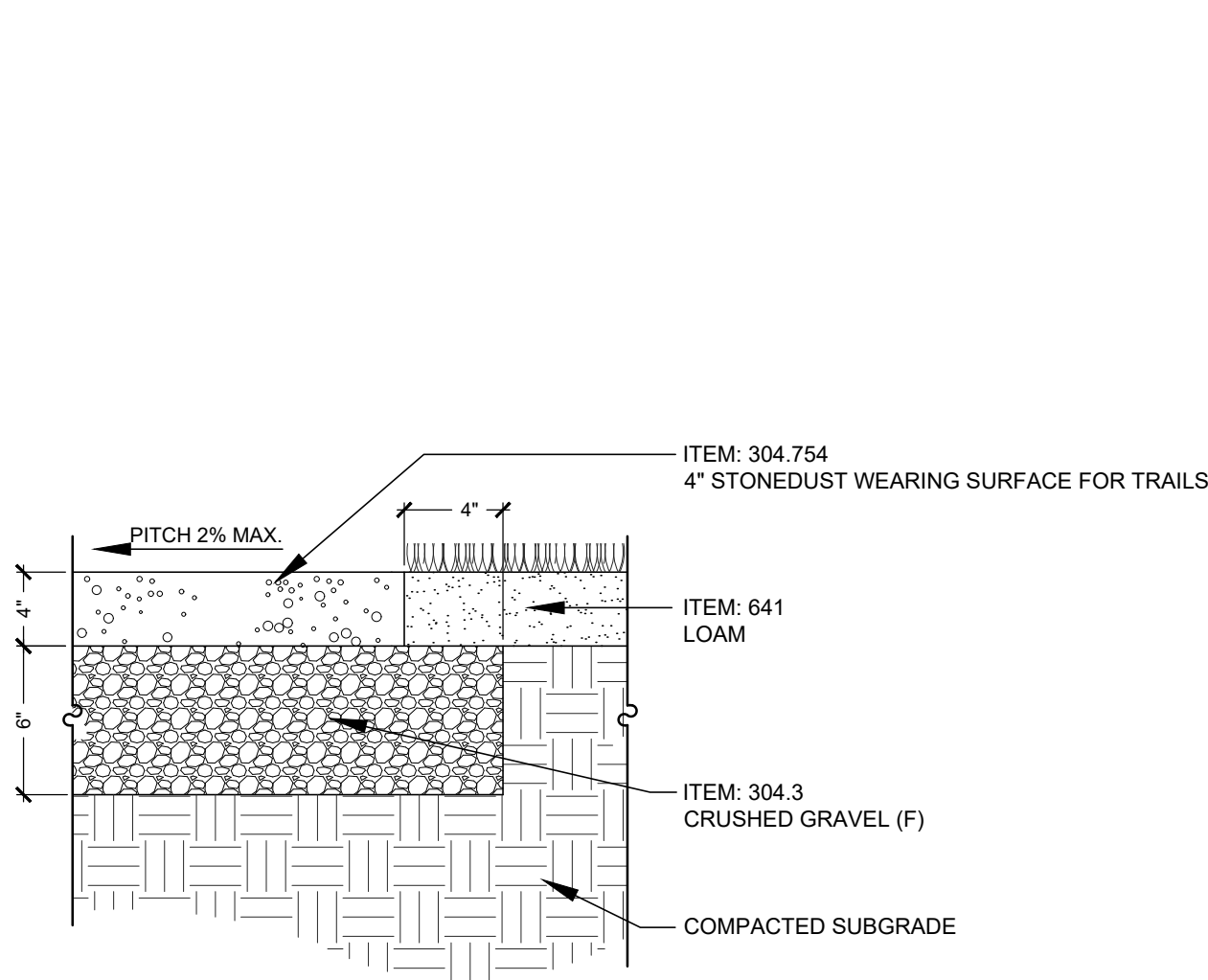
Item x - Overlook Railing

Not to Scale



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2
L5.0

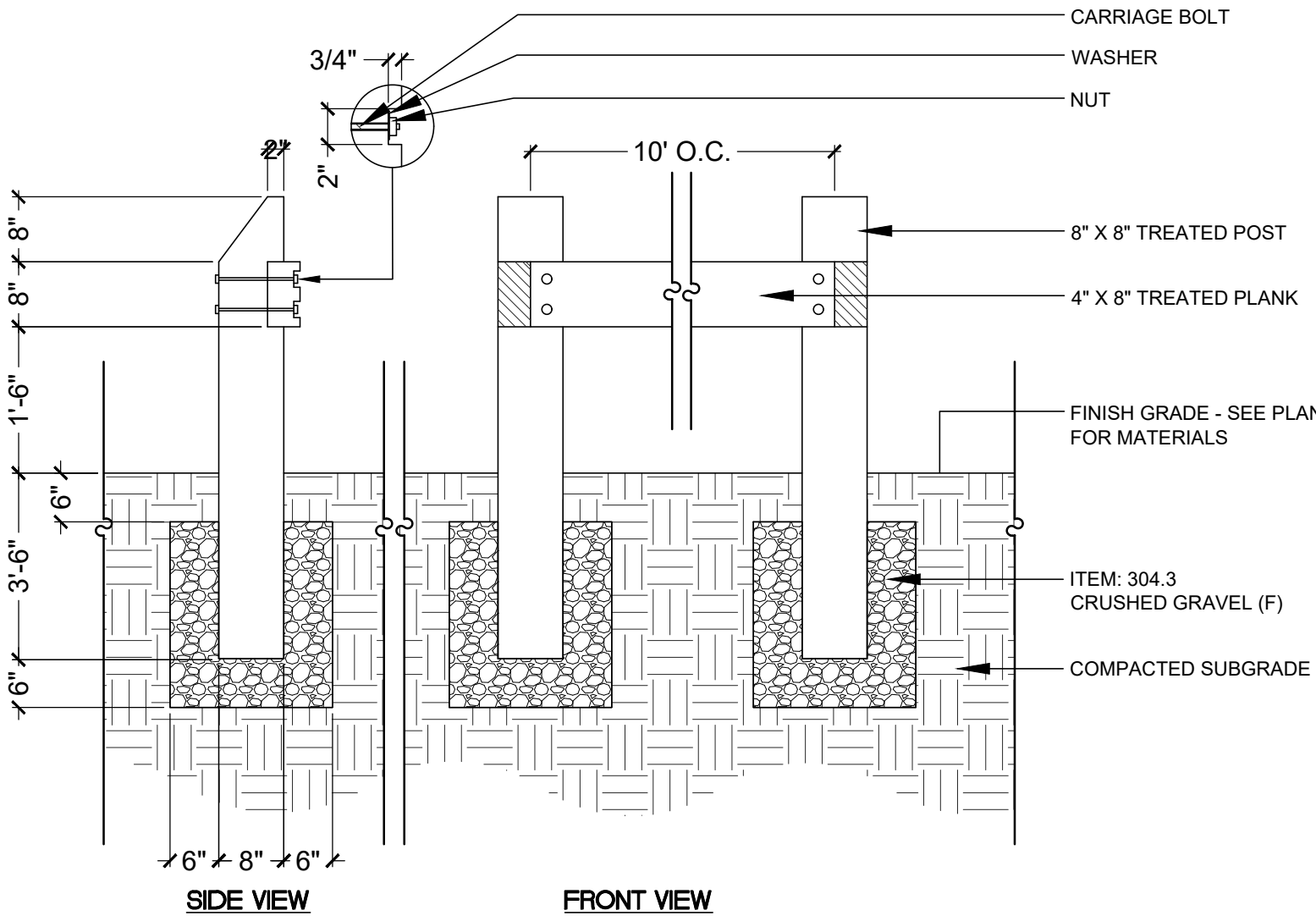


Item: 304.754 - 4" Stonedust Wearing Surface for Trails

Not to Scale

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3
L5.0

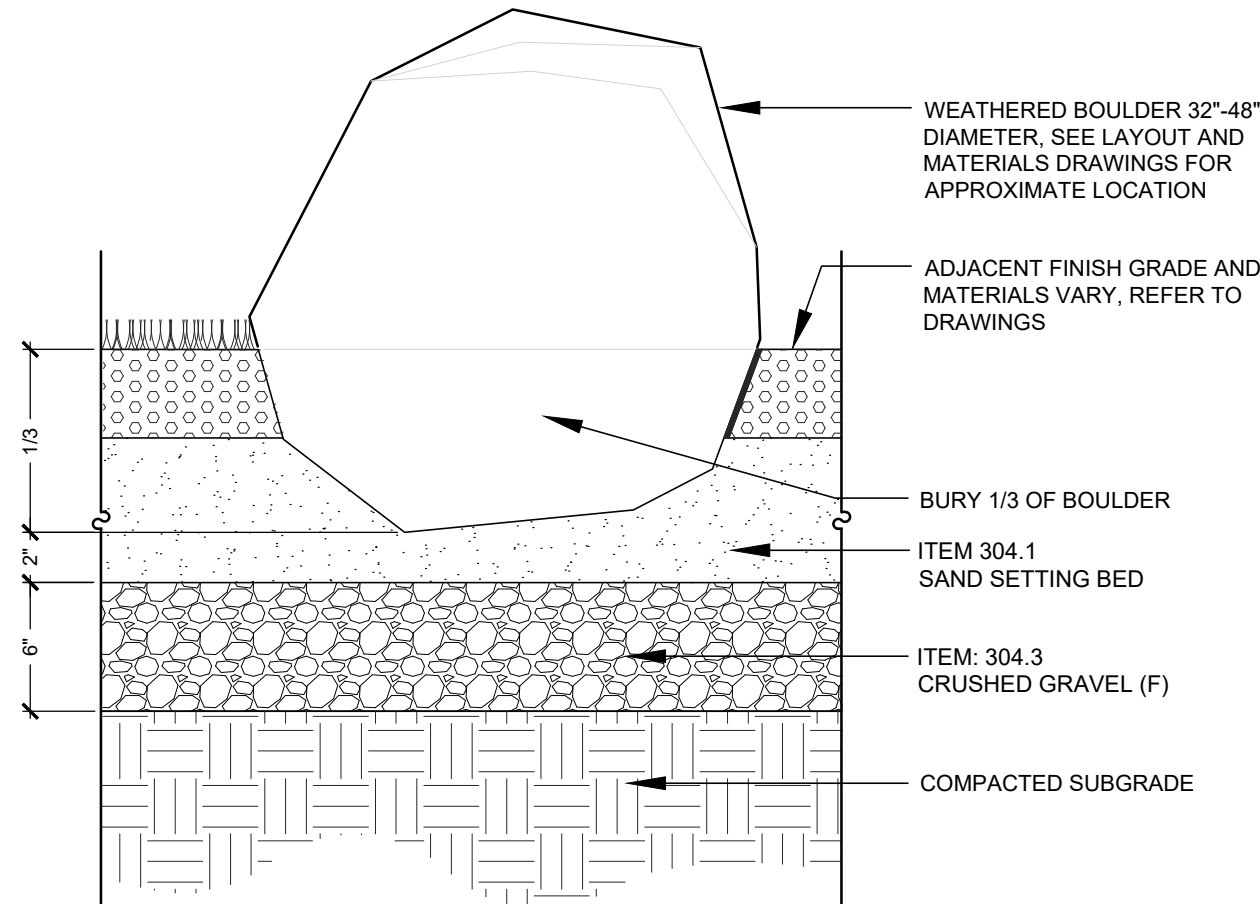


Wooden Guard Rail

Not to Scale

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4
L5.0



Weathered Boulder

Not to Scale

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5
L5.0

SHEET TITLE

LANDSCAPE DETAILS

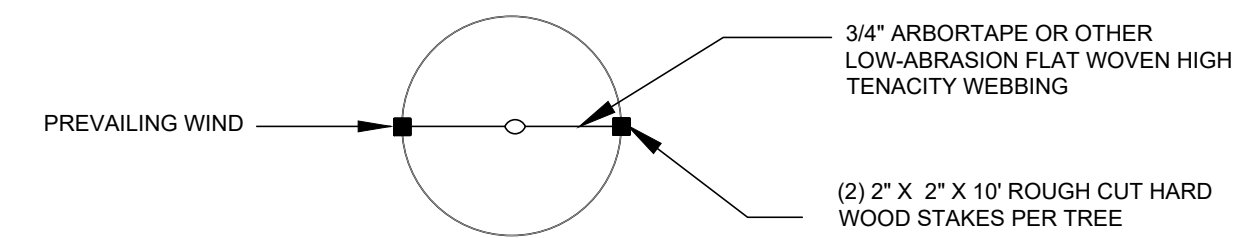
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1	9/20/19	PRELIMINARY DESIGN SUBM.
REV. NO.	REV. DATE	REVISION DESCRIPTION
IRONWOOD PROJECT NO. I7078.0		
SCALE AS NOTED		
DESIGN BY J. HYLAND, J. MARTEL		
DRAWN BY J. MARTEL, J. COLLOPY		
CHECKED BY J. HYLAND		
DATE AUGUST, 2018		
GRAPHIC SCALE		

NORTH: AS SHOWN

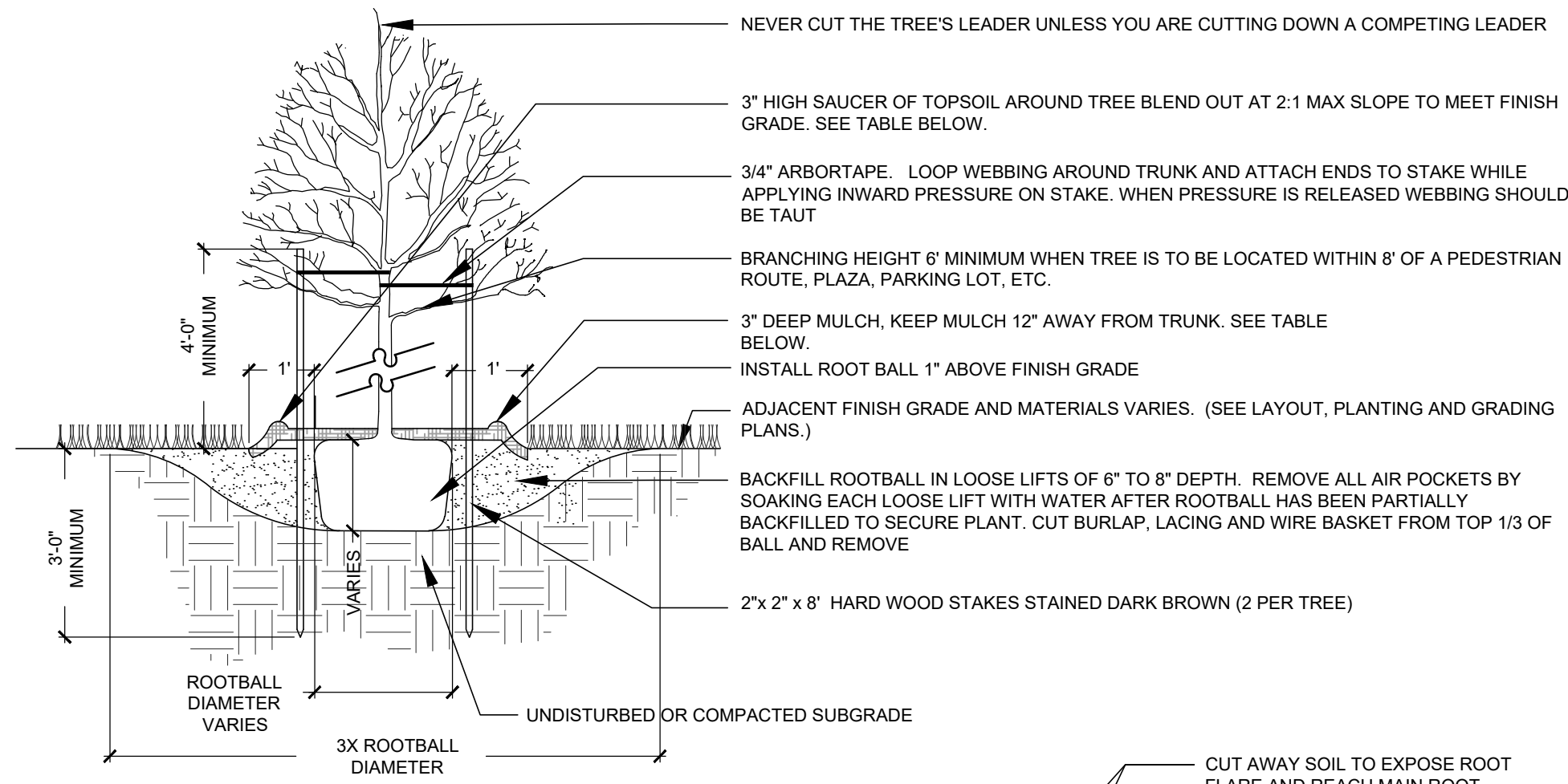
L5.0

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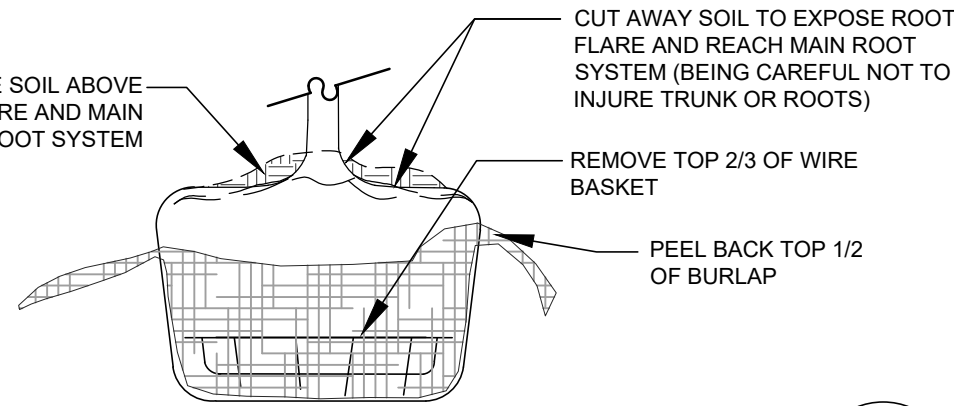
Preliminary Design Submission



STAKING PLAN
NTS



- NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
 2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.

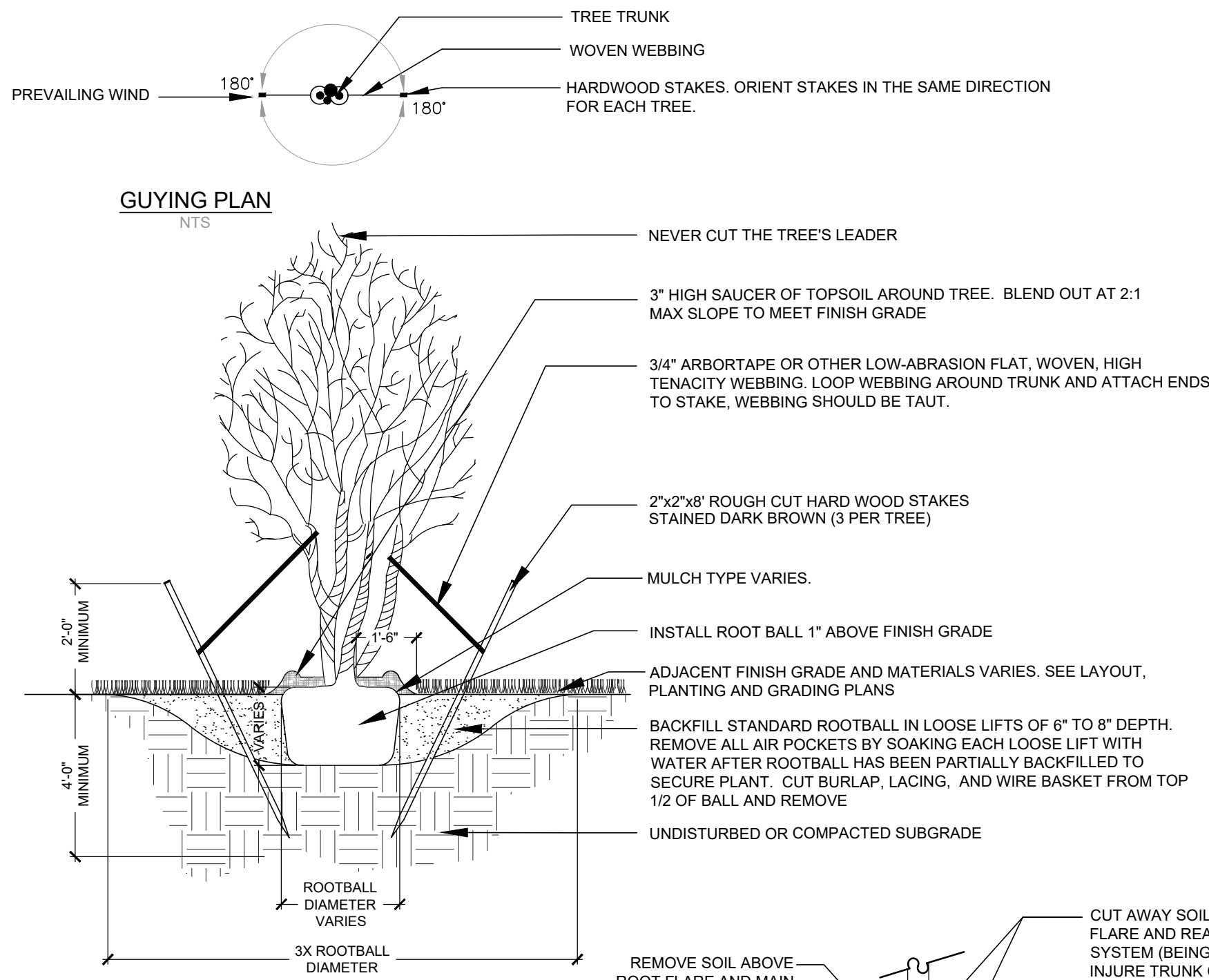


Deciduous Tree Planting

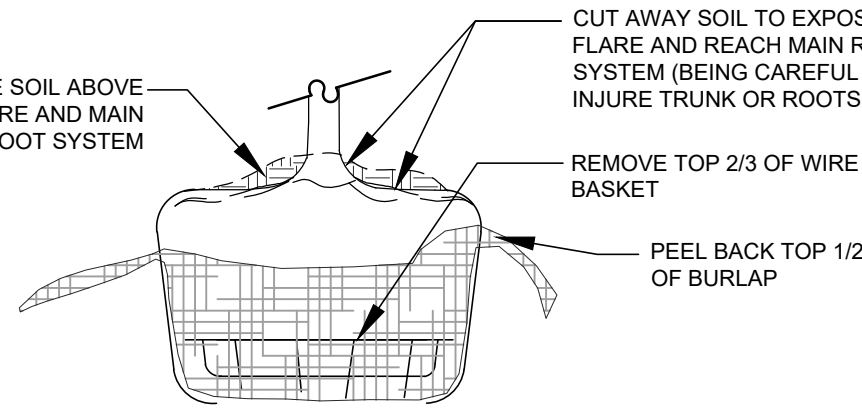
Not to Scale

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1
L6.0



- NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
 2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.

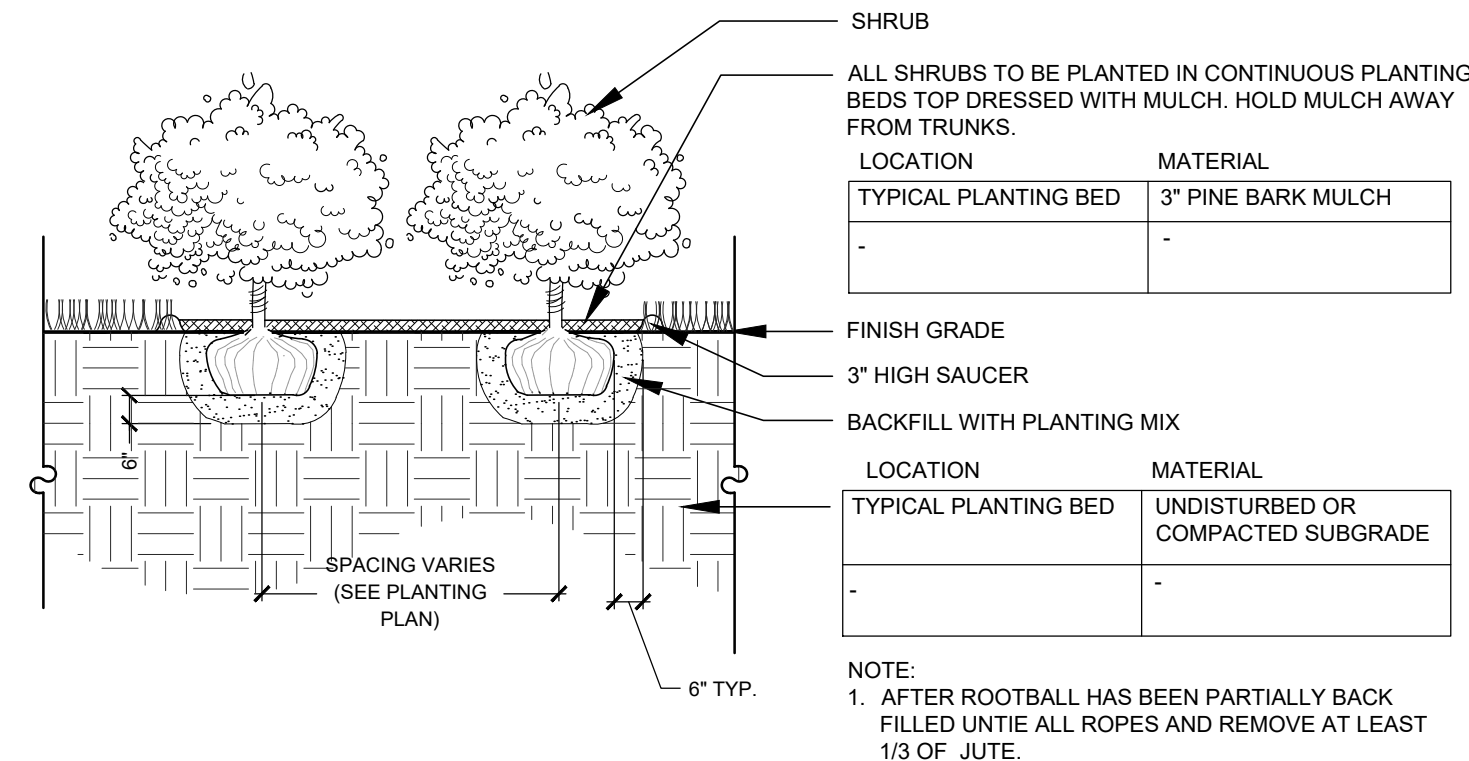


Multi-Stemmed Deciduous Tree Planting

Not to Scale

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2
L6.0



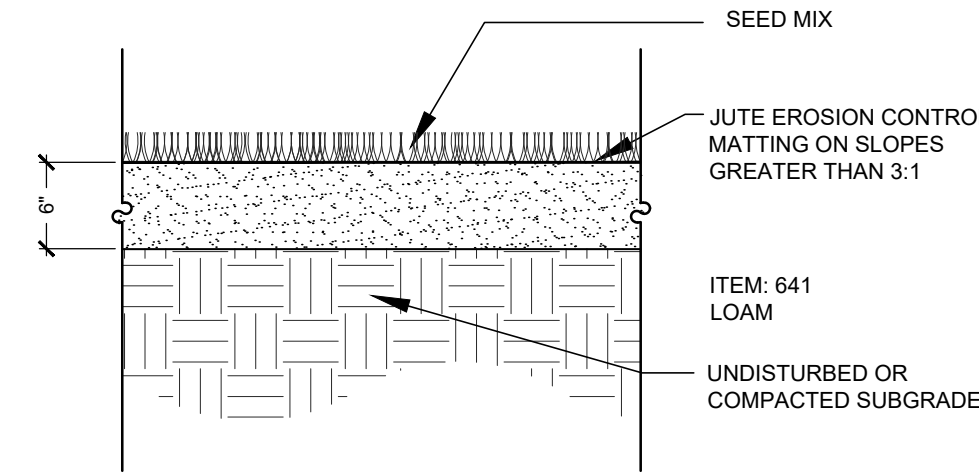
- NOTE:
1. AFTER ROOTBALL HAS BEEN PARTIALLY BACK FILLED UNTIE ALL ROPES AND REMOVE AT LEAST 1/3 OF JUTE.

Shrub Planting

Not to Scale

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3
L6.0



Type I, Lawn Percent by weight	Common Name	Scientific Name
40%	Celufine, Rebel II or Tribute Tall Fescue	
15%	Palmer II Perennial Ryegrass	
10%	Jamestown Chewings Fescue	
10%	Reliant Hard Fescue	
10%	Bredford Trifol	Arvens variety
5%	Switchgrass	
5%	White Clover	
5%	Redtop	Streaker variety

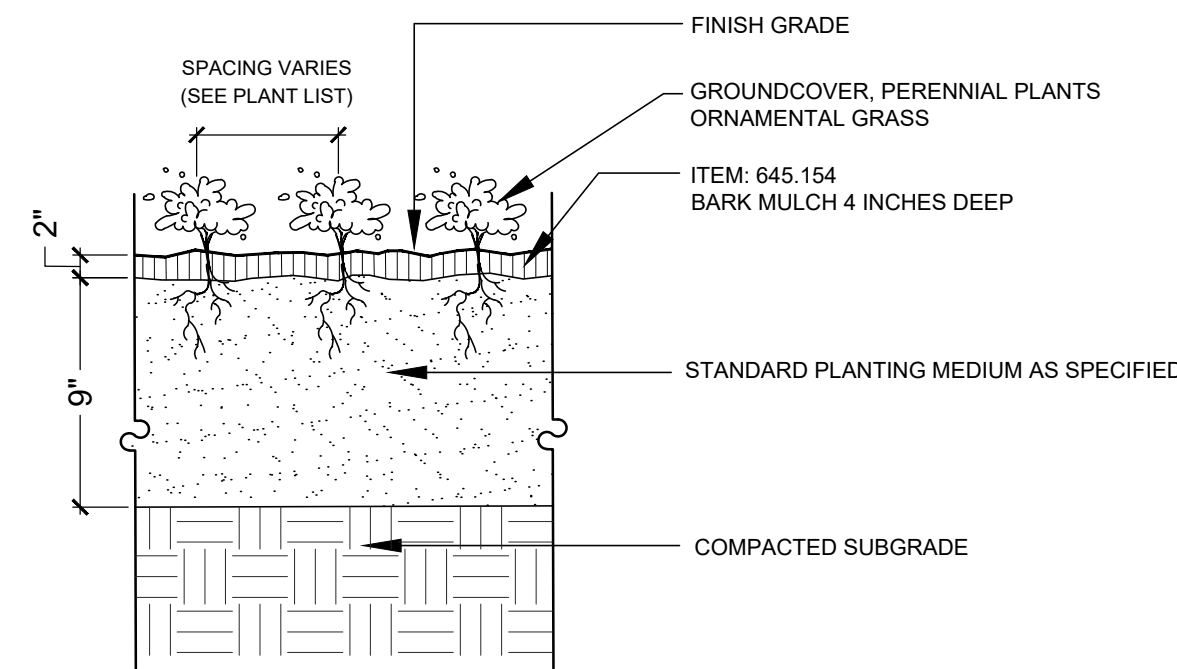
Apply at a rate of 265/lbs/acre

Lawn Seeding

Not to Scale

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4
L6.0



Groundcover / Perennial Planting

Not to Scale

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6
L6.0

SHEET TITLE

LANDSCAPE DETAILS

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GRAPHIC SCALE	

NORTH: AS SHOWN

L6.0

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