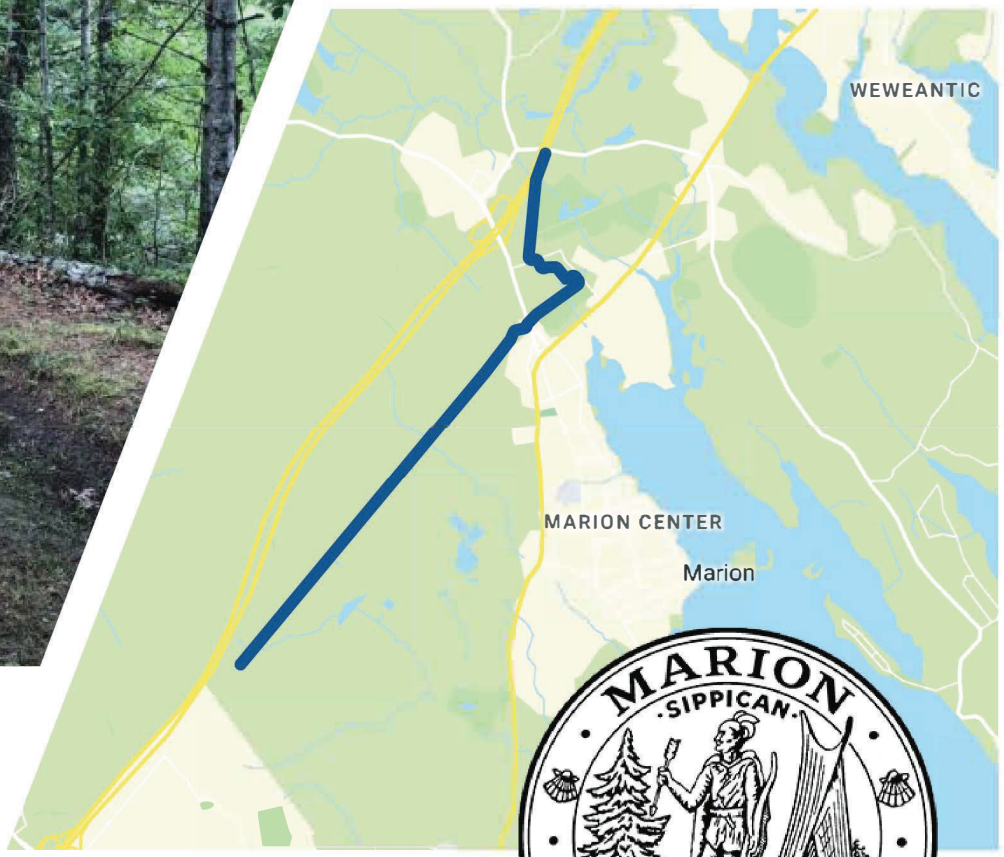
MassDOT Project No. 607979

Marion Shared Use Path Project



Marion, Massachusetts

Expanded Environmental Notification Form

March 15, 2024

MassDOT Roadway Project Management/Project File No. 607979

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Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act (MEPA) Office

Environmental Notification Form

For Office Use Only

EEA#: _____

MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Marion Shared Use Path			
Street Address: From the Marion/Mattapoisett Town Line to Point Road			
Municipality: Marion		Watershed: Buzzards Bay	
Universal Transverse Mercator Coordinates: 19 N 350020 4616958 (SW End), 19 N 352793 4621375 (NE End)		Latitude: 41° 41’ 25” N (SW End), 41° 43’ 50” N (NE End) Longitude: 70° 48’ 08” W (SW End), 70° 46’ 12” W (NE End)	
Estimated commencement date: Spring 2025		Estimated completion date: Summer 2027	
Project Type: Transportation – Shared Use Path/Bicycle Path		Status of project design: 100 % complete	
Proponent: Town of Marion, MA			
Street Address: 2 Spring Street			
Municipality: Marion		State: MA	Zip Code: 02738
Name of Contact Person: Kevin L. Slattery, PWS			
Firm/Agency: HDR		Street Address: 99 High Street	
Municipality: Boston		State: MA	Zip Code: 02110
Phone: (617) 357-7700	Fax:		E-mail: kevin.slattery@hdrinc.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☒Yes ☐No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8))	☒Yes ☐No
a Rollover EIR? (see 301 CMR 11.06(13))	☐Yes ☒No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes ☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐Yes ☒No
a Phase I Waiver? (see 301 CMR 11.11)	☐Yes ☒No

(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?

(1) Land – 11.03(1)(b)2 – Creation of five or more acres of impervious area
(2) Wetlands – 11.03(3)(b)(1)f – Alteration of ½ or more acres of any other wetlands

Which State Agency Permits will the project require?

(1) Marion Conservation Commission/MassDEP - Order of Conditions
(2) MassDOT- State Highway Access Permit
(3) MEPA Office - Secretary's Certificate
(4) NHESP - Eastern Box Turtle Protection Plan Approval

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:

No land transfer from an Agency of the Commonwealth will be required for the project. The project will be funded by MassDOT Highway Division (20%) and the Federal Highway Administration (80%).

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	10.04 Acres		
New acres of land altered		9.4 Acres	
Acres of impervious area	0.64 Acres	5.1 Acres	5.74 Acres
Square feet of new bordering vegetated wetlands alteration		0.113 Acres	
Square feet of new other wetland alteration		2.24 Acres (LSCSF and RFA)	
Acres of new non-water dependent use of tidelands or waterways		0 Acres	
STRUCTURES			
Gross square footage			
Number of housing units			
Maximum height (feet)			
TRANSPORTATION			
Vehicle trips per day	0	60	60
Parking spaces	0	15	15
WASTEWATER			
Water Use (Gallons per day)			
Water withdrawal (GPD)			
Wastewater generation/treatment (GPD)			
Length of water mains (miles)			
Length of sewer mains (miles)			

Has this project been filed with MEPA before?
☐ Yes (EEA #_____) ☒ No

Has any project on this site been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

The Marion Shared Use Path (SUP) project consists of the construction of a shared use path in the Town of Marion from the Mattapoisett/Marion Town line to Point Road. The Town of Marion and the Massachusetts Department of Transportation – Highway Division (MassDOT) are proposing the construction, which includes intersection improvements proposed at the Route 105/Spring Street crossing to accommodate pedestrian, bicycle, and vehicular traffic. The total length of the project is approximately 3.8 miles.

Describe the existing conditions and land uses on the project site:

The existing conditions on the project site include predominantly non-transportation occupied land throughout the corridor with some minor exceptions related to the roadway crossing of Front Street (Route 105) at Spring Street, and short segments along Washburn Lane and Washburn Park Place in Washburn Park (attachment 2). Most of the corridor is sited on abandoned former transportation use railroad/trolley bed passing through wooded settings and property that is proximate to developed land uses in Marion near Village Drive, Front Street, and Washburn Park. The proposed path route through Washburn Park includes undeveloped land adjacent to roads and athletic fields, wetlands, and wooded habitats, and short segments on Washburn Lane and Washburn Park Place. The northern portion of the project area also includes a segment of abandoned former railroad bed near Interstate 195 where the Interstate occupies the former bed alignment. Typically, this portion of the former rail bed is partially impassable due to poor drainage and downed trees, however pedestrians occasionally use it.

The site's status is undeveloped and lacking existing land use for transportation. The proposed project does not involve any current transportation facilities with the exception of the crossing at Front Street (Route 105) and alignment on two short segments of Washburn Lane and Washburn Park Place within Washburn Park. Front Street (Route 105) is a paved minor arterial roadway with a 35 m.p.h. rating that serves as an important connector road joining points to the west of Marion, including Interstate 195, with Route 6, Marion Town Center, and coastal areas of Buzzard's Bay. Front Street traffic volumes averaged approximately 12,000 vehicles per day in 2022 at the proposed crossing location. Washburn Lane and Washburn Park Place are narrow paved and gravel roadways. Neither street features a posted speed limit in the Park where the proposed shared use path would be located. The northern terminus of the proposed shared use path is at Point Road in Marion, adjacent to Interstate 195. Point Road is a local street that carried approximately 2,200 vehicles per day in 2022.

Describe the proposed project and its programmatic and physical elements:

The Town of Marion proposes to construct a Shared Use Path (SUP) designed in compliance with state and federal standards, including the Commonwealth of Massachusetts Department of Transportation (MassDOT), Highway Design Manual, 2006 edition; the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004 edition; and the Guide for Development of Bicycle Facilities, 1999 edition.

MassDOT is funding the project with Federal Highway Administration (FHWA) Congestion Mitigation and Air Quality (CMAQ) funds. The proposed project consists of a paved recreational path along the existing railroad bed beginning at the Mattapoisett/Marion town line, a path crossing and intersection improvements at the Front Street (Route 105)/Spring Street intersection, and a paved recreational path through Washburn Park continuing to the proposed project terminus at Point Road. The intersection improvements at Front Street (Route 105)/Spring Street, will include realignment of the Front Street (Route 105) southbound approach and the Spring Street northbound approach, a pedestrian crossing signal, and signage/pavement markings.

The project aligns with Smart Growth Development principles of creating walkable/rideable neighborhoods; fostering distinctive, attractive communities with a strong sense of place; preserving open space, natural beauty, and critical environmental areas; strengthening and directing development towards existing communities; and providing a variety of transportation choices. The project would meet and/or exceed numerous Massachusetts Sustainable Development Principles, specifically by providing transportation choice and integrating regional planning as the project will connect to the East Coast Greenway, a regional/interstate trail extending from Florida to Maine. Although the proposed shared

use path will be completed along and across land acquired by the Town of Marion, the project will not implicate the protections of Article 97.

The pathway will primarily use town-owned infrastructure, including the abandoned railroad right-of-way from the Mattapoisett/Marion town line to immediately southwest of the Front Street (Route 105)/Spring Street intersection, to the abandoned trolley line to Washburn Park from the Front Street (Route 105)/Spring Street intersection, to Washburn Park including its internal roadways, and to the abandoned railroad bed to the project's terminus at Pond Road. State-owned infrastructure will be limited to work on Front Street (Route 105).

Impacts resulting from this project are primarily positive. They include: (a) increased the connectedness to open space and recreational areas, reducing the need for vehicle use, and improving stormwater management; (b) safety upgrades, including a signalized crossing at the Front Street (Route 105)/Spring Street intersection; (c) improvements for ADA accessibility; (d) an overall positive benefit to Environmental Justice communities; (e) minimal impacts to wetland resources by utilization of areas that were previously disturbed, with few exceptions; (f) minimal stormwater impacts without any disturbance of cross culverts conveying streams through the project area; (g) minimal wildlife habitat impacts with mitigation that meets or exceeds Performance Standards for avoidance of adverse effects on Estimated Habitat of Rare Wildlife or on vernal pools; (h) improvement over existing conditions pertaining to Climate Change and Resiliency. Design of stormwater runoff in compliance with Storm Water Management Standards will address the moderate risk of sea level rise/storm surge impacts by stabilizing path-side embankment areas to protect from erosion along the railroad bed where sediment is currently eroding into the adjacent waterbodies and wetlands; and (i) anticipated positive air quality benefits derived from increased access to bicycle commuting via the SUP.

Land

Most of the project corridor is sited on abandoned former transportation use railroad/trolley bed passing through wooded settings and property that is proximate to developed land uses in Marion near Village Drive, Front Street, and Washburn Park. Care was taken in selecting the location and design elements that would not affect the surrounding environment and mitigate any need to acquire property to the greatest extent practicable while ensuring adjacent properties remain unaffected.

Rare Species

The project involves alteration of NHESP Estimated Habitat of Rare Wildlife and Priority Habitat of one species, but there will be no take of this species as a result of the implementation of a specific protection plan.

Wetlands, Waterways, and Tidelands

There are several wetlands, rivers and streams in the project area, primarily on the southern and northern thirds of the project. There are 5 perennial stream crossings and 7 potential intermittent stream crossings. The project is not located near any tidelands. The project will involve the modification of riverfront area (RFA), LSCSF (Land Subject to Coastal Storm Flowage) and Bordering Vegetated Wetland (BVW).

Water Supply

This project does not involve use of any public water supplies or construction affecting public water supplies and does not directly or indirectly affect any surface or ground water supplies or conveyances.

Wastewater

The project will not result in wastewater production. There are no wastewater facilities and/or systems that will be affected by the project.

Transportation (Traffic Generation)

The majority of the project area does not involve any existing transportation uses and occupies former rail and trolley bed. The project is expected to generate 60 vehicle trips per day.

Transportation (Roadways and Other Transportation Facilities)

The project will provide opportunities for safe travel mode alternatives other than automobiles and contribute toward a larger regional trail network further supporting alternative transportation modes.

Energy
The project area does not involve any energy facilities and will not affect energy use or production.

Air Quality
The project is not expected to have a negative impact on air quality. Contract specifications will be developed to ensure dust suppression measures and construction equipment emission controls are implemented to avoid construction phase impacts to air quality. The project may ultimately improve air quality by providing local users with an alternative to automobile use.

Solid and Hazardous Waste
This project will not involve any storage, treatment, processing, combustion or disposal of solid waste or any storage, recycling, treatment, or disposal of hazardous waste associated with this project.

Historical and Archaeological Resources
The proposed SUP passes through the Old Depot Area (MRN.H) and is proposed to be constructed adjacent to the south side of the Cape Cod Railroad Depot – Old Depot (MRN.120), now the Children's Depot building. The construction of the SUP will take place primarily within the former railroad bed and former trolley bed. It will not impact any existing structures or detract from the character of the area. This project was evaluated for potential effects regulated under Section 106 of the National Historic Preservation Act (NHPA) and MGL Chapter 9, Sections 26-27C (950 CMR 71) concurrently. The SUP is not anticipated to affect any historic properties and therefore no mitigation measures are required.

An archaeological survey was conducted in three locations where the proposed path diverges from either railroad or trolley line ROW. Cultural materials were recovered from disturbed contexts (pre-Contact and post-Contact period materials mixed in layers likely deposited as sheet refuse or fill material). No further investigation was recommended, and no mitigation measures are required.

Climate Change Adaptation and Resiliency
The creation of the SUP is not expected to be negatively impacted by climate change events or cause any changes that would make the area more susceptible to climate change impacts.

Environmental Justice
This project will not disproportionately affect any EJ populations. The project will maintain a high level of outreach and opportunities for public involvement throughout the environmental submittal process and construction.

Construction phase impacts will be minimal as the majority of this project will be constructed on abandoned rail/trolley corridors that are already disturbed, run through sparsely or uninhabited areas, and will provide unrestricted access. Further, there will be no permanent impacts associated with air quality during construction, including temporary conditions associated with dust. Exceptions will include work on existing roadways, notably reconfiguration of the Front Street (Route 105)/Spring Street intersection where work will be split into four phases in an effort to limit any impacts to traffic to just one phase, phase 4 (see Attachment 20 - 100% design Plans).

NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

The idea of a bike path in Marion was pursued as early as 1974 as described in the Town of Marion Master Plan. Numerous community surveys, including the most recent in 2017, indicated substantial support in Marion for a bike path connection to neighboring towns.

The following project route locations and design alternatives were considered during the development of the proposed Marion SUP. The alternative information that follows includes a mix of alternatives for the entire project as well as unique project segment alternatives evaluated for the Preferred Alternative:

Project Alternatives

Alternative 1. No Build Alternative assuming use of existing Town land and infrastructure:

- This considered the goal of promoting non-vehicular traffic, reducing air pollution, and promoting healthy transportation alternatives while making use of existing public roadways and lands:
    - Route 6: Cyclists and pedestrians currently use Route 6. However, the number of trips made as part of a commute to work or shopping or for recreation etc., is likely low due to unsafe conditions. Shoulders on Route 6 are narrow or non-existent. The roadway features substantial defects and real-time traffic speeds rise as high as 50 mph. Notably, Route 6 cannot contribute to increased access to recreational areas, neighborhoods, shopping areas, etc. Therefore, the use of Route 6 was eliminated from further study. *(Dismissed)*
    - The existing abandoned railroad bed and trolley lines are used by pedestrians despite being largely impassible due to poor drainage and downed trees for the majority of the year. Rough gravel surface on the bed is not suitable for narrow tired bicycles, strollers, roller blades, etc. The existing abandoned railroad bed itself does not provide any connection to existing roadways and the South Coast Bikeway. The bed and former trolley lines in their current state are not consistent with the project needs and goals and therefore eliminated from further study. *(Dismissed)*

Alternative 2. The Marion SUP entirely on Route 6 from the Mattapoisett Town line to the Wareham Town line:

- This alternative was eliminated from further study due to safety concerns with the current road speeds and widths. Technical, right of way (ROW) impacts, and cost challenges associated with construction of a safe alternative were also considered. *(Dismissed)*

Alternative 3. The Marion SUP to use a mix of existing Town land and infrastructure and acquisition of non-town owned lands from the Mattapoisett Town line to Pond Street.

- This alternative was selected due to the wealth of options for individual segments available for consideration. A discussion of the alternative segments that were evaluated are discussed in detail below. *(Preferred Alternative)*

Project Alternative Segments for the Preferred Alternative

Segment A. Use of the abandoned railroad bed from the Mattapoisett Town line to Front Street (Route 105):

- This parcel was considered a Preferred Alternative route for the westernmost portion of the SUP after the Marion Open Space Acquisition Commission (MOSAC) purchased it in 2004. Benefits include the parcel's location on Town owned land and avoidance of wetland impacts as the route, which traverses scenic woodlands and ponds, was previously cleared and graded. *(Preferred Alternative Segment)*

Segment B. A small section of the abandoned railroad bed between the east end of the MOSAC parcel and Front Street located on privately held property:

- During the fall of 2013, the Marion Pathway Committee assessed a number of alternatives to connect the abandoned railroad bed to Town owned property in order to cross Spring Street and/or Front Street (Route 105). Each option involved crossing private property, requiring anticipated extensive negotiations and fees for access.

- Access across Lockheed Martin property to Atlantis Drive was considered and eliminated from further study due to cost, and negotiations with a multinational, out-of-state landowner *(Dismissed)*,
- Access along the west side of the Brew Fish Restaurant parking lot was considered and eliminated from further study due to cost and impacts to the Brew Fish Restaurant *(Dismissed)*,
- Access along the entrance road to Marion Village Estates was considered and eliminated from further study due to cost and other considerations, including possible Environmental Justice impacts *(Dismissed)*,
- The Marion Board of Selectmen entered into negotiations with landowners who controlled a parcel adjacent to the Brew Fish Restaurant. This lot connects the MOSAC-owned abandoned railroad bed to Spring Street where the SUP could cross Spring Street and Front Street. In consideration of the relative ease of negotiating with local landowners and the location for crossing the public streets, this route became the Preferred Alternative in 2014. *(Preferred Alternative Segment)*

Segment C. The connection between the crossing at Spring Street/Front Street (Route 105) and the abandoned railroad bed on the north side of Washburn Park Place:

- The abandoned trolley bed on the east side of Front Street extends easterly to the Washburn Lane entrance to Washburn Park. Benefits include Town ownership since 1951 along with pre-existing cleared and graded land that traverses scenic woodlands and ponds. The site's location across from the parcel adjacent to the Brew Fish allows redesign of the Spring Street/Front Street (Route 105) intersection, which had been under consideration by the Town and MassDOT for some time. The incorporation of the SUP at the intersection prompted the redesign of the intersection to include a safe pedestrian crossing. Therefore, that route was selected as a Preferred Alternative to Washburn Lane. *(Preferred Alternative Segment)*
- The route along-side Washburn Lane from its intersection with the abandoned trolley bed into Washburn Park, including the following alternatives:
  - Widening Washburn Lane to create a separated SUP and creation of a parking lot was considered and presented to the Bike Path Committee and Board of Selectmen. This was eliminated from further study due to the need for a retaining wall to minimize wetland impacts, sight line limitations, and property ownership issues. *(Dismissed)*
  - A shared use lane on the existing Washburn Lane and elimination of the parking lot minimizes the need to impact wetlands and reduces cost. The low volume and low speed of vehicle traffic on Washburn Lane also contributed to the selection of this alternative as a Preferred Alternative. *(Preferred Alternative Segment)*
- Route from Washburn Lane northwesterly through Washburn Park to the abandoned railroad bed on the north side of Washburn Park Place:
  - Use of existing gravel roads connecting Washburn Park Place and Washburn Lane was considered. The gravel roads are wide enough for single-lane vehicle traffic, creating potential conflict with vehicular traffic. That issue as well as potential impacts on park infrastructure resulting from road widening to accommodate the SUP and land ownership constraints resulted in eliminating this alternative from further study. *(Dismissed)*
  - Use of an existing gravel road from its intersection with Washburn Lane, between an existing baseball field and wetlands into Washburn Park along the south and west sides of other baseball fields was considered. This alternative had the benefits of being cleared and graded, having minimal wetland impacts, and allowing for traversal through scenic woodlands. Further, space exists for construction of a parking lot for vehicles from where pedestrians and/or cyclists can access the SUP. Therefore, that route was selected as the Preferred Alternative to Washburn Park Place. *(Preferred Alternative Segment)*
  - The route along the gravel two lane Washburn Park Place to its intersection with the abandoned railroad bed was considered for a separated SUP along the north side of Washburn Park Place, which would require land clearing, grading and wetland impacts. *(Dismissed)*

- Paved, shared use pedestrian/cyclist lanes on both the inbound and outbound separated lanes of Washburn Park Place were considered along with the above separated SUP at an on-site meeting with a Marion Town Selectman. In consideration of the relatively low vehicular traffic volume, wetland impacts and cost, the shared use lanes were selected as the Preferred Alternative. *(Preferred Alternative Segment)*

Segment D. The continuation of the abandoned railroad bed from the east side of Front Street to its intersection with the I-195 property west of Point Road:

- The southern end between Front Street (Route 105) and Washburn Park Place was eliminated from consideration due to required crossings over a number of privately owned parcels for which extensive negotiations and fees for access were anticipated. *(Dismissed)*
- The northern end of the abandoned railroad bed from Washburn Park Place to the intersection with the I-195 property was purchased by the Town of Marion in 2008, making the parcel the Preferred Alternative. Benefits include being sited on a cleared, graded route that will avoid wetland impacts while traversing scenic woodlands. *(Preferred Alternative Segment)*

Segment E. The northern most section from the end of the abandoned railroad bed intersection with I-195 to the route terminus at Point Road:

- Most of the land between the abandoned railroad bed intersection at I-195 and the route terminus at Point Road is privately owned, contains wetlands, and was therefore eliminated from further study. *(Dismissed)*
- The Town of Marion purchased a parcel of land along the east side of I-195 in 1975 that connects the abandoned railroad bed with Point Road. An existing foot trail that skirts around small wetland areas has been maintained on the parcel for many years. In consideration of the Town's ownership, the ability to minimize wetland impacts, and available land area for a vehicle parking lot to allow for pedestrian/cyclist access to the SUP, the parcel is the Preferred Alternative. *(Preferred Alternative Segment)*

Preferred Alternative Summery

The Preferred Alternative will primarily use town-owned infrastructure, including the abandoned railroad right-of-way originating at the Mattapoisett/Marion town line and extending to the area immediately west of the Front Street (Route 105)/Spring Street intersection, where it will meet the intersection via a parcel directly south of the Brew Fish Restaurant. On the east side of the intersection, it will travel along the abandoned trolley line to Washburn Lane, travel along Washburn Lane for a short stretch before entering Washburn Park. The path will navigate existing wetlands and ball fields before reaching Washburn Park Place where it will travel for a short distance before rejoining the abandoned railroad bed where it will continue to the project's terminus at Pond Road.

NOTE*: The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and alternative site configurations.*

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

The project intends to implement mitigative measures to offset impacts related to wetlands and waterways, threatened and endangered species, as well as historic and Section 4(f) properties.

Wetlands and Waterways

This project will require unavoidable impacts to resource areas regulated under the Massachusetts Wetlands Protection Act as well as the Clean Water Act. In an effort to minimize those impacts to the greatest extent practicable, MassDOT has proposed the following mitigations measures:

- The Massachusetts Wetlands Protection Act (WPA) requires replication of the altered Bordering Vegetated Wetland (BVW) at a 1:1 ratio. The project will construct a 5,050 sf replication area aimed at replicating the wetland types being lost and plant vegetation including, but not being limited to, sweet pepperbush (*Clethra alnifolia*), inkberry (*Ilex glabra*), and highbush blueberry (*Vaccinium corymbosum*), similar to the surrounding area. Design of the SUP and the Notice of Intent (NOI) filing will incorporate replication of existing BVW adjacent to each of three areas that feature filled BVW, Alteration of less than 5,000 square feet of vegetated wetlands can be permitted under the USACE and does not require compensatory mitigation.
- The WPA currently does not contain Performance Standards or require mitigation beyond compliance with local building code for work on Land Subject to Coastal Storm Flowage (LSCSF). There are no structures associated with the SUP requiring compliance with the Town of Marion Building Code.
- The Massachusetts Storm Water Management Standards that are incorporated into the WPA state that "no new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater or cause erosion in wetlands or waters of the Commonwealth." Stormwater runoff from the SUP will be designed in compliance with Massachusetts Storm Water Management Standards, which will create an improvement over existing conditions where sediment currently erodes into adjacent waterbodies and wetlands.
- Downslope resource areas will be protected through the installation of a combination of compost filter tube/sedimentation fence located along the perimeter and/or elsewhere as required to protect and stabilize earthworks. All erosion and sedimentation control measures will be established prior to the start of construction and earth-disturbing activities. Excavated soils will be stockpiled in appropriate locations, away from resources areas and drainage inlets, and will be contained with compost filter tubes and or haybales, prior to being removed from the site.
- As required by the WPA standards for activities in the Riverfront Area (RA), the SUP will be designed to:
    - Provide mitigation that meets or exceeds Performance Standards for the above listed wetland resources,
    - Avoid any adverse effect on Estimated Habitat of Rare Wildlife or on a vernal pool,
    - Demonstrate the lack of a practicable and substantially equivalent economic alternative to the proposed project that lessens adverse effects on wetland resources.

<u>Stormwater Management</u>

The project will add improvements to stormwater management including path-side swales and crushed stone trenches to intercept the runoff prior to discharge to any wetlands or waters of the Commonwealth. In locations with sufficient area, grassed depressions are also proposed as a place to collect runoff for settling of sediment and to minimize the potential for erosion and sedimentation towards adjacent wetland resource areas.

<u>Threatened and Endangered Species.</u>

This project will require work within areas designated as either Priority Habitat of Rare Species and/or Estimated Habitat of Rare Wildlife. In an effort to minimize impacts to species regulated under the Massachusetts Endangered Species Act to the greatest extent practicable, MassDOT has proposed the following mitigation measures:

- The Massachusetts Endangered Species Act (MESA) requires that NHESP determine if the project would result in a "taking" of a regulated habitat. In the event the project is found to result in a "taking" of habitat, the project may be designed to incorporate a Conservation and Management Permit upon demonstration that:
    - Alternatives to both temporary and permanent impacts to State-listed Species have been adequately addressed,
    - An insignificant portion of the local population would be impacted by the project,
    - A conservation and management plan that provides a long-term Net Benefit to the conservation of State-listed Species will be carried out.

Safety

This project presents opportunities to integrate elements of safety. These opportunities are summarized below:

- Several safety measures will be implemented on this project to protect those utilizing the SUP and motorists, including:
  - Installation of rectangular rapid Flashing Beacons (RRFBs) at the Front Street (Route 105)/Spring Street intersection crosswalk,
  - Construction of cement concrete sidewalk/warning panels at all locations where the SUP enters an intersection or parking lot,
  - Use of Traffic Flow arrows,
  - Introduction of bicycle safety fencing,
  - Installation of splitter islands at all intersections/parking lots to direct traffic flow,
  - Development of rest areas that offer refuge from the main path, and
  - Building of handicap parking locations and other ADA compliant amenities.

Historic Properties

This project was evaluated for potential effects regulated under Section 106 of the National Historic Preservation Act (NHPA) and MGL Chapter 9, Sections 26-27C (950 CMR 71) concurrently. The SUP is not anticipated to affect any historic properties and therefore no mitigation measures are required. There is a potential for installation of information kiosks describing historic features along the SUP such as the foundations of the Marconi radio towers and the Old Depot building[1], a two-story, wood framed building with an open porch extending across the façade.

If the project is proposed to be constructed in phases, please describe each phase:

This project as evaluated will not be constructed in phases. However, it will be built to allow for future connections by other shared use path projects.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:

Is the project within or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____)
☒No

The nearest Area of Critical Environmental Concern (ACEC) is the Bourne Black River, which is located on the other side of Buzzards Bay, approximately seven miles from the project's geographic area.

if yes, does the ACEC have an approved Resource Management Plan? ___ Yes ___ No;
If yes, describe how the project complies with this plan.

_____

Will there be stormwater runoff or discharge to the designated ACEC? ___ Yes ___ No;
If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.

_____

RARE SPECIES:

Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)

☒Yes (Specify PH 345, EH 314, PH 378, EH 344) ☐No

A review of data available through the MassMapper[2] database reveals approximately one-third of the project corridor, or 3.5 acres, falls within priority and estimated habitats PH 345 and EH 314 on the southwestern portion of the project. Another small section of the SUP, at the northeastern end of the project where the SUP will run

[1] https://mhc-macris.net/details?mhcid=mrn.120
[2] https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html

adjacent to I-95, falls within priority and estimated habitats PH 378 and EH 344 (attachment 11).

The Mass.gov Rare Species Map Viewer[3] also lists the following state listed species as recorded in Marion: Common Tern (*Sterna hirundo*), Eastern Box Turtle (*Terrapene carolina*), Long-leaved Panic-grass (*Coleataenia longifolia ssp. longifolia*), Mattamuskeet Rosette-grass (*Dichanthelium mattamuskeetense*), New England Blazing Star (*Liatris novae-angliae*), Northern Diamond-back Terrapin (*Malaclemys terrapin*), Northern Gama-grass (*Tripsacum dactyloides*), Piping Plover (*Charadrius melodus*), Purple Needlegrass (*Aristida purpurascens*), Shore Pygmy-weed (*Crassula aquatica*), and Water-willow Stem Borer (*Papaipema sulphurate*). The Mass.gov Rare Species lacked functionality to distinguish species presence beyond the Town level.

A query of the US Fish and Wildlife Service (USFWS) Information for Panning and Consultation (IPaC) tool (attachment 13) revealed the following federal species as being potentially present in the project area: (a) Endangered Northern Long-Eared Bat (*Myotis septentrionalis)*, (b) Endangered Roseate Tern (*Sterna dougallii dougallii*, also state listed), (c) Endangered Plymouth Redbelly Turtle (*Pseudemys rubriventris bangsi*), and (d) Candidate Monarch Butterfly (*Danus plexippus*).

HISTORICAL /ARCHAEOLOGICAL RESOURCES:

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☒Yes (Specify_____) ☐No

The project was cleared by MassDOT Cultural Resources on 9/20/2022 as No Effect under Stipulation VB of the Section 106 Programmatic Agreement (Attachment 14). An archaeological survey was conducted by MassDOT's archaeological consultant, Public Archaeology Lab, Inc., in July 2022 at three locations where the proposed path diverges from either railroad or trolley line ROW. Cultural materials were recovered from disturbed contexts (pre-Contact and post-Contact period materials mixed in layers likely deposited as sheet refuse or fill material) and no further investigation was recommended. Notification was sent in June 2022 to the Tribal Historic Preservation Officers for the Aquinnah Wampanoag, Mashpee Wampanoag, and Narragansett Indian Tribe. Notification was sent to the Board of Underwater Archaeological Resources in September 2022. None of the parties expressed concerns relative to the proposed project.

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐Yes (Specify_____) ☒No

The proposed SUP passes through the Old Depot Area (MRN.H) and is proposed to be constructed adjacent to the south side of the Cape Cod Railroad Depot - Old Depot (MRN.120), now the Children's Depot building. Construction of the SUP will take place primarily within the former railroad bed and former trolley bed and will not impact any of the structures or detract from the character of the area.

WATER RESOURCES:

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site? ___Yes _X__No; if yes, identify the ORW and its location.

There is one vernal pool that was previously certified and has since been decertified (NHESP CVP number 6000.00, see attachment 12) near the northern side of the SUP adjacent to the affordable housing (under MGL c.40B) roadway access site. The project is unlikely to affect the vernal pool as it is on the other side of Village Drive from the proposed path and therefore, no direct or indirect impacts will occur, and drainage will not be directed towards the vernal pool. Additionally, there is a field verified vernal pool near the proposed project path (located approximately between stations 119 and 120), however this vernal pool is not certified and will be protected at all times during construction.

(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering

[3] Rare species viewer | Mass.gov

wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)

Are there any impaired water bodies on or within a half-mile radius of the project site? _**X**__Yes ___No; if yes, identify the water body and pollutant(s) causing the impairment:

The following information is taken from MassMapper and the Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle report. These impaired water bodies are not within the project area but are within a half-mile radius of the project site.

- Sippican River (MA95-06 / 07): Chlorophyll-a, Dissolved Oxygen, Enterococcus/Fecal Coliform
- Hammett Cove (MA95-56): Estuarine Bioassessments, Fecal Coliform, Nitrogen, Nutrient/Eutrophication Biological Indicators
- Inner Sippican Harbor (MA95-70): Dissolved Oxygen, Estuarine Bioassessments, Fecal Coliform, Nitrogen
- Hammett Cove (MA95-56): Estuarine Bioassessments, Fecal Coliform, Nitrogen, Nutrient/Eutrophication, Biological Indicators

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? ___Yes _**X**__No

The December 2001 Stressed Basins in Massachusetts report does not list any basins/sub basins within the project site as being medium or high stress[4].

STORMWATER MANAGEMENT:

Generally, describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:

Massachusetts Storm Water Management Standards are incorporated into the Massachusetts Wetlands protection Act (WPA). In accordance with 310 CMR 10.05(6)(m), footpaths, bike paths, and other paths for pedestrian and/or nonmotorized vehicle access are only required to meet the Stormwater Management Standards to the greatest extent practicable.

Standard 1 - Stormwater Discharges

"No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth".

The proposed project will not result in any new discharges of untreated stormwater directly to wetlands or waters of the Commonwealth. The project will incorporate path-side swales and crushed stone trenches to intercept the runoff prior to discharge to any wetlands or waters of the Commonwealth. In locations with sufficient area, grassed depressions are also proposed as a place to collect runoff for settling of sediment and to minimize the potential for erosion and sedimentation towards adjacent wetland resource areas. Stormwater from portions of the paved roadway area within the Spring Street (Route 105) intersection will be collected in a closed conduit piping system fitted with 4-foot-deep sump catch basins with hooded outlets.

Standard 2 - Stormwater Discharge Rates

"Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04".

As a linear project being constructed primarily within abandoned rail/trolly corridors, with several wetland resource areas paralleling the site in close proximity, introduction of a completely new drainage system designed in compliance with these standards would result in unnecessary impacts to the surrounding environment and would not be feasible.

[4] Stressed Basins in Massachusetts Report | Mass.gov

Peak discharge rates will increase because of the new impervious areas being constructed as part of this project. Some attenuation of the peak discharge rates will be achieved with the country drainage system and crushed stone edge drains that will be installed in certain areas alongside the path as well as via the 4-foot-deep sump catch basins with hooded outlets to be installed at the Spring Street (Route 105) intersection. In addition, grassed depressions will be provided in three areas which will serve to provide some attenuation of the runoff.

Standard 3 - Groundwater Recharge

"Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions based on soil type. This standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook."

As a project with limited areas available for development of the SUP, opportunities to provide recharge best management practices along the route are constrained. Annual recharge from the post-development conditions of the site will approximate the annual recharge from pre-development conditions of the site. The path-side swales, gassed depressions and crushed stone edge drains will provide some recharge of the runoff from the paved path to help minimize any impacts to the recharge to groundwater as a result of this project.

Standard 4 – 80% Total Suspended Solids Removal

"Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS)"

This project is being constructed primarily within abandoned rail/trolley corridors that are unstable and susceptible to erosion into adjacent wetland resource areas. The project will result in vastly improved stabilization of these areas and greatly reduce the available material to contribute to overall TSS concentrations. Additionally, the SUP will not be sanded in the winter times and will not be prone to sediment buildup due to the types of use that will be seen. The SUP will only be used by pedestrians and non-motorized vehicles and therefore, there should also be little potential for oils or greases to collect on the path. In areas where adequate room exists, the proposed 1' x 2' crushed stone trench will provide adequate water quality volume to meet the water quality standards as shown the Water Quality Volume calculations for a typical 100' Path/Trench section provided in Section 2 of this Report. This Standard will be met to the maximum extent practicable.

Standard 5 - Discharge from Areas with Higher Pollutant Loads

"For land uses with higher pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMP's determined by the Department to but suitable for such uses as provided in the Massachusetts Stormwater Handbook."

The project is not considered a high intensity use and does not have any areas with higher potential pollutant loads as defined by the Stormwater Management Regulations. Therefore, this standard is not applicable.

Standard 6 - Discharge to Critical Areas

"Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharge near or to any other critical area, require the use of specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook."

This project is not located in an area that discharges to a Wellhead Protection Zone II or Interim Wellhead Protection Area of a public water supply or to any other critical area. There are two vernal pool locations adjacent to the project that were identified, one as the site of a decertified vernal pool by MassWildlife's Natural Heritage and Endangered Species Programs (NHESP), and another that was field identified during the project resource area delineation. The proposed grade of the SUP is removed from the decertified

vernal pool and will remain lower than the area separating it from the vernal pool. As a result, it will not be subject to discharges from the path. The field verified vernal pool (located approximately between stations 119 and 120) will be protected at all times during construction and will not be subject to discharges from the path. Therefore, this standard is not applicable.

Standard 7 - Redevelopment Sites

"A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standard 4, 5 and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions."

Although portions of this project are taking place within existing paved areas that will meet the criteria as redevelopment, notably work at the Front Street (Route 105)/Spring Street intersection, at Washburn Lane, and at Washburn Park Place, this project as a whole does not meet the criteria to qualify as a redevelopment project. This project will ultimately provide a net benefit through the incorporation of path-side swales and crushed stone trenches to intercept the runoff prior to discharge to any wetlands or waterways as well as grassed depressions to collect runoff for settling of sediment and to minimize the potential for erosion and sedimentation towards adjacent wetland resource areas. Furthermore, portions of the paved roadway area within the Spring Street (Route 105) intersection will be collected in a closed conduit piping system fitted with 4-foot-deep sump catch basins with hooded outlets.

Standard 8 - Erosion and Sedimentation Control

"*A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented."*

Downslope areas will be protected through the installation of a combination of compost filter tube/sedimentation fence located along the perimeter and/or elsewhere as required to protect and stabilize earthworks. Existing inlets in the intersection area will be protected in advance of construction with silt sacks. All erosion and sedimentation control measures will be established prior to the start of construction and earth-disturbing activities. Excavated soils will be stockpiled in appropriate locations, away from resources areas and drainage inlets, and will be contained with compost filter tubes and or haybales, prior to being removed from the site. Stockpiles that will be unused and inactive for more than 14 days will be temporarily stabilized by use of seeding, application of a tackifier, or cover with poly or other weather resistant material.

This project will result in over 1 acre of impact to erodible surfaces and as a result will need to secure a National Pollutant Discharge Elimination System (NPDES) Construction General Permit. As part of the permit requirements a Stormwater Pollution Prevention Plan will be developed and further address the requirements of this standard.

Standard 9 - Operation & Maintenance Plan

"A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed."

The Stormwater Management Plan for this project has been developed in compliance with the DEP Stormwater Management Policy. The Plan is based on a multi-dimensional approach to stormwater management that recognizes the need for source control of potential contaminants, and implementation of structural and non-structural treatment methods to ensure the protection of water resources in the vicinity of the site and adjacent properties.

Standard 10 – Prohibition of Illicit Discharges

"All illicit discharges to the stormwater management system are prohibited."

The proposed project will not have any illicit discharges to the proposed stormwater management system.

MASSACHUSETTS CONTINGENCY PLAN:

Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes ___ No **_X_**; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification):

The project does not involve any land currently being regulated by the MCP. The nearest RTN is at 400 Front Street with is approximately 300 feet north of the project along Front Street (RTN# 4-0025600). The Response Action Outcome (RAO) for this release is a PN - Permanent Solution with No Conditions (unrestricted use)[5].

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes ___ No **_X_**;
if yes, describe which portion of the site and how the project will be consistent with the AUL:

There are no mapped AUL's associated with any release sites in Marion, including the project site.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? Yes ___ No **_X_**; if yes, please describe:_____

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:

This project will not generate solid waste. The project's siting primarily within retired rail/transit corridors and the other pervious environments limited opportunities for reuse, recycling, and/or disposal of the above-mentioned materials and therefore was not assessed as a driver in pursuit of alternatives.

The project site occupies predominately abandoned rail/trolley corridors. As a result, potential sources of contamination in soils in and around work areas may be indicated. As a standard of practice, soils under and adjacent to rail beds are presumed contaminated. As such, protocols for handling and management will be employed by MassDOT and contractors while constructing the project. Utilization of established Standard Specifications for handling soils will minimize exposure or inadvertent releases of contaminants off site.

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

Will your project disturb asbestos containing materials? Yes ___ No **_X_**;
if yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

Based on the nature of the project as a shared use path, there is a low probability of encountering asbestos-containing material. Project specifications will include procedures to be followed should asbestos-containing material be encountered, including proper handling and disposal procedures and requirements to file an Asbestos Notification Form (ANF-001, also known as the BWP AQ04) with MassDEP at least 10 working days before conducting an asbestos abatement activity or the start of construction or demolition.

Describe anti-idling and other measures to limit emissions from construction equipment:

Project specifications will include emission limiting procedures to be followed by the contractor during construction. Additionally, the contractor will be required to adhere to the Massachusetts anti-idling laws in accordance with MGL chapter 90 sec. 16A and as regulated under 310 CMR 7.11(1)(b).

[5] https://eeaonline.eea.state.ma.us/Portal/#!/wastesite/4-0025600

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes ___ No _**X**__ ;
if yes, specify name of river and designation:

A review of the National Park Service's interactive Wild and Scenic Rivers mapper and the Rivers.gov[6] mapper reveals no Wild and Scenic Rivers within or near the project area[7].

If yes, does the project have the potential to impact any of the "outstandingly remarkable" resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River? Yes ___ No ___ ; if yes, specify name of river and designation: _____;
if yes, will the project result in any impacts to any of the designated "outstandingly remarkable" resources of the Wild and Scenic River or the stated purposes of a Scenic River.
Yes ___ No ___ ;
if yes, describe the potential impacts to one or more of the "outstandingly remarkable" resources or stated purposes and mitigation measures proposed.

ATTACHMENTS:

1. List of all attachments to this document.
2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries.
3. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.
4. Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts.

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5. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
6. List of municipal and federal permits and reviews required by the project, as applicable.
7. Printout of output report from RMAT Climate Resilience Design Standards Tool, available here.
8. Printout from the EEA EJ Maps Viewer showing the project location relative to Environmental Justice (EJ) Populations located in whole or in part within a 1-mile and 5-mile radius of the project site.
9. DPH EJ Tool – Vulnerable Health Criteria
10. EJ Screening Form
11. NHESP Priority and Estimated Habitat Atlas Page
12. Vernal Pool Records
13. IPaC Report
14. Cultural Resources Project Record
15. Article 97 Letter
16. NHESP Letter
17. EJ Engagement Plan
18. Stormwater Report and Checklist
19. January 31st Public Meeting Materials
20. 100% Design Plans

[6] Massachusetts | Rivers.gov
[7] Wild & Scenic Rivers (arcgis.com)

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1)
_X_ Yes ___ No; if yes, specify each threshold:

The project will introduce approximately 5.1 acres of new impervious surfaces for the creation of the bike path (301 CMR 11.03(1)(b)2).

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	___0____	___0____	___0____
Internal roadways	__0.28 __	___0[1] ___	__0.28 __
Parking and other paved areas	__0.64 __	__ 5.06[2] _	__5.70 __
Other altered areas	___0____	__4.21[3]__	__4.21 __
Undeveloped areas	___9.4 __	__ 5.06[4] _	__4.34[5]__
Total: Project Site Acreage	__9.95[6]_	__9.95[6]_	__9.95[6]_

[1] This value represents the net change in internal roadways associated with Washburn Park. The footprint will remain the same as existing the roadway following resurfacing.

[2] This value represents the net change in parking and other paved areas as a result of this project resulting from the addition of 5.1 acres of new paved surfaces and the alteration of 0.04 acres of existing pavement to vegetated areas.

[3] This value represents side slope areas being graded along SUP and wetland mitigation areas. The area will remain vegetated after alteration.

[4]This value represents the net unaltered change resulting from addition of 5.1 acres of new paved surfaces and 0.04 acres of existing pavement being altered to vegetated areas.

[5]This value represents the net result in new unaltered (pervious) areas resulting from the project.

[6] This value represents the total impacted area of the project, inclusive of both permanent and temporary impacts. Some of these values are additive and not a true sum of the values above. To support the values presented in the section above, the following table is offered to present surface condition impacts for the project.

Surface Conditions	Impact (sf)	Impact (acres)	Notes
Pervious Resulting in Pervious	183,385	4.21	Resulting from side slope grading work associated with the SUP and the wetland mitigation area.
Pervious Resulting in Impervious	222,156	5.1	Resulting from the new paved path alignment and parking areas.
Impervious Resulting in Impervious	26,110	0.6	Resulting from the work at the Front Street (Rt 105)/Spring Street intersection and work on Washburn Lane.
Impervious Resulting in Pervious	1,827	0.04	Resulting from new vegetated areas at the Front Street (Rt 105)/Spring Street intersection.
Total	**433,478**	**9.95**	

B. Has any part of the project site been in active agricultural use in the last five years? ___ Yes _X_ No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

The project will take place primarily within abandoned rail/transit corridors, Washburn Park, and existing roadway infrastructure. It will not utilize lands actively used for agriculture.

C. Is any part of the project site currently or proposed to be in active forestry use? ___ Yes _X_ No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

The project will take place primarily within abandoned rail/transit corridors, Washburn Park, and existing roadway infrastructure. It will not utilize lands actively used for forestry.

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ___ Yes _X_ No; if yes, describe:

It is the opinion of the Town of Marion as presented in the attached letter (Attachment 15) that "(1) the proposed shared use path to be completed along and across land acquired by the Town of Marion does not implicate the protections of Article 97 and (2) there are no prohibitions or conflicts contained within the ownership rights of the Town that precludes the completion of the proposed shared use path project." Furthermore, it is the Town's opinion that "the shared use path neither triggers Article 97 protections nor conflicts with any restriction imposed by any state or federal agency."

Article 97 provides protection for certain lands with the expressed intent to maintain the public's right to a clean environment and its natural, scenic, historical, and aesthetic qualities. The SUP supports those values protected under Article 97 and further enhances lands in the vicinity of the project by providing the public access to enjoy the natural, scenic, historical, and aesthetic qualities that these areas currently offer.

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ___ Yes_X_ No; if yes, does the project involve the release or modification of such restriction? ___ Yes ___ No; if yes, describe:

As presented in the attached letter (Attachment 15), it is the opinion of the Town of Marion that "there are no known restrictions within the shared use path precluding construction." Furthermore, it is the Town's opinion that the shared use path does not conflict "with any restriction imposed by any state or federal agency."

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___ Yes _X_ No; if yes, describe:

The project will not impact any urban redevelopment projects. Supported by local and regional plans, it will become a part of the South Coast Bikeway, a regional use Bikeway as outlined in the Southeastern Regional Planning and Economic Development District's (SRPEDD) 2016 Regional Transportation Plan.

The Town of Marion Planning Board, with the help of SRPEDD, prepared the 2017 Master Plan based on extensive public input attained through community forums and workshops that began in 2014. The 2017 Master Plan represents a long-term vision document to help guide Marion's growth and change, preserve its natural and cultural resources, and maintain public facilities and services. Marion is currently working under a Complete Street program grant to provide "accommodations for all users and modes,

create safer and more livable neighborhoods, and encourage healthy transportation alternatives." The Transportation and Circulation chapter of the Master Plan identified a central theme as "the need for improved appearance, safety and connectivity in the Town's transportation network." As described in the Transportation and Circulation chapter, the means to achieve those policy goals include bike and pedestrian improvements will be provided by the Marion SUP. Specifically, the SUP intersection with Front Street (Route 105) and Spring Street will be consistent with the goal of providing traffic calming and potentially visual enhancements to the Route 6 and Route 105 "Gateway" area which is the main point of entry into Marion.

SRPEDD's Joint Transportation Planning Group (JTPG) makes recommendations on priorities, plans and programs to the Southeastern Massachusetts Metropolitan Planning Organization (SMMPO). The SMMPO Regional Pedestrian Plan, Draft August 1, 2018, describes the need for safe, connected pedestrian facilities, which will be provided by the Marion SUP.

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ No _X_; if yes, describe:

The Town of Marion has not published an urban renewal plan[8]. As a result, the project will not require an approval pursuant to the urban renewal plan requirements of M.G.L.c.121B.

III. Consistency

A. Identify the current municipal comprehensive land use plan
Title:_2017 Town of Marion Master Plan_____ Date___10/23/17_____

B. Describe the project's consistency with that plan with regard to:
1) economic development

Although the plan does not identify the path specifically as it relates to economic development, the project is consistent with the Town of Marion Master Plan in that it will not detract from and supports economic development through increased community connectedness and access. Specifically, as it relates to Sec. 4-4 of the Master Plan which discusses the pursuit of high-value, mixed-use development in the Route 6 and Route 105 gateway, this project will further connect, and offer increased access to bring people to and through these areas earmarked for growth.

2) adequacy of infrastructure

The project is consistent with the Town of Marion Master Plan. Specifically, Sec. 3-1-1 of the Master Plan (Land Use Strategy) sets forth "Purpose and Intent" of town bylaws that "clearly" seek "to allow residential, commercial, **recreational** [emphasis added], and institutional uses within close proximity." This intent was presented among "clear goals identified by the Marion residents" and Sec. 10-2-1 of the Master Plan (Natural and Cultural Resources Strategy).

Further, the project is consistent with the Town of Marion Open Space and Recreation Plan (ORSP) 2023-20309 that was approved on May 5, 2023. That plan began with an introduction that the ORSP is intended "to preserve [Marion's] semi-rural character, protect critical natural resources, increase recreational opportunities and **forge greater connections to its neighbors through the development of regional shared use and bike paths**." [emphasis added.] Completion and implementation of bikeway/shared use pathway plans is set forth among five key elements of the ORSP's Goals and Objectives. The project will also offer limited economic benefits for neighboring retail, café and restaurant establishments located on Front Street and Spring Street by way of an additional connection from the SUP to this business district.

[8] download (mass.gov)
[9] approved_marion_osrp_040523.pdf (marionma.gov)

3) open space impacts

The project is routed through and alongside some of the Town's significant open space and recreation lands that are not connected to the Town's planned bicycle and pedestrian system. The SUP will enhance connectivity and access to Open Space areas that are concentrated on the western side of Sippican Harbor and also located to the east of the Harbor, particularly along Sippican Neck off of Point Road. There will be no negative impacts to these open spaces.

4) compatibility with adjacent land uses

Although the plan does not identify the path specifically as it relates to land use, the project is consistent with the Town of Marion Master Plan in that it will support adjacent land uses, both in their current state (use) and in their future state through increased community connectedness and access. Much of the current land uses include wooded, natural areas or recreational facilities (parkland, ballfields, etc.) The introduction of the SUP will provide greater access for individuals to utilize and enjoy these areas. Additionally, Section 3-1 of the Master Plan details a desire to incentivize village-style development in key areas. Currently the only areas zoned for this type of development account for just 2.2% of the geographic area in Marion. This project will traverse one of these small areas, and as a result the SUP will not only be compatible with but support the need for this development.

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA:

Southeastern Massachusetts Regional Planning & Economic Development District (SPREDD)

Title: Regional Bicycle Plan Date: Feb. 2016, Updated June 27, 2019

D. Describe the project's consistency with that plan with regard to:
1) economic development

This project is consistent with the economic development advantages of bicycle use and infrastructure improvements identified in SPREDD's Regional Bike Plan. The plan cites data supporting information indicating the potential economic benefits including improved travel time, reduced transportation expenses, improved safety improvements, and access to jobs, among others. The plan also specifically identifies the routing of this project as a future offroad component of the South Coast Bikeway.

2) adequacy of infrastructure

The project will fulfill Town and regional plans to advance bicycle transportation in the Commonwealth as set forth by the 2008 Massachusetts Bicycle Plan (MBTP). The state plan envisions development of a 740-mile, seven-corridor Bay State Greenway (BSG) network consisting of on-road and off-road facilities to maximize both bicycle transportation and recreational purposes. The project will provide the Town of Marion with a connection to identified highest priority shared-use path projects, as indicated by its inclusion among the BSG Priority 100 list of desired projects.

3) open space impacts

Most of the area that encompasses the existing rail/trolley line is not actively in use as open space due to physical barriers such as overgrown vegetation. Addition of the SUP will provide enhanced open space functionality, including some use of small, vegetated open space areas within Washburn Park.

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? __ Yes _**X**__ No; if yes, specify, in quantitative terms:

The project will involve the alteration of approximately 2.9 acres of both Estimated Habitat of Rare Wildlife and Priority Habitats of Rare Species. Based on the April 15, 2020 letter from Mass Wildlife, there will not be any take of the species upon implementation of a Protection Plan for the species.

(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)

B. Does the project require any state permits related to **rare species or habitat**? __ Yes _**X**__ No

The project requires a Protection Plan for the Eastern Box Turtle, a state listed species of Special Concern, to be reviewed and approved by NHESP prior to construction as directed through consultation with NHESP (attachment 16). The Protection Plan will be developed at a later stage of the project and submitted to NHESP for review and approval. As stated by MassWildlife in the April 15, 2020, letter, implementation of this plan will minimize the likelihood of a take as a result of this project. Standard elements of a Protection Plan are designed to minimize the loss of the species and may include the use of temporary barriers installed around the limits of project work areas and/or implementation of species surveys during appropriate weather conditions under the purview of a certified wildlife biologist or herpetologist.

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? _**X**__ Yes ___ No.

A review of data available through the MassMapper[10] database reveals approximately one-third of the project corridor falls within priority and estimated habitats PH 345 and EH 314 on the southwestern portion of the project. Another small section of the SUP, at the northeastern end of the project where the SUP will run adjacent to I-95, falls within priority and estimated habitats PH 378 and EH 344 (attachment 11).

D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? _**X**__ Yes ___ No. If yes,

1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? _**X**__Yes ___No; if yes, have you received a determination as to whether the project will result in the "take" of a rare species? _X__ Yes ___ No; if yes, attach the letter of determination to this submission.

A letter from NHESP was received, dated April 15, 2020, stating that proper implementation of the Eastern Box Turtle Protection Plan (to be reviewed and approved by NHESP) will not result in "take" of the species.

[10] https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html

2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes _**X**__ No; if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts.

The project requires an Eastern Box Turtle Protection Plan to be reviewed and approved by NHESP prior to construction, as directed through consultation with NHESP. As stated by MassWildlife in April 15, 2020 correspondence, proper implementation of the Eastern Box Turtle Protection Plan upon approval will minimize the likelihood of a take of state-listed species as a result of this project.

3. Which rare species are known to occur within the Priority or Estimated Habitat?

Consultation with NHESP has concluded the Eastern Box Turtle (*Terrapene carolina carolina*) is known to exist within the project area.

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? ___ Yes _**X**__ No

While the site has not yet been surveyed for rare species, this could be performed as part of the yet to be developed Eastern Box Turtle Protection Plan.

5. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ___ Yes _**X**__ No; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

A NOI has not yet been filed with the Marion Conservation Commission. One is planned as the project advances. NHESP will also receive a copy.

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes X___ No; if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

An Eastern Box Turtle Protection Plan will be developed at a later stage of the project and submitted to NHESP for review and approval. As stated by MassWildlife in the April 15, 2020 letter, implementation of the Eastern Box Turtle Protection Plan will minimize the likelihood of a take as a result of this project.

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? _X__ Yes ___ No; if yes, specify, in quantitative terms:

The project will involve modification of 48,170 sf of riverfront area (MEPA review threshold for RFA is a ½ acre [21,780 sf]) and 49,794 sf of Land Subject to Coastal Storm Flowage (LSCSF) (MEPA review threshold for LSCSF is ½ acre). The project will involve modification of approximately 4,949 sf of Bordering Vegetated Wetland (BVW) (MEPA review threshold for BWV is 5,000 sf (attachment 3).

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? _**X**__ Yes __ No; if yes, specify which permit:

This project will require a Notice of Intent (NOI) to be filed with the Marion Conservation Commission and MassDEP as well as approval via an Order of Conditions issued by the Marion Conservation Commission.

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? _**X**__ Yes ___ No; if yes, has a Notice of Intent been filed? ___ Yes _X__ No; if yes, list the date and MassDEP file number: _____; if yes, has a local Order of Conditions been issued? ___ Yes ___ No; Was the Order of Conditions appealed? ___ Yes ___ No. Will the project require a Variance from the Wetlands regulations? ___ Yes ___ No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

This project will result in alteration of approximately 4,949 square feet of Bordering Vegetated Wetlands (BVW) (4,940 sf permanent, 9 sf temporary). Additionally, the project will result in alteration of approximately 1.14 acres of Land Subject to Coastal Storm Flowage (45,788 sf permanent, 4,006 sf temporary) and alteration of approximately 1.1 acres of Riverfront Area (34,580 sf permanent, 13,585 sf temporary). The majority of these impacts will occur in the northern third of the project corridor. Although the project will traverse several streams, there will be no impact to Land Under Water Bodies and Waterways or jurisdictional Bank. Twelve total stream crossings will be located over existing culverts. This project will compensate for impacts to wetland resource areas by constructing a 5,050 sf wetland replication area. Additional mitigation measures will feature grading of side slope areas along locations adjacent to wetlands and installation of permanent vegetation that will remain after alteration.

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

Coastal Wetlands	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Land Under the Ocean	_____	_____
Designated Port Areas	_____	_____
Coastal Beaches	_____	_____
Coastal Dunes	_____	_____
Barrier Beaches	_____	_____

Coastal Banks	_____	_____
Rocky Intertidal Shores	_____	_____
Salt Marshes	_____	_____
Land Under Salt Ponds	_____	_____
Land Containing Shellfish	_____	_____
Fish Runs	_____	_____
Land Subject to Coastal Storm Flowage	45,788 sf/4,006 sf	Permanent/Temporary
Inland Wetlands		
Bank (lf)	_____	_____
Bordering Vegetated Wetlands	4,949 sf/9 sf	Permanent/Temporary
Isolated Vegetated Wetlands	_____	_____
Land under Water	_____	_____
Isolated Land Subject to Flooding	_____	_____
Bordering Land Subject to Flooding	_____	_____
Riverfront Area	34,580 sf/13,585 sf	Permanent/Temporary

D. Is any part of the project:

1. proposed as a **limited project**? ___ Yes _X__ No; if yes, what is the area (in sf)?____
2. the construction or alteration of a **dam**? ___ Yes _X__ No; if yes, describe:
3. fill or structure in a **velocity zone** or **regulatory floodway**? ___ Yes _X__ No
4. dredging or disposal of dredged material? ___ Yes _X__ No; if yes, describe the volume of dredged material and the proposed disposal site:
5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**? ___ Yes __X_ No
6. subject to a wetlands restriction order? ____ Yes __X_ No; if yes, identify the area (in sf):

Communication with the Marion Conservation Commission led to a finding of no wetland restrictions in the proposed project path.

7. located in buffer zones? _**X**__Yes ___No; if yes, how much (in sf)

241,132 SF approximately

E. Will the project:

1. be subject to a local wetlands ordinance or bylaw? _X__ Yes ___ No

The Town of Marion has adopted local wetland ordinances/bylaws. As a Town project, the SUP is subject to those local ordinances. Specifically, the project would be subject to the Town of Marion Wetland Protection Standard #1, effective May 1, 1996, which states that "the filling, cutting of vegetation, constructing in or otherwise altering in any fashion of the first fifteen (15) feet of land immediately upgradient of, and adjacent to, any Bordering Vegetated Wetland line (BVW), also known as a portion of the buffer zone, and which is contained within any lot created by subdivision after May 1, 1996, or on any existing lot after January 1, 1997, will not be permitted by the Marion Conservation Commission."[11] The language states this standard may be waived if "it is demonstrated that issuance of such permit will not result in detriment to the protected resources of the Town of Marion."

[11] wetland_standard_1_-_buffer_zone_setbacks.pdf (marionma.gov)

2. alter any federally protected wetlands not regulated under state law? ___ Yes _**X**__ No; if yes, what is the area (sf)?

Wetlands impacted by this project are subject to state and federal regulations. There are no wetlands impacted by this project that are regulated federally but not state regulated.

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? ___ Yes _**X**_ No; if yes, is there a current Chapter 91 License or Permit affecting the project site? ___ Yes ___ No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

The project is inland and does not involve tidelands. The nearest water subject to Chapter 91 jurisdiction is roughly 0.1 miles away, a stream to the south of the Washburn Park area.

B. Does the project require a new or modified license or permit under M.G.L.c.91? ___ Yes _**X**_No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? Current ___ Change ___ Total ___

If yes, how many square feet of solid fill or pile-supported structures (in sf)?

The project does not contain any waterways or tidelands that would be subject the Waters Act, M.G.L.c.91, and therefore does not require a license or permit.

C. For non-water-dependent use projects, indicate the following:

Area of filled tidelands on the site:_____**0**_____

Area of filled tidelands covered by buildings:____**0**_____

For portions of site on filled tidelands, list ground floor uses and area of each use:

_____Not applicable_____

Does the project include new non-water-dependent uses located over flowed tidelands? Yes ___ No _**X**__

Height of building on filled tidelands_____Not applicable_____

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

The project is not in an area subject to tides. The nearest area subject to tides is the coastline of Black Point in the Sippican Harbor, which is located more than 1,000 feet to the south of the project.

D. Is the project located on landlocked tidelands? __ Yes _**X**_ No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize, or mitigate any adverse impact:

The project is inland and the nearest landlocked tideland is located approximately 13 miles away.

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? ___Yes _X__ No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize, or mitigate any adverse impact:

No sources indicating low groundwater levels as a threat to building foundations in the project area were identified.

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? ___ Yes _**X**__ No;
(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)

The project is not water dependent and subject to an EIR. It is not located on landlocked tidelands or waterways/tidelands subject to the Waterways Act.

G. Does the project include dredging? ___ Yes _**X**__ No; if yes, answer the following questions:

Dredging will not be required due to existing culverts in place for 12 stream crossings within the project geographic area.

What type of dredging? Improvement ___ Maintenance ___ Both ____
What is the proposed dredge volume, in cubic yards (cys) _____
What is the proposed dredge footprint ____length (ft) ___width (ft)____depth (ft);
Will dredging impact the following resource areas?
Intertidal Yes__ No__; if yes, ___ sq ft
Outstanding Resource Waters Yes__ No__; if yes, ___ sq ft
Other resource area (i.e., shellfish beds, eel grass beds) Yes__ No__; if yes __ sq ft
If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?
If no to any of the above, what information or documentation was used to support this determination?
Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.
Sediment Characterization
Existing gradation analysis results? __Yes ___No: if yes, provide results.
Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? ___Yes ____No; if yes, provide results.
Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.

Beach Nourishment ___
Unconfined Ocean Disposal ___
Confined Disposal:
Confined Aquatic Disposal (CAD) ___
Confined Disposal Facility (CDF) ___
Landfill Reuse in accordance with COMM-97-001 ___
Shoreline Placement ___
Upland Material Reuse____
In-State landfill disposal____
Out-of-state landfill disposal ____
(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? _**X**__ Yes __ No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

The northernmost point of the project, a small parking lot, is within the Massachusetts Coastal Zone. This parking lot is consistent with the policies of the Office of Coastal Zone Management. Creation of the lot

will be performed with minimal environmental impact and will enhance public access for recreational purposes. The project will be reviewed for consistency when the Section 404 Self Notification Verification Form is filed with USACE.

B. Is the project located within an area subject to a Municipal Harbor Plan? ___ Yes _**X**__ No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

The project area is not located within the area of Marion Harbor. It is not expected to have any elements that would be subject to harbor management plan review.

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ___ Yes _**X**__ No; if yes, specify, in quantitative terms:

This project does not involve use of any public water supplies or construction affecting public water supplies and does not directly or indirectly affect any surface or ground water supplies or conveyances. It will involve adjustments to existing hydrants and associated valve structures to accommodate the new path; however these adjustments will not exceed any of the thresholds in 301 CMR 11.03(4).

B. Does the project require any state permits related to **water supply**? ___ Yes _**X**__ No; if yes, specify which permit:

The nearest aquifer and wellhead protection areas are located approximately one-half mile away from the project.[12] The project will not impact any water supply. Adjustments to the existing hydrant infrastructure are not expected to require any state permits.

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	Existing	Change	Total
Municipal or regional water supply	_____	_____	_____
Withdrawal from groundwater	_____	_____	_____
Withdrawal from surface water	_____	_____	_____
Interbasin transfer	_____	_____	_____

(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ___ Yes ___ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? ___ Yes ___ No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results. _____

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? _____Will the project require an increase in that withdrawal? ___Yes ___No; if yes, then how much of an increase (gpd)? _____

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ___ Yes ___No. If yes, describe existing and proposed water supply facilities at the project site:

	Permitted Flow	Existing Avg Daily Flow	Project Flow	Total
Capacity of water supply well(s) (gpd)	_____	_____	_____	_____
Capacity of water treatment plant (gpd)	_____	_____	_____	_____

[12] MassMapper

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve:

1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ___ Yes ___ No
2. a Watershed Protection Act variance? ___ Yes ___ No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ___ Yes ___ No

III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities, and services:

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ___ Yes __**X**_ No; if yes, specify, in quantitative terms:

The project will not exceed any thresholds established in 301 CMR 11.03(5). No wastewater facilities and/or systems will be affected as part of this project.

B. Does the project require any state permits related to **wastewater**? ___ Yes _**X**__ No; if yes, specify which permit:

The project will not result in wastewater production. There are no wastewater facilities and/or systems that will be affected by the project.

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	Existing	Change	Total
Discharge of sanitary wastewater	_____	_____	_____
Discharge of industrial wastewater	_____	_____	_____
TOTAL	_____	_____	_____

	Existing	Change	Total
Discharge to groundwater	_____	_____	_____
Discharge to outstanding resource water	_____	_____	_____
Discharge to surface water	_____	_____	_____
Discharge to municipal or regional wastewater facility	_____	_____	_____
TOTAL	_____	_____	_____

B. Is the existing collection system at or near its capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ___ Yes___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ___ Yes ___ No; if yes, describe as follows:

	Permitted	Existing Avg Daily Flow	Project Flow	Total
Wastewater treatment plant capacity (in gallons per day)	_____	_____	_____	_____

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district? ___ Yes ___ No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials? ___ Yes ___ No; if yes, what is the capacity (tons per day):

	Existing	Change	Total
Storage	_____	_____	_____
Treatment	_____	_____	_____
Processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal.

III. Consistency

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ___ Yes ___ No; if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? _X_ Yes ___ No; if yes, specify which permit:

The project requires a State Highway Access Permit (SHAPS) for physical work or activities that will take place within or impact State Highway Right-of-Way or property owned and/or under the custody and control of MassDOT. Requirements for State Highway Access Permits are set forth under Massachusetts General Laws; Chapter 81, Section 21 and Chapter 85, Section 2.

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	Existing	Change	Total
Number of parking spaces	___0___	___15___	___15__
Number of vehicle trips per day	___0____	___60___	___60___
ITE Land Use Code(s):	__495___	__495___	__495___

B. What is the estimated average daily traffic on roadways serving the site?

Roadway	Existing	Change	Total
1. _Front Street Marion___	_12,000_	___0____	_12,000_
2. __Point Road Marion___	__2,200_	___0____	__2,200_
3. _____	_____	_____	_____

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement:

The project will not substantively increase traffic on state roads. Mitigation is not required.

The project is likely to support reduction of traffic on state-controlled roadways by providing an alternative travel route and mode to users of the shared use path. Construction of future sections of shared use paths in Wareham and Mattapoisett are planned for connection to the Marion SUP, likely yielding further reduction to traffic on state-controlled roads.

The proposed crossing of the Front Street (Route 105) and Spring Street intersection will provide a safer intersection through reconfiguration and signalized accommodation for the path crossing. This intersection is specifically identified in the 2017 Marion Master Plan as a key location for intersection improvement for safety.

The Master Plan Transportation Goal of Improving Traffic Safety Through Low-cost Interventions cites traffic calming measures, including signage, roadway markings (such as sharrows), crosswalk bump-outs, and speed humps. The proposed shared use path will assist in attaining this goal through the aforementioned intersection improvements.

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site?

The project is a shared use path for pedestrians and bicycles and provides considerable opportunities for non-vehicular transportation alternatives. The project also provides new opportunities for non-vehicular connections to the Greater Attleboro and Taunton Regional Transit Authority (GATRA) transit hub, as well as a proposed commuter rail station in downtown Wareham to the east.

The project will eventually accommodate connections to the Mattapoisett shared use path and the Town of Wareham's planned shared use path, forming an important component of the regional South Coast Bikeway outlined in the Southeastern Regional Planning and Economic Development District's (SRPEDD) 2016 Regional Transportation Plan. Once realized, the South Coast Bikeway will provide a continuous, 50-mile-long system of SUPs that connect Rhode Island to Cape Cod. Cities and towns included in this plan are Swansea, Somerset, Fall River, Westport, Dartmouth, New Bedford, Fairhaven, Mattapoisett, Marion, Wareham and Bourne. Segments of the bikeway exist in Swansea, Fall River, Fairhaven, Mattapoisett, and Wareham.

E. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? ____ Yes _X_ No; if yes, describe if and how the project will participate in the TMA:

There is no TMA providing transportation demand services in the project area. Further, there is no regional transit agency currently serving Marion, with fixed bus route services provided in Wareham, an adjacent community. Local transportation services are provided for seniors through the Marion Council On Aging.

F. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? ____ Yes __X_ No; if yes, generally describe:

There are no water, rail, or air transportation facilities in the vicinity of the project. It will not use other alternative transportation facilities.

G. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)?

The project is an at-grade path and will not penetrate approach airspace of any airport. The nearest airports are New Bedford Regional Airport (approximately 8 miles distant), Camp Edwards in Mashpee on Cape Cod (approximately 12 miles distant), Plymouth Municipal Airport (approximately 13 miles distant), Falmouth Air Park on Cape Cod (approximately 15 miles distant), and Taunton Municipal Airport (approximately 16 miles distant).

III. Consistency

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

The project is consistent with the Town of Marion Planning Board 2017 Master Plan. It is a key component of the Town's Bicycle and Pedestrian Plan. The Master Plan included transportation and improved traffic circulation as a central theme. It also identified a need for improved appearance, safety, and connectivity within the Town's transportation network. One Transportation Strategy goal of the Master Plan features completion of the proposed Marion Bicycle and Pedestrian Plan.

The Town of Marion Complete Street program provides accommodations for all users and modes, creates safer and more livable neighborhoods, and encourages healthy transportation alternatives. The shared use path intersection with Front Street and Spring Street will be consistent with the goal of providing traffic calming and a potential visual enhancement to the Route 6 and Route 105 Gateway area, which serves as a main point of entry into Marion.

The project will form a part of the South Coast Bikeway outlined in the SPREDD 2016 Regional Transportation Plan. Federal Highway Administration provided funding for the project under the Congestion Mitigation and Air Quality (CMAQ) program to support surface transportation projects and other related efforts that contribute air quality improvements and provide vehicular traffic congestion relief.

The SMMPO Regional Pedestrian Plan, Draft August 1, 2018, describes the need for safe, connected pedestrian facilities as proposed by the Marion SUP. Support for the Marion SUP is provided through each of the above-referenced plans and programs, demonstrating its regional need. Additional evidence of the strong, continued need for the Marion SUP was indicated on November 14, 2018, when representatives of the Marion Pathway Committee and Town of Mattapoisett attended SRPEDD's Joint Transportation Planning Group (JTPG) meeting. There, the parties noted the regional importance of the Marion SUP and advocated for advancing the project. In recognition of construction of Mattapoisett Phase 1 B SUP scheduled for spring 2019, the parties further highlighted a need for the Marion SUP. The Town of Mattapoisett has stated that completion of the Marion SUP is required to assure support for its proposed, non-TIP funded, approximately half-mile-long paved pathway connecting the terminus of the Marion SUP at the Marion/Mattapoisett town line to the existing paved road in the Mattapoisett Industrial Park.

The 2017 Master Plan for the Town of Marion Land Use Strategy (the Plan) stated benefits of Complete Streets policies and procedures as providing "accommodations for all users and modes, to create a safer and more livable neighborhoods, and to encourage healthy transportation alternatives."[13] The Plan section on Transportation and Circulation cited a "central theme" that was identified during Marion's Master Plan public input process being "the need for improved appearance, safety, and connectivity in the Town's transportation network".[14]

[13] https://www.marionma.gov/DocumentCenter/View/317/marion_master_plan_final-1-PDF
[14] Ibid

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? _X_ Yes ___ No; if yes, specify which permit:

The project requires a State Highway Access Permit (SHAPS) for physical work or activities that take place within, or impact, the State Highway Right-of-Way or property owned or under the custody and control of MassDOT-Highway.

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

Existing transportation facilities near the proposed project site include state and town-owned roadways. There are no active railroads, airports, or waterborne transportation facilities located nearby.

According to the Town of Marion 2017 Master Plan, the Southeastern Regional Transit Authority (SRTA) and Greater Attleboro Taunton Regional Transit Authority (GATRA) serve communities throughout Southeastern MA with fixed route and on-demand transit service. Bus service is not provided in Marion. Nearby accommodations include SRTA service for Mattapoisett and GATRA service for Wareham. One of the Transportation Strategies of the Master Plan seeks to engage regional transit authorities to provide service in Marion.

The project provides alternative transportation mode options on a dedicated pathway for pedestrians and bicyclists, with accommodations for all users. The project is not anticipated to generate traffic as defined in 301 CMR 11.03 (6). It will accommodate 15 total new parking spaces in Washburn Park and at Point Road. The additional parking is not considered a traffic generator under MEPA.

The project will cross Front Street and when path users cross the roadway, it will contribute to short-duration roadway traffic stoppage. The project includes reconfiguration of the Front Street and Spring Street intersection, including installation of a user-actuated Rapid Rectangular Flashing Beacon (RRFB) to provide safe crossings and maintain traffic controls. The use of a short segment of Washburn Lane through Washburn Park will require two other dedicated path crossings for the project. A new vehicle parking area within Washburn Park adjacent to a baseball diamond will be added to provide 12 parking spaces for SUP access parking, with one space being ADA-dedicated. A new roadside parking area will be added on Point Road, providing three other parking spaces, with one being ADA dedicated.

The path will provide opportunities for transit riders to connect with the GATRA transit hub and a proposed commuter rail station in downtown Wareham to the east. The project will provide year-round opportunities for walkers, cyclists, roller bladers, and cross-country skiers, while providing a safe alternative to vehicular transportation that can help reduce vehicular traffic congestion and associated air pollution by way of increased non-vehicular access to various under-utilized conservation areas. When completed, the project will connect the Mattapoisett SUP with the SUP planned for Wareham, forming a critical component of the regional South Coast Bikeway that is outlined in the Southeastern

Regional Planning and Economic Development District's (SRPEDD) 2016 Regional Transportation Plan. Once realized, the South Coast Bikeway will provide a 50-mile continuous system of SUPs connecting Rhode Island with Cape Cod.

B. Will the project involve any
   1. Alteration of bank or terrain (in linear feet)? _____No_____
   2. Cutting of living public shade trees (number)? _____3_____

A public shade tree is defined as [any] tree within a public way or on the boundaries thereof."[15] There is one spruce on Spring Street and two on Point Road that will be removed. Other trees being removed on the project are not sited on a public way.

   3. Elimination of stone wall (in linear feet)? _____No_____

III. Consistency -- Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

The 2019 Massachusetts Bicycle Transportation Plan set forth a commitment to multimodal and investment in infrastructure that supports increased biking and walking activities. Objectives in the Bicycle Transportation Plan include improved connections and reduction of stressful interactions with motor vehicles.

The Plan's top feature, Initiative 1, lists development of connected, safe, and comfortable bicycle networks, with the filling of gaps in existing bike networks identified as a key Plan goal. A specific Action set forth by the Plan is connection of the Mattapoisett Rail Trail with the proposed Marion shared use path.

Initiative 4 in the Bicycle Transportation Plan describes increased access to bicycles and enabling the convenience of bicycling as an everyday travel option for people of all ages and abilities. The project is entirely consistent with this initiative by way of providing a low-grade path that is predominantly separated from vehicle traffic while providing safe routes for crossing or encountering traffic on state and local roads.

Capital Investment Plan

The Capital Investment Plan (CIP) is established to program state, federal and other funds to pay for long-term improvements to the transportation system and is integrated with the Commonwealth's State Transportation Improvement Plan (STIP). Transportation investments that receive federal highway and federal transit funding are included in the STIP, while comprising approximately one-third of funding that is listed in the CIP. Updated annually, the CIP is adapted to changing needs, priorities, and programs within a five-year horizon. The Marion SUP project was included in the 2023-2027 STIP under the Southeastern Massachusetts Municipal Planning Organization, with federal Congestion Management Air Quality (CMAQ) funding. The project is identified with positive air quality contributions that are consistent with the STIP and CIP.

MassDOT Healthy Transportation Policy Directive

The proposed SUP is consistent with the requirements of the directive. The September 2013 directive formalized MassDOT's commitment to transportation networks that serve all mode choices. A primary commitment provided that all MassDOT-funded and/or designed projects shall seek to increase and

[15] General Law - Part I, Title XIV, Chapter 87, Section 1 (malegislature.gov)

encourage increased volumes of pedestrian, bicycle, and transit trips. The project fully meets the key objective of encouraging additional pedestrian and bicycle trips. Another commitment of the directive featured inclusion of provisions for off-road accommodations and/or clearly destinated safe travel routes for pedestrians, bicyclists, and transit users along existing facilities, including for people protected under the American with Disabilities Act. The project distinctly provides safe routes and accommodates ADA requirements, which provides appropriate features for possible future infrastructure additions. The MassDOT directive for bicycle facilities requires that a project "…shall consider, but not be limited to, the AASHTO Guide for the Development of Bicycle Facilities (2012) and the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide (2012) as supplements to the Project Development and Design Guide (2006), except for pavement markings not approved by MUTCD."[16]

Massachusetts Pedestrian Transportation Plan

The MassDOT 2019 Pedestrian Transportation Plan (PTP) targeted safe and comfortable walking options for short trips. The intent of the project is aligned with PTP objectives. Initiative 2 of the PTP includes incorporation of pedestrian safety, comfort, and convenience in investment decision-making and project development.[17] The incorporation of pedestrian safety and comfort is intrinsic in the project.

[16] https://www.mass.gov/files/documents/2018/03/07/p-13-0001.pdf
[17] https://massdot.maps.arcgis.com/apps/MapJournal/index.html?appid=96339eb442f94ac7a5a7396a337e60c0

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ___ Yes _**X**__ No; if yes, specify, in quantitative terms:

The project will not create any electric generating facilities, fuel pipelines, or transmission lines.

B. Does the project require any state permits related to **energy**? ___ Yes _**X**__ No; if yes, specify which permit:

The project will not create any electric generating facilities, fuel pipelines, or transmission lines.

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	Existing	Change	Total
Capacity of electric generating facility (megawatts)	_____	_____	_____
Length of fuel line (in miles)	_____	_____	_____
Length of transmission lines (in miles)	_____	_____	_____
Capacity of transmission lines (in kilovolts)	_____	_____	_____

B. If the project involves construction or expansion of an electric generating facility, what are:

1. the facility's current and proposed fuel source(s)?
2. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ___Yes ___No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans, and policies for enhancing energy facilities and services:

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ___ Yes _X__ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ___ Yes __X_ No; if yes, specify which permit:

The project will not result in the construction or modification of a stationary source for federal potential emissions. It will provide a benefit to air quality based on projected reduction of vehicular traffic on area roads.

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ___ Yes ___ No; if yes, describe existing and proposed emissions (in tons per day) of:

	Existing	Change	Total
Particulate matter	_____	_____	_____
Carbon monoxide	_____	_____	_____
Sulfur dioxide	_____	_____	_____
Volatile organic compounds	_____	_____	_____
Oxides of nitrogen	_____	_____	_____
Lead	_____	_____	_____
Any hazardous air pollutant	_____	_____	_____
Carbon dioxide	_____	_____	_____

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

This project will construct a shared use path that provides year-round opportunities for walkers, cyclists, roller bladers, cross country skiers, while providing a safe alternative to vehicular transportation, reducing vehicular traffic congestion, mitigating associated air pollution, and boosting non-vehicular access to various under-utilized conservation areas. There will be no storage, treatment, processing, combustion or disposal of solid waste or any storage, recycling, treatment, or disposal of hazardous waste associated with this project.

B. Does the project require any state permits related to **solid and hazardous waste**? ___ Yes _X_ No; if yes, specify which permit:

No permitting related to solid and/or hazardous waste will be required. The project design (100%) complies with state and federal standards, including the Commonwealth of Massachusetts Department of Transportation (MassDOT), Highway Design Manual, 2006 edition, the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004 edition, and the Guide for Development of Bicycle Facilities, 1999 edition.

The project site occupies predominately abandoned rail/trolley corridors. As a standard of practice, soils located under and adjacent to rail beds are presumed contaminated. As such, protocols for handling and management will be employed by MassDOT and contractors while constructing the project. Utilizing established Standard Specifications for handling soils will minimize exposure or inadvertent releases of contaminants off site. Upon completion, the addition of pavement in these areas will help prevent exposure and/or release to users of the SUP or to the surrounding environment.

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion, or disposal of solid waste? ___ Yes ___ No; if yes, what is the volume (in tons per day) of the capacity:

	Existing	Change	Total
Storage	_____	_____	_____
Treatment, processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment, or disposal of hazardous waste? ___ Yes ___ No; if yes, what is the volume (in tons or gallons per day) of the capacity:

	Existing	Change	Total
Storage	_____	_____	_____
Recycling	_____	_____	_____
Treatment	_____	_____	_____
Disposal	_____	_____	_____

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos?
___ Yes ___ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? _X_ Yes ___ No; if yes, attach correspondence. For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? _X___Yes ____ No; if yes, attach correspondence

The Marion Shared Use Path was reviewed by MassDOT Cultural Resources on September 20, 2022, as No Effect under Stipulation VB of the Section 106 Programmatic Agreement (Attachment 14). Notification was sent in June 2022 to the Tribal Historic Preservation Officers for the Aquinnah Wampanoag, Mashpee Wampanoag, and Narragansett Indian Tribe. Notification was sent to the Board of Underwater Archaeological Resources in September 2022. None of the parties expressed concerns relative to the project.

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes _X_ No; if yes, does the project involve the demolition of all or any exterior part of such historic structure? ___ Yes ___ No; if yes, please describe:

The proposed SUP passes through the Old Depot Area (MRN.H) and is proposed to be constructed adjacent to the south side of the Cape Cod Railroad Depot – Old Depot (MRN.120), now the Children's Depot building (attachment 4). The construction of the SUP will take place primarily within the former railroad bed and former trolley bed. It will not impact any existing structures or detract from the character of the area.

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes _X_ No; if yes, does the project involve the destruction of all or any part of such archaeological site? ___ Yes ___ No; if yes, please describe:

An archaeological survey was conducted by Public Archaeology Lab, Inc., MassDOT's archaeological consultant. The survey was conducted in July 2022 at three locations where the proposed path diverges from either railroad or trolley line ROW. Cultural materials were recovered from disturbed contexts (pre-Contact and post-Contact period materials mixed in layers likely deposited as sheet refuse or fill material). No further investigation was recommended.

D. If you answered "No" to <u>all parts of both</u> questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to <u>any part of either</u> question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

Historic:
A review of the National Register of Historic Places revealed no historic properties within or adjacent to the project area. A review of the MHC-Inventory revealed that the project corridor runs through the Old Depot Area (MRN.H). This area is comprised of residential and commercial buildings constructed between circa 1800-1920. Buildings that contribute to MRN.H have been altered so they no longer appear to possess the architectural integrity necessary for listing in the NRHP. Alterations include replacement windows, new roofs, additions, replacement cladding, and altered chimneys.

The Cape Cod Railroad Depot/Old Depot (MRN.120) at 381 Front Street, circa 1850, is part of MRN.H, a two-story, wood-framed building with an open porch that extends across the façade. The building was moved from across the street at the turn of the 20th century to become the New Bedford & Onset electric trolley line's depot. It still appears to retain architectural and historic significance associated with railway transportation. Therefore, it appears to qualify for individual listing in the NRHP. Work in front of the depot will be limited to roadway resurfacing and sidewalk work within the roadway layout.

Archaeology:
A review of the MHC archaeological maps revealed numerous pre-contact sites recorded on Little Neck near Hammett Cove northeasterly of the north end of the project area including: 19-PL-229 (Washburn Farm South Site); 19-PL-230 (Washburn Farm North Site); 19-PL-231 (Washburn Farm Site); 19-PL-294 (Little Neck Shell Midden Site); 19-PL-830 (Minister's Rock Vicinity Site); 19-PL-833 (J. Smith Findspot 2); and Little Neck Site (19-PL-1107). These sites are outside the project's direct APE and will not be impacted by the proposed project work.

The MassDOT Archaeologist conducted a site visit to the project area on May 25, 2022. The majority of the project area was determined to have low sensitivity based on impacts of past railroad and roadway construction. The MassDOT Archaeologist determined that three locations appeared to be sensitive for archaeological resources where the proposed path diverged from the former railroad ROW. On behalf of MassDOT, the Public Archaeology Laboratory, Inc. (PAL) conducted an intensive (locational) archaeological survey at the three locations in July 2022: Area 1 – an existing unimproved walking trail from Station 251+00 to Station 265+50; Area 2 – a proposed wetland replication area and access path near Station 284+25 LT; Area 3 – alignment east of the I-195 NB layout line from Station 291+00 to Station 300+25. That intensive survey produced low-density deposits of mixed post-contact and pre-contact cultural materials. The post-contact material is interpreted as sheet trash resulting from expedient disposal patterns and does not represent a significant archaeological site. The final archaeological report was submitted to the MHC on September 14, 2022.

The MTHPO, NTHPO, ATHPO were notified in advance of the proposed archaeological survey. The MTHPO provided a tribal monitor during portions of the survey. To date, no written comments have been received from the MTHPO, the NTHPO, or the ATHPO.

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

Notification was sent in June 2022 to the Tribal Historic Preservation Officers for the Aquinnah Wampanoag, Mashpee Wampanoag, and Narragansett Indian Tribe. Notification was sent to the Board of Underwater Archaeological Resources in September 2022. None of these parties expressed concerns relative to the proposed project. MassDOT's CRU staff has determined that the project satisfies the conditions outlined in Stipulation V.B. -no effect on NR-listed or -eligible properties. No further review is required. Documentation in support of this finding has been placed on file at MassDOT.

CLIMATE CHANGE ADAPTATION AND RESILIENCY SECTION

This section of the Environmental Notification Form (ENF) solicits information and disclosures related to climate change adaptation and resiliency, in accordance with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency (the "MEPA Interim Protocol"), effective October 1, 2021. The Interim Protocol builds on the analysis and recommendations of the 2018 Massachusetts Integrated State Hazard Mitigation and Climate Adaptation Plan (SHMCAP), and incorporates the efforts of the Resilient Massachusetts Action Team (RMAT), the inter-agency steering committee responsible for implementation, monitoring, and maintenance of the SHMCAP, including the "Climate Resilience Design Standards and Guidelines" project. The RMAT team recently released the RMAT Climate Resilience Design Standards Tool, which is available here.

The MEPA Interim Protocol is intended to gather project-level data in a standardized manner that will both inform the MEPA review process and assist the RMAT team in evaluating the accuracy and effectiveness of the RMAT Climate Resilience Design Standards Tool. Once this testing process is completed, the MEPA Office anticipates developing a formal Climate Change Adaptation and Resiliency Policy through a public stakeholder process. Questions about the RMAT Climate Resilience Design Standards Tool can be directed to rmat@mass.gov.

All Proponents must complete the following section, referencing as appropriate the results of the output report generated by the RMAT Climate Resilience Design Standards Tool and attached to the ENF. In completing this section, Proponents are encouraged, but not required at this time, to utilize the recommended design standards and associated Tier 1/2/3 methodologies outlined in the RMAT Climate Resilience Design Standards Tool to analyze the project design. However, Proponents are requested to respond to a respond to a user feedback survey on the RMAT website or to provide feedback to rmat@mass.gov, which will be used by the RMAT team to further refine the tool. Proponents are also encouraged to consult general guidance and best practices as described in the RMAT Climate Resilience Design Guidelines.

Climate Change Adaptation and Resiliency Strategies

I. Has the project taken measures to adapt to climate change for all of the climate parameters analyzed in the RMAT Climate Resilience Design Standards Tool (sea level rise/storm surge, extreme precipitation (urban or riverine flooding), extreme heat)? ___Yes _X_ No

Note: Climate adaptation and resiliency strategies include actions that seek to reduce vulnerability to anticipated climate risks and improve resiliency for future climate conditions. Examples of climate adaptation and resiliency strategies include flood barriers, increased stormwater infiltration, living shorelines, elevated infrastructure, increased tree canopy, etc. Projects should address any planning priorities identified by the affected municipality through the Municipal Vulnerability Preparedness (MVP) program or other planning efforts, and should consider a flexible adaptive pathways approach, an adaptation best practice that encourages design strategies that adapt over time to respond to changing climate conditions. General guidance and best practices for designing for climate risk are described in the RMAT Climate Resilience Design Guidelines.

A If no, explain why.

The RMAT report (attachment 7) suggests the project will be subject to a moderate risk of sea level rise/storm surge. The project area is projected to be exposed to a 1% annual coastal flood event as early as 2030. Due to increased impervious area, the project also has a high risk of urban flooding and riverine flooding. The maximum annual daily rainfall is within 6 to 10 inches during the overall project's useful life. A portion of the project is located within a mapped FEMA floodplain. In addition, the report states the project is at risk of extreme heat.

Stormwater runoff from the SUP will be designed in compliance with Storm Water Management Standards and include path-side swales, crushed stone trenches, grassed depressions, and deep sump

catch basins that will drain the project trail and roadways more efficiently and offer attenuation of runoff. Additionally, this will result in an improvement over existing conditions along the railroad bed where sediment is currently eroding into the adjacent waterbodies and wetlands, which will alleviate damage to wetlands. Additionally, the project is anticipated to result in a reduction of greenhouse gas emissions.

The RMAT report uses a 2030 Target Planning Horizon.

Although the project may experience minor negative heat impacts associated with removing public shade trees, the project will ultimately offer a net positive impact by provided new access to shaded areas from one of Marion's commercial centers that have previously been inaccessible. Additionally, this project will offer an alternative to automobile use, which in turn offers an opportunity for reduced greenhouse gas emissions. The project is not expected to be susceptible to negative impacts due to climate change in the future.

B. If yes, describe the measures the project will take, including identifying the planning horizon and climate data used in designing project components. If applicable, specify the return period and design storm used (e.g., 100-year, 24-hour storm).

C. Is the project contributing to regional adaptation strategies? __X__ Yes __ No; If yes, describe.

This project will contribute to regional adaptation strategies. The Marion SUP project is part of the 2023-2027 Massachusetts State Transportation Improvement Program (STIP) and supports the Commonwealth's goal of mitigating impacts associated with global climate change. The project is expected to result in a quantified decrease in emissions, as an effect of providing pedestrian and bicycle infrastructure. The project aligns with the STIP in regard to anticipated decreases in emissions.

II. Has the Proponent considered alternative locations for the project in light of climate change risks? ___ Yes _X__ No

A. If no, explain why.

The project location was chosen based on the presence of the existing rail/trolley bed to minimize environmental impacts. It is expected that potential impacts from heavy rains, short term flooding, and extreme heat will be withstood by the shared use path.

B. If yes, describe alternatives considered.

III. Is the project located in Land Subject to Coastal Storm Flowage (LSCSF) or Bordering Land Subject to Flooding (BLSF) as defined in the Wetlands Protection Act? __X__Yes ____No

If yes, describe how/whether proposed changes to the site's topography (including the addition of fill) will result in changes to floodwater flow paths and/or velocities that could impact adjacent properties or the functioning of the floodplain. General guidance on providing this analysis can be found in the CZM/MassDEP Coastal Wetlands Manual, available here.

Topography will not be impacted to the extent that it would change floodwater flow paths and/or velocities. Though there will be an addition of impervious surface in the project area, there is just slightly over 1 acre of impact to LSCSF. Although proposed conditions will be slightly elevated along the railroad bed in areas that have experienced erosion, path-side embankment areas will be treated with either modified rockfill or loam and seed, depending on slope, to protect from erosion, including during coastal storm flooding events.

ENVIRONMENTAL JUSTICE SECTION

I. Identifying Characteristics of EJ Populations

A. If an Environmental Justice (EJ) population has been identified as located in whole or in part within 5 miles of the project site, describe the characteristics of each EJ populations as identified in the EJ Maps Viewer (i.e., the census block group identification number and EJ characteristics of "Minority," "Minority and Income," etc.). Provide a breakdown of those EJ populations within 1 mile of the project site, and those within 5 miles of the site.

The Updated 2020 Massachusetts Environmental Justice Populations map identifies the one EJ population within the Town of Marion with EJ characteristics of this block group being Minority population: 26%. The map is based on Block Group 4, Census Tract 5611, Plymouth County, Massachusetts. Roughly two thirds of the project lie within this tract. Available public data about the tract lists a population of 5,293 within a 14.1 square mile area, or 374.7 people per square mile.[18] Publicly available data reports that in 2020, the town population featured ten percent or more of two or more minority designations, one percent as Black, one percent as Asian, two percent as Other, and four percent as Hispanic.

The northeastern portion of the corridor is sited within 5 miles of neighborhoods with known EJ populations (attachment 8). Roughly 2 miles northeast of the project lie two EJ populations with the criteria: Income, (Block Group 4 and 5, Census Tract 5454). Another EJ population with the criteria: Minority, is roughly 3.5 miles to the northeast of the project (Block Group 1, Census Tract 5452). Finally, roughly 3.5 miles to the north lies another EJ population with the criteria: Income (Block Group 1, Census Tract 5451). These other EJ communities within 5 miles of the project site are all within the Town of Wareham.

Town	EJ Criteria	Block Group	Census Tract	Distance from Project
Wareham	Income	4	545400	2 mi NE
Wareham	Income	5	545400	3 mi NE
Wareham	Minority	1	545200	3.5 mi NE
Wareham	Income	1	545100	3.5 mi N

B. Identify all languages identified in the "Languages Spoken in Massachusetts" tab of the EJ Maps Viewer as spoken by 5 percent or more of the EJ population who also identify as not speaking English "very well." The languages should be identified for each census tract located in whole or in part within 1 mile and 5 miles of the project site, regardless of whether such census tract contains any designated EJ populations.

The EJ Maps Viewer Language Spoken In Massachusetts map does not identify any non-English languages spoken by five percent or more of the EJ population in the Town of Marion or Wareham.[19] In Acushnet, there is Tract 6541, of which 7.3% of the population speak Portuguese or Portuguese Creole and do not speak English very well, however, this Tract is not an EJ community.

C. If the list of languages identified under Section I.B. has been modified with approval of the EEA EJ Director, provide a list of approved languages that the project will use to provide public involvement opportunities during the course of MEPA review. If the list has been expanded by the Proponent (without input from the EEA EJ Director), provide a list of the

18 Census Tract 5611, Plymouth, MA - Profile data - Census Reporter
19 Languages spoken in Massachusetts (arcgis.com)

additional languages that will be used to provide public involvement opportunities during the course of MEPA review as required by Part II of the MEPA Public Involvement Protocol for Environmental Justice Populations ("MEPA EJ Public Involvement Protocol"). If the project is exempt from Part II of the protocol, please specify.

The EJ Maps Viewer Language Spoken In Massachusetts map does not identify any non-English languages spoken by five percent or more of the EJ population within a mile of the project limits. As a result, no additional languages will be used to provide public involvement opportunities during the course of MEPA review other than English. [20]

II. Potential Effects on EJ Populations

A. If an EJ population has been identified using the EJ Maps Viewer within 1 mile of the project site, describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

The proposed project consists of a paved recreational path along the existing railroad bed beginning at the Mattapoisett/Marion town line, a path crossing and intersection improvements at Front Street (Route 105)/Spring Street intersection, and a paved recreational path through Washburn Park continuing to the proposed project terminus at Point Road.

The Commonwealth's Vulnerable EJ health criteria tool[21] on the state Department of Public Health (DPH) website supports that neither the community of Marion nor the identified EJ population within Marion exhibit any vulnerable EJ criteria, although blood lead prevalence data is not available on community or census tract level through this tool. Facilities identified as being regulated by MassDEP's Bureau of Air and Waste exist within this EJ population and are associated with Lockheed Martin Sippican Inc. and Hiller Co Inc., however they are not associated with the project and the closest (Lockheed Martin Sippican Inc.) is over 1,000 feet removed from the project area[22]. The Marion Landfill, an unlined and capped facility which closed in 2012 is located approximately 0.25 miles from the project. The Mattapoisett Landfill, also an unlined and capped facility which closed in 1999 is less than 1 mile from the southern end of the proposed SUP. Landfills have the potential to emit harmful gases to the air and introduce pollutants that can infiltrate and migrate into surrounding soils and groundwater. All four of these facilities existed before the section of Marion in which the project resides evolved to meet EJ criteria. Due to the lack of vulnerable EJ health criteria present, available data does not support an unfair or inequitable burden on this EJ community, nor is it anticipated that this project will contribute to elevated health vulnerability within the EJ community.

Based on longstanding local and regional community requests for development of an SUP and bicycle path in Marion along with significant plans for the project (Town of Marion Master Plan, Town of Marion Open Space and Recreational Plan; Town of Marion Complete Streets Plan; and SPREDD 2016 Regional Transportation Plan), the project is widely viewed as delivering beneficial impacts of increased connectedness to open space and recreation and reduce the need for vehicle use. Specifically, the project will not create negative impacts for any person(s) situated within the EJ Minority community, including during the construction period. To support this effort, contract specifications will be developed to address dust suppression measures, construction equipment emission controls, and noise control measures to avoid construction phase impacts to air quality and noise levels.

20 Ibid
21 MEPHT | Environmental Justice (state.ma.us)
22 https://www.mass.gov/info-details/massgis-data-massdep-major-facilities

Likely positive effects of the project are the addition of long desired connection points to existing open space parcels (public and accessible private) as well as to the Town's village area, increased recreational opportunities, and greater connections to neighbors through connection to the regional shared use and bike paths.

The project is part of the Town's Complete Street plan for improvements to increase access to open space and recreation tracts in Marion, including multi-modal access described by the OSRP as particularly important to open space areas because parking is typically extremely limited. The Town OSRP states that access via a bicycle and pedestrian network would enable users to arrive at the parklands and their trails without the need for a passenger vehicle.

The Project has been developed to the greatest extent practicable to only require easements and avoid acquisition of properties housing nearby businesses, single-family or multifamily residences, or identified communities and therefore, substantive negative impacts are not anticipated. Broadly speaking, the project will not lead to hardship to any person(s) situated within the EJ Minority community (the northeastern portion of the project corridor.) Trip generation impacts associated with the addition of 12 parking spaces at Washburn Park is projected at 60 per day, are considered minimal when contrasted with potential trip reduction associated with additional bicycle commuter trips the path can accommodate.

B. If an EJ population has been identified using the EJ Maps Viewer within 5 miles of the project site, will the project: (i) meet or exceed MEPA review thresholds under 301 CMR 11.03(8)(a)-(b) _ Yes **X** __ No; or (ii) generate 150 or more new average daily trips (adt) of diesel vehicle traffic, excluding public transit trips, over a duration of 1 year or more. ___ Yes __**X**_ No

The project will not involve the construction or modification of any stationary source with potential emissions and the project will not generate 150 or more adt of diesel vehicle traffic.

C. If you answered "Yes" to either question in Section II.B., describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

III. Public Involvement Activities

A. Provide a description of activities conducted prior to filing to promote public involvement by EJ populations, in accordance with Part II of the MEPA EJ Public Involvement Protocol. In particular:

   1. If advance notification was provided under Part II.A., attach a copy of the Environmental Justice Screening Form and provide list of CBOs/tribes contacted (with dates). Copies of email correspondence can be attached in lieu of a separate list.

The table that follows details the outreach efforts conducted to date, noting methods used for outreach (email vs. phone call), notes about the any communications, and utilizing the EJ Ref. List provided by MEPA. The list also notes groups added to the EJ Ref. List in green. A copy of the Environmental Justice Screening Form can be found in Attachment 10.

Key	Email Phone call Added to EJ Ref List

Organization Name	Point of Contact/Title	Dates/Form of Outreach	Request for Meeting	Notes
Chappaquiddick Tribe of the Wampanoag Nation	Alma Gordon, Tribal Pres.	1/4/24 1/4/24 1/16/24 1/22/24 1/29/24	No	No response to email. Voice mail (VM) not available.
Narragansett Tribe	Dinalyn Spears, Dir. of Planning & Natural Resources	1/4/24 1/4/24 1/16/24 1/22/24 1/29/24	No	No response to email. VM not returned.
Nipmuc Nation (Hassanamisco Nipmucs)	Cheryll Toney Holley, Chair	1/4/24 1/4/24 1/16/24 1/19/24 1/26/24 1/26/24	No	No response to email. VM not available.
Massachusetts Commission on Indian Affairs (MCIA)	John Peters, Jr., Exec. Dir.	1/4/24 1/4/24 1/16/24 1/18/24 1/26/24 1/29/24	No	No response to email. VM not returned.
Herring Pond Wampanoag Tribe	Melissa Ferretti, Chair	1/4/24 1/4/24 1/16/24 1/18/24 1/26/24	No	Spoke with M. Ferretti on 1/26. She indicated intention to submit formal comment on EENF when link is available. Generally positive about SUP projects but will reserve judgement until EENF has been reviewed. Expressed great appreciation for MassDOT EJ outreach work and initiative-taking communication by project team.
Chappaquiddick Tribe of the Wampanoag Nation, Whale Clan	Patricia Rocker, Chair	1/4/24 1/26/24	No	No response to email. Telephone # provided by MEPA EJ Ref. List was not operative. No alternative # available.
North American Indian Center of Boston	Raquel Halsey, Exec. Dir.	1/4/24 1/16/24 1/26/24	No.	Representative contacted via phone. Would not provide name. Confirmed receipt of EJ Screen Form on 1/4/24 and thanked MassDOT for including Center in the EJ Outreach process.
Pocasset Wampanoag Tribe	Cora Pierce, (no title listed)	1/4/24 1/26/24	No	No response to email.

Organization Name	Point of Contact/Title	Dates/Form of Outreach	Request for Meeting	Notes
				Telephone # provided by MEPA EJ Ref. List was not operative. No alternative # available.
Massachusetts Tribe at Ponkapoag	Elizabeth Soloman, (no title listed)	1/4/24 1/26/24	No	No response to email. Telephone # provided by MEPA EJ Ref. List was not operative. No alternative # available.
Wampanoag Tribe of Gay Head	NA	1/4/24 1/16/24 1/18/24 1/26/24	NA	EJ Ref. List contained no contact information for tribe. Tribal website did not list email contact information. Called telephone # shown on website (508-645-9265) and left VMs but did not receive return call.
Mashpee Wampanoag Tribe	NA	1/4/24 1/16/24 1/18/24 1/26/24	NA	EJ Ref. List contained no contact information for tribe. Tribal website did not list email contact information. Called telephone # shown on website (508-645-9265) and left VMs but did not receive return call.
Unitarian Universalist Mass Action Network	Clair Muller, Movement Building Dir.	1/4/24 1/17/24 1/22/24 1/26/24	No	No response to email or VM.
Mass Rivers Alliance	Julia Blatt and Gretchen McClain, co-Exec. Dirs.	1/4/24 1/17/24 1/22/24 1/26/24	No	No response to email or VM.
The Trust for Public Land	Jodi Valenta, MA State Dir.	1/4/24 1/17/24 1/22/24	No	Confirmed receipt of EJ Screen Form on 1/22 via email. Trust does not attend ENF hearings as general rule and had no plans to participate in Marion SUP process.
Browning the GreenSpace	Kerry Bowie, Pres.	1/4/24 1/22/24	No	No response to email. No telephone # listed on EJ Ref. List and none could be found in public listings.
Community Action Works	Sylvia Braude, Exec. Dir	1/4/24 1/17/24	No	Confirmed receipt of EJ Screen form on 1/17 via phone. Reported that organizations' membership was alerted to 1/31 Open House meeting in Marion and pending publication of EENF. Expressed no concerns and did not request a meeting.
Appalachian Mountain Club	Heather Clish, Dir. Of Conservation & Recreation Policy	1/4/24 1/17/24 1/22/24 1/26/24	No	No response to email or VM.

Organization Name	Point of Contact/Title	Dates/Form of Outreach	Request for Meeting	Notes
Conservation Law Foundation	Joahnnes Epke and Brittney Jenkins, Staff Atty. and VP	1/4/24 1/16/24 1/22/24	No	Spoke with J. Epke on 1/16 via phone. CLF is monitoring project, which it supports. Will comment on EENF after publication.
Environment Massachusetts	Ben Hellerstein, MA State Dir.	1/4/24 1/17/24 1/22/24 1/26/24	No	No response to email or VM.
Mass Land Trust Coalition	Robb Johnson, Exec. Dir.	1/4/24 1/17/24 1/22/24 1/26/24	No	No response to email or VM.
Clean Water Action	Cindy Luppi, New England Dir.	1/4/24 1/17/24 1/22/24 1/26/24	No	No response to email or VM.
Neighbor to Neighbor Mass.	Lena Entin & Miles Gresham, Interim co-Dirs.	1/4/24 1/22/24	No	No response to email. No telephone # listed on EJ Ref. List and none could be found in public listings.
Ocean River Institute	Rob Moir, Exc. Dir.	1/4/24 1/22/24	No	No response to email. No telephone # listed on EJ Ref. List and none could be found in public listings.
Sierra Club MA	Deb Pasternak, MA Chapter Dir.	1/4/24 1/17/24 1/22/24 1/26/24	No	No response to email or VM.
Mass Audubon	Heidi Ricci, Dir. Of Policy	1/4/24 1/22/24	No	No response to email. No telephone # listed on EJ Ref. List and none could be found in public listings.
Coastline Elderly Services	Jeanne Daly, Marion Rep.	1/4/24 1/16/24 1/26/24	No	Phone operator did not have contact information for J. Daly. VM left on hotline per operator instruction. Email was not returned.
Community Connections	Liz Rabideau, Dir. Of Community Relationships	1/4/24 1/16/24 1/26/24	No	L. Rabideau confirmed receipt of EJ Screen on 1/16. She said that Comm. Connections did not service Marion but did service Wareham. She said she will review EENF filing for any impacts to Wareham and her client base.
Fishing Partnership Support Services	JJ Bartlett, President	1/4/24 1/16/24 1/19/24 1/26/24 1/26/24	No.	VMs not returned. No response to email.
Groundwork South Coast	Maura Valdez, Exec. Dir.	1/4/24 1/16/24	No	M. Valdez responded via email on 1/17. The organization does not support Marion and could not provide local contact information for additional engagement.

Organization Name	Point of Contact/Title	Dates/Form of Outreach	Request for Meeting	Notes
Island Foundation (based in Marion, MA)	Andrea Bogomolni, Program Officer, Envir. & Educ.	1/4/24 1/16/24 1/19/24 1/26/24 1/26/24	No	Spoke with A. Bogomolni on 1/19 and 1/26. Confirmed receipt of EJ Screen From on 1/16. She reported on 1/26 that the Foundation was between leaders and therefore, it could not comment on SUP until further notice.
Marion Council on Aging	Karen Gregory, Dir.	1/4/24 1/16/24 1/26/24 1/22/24	No	Spoke with assistant on 1/16. Confirmed receipt of EJ Screen Form. Did not reply otherwise.
NAACP of New Bedford	Renee Ledbetter, Pres.	1/16/24 1/19/24 1/26/24	No.	Phone # listed in EJ Ref. List was inactive. No email address was provided. Email was sent to address found on internet, but message bounced back. Online search listed # that connected to a church in New Bedford. VMs left on 1/16, 1/19, and 1/26.
Nemasket Group	Margaret LeBrun, Exec. Dir.	1/4/24 1/16/24 1/22/24 1/26/24	No	Spoke to receptionist on 1/16 and left VM for ED. She could not confirm receipt of EJ Screen Form. Left VM again on 1/22. No responses received.
Sippican Lands Trust	Cathy Stone, Pres.	1/4/24 1/16/24 1/29/24 1/26/24	No	No response to VMs and emails.
Southcoast Community Foundation	Kristen Sarkarati, Dir. of Marketing & Communications	1/4/24 1/16/24 1/29/24 1/26/24	No	No response to VMs and emails.
South Coast LGBTQ+ Network	Eileen Dugas & David Civitarese, Exec. Dir. & Board Member	1/4/24 1/16/24 1/29/24 1/26/24 2/5/24	No	No responses to VMs and initial emails. D. Civitarese responded by phone on 2/2 and confirmed receipt of EJ Screen Form. The Network was interested in learning more about the SUP and impacts on EJ populations, including positive impacts. The organization supports the project. Email sent on 2/5 with all materials from 1/31 meeting (presentation, handout, FAQ). The organization intends to comment on EENF when it is published.
United Way of Greater New Bedford	Victoria Grasela, VP of External Engagement	1/4/24 1/16/24 1/29/24 1/29/24	No	V. Grasela responded via email on 1/29 to confirm receipt of EJ Screen Form. She reported that UW does not have active funding relationships with any

Organization Name	Point of Contact/Title	Dates/Form of Outreach	Request for Meeting	Notes
				group in Marion. The UW is not interested in commenting on EENF.
Women's Fund South Coast	Christine Monska, Ed. Dir.	1/4/24 1/16/24 1/29/24 1/26/24	No	No response to VMs and emails.
Southeastern Regional Planning and Economic Development District (SRPEDD)	Danica Belknap & Jonathan Gray, Dir. of Environmental & Climate Justice, and Transportation Planner	1/4/24 1/16/24 1/19/24 1/29/24 1/26/24 2/6/24	No	Spoke with D. Belknap on 1-16 and learned that EJ director had been replaced. Emailed D. Belknap, new EJ director, on via email in 1/19, who confirmed receipt of EJ Screen and shared list of local organizations to consider as EJ contacts (note: list was duplicative of EJ Ref. List and MassDOT additions.) SPREDD does not have coverage in Marion for land use but sent J. Gray to 1/31 meeting who spoke with project team after presentation to state support for SUP as part of regional bikeway program. Follow up phone call with J. Gray on 2.6 provided additional details on local options to connect with Marion EJ populations. SRPEDD will comment on EENF when it is published.
Marion Stewards of Community Open Space Committee	Doug Guey-Lee, Town Planner	1/4/24 1/16/24 1/19/24 1/29/24 1/29/24 1/30/24	No	Left VM on 1/26. Spoke with Mr. Guey-Lee on 1/29 and 1/30. He has shared meeting info and EJ Screen form with open space committee and forwarded to affordable housing contact at Town Hall (chairperson Terri Santos.) He also shared information and EJ Screen Form with individuals in community who are members of Cape Verdean population. Follow up call has been placed to Ms. Santos for discussion of engagement with town's affordable housing community. No response was received.

2. State how CBOs and tribes were informed of ways to request a community meeting, and if any meeting was requested. If public meetings were held, describe any issues of concern that were raised at such meetings, and any steps taken (including modifications to the project design) to address such concerns.

Based on the EJ Ref. List provided by MEPA, CBOs and Tribes were emailed a copy of project's EJ Screen Form on Jan. 4, 2024. Follow up phone calls were made throughout the month of January to inform organizations that public Open House meeting for Marion SUP EENF presentation would take place on Jan. 31, 2024, that EJ organizations and representatives were encouraged to attend, and that additional meetings could be requested if more information was needed.

A Notice of Public Meeting for the Jan. 31 Open House meeting were published in the Cape Cod Times, New Bedford Standard Times, and The Wanderer (local community newspaper) on Jan. 11 and 18 (Wanderer), as well as Jan. 17 and 24 (both Times' papers) to satisfy state open meeting notification requirements. A press release was prepared and distributed by MassDOT during the week of Jan. 22. Town of Marion's communications consultant, JGPR, posted the MassDOT press release on owned social media channels and to all relevant local community newspapers and websites.

Per MEPA requirements for outreach to EJ populations, the project-specific enhanced public outreach protocols that were implemented included direct phone call notification to all organizations listed on the EJ Reference List provided by the MEPA Office. At all times, efforts were made to ensure all people, regardless of race, color, national origin, or income, receive fair treatment and have opportunity for meaningful involvement with respect to the proposed SUP. Ongoing outreach throughout January consisted of phone calls to CBOs and tribes as well as emails to those without phone numbers listed. When a CBO or tribe did not respond to emails, voice messages were left with a brief overview of the project, including how to procure more information, public meeting details, and how to participate in the comment process. Emails followed the same procedure with the same information. Follow-up calls were also made to those CBOs and tribes that were not reached, with more messages left if necessary.

The Open House public meeting was held on 1/31/23 at the Marion Town Music Hall. Approximately 50 members of the community and representatives from EJ Organizations attended. Attendees were provided with copies of a project fact sheet and a Frequently Asked Questions (FAQ) handout. The MassDOT project team presented an overview of the notices provided for the meeting; MassDOT's commitment to equitable treatment of all; the EENF's scope (project impacts and mitigation); the project's designation that required enhanced EJ outreach; the EJ outreach process and protocols that were employed; the project's public outreach history; project funding; a tentative EENF notification schedule; next steps; and a general question and answer session. The presentation provided information on how to submit further comments on the project and comment sheets were made available for all who attended the meeting. No EJ concerns regarding the project were reported at the meeting.

3. If the project is exempt from Part II of the protocol, please specify.

To ensure accordance with Part II of the MEPA EJ Public Involvement Protocol, MassDOT has developed a comprehensive, project-specific Environmental Justice Community Outreach Plan (see DRAFT: Marion Environmental Justice Community Outreach Plan, September 262023 (Rev. 2) (attachment 17). The enhanced public outreach and community engagement strategy sets forth protocols to ensure robust levels of public involvement with EJ populations based in the geographic area around the project site, including the southern extent of the project corridor, which features a substantial EJ population.

The MassDOT EJ Community Outreach Plan was established to ensure that all people, regardless of race, color, national origin, or income, receive fair treatment and meaningful involvement with respect to the proposed project and to ensure that local EJ populations have many opportunities to meaningfully engage in MEPA project reviews and fully participate in the decision-making process about the project.

MassDOT anticipates that the Marion Environmental Justice Community Outreach Plan will improve public participation and meaningful engagement by community-based EJ populations in MEPA reviews of

the project, support determinations about the projects' likely effects on EJ populations (negative, positive, or neutral), including whether the project is "reasonably likely" to negatively affect EJ populations located within the designated geographic area around a project site, and address community concerns to the extent practicable through fair and achievable mitigation strategies to reduce potential project impacts on a surrounding community.

Targeted outreach is intended to engage area residents and business owners (primarily small businesses) who are minority, low-income, or limited-English proficient (LEP.) Additional engagement is sought with social service providers, community leaders, Indigenous People's Tribes, and representatives of religious and cultural gathering places.

Focused community meetings will be held based on feedback and input from Community Based Organizations (CBO), with stakeholder coordination to encompass local government agencies, elected officials, and key EJ community stakeholders. A non-exhaustive list of community stakeholders in Marion has been developed that feature local businesses, foundations, and advocacy organizations. The MassDOT EJ Community Outreach Plan lists 19 town-based and regional CBOs.

An additional list of local businesses was developed for consideration, with MassDOT determining that level of targeted engagement was not warranted based on awareness of the community's overall support for the project (see Appendix A on page 23 of the attached Marion Shared Use Path Environmental Justice Community Outreach Plan.)

The SUP Environmental Justice Community Outreach Plan sets forth opportunities to provide advanced notification to key local and regional Community Based Organizations (CBOs) and Native American and Indigenous Peoples' tribes that will provide information about options for requesting a public meeting to learn more about the project. These notifications will adhere to public notice requirements and utilize a variety of local outreach tools, including postings in local online (and print edition) community news outlets, including The Wanderer; New Bedford Standard Times and Cape Cod Times. Online and social media platforms will also be used to provide notification via the Town of Marion, MA Facebook page (public); two local private Facebook pages (Marion, MA page and Marion Matters page (private); the social media platform NextDoor (Marion page, River's Edge page and The Village page.) Notifications will be provided in as many formats as practicable, including newspaper legal ads; news media releases; fliers posted at community gathering spots. Also, email invitations will be sent to project stakeholders identified in the EJ Reference List and other key stakeholder lists with notice of all community meetings related to the SUP. All notifications will include the date, time, location, and other general information about the Community Meeting event, including a brief description of the project, purpose of meeting, and a solicitation to participate. As needed, post cards sent via US postal mail services may be utilized to engage residents who do not have access to digital technology.

The Town of Marion has engaged in an extensive public outreach and involvement process while developing and designing the SUP project dating back to 1974. In 2005, local advocates who had been actively promoting construction of the SUP for more than 30 years formed The Town of Marion Pathway Committee and Friends of the Marion Pathway, which is now defunct. In March 2014, the Pathway Committee prepared and submitted a MassDOT Project Need Form for the SUP, and later prepared and present a MassDOT Project Initiation Form at an October public meeting in the same year. In 2015, the Pathway Committee prepared and submitted a Community Preservation Committee grant application that later was presented at a public hearing and Marion's Spring Annual Town Meeting. The South Coast Bikeway Alliance (SCBA) later prepared and presented posters and information on the status of the Marion SUP between 2015 and 2019. Public meetings with MassDOT included a well-attended public SUP Project Kick-Off Meeting that was held at the Marion Music Hall on June 21, 2016; a Pre-25%

Submittal Meeting that was held at the MassDOT District 5 Offices on December 5, 2016; and a July 24, 2017, public meeting with the Marion Pathway Committee.

Another public meeting was held on September 7, 2017, at the Marion Music Hall to review three design alternatives for the Spring Street/Front Street Crossing and solicit comments and concerns from neighbors and others familiar with the intersection. The meeting was attended by a representative from the Marion Board of Selectmen and a representative of the Marion Planning Board as well as more than 20 citizens. Subsequently an on-line discussion of the option continued on the Town of Marion webpage. A second Pre-25% Submittal Meeting was held at the MassDOT District 5 Offices in October 2017, and a public meeting of the Marion Pathway Committee was held in June 2018 to review the status of the 25% design submittal with MassDOT. Additional on-site meetings with representatives of the Marion Board of Selectmen and the Pathway Committee were held in the same month.

Additional involvement was supported by published articles in local newspapers over the course of several decades and a website operated by the now defunct Friends of the Marion Pathway.

Issues and concerns identified through public involvement and outreach activities included the SUP's route, the project's potential environmental impact; potential changes to nearby residential and commercial property values; and safety for motorists and cyclists. Stakeholders also discussed project engineering and construction costs as well as potential timelines to completion.

In April 2019, a public meeting was held at the Marion Music Hall to review three alternatives for the Spring Street/Front Street Crossing. At the meeting, residents voiced concerns regarding pedestrian safety, vehicular traffic speed at the crossing, potential impacts on the operation of emergency vehicles, and peak hour traffic concerns. Subsequent public meetings held in 2019 prior to the COVID-19 pandemic reviewed the funding status for SUP construction along with the timeline for the engineering design, MassDOT review, environmental permitting, and solicitation of construction bids.
On January 4th, 2024, advanced notification occurred in the form of an Environmental Justice Screening form which was sent to MEPA and to CBO's.

On January 31st, 2024, a public meeting was held at the Marion Music Hall to present the project updates and status of the submittal of this MEPA document. Nearly 50 members of the public were in attendance. The general consensus was supportive of the project, but some raised concerns related to increased traffic in proximity to Countryside Daycare, safety at the Route 105/Spring Street intersection, wildlife encounters, and construction period access. See Attachment 19 for meeting materials including the fact sheet and FAQ that were distributed at the January 31st meeting, sign in sheets, and public comments received during the 10-day period after the meeting. The project team and the town of Marion appreciate the input and support and are evaluating incorporating suggestions to the extent practicable.

B. Provide below (or attach) a distribution list (if different from the list in Section III.A. above) of CBOs and tribes, or other individuals or entities the Proponent intends to maintain for the notice of the MEPA Site Visit and circulation of other materials and notices during the course of MEPA review.

- Town of Marion Pathway Committee
- Town of Marion Stewards of Community Open Space Committee
- The Island Foundation (based in Marion)
- Marion Council on Aging (MCOA)

- Sippican Lands Trust (Marion)
- Community Connections (South Yarmouth)
- NAACP of New Bedford
- Southcoast Community Foundation (New Bedford)
- United Way of Greater New Bedford
- Wampanoag Tribal Council (Mashpee)
- Wampanoag Tribe of Gay Head (Aquinnah)
- Narragansett Indian Tribe (Charlestown, RI)
- Southeastern Regional Planning and Economic Development District (SRPEDD)
- Friends of the Mattapoisett Rail Trail (Mattapoisett)
- Residents of low-income housing communities in Marion located in the project's northeastern corridor
- EJ Residents located southwest of Front Street

See pages 11-18 of the attached Marion Shared Use Path Environmental Justice Community Outreach Plan for complete information regarding contact information for CBOs, tribes, and related stakeholders. Additional organizations have been added as directed by the Massachusetts Executive Office of Energy and Environmental Affair's EJ Director by way of a formal EJ Reference List, along with any other stakeholders identified by the MEPA Office.

C. Describe (or submit as a separate document) the Proponent's plan to maintain the same level of community engagement throughout the MEPA review process, as conducted prior to filing.

MassDOT's Marion Environmental Justice Community Outreach Plan was constructed to maintain consistent levels of meaningful community engagement throughout the MEPA review process. It will create meaningful engagement with stakeholders through intentional messaging and targeted delivery to all identified EJ populations. The Marion SUP project team will also carefully consider options to host additional informal community meetings through solicitation of input from CBOs listed herein.

Engagement strategies will rely on available resources, including local and community news media; social media platforms (Facebook and NextDoor); Town of Marion community notice boards (at Town Hall, the Elizabeth Taber Library, Benjamin D. Cushing Community Center); opt-in email updates; a Marion SUP Project Website/EJ Public Outreach Webpage; and a Project Toolkit available in printed or digital form that includes a project fact sheet, graphics, and related content such as frequently-asked-questions (FAQ). The toolkit will be updated throughout the project process to ensure the most up-to-date information is available to EJ populations and community stakeholders. Additional tactics of engagement may include door-to-door canvassing, as needed and ad-hoc 'pop up' events to supplement a planned community meeting.

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

(Name) The Wanderer, 55 County Rd., Mattapoisett, MA (Date) 3/21/2024

(Name) The New Bedford Standard Times, 25 Elm St., New Bedford, MA (Date) 3/21/2024

(Name) Cape Cod Times, 319 Main St., Hyannis, MA (Date) 3/21/2024

(Name) Sippican Week, 25 County Rd., Mattapoisett, MA (Date) 3/21/2024

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

3/14/24		3/13/2024	
Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing ENF (if different from above)

Geoffrey Gorman	Kevin Slattery
Name (print or type)	Name (print or type)
Town of Marion	HDR Engineering, Inc.
Firm/Agency	Firm/Agency
2 Spring Street	99 High Street, Suite 2300
Street	Street
Marion, MA 02738	Boston, MA 02116
Municipality/State/Zip	Municipality/State/Zip
(508) 748-3500	(617) 816-1861
Phone	Phone

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Attachment 1
List of Attachments

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1. **List of all attachments to this document.**
2. U.S.G.S. Map
3.. Existing Conditions Figures
4 Environmental Constraints Figures
5. EENF Circulation List
6. List of Permits and Reviews Required by the Project
7. RMAT Climate Resilience Design Standards Tool Report
8. EEA EJ Maps Viewer Printout
9. DPH EJ Tool – Vulnerable Health Criteria
10. EJ Screening Form
11. NHESP Priority and Estimated Habitat Atlas Page
12. Vernal Pool Records
13. IPaC Report
14. Cultural Resources Project Record
15. Article 97 Letter
16. NHESP Letter
17. EJ Engagement Plan
18. Stormwater Report and Checklist
19. January 31st Public Meeting Materials
20. 100% Design Plans

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Attachment 2

U.S.G.S Map

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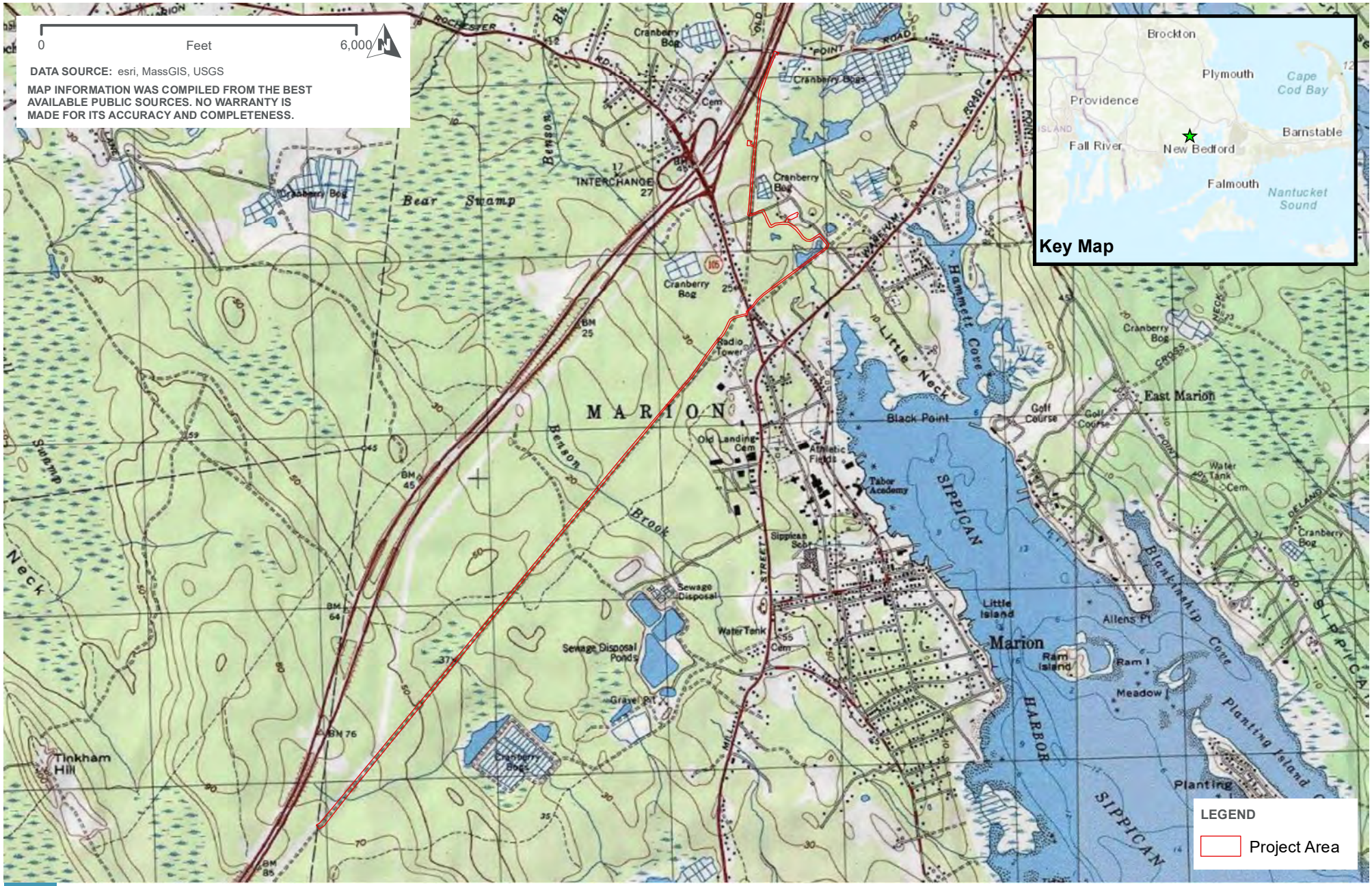

MARION SHARED USE PATH

USGS MAP

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Attachment 3

Existing Conditions Figures

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MARION SHARED USE PATH

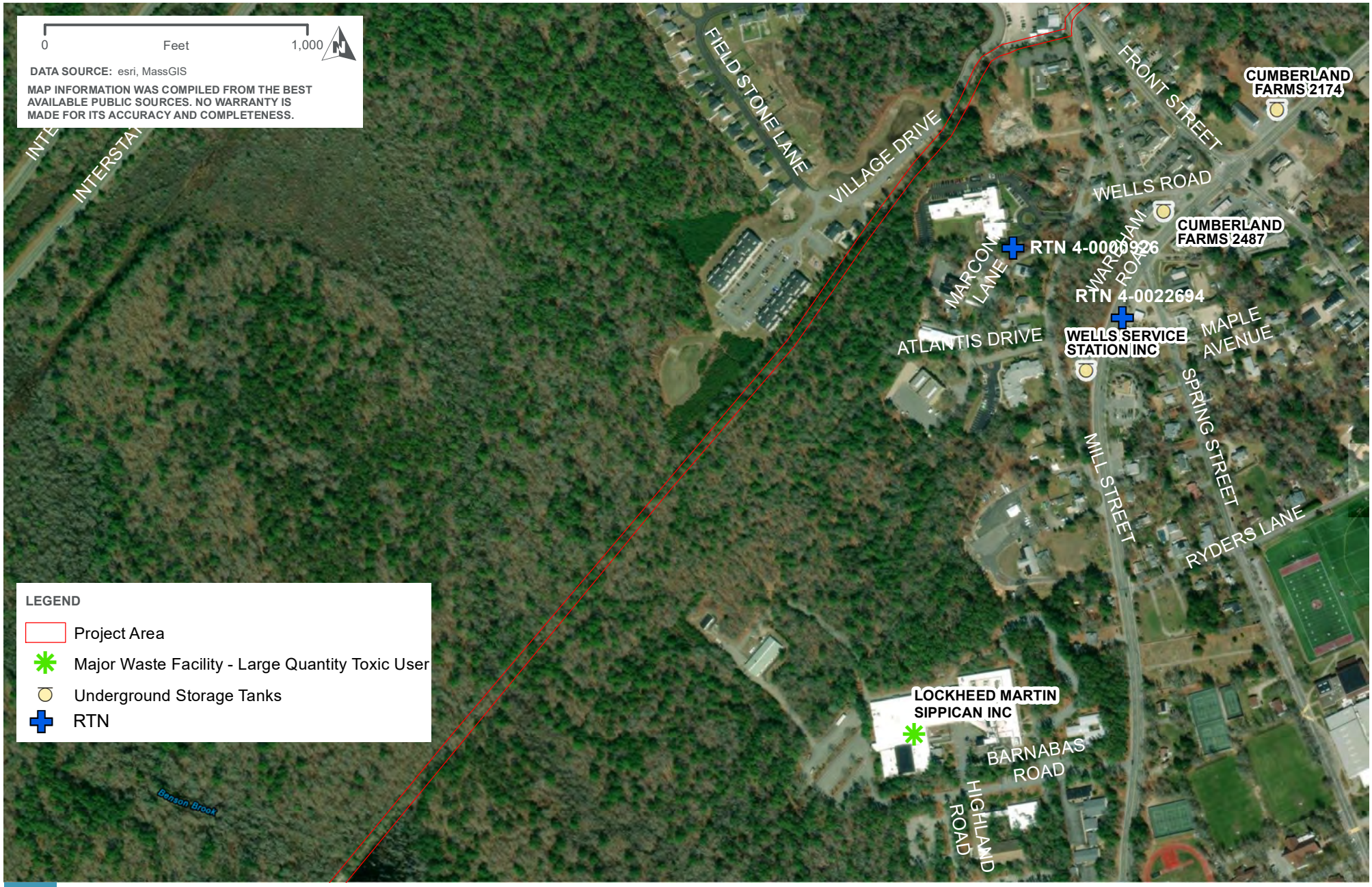
EXISTING CONDITIONS MAP - HAZARDOUS 1/5

HDR

massDOT

MARION SHARED USE PATH

EXISTING CONDITIONS MAP - HAZARDOUS 2/5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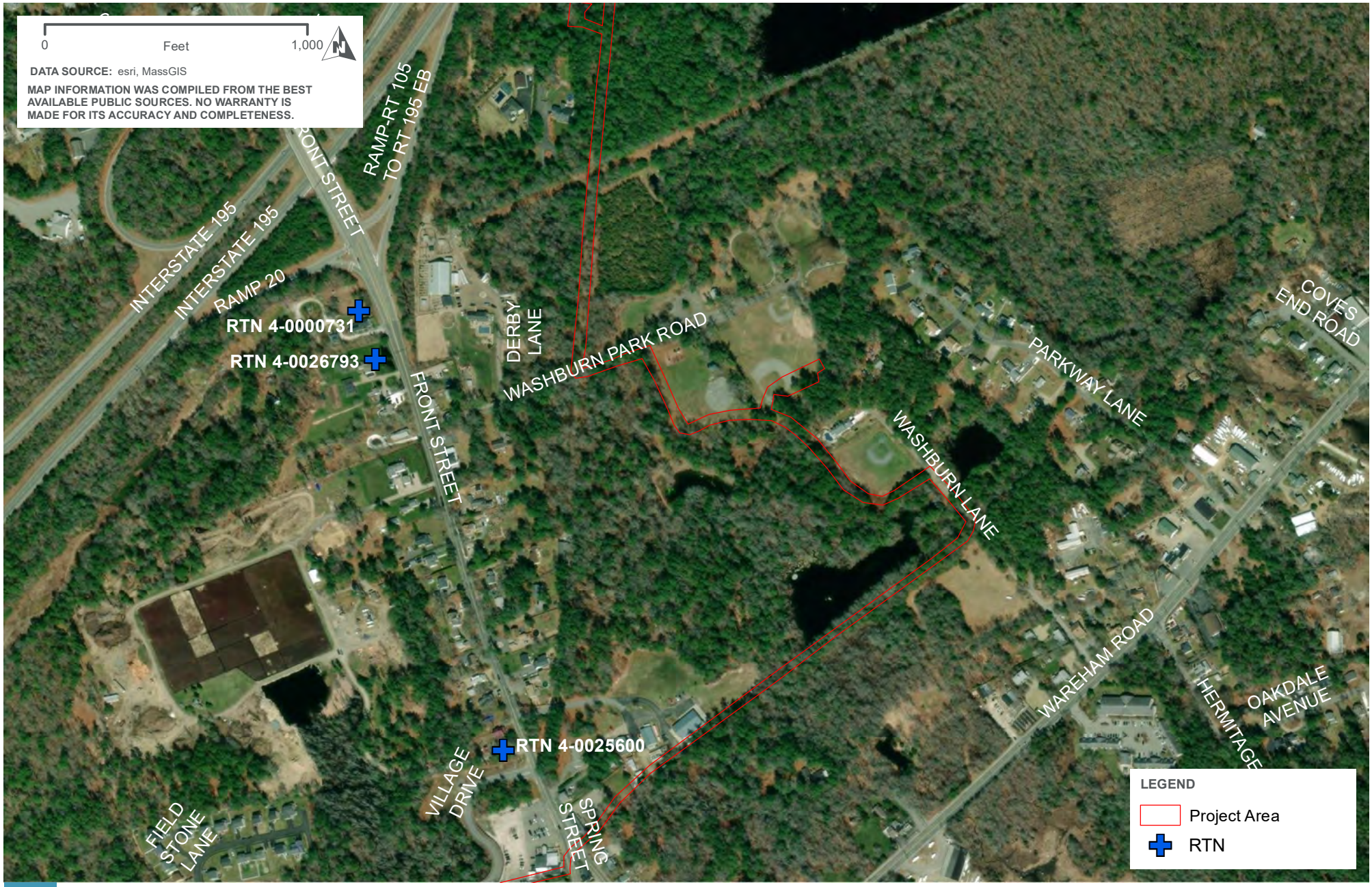
DATA SOURCE: esri, MassGIS
MAP INFORMATION WAS COMPILED FROM THE BEST AVAILABLE PUBLIC SOURCES. NO WARRANTY IS MADE FOR ITS ACCURACY AND COMPLETENESS.
INTERSTATE
FIELD STONE LANE
VILLAGE DRIVE
FRONT STREET
CUMBERLAND FARMS 2174
WELLS ROAD
CUMBERLAND FARMS 2487
MARCOM LANE
WARNHAM ROAD
RTN 4-0000926
RTN 4-0022694
ATLANTIS DRIVE
WELLS SERVICE STATION INC
MAPLE AVENUE
SPRING STREET
MILL STREET
RYDERS LANE
LOCKHEED MARTIN SIPPICAN INC
BARNABAS ROAD
HIGHLAND ROAD
Benson Brook
LEGEND
Project Area
Major Waste Facility - Large Quantity Toxic User
Underground Storage Tanks
RTN

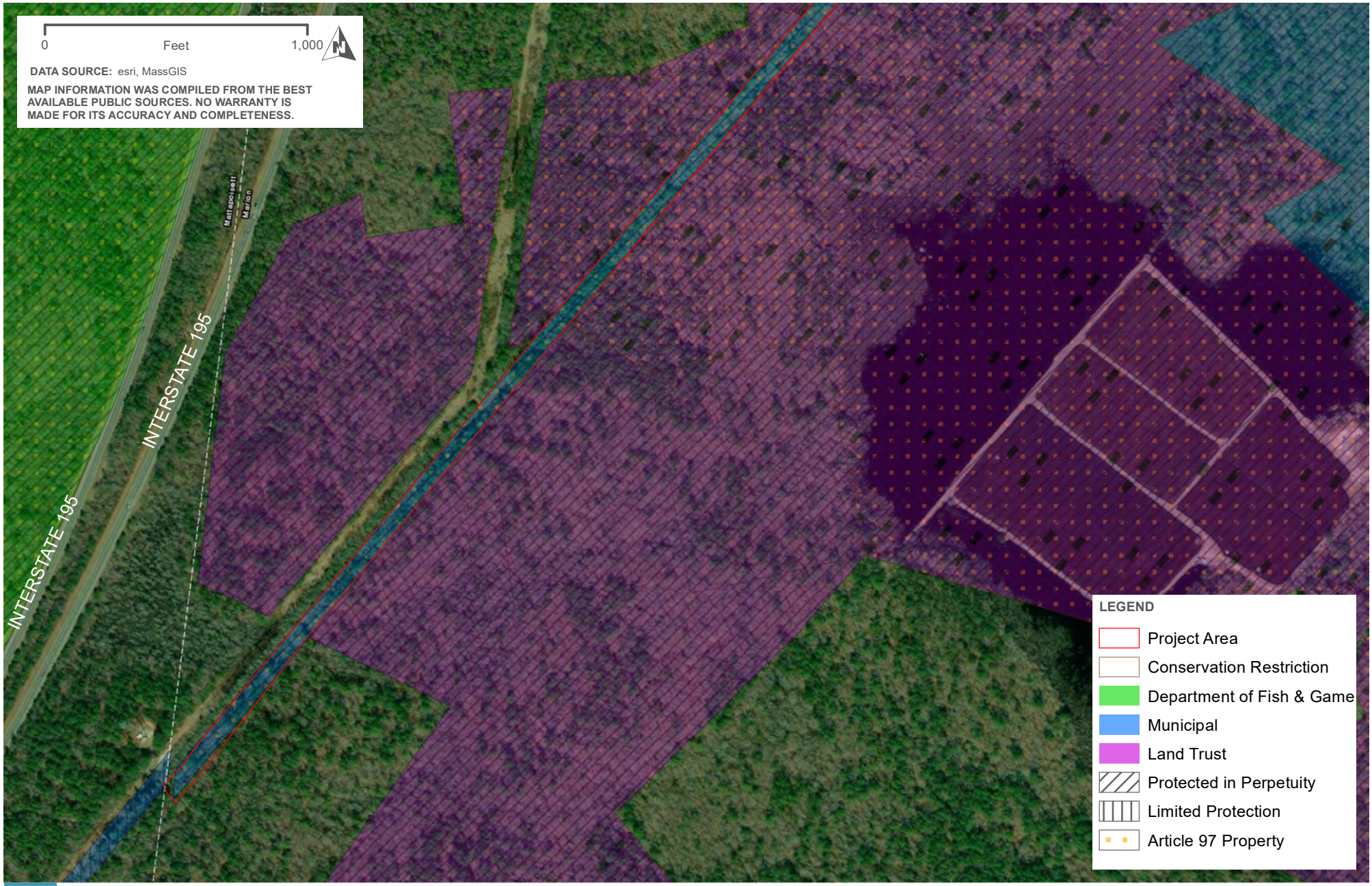


MARION SHARED USE PATH

EXISTING CONDITIONS MAP - HAZARDOUS 4/5

MARION SHARED USE PATH

EXISTING CONDITIONS MAP - HAZARDOUS 5/5

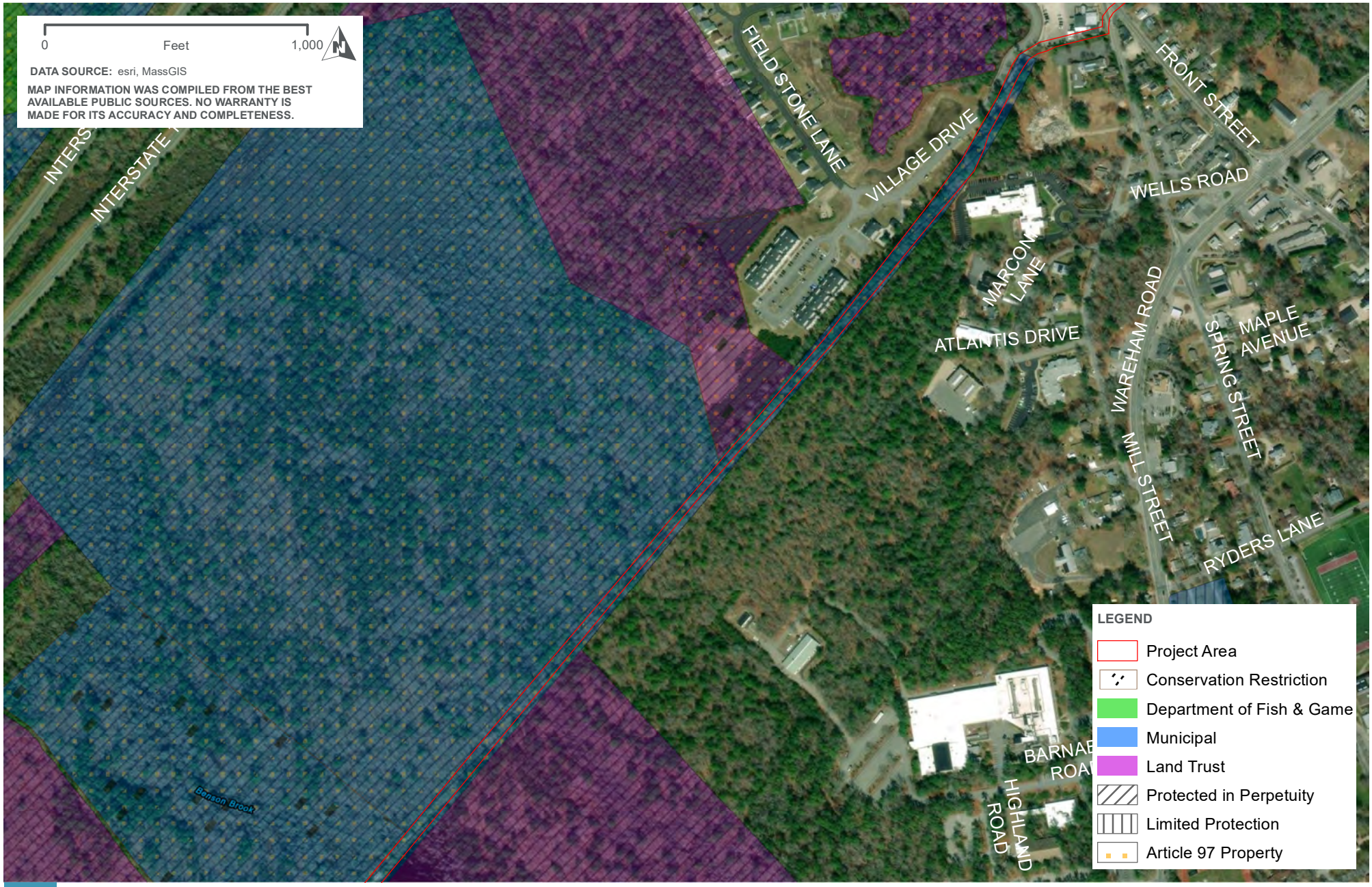


MARION SHARED USE PATH

EXISTING CONDITIONS MAP - OPEN SPACE 1/5

MARION SHARED USE PATH

EXISTING CONDITIONS MAP - OPEN SPACE 2/5



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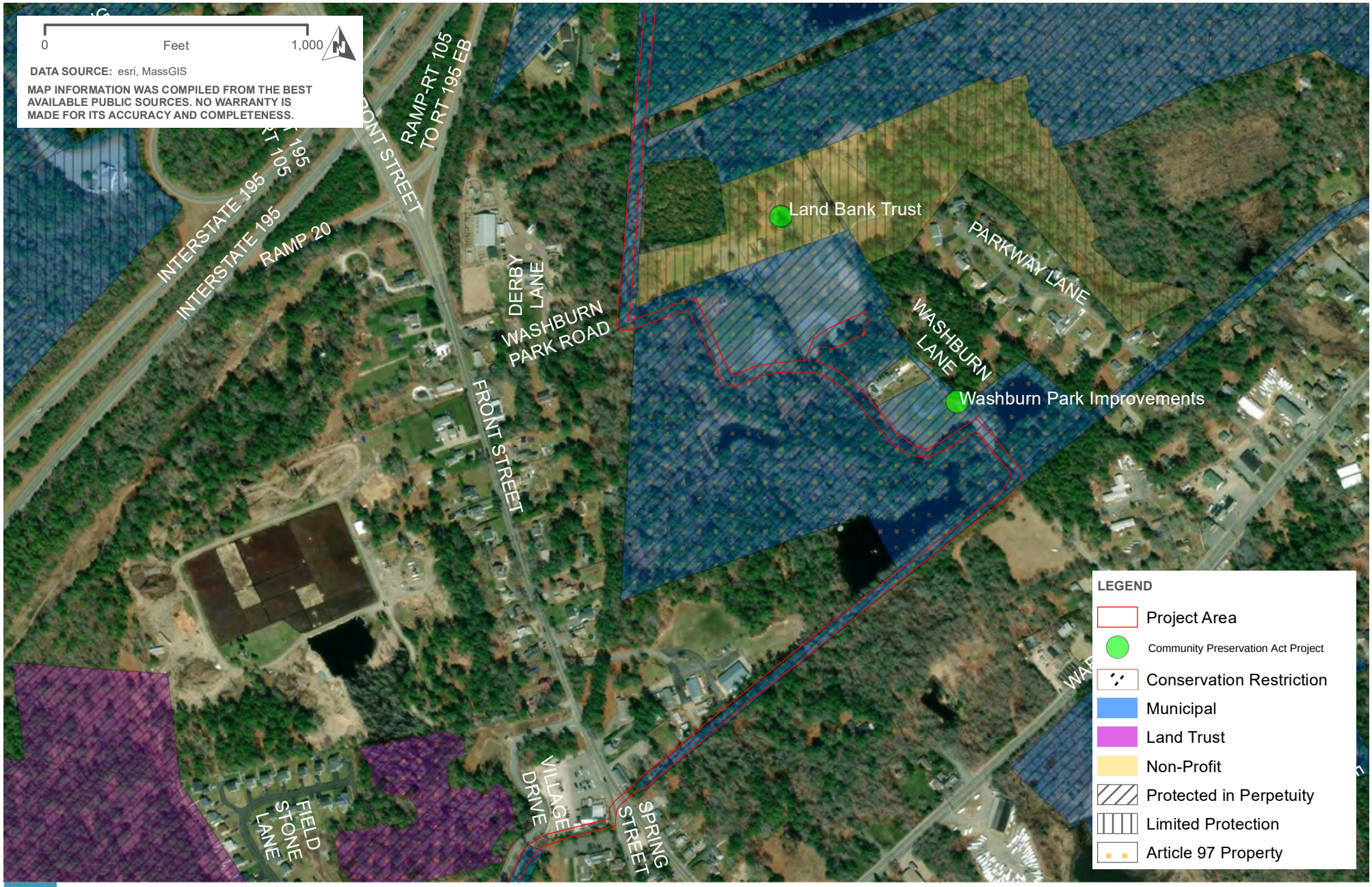
EXISTING CONDITIONS MAP - OPEN SPACE 3/5



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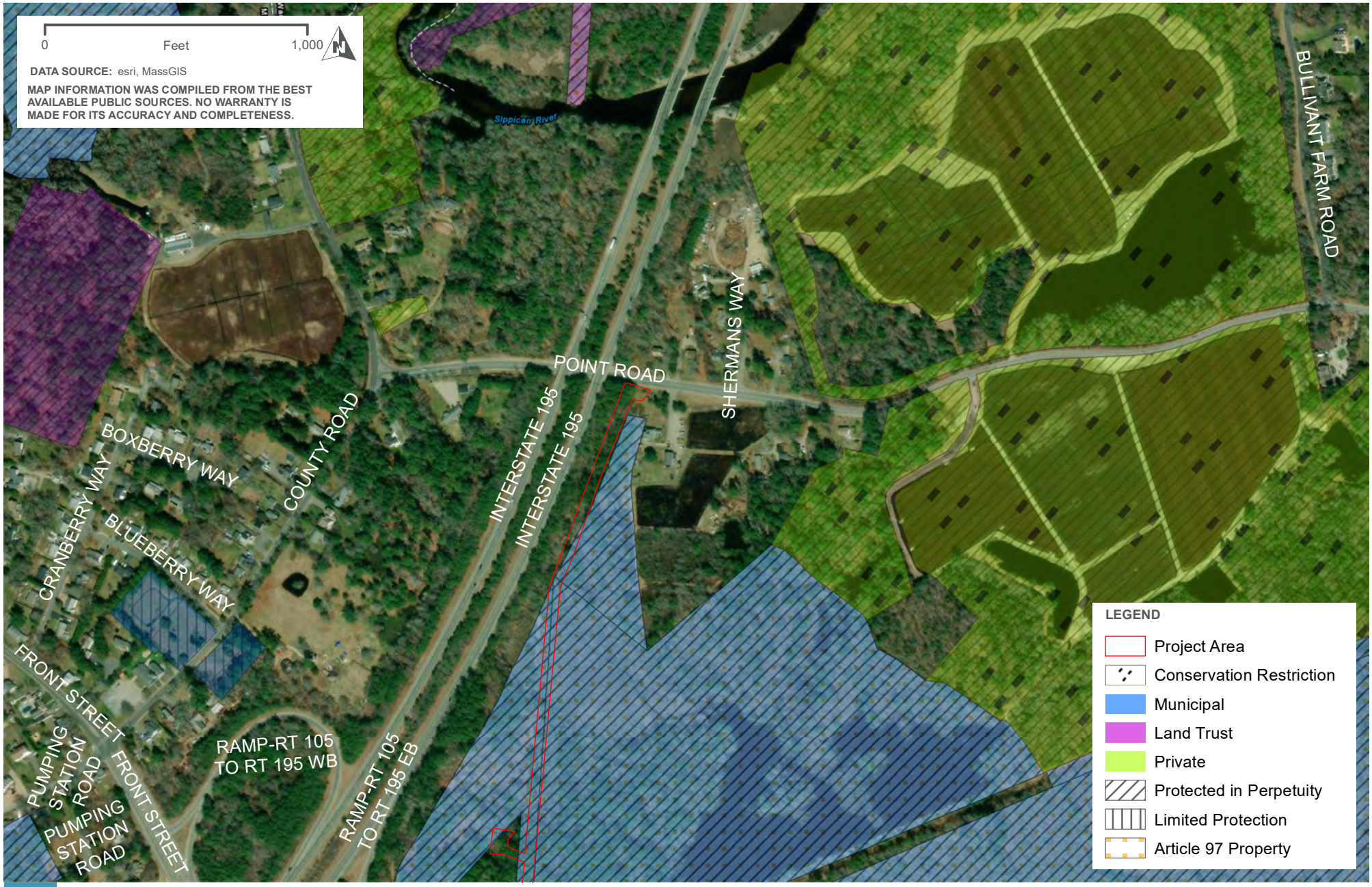
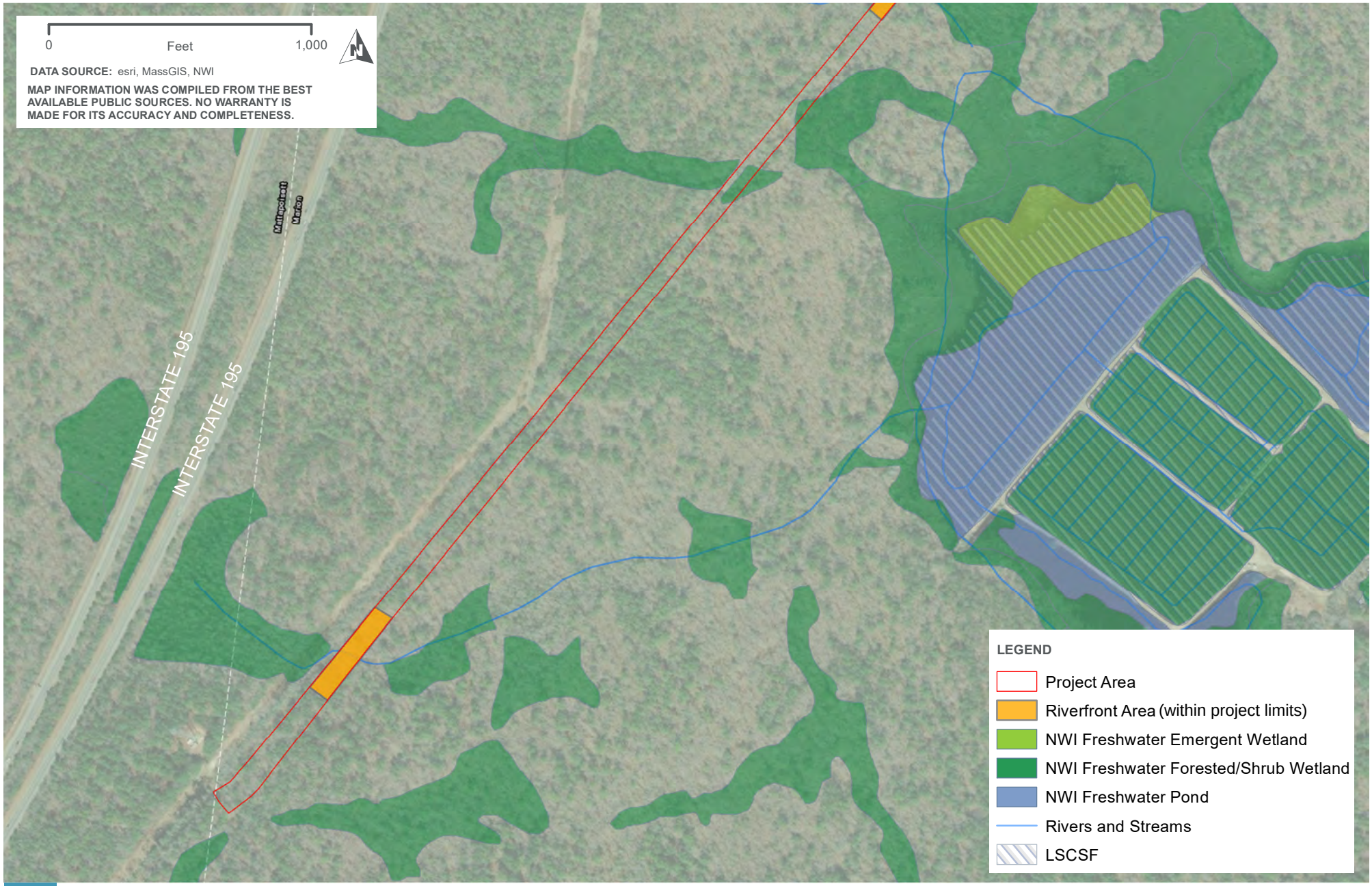
EXISTING CONDITIONS MAP - OPEN SPACE 4/5



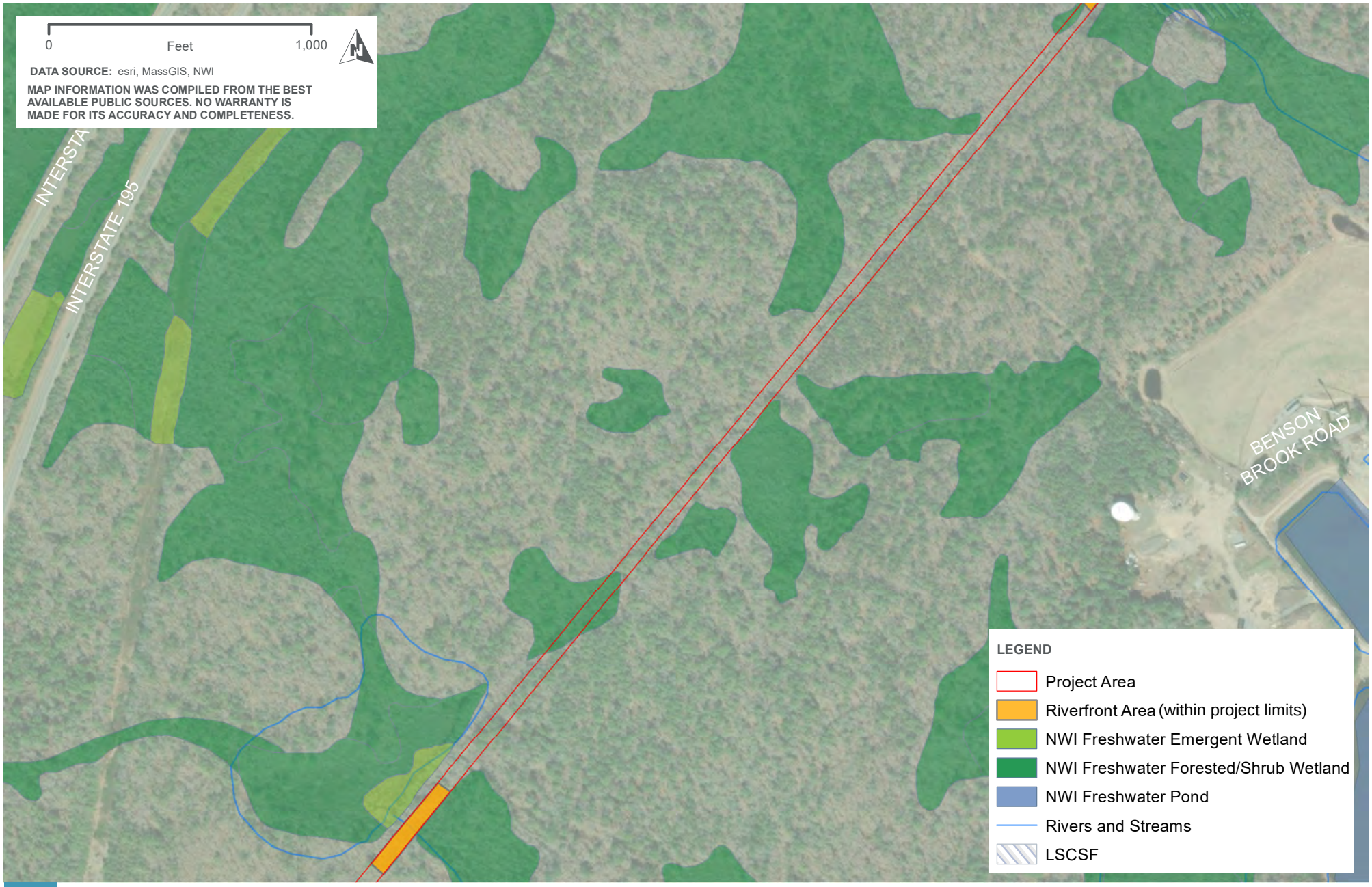
MARION SHARED USE PATH

EXISTING CONDITIONS MAP - OPEN SPACE 5/5



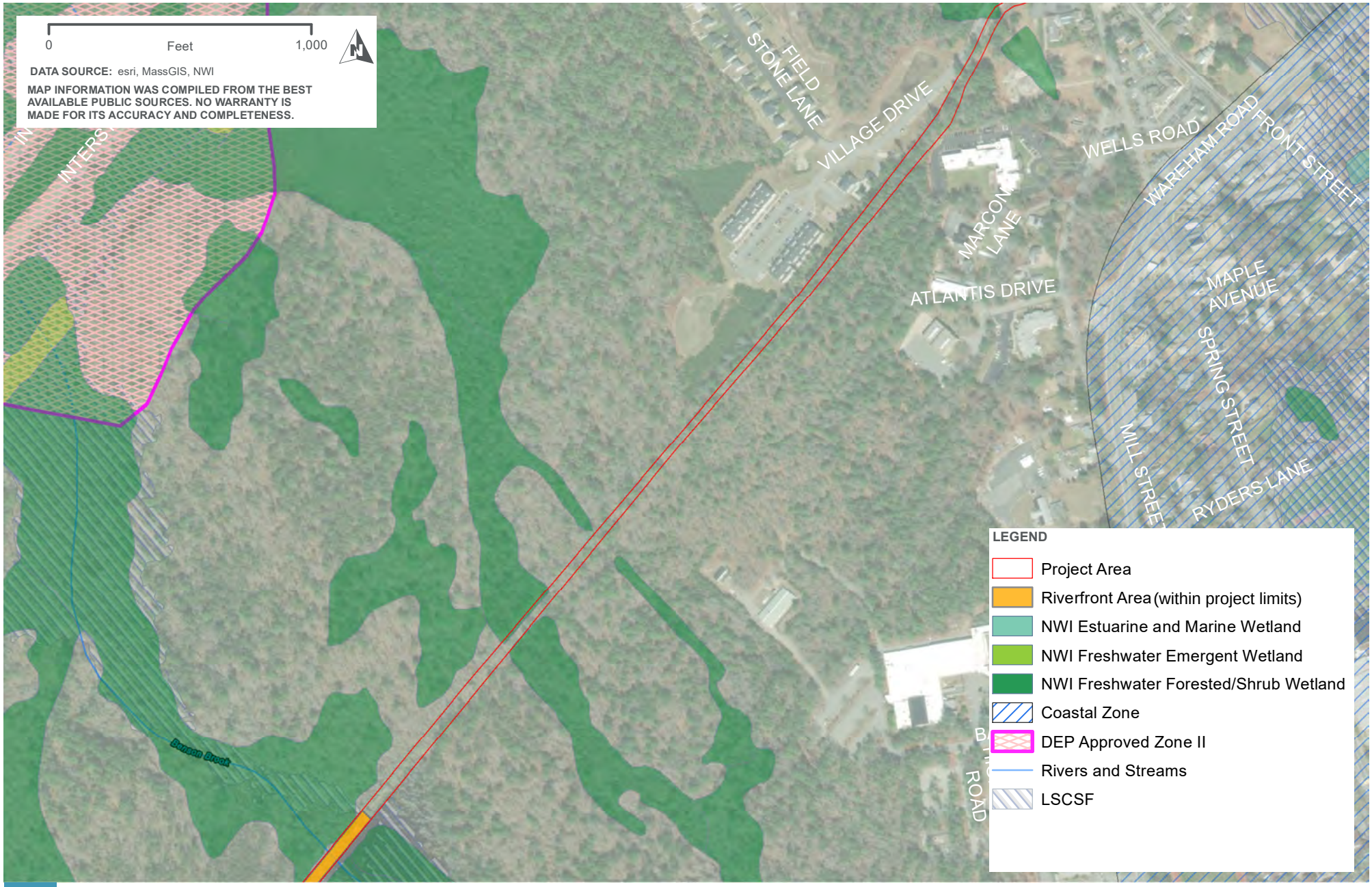
MARION SHARED USE PATH

EXISTING CONDITIONS MAP - WATERS AND NWI WETLANDS 1/5



MARION SHARED USE PATH

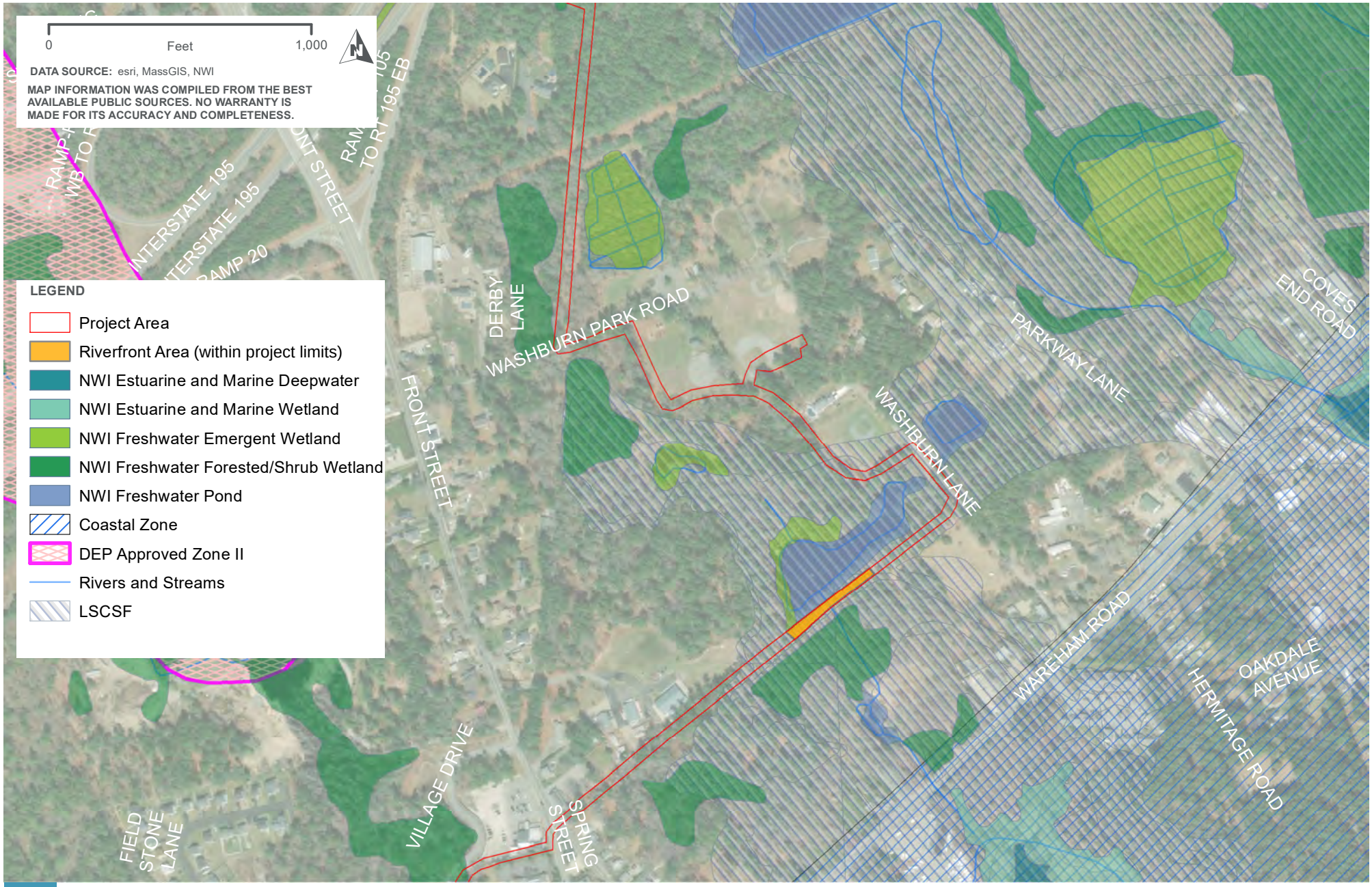
EXISTING CONDITIONS MAP - WATERS AND NWI WETLANDS 2/5



massDOT

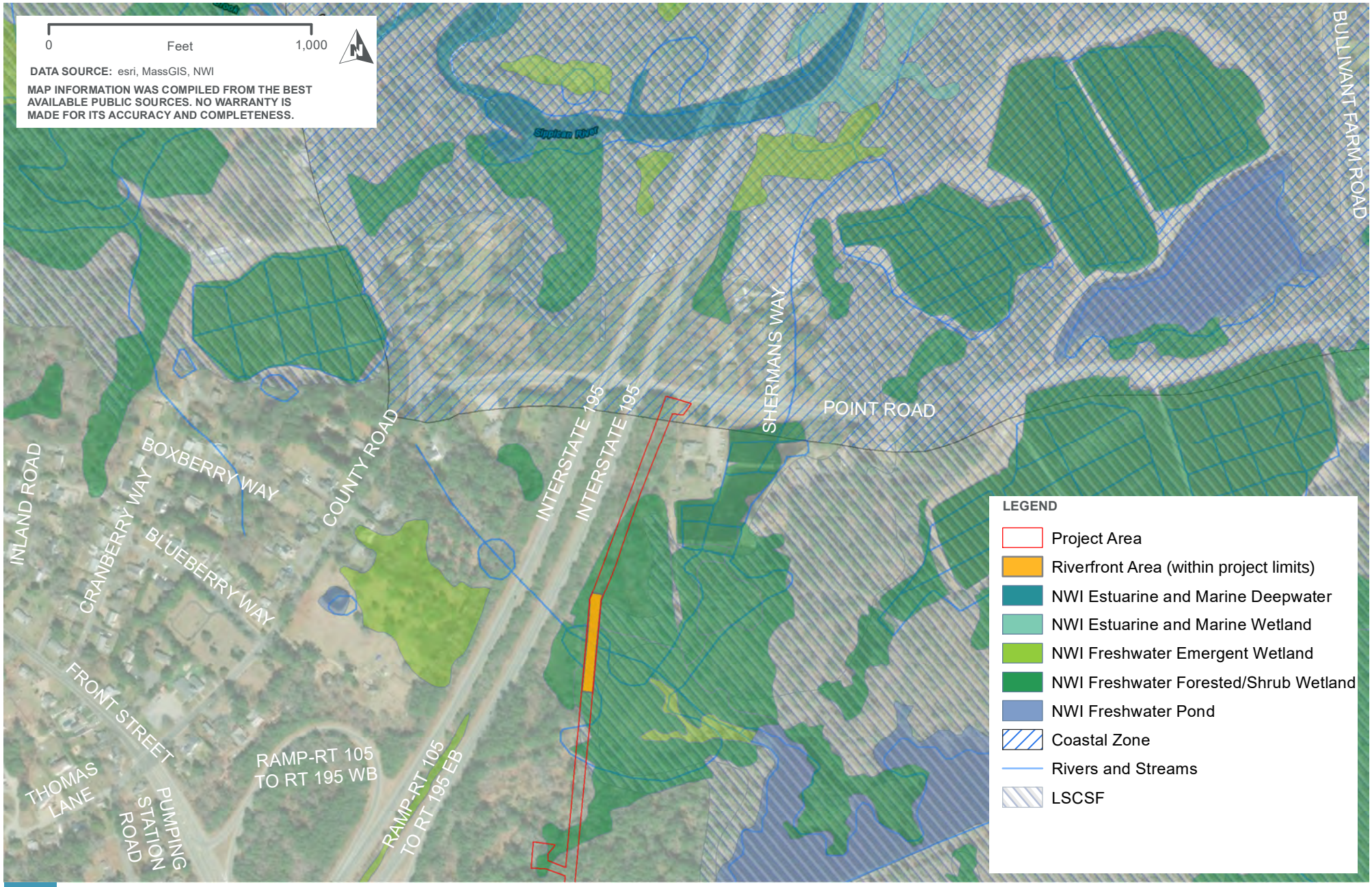
MARION SHARED USE PATH

EXISTING CONDITIONS MAP - WATERS AND NWI WETLANDS 3/5



MARION SHARED USE PATH

EXISTING CONDITIONS MAP - WATERS AND NWI WETLANDS 4/5



MARION SHARED USE PATH

EXISTING CONDITIONS MAP - WATERS AND NWI WETLANDS 5/5

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Attachment 4

Environmental Constraints Figures

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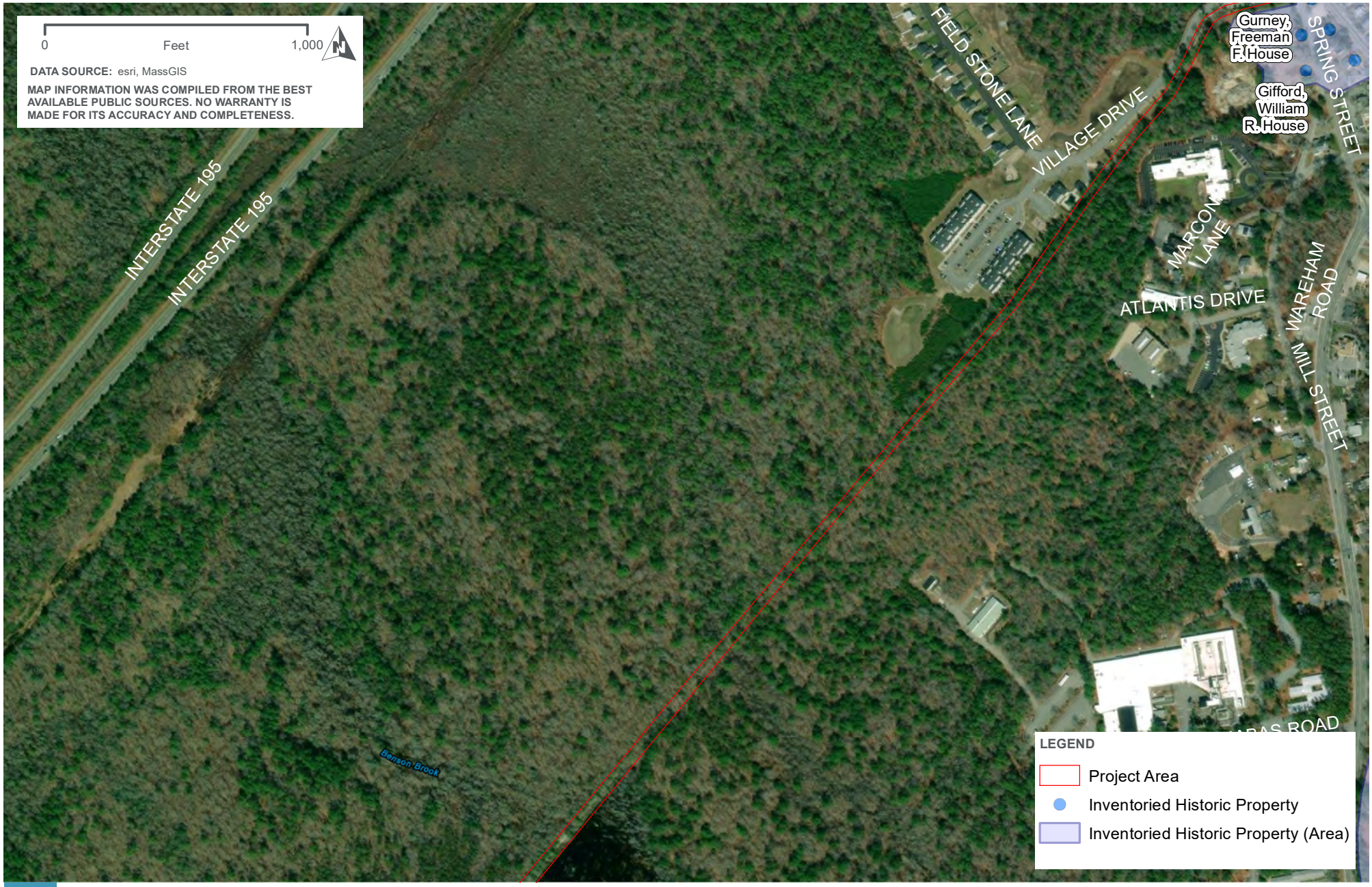
MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HISTORIC 1/5

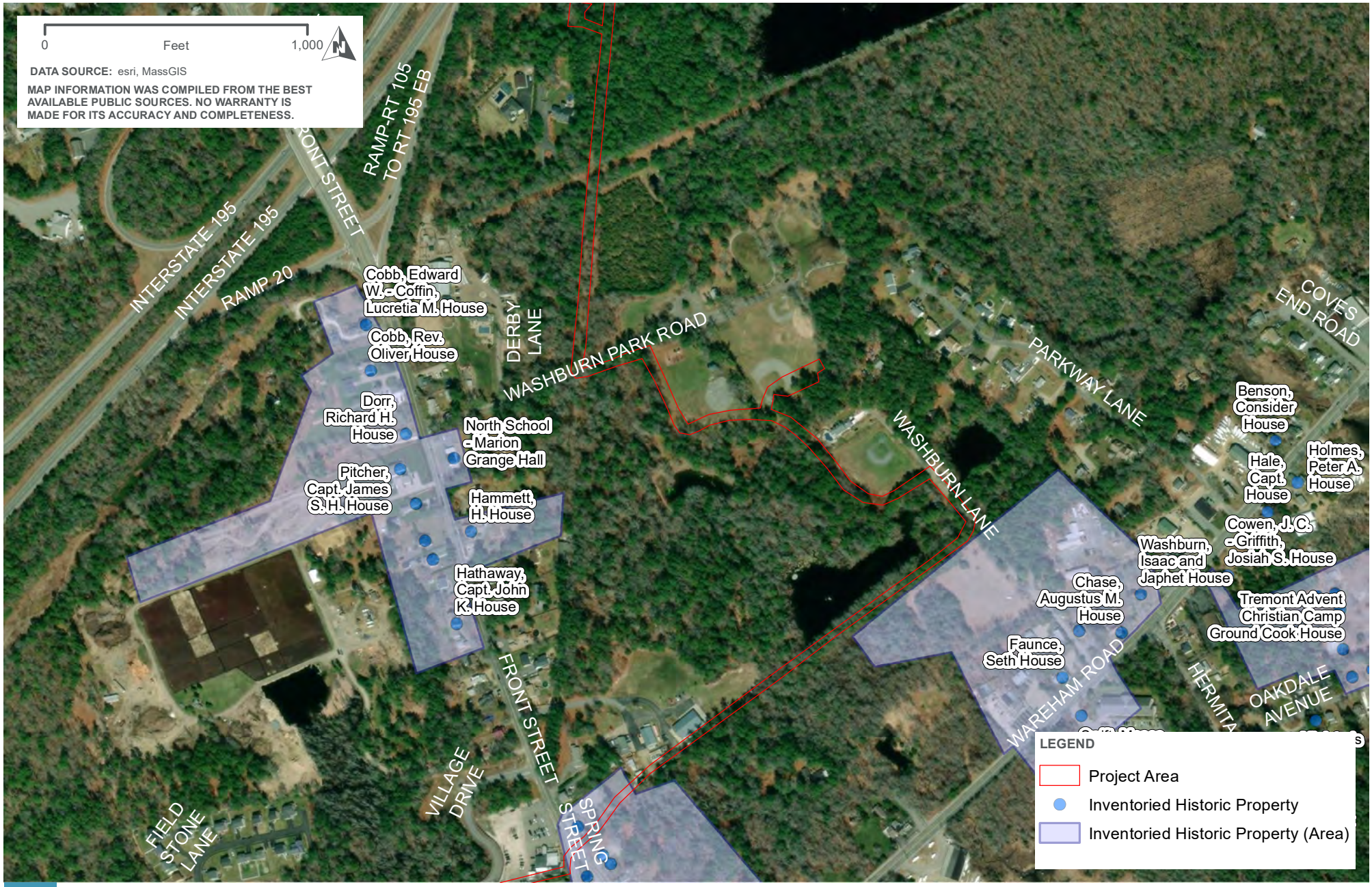
MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HISTORIC 2/5



MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HISTORIC 3/5



MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HISTORIC 4/5

MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HISTORIC 5/5

HDR

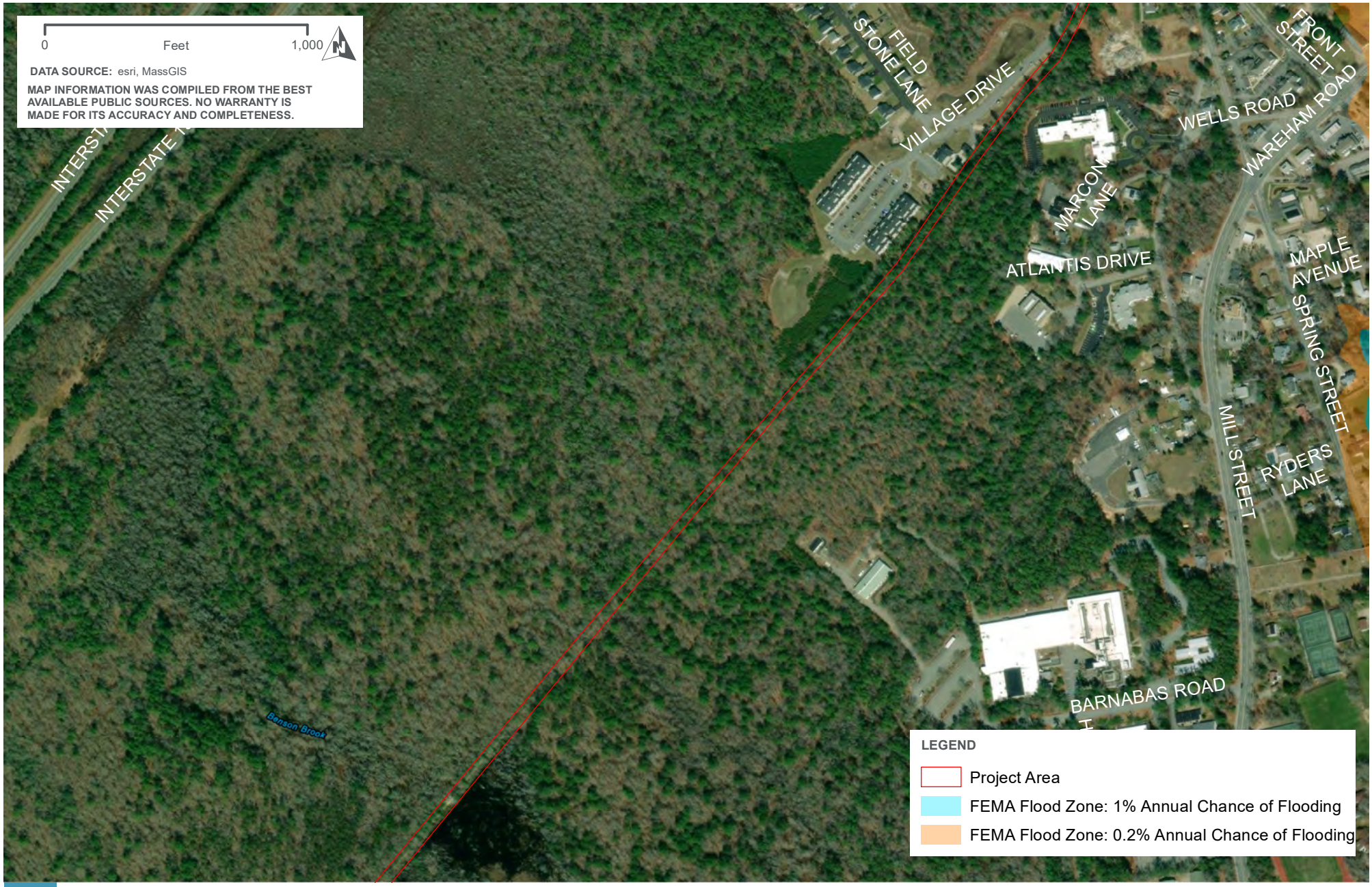
massDOT

MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - FEMA AND CHAPTER 91 1/5

MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - FEMA AND CHAPTER 91 2/5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DATA SOURCE: esri, MassGIS
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INTERSTATE
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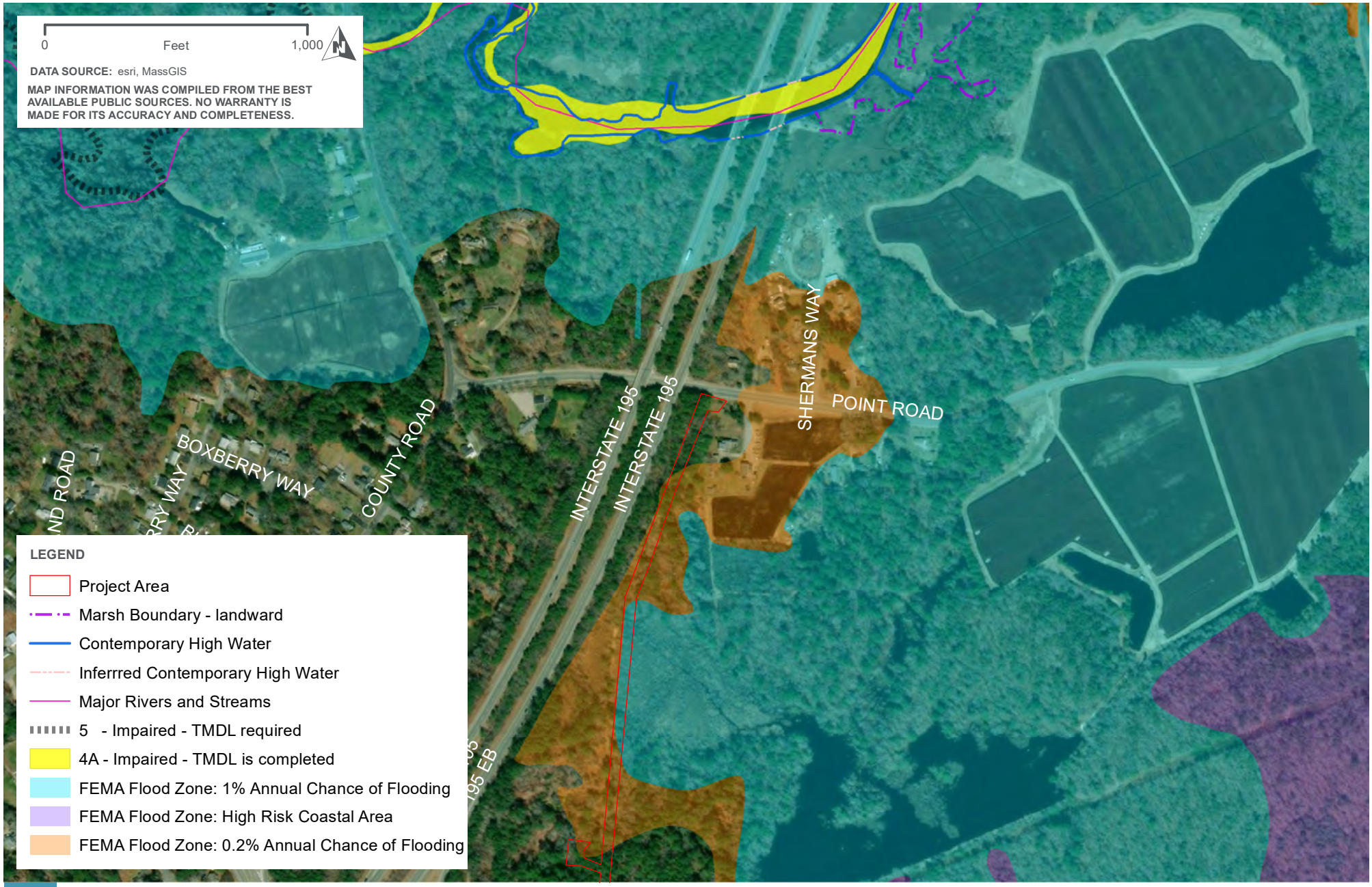
VILLAGE DRIVE
FRONT STREET
WELLS ROAD
WAREHAM ROAD
MARCONI LANE
ATLANTIS DRIVE
MAPLE AVENUE
SPRING STREET
MILL STREET
RYDERS LANE
BARNABAS ROAD
Benson Brook
LEGEND
Project Area
FEMA Flood Zone: 1% Annual Chance of Flooding
FEMA Flood Zone: 0.2% Annual Chance of Flooding

MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - FEMA AND CHAPTER 91 4/5

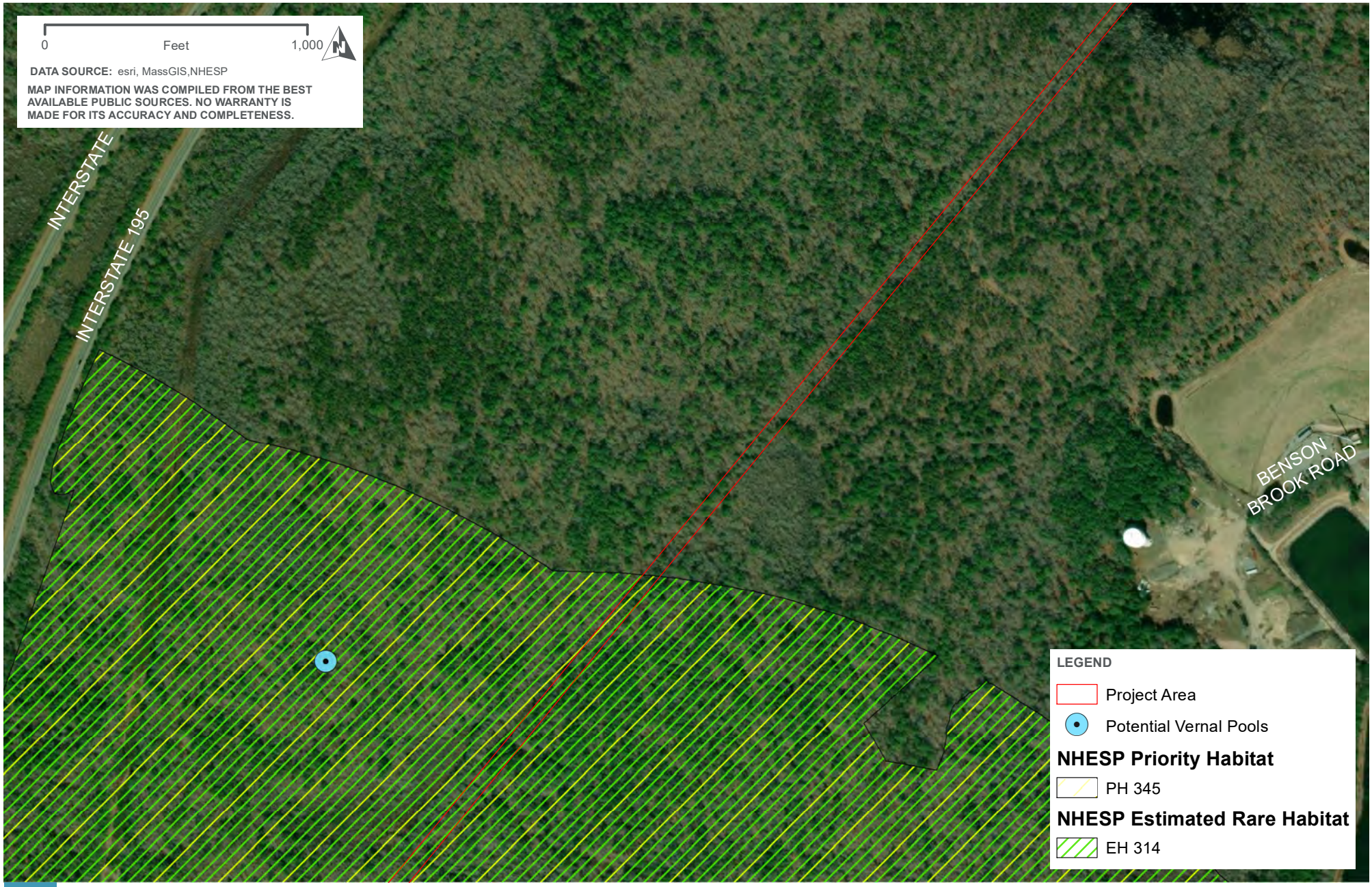


MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - FEMA AND CHAPTER 91 5/5

MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HABITAT 1/5



MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HABITAT 2/5

MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HABITAT 3/5

MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HABITAT 4/5

MARION SHARED USE PATH

ENVIRONMENTAL CONSTRAINTS MAP - HABITAT 5/5

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Attachment 5
EENF Circulation List

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Marion Shared Used Path EENF Circulation List

Massachusetts Environmental Policy Act (MEPA) Office
MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114
MEPA@mass.gov

Department of Environmental Protection – Boston Office
Commissioner's Office
One Winter Street
Boston, MA 02108
helena.boccadoro@mass.gov

Department of Environmental Protection – Boston office
ATTN: MEPA Coordinator
One Winter Street
Boston, MA 02108

Department of Environmental Protection
Southeastern Regional Office
Attn: MEPA Coordinator
20 Riverside Drive
Lakeville, MA 02347
george.zoto@mass.gov
jonathan.hobill@mass.gov

Massachusetts Department of Transportation – Boston
Public/Private Development Unit
10 Park Plaza, Suite #4150
Boston, MA 02116
MassDOTPPDU@dot.state.ma.us

Massachusetts Department of Transportation – District 5
Attn: MEPA Coordinator
1000 County Street
Taunton, MA 02780
Cindy.McConarty@dot.state.ma.us

Massachusetts Historical Commission
The MA Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Southeastern Regional Planning and Economic Development District (SRPEDD)
88 Broadway
Taunton, MA 02780
jwalker@srpedd.org
gking@srpedd.org
hzincavage@.org
bnap@srpedd.org

Marion Select Board
Select Board Office
2 Spring Street
Marion Town House
Marion, MA 02738

Marion Planning Board
Planning Board's Office
2 Spring Street
Marion Town House
Marion, MA 02738

Marion Conservation Commission
Conservation Commission's Office
2 Spring Street
Marion Town House
Marion, MA 02738

Marion Board of Health
Board of Health Office
2 Spring Street
Marion Town House
Marion, MA 02738

Elizabeth Tabeer Library
8 Spring Street,
Marion, MA 02738

MEPA Office
Attn: EEA EJ Director
100 Cambridge Street, Suite 900
Boston, MA 02144
MEPA-EJ@mass.gov

Massachusetts Department of Public Health
250 Washington Street
Boston, MA 02108

Coastal Zone Management
Attn: Project Review Coordinator
100 Cambridge Street, Suite 900
Boston, MA 02144
robert.boeri@mass.gov
patrice.bordonaro@mass.gov

DMF – South Shore
Attn: Environmental Reviewer
836 South Rodney French Blvd
New Bedford , MA, 02744
DMF.EnvReview-South@mass.gov

Natural Heritage and Endangered Species Program
Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581
melany.cheeseman@mass.gov
emily.holt@mass.gov

Department of Energy Resources
Attn: MEPA Coordinator
100 Cambridge Street, 10th floor
Boston, MA 02114
paul.ormond@mass.gov

US Fish and Wildlife Service – Northeast Regional Office
300 Westgate Center Drive
Hadley, MA 01035

U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742
cenae-pa@usace.army.mil

US Environmental Protection Agency
New England Headquarters
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Attachment 6
List of Permits and Reviews Required by the Project

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Marion Shared Use Path List of Permits/Reviews Required

State

Secretary's Certificate – Massachusetts Environmental Policy Act Office

Eastern Box Turtle Protection Plan Approval – NHESP

Order of Conditions – Marion Conservation Commission/MassDEP

State Highway Access Permit – MassDOT

Approval - Board of Underwater Archaeological Resources

Federal

Consultation under Section 7 of the ESA – US Fish and Wildlife Service

Massachusetts General Permit – USACE

Federal Consistency Review with the Coastal Zone Management Act – CZM

NPDES Construction General Permit – EPA

NEPA Approval – FHWA

Section 106 Approval – SHPO

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Attachment 7

RMAT Climate Resilience Design Standards Tool Report

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Climate Resilience Design Standards Tool Project Report

Marion SUP
Date Created: 8/23/2023 9:35:14 AM
Date Report Generated: 9/25/2023 9:03:48 AM
Project Contact Information: Meagan Tunon (Meagan.Tunon@HDRinc.com)

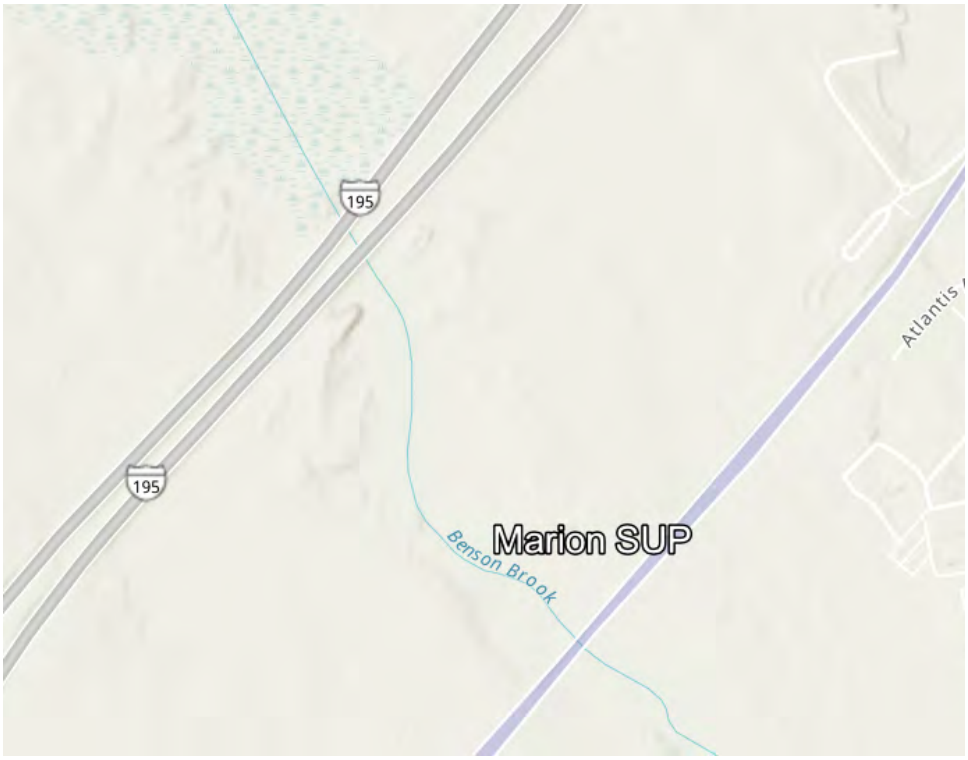
Created By: Meagan.Tunon
Tool Version: Version 1.2

Project Summary

Link to Project

Estimated Capital Cost: $10000000.00
End of Useful Life Year: 2035
Project within mapped Environmental Justice neighborhood: Yes

Ecosystem Service Benefits	Scores
Project Score	Low
Exposure	**Scores**
Sea Level Rise/Storm Surge	Moderate Exposure
Extreme Precipitation - Urban Flooding	High Exposure
Extreme Precipitation - Riverine Flooding	High Exposure
Extreme Heat	High Exposure



Asset Preliminary Climate Risk Rating Summary

Number of Assets: 3

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
Path	Moderate Risk	High Risk	High Risk	High Risk
Wetland Replication Area	—— Natural Resource project assets do not receive a preliminary climate risk rating. ——			
Parking lots	Moderate Risk	High Risk	High Risk	High Risk

Climate Resilience Design Standards Summary

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
Path	2030				
Wetland Replication Area	2030				
Parking lots	2030				
Extreme Precipitation					
Path	2030				Tier 2
Wetland Replication Area	2030				Tier 1
Parking lots	2030				Tier 2
Extreme Heat					
Path	2030		50th		Tier 2
Wetland Replication Area	2030		50th		Tier 1

Parking lots	2030	50th	Tier 2

Scoring Rationale - Project Exposure Score

The purpose of the Exposure Score output is to provide a preliminary assessment of whether the overall project site and subsequent assets are exposed to impacts of natural hazard events and/or future impacts of climate change. For each climate parameter, the Tool will calculate one of the following exposure ratings: Not Exposed, Low Exposure, Moderate Exposure, or High Exposure. The rationale behind the exposure rating is provided below.

Sea Level Rise/Storm Surge

This project received a "Moderate Exposure" because of the following:

- Exposed to the 1% annual coastal flood event as early as 2030
- Located within the 0.1% annual coastal flood event within the project's useful life
- Not located within the predicted mean high water shoreline by 2030

Extreme Precipitation - Urban Flooding

This project received a "High Exposure" because of the following:

- Historic flooding at the project site
- Increased impervious area
- Maximum annual daily rainfall is within 6 to 10 inches within the overall project's useful life
- Existing impervious area of the project site is less than 10%

Extreme Precipitation - Riverine Flooding

This project received a "High Exposure" because of the following:

- Project site has a history of riverine flooding
- Part of the project is within a mapped FEMA floodplain, outside of the Massachusetts Coast Flood Risk Model (MC-FRM)
- Part of the project is within 500ft of a waterbody and less than 20ft above the waterbody
- Project is not likely susceptible to riverine erosion

Extreme Heat

This project received a "High Exposure" because of the following:

- Increased impervious area
- Existing trees are being removed as part of the proposed project
- Existing impervious area of the project site is less than 10%
- Located within 100 ft of existing water body
- < 10 day increase in days over 90 deg. F within project's useful life

Scoring Rationale - Asset Preliminary Climate Risk Rating

A Preliminary Climate Risk Rating is determined for each infrastructure and building asset by considering the overall project Exposure Score and responses to Step 4 questions provided by the user in the Tool. Natural Resource assets do not receive a risk rating. The following factors are what influenced the risk ratings for each asset.

Asset - Path
Primary asset criticality factors influencing risk ratings for this asset:

- Asset can be inaccessible/inoperable more than a week after natural hazard event without consequences
- Loss/inoperability of the asset would have impacts limited to local area and/or municipality
- The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
- Inoperability of the asset would not be expected to result in injuries
- Cost to replace is less than $10 million
- There are no hazardous materials in the asset

Asset - Wetland Replication Area

Primary asset criticality factors influencing risk ratings for this asset:

No score available

Asset - Parking lots
Primary asset criticality factors influencing risk ratings for this asset:

- Asset can be inaccessible/inoperable more than a week after natural hazard event without consequences
- Loss/inoperability of the asset would have impacts limited to local area and/or municipality
- The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
- Inoperability of the asset would not be expected to result in injuries
- Inoperability may moderately impact other facilities, assets, or buildings, but is not expected to affect their ability to operate
- There are no hazardous materials in the asset

Project Climate Resilience Design Standards Output

Climate Resilience Design Standards and Guidance are recommended for each asset and climate parameter. The Design Standards for each climate parameter include the following: recommended planning horizon (target and/or intermediate), recommended return period (Sea Level Rise/Storm Surge and Precipitation) or percentile (Heat), and a list of applicable design criteria that are likely to be affected by climate change. Some design criteria have numerical values associated with the recommended return period and planning horizon, while others have tiered methodologies with step-by-step instructions on how to estimate design values given the other recommended design standards.

Asset: Path — Infrastructure

Sea Level Rise/Storm Surge — Moderate Risk

Target Planning Horizon: 2030
Intermediate Planning Horizon: Not Applicable
Return Period: Not exposed to coastal flooding by 2070

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE
Note: The site is exposed to Sea Level Rise/Storm Surge, but projected Tidal Datums are not available within the site. Additional site-specific analyses are recommended to identify projected Tidal Datums for the recommended planning horizon. Consult a professional coastal engineer or modeler to estimate projected Tidal Datums based on the recommended Standards and additional outputs provided through this Tool.

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Projected Duration of Flooding: APPLICABLE
Methodology to Estimate Projected Values

Projected Design Flood Velocity: APPLICABLE
Methodology to Estimate Projected Values

Projected Scour & Erosion: APPLICABLE
Methodology to Estimate Projected Values

Extreme Precipitation — High Risk

Target Planning Horizon: 2030
Return Period: No Return Period

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best

practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Path	2030	No Return Period	N/A	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Extreme Heat High Risk

Target Planning Horizon: 2030
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Asset: Wetland Replication Area Natural Resources

Sea Level Rise/Storm Surge

Target Planning Horizon: 2030
Intermediate Planning Horizon: Not Applicable

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE
Note: The site is exposed to Sea Level Rise/Storm Surge, but projected Tidal Datums are not available within the site. Additional site-specific analyses are recommended to identify projected Tidal Datums for the recommended planning horizon. Consult a professional coastal engineer or modeler to estimate projected Tidal Datums based on the recommended Standards and additional outputs provided through this Tool.

Projected Water Surface Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Wetland Replication Area	2030	5% (20-Year)	11.0	10.7	10.9

Projected Wave Action Water Elevation: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(ft - NAVD88)		
Wetland Replication Area	2030	5% (20-Year)	11.6	10.7	11.1

Projected Wave Heights: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period	Max	Min	Area Weighted Average
			(Feet)		
Wetland Replication Area	2030	5% (20-Year)	1.0	0.0	0.3

Return Period Recommendations for natural resource assets and subsequent projected values are provided as a consideration for users, not a formal standard. Users should follow industry best practices for designing natural resource assets in coordination with the appropriate regulatory agencies.

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation

Target Planning Horizon: 2030

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 1

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Wetland Replication Area	2030	25-Year (4%)	6.9	Downloadable Methodology PDF

Return Period Recommendations for natural resource assets and subsequent projected values are provided as a consideration for users, not a formal standard. Users should follow industry best practices for designing natural resource assets in coordination with the appropriate regulatory agencies.

ATTENTION: This is a Tier 1 project. It is advised to compare the extreme precipitation output values to the NOAA+ methodology to calculate total precipitation depth for 24-hr design storms.

This methodology can be found in the following PDF. (Link).

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 1

Extreme Heat

Target Planning Horizon: 2030
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 1

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 1

Projected Heat Index: NOT APPLICABLE

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: NOT APPLICABLE

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: NOT APPLICABLE

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Asset: Parking lots — Infrastructure

Sea Level Rise/Storm Surge — Moderate Risk

Target Planning Horizon: 2030
Intermediate Planning Horizon: Not Applicable
Return Period: Not exposed to coastal flooding by 2070

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.

Applicable Design Criteria

Projected Tidal Datums: APPLICABLE
Note: The site is exposed to Sea Level Rise/Storm Surge, but projected Tidal Datums are not available within the site. Additional site-specific analyses are recommended to identify projected Tidal Datums for the recommended planning horizon. Consult a professional coastal engineer or modeler to estimate projected Tidal Datums based on the recommended Standards and additional outputs provided through this Tool.

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Projected Duration of Flooding: APPLICABLE
Methodology to Estimate Projected Values

Projected Design Flood Velocity: APPLICABLE
Methodology to Estimate Projected Values

Projected Scour & Erosion: APPLICABLE
Methodology to Estimate Projected Values

Extreme Precipitation High Risk

Target Planning Horizon: 2030
Return Period: No Return Period

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Parking lots	2030	No Return Period	N/A	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Extreme Heat High Risk

Target Planning Horizon: 2030
Percentile: 50th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 2

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Heat Index: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE
Methodology to Estimate Projected Values : Tier 2

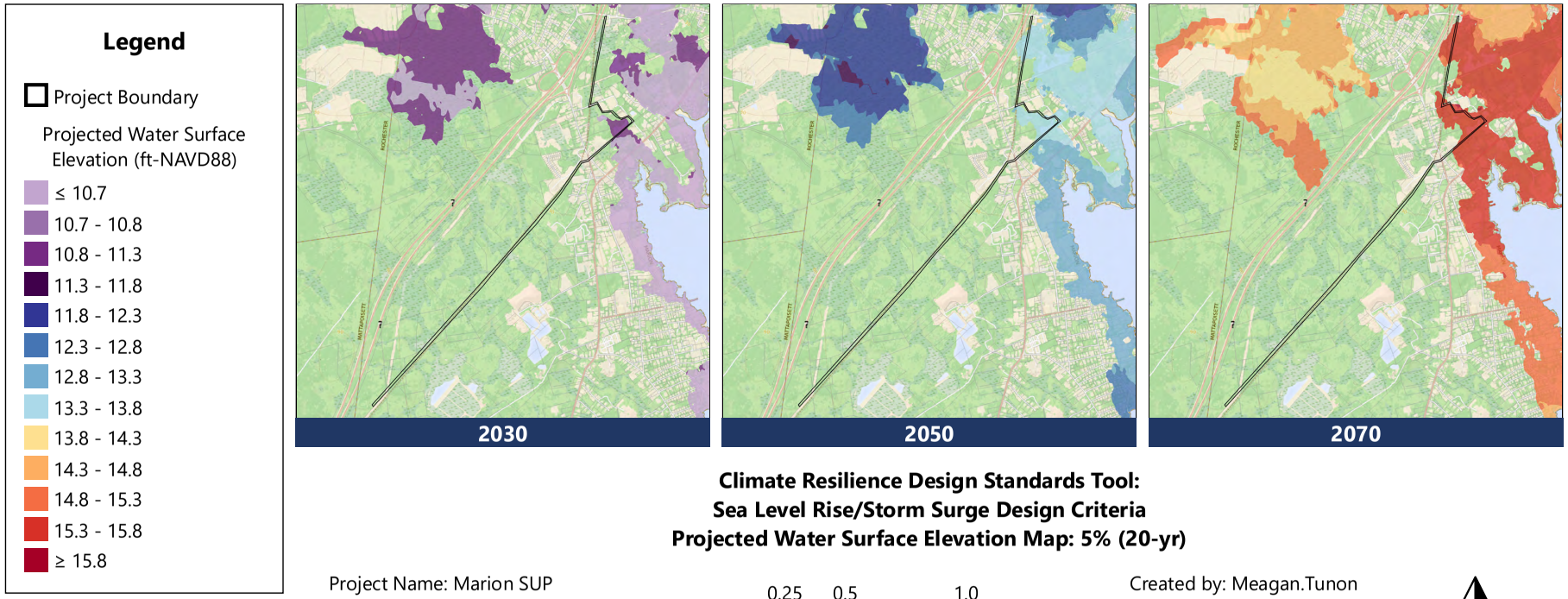
Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Sea Level Rise/Storm Surge Project Maps

The following three maps illustrate the Projected Water Surface Elevation for the 2030, 2050, and 2070 planning horizons corresponding to the lowest return period (largest design storm) recommended across the assets identified for this project in the Tool. For projects that only have Natural Resource assets, the maps will show the Projected Water Surface Elevations corresponding to the 5% (20-year) return period. Refer to the Climate Resilience Design Standards Output - Sea Level Rise/Storm Surge Section for additional values associated with other assets. The maps include the project area as drawn by the user with a 0.1 mile minimum buffer, but do not reflect the location of specific assets on the site.

LIMITATIONS: The recommended Climate Resilience Design Standards for the Sea Level Rise / Storm Surge Design Criteria are based on the user drawn polygon and relationships as defined in the Supporting Documents. The projected values and maps provided through the Tool are based on the Massachusetts Coast Flood Risk Model (MC-FRM) outputs as of 9/13/2021, which included GIS-based data for three planning horizons (2030, 2050, 2070) and six return periods (0.1%, 0.2%, 0.5%, 1%, 2%, 5%). These values are projections based on assumptions as defined in the model and the LiDAR used at the time. For additional information on the MC-FRM, review the additional resources provided on the Start Here page.

The projected values, maps, Standards, and Guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence.



Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 5% (20-yr)

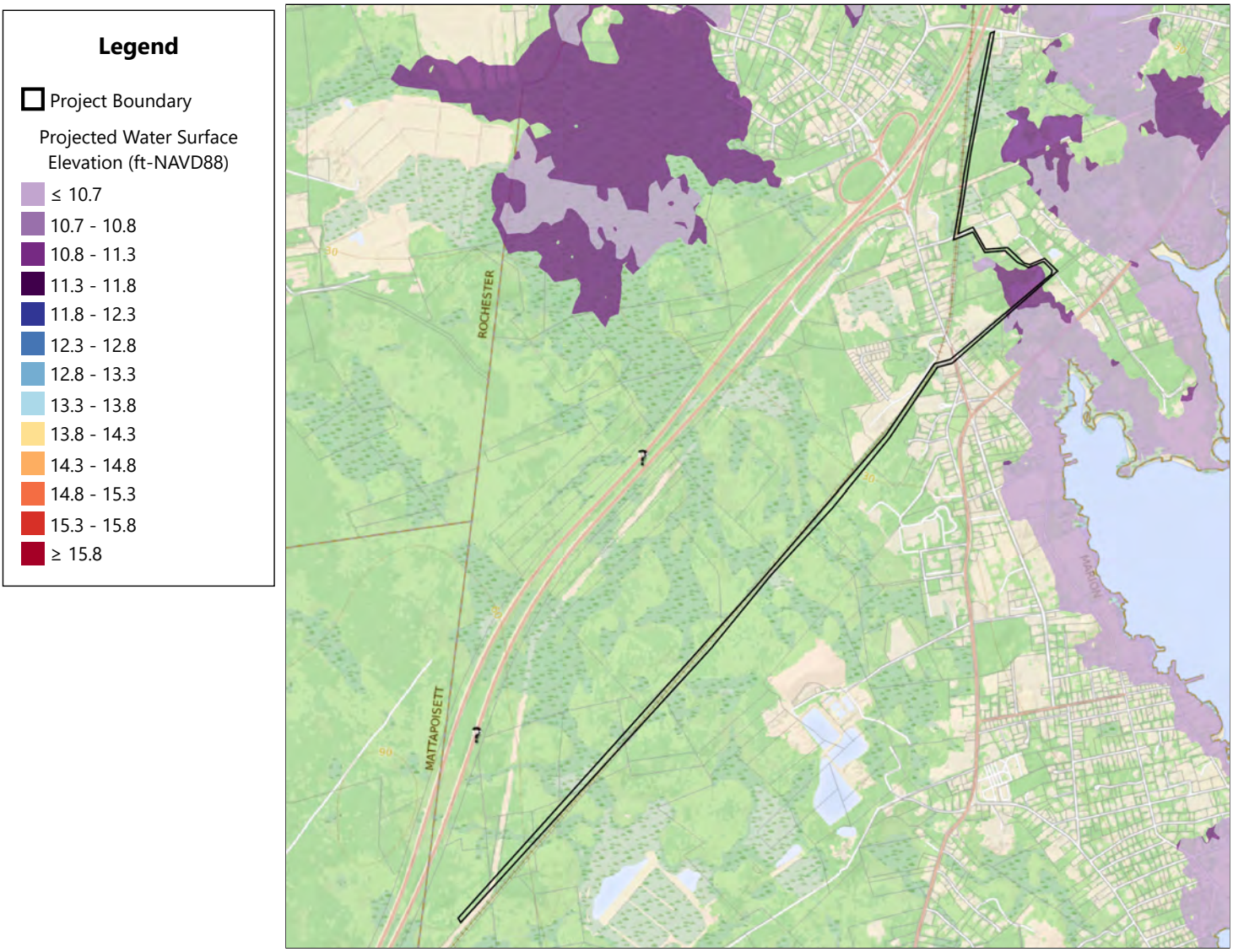
Project Name: Marion SUP
Location (Town): Marion

0.25 0.5 1.0 Miles

Created by: Meagan.Tunon
Date Created: 8/23/2023
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Wetland Replication Area	2030	5% (20-yr)	11.0	10.7	10.9
	2050	5% (20-yr)	14.0	13.1	13.4
	2070	5% (20-yr)	15.8	15.2	15.5



Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2030, 5% (20-yr)

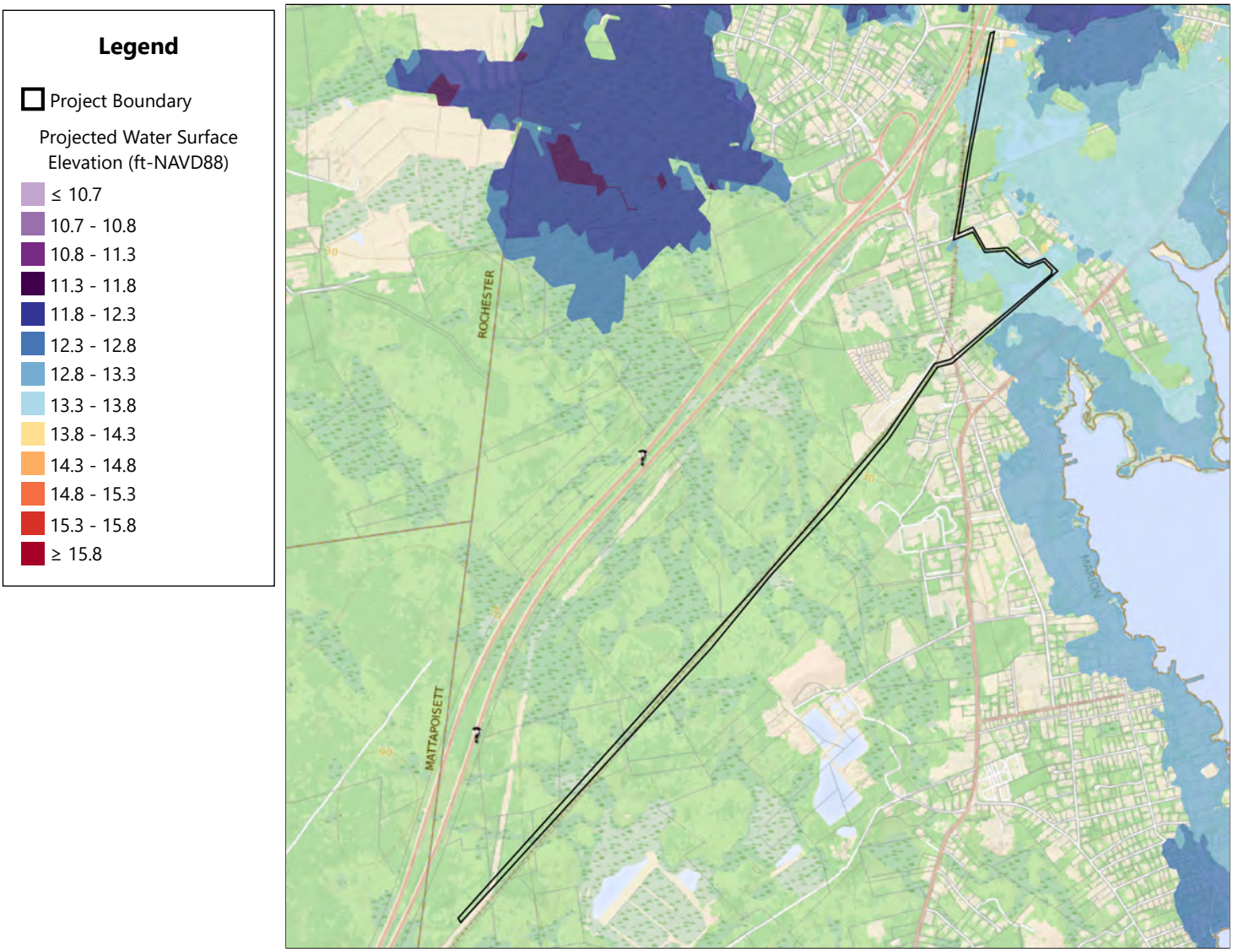
Project Name: Marion SUP
Location (Town): Marion

0.05 0.1 0.25 Miles

Created by: Meagan.Tunon
Date Created: 8/23/2023
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Wetland Replication Area	2030	5% (20-yr)	11.0	10.7	10.9



Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2050, 5% (20-yr)

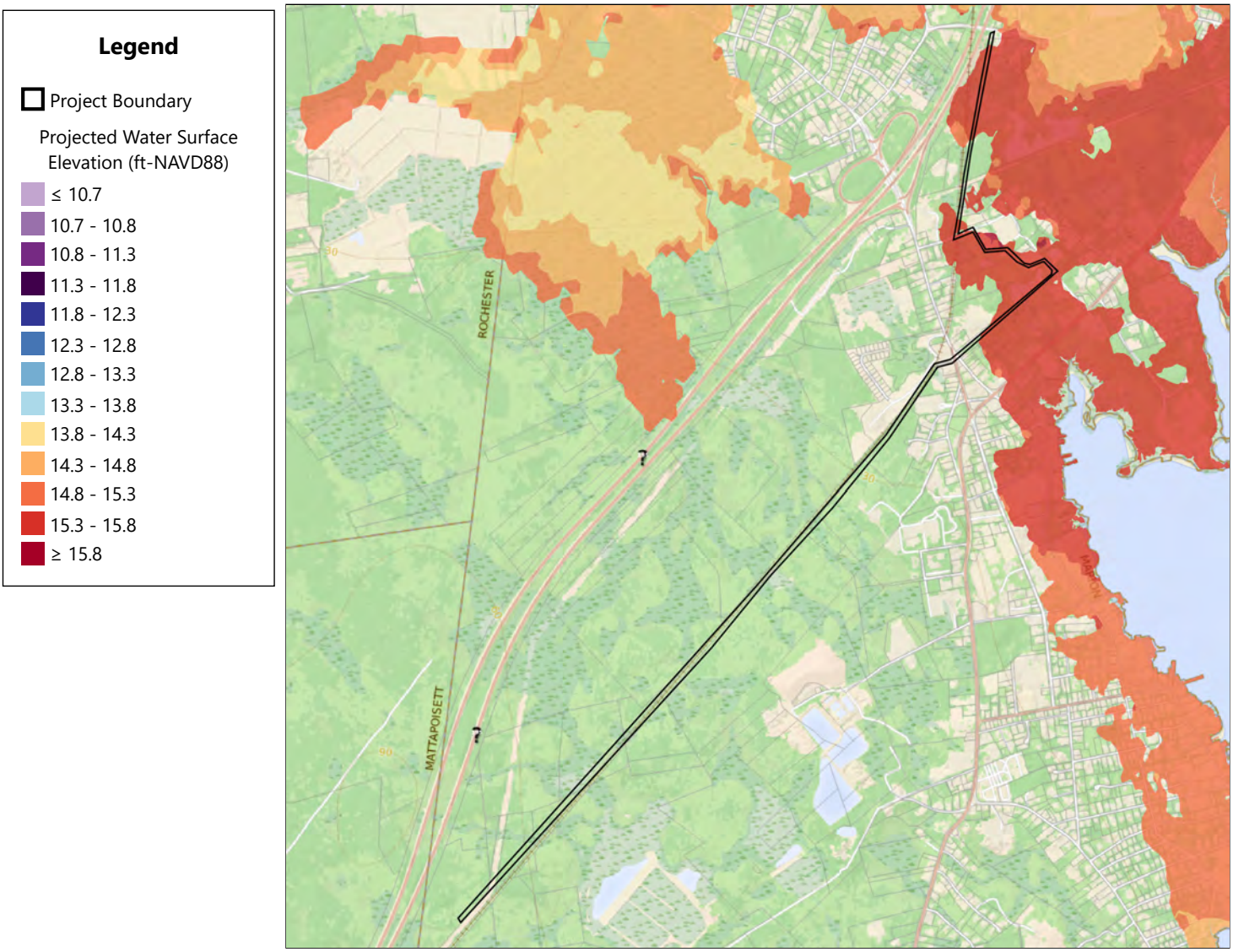
Project Name: Marion SUP
Location (Town): Marion

0.05 0.1 0.25 Miles

Created by: Meagan.Tunon
Date Created: 8/23/2023
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Wetland Replication Area	2050	5% (20-yr)	14.0	13.1	13.4



Climate Resilience Design Standards Tool:
Sea Level Rise/Storm Surge Design Criteria
Projected Water Surface Elevation Map: 2070, 5% (20-yr)

Project Name: Marion SUP
Location (Town): Marion

0.05 0.1 0.25 Miles

Created by: Meagan.Tunon
Date Created: 8/23/2023
Tool Version: 1.3

N

Asset Name	Planning Horizon	Return Period	Max	Min	Area Weighted Average (ft-NAVD88)
Wetland Replication Area	2070	5% (20-yr)	15.8	15.2	15.5

Project Inputs

Core Project Information

Name:	Marion SUP
Given the expected useful life of the project, through what year do you estimate the project to last (i.e. before a major reconstruction/renovation)?	2035
Location of Project:	Marion
Estimated Capital Cost:	$10,000,000
Who is the Submitting Entity?	State Agency Massachusetts Department of Transportation Meagan Tunon (Meagan.Tunon@HDRinc.com)
Is this project identified as an agency priority project, such as in the State Hazard Mitigation and Climate Adaptation Plan (SHMCAP)?	No
Is this project being submitted as part of a state grant application?	Yes
What stage are you in your project lifecycle?	Design
Is climate resiliency a core objective of this project?	Yes
Is this project being submitted as part of the state capital planning process?	No
Is this project being submitted as part of a regulatory review process or permitting?	Yes
Brief Project Description:	The Town of Marion proposes to construct a Shared Use Path (SUP) designed in compliance with state and federal standards including the Commonwealth of Massachusetts Department of Transportation (MassDOT), Highway Design Manual, 2006 edition, the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004 edition, and the Guide for Development of Bicycle Facilities, 1999 edition. MassDOT is funding the project with Federal Highway Administration (FHWA) Congestion Mitigation and Air Quality (CMAQ) funds. The proposed project consists of a paved recreational path along the existing railroad bed beginning at the Mattapoisett/Marion town line, a path crossing and intersection improvements at Route 105/Spring Street intersection, and a paved recreational path through Washburn Lane continuing to the proposed project terminus at Point Road. Project also includes intersection improvements at Route 105/Spring Street including realignment of the Route 105 southbound approach and the Spring Street northbound approach, a pedestrian crossing signal, and signage/pavement markings. The project will also create a parking lot and wetland replication area.
Project Submission Comments:	

Project Ecosystem Service Benefits

Factors Influencing Output

- ✓ Project promotes decarbonization
- ✓ Project improves water quality
- ✓ Project provides recreation
- ✓ Project improves air quality
- ✓ Project prevents pollution
- ✓ Project provides cultural resources/education

Factors to Improve Output

- ✓ Incorporate green infrastructure to filter stormwater
- ✓ Increase biodiversity, protect critical habitat for species, manage invasive populations, and/or provide connectivity to other habitats
- ✓ Incorporate vegetation that provides pollinator habitat

Is the primary purpose of this project ecological restoration?

No

Project Benefits

Provides flood protection through nature-based solutions	No
Reduces storm damage	No
Recharges groundwater	No
Protects public water supply	No
Filters stormwater using green infrastructure	Maybe
Improves water quality	Yes

Promotes decarbonization	Yes
Enables carbon sequestration	No
Provides oxygen production	No
Improves air quality	Yes
Prevents pollution	Yes
Remediates existing sources of pollution	No
Protects fisheries, wildlife, and plant habitat	Maybe
Protects land containing shellfish	No
Provides pollinator habitat	Maybe
Provides recreation	Yes
Provides cultural resources/education	Yes

Project Climate Exposure

Is the primary purpose of this project ecological restoration?	No
Does the project site have a history of coastal flooding?	No
Does the project site have a history of flooding during extreme precipitation events (unrelated to water/sewer damages)?	Yes
Does the project site have a history of riverine flooding?	Yes
Does the project result in a net increase in impervious area of the site?	Yes
Are existing trees being removed as part of the proposed project?	Yes

Project Assets

Asset: Path
Asset Type: Other
Asset Sub-Type: Other
Construction Type: Major Repair/Retrofit
Construction Year: 2025
Useful Life: 10
Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure may be inaccessible/inoperable more than a week after natural hazard event without consequences.
Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts would be limited to local area and/or municipality
Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Less than 10,000 people
Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
Will the infrastructure reduce the risk of flooding?
No
If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the infrastructure would not be expected to result in injuries
If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?
There are no hazardous materials in the infrastructure
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Minor – Inoperability will not likely affect other facilities, assets, or buildings
If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?
Less than $10 million
Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.
No
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?
Loss of infrastructure is not expected to reduce the ability to maintain government services
What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?
Reduced morale and public support
Asset: Wetland Replication Area
Asset Type: Wetland Resource Area - Inland
Asset Sub-Type: Wet meadows
Construction Type: New Construction
Construction Year: 2025
Monitoring Frequency: 3
Asset: Parking lots
Asset Type: Other

Asset Sub-Type: Other
Construction Type: New Construction
Construction Year: 2025
Useful Life: 10

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure may be inaccessible/inoperable more than a week after natural hazard event without consequences.

Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts would be limited to local area and/or municipality

Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Less than 10,000 people

Identify if the infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

Will the infrastructure reduce the risk of flooding?
No

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the infrastructure would not be expected to result in injuries

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?
There are no hazardous materials in the infrastructure

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Moderate – Inoperability may impact other facilities, assets, or buildings, but cascading impacts do not affect the ability of other facilities, assets, or buildings to operate

If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?
Less than $10 million

Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.
No

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?
Loss of infrastructure is not expected to reduce the ability to maintain government services

What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?
Reduced morale and public support

Report Comments

N/A

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Attachment 8

EEA EJ Maps Viewer Printout

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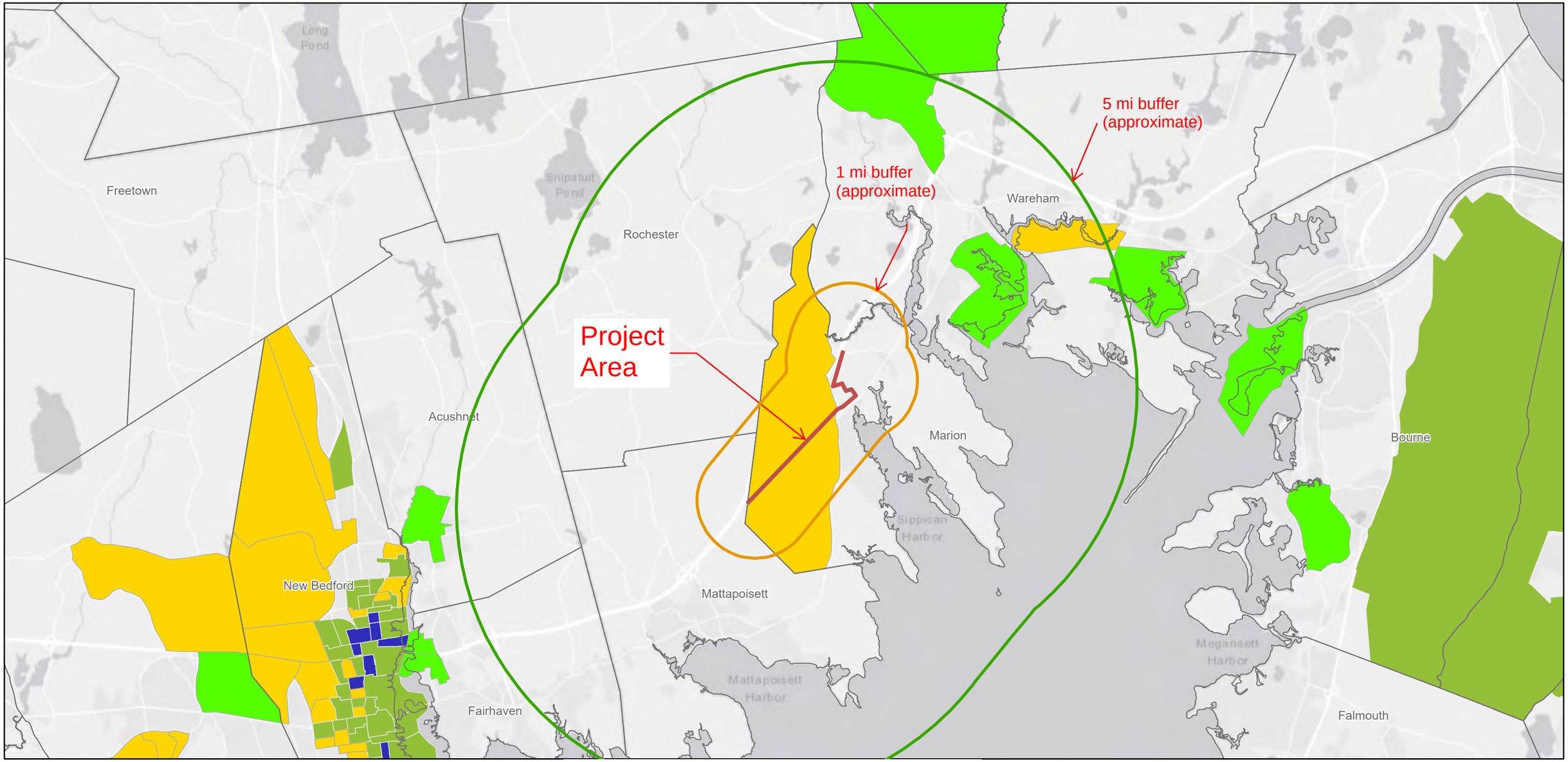
2020 Environmental Justice Neighborhoods



9/28/2023, 5:27:56 PM

MA 2020 Environmental Justice Block Groups

- Minority: the block group minority population is >= 40%, or the block group minority population is >= 25% and the median household income of the municipality the block group is in is < 150% of the Massachusetts median household income
- Income: at least 25% of households have a median household income 65% or less than the state median household income
- Minority and Income
- Minority, Income and English isolation

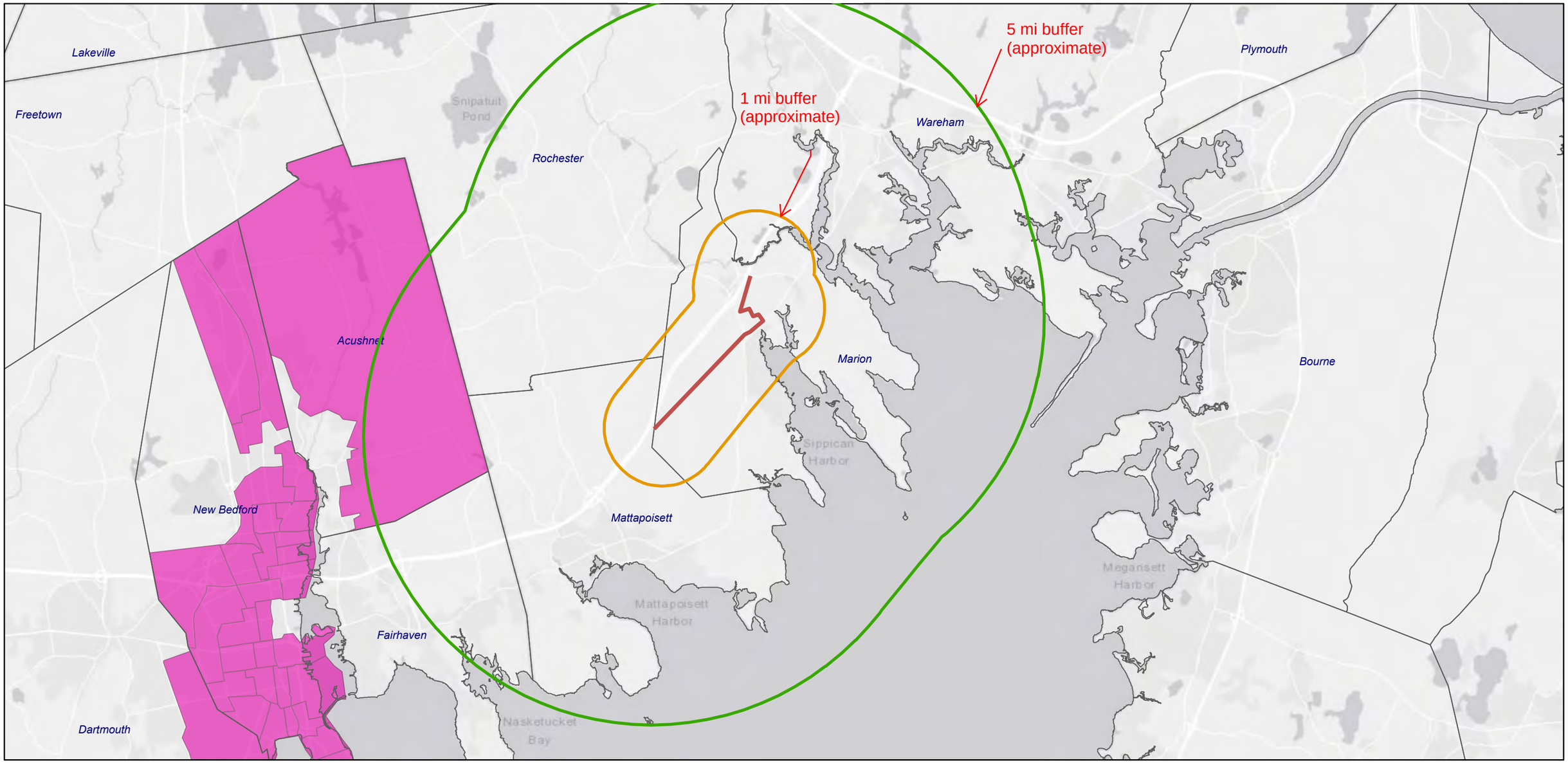
1:144,448

0 1.25 2.5 5 mi

0 2 4 8 km

MassGIS, Esri, HERE, Garmin, USGS, EPA, NPS

Languages spoken in Massachusetts



2/26/2024, 3:37:45 PM

MA Municipalities -- multipart

2015 ACS: Languages spoken by at least 5% of population in the census tract who do not speak English very well, by tract

1:144,448

0 1.25 2.5 5 mi

0 2 4 8 km

MassGIS, Esri, HERE, Garmin, USGS, EPA, NPS, Esri, HERE, NPS

MassGIS, Esri, HERE, Garmin, USGS, EPA, NPS | Data provided to EEA by Craig Weller, Data, Assessment, and Accountability, Massachusetts Department of Elementary and Secondary Education | American Community Survey, EEA GIS | MassGIS | Esri, HERE, NPS | EEA GIS |

Attachment 9

DPH EJ Tool - Vulnerable Health Criteria

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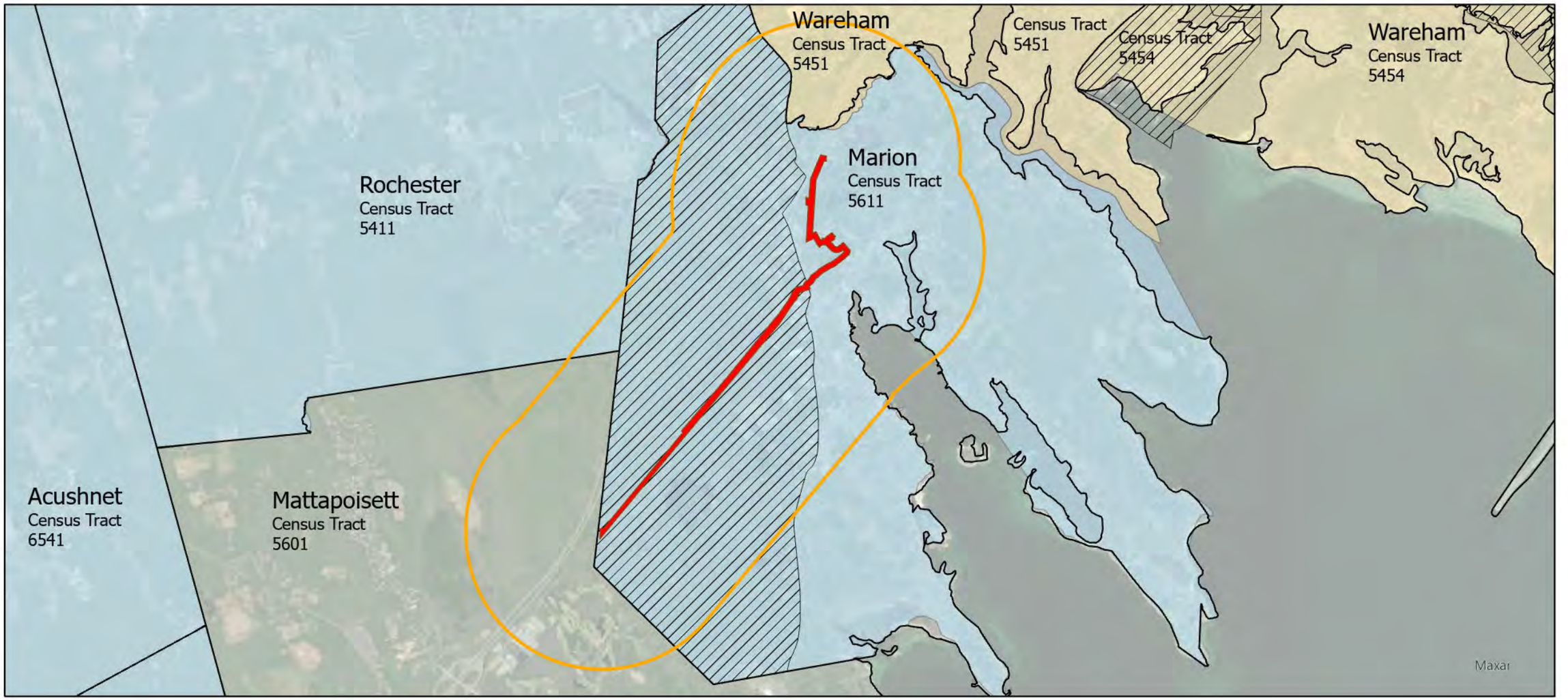
MassDPH Vulnerable Health EJ Criteria Pediatric Asthma Emergency Department Visits



Legend

- ProjectLimits
- 1 Mile Radius
- Census Tracts (2020)
- Environmental Justice Populations

Childhood Asthma Ed Visits Rate per 10,000 (2016-2020)

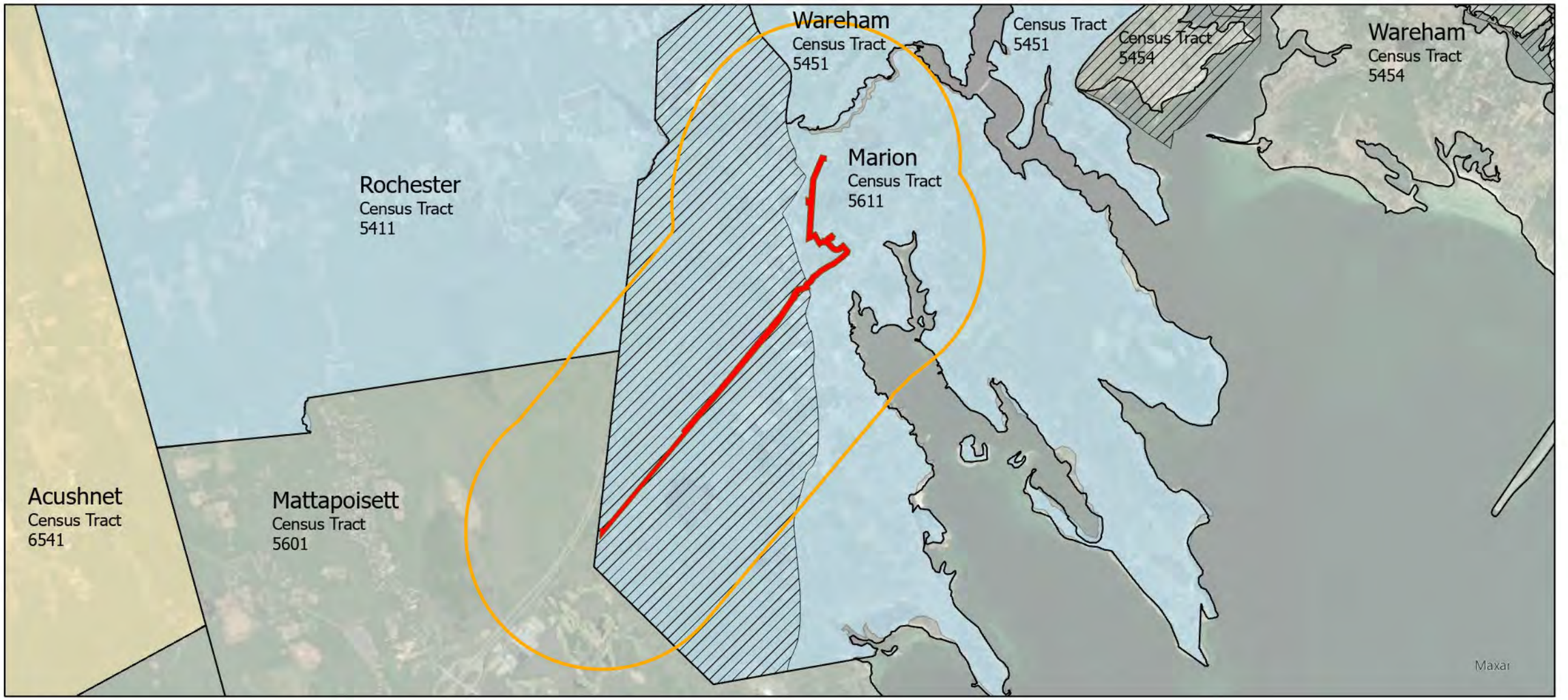
- <72.5 (less than 110% Statewide Average)
- ≥72.5 (more than 110% Statewide Average)

0 0.5 1 2 Miles

N

Source: Massachusetts Center for Health Information and Analysis

MassDPH Vulnerable Health EJ Criteria Low Birth Weight



Legend

- ProjectLimits
- 1 Mile Radius
- Census Tracts (2020)
- Environmental Justice Populations

Low Birth Weight Rate per 1,000 (2011-2015)

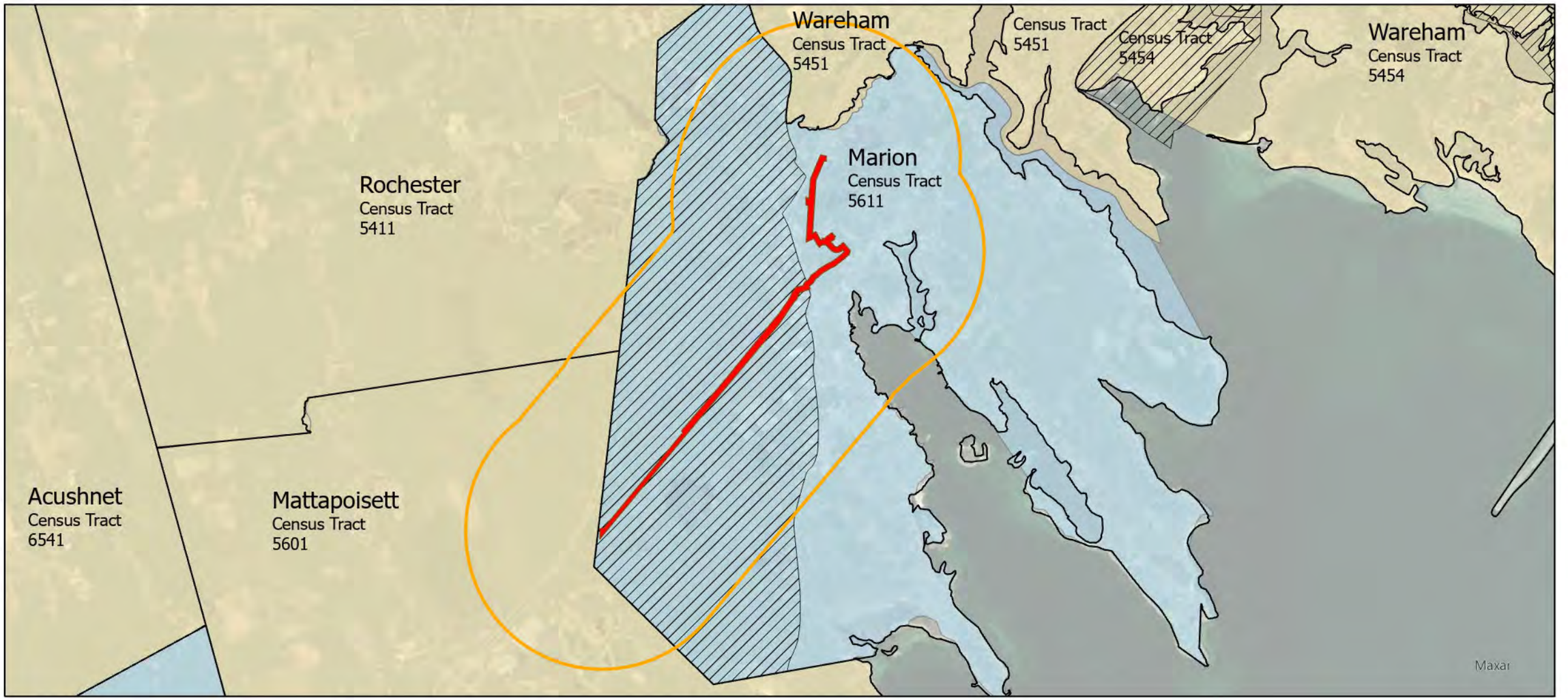
- <238.5 (less than 110% Statewide Average)
- ≥238.5 (more than 110% Statewide Average)

0 0.5 1 2 Miles

N

Source: Massachusetts Center for Health Information and Analysis

MassDPH Vulnerable Health EJ Criteria Heart Attack



Legend

- ProjectLimits
- 1 Mile Radius
- Census Tracts (2020)
- Environmental Justice Populations

Heart Attack per 10,000 (2016-2020)

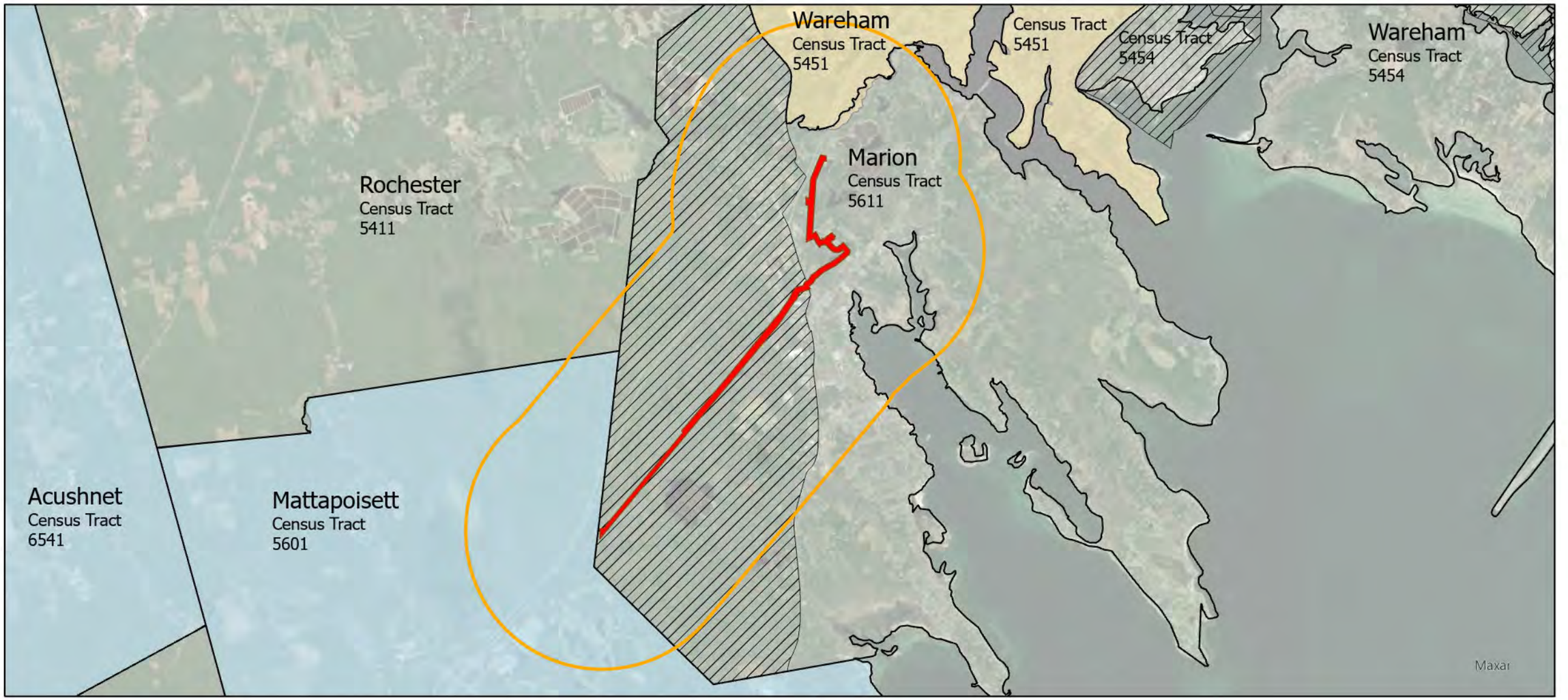
- <28.73 (less than 110% Statewide Average)
- ≥28.73 (more than 110% Statewide Average)

0 0.5 1 2 Miles

N

Source: Massachusetts Center for Health Information and Analysis

MassDPH Vulnerable Health EJ Criteria Elevated Blood Lead Prevalence



Legend

- ProjectLimits
- 1 Mile Radius
- Census Tracts (2020)
- Environmental Justice Populations

Elevated Blood Lead Prevalence per 1,000 (2017-2021)

- <15 (less than 110% Statewide Average)
- ≥15 (more than 110% Statewide Average)

0 0.5 1 2 Miles

N

Source: Massachusetts Center for Health Information and Analysis

Attachment 10

Environmental Justice Screening Form

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Environmental Justice Screening Form
MassDOT Project File No. 607979
Town of Marion Shared Use Path

Project Name	MassDOT/Town of Marion Shared Use Path
Anticipated Date of MEPA Filing	Q1/2024
Proponent Name	Town of Marion, MA
Contact Information (e.g., consultant)	Kevin Slattery, PWS, HDR Project Manager
Public website for project or other physical location where project materials can be obtained (if available)	Shared Use Path Information | Marion MA
Municipality and Zip Code for Project (if known)	Marion, MA
Project Type* (list all that apply)	02738
Is the project site within a mapped 100-year FEMA flood plain? Y/N/ unknown	Y (portions)
Estimated GHG emissions of conditioned spaces (click **here** for GHG Estimation tool)	N/A

Project Description

1. Provide a brief project description, including overall size of the project site and square footage of proposed buildings and structures if known.

The Marion Shared Use Path (SUP) project consists of the construction of a shared use path in the Town of Marion from the Mattapoisett/Marion Town line to Point Road. The proposed project consists of a paved recreational path along the existing abandoned railroad bed beginning at the Mattapoisett/Marion town line, a path crossing and intersection improvements at Route 105/Spring Street intersection, and a paved recreational path through Washburn Park continuing along abandoned railroad bed to the proposed project terminus at Point Road. Intersection improvements at Route 105/Spring Street include realignment of the Route 105 southbound approach and the Spring Street northbound approach, a pedestrian crossing signal, and signage/pavement markings. The project is located entirely with the Town of Marion, MA. The Massachusetts Department of Transportation – Highway Division (MassDOT) is proposing construction on behalf of the Town of Marion. Construction will include intersection improvements proposed at the Route 105/Spring Street crossing to accommodate pedestrian, bicycle, and vehicular traffic. The total length of the project is approximately 3.8 miles.

2. List anticipated MEPA review thresholds (301 CMR 11.03) (if known)

In accordance with 301 CMR 11.03 (1) Land, the proposed SUP will meet the threshold for impervious area under (1)(b)(2) Creation of five or more acres of impervious area. The SUP will have approximately 5.2 acres of new impervious surface.

The other review thresholds anticipated by the proposed SUP is 301 CMR 11.03 (3) Wetlands, Waterways and Tidelands, under (b)1(f) alteration of one half or more acres of any other wetlands. The proposed SUP is expected to involve work in both 310 CMR 10.02 (1)(b) Land Subject to Coastal Storm Flowage (LSCSF) totaling over 1 acre, and Riverfront Area in 310 CMR 10.02 (1)(f) totaling one acre.

3. List all anticipated state, local and federal permits needed for the project (if known)

- Marion Conservation Commission - Order of Conditions
- Massachusetts Department of Environmental Protection 401 WQC.
- MassDOT- State Highway Access Permit,
- MEPA Office - Secretary's Certificate, NHESP - Eastern Box Turtle Protection Plan Approval
- United States Army Corps of Engineers (USACE) Self-Verification Notification Form (SVNF)

4. Identify EJ populations and characteristics (Minority, Income, English Isolation) within 5 miles of project site (can attach map identifying 5-mile radius from EJ Maps Viewer in lieu of narrative)

The EJ population block group within the project's geographic area boundaries is Minority.

Characteristics of the Town of Marion's EJ population within the project's geographic area identified a Minority population of 26%. The characteristics are based on Block Group 4, Census Tract 5611, Plymouth County, Massachusetts. Roughly two-thirds of the project lies within this tract. Available public data about the tract lists a population of 5,293 withing a 14.1 square mile area, or 374.7 people per square mile. Publicly available data reports that in 2020, the town population featured ten percent or more of two or more minority designations, one percent as Black, one percent as Asian, two percent as Other, and four percent as Hispanic.

5. Identify any municipality or census tract meeting the definition of "vulnerable health EJ criteria" in the DPH EJ Tool located in whole or in part within a 1 mile radius of the project site.

The Massachusetts Department of Public Health (DPH) EJ Tool identified a single "vulnerable health criteria" within the project's geographic area footprint. According to the DPH's Department of Public Health Community Health Assessment, the applicable criterion is Heart Attack.[1]

[1] EJ Screening v7-community (mass.gov)

6. Identify potential short-term and long-term environmental and public health impacts that may affect EJ Populations and any anticipated mitigation

Impacts resulting from this project are primarily positive. Environmental impacts will be minimized to the greatest extent practicable. There will no impact on Areas of Critical Environmental Concern, designated wild and scenic rivers, historic resources, water supply, wastewater resources, energy facilities, and/or air quality.

Construction phase impacts will be minimal as the majority of this project will be constructed on abandoned rail/trolley corridors that run through sparsely or uninhabited areas.

7. Identify project benefits, including "Environmental Benefits" as defined in 301 CMR 11.02, that may improve environmental conditions or public health of the EJ population

Project benefits include increased connectedness to open space and recreational areas as well as a reduced need for vehicle use, improved stormwater management, several safety upgrades, including a signalized crossing at the Front Street (Route 105)/Spring Street intersection, improvements for ADA accessibility, and offer an overall benefit to EJ communities.

The project also offers benefits to address the vulnerable health criteria that was identified within the project's geographic area footprint (heart attack), specifically a long-desired asset in Marion that offers a readily available resource for cardiovascular exercise, commonly referred to as cardio exercise, for all Town residents and shareholders. Widely available research data has proven that cardio exercise is physical activity that improves heart and lung function, with benefits including 'burning' (i.e., reduction) of fat and calories in support of weight loss; enhanced sleep quality and mood condition; expanded lung capacity and blood flow; lower blood pressure; lower blood sugar; and a reduce and risk of heart disease, stroke, diabetes, and some types of cancer. Cardio exercise also strengthens the human immune system and muscle function.

8. Describe how the community can request a meeting to discuss the project, and how the community can request oral language interpretation services at the meeting . Specify how to request other accommodations, including meetings after business hours and at locations near public transportation.

Per MEPA protocols and requirements, the Marion SUP project team will schedule at least one community meeting for EJ populations prior to filing its EENF. It is anticipated that The Town of Marion will be host for a "community-at-large" open house that will be advertised with the stated intent of sharing project information, educating public and stakeholder audiences, soliciting information, and discussing the public's role in decision-making about the process.

In the period leading up to the meeting, the project team will take every practicable step to engage EJ populations and relevant Community Based Organizations (CBOs) that provide services to EJ populations. CBOs will be identified by way of MEPA's EJ Reference List for the project and any other available information for suitable community partners to augment the reference list.

All activity will be undertaken with the objective of encouraging and securing elevated levels of participation at the community meeting.

Please note that EJ community meetings hosted for the Marion SUP project will adhere to public notice requirements and utilize other outreach tools. Notifications will include the date, time, location, and other general information about the Community Meeting event,

including a brief description of the project, purpose of meeting, and a solicitation to participate. Notifications will also include contact information for the Project Manager and Town of Marion representatives along with specific instructions on how to request accommodations such as meetings after business hours and at locations near public transportation.

When planning the community meetings, the project team will carefully consider several factors, including discussion of sites where previous meetings have been held, accessibility (ADA accessible as well as access via bicycle and walking. Please note that the Town of Marion does not offer fixed-route public transit services.) The project team will work with CBOs and local stakeholders to determine the time period of a day or week that is most likely to be convenient for EJ populations (i.e., day or night, weekday, or weekend).

Additional considerations in selecting the meeting site will include technology (Wi-Fi network and broadband connection); and meeting logistics (public address systems, video display, digital accessibility services). The Marion project DGA does not feature a population with LEP translation needs, so translation services are not anticipated. Should a community shareholder ask for such an accommodation, the project will work with Town representatives to facilitate the request.

The Marion SUP project team will also carefully consider options to host additional informal community meetings through solicitation of input from CBOs listed on the project's EJ Reference List. As needed, the project team will consider hosting ad-hoc 'pop up' events, as needed, in addition to the community meeting.

Notifications will be provided in as many formats as practicable, including:

- Newspaper Legal Ads
- Social Media Postings
- Media Release
- Fliers
    - For posting at community gathering spots
- Email
    - Email invitations for all community meetings will be sent to project stakeholders identified in the EJ Reference List and other key stakeholder lists

**MEPA Project Types [Note: this list can be omitted when circulating this form.]*

Article 97	Marijuana
Agriculture	Marine Industrial
Airport	Master Plan – Development
Aquaculture/Shellfish	Master Plan – Urban Renewal Plan
Beach/Coastal Nourishment	Other (Specify)
Coastal Infrastructure	Recreation
Commercial - Office/Lab/R&D	Regulations

Commercial - Hotel	Remediation
Commercial - Warehouse	Residential
Commercial- Retail	Resiliency
Dam Removal	Solid Waste
Dam Repair/Replacement	Transportation – Roadways/transit
Dredging	Transportation - Trails
Ecological Restoration	Wastewater – Treatment/conveyance
Energy Generation	Wastewater - CWMP
Energy Storage	Water Supply - New Source
Energy Transmission	Water Supply – Treatment/conveyance
Industrial	
Institutional - Educational	

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Attachment 11

NHESP Priority and Estimated Habitat Atlas Page

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MARION
Priority Habitats and Estimated Habitats

Priority Habitats, for use with the MA Endangered Species Act Regulations (321 CMR 10)

Estimated Habitats, for use with the MA Wetlands Protection Act Regulations (310 CMR 10)

Effective August 1, 2021

Natural Heritage & Endangered Species Program
1 Rabbit Hill Road, Westborough, MA 01581
tel: (508) 389-6360; fax: (508) 389-7890

Data Sources:

Priority Habitats and Estimated Habitats: created by NHESP in 2021.
Certified Vernal Pools: created by NHESP, July 20, 2021.
Town Boundaries: 1:25,000 community boundary data, from MassGIS (updated March, 2017).
Roads: MassDOT roads, from MassGIS (updated 2018).
Digital Orthophoto: 15cm resolution, taken in 2019, from MassGIS.

Priority Habitat of Rare Species

Project or Activity falls within Priority Habitat only:
- You must file directly with NHESP pursuant to Massachusetts Endangered Species Act (MESA)

Examples of projects: single family home, subdivision, commercial building, widening of driveway/road, beaver dam removal, etc.

Some projects or activities may be exempt from MESA filing: see 321 CMR 10.14

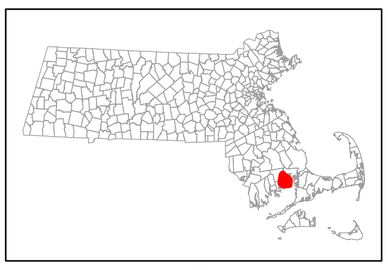
Priority Habitat of Rare Species and also Estimated Habitat of Rare Wildlife

Project or Activity is within BOTH Estimated Habitat and Priority Habitat:
- Is a Notice of Intent (NOI) under wetlands regulations required?
  - -Yes
    Send copy of NOI to NHESP and must also file under MESA (streamlined MESA-NOI filing option available)
  - -No
    MESA filing only (see 'Priority Habitat' details at left)

For more information, see our website at: www.mass.gov/nhesp

- Certified Vernal Pools (as of July 20, 2021)
- Town Boundary

Transportation:
- Interstate
- U.S. Highway
- State Route
- Non-numbered Route
- Railroad



Commonwealth of Massachusetts — Charlie Baker, Governor; Karyn Polito, Lt. Governor
Executive Office of Energy & Environmental Affairs — Kathleen A. Theoharides, Secretary

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Attachment 12

Vernal Pool Records

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LOT D APARTMENT BUILDING UNIT/ BEDROOM SUMMARY

BUILDING	ONE BEDROOM UNITS	TWO BEDROOM UNITS	THREE BEDROOM UNITS
A	4	23	3
B	4	23	3
TOTAL BEDROOM UNITS	8	46	6
TOTAL BEDROOMS	8	92	18

ONE BEDROOM UNITS	13.33%	
TWO BEDROOM UNITS	76.67%	
THREE BEDROOM UNITS	10.0%	
RATIO OF BEDROOMS PER UNIT	1.967	
TOTAL UNITS	60	
TOTAL BEDROOMS	118	

LOT D APARTMENT/OFFICE PARKING SUMMARY

PARKING SPOTS (10'x20')	129
HANDICAP SPOTS (8'x20')	5
TOTAL SPOTS	134
RATIO OF PARKING SPOTS TO UNITS	2.23

LEGEND

- EX. UTILITY POLE
- EX. CATCH BASIN
- EX. MANHOLE
- EX. TEST PIT
- EX. CONTOUR
- BR (BIKE RACK)
- DP (DUMPSTER/RECYCL.
- PROPOSED MONITORI

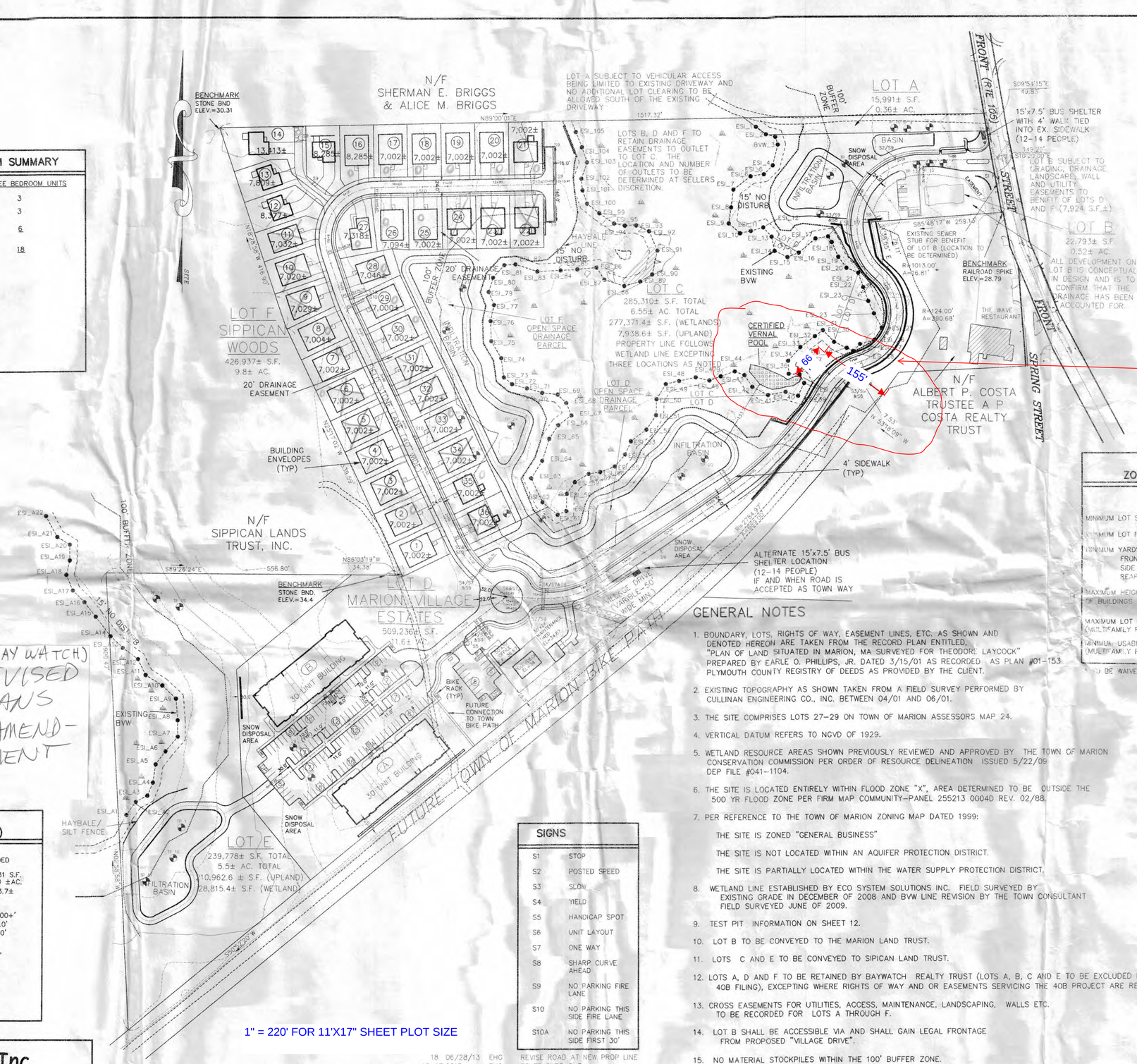
(BAY WATCH) REVISED PLANS FOR AMENDMENT

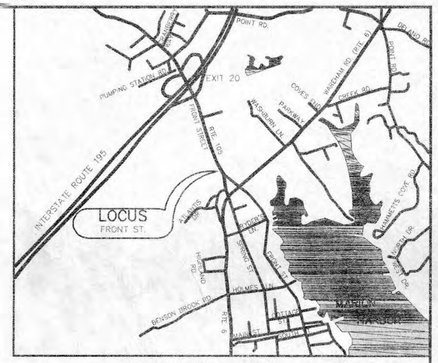
LOT D APARTMENTS ZONING DISTRICT – GENERAL BUSINESS (GB)

	REQUIRED	PROVIDED
MINIMUM LOT SIZE	15,000 S.F.	518,831 S.F. 11.9 ±AC.
MINIMUM LOT FRONTAGE	100'	163.7±
MINIMUM YARDS:		
FRONT	35'	1,500+'
SIDE	10'	25.0'
REAR	10'	30.0'
MAXIMUM HEIGHT OF BUILDINGS	35'	35'
MAXIMUM LOT COVERAGE (MULTIFAMILY RESIDENCE)	40%	*
MINIMUM USABLE OPEN SPACE (MULTIFAMILY RESIDENCE)	40%	*

* TO BE WAIVED OR PREVIOUSLY WAIVED UNDER PRIOR DECISIONS

Existing Grade Inc.
Surveyors & Civil Engineers
PO Box 612
Dennisport, MA 02639
508-694-6501 Ph/Fax





LOCUS MAP
1" = 2000'±

LOCATON OF CERTIFIED VERNAL POOL FROM MARION CONSERVATION COMMISSION NOTICE OF INTENT FILIING

LOT F–36 LOT FOR SALE PROJECT ZONING DISTRICT – GENERAL BUSINESS (GB)

	REQUIRED	PROVIDED
MINIMUM LOT SIZE	15,000 S.F.	7,002 S.F.* 0.16±AC.
MINIMUM LOT FRONTAGE	100'	14'*
MINIMUM YARDS:		
FRONT	35'	25'
SIDE	10'	10.0'
REAR	10'	10.0'
MAXIMUM HEIGHT OF BUILDINGS	35'	35'
MAXIMUM LOT COVERAGE (MULTIFAMILY RESIDENCE)	40%	50%±*
MINIMUM USABLE OPEN SPACE (MULTIFAMILY RESIDENCE)	40%	60%±

* TO BE WAIVED OR PREVIOUSLY WAIVED UNDER PRIOR DECISIONS

SLT LOT SUMMARY (LOTS C AND E)

TOTAL AREA	525,088± S.F.	12.05± AC.
TOTAL UPLANDS	218,901.2± S.F. (7,938.6±S.F. LOT C) (210,962.6± S.F. LOT E)	5.02 ± AC.
TOTAL WETLANDS	306,186.8± S.F. (277,371.4± S.F. LOT C) (28,815.4± S.F. LOT E)	7.03± AC.

SIGNS

S1	STOP
S2	POSTED SPEED
S3	SLOW
S4	YIELD
S5	HANDICAP SPOT
S6	UNIT LAYOUT
S7	ONE WAY
S8	SHARP CURVE AHEAD
S9	NO PARKING FIRE LANE
S10	NO PARKING THIS SIDE FIRE LANE
S10A	NO PARKING THIS SIDE FIRST 30'

1" = 220' FOR 11'X17" SHEET PLOT SIZE

GENERAL NOTES

1. BOUNDARY, LOTS, RIGHTS OF WAY, EASEMENT LINES, ETC. AS SHOWN AND DENOTED HEREON ARE TAKEN FROM THE RECORD PLAN ENTITLED, "PLAN OF LAND SITUATED IN MARION, MA SURVEYED FOR THEODORE LAYCOCK" PREPARED BY EARLE O. PHILLIPS, JR. DATED 3/15/01 AS RECORDED AS PLAN #01–153 PLYMOUTH COUNTY REGISTRY OF DEEDS AS PROVIDED BY THE CLIENT.
2. EXISTING TOPOGRAPHY AS SHOWN TAKEN FROM A FIELD SURVEY PERFORMED BY CULLINAN ENGINEERING CO., INC. BETWEEN 04/01 AND 06/01.
3. THE SITE COMPRISES LOTS 27–29 ON TOWN OF MARION ASSESSORS MAP 24.
4. VERTICAL DATUM REFERS TO NGVD OF 1929.
5. WETLAND RESOURCE AREAS SHOWN PREVIOUSLY REVIEWED AND APPROVED BY THE TOWN OF MARION CONSERVATION COMMISSION PER ORDER OF RESOURCE DELINEATION ISSUED 5/22/09 DEP FILE #041–1104.
6. THE SITE IS LOCATED ENTIRELY WITHIN FLOOD ZONE "X", AREA DETERMINED TO BE OUTSIDE THE 500 YR FLOOD ZONE PER FIRM MAP COMMUNITY–PANEL 255213 0004D REV. 02/88.
7. PER REFERENCE TO THE TOWN OF MARION ZONING MAP DATED 1999:

   THE SITE IS ZONED "GENERAL BUSINESS"

   THE SITE IS NOT LOCATED WITHIN AN AQUIFER PROTECTION DISTRICT.

   THE SITE IS PARTIALLY LOCATED WITHIN THE WATER SUPPLY PROTECTION DISTRICT.
8. WETLAND LINE ESTABLISHED BY ECO SYSTEM SOLUTIONS INC. FIELD SURVEYED BY EXISTING GRADE IN DECEMBER OF 2008 AND BVW LINE REVISION BY THE TOWN CONSULTANT FIELD SURVEYED JUNE OF 2009.
9. TEST PIT INFORMATION ON SHEET 12.
10. LOT B TO BE CONVEYED TO THE MARION LAND TRUST.
11. LOTS C AND E TO BE CONVEYED TO SIPICAN LAND TRUST.
12. LOTS A, D AND F TO BE RETAINED BY BAYWATCH REALTY TRUST (LOTS A, B, C AND E TO BE EXCLUDED FROM REVISED 40B FILING), EXCEPTING WHERE RIGHTS OF WAY AND OR EASEMENTS SERVICING THE 40B PROJECT ARE REQUIRED..
13. CROSS EASEMENTS FOR UTILITIES, ACCESS, MAINTENANCE, LANDSCAPING, WALLS ETC. TO BE RECORDED FOR LOTS A THROUGH F.
14. LOT B SHALL BE ACCESSIBLE VIA AND SHALL GAIN LEGAL FRONTAGE FROM PROPOSED "VILLAGE DRIVE".
15. NO MATERIAL STOCKPILES WITHIN THE 100' BUFFER ZONE.

PLANS OF RECORD EFFECTIVE 8/29/13

RECEIVED AUG – 2 2013 SE041-1145 MARION CONSERVATION COMMISSION

NO.	DATE	BY	REVISIONS
18	06/28/13	EHG	REVISE ROAD AT NEW PROP LINE
16–17	2013	EHG	STATE CURB CUT
15	04/05/12	EHG	PER ZBA HEARING
14	03/22/12	EHG	PER REVIEW LETTER
11–13	01/26/12– 02/01–24/12	EHG	REVISED PER REVIEW, PER MEETING WITH FIRE/POLICE CHIEF
8–10	12/22/10,01/26 12/14/11	EHG	PER REVIEW LETTERS, NEW SITE PLAN
7	09/22/10	EHG	ADD REPLICATION PLAN AND GENERAL PLAN REVISIONS
5–6	08/03–08/30 2010	EHG	ADD VERNAL POOL AREA 1/REVISE FRONT BLDG
1–4	03/16–06/30 2010	EHG	ADD TEST PIT DATA, REVISE DRAINAGE, ADD/REVISE BLDG

SCALE

SCALE 1" = 100'
0 25 50 100 200

EDWIN H. GLESS, JR. CIVIL No. 41294 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

CLIENT
BAYWATCH REALTY TRUST
3 LEDGEWOOD BLVD
DARTMOUTH, MASSACHUSETTS 02747

REVISED SITE LAYOUT PLAN OF SIPPICAN WOODS & MARION VILLAGE ESTATES
MARION, MASSACHUSETTS

PROJECT NO. 1367
DATE: 06/25/09
SHEET NO. 1 OF 14

1367SITE_PLAN_96_UNIT(REV–18)

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Wayne F. MacCallum, *Director*

August 23, 2010

Ken Steen & Jim Holding
Bay Watch Realty Trust
3 Ledgewood Boulevard
Dartmouth, MA 02747

Re: Status of Vernal Pool 2
Marion Village Estates
NHESP Tracking No. 10-28015

Dear Messrs. Steen & Holding:

I am writing in response to a letter and supporting materials requesting the de-certification of Potential Vernal Pool 2 ("PVP 2"), at the above-referenced project site, sent on your behalf by Brian Butler of Oxbow Associates, Inc. (dated June 30, 2010). As you are aware, Natural Heritage & Endangered Species Program (NHESP) staff met with you and your representatives to review these materials and discuss the status of the vernal pool on August 6, 2010, and conducted a site visit to view the pool in question and surrounding wetland on August 9, 2010. Based on our review of the original certification form and supporting documentation, materials submitted by Oxbow Associates, Inc., and our site visit, the NHESP has determined that PVP 2 does not meet the definition of Vernal Pool Habitat at 310 CMR 10.04, as interpreted and applied by the Division through the vernal pool certification process. Therefore, we are decertifying PVP 2, effective immediately. We re-affirm our June 28, 2009 certification of Vernal Pool 1, the status of which is not in dispute.

As described in the "Natural Heritage & Endangered Species Program's Guidelines for the Certification of Vernal Pool Habitat," dated March 2009 (the "Guidelines"), the Division has identified certain biological and physical criteria of wetlands that can be observed in the field and that are indicative of Vernal Pool Habitat as defined in the Wetland Protection Act Regulations (321 CMR 10.04, "WPA"). For example, the Division has identified certain amphibian species that breed almost exclusively within vernal pools, such as the spotted salamander, as "Obligate" vernal pool species. As described in Section II of the Guidelines, breeding evidence of obligate amphibians and evidence of a pool with no permanently flowing outlet is generally sufficient to justify the certification of Vernal Pool Habitat.

Section II.A. of the Guidelines outlines specific types of acceptable breeding evidence which have been selected to ensure that, consistent with the WPA definition, certified vernal pools provide "...essential breeding habitat...for a variety of amphibian species such as wood frog (*Rana sylvatica*) and the spotted salamander (*Ambystoma maculatum*), and are important habitat

Division of Fisheries and Wildlife
Field Headquarters, One Rabbit Hill Road, Westborough, MA 01581 (508) 389-6300 Fax (508) 389-7891
An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement

for other wildlife species" (310 CMR 10.04). In some cases, small numbers of wood frogs or spotted salamanders will breed in unsuitable or marginally suitable habitat; for example, a depression that may not "in most years," (see WPA definition) have a suitable hydroperiod to support successful reproduction of vernal pool breeding amphibians. To help ensure that pools certified as Vernal Pool Habitat provide "essential breeding habitat" and "important habitat" the Division has established criteria for obligate species breeding evidence that generally indicate the breeding of *multiple* Ambystoma salamanders or wood frogs. For example, the most frequently used form of biological evidence used to certify vernal pools is the presence of spotted salamander and/or wood frog egg masses, and the Division requires evidence of *five or more* egg masses (a female typically, although not always, produces a single egg mass).

With respect to wood frog tadpoles, the Division does not specify a minimum number of tadpoles that must be documented because wood frogs generally breed communally and lay their eggs in clusters. Therefore, the presence of tadpoles is a good indicator of multiple (i.e. more than five) breeding females. Second, a single egg mass may contain more than 1,000 embryos, so an attempt to specify a minimum number of tadpoles necessary for certification would be impractical. In retaining wood frog tadpoles as acceptable breeding evidence for certification in the 2009 revisions to the Vernal Pool Certification Guidelines, the Division determined that tadpoles are a reliable indicator of Vernal Pool Habitat as defined in the WPA. However, the reliability of this indicator can be called into question in certain circumstances—particularly in cases where only one or two wood frog females deposit eggs in unsuitable or marginal habitat, as is known to occur from time to time. In summary, because of the generally high reliability of wood frog tadpoles as indicators of Vernal Pool Habitat, the Division has determined that the retention of this criterion for vernal pool certification is justified. At the same time, reconsideration of vernal pools certified on this basis may be appropriate on a case-by-case basis.

In the case of PVP-2, according to the Vernal Pool Observation Form submitted to our office by Robert M. Gray, of Sabatia, Inc., representing the Marion Conservation Commission, a total of seven wood frog tadpoles were captured by dip-netting on May 2 and May 8, 2009. However, in a letter to the Marion Conservation Commission, dated May 15, 2009, Mr. Gray stated, "PVP area two is only marginally functioning as "vernal pool habitat" and the potential introduction of fish lessen the chances of it being successfully certified." I note that this letter was not submitted to the Division with the original vernal pool observation forms submitted by Mr. Gray.

During Spring 2010, vernal pool expert, Brian Butler, representing Bay Watch Realty Trust, visited PVP 2 on April 8, 9, and 11 and reported observing no Wood Frog egg masses, and no evidence of breeding by any other vernal pool obligate species. On April 19, 2010, Mr. Butler again visited PVP 2 and other onsite pools with Robert Gray, representing the Marion Conservation Commission. Both experts concur that no egg masses of wood frogs or other obligate vernal pool species were observed in PVP 2 (see B. Butler letter dated June 30, 2010; R. Gray letter dated April 27, 2010). During this site visit, both experts concur that approximately 40 spotted salamander and 20 wood frog egg masses were observed in Vernal Pool 1, including wood frog egg masses that were degraded and in the process of hatching, indicating that active breeding of obligate species was occurring at the time of the site visit, and that wood frog egg masses or tadpoles would have been detected in PVP 2 were they present in 2010.

In his June 30, 2010 letter to the Division requesting de-certification, Mr. Butler notes that PVP 2 is shallow with a firm bottom and has a depauperate invertebrate fauna—all signs of a pool

with a short hydroperiod. As wood frogs in our region generally metamorphose beginning in late June or early July, too short of a hydroperiod would severely limit productivity or preclude successful reproduction entirely. Consistent with this conclusion, Mr. Butler states that on May 25, 2010 PVP 2 was almost completely dry, and had less than one square meter of very shallow surface water. On August 9, 2010 vernal pool expert Jon Regosin, Ph.D., Regulatory Review Manager of the Natural Heritage & Endangered Species Program, and another staff person, visited PVP 2 and the surrounding wetland. During this site visit, Dr. Regosin confirmed Mr. Butler's characterization of the pool as a shallow basin with a firm bottom, stained leaves, and a relative lack of decomposing organic material.

In summary, seven Wood Frog tadpoles were observed in PVP 2 during 2009, indicative of a very low breeding effort. Based on extensive field survey at the appropriate time of year, we conclude that obligate amphibians (i.e. spotted salamanders and wood frogs) did not breed in PVP 2 during 2010. The pool is shallow, and in 2010 dried too early for the successful reproduction of obligate vernal pool amphibians. PVP 2 has a generally short hydroperiod which will vary somewhat from year to year depending on rainfall. We conclude that PVP 2 does not provide suitable habitat for successful breeding and reproduction of vernal pool obligate amphibians in most years. The pool may provide marginal breeding habitat in some years. As a result, the Division has determined that PVP 2 does not "...provide essential breeding habitat, and provide other extremely important wildlife habitat functions during the non-breeding season as well, for a variety of amphibian species such as the wood frog and the spotted salamander..." (301 CMR 10.04), and therefore does not meet the definition of Vernal Pool Habitat in the WPA, and should be decertified.

If you have any questions about this letter, please contact Jon Regosin, Ph.D. at (508) 389-6376.

Sincerely,

Thomas W. French

Thomas W. French, Ph.D.
Assistant Director

cc: Marion Conservation Commission
Robert Gray, Sabatia, Inc.
Brian Butler, Oxbow Associates, Inc.
Mike Howard & Laura Rome, Epsilon Associates, Inc.
Dan Gilmore, DEP Southeast Regional Office, Wetlands Section
Deirdre Buckley, MEPA

Attachment 13
IPaC Report (generated 8/25/2023)

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IPaC resource list

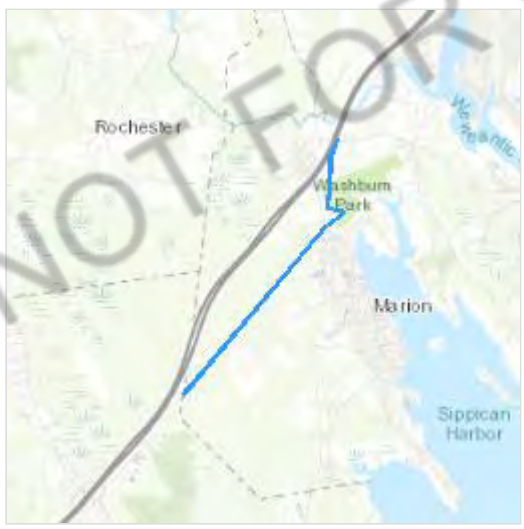
This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Plymouth County, Massachusetts



Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300

Concord, NH 03301-5094

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

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

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered

Birds

NAME	STATUS
Roseate Tern Sterna dougallii dougallii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2083	Endangered

Reptiles

NAME	STATUS
Plymouth Redbelly Turtle = Plymouth Redbelly Cooter Pseudemys rubriventris bangsi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/451	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

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Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

NOT FOR CONSULTATION

Bald and Golden Eagle information is not available at this time

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

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Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory bird information is not available at this time

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

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What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they

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might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

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Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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Attachment 14

Cultural Resources Project Record

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CULTURAL RESOURCES PROJECT RECORD

Summary of MassDOT Highway Division Finding
(Appendix 1 and Section V.B. Projects only)

Project Description:
MassDOT and the Town of Marion are proposing to expend federal funds to construct Phase 1 of a shared use path running from the Marion/Mattapoisett town line northeasterly for approximately 3.88 miles to Point Road. The majority of the proposed path in Marion will follow the defunct New York, New Haven & Hartford Railroad right of way, which connects Fairhaven to the Cape Cod Railroad in Wareham, and a shorter segment of the proposed path will run along the former New Bedford & Onset trolley line's route between Front Street (Route 105) and Washburn Lane. Lastly, there will be small segments of the proposed path along Washburn Lane as well as through an undeveloped area along the southern edge of Washburn Park. This project is part of South Coast Bikeway, a 50-mile long, multi-phased, shared use path project that will connect Swansea to Wareham and will ultimately become part of a continuous path system between Rhode Island and Cape Cod.

The proposed shared use path will have a 12'-wide paved asphalt surface with a lane in each direction and 2' (minimum) grass shoulders. To facilitate this work, there will be grading, slope stabilization, installation of erosion control measures, landscaping, and clearing and grubbing. Bicycle safety fencing will be installed along selected areas of the path. A new wetland replication area will be built, as shown on the plans, and two proposed parking areas will be constructed adjacent to Point Road and near Washburn Lane.

The proposed path will cross Front Street directly to the north of its unsignalized Y-intersection with Spring Street. Geometric improvement at this intersection will be completed to increase the safety of the area for all roadway users as well as to improving vehicle queues entering the intersection from Spring Street, which is currently classified with a level-of-service F. Proposed roadway improvements will include eliminating the channelized right-turn movement along Front Street southbound onto Spring Street, which will also require removing the intersection's traffic island, and turning Spring Street into a T-shaped intersection with Front Street. New rapid flashing beacon pedestrian/bicycle crossing lights will also be installed at Front Street for the proposed path users, and new crosswalks will be painted at the intersection. To the north of the proposed shared use path, the sidewalks will be widened to 10' on the western side of Spring Street and eastern side of Front Street, which will provide better access for pedestrians and bicyclists entering the path from the nearby roadway and neighborhoods.

Temporary and permanent easements will be required to complete the above work as well as to ensure access to the proposed parking lots and for future maintenance. One small taking is required to construct a sidewalk with a wheelchair ramp on the west side of Front Street. The sidewalk in front of the National Register-eligible Old Depot (381 Front Street) is currently owned by MassDOT, but the Commonwealth will be transferring its ownership to the Town.

An Army Corps 404 permit is required to construct the wetlands replication area.

Historic Properties:
A review of the National Register of Historic Places revealed no historic properties within or adjacent to the project area. A review of the MHC-Inventory revealed that the project corridor runs through the Old Depot Area (MRN.H). This area is comprised of residential and commercial buildings constructed between circa 1800-1920. Overall, the buildings that contribute to MRN.H have been altered (replacement windows, new roofs, additions, replacement cladding, altered chimneys), so they no longer appear to possess the architectural integrity necessary for listing in the NRHP.

The circa 1850 Cape Cod Railroad Depot/Old Depot (MRN.120), 381 Front Street, which is part of MRN.H, a is two-story, wood framed building with an open porch extending across the façade. Although the building was moved from across the street at the turn of the twentieth century to become the New Bedford & Onset electric trolley line's depot, it still appears to retain its architectural and historic significance associated with railway transportation, and therefore, it appears to qualify for individual listing in the NRHP. Work in front of the depot will be limited to roadway resurfacing and sidewalk work within the roadway layout.

Archaeology:
A review of the MHC archaeological maps revealed numerous pre-contact sites recorded on Little Neck near Hammett Cove northeasterly of the north end of the project area including: 19-PL-229 (Washburn Farm South Site); 19-PL-230 (Washburn Farm North Site); 19-PL-231 (Washburn Farm Site); 19-PL-294 (Little Neck Shell

Midden Site); 19-PL-830 (Minister's Rock Vicinity Site); 19-PL-833 (J. Smith Findspot 2); and Little Neck Site (19-PL-1107). These sites are outside the project's direct APE and will not be impacted by the proposed project work.

The MassDOT Archaeologist conducted a site visit to the project area on May 25, 2022. The majority of the project area was determined to have low sensitivity based on the impacts of past railroad and roadway construction. The MassDOT Archaeologist determined that three locations appeared to be sensitive for archaeological resources where the proposed path diverged from the former railroad right of way. On behalf of MassDOT, The Public Archaeology Laboratory, Inc. (PAL) conducted an intensive (locational) archaeological survey at the three locations in July 2022: Area 1 – an existing unimproved walking trail from Station 251+00 to Station 265+50; Area 2 – a proposed wetland replication area and access path near Station 284+25 LT; Area 3 - alignment east of the I-195 NB layout line from Station 291+00 to Station 300+25. The intensive survey produced low density deposits of mixed post-contact and pre-contact cultural materials. The post-contact material is interpreted as sheet trash resulting from expedient disposal patterns and does not represent a significant archaeological site. The final archaeological report was submitted to the MHC on September 14, 2022.

The MTHPO, NTHPO, ATHPO were notified in advance of the proposed archaeological survey. The MTHPO provided a tribal monitor during portions of the survey. To date, no written comments have been received from the MTHPO, the NTHPO, or the ATHPO.

Section 106 Finding
MassDOT's CRU staff has determined that the project satisfies the conditions outlined in Stipulation V.B. -no effect on NR-listed or -eligible properties. No further review is required, and all documentation in support of this finding has been placed on file at MassDOT.

The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1014 Fax (617) 626-1240
www.mass.gov/orgs/board-of-underwater-archaeological-resources

October 7, 2022

Carrie Lavallee, P.E., Chief Engineer
ATTN: Jameson Harwood (via email attachment)
Massachusetts Department of Transportation
10 Park Plaza, Boston, MA 02116-3973

RE: MDOT #607979 Shared Use Path Construction, Marion/Mattapoisett Town Line to Point Road, Marion

Dear Ms. Lavallee,

The staff of the Massachusetts Board of Underwater Archaeological Resources has reviewed of the above-referenced project's Massachusetts Historical Commission (MHC) Project Notification Form (PNF) and its accompanying project area maps and 75% construction plans provided by the Massachusetts Department of Transportation (MassDOT). We offer the following comments.

The Board has conducted a preliminary review of its files and secondary literature sources to identify known and potential submerged cultural resources within the proposed project area. No record of any underwater archaeological resources was found.

Based on the results of this review and the PNF-described nature and location of the proposed project, the Board expects that this project is unlikely to impact submerged cultural resources.

However, should heretofore-unknown submerged cultural resources be encountered during the course of the project, the Board expects that the project's sponsor will take steps to limit adverse effects and notify the Board and the Massachusetts Historical Commission, as well as other appropriate agencies, immediately, in accordance with the Board's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources*.

The Board appreciates the opportunity to provide these comments as part of the project review process. Should you have any questions regarding this letter, please do not hesitate to contact me at the address above or by email at david.s.robinson@mass.gov.

Sincerely,

David S. Robinson
Director

/dsr

Printed on Recycled Paper

Hafferty, Mary H. (DOT)

From: Hafferty, Mary H. (DOT)
Sent: Tuesday, September 20, 2022 2:50 PM
To: Robinson, David S (EEA)
Cc: Harwood, Jameson (DOT)
Subject: Shared Use Path in Marion (MassDOT #607979)
Attachments: Marion -Signed PNF.pdf; Marion -PNF Maps.pdf; Marion -PNF 75% Construction Plans.pdf

Dear Mr. Robinson,

MassDOT is submitting the enclosed project information to the Board of Underwater Archaeological Resources to meet the Section 106 consultation requirements of the U. S. Army Corps of Engineers. Please submit any written comments or concerns regarding historic or archaeological properties that may be affected by this project to Carrie Lavallee, P.E., Chief Engineer, Massachusetts Department of Transportation, 10 Park Plaza, Boston, MA 02116-3973, Attn: Jameson Harwood.

You also may send comments, questions, or requests for more information by email to Jameson.Harwood@state.ma.us.

Best regards,
Mary

Mary Hafferty
Cultural Resources Specialist
***MassDOT* – Highway Division**
10 Park Plaza – Room 7360
Boston, MA 02116
781-801-0057 (cell)

APPENDIX A
MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name:	Shared Use Path Construction (#607979)
Location /Address:	Marion/Mattapoisett Town Line to Point Road
City/Town:	Marion

Project Proponent

Name:	Massachusetts Department of Transportation
Address:	10 Park Plaza
City/Town/Zip/Telephone:	Boston, MA 02116

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name	**Type of License or funding (specify)**
FHWA	Federal funding
Army Corps	404 permit

Project Description (narrative):

MassDOT and the Town of Marion are proposing to expend federal funds to construct Phase 1 of a shared use path running from the Marion/Mattapoisett town line northeasterly for approximately 3.88 miles to Point Road. The majority of the proposed path in Marion will follow the defunct New York, New Haven & Hartford Railroad right of way, which connects Fairhaven to the Cape Cod Railroad in Wareham, and a shorter segment of the proposed path will run along the former New Bedford & Onset trolley line's route between Front Street (Route 105) and Washburn Lane. Lastly, there will be small segments of the proposed path along Washburn Lane as well as through an undeveloped area along the southern edge of Washburn Park. This project is part of South Coast Bikeway, a 50-mile long, multi-phased, shared use path project that will connect Swansea to Wareham and will ultimately become part of a continuous path system between Rhode Island and Cape Cod.

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APPENDIX A (continued)

is currently classified with a level-of-service F. Proposed roadway improvements will include eliminating the channelized right-turn movement along Front Street southbound onto Spring Street, which will also require removing the intersection's traffic island, and turning Spring Street into a T-shaped intersection with Front Street. New rapid flashing beacon pedestrian/bicycle crossing lights will also be installed at Front Street for the proposed path users, and new crosswalks will be painted at the intersection. To the north of the proposed shared use path, the sidewalks will be widened to 10' on the western side of Spring Street and eastern side of Front Street, which will provide better access for pedestrians and bicyclists entering the path from the nearby roadway and neighborhoods.

Temporary and permanent easements will be required to complete the above work as well as to ensure access to the proposed parking lots and for future maintenance. One small taking is required to construct a sidewalk with a wheelchair ramp on the west side of Front Street. The sidewalk in front of the National Register-eligible Old Depot (381 Front Street) is currently owned by MassDOT, but the Commonwealth will be transferring its ownership to the Town.

An Army Corps 404 permit is required to construct the wetlands replication area.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

n/a

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

n/a

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

n/a

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

Historic Properties:

A review of the National Register of Historic Places revealed no historic properties within or adjacent to the project area. A review of the MHC-Inventory revealed that the project corridor runs through the Old Depot Area (MRN.H). This area is comprised of residential and commercial buildings constructed between circa 1800-1920. Overall, the buildings that contribute to MRN.H have been altered (replacement windows, new roofs, additions, replacement cladding, altered chimneys), so they no longer appear to possess the architectural integrity necessary for listing in the NRHP.

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APPENDIX A (continued)

NRHP. Work in front of the depot will be limited to roadway resurfacing and sidewalk work within the roadway layout.

Archaeology:

A review of the MHC archaeological maps revealed numerous pre-contact sites recorded on Little Neck near Hammett Cove northeasterly of the north end of the project area including: 19-PL-229 (Washburn Farm South Site); 19-PL-230 (Washburn Farm North Site); 19-PL-231 (Washburn Farm Site); 19-PL-294 (Little Neck Shell Midden Site); 19-PL-830 (Minister's Rock Vicinity Site); 19-PL-833 (J. Smith Findspot 2); and Little Neck Site (19-PL-1107). These sites are outside the project's direct APE and will not be impacted by the proposed project work.

The MassDOT Archaeologist conducted a site visit to the project area on May 25, 2022. The majority of the project area was determined to have low sensitivity based on the impacts of past railroad and roadway construction. The MassDOT Archaeologist determined that three locations appeared to be sensitive for archaeological resources where the proposed path diverged from the former railroad right of way. On behalf of MassDOT, The Public Archaeology Laboratory, Inc. (PAL) conducted an intensive (locational) archaeological survey at the three locations in July 2022: Area 1 – an existing unimproved walking trail from Station 251+00 to Station 265+50; Area 2 – a proposed wetland replication area and access path near Station 284+25 LT; Area 3 - alignment east of the I-195 NB layout line from Station 291+00 to Station 300+25. The intensive survey produced low density deposits of mixed post-contact and pre-contact cultural materials. The post-contact material is interpreted as sheet trash resulting from expedient disposal patterns and does not represent a significant archaeological site. The final archaeological report was submitted to the MHC on September 14, 2022.

What is the total acreage of the project area?

Woodland		acres	Productive Resources:		
Wetland		acres	Agriculture		acres
Floodplain		acres	Forestry		acres
Open Space		acres	Mining/Extraction		acres
Developed		acres	Total Project Acreage		acres

What is the acreage of the proposed new construction? _____ acres

What is the present land use of the project area?

The project area mainly runs along old railroad and trolley tracks. Small segments of the path utilize existing roadways or run adjacent to a park.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

APPENDIX A (continued)

Signature of person submitting this form:	MHH	**Date:**	9/20/2022
Name:	Mary Hafferty, Cultural Resources Specialist MassDOT		
Address:	10 Park Plaza, Room 4260		
City/Town/Zip:	Boston, MA 02717		
Telephone:	857-368-8799		

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

CC:

Attachment 15

Article 97 Letter

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HUGGINS AND WITTEN, LLC
156 Duck Hill Road
Duxbury, Massachusetts 02332 *and*
132 Adams Street, Suite 7
Newton, Massachusetts 02458
781-934-0084
781-934-2666 (facsimile)
jon@hugginsandwitten.com

December 21, 2017

Linda Walsh
Transportation Planner and Community Compliance Officer
MassDOT-Highway Division
1000 County Street
Taunton, MA 02780

RE: MassDOT 607979, Marion Shared Use Path

Dear Ms. Walsh:

You have asked the Town of Marion to respond to questions in regard to the above noted project, specifically those pertaining to the relationship between the above noted project and Article 97 of Amendments to the Massachusetts Constitution.

As Town Counsel for the Town of Marion, I respond on behalf of the Town below.

As you are aware of the details of the project and the several land parcels that comprise the project's layout, I do not repeat the facts relating to the individual deeds or a description of the project.

Rather, I provide our opinion, in response to your questions, that: (1) the proposed shared use path to be completed along and across land acquired by the Town of Marion does not implicate the protections of Article 97 and (2) there are no prohibitions or conflicts contained within the ownership rights of the Town that precludes the completion of the proposed shared use path project.

Discussion:

The Proposed Shared Use Path Does Not Implicate Article 97

The Massachusetts Supreme Judicial Court, in interpreting the protections imposed by Article 97, has held that, among other protections, Article 97 prevents government entities from converting land set aside for public use to an inconsistent public use. See most recently,

Mahajan v. Department of Environmental Protection, 464 Mass. 604, 616 (2013) citing Robbins. V. Department of Public Works, 355 Mass. 328, 330 (1969).

In the present matter, the completion of the shared use path results in no conversion of land set aside for public use. To the contrary, the completion of the shared use path makes land acquired and set aside for public use more accessible to the public, including those with disabilities. Simply put, the completion of the shared use path is wholly consistent with the purpose of the land assemblage that the Town embarked on decades ago, that is, to ensure public use and access along and within the parcels that compromise the shard use path. Article 97 protections are not implicated where the land in question is to be used consistent with the original public use intention and where the land to be used expands opportunities for the public to access and use the same.

There Are No Known Restrictions Within the Shared Use Path Precluding Construction

Upon information and belief, there are no restrictions within or on the parcels that comprise the shared use path precluding the construction of the shared use path. We are unaware of any relevant restriction running against the real property that comprise the shared use path and are unaware of any restriction imposed by any state or federal agency that would preclude completion of the shared use path.

As discussed above, it is our opinion that the shared use path neither triggers Article 97 protections nor conflicts with any restriction imposed by any state or federal agency.

Please let me know if you have any questions or would like clarification of the discussion above. Thank you.

On behalf of the Town of Marion, acting as Town Counsel,

HUGGINS AND WITTEN, LLC

/s/ Jonathan D. Witten

Jonathan D. Witten

cc: Paul Dawson, Town Administrator
John Rockwell, Chair, Marion Open Space Acquisition Commission

Attachment 16

NHESP Letter

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MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

April 15, 2020

John Rockwell
Town of Marion Pathway Committee
2 Spring Street
Marion, MA 02738

RE:	Applicant:	John Rockwell, Town of Marion Pathway Committee
	Project Location:	Mattapoisett Town Line to Point Road Marion
	Project Description:	Shared Use Path
	NHESP File No.:	**16-35952**

Dear Applicant:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") received the MESA Project Review Checklist, Project Plans and other required materials for review pursuant to the Massachusetts Endangered Species Act (MESA) (MGL c.131A) and its implementing regulations (321 CMR 10.00).

The MESA is administered by the Division, and prohibits the Take of state-listed species. The Take of state-listed species is defined as "in reference to animals…harm…kill…disrupt the nesting, breeding, feeding or migratory activity…and in reference to plants…collect, pick, kill, transplant, cut or process…Disruption of nesting, breeding, feeding, or migratory activity may result from, but is not limited to, the modification, degradation, or destruction of Habitat" of state-listed species (321 CMR 10.02).

The Division has determined that this Project, as currently proposed, will occur **within** the actual habitat of the Eastern Box Turtle (*Terrapene carolina*), a species state-listed as Special Concern. This species and its habitats are protected in accordance with the MESA. A fact sheet for this species can be found on our website: www.mass.gov\nhesp.

Based on the information provided and the information contained in our database, the Division finds that a portion of this project, as currently proposed, **must be conditioned** in order to avoid a prohibited Take of state-listed species (321 CMR 10.18(2)(a)). To avoid a prohibited Take of state-listed species, the following condition must be met:

- The Applicant shall submit an Eastern Box Turtle Protection Plan. Said Protection Plan must be approved in writing by the Division prior to the start of Work. The Division is available for consultation on the development of the plan.

Provided the above-noted condition is fully implemented and there are no changes to the project plans, this project will not result in a Take of state-listed species. We note that all work is subject to the anti-segmentation provisions (321 CMR 10.16) of the MESA. This determination is a final decision of the

Division of Fisheries and Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or any additional work beyond that shown on the site plans may require an additional filing with the Division pursuant to the MESA. This project may be subject to further review if no physical work is commenced within five years from the date of issuance of this determination, or if there is a change to the project.

The Division notes that any future projects or activities proposed on the property which are (a) located outside of the approved limit of work shown on the site plan, (b) not exempt from review pursuant to 321 CMR 10.14, and (c) located within mapped Priority Habitat as indicated in the Massachusetts Natural Heritage Atlas, will require review by the Division pursuant to MESA. Furthermore, 321 CMR 10.16 provides that projects shall not be segmented or phased to evade or defer the review requirements under MESA. If the Division determines, based on the considerations provided for in 321 CMR 10.16, that a future project or activity proposed on the property is part of a larger common project or scheme, it may evaluate the cumulative impacts of the existing and proposed segments of the common project when reviewing the future proposed project or activity pursuant to MESA.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact David Paulson, Senior Endangered Species Review Biologist, at (508) 389-6366.

Sincerely,

Everose Schlüter

Everose Schlüter, Ph.D.
Assistant Director

cc: Timothy Dexter, MassDOT Highway Division
Jeramy Packard, Foth

Attachment 17

EJ Engagement Plan

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Marion Shared Use Path Environmental Justice Community Outreach Action Plan: Q4 2023/Q1 2024

MassDOT

December 5, 2023

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Introduction

This update to Environmental Justice Public Outreach and Community Engagement Plan (POCEP) for MassDOT Roadway Project Management/Project File No. 607979, a proposed Shared Use Path (SUP) project in the Town of Marion from the Mattapoisett/Marion Town line to Point Road, is intended to address all community-based activities spanning from December 1, 2023, to March 31, 2024.

The Marion SUP project is subject to Environmental Impact Report (EIR) thresholds that are designated due to the project site being located within an Environmental Justice (EJ) community. The designation requires implementation of project-specific enhanced public outreach and community engagement protocols with the geographic area around the project site.

In Sept. 2023, MassDOT approved the Draft Marion SUP Environmental Justice POCEP. The plan was developed in alignment with requirements for projects undergoing review by the Massachusetts Environmental Policy Act (MEPA) Office[1]. This Action Plan will be implemented to ensure that all people, regardless of race, color, national origin, or income, receive fair treatment and meaningful involvement with respect to the proposed project.

Environmental Justice is defined as fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.[2] Fair treatment is defined as ensuring that all persons shall share in the benefits of federal transportation investments and that no person (including racial, ethnic, or low-income groups) should bear a disproportionate share of the negative consequences resulting from the execution of Federal, State, and local programs and policies. (Executive Order 12898, U.S. DOT Order 5610.2(a)[3], and FHWA Order 6640.23A[4]).

The Marion SUP project is led by Massachusetts Highway Administrator Jonathan Gulliver. MassDOT Chief Engineer Patricia A Leavenworth, P. E., and MassDOT Project Manager Joseph Yoo. It is supported by MassDOT Environmental Analyst Alexander G. Lamarche, MassDOT Environmental Analyst Jeffrey Shrimpton, and HDR Project Manager Kevin L. Slattery, PWS. The Marion SUP EJCEOP is supported by the MassDOT project team and HDR Strategic Communications Manager Scott D. Farmelant.

Preparation of this document was guided by the Massachusetts' Executive Office of Energy and Environmental Affairs' Massachusetts Environmental Policy Act (MEPA) Office's Environmental Justice (EJ) public involvement and community engagement requirements for projects

[1] Environmental Justice Protocols and Resources | Mass.gov
[2] Environmental Justice | HHS.gov
[3] Department of Transportation Order 5610.2(a) | US Department of Transportation
[4] FHWA Order 6640.23A - Resources | Federal Highway Administration (dot.gov)

undergoing MEPA review. EJ public outreach requirements have been set forth by the Commonwealth via:

- Section 60 of Chapter 8 of the Acts of 2021: An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy (the "Climate Roadmap Act" or "the Act")
- 2021 update to the Executive Office of Energy and Environmental Affairs (EEA) Environmental Justice Policy (the "2021 EJ Policy")
- 301 CMR 11.00 and associated policies and guidance

Executive Summary

Project Description

The Marion Shared Use Path (SUP) project consists of the construction of a shared use path in the Town of Marion from the Mattapoisett/Marion Town line to Point Road. The proposed project consists of a paved recreational path along the existing railroad bed beginning at the Mattapoisett/Marion town line, a path crossing and intersection improvements at Route 105/Spring Street intersection, and a paved recreational path through Washburn Lane continuing to the proposed project terminus at Point Road. Intersection improvements at Route 105/Spring Street include realignment of the Route 105 southbound approach and the Spring Street northbound approach, a pedestrian crossing signal, and signage/pavement markings. The Massachusetts Department of Transportation – Highway Division (MassDOT) is proposing construction on behalf of the Town, which includes intersection improvements proposed at the Route 105/Spring Street crossing to accommodate pedestrian, bicycle, and vehicular traffic. The total length of the project is approximately 3.8 miles. The project is located entirely with the Town's borders.

Marion has a population of 5,350 people. The majority of the project will be constructed on existing railroad beds and trolley lines currently being used as passive recreational paths by the public. Route 105 is functionally classified as an Urban Minor Arterial. Spring Street and Point Road are functionally classified as Local Roadways. The goals of the OSRP are to: 1. Ensure that there are facilities to meet the recreational needs of all town population groups, especially focusing on the needs of Marion's growing senior population. 2. Focus on enhancing the network that connects recreation and open space areas and residential zones, including the development of adequate, unobstructed sidewalks and bike paths that protect pedestrians and cyclists.

Project construction costs will be funded with a combination of moneys from the Federal Highway Administration and the Commonwealth of Massachusetts and are currently estimated at $5,498,149.99.[5]

[5] Projects (state.ma.us)

MEPA Requirements for Outreach to Environmental Justice Populations

MassDOT is committed to meeting or exceeding regulatory requirements for public outreach to and community engagement with Environmental Justice populations for all projects designated in accordance with MEPA policies and state statutes.

An EJ Public Outreach and Community Engagement Plan (POCEP) is required for projects designated by MEPA office, which set forth project-specific enhanced public outreach and community engagement protocols that must be implemented to ensure that all people, regardless of race, color, national origin, or income, receive fair treatment and meaningful involvement with respect to a proposed project.

The primary goal of the POCEP is to inform and educate environmental justice populations and other shareholders about project impacts that are subject to MEPA review. Critical objectives reflect *MEPA Public Involvement Protocol for Environmental Justice Populations*[6] as follows:

- Ensure that local EJ populations have many opportunities to meaningfully engage in MEPA project reviews and fully participate in the decision-making process about the project
- Improve public participation by community-based EJ populations in MEPA reviews of the project
- Identify characteristics of and likely effects of a project's environmental impacts on EJ populations
- Define characteristics of EJ populations within 1 to 5 miles of the project site based on census block group information, and languages spoken within a community(ies) around the project site
- Determine the projects' likely effects on EJ populations (negative, positive, or neutral), including whether the project is "reasonably likely" to negatively affect EJ populations located within the designated geographic area around a project site
- Provide a description of the project's anticipated benefits, as well as its adverse environmental impacts and related public health consequences
- Address community concerns to the extent practicable through fair and achievable mitigation strategies to reduce potential project impacts on a surrounding community(ies)

Targeted outreach is intended to engage area residents and business owners (primarily small businesses) who are minority, low-income, or limited-English proficient (LEP.) Additional engagement is sought with social service providers, community leaders, Indigenous People's Tribes, and representatives of religious and cultural gathering places.

[6] MEPA Public Involvement Protocol for Environmental Justice Population (mass.gov)

Community Background and Analysis

Marion, MA was first settled in 1679 as a village in the town of Rochester known as Sippican. The Town was incorporated and renamed in 1852 in honor of the Revolutionary War hero, Francis Marion.[7] As a community with less than 5,500 residents, Marion ranks as the 245th populated community in Massachusetts.[8]

Marion is known as a seaside community that features natural beauty and small-town character while offering a variety of waterfront programs, including swimming at town beaches, pleasure boating and fishing. In accordance with 301 CMR 11.06(7)(b), detailed demographics data have been compiled within the project's Designated Geographic Area (DGA) to identify affected EJ populations and associated project shareholders. This detailed demographics' analysis of Marion, MA was undertaken to help identify primary audiences for enhanced outreach activities and ensure an inclusive and equitable engagement plan. The DGA encompasses a 1-mile radius of the project site's outermost limits of work.

According to the Updated Massachusetts 2020 Environmental Justice Populations map tool[9], the EJ population block group within Marion's community boundaries is Minority. The identified EJ population area is contiguous with the project's linear limits of 3.8 miles. The EJ characteristics of this block group are a minority population of 25.5% of the community's 5,347 population (2020, total of 1,184 minority population in 435 households.)

Please note that the project's DGA Primary Audience Assessment does not encompass any areas of neighboring communities Rochester and South Wareham that might fall within a one-mile radius of the project's outermost limits. It is estimated that two streets in Rochester may be situated within the project DGA, as well as two neighborhoods in South Wareham comprised of approximately 250 residences (note: There is no available public information that indicates relevant EJ populations residing in these areas.)

The following represents an assessment of factors considered for development of the Marion SUP Shareholder Matrix, which is discussed further in another section of this document:

- Historical Community Burdens
  - I-195 Highway
  - Marion Transfer Station (Benson Brook Road)
  - Coastal Storm Surges[10]
- EJ population Factors (meet or exceed baseline percentage)
  - Minority Population – **APPLICABLE**[11]
    - 81.7% White alone, not Hispanic or Latino

[7] About Marion, Massachusetts | Marion MA
[8] Massachusetts Cities by Population (massachusetts-demographics.com)
[9] Updated Massachusetts 2020 Environmental Justice Populations (arcgis.com)
[10] Marion, MA Municipal Vulnerability Preparedness (MVP) Workshop Summary of Findings, June 2018
[11] U.S. Census Bureau QuickFacts: Marion town, Plymouth County, Massachusetts

- 18.3% Minority
    - 1.3% Black or African American alone
    - 0.0% American Indian and Alaska Native alone
    - 1.5% Asia alone
    - 0.0% Native Hawaiian and Other Pacific Islander alone
    - 9.6% Two or More Races
    - 3.9% Hispanic or Latino
    - 2.6% Other
- Language and communications access (demographic data for LEP) – **NOT APPLICABLE**
    - 3.9% Hispanic or Latino residential population[12]
    - 0.0% Population that speaks English less than "Very Well"[13]
- Low-Income/Federal Poverty Level (FEP) – **NOT APPLICABLE**
    - 2.2% population Below Federal Poverty Level [14]
- Comparison of Project Area and State/County Household Income Data – **NOT APPLICABLE**
    - $105,813 community median household income (2017-2021) (in 2021 dollars)[15]
    - $98,120 Plymouth County median household income (2017-2021) (in 2021 dollars)[16]
    - $89,026 Commonwealth of MA median household income (2017-2021) (in 2021 dollars)[17]
- MA Department of Public Health Community Health Assessment – **APPLICABLE[18]**
    - Vulnerable Health EJ Criterion: Heart Attack
- Marion MA CBOs
    - Due to size of population, Marion residents are supported by CBOs located outside town borders in nearby municipalities. A table of relevant CBOs that provide services to EJ populations and other residents is included below (Appendix B)
- Marion MA Other Shareholders
    - Businesses, elected officials, advocacy organizations, and government agencies. A table of these shareholders is included below (Appendixes C and D)

[12] Ibid
[13] Data and Language Maps | LEP.gov and U.S. Census Bureau QuickFacts: Marion town, Plymouth County, Massachusetts
[14] U.S. Census Bureau QuickFacts: Marion town, Plymouth County, Massachusetts
[15] Ibid
[16] U.S. Census Bureau QuickFacts: Plymouth County, Massachusetts
[17] U.S. Census Bureau QuickFacts: Massachusetts
[18] EJ Screening v7-community (mass.gov)

Public Involvement Protocols

Targeted outreach to EJ populations in Marion, MA is intended to ensure effective participation in the decision-making process regarding the MassDOT proposed Marion SUP project. This effort will also provide access to information regarding the project's environmental impacts.

The Marion SUP POCEP is designed to create opportunities for local community input that can help inform the project about disproportionately high and adverse human health and environmental effects. This input would be considered by MassDOT to potentially avoid, minimize, or mitigate negative impacts any disproportionately high and adverse human health and environmental effects associated with the project. Through the POCEP, MassDOT will also encourage input from the Marion community and demonstrate that it values residents' opinions.

The project POCEP sets forth protocols to ensure effective levels of public participation that allow project planners to obtain key input about environmental impacts in Marion. POCEP protocols encompass measures to promote public involvement through meaningful community outreach and engagement. All protocols reflect recommended best practices for public outreach to and community engagement with EJ populations as set forth by the EEA.

Early identification of key issues is critical for an effective EJ community engagement and public outreach program in Marion, MA. To ensure an effective and enhanced local public involvement process that achieves a level of buy-in among EJ populations and/or key shareholders, a table of identified key issues and methods to address them has been developed (Appendix A.)

Outreach and community engagement activities set forth herein are based on specifics of the Marion SUP project and are aligned to meaningfully engage residents and neighborhoods that characterize the applicable EJ populations surrounding the project site. The POCEP will use identified best practices, including:

- Disseminating a written project summary regarding the Marion SUP to all identified EJ populations within a designated geographic area and all other shareholders that includes basic project details
- Communicating all project outreach to external public audiences in clear, understandable language and in a user-friendly format
- Preparing a fact sheet that includes a visual-design and summary of the project while using lay-person language and terms in an effort to ensure the community understands potential impacts of the project and can provide meaningful input
- Providing advance notification of community meetings (at least 10 business days) to all identified Community Based Organizations (CBOs) and Indigenous peoples' tribes as provided by the Massachusetts Executive Office of Energy and Environmental Affair's EJ Director, which is known as the "EJ Reference List" (Appendix B) along with shareholders identified by the MEPA Office

- Providing advance notification through electronic means to CBOs, residents within the Marion SUP project's Designated Geographic Area[19] (DGA), and all identified email addresses provided on the EJ Reference List
- Supplementing the state-provided EJ Reference list through local research into additional CBOs or other neighborhood leaders who may have an interest in activities that will be undertaken at the project site (See Appendix C)
- Preparing comprehensive descriptions of public involvement strategies as part of the project's Expanded Environmental Notification Form (EENF)
- Using Marion SUP project-specific statements about how EJ CBOs and Indigenous Tribes will be informed of ways to request and participate in a community meeting
- Hosting, at a minimum, one community meeting for EJ populations
- Hosting community meetings at locations that are accessible by public transportation, where feasible
- Scheduling community meetings during weekend or evening hours, based on feedback from EJ populations, local shareholders, and CBOs
- Using a web-based video conferencing service, if feasible, to allow for a "hybrid format" community meeting that allows members of the public to join in-person, on videoconference, or by phone
- Publishing content from community meetings on the internet for those who cannot attend
- Documenting all feedback and input from affected EJ populations to collect a record of experiences that will help inform, develop, and refine effective strategies for EJ population engagement on future MassDOT projects
- Including a description of the project's public involvement strategies prior to filing of its Environmental Notification Form, including a specific description how the project informed CBOs that represent EJ populations and Indigenous Peoples' tribes regarding requests for a community meeting
- Customizing community engagement and outreach and refinement of preferred methods of communication based on the feedback from identified EJ populations
- Providing creative outreach through use of community groups such as grassroots organizations and areas of community congregation (e.g., places of worship, libraries, and farmer's markets) to disseminate information about the project. (Note: this is in addition to outreach conducted at traditional locations like a community meeting, libraries, and government offices)
- Using community-specific media outlets to publicize the project, including local public broadcasting stations and community newspapers
- Disseminating information through local social media channels such as Facebook's "Marion, MA Group" (a private page with 4,600 members whose purpose is to connect

[19] In accordance with 301 CMR 11.05(4), the DGA for the Marion SUP project encompasses a 1-mile radius of the project site from the outermost limits of proposed work where one or more EJ populations reside.

people who consider Marion as their home with news, events, photos, recommendations, etc.) and the NextDoor local social media marketing site for Marion, MA
- Organizing additional focused community meetings as needed, based on feedback, and input from neighborhood groups and CBOs
- Establishing an information repository in Marion, MA that is convenient and accessible for the EJ population where information related to the project can be obtained

Physical accessibility is a priority for in-person meetings in Marion. Virtually accessible information also will be made available online in compliance with the Americans with Disabilities Act. MassDOT provides reasonable accommodations and/or language assistance free of charge upon request (including but not limited to interpreters in American Sign Language and languages other than English, open or closed captioning for videos, assistive listening devices and alternate material formats, such as audio tapes, Braille, and large print), as available. Requests for accommodation or language assistance will be coordinated with MassDOT's Chief Diversity and Civil Rights Officer.

The POCEP will seek to identify the need for reasonable accommodations and/or language assistance as soon as possible prior to scheduled community meetings. To the extent written summaries or meeting notices are provided as part of public involvement efforts, the project team will translate these materials for any identified LEP language populations within Marion, MA and circulate them at or about the same time that English language materials are circulated.

The Marion SUP project team acknowledges that meaningful public involvement for EJ populations requires extended outreach programs in order to include "any changes" made to the project after initial EENF filing.

Shareholder Coordination

As set forth by MEPA EJ protocol, shareholder coordination on the Marion SUP's POCEP must encompass CBOs, community organizations, local government agencies, and elected officials. Information has previously been compiled to augment the project's EJ Reference List (see Appendices C and D.) A non-exhaustive list of community shareholders in Marion includes businesses, foundations, advocacy organizations, and elected officials based in and around the town as well as residents in neighborhoods outside Marion borders that fall within the project's DGA. Residents of low-income housing in Marion represent Another important EJ Shareholder group. There are three apartment communities that are exclusively income-restricted: (a) Little Neck Village, (b) Marion- Village Estates, and (c) Marconi Village.[20] All three properties fall within the DGA of the Marion SUP. Within these three communities combined, approximately 75

[20] https://www.marionma.gov/affordable-housing-trust/pages/affordable-housing-information

apartments offer reduced rent to eligible households, with the majority located in age-restricted communities.[21]

Shareholder Matrix

Development of the project's EJ POCEP defined the primary shareholder audience as residents who live within a one-mile radius of the project's outermost limits as set forth by its DGA. This audience was identified on the basis of proximity to the DGA and identified EJ population members. Based on a street map of Marion, MA and estimated one-mile radius of the project's outermost limits, a total of 134 streets in the town fall within the border of the DGA Primary Audience Assessment.

A Shareholder Matrix has been developed based on the Primary Audience Assessment, MEPA EJ Reference List, other relevant CBOs that provide services to EJ populations in Marion, and identification of other local population and shareholder segments that are likely to hold interest in engagement. Prior to completion of the matrix, the team project will gather input from EJ populations that are identified as having little influence and a low likelihood of participation in an effort to gain insight that may help inform increased participation as well as future MEPA EJ community engagement initiatives.

Communications and Engagement Action Plan: December 2023-March 2024

Communications will play a significant role in the execution of an effective EJ outreach program for the Marion SUP project and achieving legally mandated requirements for meaningful community engagement. The following planned activities will ensure that the project is well-positioned to create meaningful engagement with all shareholders through intentional messaging and targeted delivery, above all EJ populations.

Community Meeting and Community Notifications

Per MEPA protocols, the Marion SUP project team will schedule an initial community meeting for EJ populations in late January 2024, prior to filing of an EENF.

It is anticipated that The Town of Marion will host the meeting in the form of a "community-at-large" open house that will be advertised with the stated intent of sharing project information, educating public and shareholder audiences, soliciting information, and discussing the public's role in decision-making about the process.

At the meeting, Town officials, MassDOT project managers, and project consultants will share details regarding the status of design (75%), filling of the ENNF, and future milestones leading

[21] Ibid

up to the anticipated start of construction in 2025. It is further anticipated that the meeting will provide an option for hybrid/remote participation.

In addition to educating public and shareholder audiences, the project will discuss the public's role in decision-making about the process and the importance of soliciting feedback and information from the community's EJ population alongside other key shareholders.

In the period leading up to the meeting, the project team will take every practicable step to engage EJ populations and CBOs with the objective of encouraging and securing elevated levels of participation at the event by working with CBOs and local shareholders to determine the time period of a day or week that is most likely to be convenient for EJ populations (i.e., day or night, weekday, or weekend). CBOs will be identified by way of MEPA's EJ Reference List for the project and any other available information for suitable community partners to augment the reference list. All activity will be undertaken with the objective of encouraging and securing elevated levels of participation at the community meeting.

Planning for the meeting will focus on consideration of several factors:

- Sites of previous Marion SUP community and other project meetings
    - Marion Music Hall, 164 Front Street, Marion MA
    - MassDOT District 5 Office, 1000 County Street, Taunton, MA
    - CLE Engineering, 15 Creek Road Marion, MA
- EJ Limited English Proficiency (LEP) population translation needs
- Access via bicycle and walking (Note: The Town of Marion does not offer fixed-route public transit services.
- Convenience for EJ Populations (Note: The project team will work with CBOs and local shareholders to determine a time period of a day or week that is most likely to be convenient for EJ populations. This feedback will be presented that to Town officials for consideration.)
- Technology (availability of Wi-Fi network and broadband connections)
- Meeting logistics (including availability of public address systems, video display, and digital accessibility support resources)

According to the MEPA EJ Screen Tool, the Marion project area does not feature a population with LEP translation needs. Should a community shareholder ask for such an accommodation, the project will work with Town representatives to facilitate the request. The Marion SUP project team will also carefully consider options to host additional informal community meetings through solicitation of input from CBOs listed on the project's EJ Reference List. As needed, the project team will consider hosting ad-hoc 'pop up' events, as needed, in addition to the community meeting.

Notifications will be provided in as many formats as practicable, including:

- Newspaper Legal Ads
- Social Media Postings
- News Media Release
- Fliers
    - For posting at community gathering spots and door-to-door canvassing, as needed
- Email
    - Email invitations for all community meetings will be sent to project shareholders identified in the EJ Reference List and other key shareholder lists EJ community meetings hosted for projects under MEPA review will adhere to public notice requirements and utilize other outreach tools.

Notifications will be posted in the following forums:

News Media

- The Wanderer (Mattapoisett publication serving Marion)
- New Bedford Standard Times
- Cape Cod Times

Social Media

- Facebook
    - Town of Marion, MA page (public)
    - Marion, MA page (private)
    - Marion Matters page (private)
- NextDoor.com
    - Marion page
    - River's Edge page
    - The Village page

Town Offices

- Town Hall
- Town Library (note: the Town does not have a public library. The community is supported by the Elizabeth Taber Library, which is operated by a non-profit)
- Benjamin D. Cushing Community Center

The project also will implement a social media strategy to advertise the Community Meeting. Future use of social platforms is anticipated to notify the community and EJ populations about future ad-hoc/pop up events, share project-related visual media, and publish educational materials based on of compelling imagery. Social media targeting tools will be utilized to ensure messages are distributed through all identified EJ population and community shareholder feeds, wherever possible. The project's effective social media presence represents an important

aspect of the program's ability to amplify outreach activity, increase community awareness, and provide additional engagement opportunities to shareholders who might not otherwise participate in community outreach activities. Using existing social accounts, the project's social media presence will focus on platforms such as Facebook, Twitter, and Instagram. Post-event sharing of project meeting video files on YouTube is anticipated.

All public notifications will include the date, time, location, and other general information about the Community Meeting event, including a brief description of the project, purpose of meeting, and a solicitation to participate. Notifications will also include contact information for the Project Manager and Town of Marion representatives along with specific instructions on how to request accommodations such as meetings after business hours.

The project team will record a video of the community meeting, which will be used to develop an educational video that will subsequently be made available to EJ populations, shareholders, and the public as an on-demand, 24/7, available video file. The video will mirror information shared in-person at the community meeting.

All postings will allow for ease of information sharing and networking with local audiences. Further, social media comments by residents and shareholders will be retained for documentation alongside formal comments provided at the Community Meeting.

Comment Management

Every practicable effort will be made to ensure official logging of oral and written comments from members of the EJ community and the general public, including the following:

- Comments sent by electronic mail (email) and the US Postal service
- Comments submitted through a project website comment form
- Comments submitted through an online meeting comment portal
- Comments submitted in writing at community or public meetings
- Comments submitted via telephone call or voice mail
- Comments submitted in response to online surveys

Wherever possible, efforts will be made to capture comments submitted orally at community or public meetings, including synopses of such comments as needed.

Schedule of Activities

December 2023

Activity	Key Dates	Notes
EJ Screen Form	Dec. 5-10	EJ Screen Form draft is complete and awaiting review by PM. Upon completion, it will be submitted to the MEPA Office and the EEA EJ Director for review and approval.
Pre-filing consultation meeting	Dec 11-22	Following approval of the EJ Screening Form, the Marion project team will schedule a pre-filing meeting with the

		MEPA Office and the EEA EJ Director to discuss outreach and community engagement strategies in Marion.
Shareholder Matrix	Dec. 30	The project has begun development of a Shareholder Matrix. It will be completed upon receipt of a project EJ Reference List from the MEPA Office and the EEA EJ Director.
CBO Outreach	Dec. 15-20	Solicitation from CBOs will be undertaken at the earliest convenience to increase engagement with EJ Populations. As part of this activity, project representatives will communicate with CBOs and local shareholders to determine a preferred time period of a day or week that is most likely to be convenient for EJ populations. This feedback will be presented that to Town officials and the project team for consideration.
Meeting Site Selection	Dec. 15-30	The project team will engage Town officials regarding the availability of space and requisite project proponents in local government for a Community Meeting event during the week of Jan. 22 or Jan 29, 2024.
Community Notifications	Dec. 20	Upon confirming a date, time and location for the Community meeting, the project team will draft notification and advertising content for use in notifying shareholders about the planned Community Meeting. This shall include social media content, a news release, a formal legal advertisement, and other relevant notice formats.
News Media Release	Dec. 30	Drafting and submittal of a Community Meeting news release to MassDOT will be completed no later than 12/30.
Comment Management Tool (online)	Dec. 30	The project team will engage Town officials and MassDOT regarding use of available, no-cost online tools such as Jotform or Zoho to support retention and efficient management of community comments. Online tools will be used to acquire the name, residential address, and if given, email address and/or telephone contact information. Any online tool used by the project to capture

		public comments will state that by virtue of the Commonwealth Massachusetts' Public Records Law, submissions and identifying information about commenters are considered a matter of public record, and subject to disclosure upon request. The project team will retain documentation of all opportunities for public involvement and all recorded comments will be incorporated into relevant final project records.
Community Notification Dissemination	Dec. 22	The project will finalize and disseminate notification of the Community Meeting event through all channels and platforms listed herein. Additional steps will be taken to ensure that notification is distributed to all identified EJ population and community shareholder audiences, with an emphasis on achieving commitments to attend the Community Meeting. In support of this effort, the project team will confer with the Town and MassDOT regarding possible postcard mail notifications to known EJ population households and/or flier distribution at apartment homes for Marion's three income-restricted communities. The project team anticipates posting fliers on all available Community Bulletin Boards, including any located in Town Hall, the Elizabeth Taber Library, and the Cushing Community Center.
Social Media Strategy	Dec. 22	The project team will work with MassDOT and Town officials to propose and begin implementation of a social media strategy to advertise community meetings, share project-related visual media, and publish educational materials. The project will use social media presence to amplify outreach activities, increase community awareness, and provide additional engagement opportunities to shareholders who might

		not otherwise participate in community outreach activities. It is anticipated that the project will use existing social media channels that are controlled by the Town and MassDOT, including but not limited to Facebook pages, Instagram feeds, and Twitter/X accounts. Social media targeting tools will be utilized wherever possible. The project team will work with the Town and MassDOT to ascertain availability of existing YouTube channels where a video file of the January Community Meeting can be posted for consumption after the event. At all times, the project's social media activities will emphasize use of clear, non-technical language, with visual communication incorporated whenever possible, along with links to primary information sources, such as the project website or online documents. All social media comments by residents and shareholders will be retained for documentation alongside formal comments provided at the Community Meeting.

January 2024

Activity	Key Dates	Notes
Project Webpage	Jan. 12	A project webpage hosted by MassDOT or the Town of Marion is recommended. This resource will help ensure that all relevant project information is available via a sole source. If approved, the Marion SUP webpage will feature dedicated EJ section. The page also will be used to provide updates about outreach activities, relevant content, and graphics displaying project information.

Project Webpage (TBD)	Jan. 12	If approved, the project team will draft all relevant content for the Marion SUP page no later than 12/15.
Project Toolkit	Jan. 12	The project team will develop a Marion SUP 'toolkit' that includes: - Project fact sheet (single page), that includes information about the SUP site, the project's connection to the South Coast Bikeway, the design process, a construction timeline, and contact information for project management. - Site graphic (overview map showing project's relationship to the Town of Marion and a 'zoom in' map overlaid to showcase the project DGA only) As directed, the project team will prepare FAQ (frequently asked questions or common discussion topics) as part of the toolkit. The toolkit will be updated throughout the project process to ensure the most up-to-date information is available to EJ populations and community shareholders.
Targeted EJ Outreach	Ongoing	The project team will partner with identified CBOs (from EJ reference list and other sources, as needed) to recruit at least 10 members of the community's EJ population to create a Marion SUP community group. This outreach will begin in December and continue with the goal of establishing a project network that allows Marion shareholders to encourage participation in the public involvement process by friends, neighbors, and other members of the community.
Meeting Logistics Support (Comment	Jan. 12	The project team will prepare draft a 'run-of-event' agenda for the Community meeting comprised of opening remarks,

management, site staging, technology)		public comment, and project team presentations. The approved agenda will be disseminated prior to the event via online channels and also will be available in print form at the meeting. A team representative will visit the meeting site prior to January 12 to review seating arrangements, evaluate remote meeting technology, and take notes regarding other staging considerations. Additionally, the project team will confirm the availability of video recording technology at the selected meeting site. In the event such technology is not readily available, the project team will consult with MassDOT to determine the availability of relevant equipment or budgetary resources to rent same.
Community Meeting	Date TBD, tentatively week of Jan. 22, 2024, or Jan. 29, 2024	
Project documentation	Ongoing	Beginning at the Community Meeting and continuing until the conclusion of 100% design, the project team will document all community engagement metrics, including volume of community meeting attendance, volume of visitors to the project webpage, and social media engagement data, such as number of comments, followers, and similar interactions. The project team will also document all community outreach activities, including number of houses and businesses that received project notifications via mail, fliers, or other distribution channels.

February 2024

Activity	Key Dates	Notes
Targeted EJ Outreach	Ongoing	
Post meeting monitoring and evaluation	Fridays at noon (Jan. 26., Feb. 2, 9, 16, and 23).	At all times, the project team will work with the Town and MassDOT to track qualitative and quantitative changes in EJ populations' levels of interaction, overall tone of communications and

		behavioral change/activity with the Marion SUP. This work will begin in earnest with the Community Meeting. After, the project team will track indicators and metrics to assess the level of meaningful engagement by EJ populations. This work will be undertaken on a weekly basis, with the project team to provide a summary report to the Town and MassDOT by end of day each Friday in February as well as the last Friday of January. Tools that that will be utilized to monitor and assess will include: - Social media analytics tools that assess audience impressions (via platforms like Facebook, Instagram, and YouTube) - Social media analytics tools that assess the tone, tenor, and frequency of comments - Analytics report created in partnership with local CBOs that summarize EJ populations' comments and feedback All reported information will be assessed to identify additional opportunities amplify outreach activities, increase community awareness among EJ populations, and provide additional engagement opportunities to shareholders who might not otherwise participate in community outreach activities. Social media monitoring will serve as a real-time evaluation tool of public sentiment and assessment of frequently discussed topics among identified shareholders and EJ populations.

		Special attention will be paid to possible unknown issues that have not been identified through traditional means. Further, social media comments by residents and shareholders will be retained for documentation alongside formal comments provided at the Community Meeting or via any online tool that might be employed to promote engagement and feedback.
Additional Community Meetings and Event(s)	Feb. 29	The project team will consult with the Town of Marion and MassDOT regarding the need and capacity to conduct additional community meetings, including 'pop up' events or formal meetings conducted in partnership with partnering CBOs that are supporting enhanced and meaningful engagement with local EJ populations.

March 2024

Activity	Key Dates	Notes
Project documentation	Ongoing	
Targeted EJ Outreach	Ongoing	
Monitoring and evaluation	Fridays at noon (Mar. 8, 15, 22, and 29)	
Comment Management	Ongoing	

Analytics & Tracking Protocol

The ability to assess the usefulness and efficacy of various public involvement tools and tactics ensures that the project team continually will adapt, innovate, and improve its EJ public outreach and community engagement strategies during a period of evolving best-in-class practices.

Tracking communication of project communications and outreach will include:

- Documenting and reporting shareholder and community questions, comments, compliments, and complaints
- Documenting public interest metrics, including virtual meeting attendance and social media interactions
- Documenting website analytics

Administrative Record

An Administrative Record, or formal collection of every document or material that will be considered by MEPA when making decisions regarding a project's EIR, will be maintained in accordance with MEPA requirements and recorded to ensure accuracy and consistency in documentation.

The project team will schedule a pre-filing consultation meeting with the MEPA Office and the EEA EJ Director to discuss outreach and community engagement strategies for the project. In accordance with MEPA requirements, the project team will track and maintain records of POCEP activity throughout the MEPA review process. The conversation will include a focus on how the project will manage POCEP-related documents and information within the Administrative Record.

Appendix A: Marion, MA Key EJ Issues and Methods to Address

(Updated September 2023)

Methods of Addressing Key Issues	
Environmental impacts	• *Survey community within project DGA limits to communicate project scope and solicit feedback on possible environmental concerns* • *Share survey results on project website and at to-be-identified local repository for project documents by way of simplified, visual, educational graphics* • *Disseminate survey results' graphic image on social media, websites, and via email (opt-in)*
Shareholders who do not have access to internet	• *Develop simplified project fact sheet(s), frequently asked questions (FAQs), and visual materials that will be available to shareholders upon request at places of public convenience (TBD site, possibly Marion Town Hall, Marion post office, and/or Elizabeth Taber Library)* • *Establish a project 'hotline' telephone message service* • *Promote community feedback drop box, as needed*
Indifferent Residents & EJ Populations	• *Market Marion SUP project as a benefit to the community through public and shareholder meetings, social media, and website* • *Provide multiple opportunities to engage local EJ populations, including online meetings and social media* • *Create channels (email address and drop box) for indifferent EJ populations to express reasons why they are apathetic and factors that could stimulate interest in Marion SUP project or future projects*

Lack of understanding and/or awareness of project purpose and need.	• *Create key messages to explain project purpose, need, and benefits*

Appendix B: Marion, MA EJ Reference List

(Updated January 8, 2023)

First Name	Last Name	Title	Phone Number	Email	Affiliation
Claire	B.W. Muller	Movement Building Director	508 308-9261	claire@uumassaction.org	Unitarian Universalist Mass Action Network
Julia Gretech	Blatt McClain	Executive Director	(617) 714-4272	JuliaBlatt@MassRiversAlliance.org GretchenMcClain@MassRiversAlliance.org	Mass Rivers Alliance
Jodi	Valenta	Massachusetts State Director	(617) 367-6200	Jodi.Valenta@tpl.org	The Trust for Public Land
Kerry	Bowie	Board President	Not Provided	kerry@msaadapartners.com	Browning the GreenSpace
Sylvia	Broude	Executive Director	617 292-4821	sylvia@communityactionworks.org	Community Action Works
Heather	Clish	Director of Conservation & Recreation Policy	(617) 523-0655	hclish@outdoors.org	Appalachian Mountain Club
Johannes Brittney	Epke Jenkins	Staff Attorney Vice President	617 850-1761	jepke@clf.org Bjenkins@clf.org	Conservation Law Foundation
Ben	Hellerstein	MA State Director	617-747-4368	ben@environmentmassachusetts.org	Environment Massachusetts
Robb	Johnson	Executive Director	(978) 443-2233	robb@massland.org	Mass Land Trust Coalition

First Name	Last Name	Title	Phone Number	Email	Affiliation
Cindy	Luppi	New England Director	617-338-8131 x208	cluppi@cleanwater.org	Clean Water Action
Lena Miles	Entin Gresham	Interim Co-Directors	Not Provided	Lena@N2NMa.org Miles@N2NMa.org	Neighbor to Neighbor Mass.
Rob	Moir	Executive Director	Not Provided	rob@oceanriver.org	Ocean River Institute
Deb	Pasternak	Director, MA Chapter	617-423-5775	deb.pasternak@sierraclub.org	Sierra Club MA
Heidi	Ricci	Director of Policy	Not Provided	hricci@massaudubon.org	Mass Audubon
Jeanne	Daly	Marion Rep.	(508) 999-6400		Coastline Elderly Services
Liz	Rabideau	Director of Community Relationships	(508) 362-1140	lrabideau@communityconnectionsinc.org	Community Connections
JJ	Bartlett	President	(617) 928-3443	jbarlett@fishingpartnership.org	Fishing Partnership Support Services
Andrea	Bogomolni	Program Officer, Environment and Education	(508) 748-2809	abogomolni@islandfdn.org	Island Foundation (based in Marion)
Karen	Gregory	Director	(508) 748-3570	Link to webform	Marion Council on Aging

First Name	Last Name	Title	Phone Number	Email	Affiliation
Renee	Ledbetter	President	(508) 994-7602		NAACP of New Bedford
Dustin	Green	Executive Director	(508) 999-4436	DustinGreen@NemasketGroup.org	Nemasket Group
Cathy	Stone	President	(508) 748-3080	info@sippicanlandstrust.org	Sippican Lands Trust
Kristen	Sarkarati	Director of Marketing and Communications	(508) 996-8253, ext. 219	ksarkarati@southcoastcf.org	Southcoast Community Foundation
Eileen	Dugas	Executive Director	(774) 775-2656	eileen@sclgbtqnetwork.org	South Coast LGBTQ+ Network
Victoria	Grasela	VP of External Engagement	508-994-9625 ext. 210	vgrasela@unitedwayofgnb.org	United Way of Greater New Bedford
Christine	Monska	Executive Director	(508) 219-6102	cmonska@womensfundsouthcoast.org	Women's Fund South Coast
Helen	Zincavage	Director of Environmental and Climate Justice	(508) 824-1367, x 221	hzincavage@spredd.org	Southeastern Regional Planning and Economic Development District
Taylor	Perez	Senior Community Engagement Specialist	(508) 824-1367, x 230	tperez@spredd.org	Southeastern Regional Planning and Economic Development District
Doug	Guey-Lee	Planner	(508) 748-3513	dguey-lee@marionma.gov	Marion Stewards of Community

First Name	Last Name	Title	Phone Number	Email	Affiliation
					Open Space Committee
Alma	Gordon	President	Not Provided	tribalcouncil@chappaquiddickwampanoag.org	Chappaquiddick Tribe of the Wampanoag Nation
Cheryll	Toney Holley	Chair	774-317-9138	crwritings@aol.com	Nipmuc Nation (Hassanamisco Nipmucs)
John	Peters, Jr.	Executive Director	617-573-1292	john.peters@mass.gov	Massachusetts Commission on Indian Affairs (MCIA)
Melissa	Ferretti	Chair	(508) 304-5023	melissa@herringpondtribe.org	Herring Pond Wampanoag Tribe
Patricia	D. Rocker	Council Chair	Not Provided	rockerpatriciad@verizon.net	Chappaquiddick Tribe of the Wampanoag Nation, Whale Clan
Raquel	Halsey	Executive Director	(617) 232-0343	rhalsey@naicob.org	North American Indian Center of Boston
Cora	Pierce	Not Provided	Not Provided	Coradot@yahoo.com	Pocassett Wampanoag Tribe
Dinalyn	Spears	Dir. Of Planning & Nat. Resources	(401) 364-1100 x-210		Narragansett Tribe
Elizabth	Soloman	Not Provided	Not Provided	Solomon.Elizabeth@gmail.com	Massachusetts Tribe at Ponkapoag

First Name	Last Name	Title	Phone Number	Email	Affiliation
Bettina	Washington	Tribal Historic Preservation Officer	508-560-9014	thpo@wampanoagtribe-nsn.gov	Wampanoag Tribe of Gay Head (Aquinnah)
Bret	Stearns	Natural Resources Director	(508) 645-9265, x 141	bstearns@wampanoagtribe-nsn.gov	Wampanoag Tribe of Gay Head (Aquinnah)
Brian	Weeden	Chair	774-413-0520	Brian.Weeden@mwtribe-nsn.gov	Mashpee Wampanoag Tribe
Beckie	Finn	Environmental Coordinator	508-645-9265 ext. 143	envcoord@wampanoagtribe-nsn.gov	Mashpee Wampanoag Tribe
Maura	Valdez	Executive Director	508-974-3535	MValdez@groundworksouthcoast.org	Groundwork South Coast

Appendix B: CBOs Servicing Marion, MA

(Updated September 28, 2023)

* Entities based in Marion
** Entities based outside Marion

Organization	Description	Contact Information
Coastline Elderly Services**	Coastline Elderly Services, Inc. is a 501(c)(3) nonprofit organization that develops, provides, and coordinates a range of home care services to support and maintain the independent living of older adults within the communities it serves. Coastline's eight-community planning and service	Coastline Elderly Services Attn Information & Referral Department 863 Belleville Ave, New Bedford, MA 02745 (508) 999-6400 Marion Board Representative: Jeanne Daly

	area includes Marion, MA. Coastline serves as the advocate and focal point for older adults in the communities served by the agency.	
Community Connections**	Community Connections is a 501(c)(3) nonprofit organization serving people with disabilities throughout Southeastern Massachusetts and Cape Cod. Service offerings include Day Habilitation, Employment Services, Life Skills, Pre-Employment, Social Recreation and Supported Living.	Community Connections Liz Rabideau, Director of Community Relationships 261 Whites Path, Suite 1 South Yarmouth, MA 02664 (508) 362-1140 lrabideau@communityconnectionsinc.org www.communityconnectionsinc.org
Fishing Partnership Support Services**	Fishing Partnership is a non-profit support services organization dedicated to improving the health, safety and economic security of commercial fishing professionals and their families as well as the communities where fishing families live.	Fishing Partnership J.J. Bartlett President 398 County Street New Bedford, MA 02740 (617) 928-3443 jbarlett@fishingpartnership.org www.fishingpartnership.org
Island Foundation*	Founded in 1979, The Island Foundation is a family foundation that provides “leadership grants” that “other foundations might be unwilling to consider.” Areas of priority include the environment and New Bedford. The Foundation focuses a sizable portion of its financial resources on	Island Foundation Andrea Bogomolni Program Officer, Environment and Education 589 Mill Street Marion, MA 02738 (508) 748-2809 abogomolni@islandfdn.org www.islandfdn.org

	Southeastern Massachusetts. The foundation "promote[s] environmental justice and seek to include the voices of those most affected by environmental harms."	
Marion Council on Aging (COA)*	The Marion Council on Aging identifies needs and develops community resources to provide information, referral, and outreach services to the community's senior citizens while providing educational, recreational, and cultural programs and activities.	Marion COA Karen Gregory, Director Marion Town Hall 2 Spring Street Marion, MA 02738 (508) 748-3570 Email contact form here www.marionma.gov/council-aging
Mashpee Wampanoag Tribal Council**	The Mashpee Wampanoag Tribe, also known as the People of the First Light, has inhabited present day Massachusetts and Eastern Rhode Island for more than 12,000 years. The Mashpee tribe currently has approximately 2,600 enrolled citizens. Note: The Town of Marion was first settled in 1679 as the "Sippican" village, which is the name of the local native Wampanoag tribe meaning "the land of many waters."	Mashpee Wampanoag Council Joanne Frye, Tribal Office Manager Beckie Finn, Environmental Coordinator 483 Great Neck Road South Mashpee, MA 02649 Frye: (508) 477-0208 Finn: 508-645-9265 ext. 143 www.mashpeewampanoagtribe-nsn.gov Finn: envcoord@wampanoagtribe-nsn.gov
NAACP of New Bedford**	The NAACP is a 501(c)4 non-profit organization that advocates for civil rights and social justice, amplifies Black	NAACP New Bedford Branch Renee Ledbetter, President Bruce Rose, Vice President 95 Cedar St, New Bedford, MA 02740

	excellence, and works to end race-based discrimination. The NAACP New Bedford Branch implements local efforts and support national programs to preserve and expand economic empowerment among African Americans and other communities of color.	(508) 991-4416 Renee Ledbetter: non-NAACP#, (508) 994-7602 Bruce Rose: non-NAACP#, (508) 998-7475
Narragansett Tribe**	The Narragansett Tribe is comprised of descendants of the Aboriginal people of the State of Rhode Island. Archaeological evidence and oral history of the Narragansett People as an Algonquin American Indian tribe establish their existence in the region more than 30,000 years ago. The Narragansett tribe controls the Narragansett Indian Reservation, 1,800 acres of trust lands in Charlestown, Rhode Island and also own several hundred acres of land in Westerly, RI. The Narragansett tribe currently has approximately 2,400 enrolled citizens.	Narragansett Indian Tribe Sequahana Mars, Tribal Director of Administration Dinalyn Spears, Director of Planning and Natural Resources 45333 South Country Trail Charlestown, RI 02813 Main #: (401) 364-1100 Mars: Ext. 203 Spears: Ext. 210 www.narragansettindiannation.org Email addresses not available.
Nemasket Group**	The Nemasket Group supports families and individuals with disabilities who live on the South Coast of Massachusetts.	The Nemasket Group, Inc. Dustin Green, Executive Director 109 Fairhaven Road Mattapoisett, MA 02739 (508) 999-4436

		DustinGreen@NemasketGroup.org www.nemasketgroup.org
Sippican Lands Trust*	The Sippican Lands Trust (SLT) is a non-profit organization that acquires, preserves, and protects conservation land in the Town of Marion. The SLT protects 1,375 acres of open space, including several conservation properties that fall within the Marion SUP project's DGA (Aucoot Woods, Brainard Marsh, Gallison Woods, Haggeman Woods).	Sippican Lands Trust Cathy Stone, President 173 Spring Street Marion, MA 02738 (508) 748-3080 info@sippicanlandstrust.org www.sippicanlandstrust.org
Southcoast Community Foundation (formerly The Community Foundation of Southeastern Massachusetts)**	The Southcoast Community Foundation is a 501(c)3 organization that serves donors – individuals, families, and corporations – who seek to improve the quality of life throughout the region. It has distributed over $50 million from more than 200 funds to humanitarian, educational, and cultural organizations in the area.	New Bedford Office Kristen Sarkarati Director of Marketing and Communications (Marion resident) 128 Union Street Suite 403 New Bedford, MA 02740 (508) 996-8253, ext. 219 ksarkarati@southcoastcf.org www.southcoastcf.org
South Coast LGBTQ+ Network**	The South Coast LGBTQ+ Network is a 501(c)(3) nonprofit established in 2014 by seven LGBTQ+ agencies and allied organizations. The group works to create and support a thriving LGBTQ+ community on Massachusetts' South Coast by building and	South Coast LGBTQ+ Network Eileen Dugas, Executive Director P.O. Box 8473 New Bedford, MA 02740 (774) 775-2656 eileen@sclgbtqnetwork.org www.sclgbtqnetwork.org

	maintaining a comprehensive support network for LGBTQ+ individuals and families, with an emphasis on the most vulnerable.	
United Way of Greater New Bedford**	The United Way of Greater New Bedford is a 70-year-old, independent, self-governing United Way organization that is overseen by a local Board of Directors. Its primary communities of focus include Marion and surrounding communities. The organization funds various grant opportunities of all sizes while also managing and providing services through its own programs.	Victoria Grasela VP of Marketing & Community Engagement 128 Union Street, Suite 105 New Bedford, MA 02740 508-994-9625 ext. 210 vgrasela@unitedwayofgnb.org www.unitedwayofgnb.org
Wampanoag Tribe of Gay Head (aka Aquinnah Wampanoag Tribe)**	The Wampanoag Tribe of Gay Head cares for 477 acres of ancestral lands where traditional arts like beadwork, basket making, and pottery continue to be taught. Annual celebrations include Cranberry Day and The Legends of Moshup Pageant. The tribe has developed affordable housing for families and elders, while owning and operating several businesses, including three stores and a shellfish hatchery. The Aquinnah Wampanoag tribe currently has	Wampanoag Tribe of Gay Head Todd Araujo, Chief of Staff Bret Stearns, Natural Resources Direct 483 Great Neck Road South Mashpee, MA 02649 Main #: (508) 645-9265 - Araujo: Ext. 101 - Stearns: Ext. 141 https://wampanoagtribe-nsn.gov/staff-directory Araujo: taraujo@wampanoagtribe-nsn.gov

	approximately 900 enrolled citizens. The Aquinnah tribe is part of the Wampanoag Nation that once included all of Southeastern Massachusetts and Eastern Rhode Island, encompassing over 67 distinct tribal communities.	
Women's Fund South Coast**	The Women's Fund SouthCoast supports and sponsors social change that advances economic security and financial independence for women and girls in the region.	The Women's Fund Christine Monska, Executive Director 65 William Street New Bedford, MA 02740 (508) 219-6102 cmonska@womensfundsouthcoast.org www.womensfundsouthcoast.org

Appendix D: Community Shareholders in Marion, MA

(Updated September 28, 2023)

The following businesses, elected officials, advocates, and government agencies represent other local shareholders in Marion, MA, and the surrounding region.

Organization	Description	Contact
Town of Marion	Town Hall officials	Geoffrey Gorman, Town Administrator Carleton "Toby" Burr, Select Board Chair Randy L. Parker, Select Board Vice-Chair Norman Hills, Select Board Clerk 2 Spring Street Marion Town House Marion, MA 02738 www.marionma.gov (508) 748-3520
Town of Marion Pathway Committee	Town Hall volunteer committee	John Rockwell, Chair 2 Spring Street Marion Town House Marion, MA 02738 (508) 748-3520 www.marionma.gov/pathway-committee

Town of Marion Town Pathways Committee	Members include John Rockwell (Chair), Lorraine Heffernan, Steven Lohrenz, Paula Meere, John Menzel and Randy L. Parker (Select Board Representative)	John Rockwell 1171 Point Road Marion, MA 02738 (508) 728-5585 johnrockw@gmail.com Note: Mr. Rockwell is an environmental planner
Charles Washburn Memorial Trust, aka Town of Marion Trustees of Washburn Park	The Trust is a non-profit formed in 1955 to maintain and preserve 16 acres of woodland, walking trails, playgrounds, parking lot, horse rings and sports fields. In 2003, it collaborated with the Sippican Lands Trust to add 109 acres of protected land to the park. The park is adjacent to the SUP project site.	Meredith Days President 47 Ichabod Ln. Marion, MA 02738 (508) 748-3439
State Legislators	State Senators and Representatives	Senator Marc R. Pacheco, 3rd Bristol and Plymouth MA State House 24 Beacon St. Room 312-B Boston, MA, 02133 (617) 722-1551 (508) 822-3000 Marc.Pacheco@masenate.gov www.malegislature.gov/Legislators/Profile/MRP0 Representative William M. Straus, 10th Bristol MA State House 24 Beacon St. Room 134 Boston, MA, 02133 (617) 722-2400 William.Straus@mahouse.gov www.malegislature.gov/Legislators/Profile/WMS1
Southeastern Regional Planning and Economic	SRPEDD serves 27 cities and towns in southeastern	Jackie Jones, AICP Principal Transportation Planner

Development District (SRPEDD)	Massachusetts by way of community master planning; regional transportation and bicycle project development; habitat restoration; watershed protection; transit planning; zoning bylaw analysis; and economic development and infrastructure initiatives.	Taylor Perez Senior Community Engagement Specialist Helen Zincavage, AICP, CFM Director of Environmental and Climate justice SPREDD 88 Broadway Taunton MA 02780 (508) 824-1367, Jones – x 230, Perez – x 311, Zincavage – x 221 jjones@spredd.org tperez@spredd.org hzincavage@spredd.org www.spredd.org
Town of Marion, Stewards of Community Open Space Committee (SoCOS)	The SoCOS oversees open space entities and coordinate conservation efforts in Marion. The committee includes representation from the Town's Parks & Tree Committee, Planner's office, Pathways Committee, Marine Resources Commission, Select Board, Trustees of Washburn Park, Open Space Acquisition Commission, and Recreation Department.	Doug Guey-Lee, Planner (508) 748-3513 www.marionma.gov/stewards-community-open-space
Friends of the Mattapoisett Rail Trail	Since 1999, Friends of the Mattapoisett Rail Trail have supported car-free trails across the South Coast of Massachusetts.	Renee Pothier, President www.mattapoisettrailtrail.com Email submission form here.

Appendix E: Supplemental Marion, MA Business List

(Updated June 14, 2023)

- MARION ANIMAL HOSPITAL, INC. 303 WAREHAM ST.
- MARION ARK LLC, 2 LEWIS ST.
- MARION ART CENTER, 80 PLEASANT ST.
- MARION BOAT WORKS, INC., 2 MAIN ST

- MARION BOOKSTALL, INC., 151 FRONT ST.
- MARION CAPITAL VENTURES, LLC, 58 COVE CIRCLE
- MARION CROSSING, LLC, 361 FRONT ST.
- MARION EDUCATION GROUP LLC, 2 THOMAS LANE
- MARION FAMILY CHIROPRACTIC, INC., 238 WAREHAM RD.
- MARION FENCE, LLC, 13 WASHBURN LN.
- MARION FIRE FIGHTERS ASSOCIATION, INC., 421 FRONT ST.
- MARION GRANGE NO.339, INCORPORATED, 441 FRONT ST.
- THE MARION MALLET CLUB, INC, 167 CONVERSE ROAD
- MARION PEDIATRIC GROUP, P.C. 240 WAREHAM RD.
- MARION POTTERY WORKS, LLC, 12 JOANNA DRIVE
- MARION REALTY, INC., 11 RICHARDSON RD.
- MARION SEAGATE LLC, 90 POINT ROAD
- MARION SOCIAL CLUB INC., 44 PUMPING STATION ROAD
- MARION SPORTS SHOP, INC.
- MARION VETERINARY CLINIC LLC (AKA MARION ANIMAL HOSPITAL), 303 WAREHAM RD
- MARION VILLAGE DENTAL, P.C., 501 POINT RD.
- MARION WELDING LLC, 16 MAPLE AVENUE

Attachment 18

Stormwater Report and Checklist

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Stormwater Management System Report

PROPOSED SHARED USE PATH
MARION, MASSACHUSETTS

Prepared for:

Town of Marion
2 Spring Street
Marion, Massachusetts 02738

Foth Infrastructure and Environment LLC
15 Creek Road
Marion, Massachusetts 02738

Prepared by:

Field Engineering Co., Inc.
11D Industrial Drive
PO Box 1178
Mattapoisett, Massachusetts 02739

September 27, 2023
FEC Project No. 2416

FIELD ENGINEERING CO., INC.
CONSULTING ENGINEERS

Preface

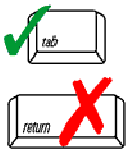
Stormwater Management Standards Compliance Checklist

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

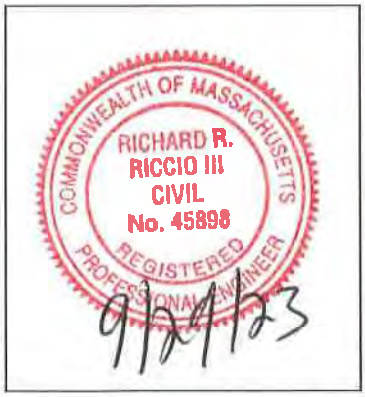
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☐ New development

☒ Redevelopment (BIKE PATH)

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☐ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☐ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☒ Use of "country drainage" versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☐ Grass Channel
- ☐ Green Roof
- ☒ Other (describe): Stone Edge Drains/Infiltration Trenches

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☒ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☒ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☒ The BMP is sized (and calculations provided) based on:

- ☒ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs) NOT APPLICABLE

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas NOT APPLICABLE

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☒ Bike Path and/or Foot Path
- ☐ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☒ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☒ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☐ Name of the stormwater management system owners;
- ☐ Party responsible for operation and maintenance;
- ☐ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

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1.3 Stormwater Management System Summary
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1.6 Regulatory Compliance

Section 2 Supplemental Data

Soils Map
Grassed Depression Sizing Calculations (STA 23+50-STA 28+50+/-)
Water Quality Volume Calculations

Appendix A – Construction Period Stormwater Pollution Prevention Plan

Appendix B – Post Construction (Long-Term) Operation and Maintenance Plan

Appendix C – Long Term Pollution Prevention Plan

Appendix D – Illicit Discharge Compliance Statement

Section 1

Hydrologic Overview

1.1 Project Description

The Town of Marion, in conjunction with the Massachusetts Department of Transportation (MassDOT) is proposing to construct a Shared Use Path extending from the town line with the Town of Mattapoisett to Point Road. The proposed project consists of a varying width paved recreational pathway following an existing railroad bed which is currently used for passive recreation by the general public. The paved pathway will cross Route 105/Spring Street and traverse through Washburn Lane towards the end of the project at Point Road. The project will also include intersection improvements at the Route 105/Spring Street crossing to accommodate pedestrian, bicycle, and vehicular traffic. The total length of the project is approximately 3.8 miles.

The stormwater management system has been designed to accept and treat the projected stormwater flows from development in accordance with the current DEP Stormwater Management Standards. As part of the DEP Stormwater Management Standards and Regulations, the DEP is requiring Low Impact Development (LID) measures to be considered in the design of the project. The project will make use of various LID measures including but not limited to "country drainage" as opposed to closed conduit piping systems, grassed depression areas, and crushed stone edge drains to promote infiltration of runoff from the Shared Use Path into the underlying soils and slow down the runoffs coming from the Shared Use Path before it reaches any wetland resource areas or adjacent properties.

1.1 Hydrologic Overview and Existing Stormwater Summary

As previously mentioned, the proposed Shared Use Path will follow along an old rail bed for a good portion of the project. The proposed Path will also cross Spring Street/Route 105 and intersect with Washburn Lane as it follows towards its terminus at Point Road. Along the route, there is existing drainage infrastructure including cross culverts, existing drain lines and stormwater management best management practices that should be maintained and improved as necessary to minimize impacts of the Shared Use Path on the surrounding properties and eco-systems.

1.2.1 Existing Cross Culverts

There are a number of existing cross culverts that the Shared Use Path will cross along the proposed route that provide hydraulic connections between wetland resource areas located on either side of the path. It is critical that these culverts remain functional during and following construction to minimize any potential impacts to the upgradient and downgradient properties. During construction each culvert should be inspected and cleaned as necessary to maintain their functionality. Structural improvements to the culverts are not proposed or recommended at this time as any structural improvements may trigger additional permitting requirements that

have not been anticipated as part of the Shared Use Path project. The existing cross culverts are shown on the plans.

1.2.2 Existing Spring Street/Route 105 Intersection Drainage Infrastructure

There are a number of drainage structures within the layout of Spring Street and Route 105 (Front Street) that will need to be maintained and adjusted to the new finish grades of each roadway as a result of reconstruction of the existing intersection. These structures contribute runoff to a closed conduit piping system which flows off road along the route of the Shared Use Path to the north before discharging to a surface stormwater best management practice consisting of a grassed swale with crushed stone check dams on land owned by the Marion Lands Trust. As shown on the design plans, the existing drainage pipe should be cleaned and sediment should be removed as part of this project. The limits of work should encompass the entire grassed swale and this system should be maintained throughout construction.

1.3 Stormwater Management System Summary

The proposed stormwater management system incorporates Best Management Practices (BMPs) as prescribed in the Department of Environmental Protection Stormwater Management Handbook. These practices include structural and non-structural measures providing stormwater quantity and quality management. These BMPs will function to minimize potential adverse water quality impacts to the surrounding ecosystem. The following sections describe the temporary and permanent stormwater BMPs proposed for the proposed bulkhead improvement project.

1.4 Select Structural Best Management Practices (BMP's)

Crushed Stone Edge Drain/Infiltration Trench

In critical areas and where there is sufficient room, runoff from the paved Shared Use Path will flow to a crushed stone infiltration trench located along the southern and eastern sides of the parking area. These trenches will consist of crushed stone wrapped in filter fabric with an additional layer of crushed stone to the surface. These trenches will serve as a conduit to facilitate recharge into the subsurface soils as well as provide a means to slow the runoff down prior to discharge off-site. These trenches will help to minimize the effects of erosion and sedimentation towards the adjacent wetland resource areas and abutting properties following construction of the Shared Use Path. The top 6" of crushed stone above the filter fabric can be inspected and maintained on a regular basis to function as a filter strip for the runoff coming from the paved path. The 1' x 2' crushed stone trench will provided adequate water quality volume to meet the water quality standards as shown the Water Quality Volume calculations for a typical 100' section provided in Section 2 of this Report.

Deep Sump Hooded Catch Basins

Stormwater from portions of the paved roadway area within the Spring Street/Route 105 intersection will be collected in a closed conduit piping system fitted with 4-foot-deep sump catch basins with hooded outlets. Catch basin sump systems are effective devices for removal of large matter and pollutants that adsorb to sediments and other particulates. Catch basins with sumps and hooded outlets are designed to trap sediment particles and floating contaminants (e.g., oil and greases), that are typically the most significant constituents of the urban runoff pollutant load. Regular maintenance and cleaning of catch basins is required to assure adequate performance of these structures. A specific maintenance schedule is submitted in this document and on the plans.

Grassed Swales and Depression Areas

In addition to the crushed stone edge drain/infiltration trenches, in locations where sufficient area exists within the Town's Right of Way, grassed depressions and swales have been proposed to provide additional area for treatment and attenuation of the runoff from the Shared Use Path. A grassed depression or swale has been proposed in close proximity of two parking areas servicing the Shared Use Path, at Washburn Lane and at the end of the Path at Point Road. Additionally, a grassed depression has also been proposed in the area of a low point in the Path at approximate STA 23+50 to approximate STA 28+50. This depression provides enough storage to retain and infiltrate up to the 100-year storm without overtopping as provided in the sizing calculations provided in Section 2 assuming a conservative infiltration rate of 1.02 inches per hour. Similar calculations have been provided for the proposed grassed depression at the end of the Path near the Point Road parking area.

Construction Phase Stormwater BMP's

As the overall project will disturb over one acre of land, the contractor for the project will be required to file for coverage under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) for Stormwater Discharges from Construction Activities. Prior to construction, the selected contractor will develop a Stormwater Pollution Prevention Plan ("SWPPP") identifying BMPs that will be implemented to prevent erosion and sedimentation. A copy of this SWPPP will be forwarded to the Conservation Commission upon completion. The SWPPP will be finalized prior to construction in conjunction with the selection of the site contractor. The SWPPP will be updated as necessary during construction and maintained throughout the period of construction.

It is anticipated that the site contractor will use appropriate erosion controls and best management practices during construction. Erosion controls consisting of compost filter tubes

and silt fence along the limit of work for the project are shown on the Design Plans and will be utilized for the project. Additionally, the contractor may use erosion control blankets or mats or straw mulch on exposed slopes for stabilization. The use of designated construction entrances enhanced with crushed stone will be required to minimize off-site vehicle tracking of sediments and silt sacks will be placed in existing catch basins in close proximity to the construction site (with DPW approval) to minimize the potential for sediment to get into the closed conduit drainage systems.

1.5 Select Non-Structural Best Management Practices (BMP's)

Stormwater Management System Maintenance Program

All structural components of the stormwater management system will be inspected and maintained on a regular basis in accordance with the requirements of the Stormwater Management Policy. A detailed Stormwater Management System Operation and Maintenance Plan has been prepared in accordance with the Stormwater Management Standards and Stormwater Management Handbook prepared by the Massachusetts Department of Environmental Protection and is included in this report.

1.6 Regulatory Compliance

The proposed Shared Use Path will be constructed within areas Subject to Jurisdiction under the Massachusetts Wetlands Protection Act (M.G.L. c 131,§ 40) and is therefore subject to the Massachusetts Stormwater Standards under the Stormwater Policy issued by MassDEP in 1996. Stormwater runoff from projects within an Area Subject to Protection under the Wetlands Protection Act shall be provided with stormwater best management practices to attenuate pollutants and to provide a setback from the receiving waters and wetlands in accordance with established Standards as defined in the Massachusetts Stormwater Handbook. In accordance with Section 10.05(6)(m) of the Wetlands Protection Act Regulations, "footpaths, bike paths, and other paths for pedestrian and/or nonmotorized vehicle access" are only required to meet the Massachusetts Stormwater Standards to the maximum extent practicable. (Standards 1, 8, 9, and 10 must always be fully met).

The Massachusetts Stormwater Handbook, Volume 3 (February, 2008), will be used as the primary guidance for the selection and design of permanent non-structural and structural BMPs for the long-term protection of existing wetland and water resources. The Final Stormwater Management Plan developed for this project will incorporate water quantity and quality controls that will protect surface and groundwater resources, wetlands and adjacent properties from potential impacts due to increased impervious areas on the site. The Stormwater Management Plan also incorporates select LID measures in accordance with the new Stormwater Management Policies.

The stormwater performance standards developed by the DEP and a brief discussion on how the proposed project will achieve the standards are provided below. The Stormwater Management System Compliance Certification and Checklist has been included as a Preface to this report.

Standard 1. No new stormwater conveyances may discharge untreated stormwater directly to, or cause erosion in wetlands or waters of the Commonwealth.

- No proposed site stormwater conveyance system will discharge untreated stormwater runoff directly to wetlands. The design will incorporate path-side swales and crushed stone trenches to intercept the runoff prior to discharge to any wetlands or waters of the Commonwealth. In locations with sufficient area, grassed depressions are also proposed as a place to collect runoff for settling of sediment and to minimize the potential for erosion and sedimentation towards adjacent wetland resource areas.

Standard 2. Stormwater management systems shall be designed so that the post-development peak discharge rates do not exceed pre-development peak discharge rates.

- The limited areas available for development of the Shared Use Path limit the potential to provide suitable stormwater management systems with the ability to attenuate any significant increases in the rates of runoff from pre-development to post development conditions. Given the fact that the majority of the Shared Use Path route is following an old railroad bed which has previously been disturbed, the anticipated increase in the rates of runoff will not be excessive. Some attenuation of the peak discharge rates will be achieved with the "country drainage" system and crushed stone edge drains that will be installed in certain areas alongside the path. In addition, grassed depressions will also be provided in three areas which will serve to provide some attenuation of the runoff.

Standard 3. Loss of annual recharge to groundwater shall be eliminated or minimized through the use of environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post- development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

- Once again, the limited areas available for development of the Shared Use Path will limit the potential for significant areas to provide recharge best management practices along the route. The path-side swales, gassed depressions and crushed stone edge drains will provide some recharge of the runoff from the paved path to help minimize any impacts to the recharge to groundwater as a result of this project.

Standard 4. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when:

a) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;
b) Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and
c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

- This Standard will be met to the maximum extent practicable. The Shared Use Path will not be sanded in the winter times and will not be prone to sediment buildup due to the types of use that will be seen. The Shared Use Path will only be used by pedestrians and non-motorized vehicles and therefore there should also be little potential for oils or greases to collect on the path. In areas where adequate room exists, the proposed 1' x 2' crushed stone trench will provide adequate water quality volume to meet the water quality standards as shown the Water Quality Volume calculations for a typical 100' Path/Trench section provided in Section 2 of this Report.

Standard 5. For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If, through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L.c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

- The proposed project is not considered a high intensity use with higher potential pollutant loads.

Standard 6. Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook.

- The project does not discharge within a Critical Area as defined in the Stormwater Management Standards.

Standard 7. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

- No portion of the project would be considered a redevelopment project in accordance with the Stormwater Management Standards. However, in accordance with Section 10.05(6)(m) of the Wetlands Protection Act Regulations, "footpaths, bike paths, and other paths for pedestrian and/or nonmotorized vehicle access" are only required to meet the Massachusetts Stormwater Standards to the maximum extent practicable. (Standards 1, 8, 9, and 10 must always be fully met).

Standard 8. A plan to control construction-related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

- The proposed development will incorporate erosion and sedimentation controls to minimize the potential for sedimentation in down gradient resources. These controls will include a compost filter tube/sedimentation fence as shown on the Shared Use Path Design Plans. A Construction Period Pollution Prevention Plan has been completed and is included in the following sections.

Standard 9. A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

- The Stormwater Management Plan for this project has been developed in compliance with the DEP Stormwater Management Policy. The Plan is based on a multi-dimensional approach to stormwater management that recognizes the need for source control of potential contaminants, and implementation of structural and non-structural treatment methods to ensure the protection of water resources in the vicinity of the site and adjacent properties. A Long-Term Operation and Maintenance Plan is included in the in the following sections.

Standard 10. Illicit Discharges to the Stormwater Management System are prohibited.

- An Illicit Discharge Compliance Statement has been completed and is attached to this report.

Section 2

Supplemental Data

Soil Map—Plymouth County, Massachusetts

Map Scale: 1:1,540 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: Plymouth County, Massachusetts
Survey Area Data: Version 15, Sep 9, 2022

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

Date(s) aerial images were photographed: Jun 10, 2022—Jun 30, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
37A	Massasoit - Mashpee complex, 0 to 3 percent slopes	1.0	18.8%
52A	Freetown muck, 0 to 1 percent slopes	0.0	0.4%
60A	Swansea coarse sand, 0 to 2 percent slopes	0.5	9.0%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	0.9	16.1%
321B	Birchwood sand, 3 to 8 percent slopes, very stony	2.0	37.8%
322B	Poquonock sand, 3 to 8 percent slopes	1.0	17.9%
Totals for Area of Interest		**5.4**	**100.0%**

70° 46' 28" W
70° 46' 17" W
352410
352430
352450
352470
352490
352510
352530
352550
352570
352590
352610
352630
41° 43' 1" N
41° 42' 56" N
4619870
4619850
4619830
4619810
4619790
4619770
4619750
4619730
321B
37A
321B
Spring St
105
Soil Map may not be valid at this scale.
352390
Map Scale: 1:1,110 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 15 30 60 90
Feet
0 50 100 200 300
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
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Water Features

- Streams and Canals

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- Interstate Highways
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- Major Roads
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Background

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Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

Soil Survey Area: Plymouth County, Massachusetts
Survey Area Data: Version 15, Sep 9, 2022

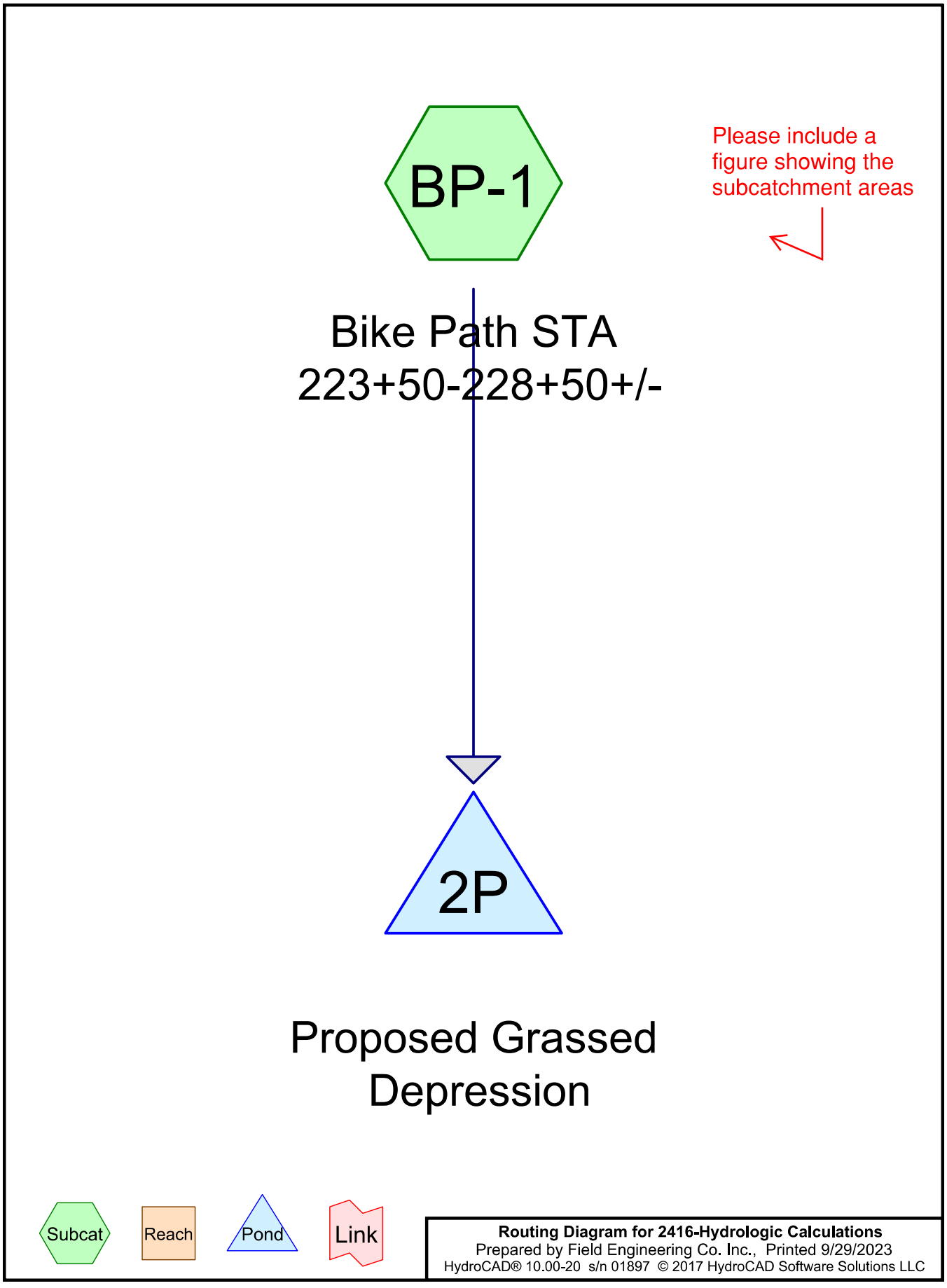
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 10, 2022—Jun 30, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
37A	Massasoit - Mashpee complex, 0 to 3 percent slopes	1.2	75.5%
321B	Birchwood sand, 3 to 8 percent slopes, very stony	0.4	24.5%
Totals for Area of Interest		**1.6**	**100.0%**


BP-1
Please include a figure showing the subcatchment areas
Bike Path STA 223+50-228+50+/-
2P
Proposed Grassed Depression
Subcat
Reach
Pond
Link
Routing Diagram for 2416-Hydrologic Calculations
Prepared by Field Engineering Co. Inc., Printed 9/29/2023
HydroCAD® 10.00-20 s/n 01897 © 2017 HydroCAD Software Solutions LLC

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment BP-1: Bike Path STA Runoff Area=20,000 sf 25.00% Impervious Runoff Depth=0.97"
Tc=10.0 min CN=70 Runoff=0.41 cfs 0.037 af

Pond 2P: Proposed Grassed Depression Peak Elev=23.47' Storage=715 cf Inflow=0.41 cfs 0.037 af
Outflow=0.04 cfs 0.037 af

Total Runoff Area = 0.459 ac Runoff Volume = 0.037 af Average Runoff Depth = 0.97"
75.00% Pervious = 0.344 ac 25.00% Impervious = 0.115 ac

Summary for Subcatchment BP-1: Bike Path STA 223+50-228+50+/-

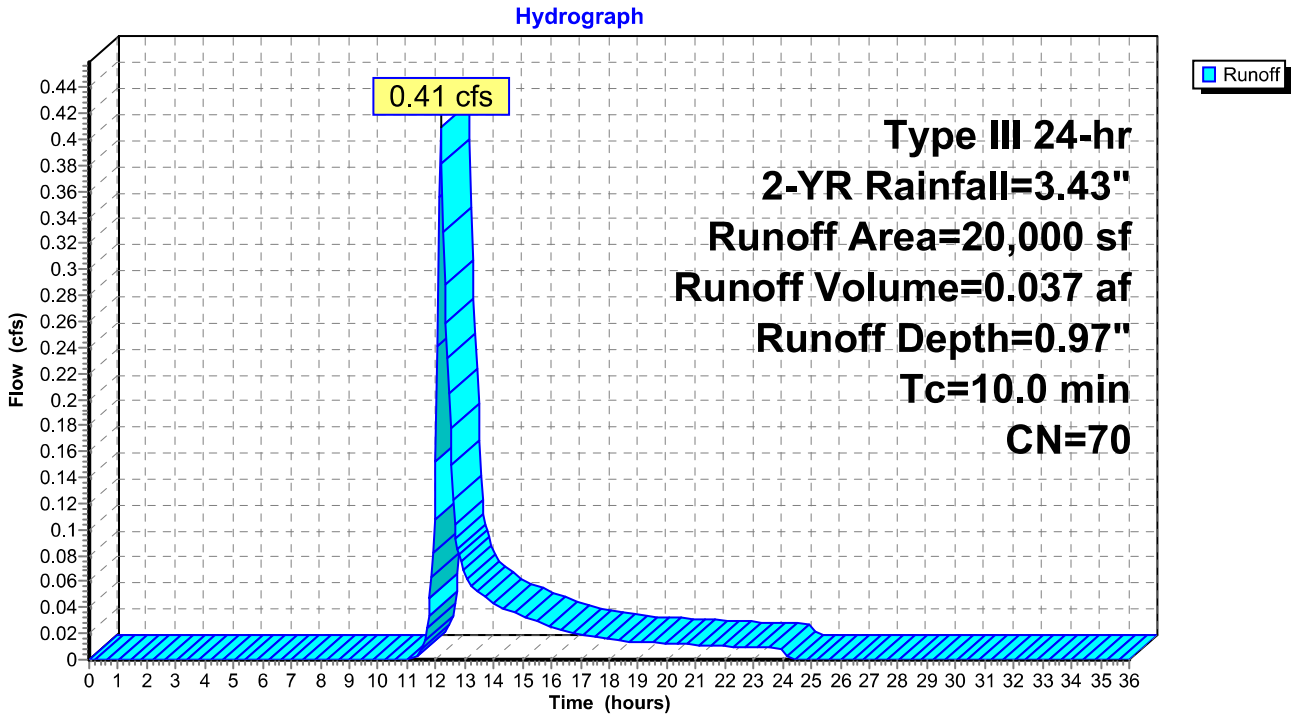
Runoff = 0.41 cfs @ 12.16 hrs, Volume= 0.037 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.43"

Area (sf)	CN	Description
5,000	98	Paved parking, HSG B
15,000	61	>75% Grass cover, Good, HSG B
20,000	70	Weighted Average
15,000		75.00% Pervious Area
5,000		25.00% Impervious Area

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

Subcatchment BP-1: Bike Path STA 223+50-228+50+/-



Summary for Pond 2P: Proposed Grassed Depression

Inflow Area = 0.459 ac, 25.00% Impervious, Inflow Depth = 0.97" for 2-YR event
Inflow = 0.41 cfs @ 12.16 hrs, Volume= 0.037 af
Outflow = 0.04 cfs @ 14.85 hrs, Volume= 0.037 af, Atten= 91%, Lag= 161.7 min
Discarded = 0.04 cfs @ 14.85 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 23.47' @ 14.85 hrs Surf.Area= 1,487 sf Storage= 715 cf

Plug-Flow detention time= 233.8 min calculated for 0.037 af (100% of inflow)
Center-of-Mass det. time= 233.6 min (1,108.0 - 874.4)

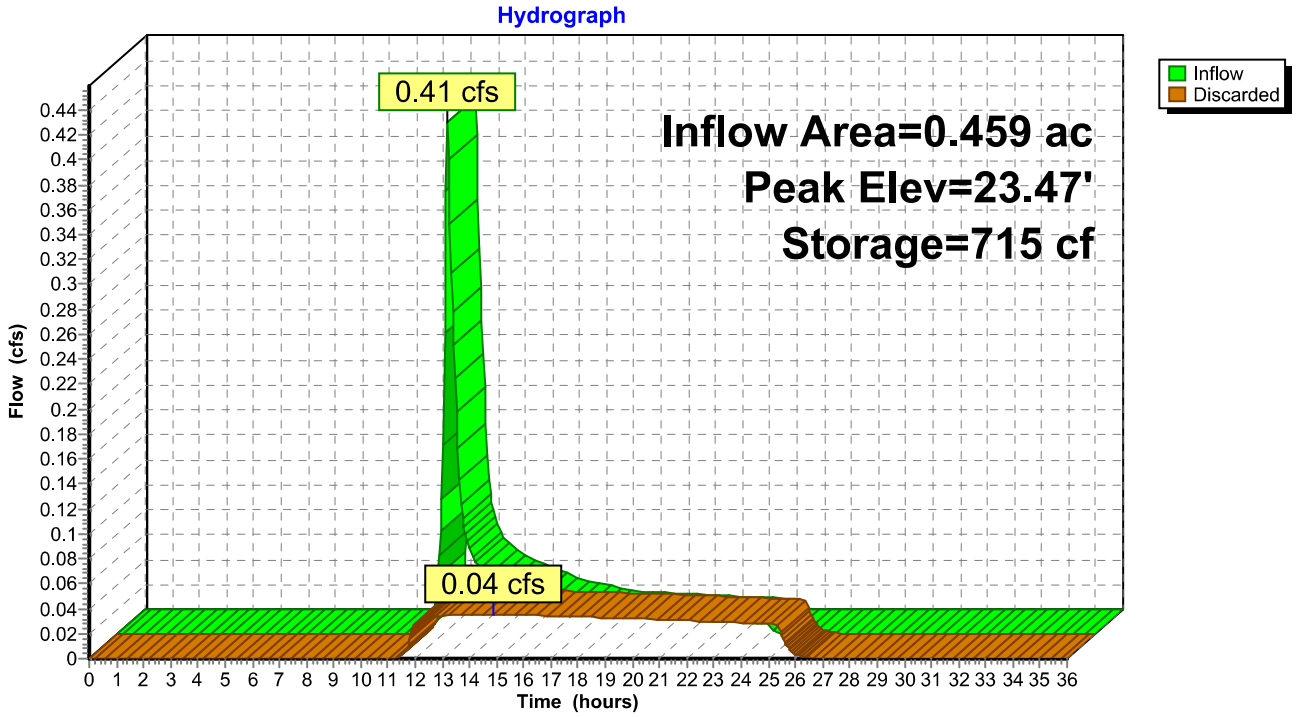
Volume	Invert	Avail.Storage	Storage Description
#1	23.00'	4,384 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	1,136	0	0
24.00	1,876	1,506	1,506
25.00	3,880	2,878	4,384

Device	Routing	Invert	Outlet Devices
#1	Discarded	23.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.04 cfs @ 14.85 hrs HW=23.47' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond 2P: Proposed Grassed Depression



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment BP-1: Bike Path STA Runoff Area=20,000 sf 25.00% Impervious Runoff Depth=2.07"
Tc=10.0 min CN=70 Runoff=0.94 cfs 0.079 af

Pond 2P: Proposed Grassed Depression Peak Elev=24.14' Storage=1,923 cf Inflow=0.94 cfs 0.079 af
Outflow=0.05 cfs 0.079 af

Total Runoff Area = 0.459 ac Runoff Volume = 0.079 af Average Runoff Depth = 2.07"
75.00% Pervious = 0.344 ac 25.00% Impervious = 0.115 ac

Summary for Subcatchment BP-1: Bike Path STA 223+50-228+50+/-

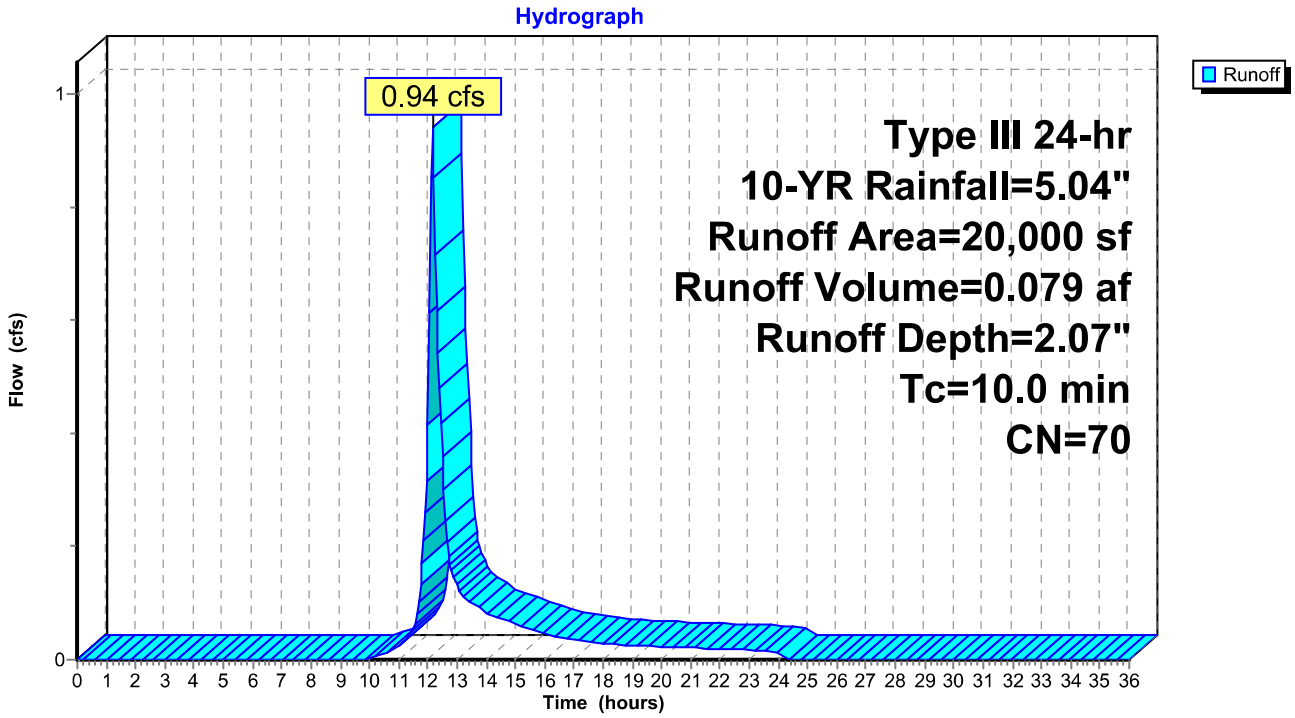
Runoff = 0.94 cfs @ 12.15 hrs, Volume= 0.079 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.04"

Area (sf)	CN	Description
5,000	98	Paved parking, HSG B
15,000	61	>75% Grass cover, Good, HSG B
20,000	70	Weighted Average
15,000		75.00% Pervious Area
5,000		25.00% Impervious Area

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

Subcatchment BP-1: Bike Path STA 223+50-228+50+/-



Summary for Pond 2P: Proposed Grassed Depression

Inflow Area = 0.459 ac, 25.00% Impervious, Inflow Depth = 2.07" for 10-YR event
Inflow = 0.94 cfs @ 12.15 hrs, Volume= 0.079 af
Outflow = 0.05 cfs @ 15.69 hrs, Volume= 0.079 af, Atten= 95%, Lag= 212.6 min
Discarded = 0.05 cfs @ 15.69 hrs, Volume= 0.079 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 24.14' @ 15.69 hrs Surf.Area= 2,166 sf Storage= 1,923 cf

Plug-Flow detention time= 459.0 min calculated for 0.079 af (100% of inflow)
Center-of-Mass det. time= 459.0 min (1,309.9 - 850.9)

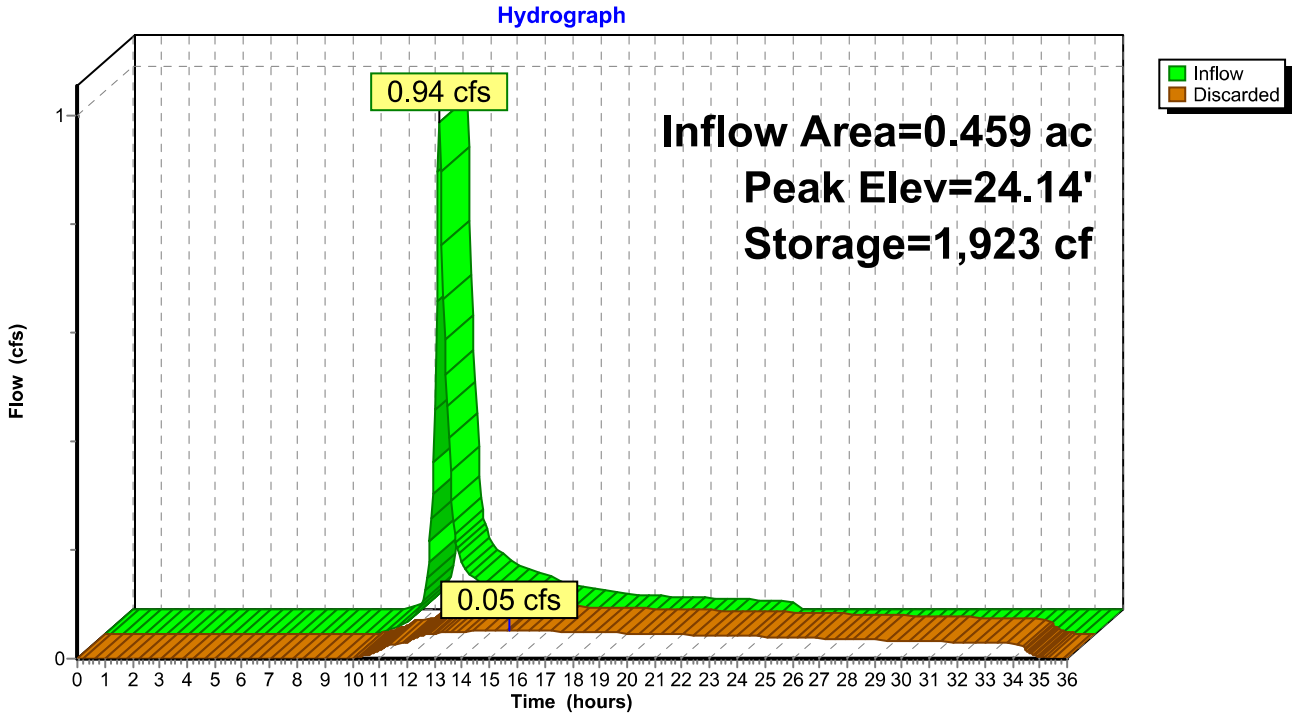
Volume	Invert	Avail.Storage	Storage Description
#1	23.00'	4,384 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	1,136	0	0
24.00	1,876	1,506	1,506
25.00	3,880	2,878	4,384

Device	Routing	Invert	Outlet Devices
#1	Discarded	23.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.05 cfs @ 15.69 hrs HW=24.14' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Pond 2P: Proposed Grassed Depression



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment BP-1: Bike Path STA Runoff Area=20,000 sf 25.00% Impervious Runoff Depth=2.84"
Tc=10.0 min CN=70 Runoff=1.31 cfs 0.109 af

Pond 2P: Proposed Grassed Depression Peak Elev=24.44' Storage=2,770 cf Inflow=1.31 cfs 0.109 af
Outflow=0.07 cfs 0.102 af

Total Runoff Area = 0.459 ac Runoff Volume = 0.109 af Average Runoff Depth = 2.84"
75.00% Pervious = 0.344 ac 25.00% Impervious = 0.115 ac

Summary for Subcatchment BP-1: Bike Path STA 223+50-228+50+/-

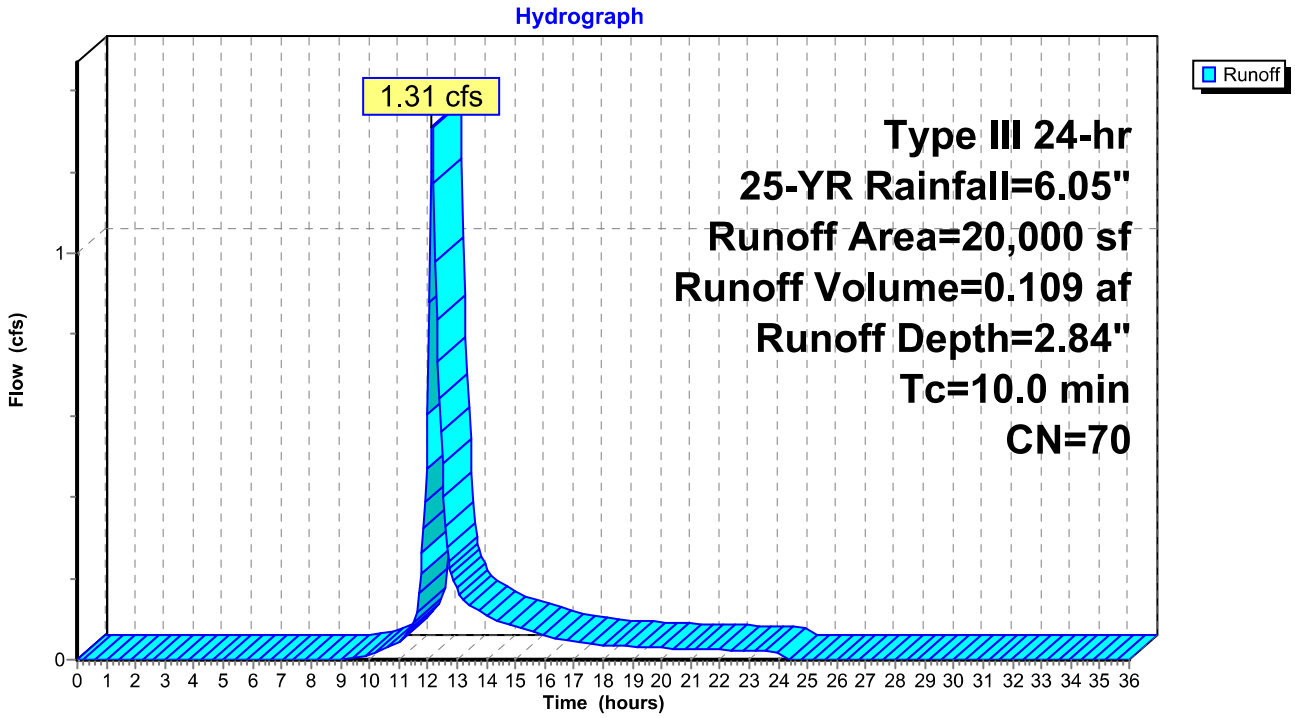
Runoff = 1.31 cfs @ 12.15 hrs, Volume= 0.109 af, Depth= 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.05"

Area (sf)	CN	Description
5,000	98	Paved parking, HSG B
15,000	61	>75% Grass cover, Good, HSG B
20,000	70	Weighted Average
15,000		75.00% Pervious Area
5,000		25.00% Impervious Area

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

Subcatchment BP-1: Bike Path STA 223+50-228+50+/-



Summary for Pond 2P: Proposed Grassed Depression

Inflow Area = 0.459 ac, 25.00% Impervious, Inflow Depth = 2.84" for 25-YR event
Inflow = 1.31 cfs @ 12.15 hrs, Volume= 0.109 af
Outflow = 0.07 cfs @ 15.75 hrs, Volume= 0.102 af, Atten= 95%, Lag= 216.2 min
Discarded = 0.07 cfs @ 15.75 hrs, Volume= 0.102 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 24.44' @ 15.75 hrs Surf.Area= 2,756 sf Storage= 2,770 cf

Plug-Flow detention time= 513.3 min calculated for 0.102 af (94% of inflow)
Center-of-Mass det. time= 482.1 min (1,323.6 - 841.5)

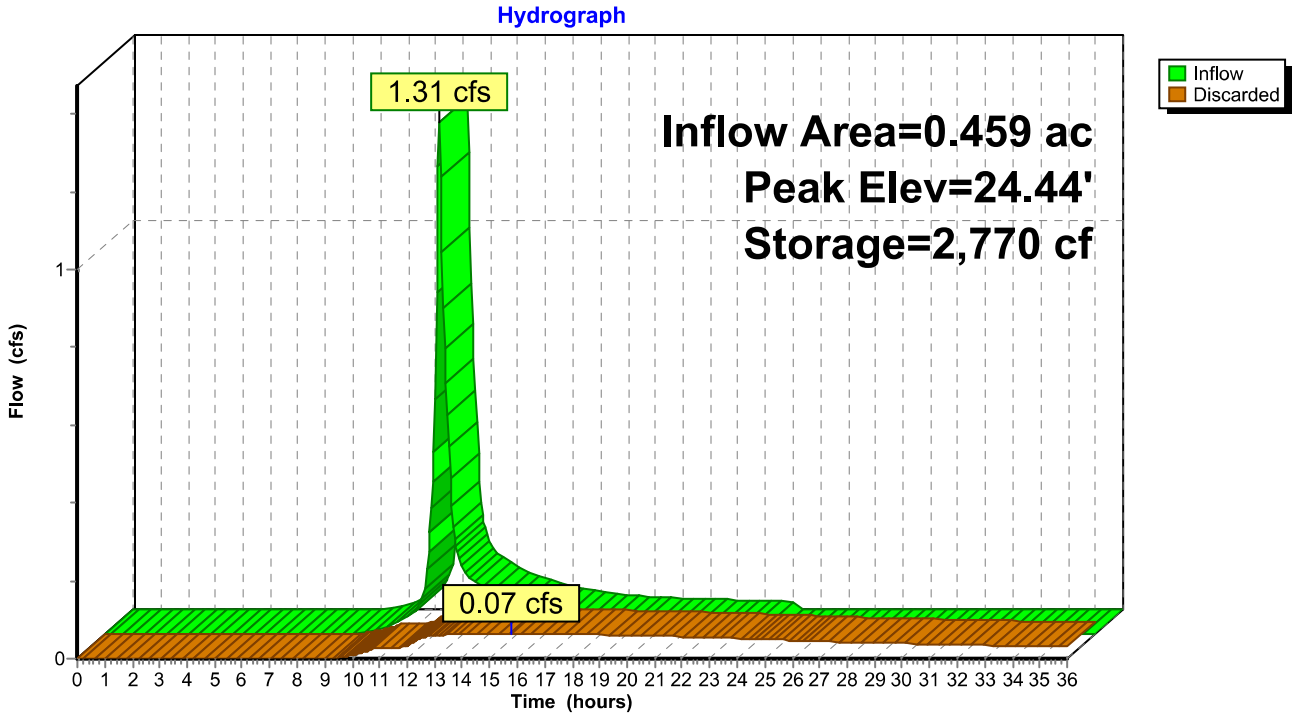
Volume	Invert	Avail.Storage	Storage Description
#1	23.00'	4,384 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	1,136	0	0
24.00	1,876	1,506	1,506
25.00	3,880	2,878	4,384

Device	Routing	Invert	Outlet Devices
#1	Discarded	23.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 15.75 hrs HW=24.44' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Pond 2P: Proposed Grassed Depression



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment BP-1: Bike Path STA Runoff Area=20,000 sf 25.00% Impervious Runoff Depth=4.12"
Tc=10.0 min CN=70 Runoff=1.92 cfs 0.158 af

Pond 2P: Proposed Grassed Depression Peak Elev=24.93' Storage=4,183 cf Inflow=1.92 cfs 0.158 af
Outflow=0.09 cfs 0.137 af

Total Runoff Area = 0.459 ac Runoff Volume = 0.158 af Average Runoff Depth = 4.12"
75.00% Pervious = 0.344 ac 25.00% Impervious = 0.115 ac

Summary for Subcatchment BP-1: Bike Path STA 223+50-228+50+/-

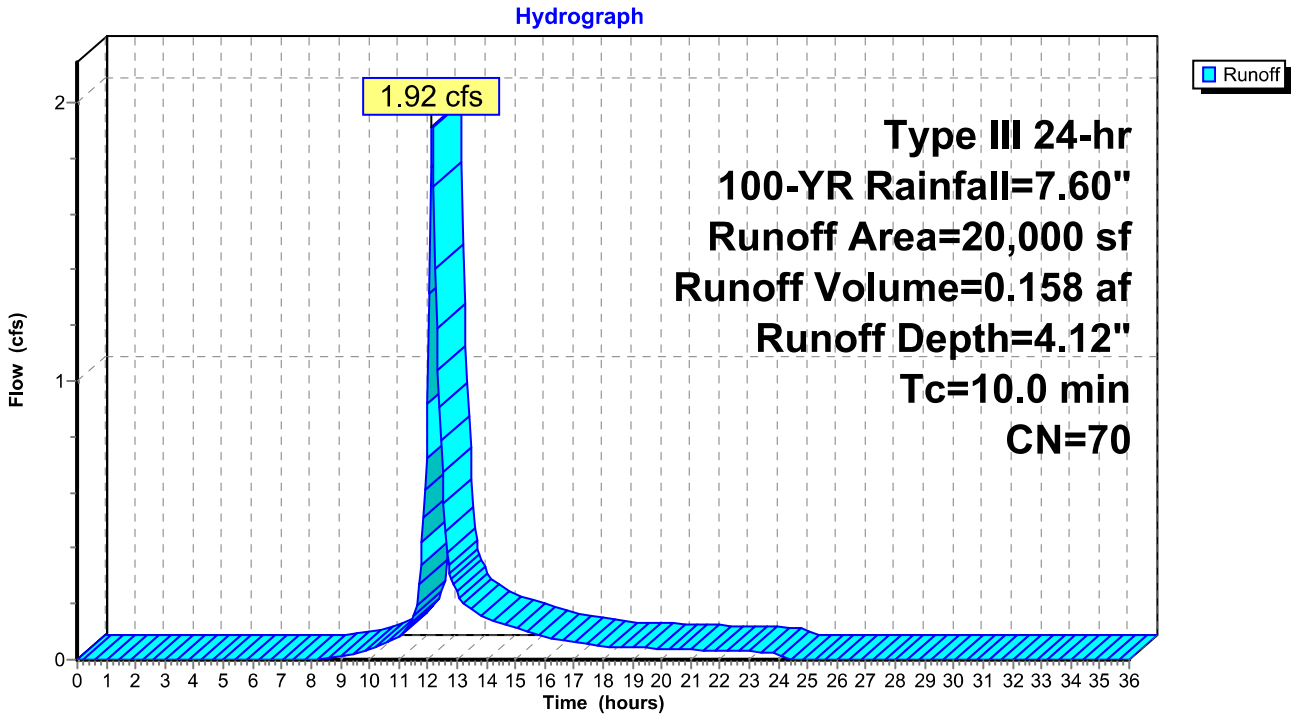
Runoff = 1.92 cfs @ 12.14 hrs, Volume= 0.158 af, Depth= 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
5,000	98	Paved parking, HSG B
15,000	61	>75% Grass cover, Good, HSG B
20,000	70	Weighted Average
15,000		75.00% Pervious Area
5,000		25.00% Impervious Area

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

Subcatchment BP-1: Bike Path STA 223+50-228+50+/-



Summary for Pond 2P: Proposed Grassed Depression

Inflow Area = 0.459 ac, 25.00% Impervious, Inflow Depth = 4.12" for 100-YR event
Inflow = 1.92 cfs @ 12.14 hrs, Volume= 0.158 af
Outflow = 0.09 cfs @ 15.75 hrs, Volume= 0.137 af, Atten= 95%, Lag= 216.4 min
Discarded = 0.09 cfs @ 15.75 hrs, Volume= 0.137 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 24.93' @ 15.75 hrs Surf.Area= 3,740 sf Storage= 4,183 cf

Plug-Flow detention time= 538.4 min calculated for 0.137 af (87% of inflow)
Center-of-Mass det. time= 478.9 min (1,309.7 - 830.8)

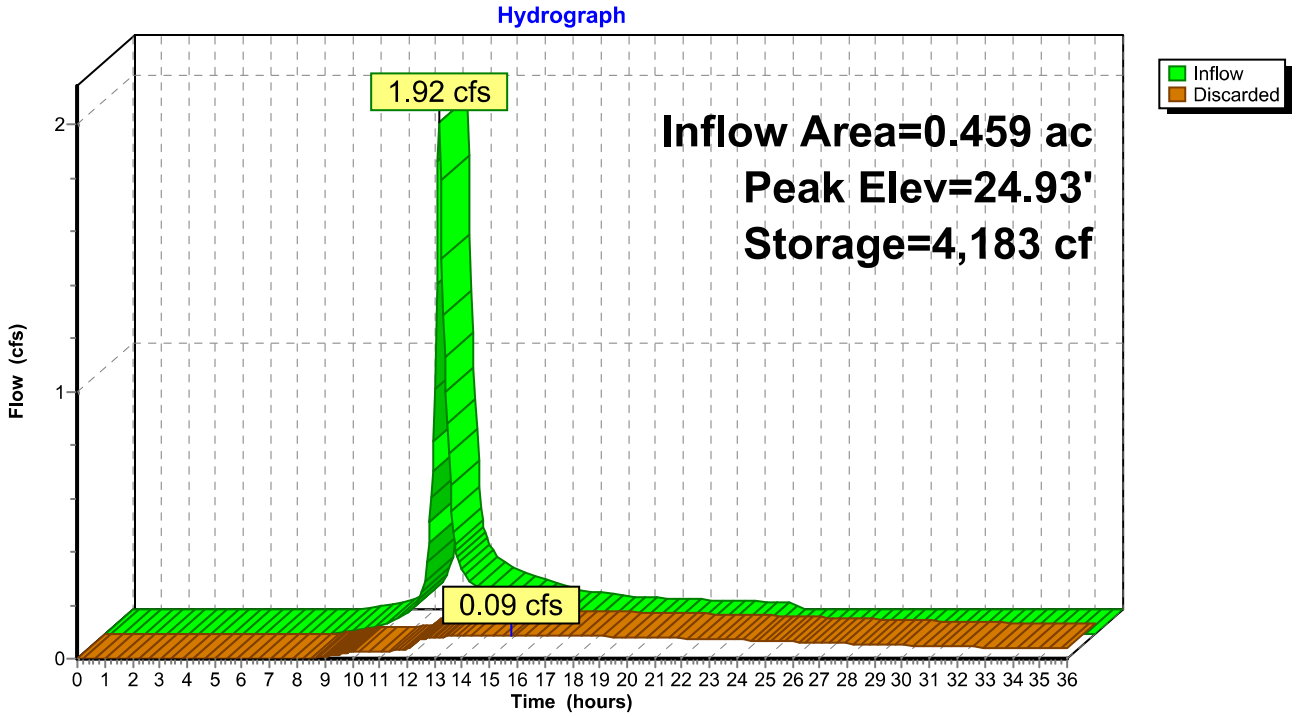
Volume	Invert	Avail.Storage	Storage Description
#1	23.00'	4,384 cf	**Custom Stage Data (Prismatic)**Listed below

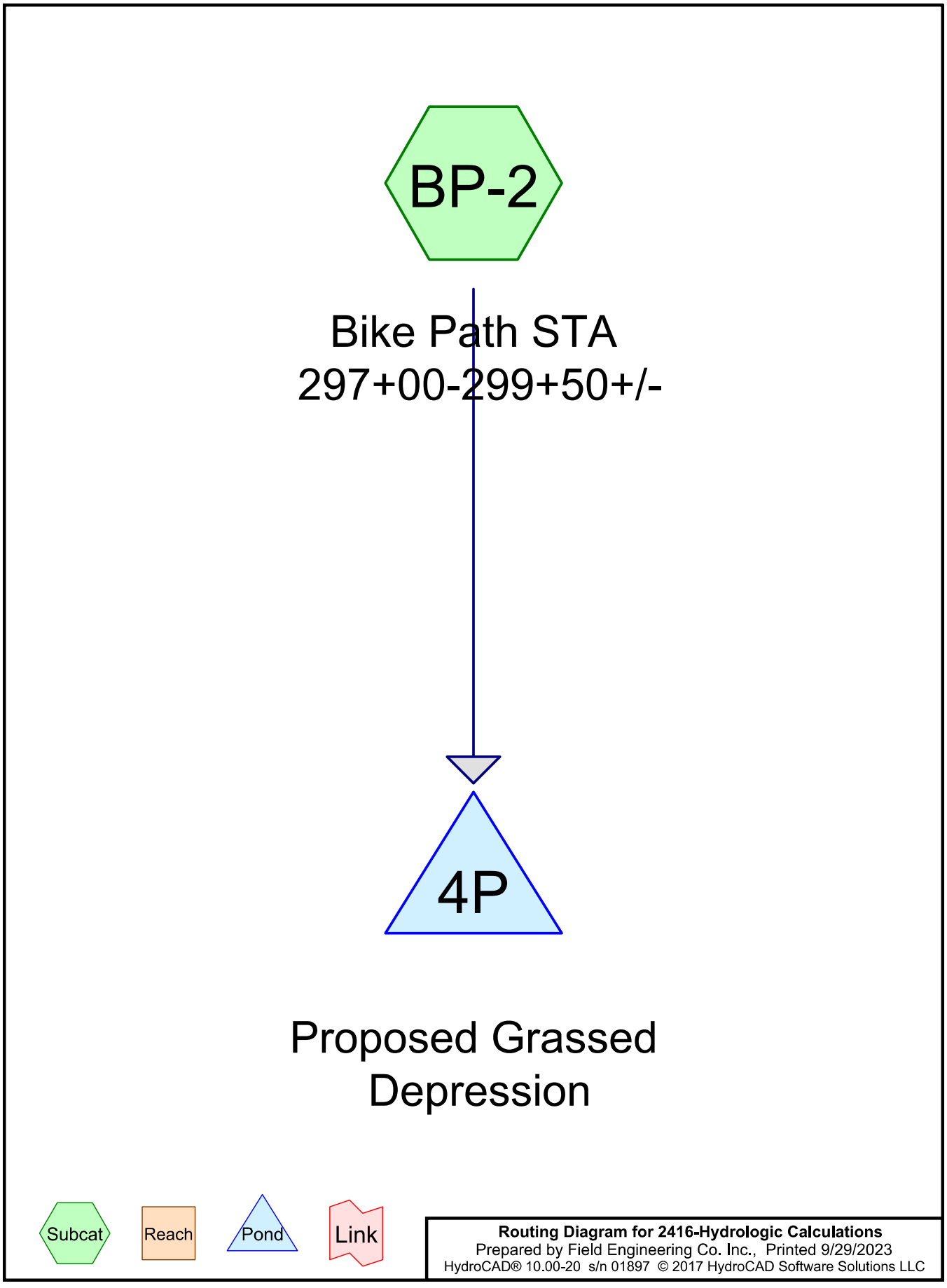
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
23.00	1,136	0	0
24.00	1,876	1,506	1,506
25.00	3,880	2,878	4,384

Device	Routing	Invert	Outlet Devices
#1	Discarded	23.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.09 cfs @ 15.75 hrs HW=24.93' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Pond 2P: Proposed Grassed Depression




BP-2
Bike Path STA
297+00-299+50+/-
4P
Proposed Grassed
Depression
Subcat
Reach
Pond
Link
Routing Diagram for 2416-Hydrologic Calculations
Prepared by Field Engineering Co. Inc., Printed 9/29/2023
HydroCAD® 10.00-20 s/n 01897 © 2017 HydroCAD Software Solutions LLC

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment BP-2: Bike Path STA Runoff Area=17,000 sf 20.59% Impervious Runoff Depth=0.91"
Tc=10.0 min CN=69 Runoff=0.32 cfs 0.030 af

Pond 4P: Proposed Grassed Depression Peak Elev=14.77' Storage=619 cf Inflow=0.32 cfs 0.030 af
Outflow=0.03 cfs 0.030 af

Total Runoff Area = 0.390 ac Runoff Volume = 0.030 af Average Runoff Depth = 0.91"
79.41% Pervious = 0.310 ac 20.59% Impervious = 0.080 ac

Summary for Subcatchment BP-2: Bike Path STA 297+00-299+50+/-

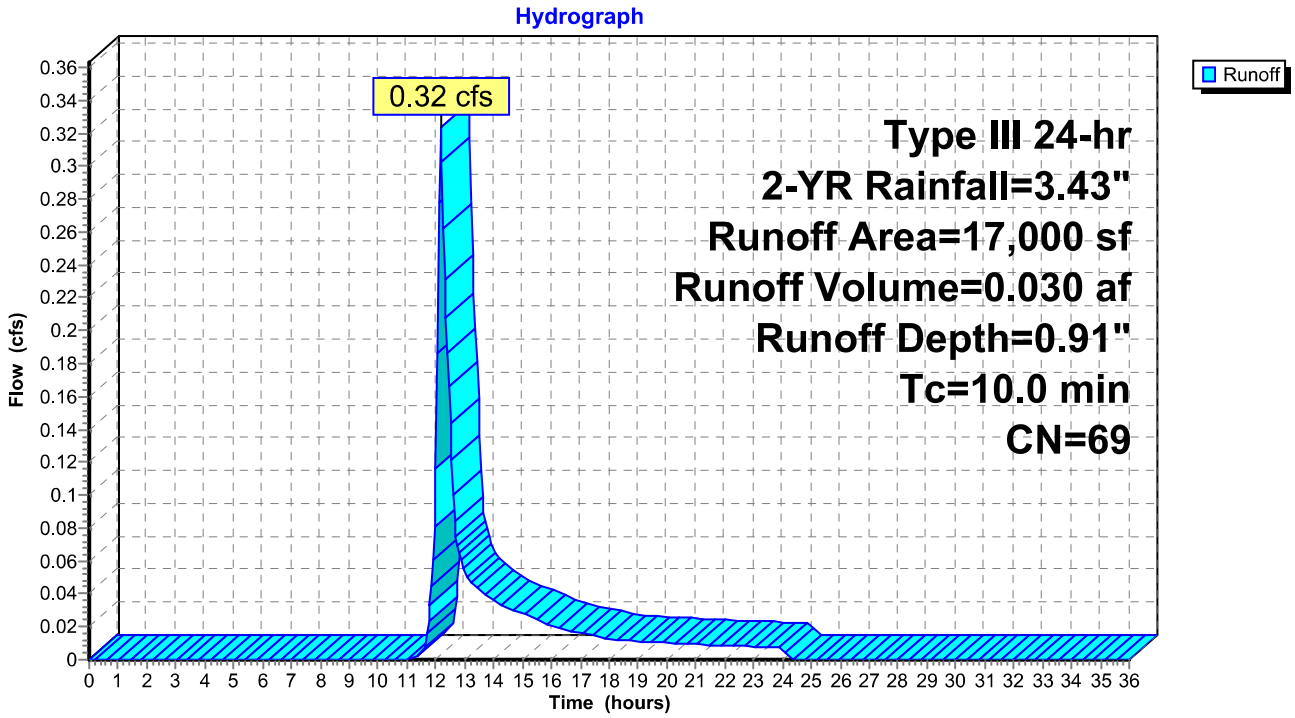
Runoff = 0.32 cfs @ 12.16 hrs, Volume= 0.030 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YR Rainfall=3.43"

Area (sf)	CN	Description
3,500	98	Paved parking, HSG B
13,500	61	>75% Grass cover, Good, HSG B
17,000	69	Weighted Average
13,500		79.41% Pervious Area
3,500		20.59% Impervious Area

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

Subcatchment BP-2: Bike Path STA 297+00-299+50+/-



Summary for Pond 4P: Proposed Grassed Depression

Inflow Area = 0.390 ac, 20.59% Impervious, Inflow Depth = 0.91" for 2-YR event
Inflow = 0.32 cfs @ 12.16 hrs, Volume= 0.030 af
Outflow = 0.03 cfs @ 15.04 hrs, Volume= 0.030 af, Atten= 92%, Lag= 172.7 min
Discarded = 0.03 cfs @ 15.04 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 14.77' @ 15.04 hrs Surf.Area= 1,163 sf Storage= 619 cf

Plug-Flow detention time= 334.4 min calculated for 0.030 af (100% of inflow)
Center-of-Mass det. time= 333.3 min (1,211.1 - 877.8)

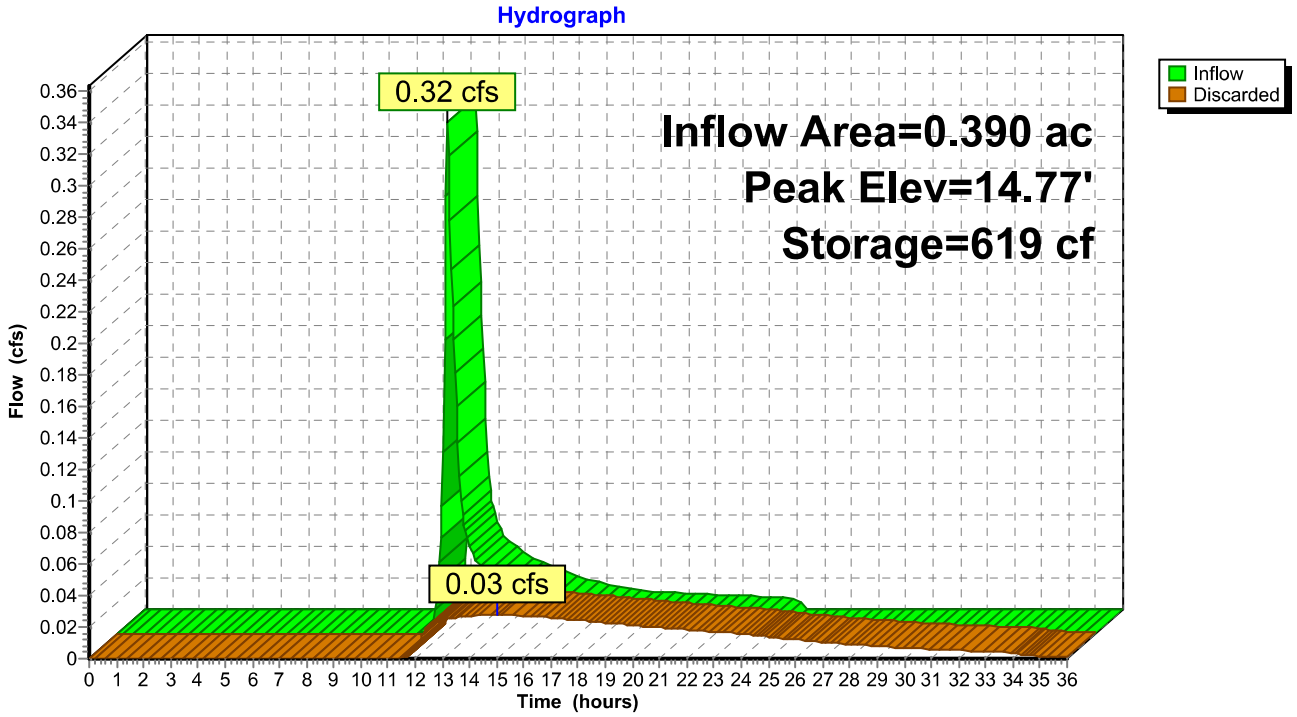
Volume	Invert	Avail.Storage	Storage Description
#1	14.00'	3,716 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.00	140	0	0
15.00	1,474	807	807
16.00	4,344	2,909	3,716

Device	Routing	Invert	Outlet Devices
#1	Discarded	14.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.03 cfs @ 15.04 hrs HW=14.77' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Pond 4P: Proposed Grassed Depression



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment BP-2: Bike Path STA Runoff Area=17,000 sf 20.59% Impervious Runoff Depth=1.99"
Tc=10.0 min CN=69 Runoff=0.77 cfs 0.065 af

Pond 4P: Proposed Grassed Depression Peak Elev=15.25' Storage=1,520 cf Inflow=0.77 cfs 0.065 af
Outflow=0.05 cfs 0.063 af

Total Runoff Area = 0.390 ac Runoff Volume = 0.065 af Average Runoff Depth = 1.99"
79.41% Pervious = 0.310 ac 20.59% Impervious = 0.080 ac

Summary for Subcatchment BP-2: Bike Path STA 297+00-299+50+/-

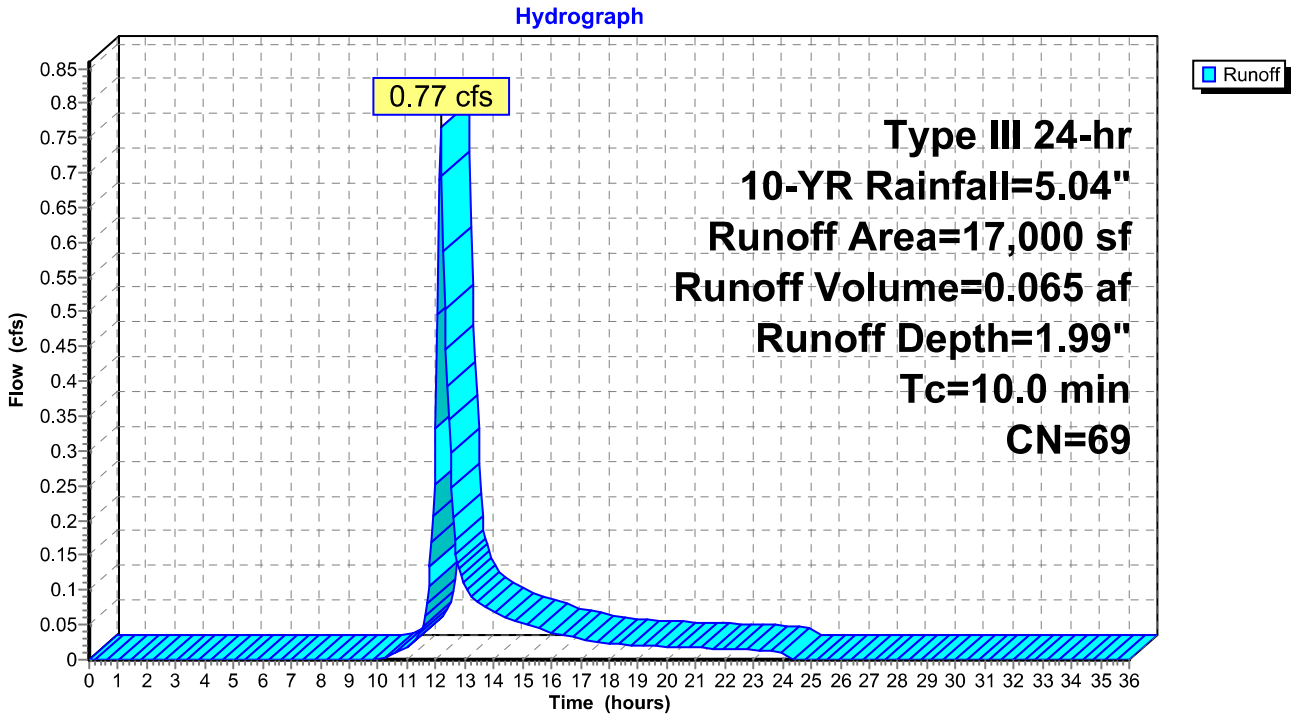
Runoff = 0.77 cfs @ 12.15 hrs, Volume= 0.065 af, Depth= 1.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=5.04"

Area (sf)	CN	Description
3,500	98	Paved parking, HSG B
13,500	61	>75% Grass cover, Good, HSG B
17,000	69	Weighted Average
13,500		79.41% Pervious Area
3,500		20.59% Impervious Area

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

Subcatchment BP-2: Bike Path STA 297+00-299+50+/-



Summary for Pond 4P: Proposed Grassed Depression

Inflow Area = 0.390 ac, 20.59% Impervious, Inflow Depth = 1.99" for 10-YR event
Inflow = 0.77 cfs @ 12.15 hrs, Volume= 0.065 af
Outflow = 0.05 cfs @ 15.08 hrs, Volume= 0.063 af, Atten= 93%, Lag= 175.6 min
Discarded = 0.05 cfs @ 15.08 hrs, Volume= 0.063 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 15.25' @ 15.08 hrs Surf.Area= 2,178 sf Storage= 1,520 cf

Plug-Flow detention time= 401.8 min calculated for 0.063 af (97% of inflow)
Center-of-Mass det. time= 385.1 min (1,238.6 - 853.5)

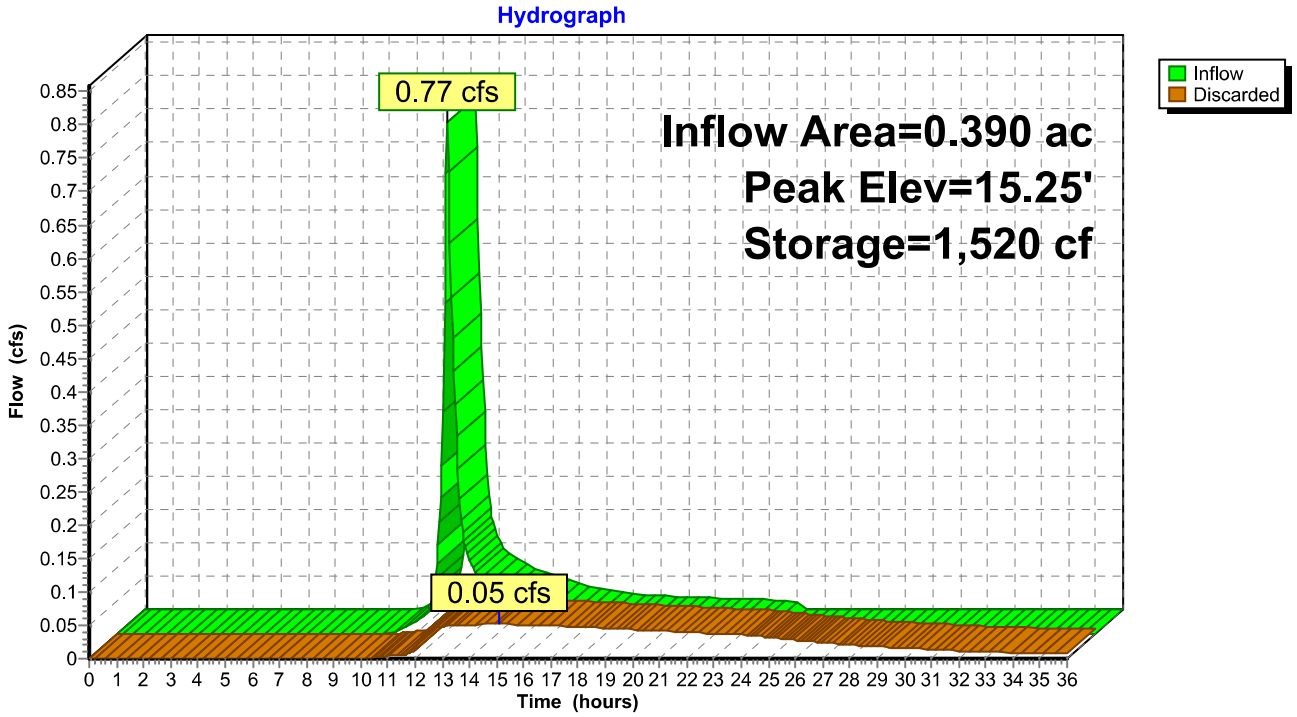
Volume	Invert	Avail.Storage	Storage Description
#1	14.00'	3,716 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.00	140	0	0
15.00	1,474	807	807
16.00	4,344	2,909	3,716

Device	Routing	Invert	Outlet Devices
#1	Discarded	14.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.05 cfs @ 15.08 hrs HW=15.25' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Pond 4P: Proposed Grassed Depression



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment BP-2: Bike Path STA Runoff Area=17,000 sf 20.59% Impervious Runoff Depth=2.75"
Tc=10.0 min CN=69 Runoff=1.08 cfs 0.089 af

Pond 4P: Proposed Grassed Depression Peak Elev=15.48' Storage=2,197 cf Inflow=1.08 cfs 0.089 af
Outflow=0.07 cfs 0.085 af

Total Runoff Area = 0.390 ac Runoff Volume = 0.089 af Average Runoff Depth = 2.75"
79.41% Pervious = 0.310 ac 20.59% Impervious = 0.080 ac

Summary for Subcatchment BP-2: Bike Path STA 297+00-299+50+/-

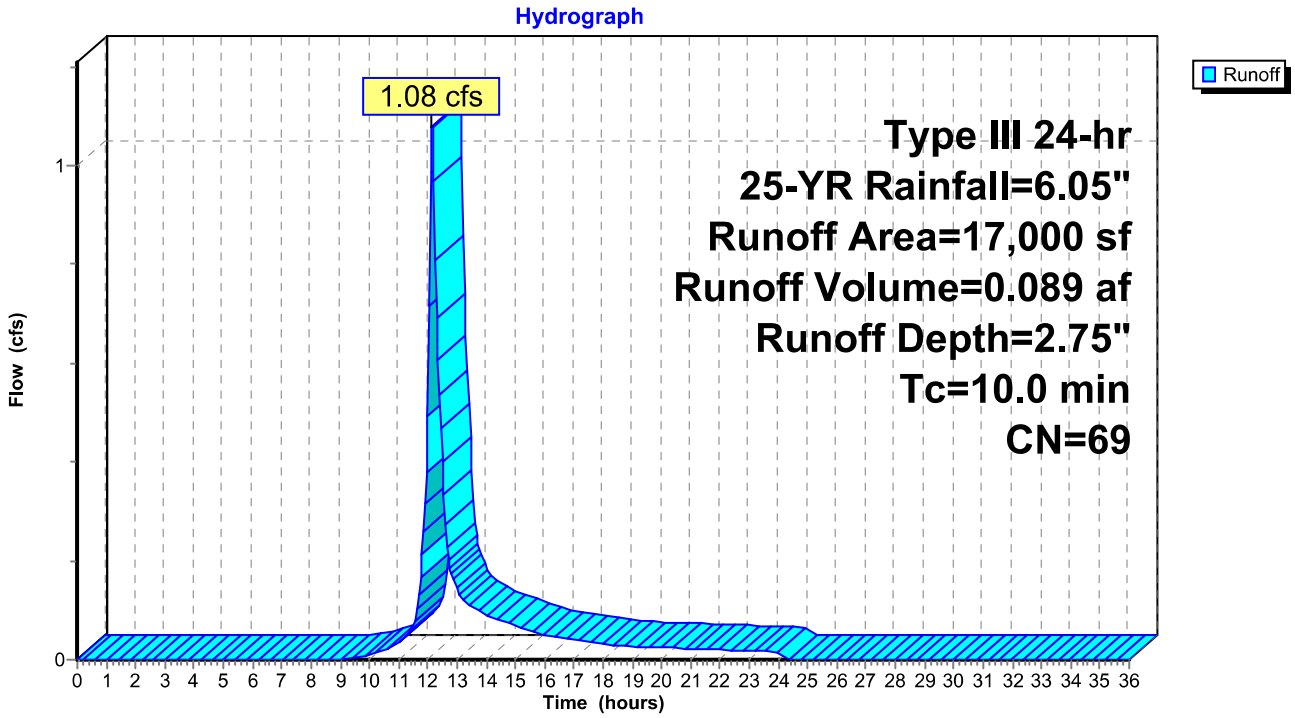
Runoff = 1.08 cfs @ 12.15 hrs, Volume= 0.089 af, Depth= 2.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=6.05"

Area (sf)	CN	Description
3,500	98	Paved parking, HSG B
13,500	61	>75% Grass cover, Good, HSG B
17,000	69	Weighted Average
13,500		79.41% Pervious Area
3,500		20.59% Impervious Area

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

Subcatchment BP-2: Bike Path STA 297+00-299+50+/-



Summary for Pond 4P: Proposed Grassed Depression

Inflow Area = 0.390 ac, 20.59% Impervious, Inflow Depth = 2.75" for 25-YR event
Inflow = 1.08 cfs @ 12.15 hrs, Volume= 0.089 af
Outflow = 0.07 cfs @ 15.08 hrs, Volume= 0.085 af, Atten= 94%, Lag= 176.0 min
Discarded = 0.07 cfs @ 15.08 hrs, Volume= 0.085 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 15.48' @ 15.08 hrs Surf.Area= 2,846 sf Storage= 2,197 cf

Plug-Flow detention time= 437.0 min calculated for 0.085 af (95% of inflow)
Center-of-Mass det. time= 412.0 min (1,255.9 - 843.9)

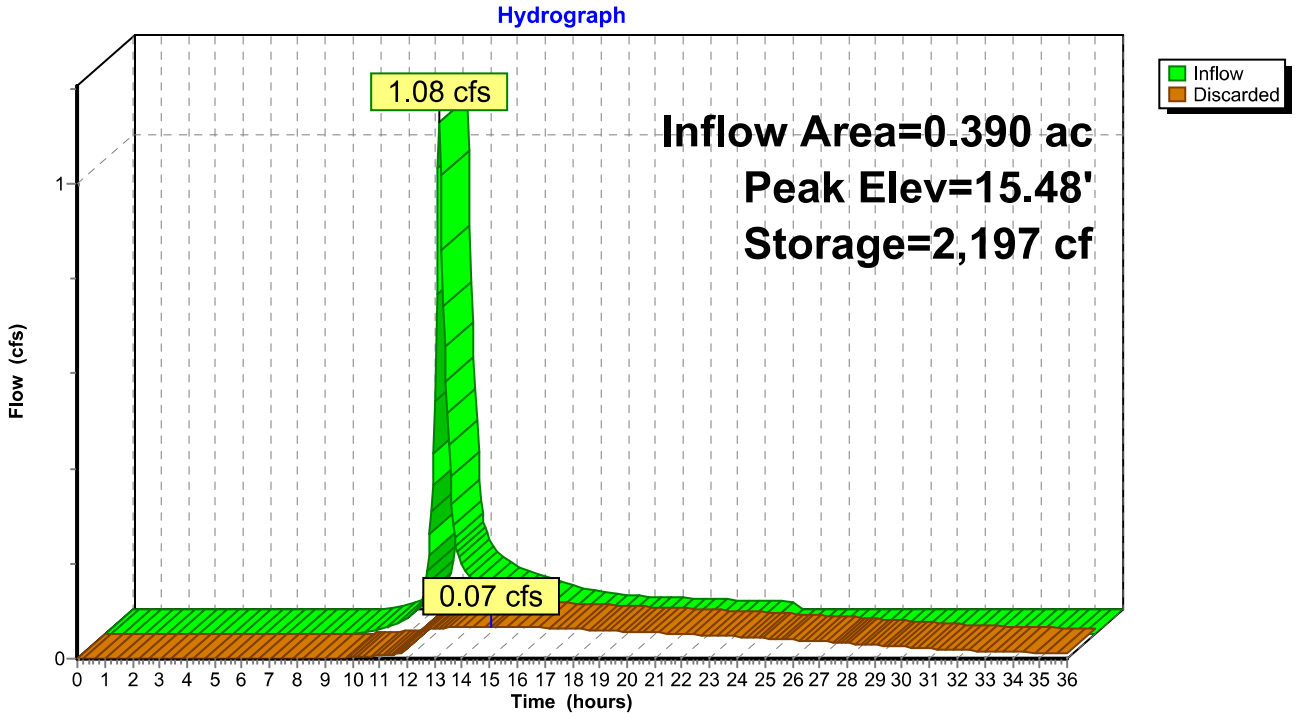
Volume	Invert	Avail.Storage	Storage Description
#1	14.00'	3,716 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.00	140	0	0
15.00	1,474	807	807
16.00	4,344	2,909	3,716

Device	Routing	Invert	Outlet Devices
#1	Discarded	14.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.07 cfs @ 15.08 hrs HW=15.48' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Pond 4P: Proposed Grassed Depression



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment BP-2: Bike Path STA Runoff Area=17,000 sf 20.59% Impervious Runoff Depth=4.01"
Tc=10.0 min CN=69 Runoff=1.58 cfs 0.130 af

Pond 4P: Proposed Grassed Depression Peak Elev=15.86' Storage=3,321 cf Inflow=1.58 cfs 0.130 af
Outflow=0.09 cfs 0.122 af

Total Runoff Area = 0.390 ac Runoff Volume = 0.130 af Average Runoff Depth = 4.01"
79.41% Pervious = 0.310 ac 20.59% Impervious = 0.080 ac

Summary for Subcatchment BP-2: Bike Path STA 297+00-299+50+/-

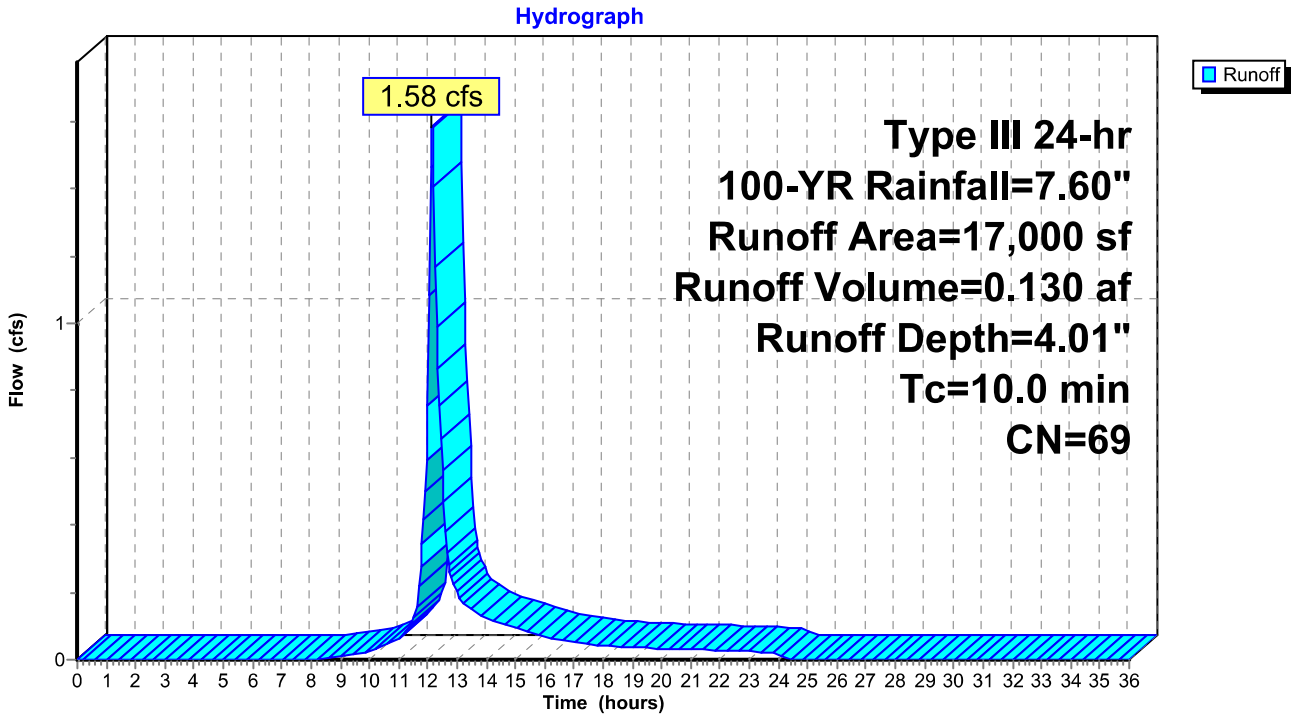
Runoff = 1.58 cfs @ 12.15 hrs, Volume= 0.130 af, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YR Rainfall=7.60"

Area (sf)	CN	Description
3,500	98	Paved parking, HSG B
13,500	61	>75% Grass cover, Good, HSG B
17,000	69	Weighted Average
13,500		79.41% Pervious Area
3,500		20.59% Impervious Area

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

Subcatchment BP-2: Bike Path STA 297+00-299+50+/-



Summary for Pond 4P: Proposed Grassed Depression

Inflow Area = 0.390 ac, 20.59% Impervious, Inflow Depth = 4.01" for 100-YR event
Inflow = 1.58 cfs @ 12.15 hrs, Volume= 0.130 af
Outflow = 0.09 cfs @ 15.02 hrs, Volume= 0.122 af, Atten= 94%, Lag= 172.6 min
Discarded = 0.09 cfs @ 15.02 hrs, Volume= 0.122 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 15.86' @ 15.02 hrs Surf.Area= 3,954 sf Storage= 3,321 cf

Plug-Flow detention time= 470.2 min calculated for 0.122 af (93% of inflow)
Center-of-Mass det. time= 435.6 min (1,268.6 - 832.9)

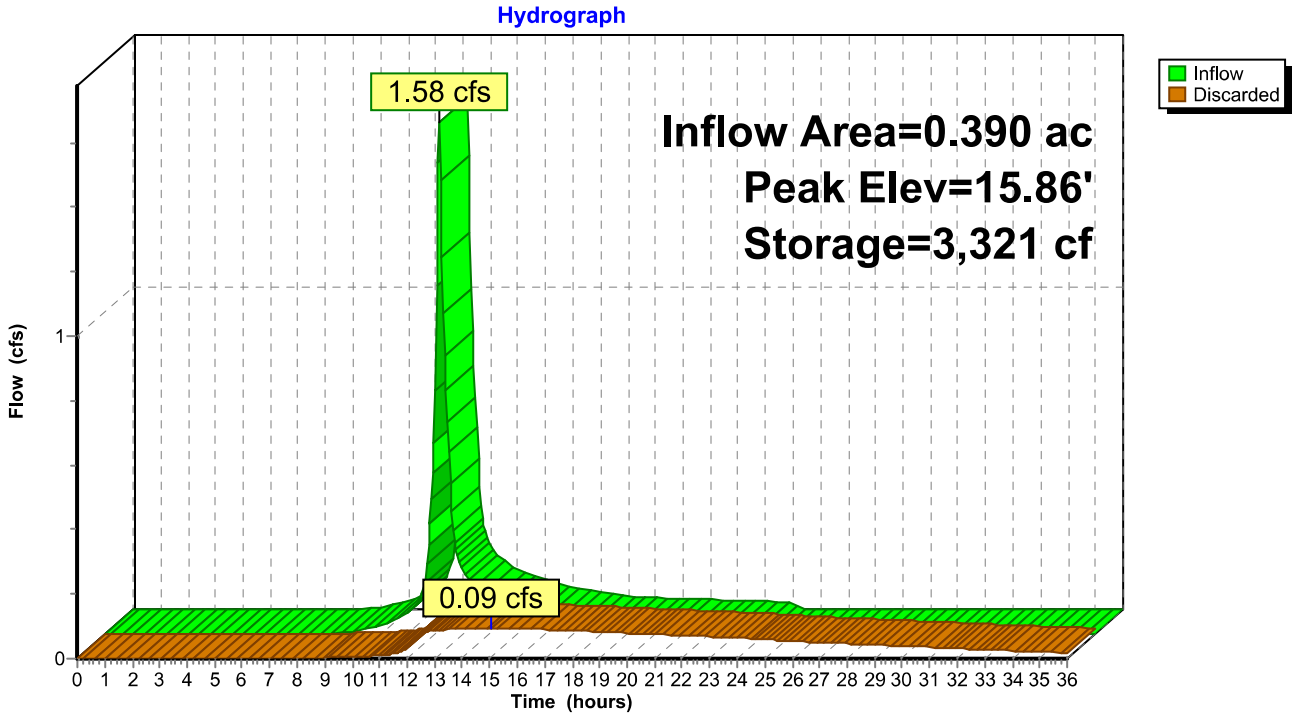
Volume	Invert	Avail.Storage	Storage Description
#1	14.00'	3,716 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
14.00	140	0	0
15.00	1,474	807	807
16.00	4,344	2,909	3,716

Device	Routing	Invert	Outlet Devices
#1	Discarded	14.00'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.09 cfs @ 15.02 hrs HW=15.86' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Pond 4P: Proposed Grassed Depression



FIELD ENGINEERING, INC. MATTAPOISETT, MA

WATER QUALITY VOLUME CALCULATIONS

Client:	TOWN OF MARION/MASSDOT	Job No.	2416
Project:	SHARED USE PATH	Date:	9/28/2023
Location:	BREWFISH/BALDWIN BROTHERS	Design by:	RRR

REQUIRED WATER QUALITY VOLUME-APPROX. STA 223+50-228+50

UNIT VOLUME (in.) =	0.50
IMPERVIOUS AREA (s.f.) =	5,000
WATER QUALITY VOLUME (cu.ft.) =	208

AVAILABLE VOLUME CALCULATION (DEPRESSION)

ELEV (ft.)	AREA (s.f.)	VOL (cu.ft.)	CUM. VOL (cu.ft.)	CUM. VOL (ac.ft.)	
**	**				
23.0	1,136.0	0.0	0.0	0.000	
24.00	1,876.0	1,506.0	1,506.0	0.035	
25.00	3,880.0	2,878.0	4,384.0	0.101	
WATER QUALITY VOLUME PROVIDED =			4,384.0	0.101	
WATER QUALITY VOLUME REQUIRED =			208.3	0.005	OK

FIELD ENGINEERING, INC. MATTAPOISETT, MA

WATER QUALITY VOLUME CALCULATIONS

Client:	TOWN OF MARION/MASSDOT	Job No.	2416
Project:	SHARED USE PATH	Date:	9/28/2023
Location:	POINT ROAD PARKING	Design by:	RRR

REQUIRED WATER QUALITY VOLUME-APPROX. STA 297+00-299+50

UNIT VOLUME (in.) =	0.50
IMPERVIOUS AREA (s.f.) =	3,500
WATER QUALITY VOLUME (cu.ft.) =	146

AVAILABLE VOLUME CALCULATION (DEPRESSION)

ELEV (ft.)	AREA (s.f.)	VOL (cu.ft.)	CUM. VOL (cu.ft.)	CUM. VOL (ac.ft.)
**	**			
14.0	140.0	0.0	0.0	0.000
15.00	1,474.0	807.0	807.0	0.019
16.00	4,344.0	2,909.0	3,716.0	0.085

WATER QUALITY VOLUME PROVIDED =	3,716.0	0.085	
WATER QUALITY VOLUME REQUIRED =	145.8	0.003	OK

FIELD ENGINEERING, INC. MATTAPOISETT, MA

WATER QUALITY VOLUME CALCULATIONS

Client:	TOWN OF MARION/MASSDOT	Job No.	2416
Project:	SHARED USE PATH	Date:	9/28/2023
Location:	BREWFISH/BALDWIN BROTHERS	Design by:	RRR

REQUIRED WATER QUALITY VOLUME (100' LENGTH OF BIKE PATH)

UNIT VOLUME (in.) =	0.50
IMPERVIOUS AREA (s.f.) =	500
WATER QUALITY VOLUME (cu.ft.) =	21

AVAILABLE VOLUME CALCULATION (100' LENGTH OF TRENCH)

TYPICAL 100' LENGTH OF EDGE DRAIN TRENCH
VOLUME =1' W X 2' D X 100' L * 40% VOIDS 80 (cu. Ft.)

WATER QUALITY VOLUME PROVIDED =	80.0	0.002	
WATER QUALITY VOLUME REQUIRED =	20.8	0.000	OK

Appendix A

Construction Period Stormwater Pollution Prevention Plan

Construction Period Pollution Prevention and
Erosion and Sedimentation Control Plan
Shared Use Path
MassDOT/Town of Marion, Massachusetts
Marion, Massachusetts

1. Narrative

The Town of Marion, in conjunction with the Massachusetts Department of Transportation (MassDOT) is proposing to construct a Shared Use Path extending from the town line with the Town of Mattapoisett to Point Road. The proposed project consists of a varying width paved recreational pathway following an existing railroad bed which is currently used for passive recreation by the general public. The paved pathway will cross Route 105/Spring Street and traverse through Washburn Lane towards the end of the project at Point Road. The project will also include intersection improvements at the Route 105/Spring Street crossing to accommodate pedestrian, bicycle, and vehicular traffic. The total length of the project is approximately 3.8 miles.

The stormwater management system will be designed to accept and treat the projected stormwater flows from development in accordance with the current DEP Stormwater Management Standards. As part of the DEP Stormwater Management Standards and Regulations, the DEP is requiring Low Impact Development (LID) measures to be considered in the design of the project. The project will make use of various LID measures including but not limited to “country drainage” as opposed to closed conduit piping systems, grassed depression areas, and crushed stone edge drains to promote infiltration of runoff from the Shared Use Path into the underlying soils and slow down the runoffs coming from the Shared Use Path before it reaches any wetland resource areas or adjacent properties.

2. Construction Plan Pollution Prevention Measures and Operation and Maintenance Plan

It is anticipated that the site contractor will use appropriate erosion controls and best management practices during construction. Erosion controls consisting of compost filter tubes and silt fence along the limit of work for the project are shown on the Design Plans and will be utilized for the project. Additionally, the contractor may use erosion control blankets or mats or straw mulch on exposed slopes for stabilization. The use of designated construction entrances enhanced with crushed stone will be required to minimize off-site vehicle tracking of sediments and silt sacks will be placed in existing catch basins in close proximity to the construction site (with DPW approval) to minimize the potential for sediment to get into the closed conduit drainage systems.

The erosion controls will be inspected and maintained/repaired at the beginning of each work day until all work has been completed.

Upon completion of the work and stabilization of all disturbed surfaces, the erosion controls will be removed and properly disposed of by the contractor.

3. Person or Entity Responsible for Plan Compliance

Site Contractor to Be Determined

4. Construction Plan Pollution Prevention Measures

Prior to the performance of any earth disturbing activities, the contractors shall install erosion controls as shown around the perimeter of the work area as necessary to protect downgradient and off-site receptors. Additionally, the contractor shall install crushed stone or rip rap temporary construction pads at any construction entrances off of public roadways to minimize the potential for tracking of sediment by construction vehicles leaving the site.

5. Vegetation Planning

All disturbed surfaces beyond the pavement limits shall be loamed and seeded or otherwise restored to prevent the generation of any erosion and sedimentation.

6. Site Plan Erosion and Sedimentation Control Plan Drawings

The proposed site plans have been included with the Notice of Intent application. Erosion controls to be used shall be compost filter tubes and sedimentation fence at the discretion at the Conservation Agent.

7. Inspection and Maintenance Log Form

A sample inspection and maintenance log form is attached.

Appendix B

Post Construction (Long-Term) Operation and Maintenance Plan

Post Construction (Long Term) Operation and Maintenance Plan

Name and address of the Owner/Applicant of Record

Town of Marion
2 Spring Street
Marion, Massachusetts

Name and address of the Contractor of Record

The contractor as not yet been chosen for this project.

Plans of Record

Refer to the Shared Use Path plans prepared by Foth Infrastructure and Environment LLC for the Town of Marion. Refer to the Order of Conditions to be issued by the Marion Conservation Commission for additional information regarding the operation and maintenance of the stormwater management BMP's on site.

1. The contractor shall be responsible for the proper inspection and maintenance of all stormwater management facilities until such time as the Stormwater Management System is accepted by the Owner. Thereafter the Owner shall be responsible for the proper inspection and maintenance of the stormwater facilities in accordance with this Operation and Maintenance Plan as well as the continuing conditions of the Certificate of Compliance on the property.

2. All Structural Best Management Practices (BMP's) should be inspected after every major rainfall event exceeding 1.0-inch for the first 6 months after construction to ensure proper stabilization, construction, and function.

3. Thereafter, regular BMP inspections should be conducted according to the following schedule:

BMP Structure	Inspections per Year
Crushed Stone Edge Drain	2
Grassed Depression Areas	2

4. The contractor and the owner shall maintain and submit to the Conservation Commission a BMP Inspection Report following each site inspection as recommended above. The BMP Inspection report shall identify the Date of Inspection, the name and contact number of the

responsible party, specific structures inspected, specific maintenance required and observations at a minimum, inspection reports should address the following conditions:

1. Embankment Subsidence
2. Erosion
3. Condition of Stone Filter Berm
4. Inlet/Outlet Conditions
5. Sediment Accumulations
6. Slope Stability

5. All removed sediments are to be properly disposed of at a location to be approved by the Board of Health. Transportation and disposal of sediments shall comply with all applicable local, state, and federal regulations.

6. The crushed stone edge drain/infiltration trenches shall be inspected twice per year. If it is determined that the top stone above the filter fabric is silted or compromised, the top stone shall be removed, any damaged filter fabric shall be removed and replaced and clean stone shall be placed over the filter fabric.

7. The Shared Use Path shall be monitored to ensure proposed drainage patterns are maintained following construction. Should channel flow from runoff develop within the site that requires corrective measures, these measures shall be reviewed with the Conservation Commission prior to their implementation.

8. The Shared Use Path should be inspected for trash on a regular basis. Any accumulated trash, litter, and discarded materials should be removed.

9. No disposal of materials shall be permitted within the buffer zones or resource areas on the project site. This prohibition applies to trash, fill material, construction debris, grass clippings, collected leaves and cut branches.

10. Any deficiencies noted during an inspection shall be reported to and corrected to the satisfaction of the project engineer and/or Conservation Commission.

11. An Operation and Maintenance Inspection Form shall be developed and copies of the completed forms shall be submitted to the Conservation Commission in accordance with the determined schedule.

12. The Town shall either conduct the maintenance themselves or contract with a maintenance company to perform the operation and maintenance of the stormwater management system. The contact information for this company, if applicable, shall be provided to the Conservation Commission for their files.

Appendix C

Long Term Pollution Prevention Plan

Long Term Pollution Prevention Plan
Shared Use Path
Town of Marion/MassDOT
Town of Marion Massachusetts

1.0 Introduction

This Long-Term Pollution Prevention Plan has been prepared in accordance with the Massachusetts Stormwater Handbook for Compliance with Stormwater Standards 4-6.

2.0 Good Housekeeping Practices/Storage Provisions

Good housekeeping practices including periodic inspections of stormwater management system components will be performed in accordance with the Stormwater Management System Operation and Maintenance Plan. It is not anticipated that any high pollutant materials would be stored or used on the Shared Use Path that would discharge directly to the wetland systems or stormwater management systems.

3.0 Routine Maintenance of Stormwater BMP's

The Stormwater BMP's including the crushed stone edge drain/infiltration trench and grassed swales/depressions will be operated and maintained in accordance with the Stormwater Management System Operation and Maintenance Plan which is discussed in this Report.

4.0 Spill Prevention and Response Plans

It is anticipated that Town employees would be on site on a regular basis trained in spill prevention and response. MSDS sheets are kept at the Town's offices for any materials that may be associated with operating and maintaining the Shared Use Path.

5.0 Landscaping Provisions

The landscaping on site will be maintained with generally accepted industry practices. It would be anticipated that Town employees would maintain the vegetation along the Shared Use Path such that the path does not become overgrown and unusable. Disposal of lawn and garden waste will be prohibited from any areas being used for stormwater management as well as in the wetland resource areas.

6.0 Pet Waste Management Provisions

There may be users of the Shared Use Path that bring pets with them and they will be encouraged to pick up any pet waste and dispose of it properly.

7.0 Provisions for Solid Waste Management

Users of the Shared Use Path will be encouraged to "carry in/carry out" any trash that they may produce while on the Path.

8.0 Snow Disposal Guidelines

It is not anticipated that snow will be removed from the Shared Use Path during the winter. All snow will remain on-site and will melt and flow through the stormwater management system.

9.0 Winter Road Salt and Sand Use

It is not anticipated that road salt and/or sand will be used on the Shared Use Path.

10.0 Illicit Discharge Prevention

Illicit connections to the stormwater management system will be strictly prohibited. Any contractors performing work at the site will be notified of the prohibition of any illicit connections to the stormwater management system. All work done on site shall be per the approved design plans.

11.0 Training for Staff

It is expected that Town employees would be responsible to manage Shared Use Path as a whole. Included in this work would be the operation and maintenance of the Stormwater Management System. Any Site Management Staff would be properly trained in the operation and maintenance of the Stormwater Management System.

12.0 Emergency Contacts

The applicants of the project, the Town of Marion. would be the emergency contacts for any implementation measures that may be required on this Long-Term Pollution Prevention Plan.

Appendix D

Illicit Discharge Compliance Statement

Illicit Discharge Compliance Statement
Town of Marion/MassDOT
Proposed Shared Use Path
Marion, Massachusetts

1.0 Description of Illicit Discharges

Illicit discharges are discharges to the stormwater management system that are not entirely composed of stormwater. Illicit discharges include (but are not limited to) wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease.

2.0 Illicit Discharge Prevention

The project, as designed, does not provide for any illicit connections to the proposed stormwater management system. As part of the long-term pollution prevention plan that will be on file at the Town of Marion, illicit connections to the stormwater management system will be strictly prohibited. Any contractors performing work at the site will be notified of the prohibition of any illicit connections to the stormwater management system.

3.0 Training for Staff

All staff will be properly trained as required to detect any unauthorized illicit discharges to the stormwater management system and eliminate them as soon as possible. It is anticipated that the staff will be performing routine maintenance on the stormwater management system and at this time would be able to detect any unauthorized illicit discharges.

4.0 Site Map

Refer to Proposed Shared Use Path Plans prepared by Foth Environmental and Infrastructure attached to the Notice of Intent for locations and information on the proposed stormwater management system associated with this project.

5.0 Certification

As the design plan shows, there are no provisions for illicit discharges to the stormwater management system being proposed. Additionally, there are no proposed connections between any stormwater and wastewater management systems. Illicit discharges will be prohibited to the new stormwater management system associated with the Shared Use Path and Town staff will be trained to detect any unauthorized illicit discharges and to eliminate them as soon as possible.

Richard R. Riccio III, P.E.

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Attachment 19

January 31, 2024 Public Meeting Materials

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Sign-in Sheet

Date 01/31/24

Name	Telephone Number	Email Address
Margaret Mallett	508 748 3107	mmallett@verizon.net
Deirdre & Doug Katz	978 239-4144	dmkatz42@comcast.net
Jay Pasco-Anderson	617 733 9274	svheron@gmail
Meg + Barry Slenker	778-533-5734	bmgb@comcast.net
Evelyn Fischer	917 592 1381	HelloMrsFischer@gmail
Lorraine Heffernan	508-728-7297	lorraine934C hotmail.com
Doug Gurley-Lee	608-748-3513	dgurleylee@marianum.edu
Chrystal Walsh	510-334-5622	mscwalsh@yahoo.com
Bob Cattell	617 834-4743	bob.cattell@gmail.com
Diane Chimonides	770-313-5996	Dchimonides@aol.com
Terry Buckley	781-883-4066	Terrybade@mac.com
Gail Cullen	781-223-3948	gailbuckB@icloud.com
Jonathan Gray	508 823 1883	jgray@srpedd.org

Sign-in Sheet

Date 01/31/24

Name	Telephone Number	Email Address
NORMAN HILLS	508-748-3215	nhills@verizon.net
Jeremy Packard	508 486 0928	jeremy.packard@fatpipe.com
ED SEFN AWKA	508-280-8831	ej2346d.gmail.com
GEORGE TINKHAM	508 748 1055	georgetinkham9a gmail.com
Bonnie DeSousa	508 951 2406	bdesousa43@comcast.net
Gretchen Crowley	703-508-6380	crowleytd@att.net
MICK CORBETT		
Liz+Tim Russell	508.838.4121	liz.russell@gmail.com
Erez Ben-Akiva		Ebez@sippiquawk.com
Kevin Hart (Rep Straus)	617-722-2400	kevin.hart@mahouse.gov
WISNER	508-566-5666	Hotspurjf@yahoo.com
Bill+Tinker Saltonstall	508-353-2313	tinkersalty@gmail.com
SHAUN WALSH	857-205-7077	SPWALSHESQ@gmail
K&P. Sanborn	508-291-5115	
Elizabeth Roy	617-872-3660	EGROY1@gmail.com
Joe Zoo & Jon Stewart	781-223-3541	jmzstewart@icloud.com
Alan Harris	508 317 3601	alaharris@verizon.net
ROBERT PANTALONE	508 749-1538	PANTASSOC@comcast.net
Donald + Mary Marshall	508-259-8983	marshallmt80@gmail.com
Michael + Margie Baldwin	508 748-2080	
JOE FOR LONDON	5087614431	JOFOR@charter.net
Pam, Bruce Algeo	860-216-7422	pamalgeo@gmail.com
Randy L Kroll	508.317.0240	RLKroll@charter.net
Chuck Green	508.881.8778	CGREEN@4CC.com
DAN ELING	571 482 9431	DELING@GMAIL.COM

Name	Email	Phone
Andy Kendall	AKendall@Kendall.org	617-775-2049
Cathy Stone	Cakstone@comcast.net	508-748-1112
Ken Vasques	kennethvasques@gmail.com	5089650876
Jaune Hellsten	jackandjaune@gmail.com	~~774~~-553-501
J Meere	rujfm@yahoo.com	
P Meere	p.meere@comcast.net	
Dave Nichols & Jay Nichols	diannicholsre@gmail.com	

TOWN OF MARION SHARED USE PATH PROJECT DESCRIPTION

Overview

The Marion Shared Use Path (SUP) project consists of the construction of a path for non-motorized uses (bicycling, walking, jogging) in the Town of Marion from the Mattapoisett/ Marion Town line to Point Road. The Town of Marion and the Massachusetts Department of Transportation – Highway Division (MassDOT) are proposing the construction. The total length of the project is approximately 3.8 miles.

Project Highlights

- Majority of corridor sited on abandoned former transportation use railroad/trolley bed.
- Corridor passes through wooded settings and property that are near developed land uses in Marion:
    - Close to properties on Village Drive, Front Street, and Washburn Park.
    - Passes through Washburn Park and undeveloped land adjacent to roads and athletic fields, wetlands, wooded habitats, and segments on Washburn Lane and Washburn Park Road.
- Project includes intersection improvements at the Front Street (Route 105)/Spring Street crossing to accommodate pedestrian, bicycle, and vehicular traffic.

Project Benefits

- Improved transportation network within Town of Marion.
- Long-desired asset in Marion that offers residents a readily available resource for exercise and passive recreation.
- Increased connectedness to open space and recreational areas.
- Reduced need for use of motorized vehicles in the community.
- Improved stormwater management.
- Incorporated safety systems:
    - Upgraded signalized crossing at the Front Street (Route 105)/Spring Street intersection.
    - Improved ADA accessibility and handicap parking areas.
    - Development of rest bench areas that offer refuge from the main path.
- Connection point between existing Mattapoisett SUP and another proposed for development in Wareham as part of continued development of the 50-mile continuous system South Coast Bikeway that will connect Rhode Island to Cape Cod.

Environmental Justice (EJ) Impacts

- Overall benefit to EJ communities in Marion:
    - Including benefits to address a vulnerable health criterion identified within the project's designated geographic area.

Construction Impacts
The project's selected location of already disturbed, abandoned former trolley/railroad beds that pass through wooded settings and careful selection of design elements helps minimize impact to the surrounding environment. The project involves unavoidable impacts to wetland resource areas (43,560 square feet of riverfront area, 49,794 square feet of land subject to coastal storm flowage, and 4,949 square feet of bordering vegetated wetland.)

No Construction Impacts foreseen for the following:

- Rare species:
    - The project will not result in the take[1] of any rare species. In support of this, a special conservation plan will be implemented for one species, whose mapped habitat range exists in the footprint of this project.
- Air Quality.
- EJ populations.
- Historic or cultural properties.
- Public water or groundwater supplies.
- Wastewater.
- Storage, treatment, processing, or disposal of solid and hazardous waste.

Mitigation

- This project has presented multiple opportunities to implement mitigative measures, including the following:
    - Replication of the altered Bordering Vegetated Wetland (BVW) at a 1:1 ratio addresses unavoidable impacts to resource areas.
    - A Protection Plan that provides a long-term Net Benefit to the conservation of a State-listed Species.
    - Several safety amenities, including those to provide ADA compliance.

Stormwater management improvements:

- Appropriate erosion and sedimentation controls as well as pollution prevention controls to safeguard against any unintended impacts to adjacent wetland resource areas during construction:
- Path-side swales and crushed stone trenches to intercept the runoff prior to discharge to wetlands and other waters.
- Proposed grass depressions to collect runoff of sediment and minimize the potential for erosion and sedimentation towards adjacent wetland resource areas.

Project Status/Cost:
The project program cost is approximately $5.49M and will be funded with a combination of moneys from the Federal Highway Administration and the Commonwealth of Massachusetts.

[1] The term "Take" means to harass, harm, pursue, hunt, shoot, hound, kill, trap, capture, collect, process, disrupt the nesting, breeding, feeding or migratory activity or attempt to engage in any such conduct, or to assist such conduct.

Town of Marion Shared Use Path General Project Questions

Question

When will the project be built?

Answer

Construction is tentatively scheduled to begin in Fall of 2025. The final schedule will be based on the process of soliciting a contractor to construct the SUP. The project is expected to advertise a legal notice for bids by Spring 2025.

Question

How much will the project cost?

Answer

The project program cost is approximately $5.49M. It will be financed with a combination of funds from the Federal Highway Administration (FHWA) and the Commonwealth of Massachusetts.

Question

How many access points will be provided for path users?

Answer

In addition to the access points at the Mattapoisett/Marion town line and at the SUP's Point Road terminus, access points will be available at Washburn Park, at the intersection of Route 105/Spring St. and on Point Road.

Question

How much parking will be provided for trail users?

Answer

The project design includes the addition of 15 parking spaces for trail users. These will be located at Washburn Lane (12) and Point Road (3).

Question

Will there be any seating benches on the trail?

Answer

Yes. The project design includes the addition of 24 seating benches for trail users. These will be located throughout the Shared Use Path (SUP) corridor.

Question

Who will own the SUP?

Answer

The Town of Marion will own the SUP and maintain it after construction is completed.

Question

What additional permits and approvals are needed for the SUP?

Answer

In additional to review by the MEPA Office, the project requires the following approvals and permits:

- Order of Conditions from Marion Conservation Commission
- State Highway Access Permit from MassDOT
- Secretary's Certificate from MEPA Office
- NHESP approval of Species Protection Plan
- United States Army Corps of Engineers (USACE) Self-Verification Notification Form (SVNF)

Question

Will there be a formal Public Hearing for this project?

Answer

Yes. There will be a hearing for Notice of Intent held by the Marion Conservation Commission.

Environmental Impact Questions

Question

Why does the Shared Use Path require an Environmental Notification Form/Expanded Environmental Notification Form?

Answer

A project falls under jurisdiction of Massachusetts Environmental Protection Act (MEPA) if it is undertaken by a state agency, requires a permit from a State Agency, or it involves Financial Assistance or a Land Transfer by a State Agency. MEPA Regulations (301 CMR 11.03) establish review thresholds that determine whether or not a project is required to file an Environmental Notification Form with the MEPA Office and the Secretary of Energy and Environmental Affairs (EEA). The thresholds exceeded resulting in the need for an ENF/EENF for the SUP include:

a. Creation of five or more acres of impervious area. The SUP will have approximately 5.2 acres of new impervious surface.
b. Alteration of 1 half or more acres of any other wetlands (per 301 CMR 11.03 (3) Wetlands, Waterways and Tidelands, (b)1(f)). The SUP will have approximately 2.14 acres of other wetland impact (LSCSF and RFA).
c. Construction work on Land Subject to Coastal Storm Flowage (LSCSF) totaling over 1 acre, and Riverfront Area (RFA) totaling 1 acre. (per 310 CMR 10.02 (1)(b) and (1)(f). The proposed SUP is expected to involve work in both areas.)

Question

What is MEPA and how does this project get reviewed?

Answer

MEPA requires that state agencies study the environmental consequences of their actions with a mandate to take all feasible measures to avoid, minimize, and mitigate damage to the environment. This includes an obligation that state agencies use all practicable means and measures to minimize damage to the environment. This is achieved through studying alternatives to the proposed project and developing enforceable mitigation commitments. The latter become conditions for the project if and when they are permitted.

MEPA only applies to projects proposed by a state agency, municipality, nonprofit, or private parties that exceed specific review thresholds, require action by a state agency action, and need permits, financial assistance, or land transfer from state agencies.

MEPA review is not a permitting process. Requirements are focused on public study, disclosure, and development of feasible mitigation for proposed projects. Decisions on whether a project can or should receive a particular permit are left to specific permitting entities. MEPA review

takes place prior to the permitting process, which ensures that all interested parties are fully cognizant of environmental consequences of their actions.

The MEPA process is public and encourages comments from citizens and from state, regional and local agencies. It is led by the MEPA Office, which is part of the Massachusetts Executive Office of Energy and Environmental Affairs. The MEPA Office solicits comments from the general public and agencies and represents the EEA for public consultation sessions on projects. It also coordinates project review with the proponent, consultants, as well as interested agencies and citizens. It further makes recommendation to the Secretary of EEA regarding the adequacy of environmental documentation submitted for a project.

Question

Where can residents and interested parties obtain copies of the project's EENF?

Answer

Notice of Availability of the EENF will be published in the Environmental Monitor. https://eeaonline.eea.state.ma.us/EEA/MEPA-eMonitor/home

Question

How can I submit a comment about the project's EENF?

Answer

It is recommended that comments be provided through the Environmental Monitor link to the EENF at: https://eeaonline.eea.state.ma.us/EEA/MEPA-eMonitor/home

When published for availability, a public comments portal will be provided with the EENF. The Environmental Monitor is a bi-weekly publication that provides notice of new projects that have been submitted to the MEPA Office for review, other projects currently under review, certificates, and public notices. It is published two times a month. All members of the public can sign up for E-mail notifications if they would like to receive a notice when the newest edition is available (send a blank email to subscribe-mepa_environmentalmonitor@listserv.state.ma.us. Please ensure that both the subject line and the body of the email are blank and that the email does not contain an automatic signature.)

Question

When will the EENF be available to the public?

Answer

The EENF is expected to be published in the Environmental Monitor in March of 2024.

Question

How long is the comment period for the EENF?

Answer

An EENF Filing that request a Single EIR are typically subject to a 37-day review period, including a 30-day public comment period.

Question

Does the SUP project require a MEPA Environmental Impact Report?

Answer

Yes. Under the Act, any project that contains an Environmental Justice Population (in whole or in part) within the "Designated Geographic Area" (DGA) of the project site is required to submit an Environmental Impact Report (EIR) in accordance with 301 CMR 11.06(7)(b).

Speaker: **Comment:**

1. **Norm Hills, Selectman**: What additional access points to the SUP will be provided for construction? Concern about limited access points for the length of the SUP during construction between Marion/Mattapoisett Line and Front St.

Response: The access areas for construction include from Front Street, the existing SUP in Mattapoisett, from Washburn Lane, and from Point Road. The proposed SUP land is sufficiently large and wide enough to accommodate construction equipment and materials for building the SUP.

2. **Jen Stewart**: Resident on front street impacted by the project. Concerned about Front Street Intersection and safety – How will it impact traffic and safety for children crossing?

Response: The Front Street/Spring Street intersection is designed to current best practices for the setting and uses, (*Manual on Uniform Traffic Control Devices for Streets and Highways*, USDOT, Federal Highway Administration) which will provide improved safety options for the intersection and proposed SUP crossing.

3. **Name not provided:** Also a resident on the Northern part of Front St. There is limited ROW for the path and wanted to know if any land takings will be needed.

Response: There may be very minor easements or takings in the vicinity of the Front Street/Spring Street intersection. The project right-of-way is not finalized, and still being studied to minimize easements/taking and work with the affected property owners. The process also involves approval by the Marion elected officials before it can proceed.

4. **Jen Stewart:** There are many emergency vehicles using the busy Front Street/Spring Street intersection, and the reconfiguration of the intersection with a sharp turn needs to allow for the turning of fire trucks. Also concerned about children's safety on the SUP – particularly crossing the road – that needs to be a top priority.

Response: The intersection is designed to accommodate turning movements for emergency vehicles and trucks. Modifying the intersection from a "Y" configuration to a 90 degree turn will improve safety by reducing speed of roadway users and providing more opportunities to observe SUP occupants at the roadway. Proposed signage and safety markings are also included to clearly delineate the SUP crossing of the roadway, including rectangular rapid flashing beacons to alert motorists of users crossing the roadway.

5. **Chuck Green:** How secure is the federal funding for this project in the consideration that national leadership changes?

Response: Federal funding is not likely to be affected for this project should changes in federal leadership occur.

6. **Joe Zora**: The SUP passes through large expanses of woodland and remote areas with many types of wildlife. Concern raised about risks to users from animals such as coyotes, fisher cats, and bears. Concern raised about old roads/walkways that have history by the path. Also raised the concern about numerous stream crossings/culverts are not maintained and they need to be cleaned. Offered suggestion that project install signage warning SUP users of possible presence of wildlife.

Response: Comment noted about wildlife and the project setting. Currently there is no plan to clean culverts or dredge sediments at the existing culvert crossings. Maintenance of the SUP will be the responsibility of the Town of Marion, and as required to maintain safety and function of the system.

7. **Margie Baldwin**: In favor of the SUP and suggesting working with residents and business owners to address access points and alleviating navigation with cars and bicycles. Also asked about the SUP routing North of Spring Street.

Response: Comment noted. The route of the SUP north of Spring Street was explained as passing through Washburn Park and along Washburn Lane, then onto the former rail/trolley line and ending at Point Road.

8. **Name not provided:** Are the SUP maps available?

Response: Yes, project plans are posted on the Town's website.

9. **Bonne DeZousa**: Member of Friends of Mattapoisett Bike Path and Southeast Coastal Alliance – supports the project, this section of the overall South Coast Bikeway Trail. Thinks it would be great for kids and families to move in between towns, employment opportunities as well. Excited to connect towns.

Response: Comment noted.

10. **Norm Hills, Selectman:** Are there any regulations preventing connecting other trails to the SUP once constructed (as in federal limitations)?

Response: No limitations – interconnecting and providing alternative travel options is a goal of the federal funding.

11. **Name not provided**: Looking at a satellite image of the trail it appears much of the pathway route is currently wooded along the ROW.

Response: The trail follows existing abandoned rail beds and will involve clearing on the edges of the embankment to provide the safe width for the trail users.

12. **Andy Kendall:** Property owner in Marion. Avid cyclist and spends lots of time on the trail in Mattapoisett, supports the extension through Marion. It takes a big vision and perseverance.

Response: Comment noted.

13. **Donald Marshall**: There are many wild animals in the woods where the path is located, some of which can be threatening, please consider adding signage to advise users of the types of wildlife that could be encountered and how to avoid them.

Response: Comment noted.

14. **Terry Buckley**: There are horse stables near the trail in Washburn Park, will horses be allowed to use the trail? Is the trail paved and if so, can a portion of the trail be unpaved or widened for use by horses?

Response: The width of the trail accommodates the paved area, necessary grading, and treatment areas, while minimizing encroachment on wetland areas. The trail cannot be further widened to provide unpaved areas due to property and natural resource constraints.

15. **Joe Zora:** This path will be year-round and needs maintenance, where is the money coming from to pay for the maintenance, including the constraints on Marion public works, what effect on taxes will this lead to?

Response: The Town of Marion will be responsible for the maintenance of the SUP.

16. **Jen Stewart:** Will there be access roads for fire/emergency equipment to access the trail for emergencies? Is the path wide enough for emergency equipment?

Response: Access to the SUP for emergency equipment will be from existing roadways and from the Mattapoisett portion of the trail. The trail design is rated for rescue vehicles like an ambulance.

17. **Name not provided**: This SUP crosses watersheds and wetlands, is that addressed in the EENF?

Response: The EENF discusses natural resource setting and impacts, including mitigation.

18. **Joe Falconeiri**: The SUP crosses mapped priority and critical habitat, and extensive wetland areas. It's a big deal from an ecological standpoint.

Response: Massachusetts Wildlife Natural Heritage & Endangered Species program indicates that the species of concern will be protected by developing and implementing a Conservation Protection Plan and not expected to constitute a "take" of the protected species.

First Name	Last Name	Address	Phone Number	Email	Organization (If applicable)	Summary of Comments
Renee	Pothier	PO Box 1336, Mattapoisett, MA 02739	508-789-4410	president@mattapoisettrailtrail.org	Friends of Mattapoisett Bicycle and Recreational Path	The Friends of the Mattapoisett Bicycle and Recreational Path strongly support the Marion Pathway Project. It will greatly improve transportation and recreation options between Mattapoisett and Marion, improving upon current options including I-195, Route 6, Route 105 and the former railroad right of way. The pathway will also improve drainage issues and make walking and bicycling safer in Marion's business district.
Bonne	DeSousa	N/A	508-951-2406	bdesousa43@comcast.net	Passing along above^^	Passing along above^^
Sandra	Medeiros	SPREDD 88 Broadway, Taunton MA, 02780	508-264-4132	N/A, but jjones@spredd.org was mentioned also thesouthecoastbikeway@gmail.com	South Coast Bikeway Alliance	Looking forward to the day where crossings of Route 105 and Spring Street are a reality. Applauds the work already completed. Bike infrastructure impacts health, economy and quality of life of regions where they occur. Benefits of Marion SUP include: Bike and pedestrian access to Old Rochester Regional High School, Access to existing old trails and paths, benefits to EJ communities, completion of another portion of the Priority 100 Miles of the South Coast Bikeway, outdoor resource for cardiovacular exercise, reduction in traffic, improved crossings, safe connectivetiy to Mattapoisett and Wareham
Jennifer	Esposito	N/A	N/A	lndnursepbj22@yahoo.com	Marion Resident	Children attend Countryside Daycare, path goes alongside daycare, does not like the idea of people having access to view the daycare. Increase in traffic puts children at risk. Also location where path comes out near Brewfish is already hazardous and has frequent accidents. Asks to rethink the path.
Jennifer	Stewart	428 Front Street, Marion MA	781-223-3541	jmzstewart@icloud.com	Marion Resident	Property owner in the EJ zone. Asking for traffic flow study for cars on 105 south on Front St to the lights and those that split from 105 to Spring St., including count %'s to understand patterns and volume. Traffic backups will create air polution for those in EJ zone, will impact health in the neighborhood. How will school busses, fire trucks and large construction vehicles take a 90-degree turn from Spring Street? Will the bike path haev any bar that lifts and closes to prevent children from cutting out into 105 prior to the light stopping traffic?
Chrystal	Walsh	Mattapoisett, MA	510-334-5622	mscwalsh@yahoo.com	Mattapoisett Resident	Attended meeting in support of the SUP in Marion. Has two teenage sons who ride Route 6 to visit friends in Marion, path would be a much safer, beautiful alternative. Also will allow access to other recreational opportunities outside of front/spring street. Pathway could also allow kids to walk/bycicle home from school, as well as let track and cross country practices be held there.
Edwin	Tiffany	67 Holly Road, Marion MA	617-394-8612	edtiffany@gmail.com	Marion Resident	As a bicyclist, he appreciates the work and planning done to make bicycling more pleasant.

Mary	Marshall	424 Front Street, Marion MA	N/A	marshallmt80@gmail.com	Marion Resident	Pleased there are plans and a timetable for the SUP. She will use the path, already walks on Front St. and in Washburn Park, some tripping hazards so a paved path is much safer for elderly. Front St. and Spring St. intersections is dangerous for pedestrians, thinks that proposed crossing with pedestrian signals for the SUP will mitigate that. Also hops for a lower speed limit, hopes traffic actually may back up to be safer for the neighborhood. Will be happy to not have to drive to serene locations, has seen SUPs before (Florida) where traffic and paths are integrated.

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Attachment 20

100 % Design Plans

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MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

MARION SHARED-USE PATH

IN THE TOWN OF

MARION

PLYMOUTH COUNTY

100% HIGHWAY SUBMITTAL

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	274
PROJECT FILE NO.	607979		

TITLE SHEET & INDEX

THESE PLANS ARE SUPPLEMENTED BY THE THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2023, AS AMENDED, OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

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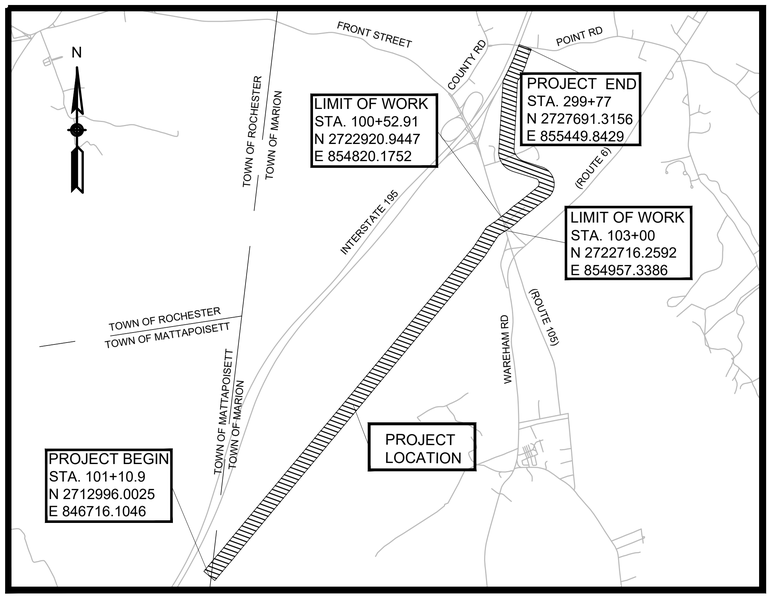
119-123	CONSTRUCTION DETAILS
124-274	CROSS SECTIONS



0 2000 4000 6000 8000
SCALE: 1" = 2000'

LENGTH OF PROJECT = 20,460 FEET = 3.88 MILES

DESIGN DESIGNATION

(PROPOSED SHARED-USE PATH)		(ROUTE 105)	
DESIGN SPEED	20 MPH	DESIGN SPEED	40 MPH
ADT (2016)	NA	ADT (2016)	14,400
FUNCTIONAL CLASS	SHARED USE PATH	ADT (2018)	14,800
		ADT (2025)	16,000
		K	8.8%
		D	49% NB, 51% SB
		T (PEAK HOUR)	4.3%
		T (AVERAGE DAY)	5.3%
		DHV	1410
		DDHV	720
		FUNCTIONAL CLASS	URBAN MINOR ARTERIAL

AUGUST 2018	25% SUBMITTAL	

massDOT Massachusetts Department of Transportation Highway Division

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER _____ DATE _____

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR _____ DATE _____

APPROVED

HIGHWAY ADMINISTRATOR _____ DATE _____

LEGEND

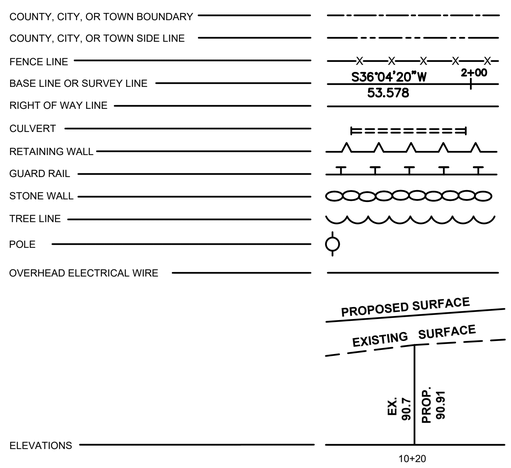
GENERAL SYMBOLS

EXISTING	PROPOSED	
JB OR BRJB	JB OR BRJB	JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
CB	CB	CATCH BASIN
CI	CI	CURB INLET
	BUOY	BUOY
	FPL	FLAG POLE
		GAS PUMP
DI	DI	DROP INLET
MB	MB	MAIL BOX
GR	GRAN POST	GRANITE POST
PLN	PLANTER	PLANTER
PST	POST	POST
TBH	TBH	TELEPHONE BOOTH
VLT	VLT	VAULT
VLV	VLV	VALVE
WELL	WELL	WELL
EHH	EHH	ELECTRIC MANHOLE (HANDHOLE)
FCGA		GATE POST
FL	FL	FLOW LINE
		GAS GATE
BH	BH	BORING HOLE
		MONITORING WELL
	TEP	TEST PIT
HC	CONC. HDWL	CONCRETE HEADWALL
HH		HANDHOLE
HS	STONE DHWL	STONE HEADWALL
HYD	HYD	HYDRANT
LPL	LPL	LIGHT POLE
CO. BD.	CO. BD.	COUNTY BOUND
GPS		GPS POINT
CMH		CABLE MANHOLE
D	D	DRAINAGE MANHOLE
EMH		ELECTRIC MANHOLE
GMH		GAS MANHOLE
MMH		MISC MANHOLE
OMH		OTHER MANHOLE
S	S	SEWER MANHOLE
TMH		TELEPHONE MANHOLE
WMH		WATER MANHOLE
MHB	MHB	MHD BOUND
MON	MON	MONUMENT
SB	SB	STONE BOUND
TOWN OR CITY BD.	TOWN OR CITY BD.	TOWN OR CITY BOUND
	TSN	TRAVERSE OR TRIANGULATION STATION
TPL OR GUY	TPL OR GUY	TROLLEY POLE OR GUY POLE
TRNP		TRANS. POLE
UFB	UFB	UP W ITH FIREBOX
LPDL	LPDL	POLE WITH DOUBLE LIGHT
ULT	ULT	UP W ITH 1 LIGHT
UPL	UPL	UTILITY POLE
	BUSH	BUSH
	TREE	TREE
STUMP		STUMP
WG		SWAMP / MARSH
	WG	WATER GATE
FA	FA	FIRE ALARM BOX
PM	PM	PARKING METER
		ELECTRICAL GROUND
	GV	GATE VALVE
		RIP RAP
		OVERHEAD CABLE
		DIRECT BURIAL CABLE
		CURBING
185	185	CONTOURS
D		DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
E		ELECTRIC DUCT " "
G		GAS MAIN " "
S		SEWER MAIN " "
T		TELEPHONE DUCT " "
W		WATER MAIN " "
		BALANCE STONE WALL
		CULVERT
		BICYCLE SAFETY FENCE / HIGHWAY GUARD
		GUTTER LINE AT DRIVEWAYS
X		CHAIN LINK FENCE
		STOCKADE FENCE

GENERAL SYMBOLS (CONT.)

EXISTING	PROPOSED	
		COMPOST FILTER TUBE / SEDIMENTATION FENCE
		RETAINING WALL
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE & OVERLAY
		BANK OF RIVER OR STREAM
WF-#		BORDER OF WETLAND
		100 FT WETLAND OR 200 FT RIVERFRONT BUFFER
SHLO		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
R.R S/L		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
℄ OR APPROX. ℄		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

CONVENTIONAL SIGNS



PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	
ONLY		PAVEMENT ARROW - WHITE
	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE - 12"
	CW	CROSSWALK
	SWL	SOLID WHITE LINE - 6"
	SYL	SOLID YELLOW LINE - 6"
	BWL	BROKEN WHITE LINE (10' LINE, 30' SPACE TYP.)
	BYL	BROKEN YELLOW LINE (10' LINE, 30' SPACE TYP.) - 6"
	DWL	DOTTED WHITE LINE - 6" (2' LINE, 4' SPACE)
	DYL	DOTTED YELLOW LINE - 6" (3' LINE, 9' SPACE)
	DBYL	DOUBLE YELLOW LINE - 6"
	SWCHL	SOLID WHITE CHANNELIZATION LINE - 8"
	WGL	WHITE GORE LINE - 12"
		DIRECTION OF TRAFFIC FLOW

TREE SYMBOLS & ABBREVIATION

	ASPEN	ASPEN
	ARBOR	ARBORVITAE
	BOAK	BLACK OAK
	CHERRY	CHERRY
	DOG	DOGWOOD
	INK	INKBERRY BUSH
	JMAPLE	JAPANESE MAPLE
	RBIRCH	RIVER BIRCH
	RM	RED MAPLE
	SHRUB	SHRUB
	SMAPLE	SILVER MAPLE
	TUPELO	TUPELO
	WOAK	WHITE OAK
	WP	WHITE PINE

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BB	BRIDGE BORING
BIT	BITUMINOUS
BC	BOTTOM OF CURB
BD	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCH MARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCB	CAPE COD BERM
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO	COUNTY
CONC	CONCRETE
CONT	CONTINUED
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
EB	EASTBOUND
ELEV (OR EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (OR EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
FDN	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
K	TRUCK PERCENTAGE
L&S	LOAM & SEED
L	LENGTH OF CURVE
LB	LEACHING BASIN
LP	LIGHT POLE
LT	LEFT
M.A.	MAST ARM
MAX	MAXIMUM
MB	MAIL BOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NB	NORTHBOUND
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PERM	PERMANENT
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PUE	PUBLIC UTILITY EASEMENT
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT

GENERAL (CONT.)

PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RB	ROAD BORING
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT-OF-WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	SOUTHBOUND
SGC	SLOPED GRANITE CURB
SHLD	SHOULDER
SHLO	STATE HIGHWAY LAYOUT LINE
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
STN	STONE
STNB	STONE BOUND
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
VGC	VERTICAL GRANITE CURB
WB	WALL BORING
WCR	WHEELCHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TOWN OF MARION
SHARED-USE PATH - PHASE 1

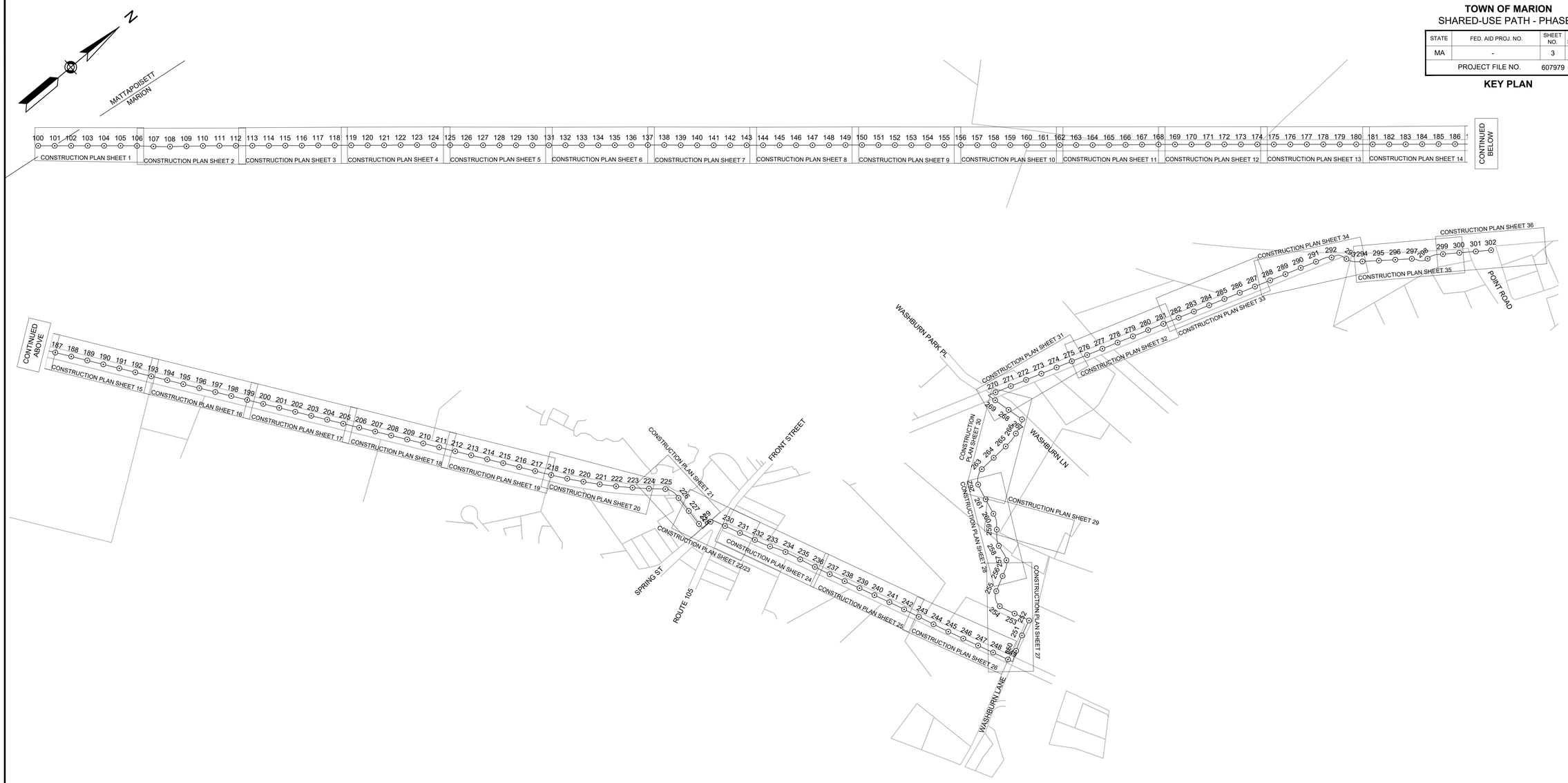
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	274
PROJECT FILE NO.	607979		

LEGEND & ABBREVIATIONS

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	274
PROJECT FILE NO.	607979		

KEY PLAN



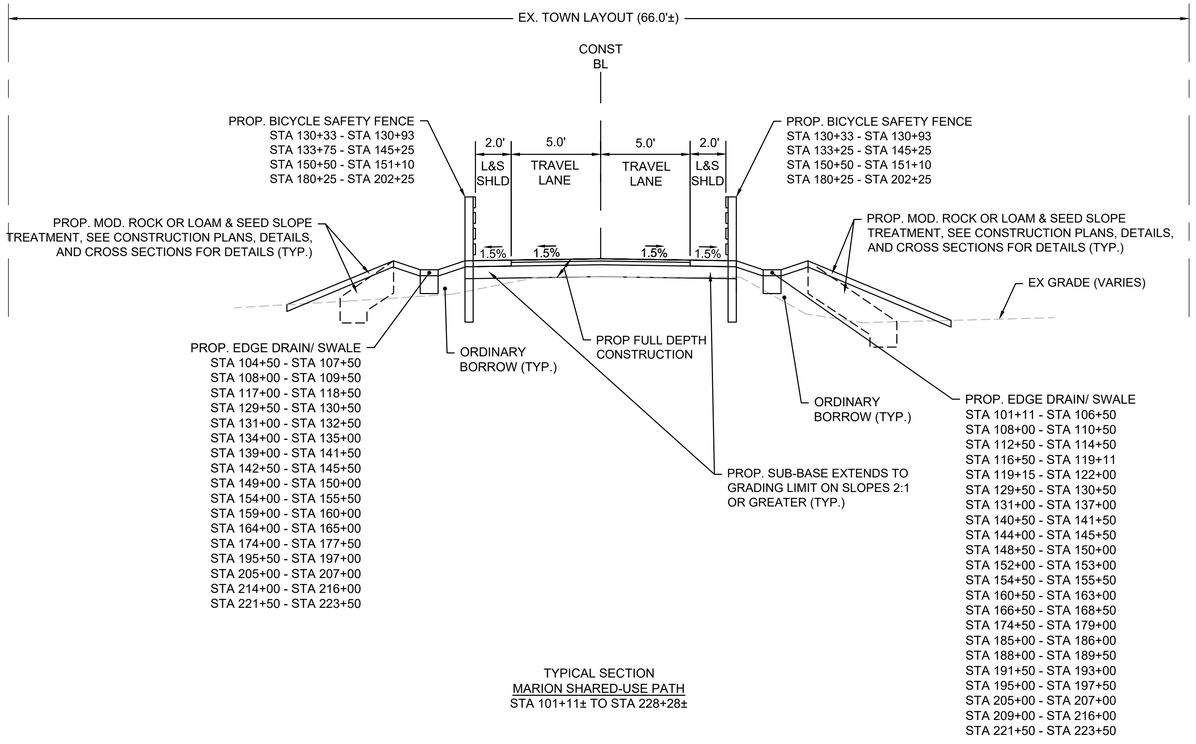
GENERAL NOTES:

1. THE SURVEY BASE PLAN WAS PREPARED BY FOTH INFRASTRUCTURE & ENVIRONMENT, LLC IN JULY 2016-SEPTEMBER 2016, MAY 2019, DECEMBER 2019, JANUARY 2020, JUNE 2020, AND OCTOBER 2020. WETLAND FLAG LINE R WAS REVISED BY JOHN ROCKWELL IN SEPTEMBER 2023.
2. ELEVATIONS SHOWN ARE IN FEET AND TENTHS AND REFERENCE NAVD 88, COORDINATES SHOWN ARE REFERENCED TO MASSACHUSETTS STATE PLAN COORDINATE SYSTEM MAINLAND ZONE NAD83.
3. THE LOCATIONS OF EXISTING UTILITIES ARE SHOWN IN AN APPROXIMATE WAYONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
4. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT AT NO ADDITIONAL COST TO THE OWNER.
5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
6. EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS, IF NECESSARY.
7. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.
8. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
9. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
10. JOINTS BETWEEN NEW BITUMINOUS CONCRETE ROADWAY PAVEMENT AND SAW CUT EXISTING PAVEMENT SHALL BE SEALED WITH HMA JOINT SEALANT AND BACKSANDED.
11. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND RESET UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
12. ALL DRAINAGE PIPES SHALL BE INSTALLED WITH A PITCH OF .01 FEET PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
13. EXISTING SEWER, WATER SERVICE, AND DRAINAGE INFORMATION SHOWN AS PROVIDED BY THE TOWN OF MARION. ALL EXISTING UTILITY INFORMATION SHOWN TO BE VERIFIED BY THE CONTRACTOR DURING CONSTRUCTION.

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	274
PROJECT FILE NO.	607979		

TYPICAL SECTIONS
SHEET 1 OF 4



TYPICAL SECTION
MARION SHARED-USE PATH
STA 101+11± TO STA 228+28±

NOTES
1. ALL CROSS SLOPES SHOWN ARE SUBJECT TO A CONSTRUCTION TOLERANCE OF +/- 0.5%

PROPOSED PAVEMENT NOTES

SHARED-USE PATH
1.5-INCH SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
ASPHALT EMULSION FOR TACK COAT OVER
2.5-INCH SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
8 INCHES GRAVEL BORROW TYPE b FOR LEVELING OVER
EX. RAILROAD BED

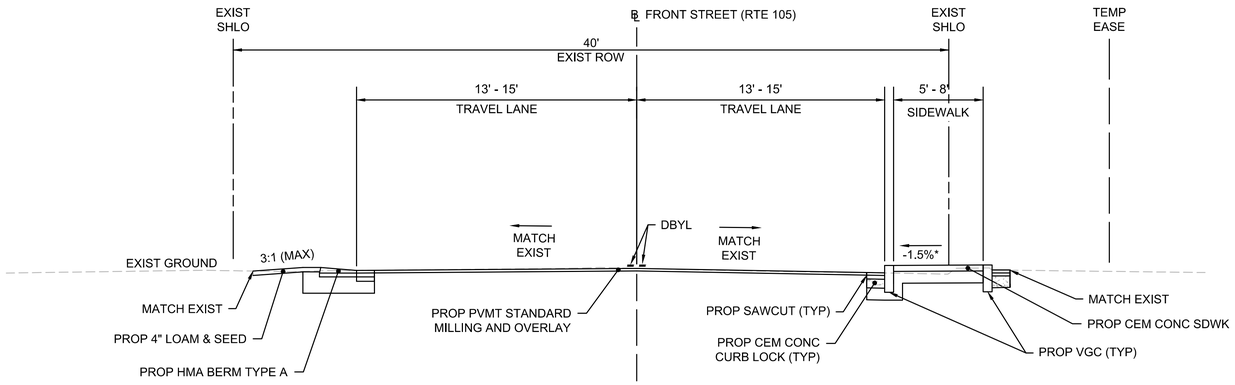
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	274
PROJECT FILE NO.	607979		

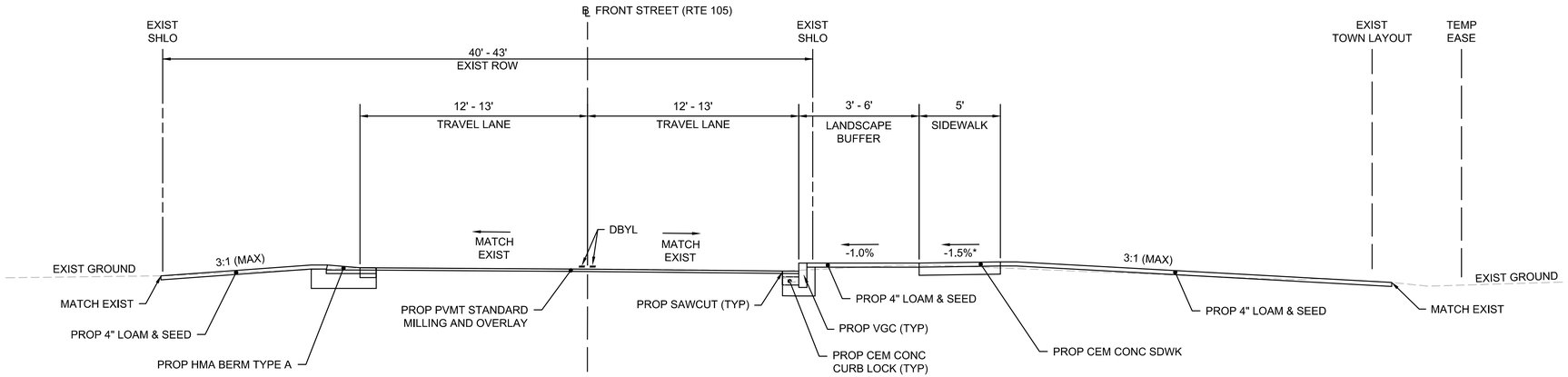
FRONT ST (RTE 105) AT SPRING ST
TYPICAL SECTIONS
SHEET 2 OF 4

Y16147.21 MARION PATHWAY (TYPICAL_SECTION).DWG Plotted on 20-Oct-2023 4:22 PM



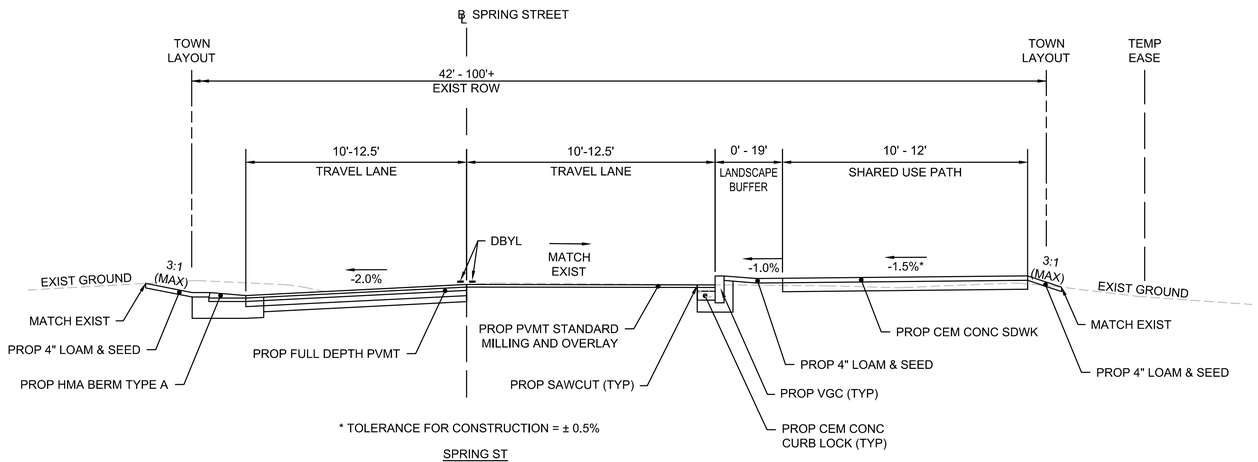
* TOLERANCE FOR CONSTRUCTION = ± 0.5%

FRONT ST (RTE 105)
STA 100+53 TO STA 101+75



* TOLERANCE FOR CONSTRUCTION = ± 0.5%

FRONT ST (RTE 105)
STA 101+75 TO STA 103+00



* TOLERANCE FOR CONSTRUCTION = ± 0.5%

SPRING ST
STA 200+22 TO STA 201+18

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT (GREATER THAN FOUR FEET WIDE)

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 2.25" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H)

BASE: 3.5" SUPERPAVE BASE COURSE 25.0 (SBC-25.0) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE FOR LEVELING OVER EXISTING GRAVEL SUBGRADE (COMPACTED) OR 8" GRAVEL BORROW (TYPE B)

PROPOSED PAVEMENT STANDARD MILLING AND OVERLAY

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H)

1.75" PAVEMENT STANDARD MILLING

PROPOSED CEMENT CONCRETE SIDEWALK, CURB RAMPS AND ISLAND

SURFACE: 4" CEMENT CONCRETE (4,000 PSI, 3/4", 610) OVER

FOUNDATION: 8" GRAVEL BORROW (TYPE b)

PROPOSED CEMENT CONCRETE DRIVEWAY

SURFACE: 6" CEMENT CONCRETE (4,000 PSI, 3/4", 610) OVER

FOUNDATION: 8" GRAVEL BORROW (TYPE b)

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

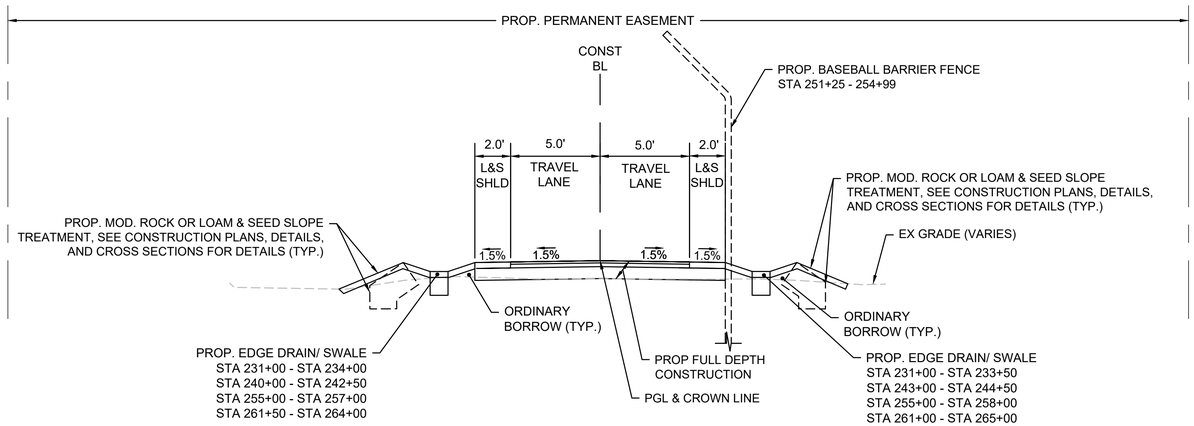
INTERMEDIATE: 2.5" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER

SUBBASE: 8" GRAVEL BORROW (TYPE b)

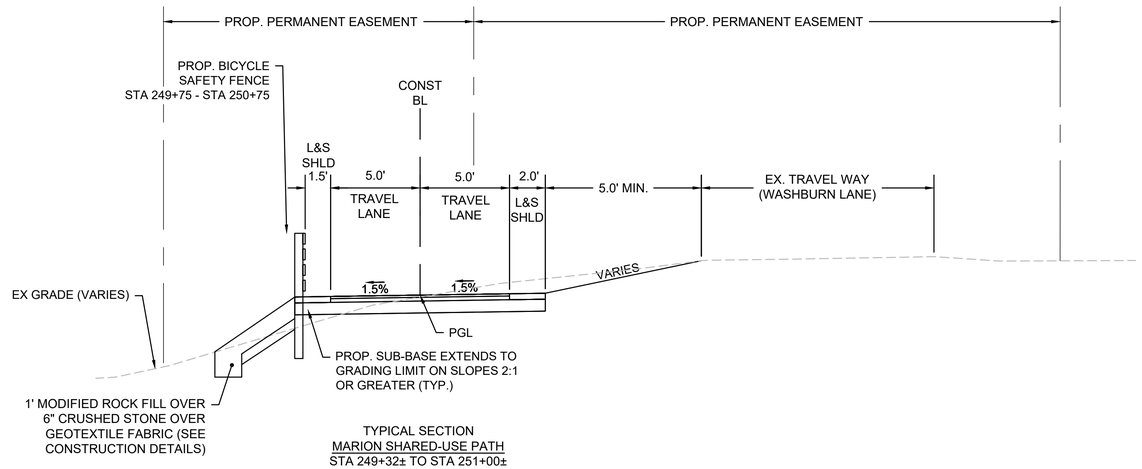
TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	6	274
PROJECT FILE NO.	607979		

TYPICAL SECTIONS
SHEET 3 OF 4



TYPICAL SECTION
MARION SHARED-USE PATH
STA 229+87± TO STA 249+32±
STA 251+00± TO STA 265+62±



TYPICAL SECTION
MARION SHARED-USE PATH
STA 249+32± TO STA 251+00±

NOTES
1. ALL CROSS SLOPES SHOWN ARE SUBJECT TO A CONSTRUCTION TOLERANCE OF +/- 0.5%

PROPOSED PAVEMENT NOTES

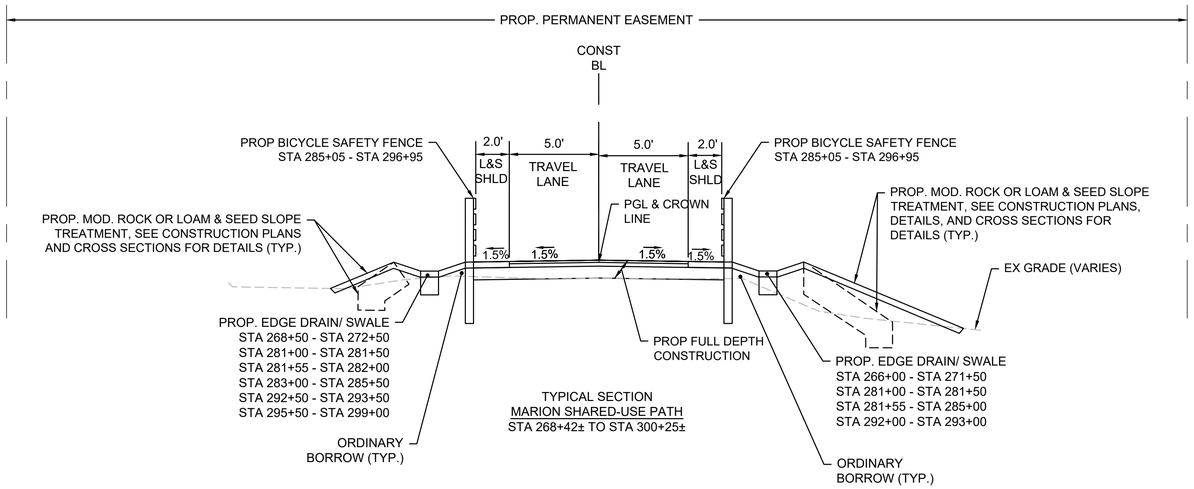
SHARED-USE PATH
1.5-INCH SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
ASPHALT EMULSION FOR TACK COAT OVER
2.5-INCH SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
8 INCHES GRAVEL BORROW TYPE b OVER
FINISH GRADE

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

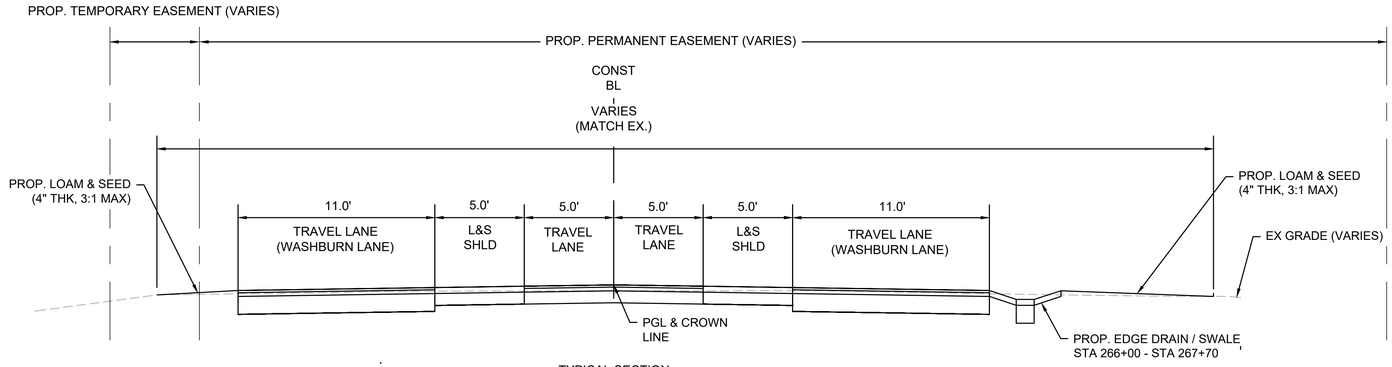
TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	274
PROJECT FILE NO.	607979		

TYPICAL SECTIONS
SHEET 4 OF 4



TYPICAL SECTION
MARION SHARED-USE PATH
STA 268+42± TO STA 300+25±



TYPICAL SECTION
MARION SHARED-USE PATH
STA 265+50± TO STA 267+70±

NOTES
1. ALL CROSS SLOPES SHOWN ARE SUBJECT TO A CONSTRUCTION TOLERANCE OF +/- 0.5%

PROPOSED PAVEMENT NOTES

SHARED-USE PATH
1.5-INCH SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
ASPHALT EMULSION FOR TACK COAT OVER
2.5-INCH SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
8 INCHES GRAVEL BORROW TYPE b OVER
FINISH GRADE

WASHBURN LANE & PARKING AREAS
1.5-INCH SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
ASPHALT EMULSION FOR TACK COAT OVER
2.5-INCH SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
12 INCHES GRAVEL BORROW TYPE b OVER
FINISH GRADE

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

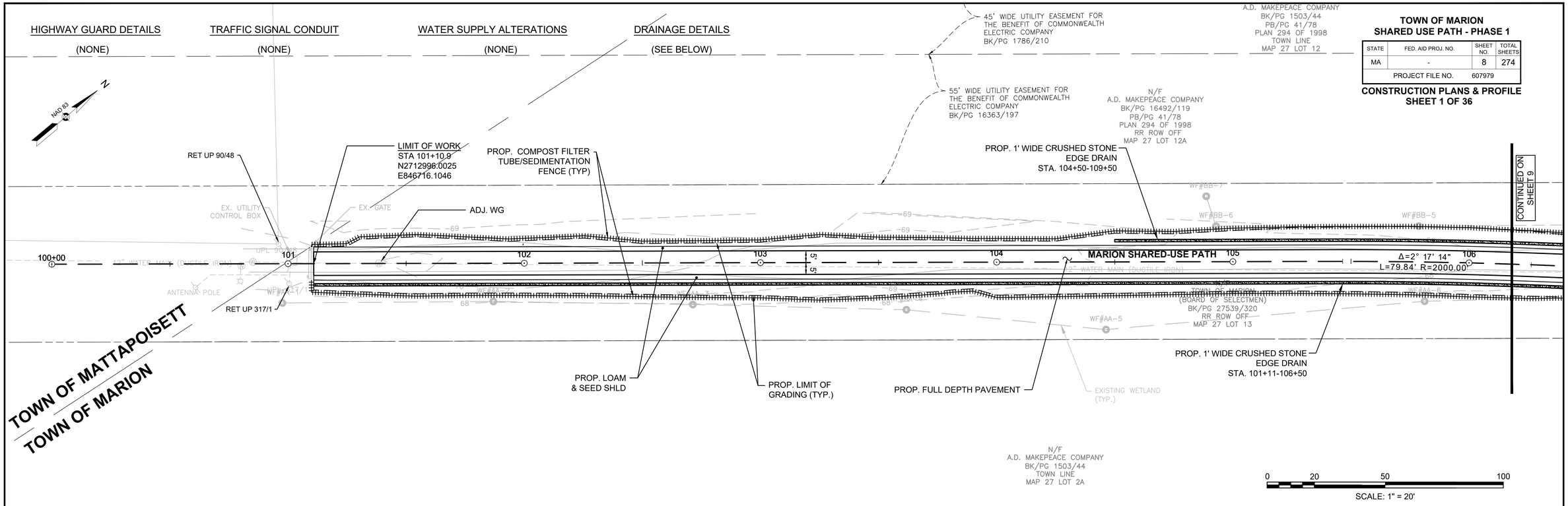
DRAINAGE DETAILS

(SEE BELOW)

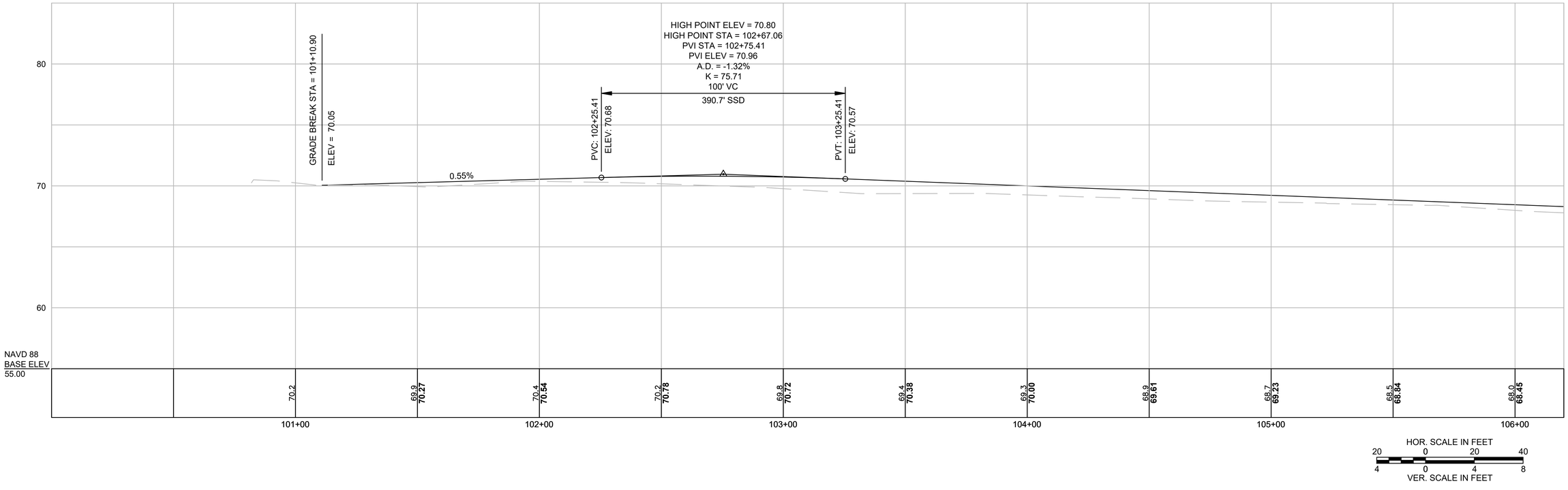
TOWN OF MARION SHARED USE PATH - PHASE 1			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 1 OF 36

607979_CONST.DWG Plotted on 27-Oct-2023 2:54 PM



MARION SHARED-USE PATH



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 2 OF 36

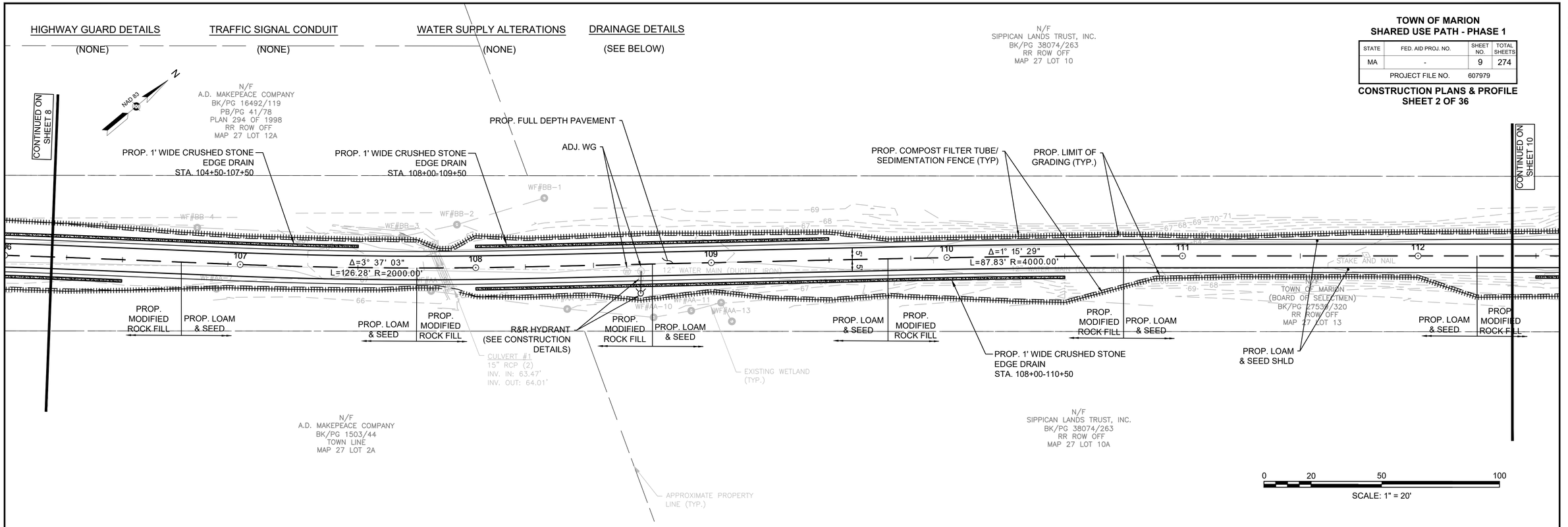
607979_CONST.DWG Plotted on 27-Oct-2023 2:54 PM

HIGHWAY GUARD DETAILS
(NONE)

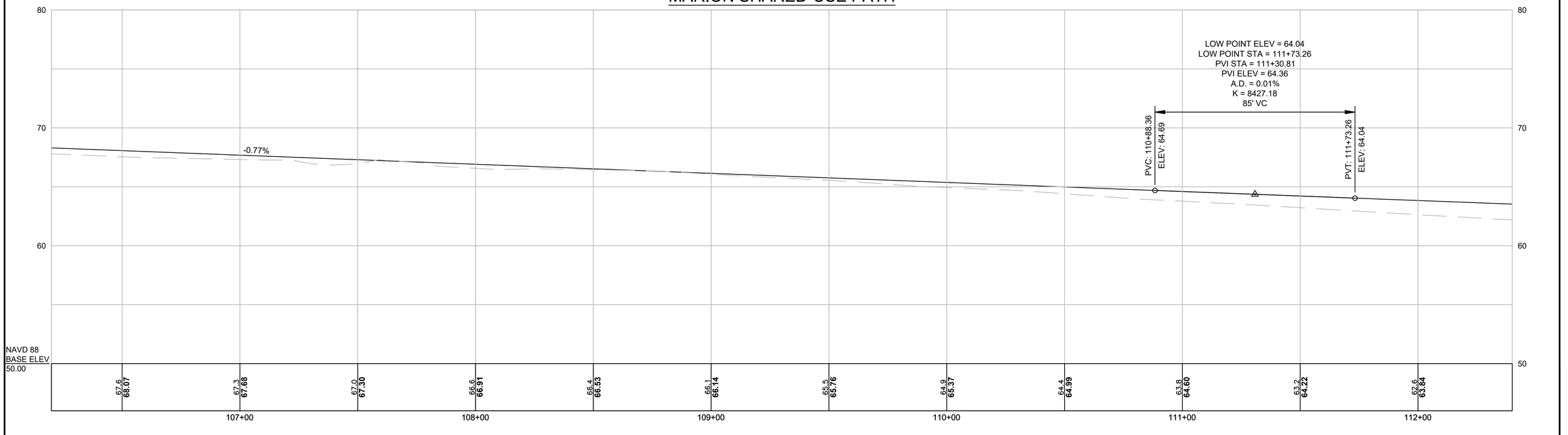
TRAFFIC SIGNAL CONDUIT
(NONE)

WATER SUPPLY ALTERATIONS
(NONE)

DRAINAGE DETAILS
(SEE BELOW)



MARION SHARED-USE PATH



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 3 OF 36

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

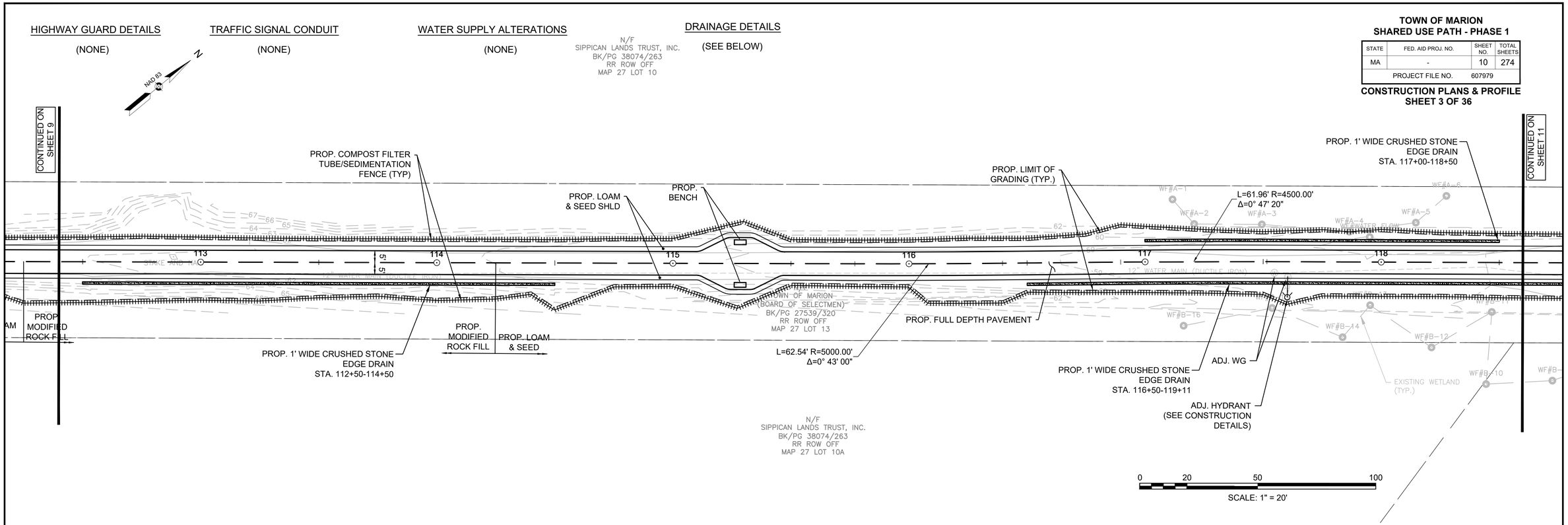
(NONE)

WATER SUPPLY ALTERATIONS

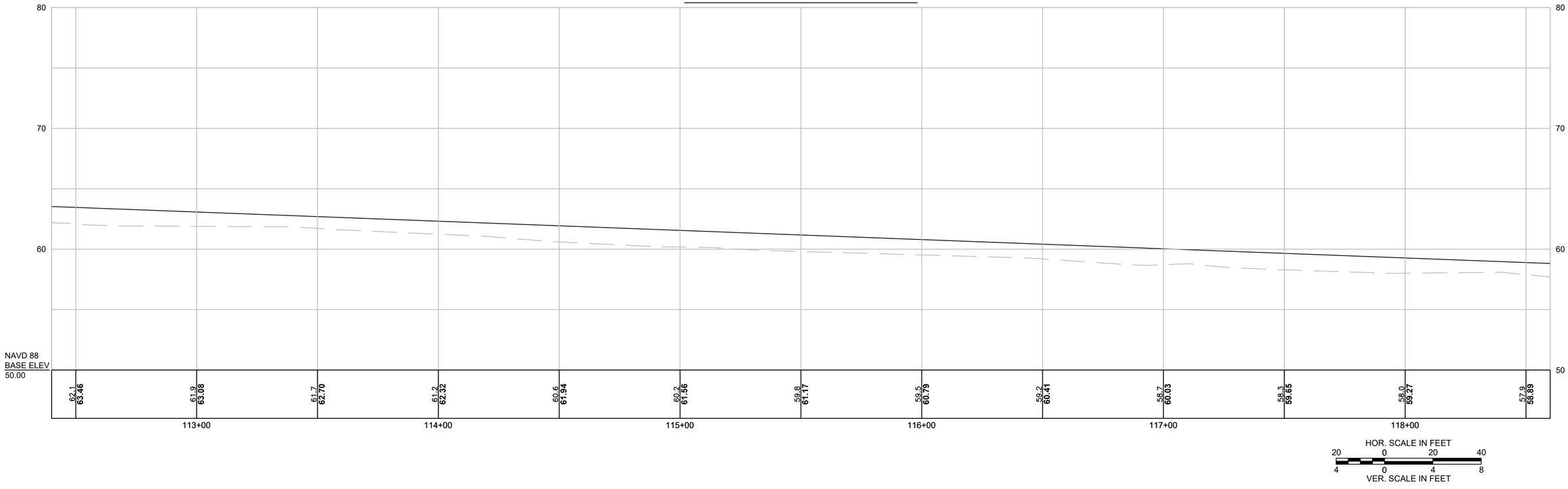
(NONE)

DRAINAGE DETAILS

(SEE BELOW)



MARION SHARED-USE PATH



607979_CONST.DWG Plotted on 27-Oct-2023 2:54 PM

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 4 OF 36

CONTINUED ON SHEET 10

CONTINUED ON SHEET 12

N/F
NEW BEDFORD GAS AND EDISON LIGHT COMPANY
BK/PG 1768/80
RR ROW OFF
MAP 27 LOT 12

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 35442/78
RR ROW OFF
MAP 27 LOT 13A

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27833/301
RR ROW OFF
MAP 27 LOT 13

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 38074/267
RR ROW OFF
MAP 27 LOT 3

NAD 83

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

PROP. LOAM & SEED SHLD

L=62.55' R=5000.00'
Δ=0° 43' 00"

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 119+15-122+00

L=80.60' R=5000.00'
Δ=0° 55' 25"

PROP. FULL DEPTH PAVEMENT

PROP. LIMIT OF GRADING (TYP.)

12" WATER MAIN (DUCTILE IRON)

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 119+15-122+00

EX. VERNAL POOL TO BE PROTECTED AT ALL TIMES DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES/IMPACTS WITHIN THE LIMITS OF THE VERNAL POOL ARE STRICTLY PROHIBITED

VERNAL POOL
APPROX. 10'x20'x3'
41°41'39.37"N
70°47'52.76"W

PROP. SEDIMENTATION FENCE TO BE MAINTAINED 25' ON EITHER SIDE OF VERNAL POOL AT ALL TIMES DURING CONSTRUCTION

EXISTING WETLAND (TYP.)

WF#B-1 WF#B-2 WF#B-3 WF#B-4 WF#B-5 WF#B-6 WF#B-8 WF#B-9 WF#B-10

119 120 121 122 123 124

0 20 50 100
SCALE: 1" = 20'

MARION SHARED-USE PATH

-0.76%

NAVD 88
BASE ELEV
50.00

119+00	120+00	121+00	122+00	123+00	124+00
57.1 / **56.51**	57.2 / **56.13**	56.8 / **57.75**	56.6 / **57.37**	56.2 / **56.99**	55.9 / **56.61**
55.5 / **56.23**	55.0 / **55.85**	54.6 / **55.47**	54.2 / **55.09**	53.7 / **54.71**	53.3 / **54.33**

80 70 60 50

HOR. SCALE IN FEET
20 0 20 40

VER. SCALE IN FEET
4 0 4 8

607979_CONST.DWG Plotted on 27-Oct-2023 2:54 PM

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 5 OF 36

CONTINUED ON SHEET 11

CONTINUED ON SHEET 13

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 35442/78
RR ROW OFF
MAP 27 LOT 14A

APPROXIMATE PROPERTY LINE (TYP.)

NAD 83

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

PROP. LOAM & SEED SHLD

PROP. LIMIT OF GRADING (TYP.)

BEGIN BICYCLE SAFETY FENCE 130+33

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 129+50-130+50

PROP. LOAM & SEED

PROP. MODIFIED ROCK FILL

125 126 127 128 129 130 131

Δ=0° 12' 49"
L=67.13' R=18000.00'

8" WATER MAIN (DUCTILE IRON)

5.5' 5.5'

WF#C-1 WF#C-2 WF#C-3 WF#C-4 WF#C-5 WF#C-6

TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
PARLOWTOWN ROAD OFF
MAP 25 LOT 32

R&R HYDRANT (SEE CONSTRUCTION DETAILS)

ADJ. WG

PROP. FULL DEPTH PAVEMENT

PROP. BENCH

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 129+50-130+50

PROP. LOAM & SEED

PROP. MODIFIED ROCK FILL

END BI FENCE

CULVERT #2
34" CONC.
BOX CULVERT
INV. IN: 45.15'
INV. OUT: 45.14'

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 35442/78
RR ROW OFF
MAP 27 LOT 14B

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 31996/346
OLD TRAIL
MAP 27 LOT 15A

0 20 50 100
SCALE: 1" = 20'

MARION SHARED-USE PATH

HIGH POINT ELEV = 50.30
HIGH POINT STA = 129+79.66
PVI STA = 130+29.66
PVI ELEV = 49.92
A.D. = -0.53%
K = 188.60
100' VC
898.7' SSD

PVC: 129+79.66
ELEV: 50.30

PVT: 130+79.66
ELEV: 49.27

NAVD 88
BASE ELEV
40.00

125+00	126+00	127+00	128+00	129+00	130+00
52.9 / **53.95**	52.5 / **53.57**	52.1 / **53.19**	51.6 / **52.81**	51.5 / **52.43**	50.9 / **52.05**
50.5 / **51.67**	50.0 / **51.29**	49.5 / **50.91**	49.3 / **50.53**	49.0 / **50.13**	49.0 / **49.63**

70 60 50 40

HOR. SCALE IN FEET
20 0 20 40

VER. SCALE IN FEET
4 0 4 8

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TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 6 OF 36

607979_CONST.DWG Plotted on 27-Oct-2023 2:54 PM

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

MAD 83

CONTINUED ON SHEET 12

PROP. MODIFIED ROCK FILL

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

PROP. MODIFIED ROCK FILL

PROP. LOAM & SEED

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 131+00-132+50

BEGIN BICYCLE SAFETY FENCE STA 133+75

PROP. LOAM & SEED

PROP. MODIFIED ROCK FILL

PROP. LOAM & SEED SHLD

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 134+00-135+00

PROP. LIMIT OF GRADING (TYP.)

PROP. MODIFIED ROCK FILL

PROP. LOAM & SEED

PROP. LOAM & SEED

PROP. MODIFIED ROCK FILL

131

132

133

134

135

136

137

Δ=0° 11' 40"
L=61.08' R=18000.00'

12" WATER MAIN (DUCTILE IRON)

5'

5'

PROP. MODIFIED ROCK FILL

END BICYCLE SAFETY FENCE 130+93

PROP. MODIFIED ROCK FILL

PROP. LOAM & SEED

PROP. LOAM & SEED

PROP. MODIFIED ROCK FILL

BEGIN BICYCLE SAFETY FENCE STA 133+25

(2) R&R WG TO STA 132+50± RT

R&R HYDRANT TO STA 132+50± RT (SEE CONSTRUCTION DETAILS)

PROP. MODIFIED ROCK FILL

PROP. L & SEE

CONTINUED ON SHEET 14

ERT #2
CONC.
CULVERT
IN: 45.15'
OUT: 45.14

EXISTING WETLAND (TYP.)

R&R HYDRANT FROM STA 137+20± RT (SEE CONSTRUCTION DETAILS)

(2) R&R WG FROM STA 137+20± RT

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 131+00-137+00

EXISTING WETLAND (TYP.)

PROP. FULL DEPTH PAVEMENT

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
PARLOWTOWN ROAD OFF
MAP 25 LOT 32

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 38074/263
RR ROW OFF
MAP 27 LOT 15

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 31996/346
OLD TRAIL
MAP 27 LOT 15A

WF#C-5 WF#C-6 WF#C-7 WF#C-8 WF#D-1 WF#D-3 WF#D-4 WF#D-5 WF#D-6 WF#E-1 WF#F-1 WF#F-4

WATER FEATURE

0 20 50 100

SCALE: 1" = 20'

MARION SHARED-USE PATH

LOW POINT ELEV = 44.42
LOW POINT STA = 134+90.31
PVI STA = 134+40.31
PVI ELEV = 44.62
A.D. = 0.89%
K = 112.25
100' VC

HIGH POINT ELEV = 44.25
HIGH POINT STA = 135+33.25
PVI STA = 135+65.16
PVI ELEV = 44.12
A.D. = -0.39%
K = 162.87
64' VC
1180.3' SSD

PVC: 133+90.31
ELEV: 45.26

PVT: 134+90.31
ELEV: 44.42

PVC: 135+33.25
ELEV: 44.25

PVT: 135+97.07
ELEV: 43.87

-1.29%

-0.40%

-0.79%

NAVD 88
BASE ELEV
40.00

132+00	133+00	134+00	135+00	136+00	137+00
48.1 / 48.37	47.2 / 47.72	46.3 / 47.08	45.5 / 46.43	44.9 / 45.78	44.1 / 45.14
			43.7 / 44.65	43.7 / 44.38	43.7 / 44.17
					43.4 / 43.84
					43.0 / 43.45
					42.8 / 43.05

70 60 50 40

HOR. SCALE IN FEET
20 0 20 40

VER. SCALE IN FEET
4 0 4 8

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

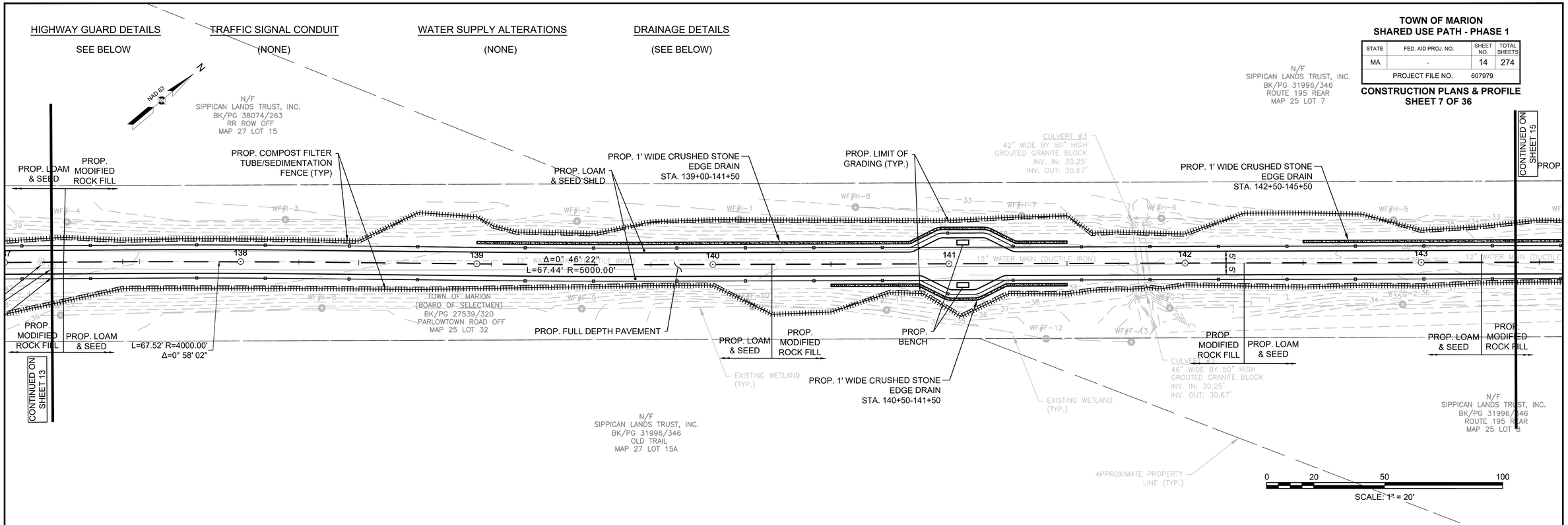
DRAINAGE DETAILS

(SEE BELOW)

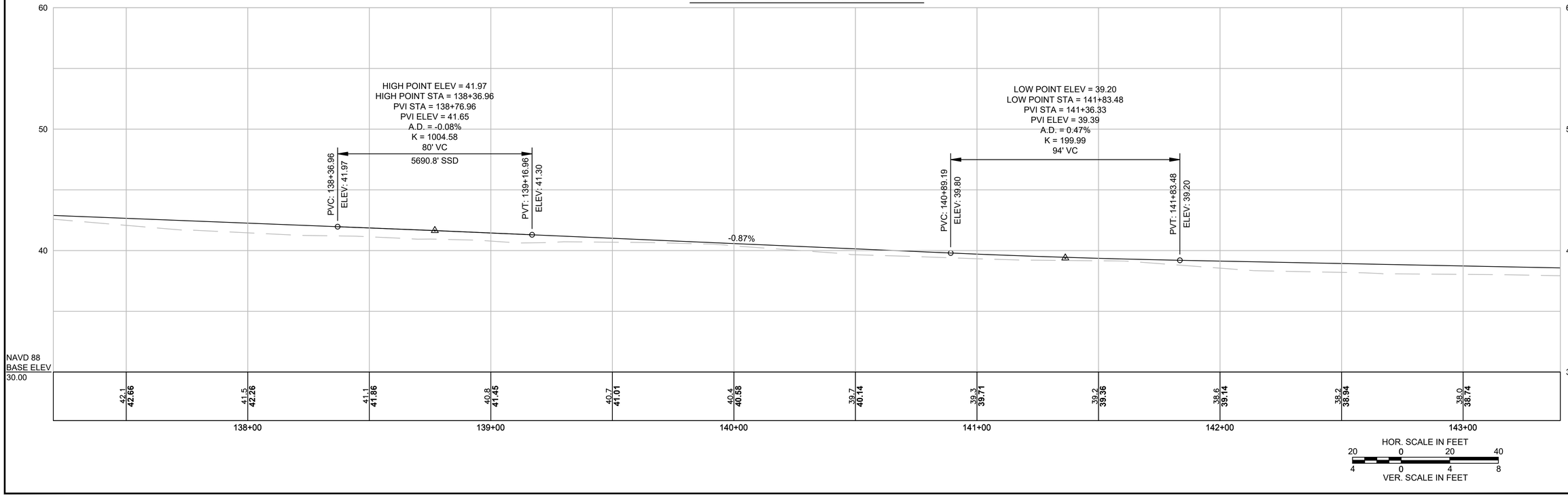
TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 7 OF 36



MARION SHARED-USE PATH



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TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 8 OF 36

Plotted on 27-Oct-2023 2:55 PM
607979_CONST.DWG

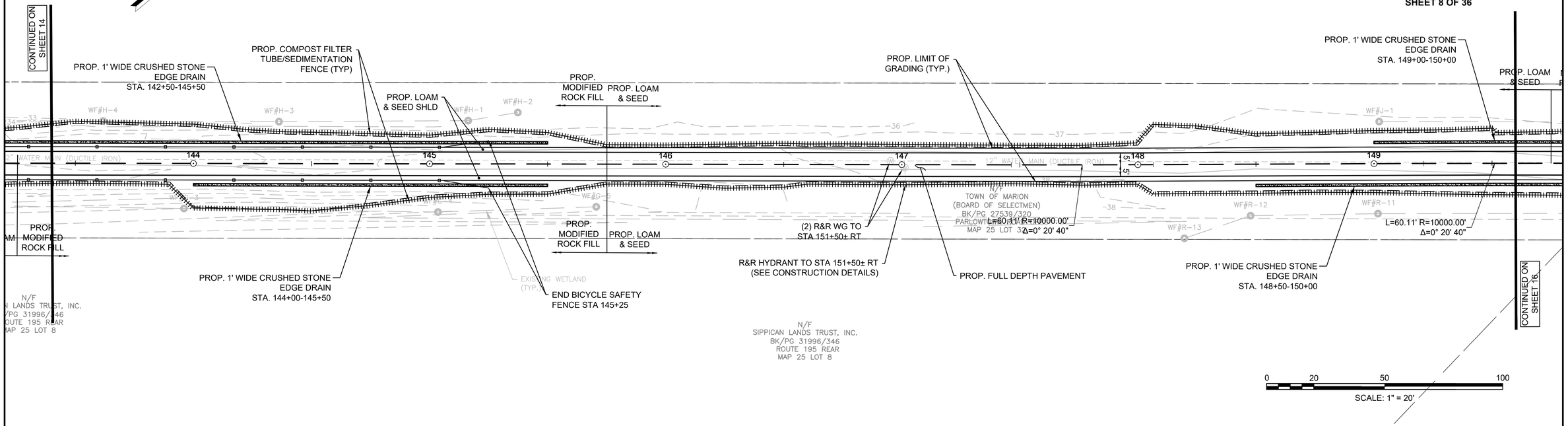
HIGHWAY GUARD DETAILS
SEE BELOW

TRAFFIC SIGNAL CONDUIT
(NONE)

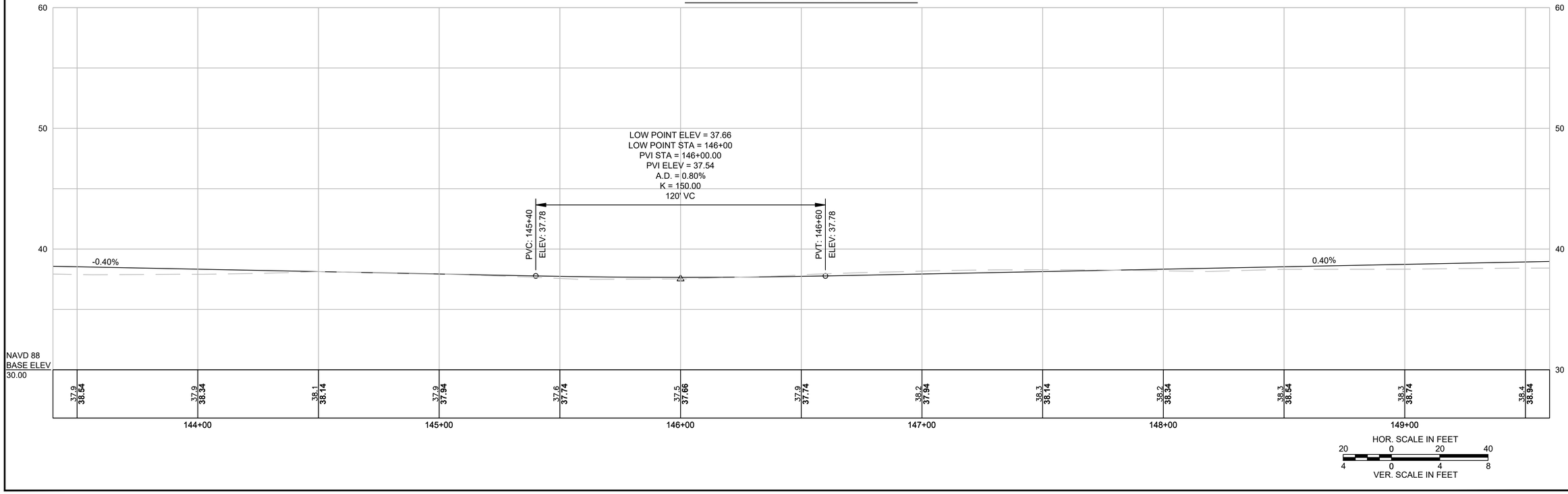
WATER SUPPLY ALTERATIONS
(NONE)

DRAINAGE DETAILS
(SEE BELOW)

NAD 83



MARION SHARED-USE PATH



HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

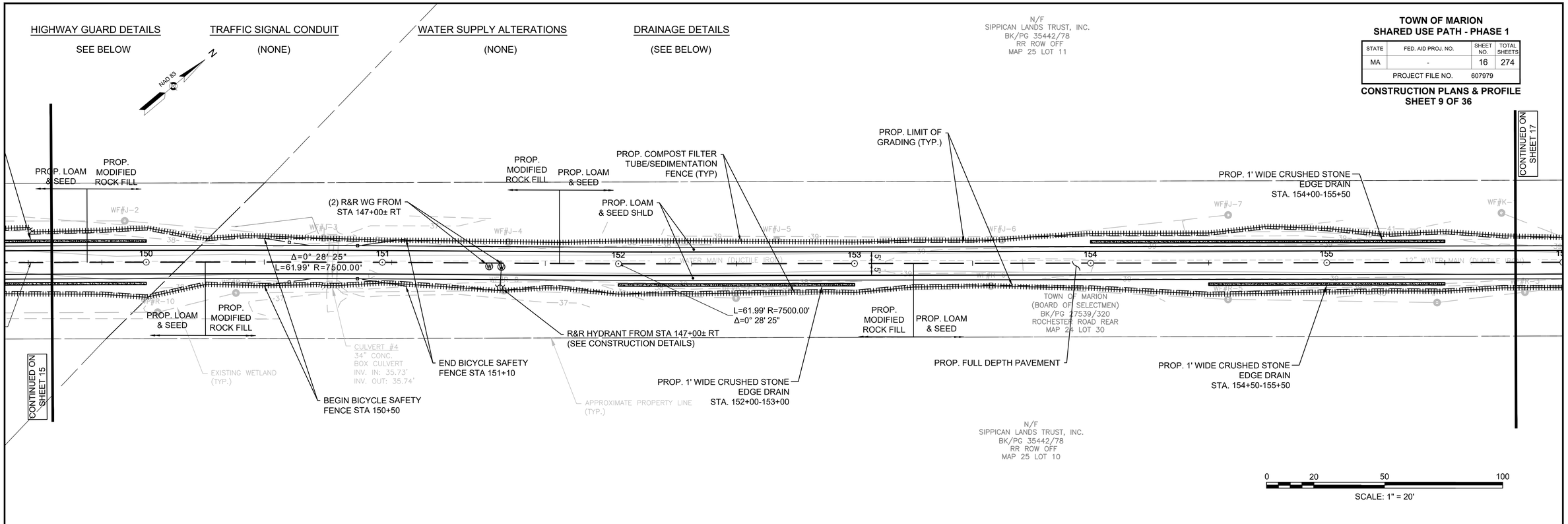
DRAINAGE DETAILS

(SEE BELOW)

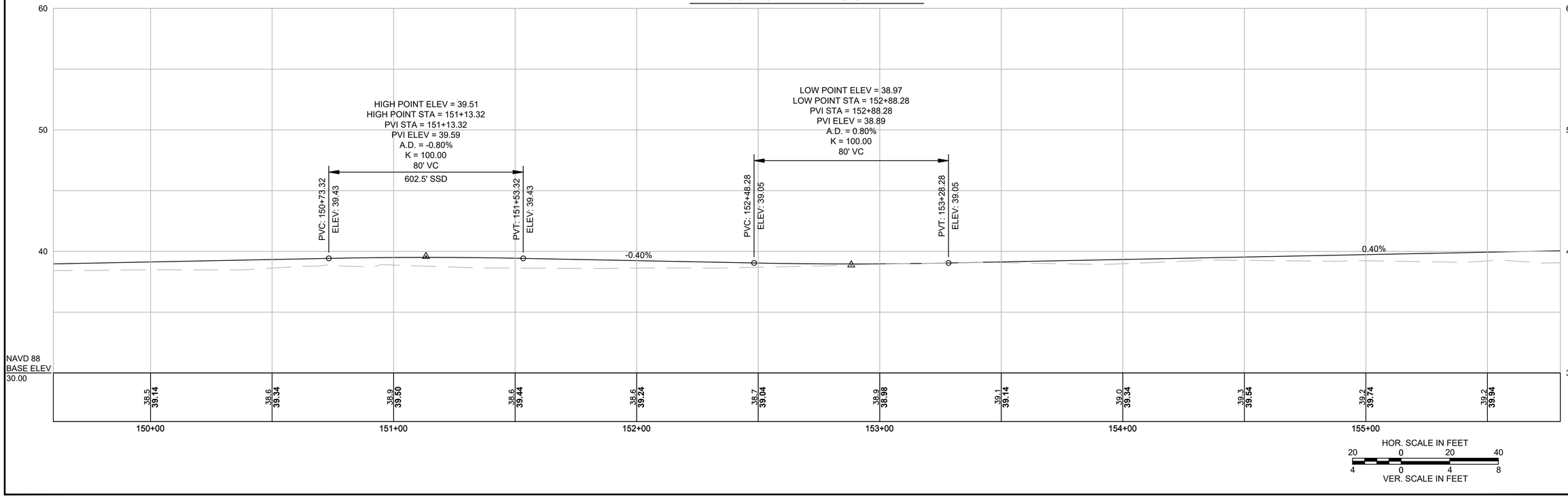
TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 9 OF 36



MARIONSHARED-USE PATH



607979_CONST.DWG Plotted on 27-Oct-2023 2:55 PM

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 10 OF 36

607979_CONST.DWG Plotted on 27-Oct-2023 2:55 PM

NAD 83

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 35442/78
RR ROW OFF
MAP 25 LOT 11

CONTINUED ON SHEET 16

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

ADJ. WG

PROP. LOAM & SEED

PROP. MODIFIED ROCK FILL

PROP. LIMIT OF GRADING (TYP.)

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 159+00-160+00

N/F
WARREN H. HILLER
BK/PG 5055/417
ROUTE 195
MAP 25 LOT 12

PROP. MODIFIED ROCK FILL

PROP. LOAM & SEED

CONTINUED ON SHEET 18

WF#K–

WF#K–3

WF#K–4

WF#L–1

WF#L–2

WF#L–3

156

157

158

159

160

161

162

12" WATER MAIN (DUCTILE IRON)

WF#L–2 WF#R–

WF#L–5

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
ROCHESTER ROAD REAR
MAP 24 LOT 30

ADJ. HYDRANT
(SEE CONSTRUCTION DETAILS)

PROP. LOAM & SEED SHLD

PROP. BENCH

PROP. FULL DEPTH PAVEMENT

PROP. LOAM & SEED

PROP. MODIFIED ROCK FILL

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 160+50-163+00

EXISTING WETLAND (TYP.)

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 4772/428
PB/PL 21/343
PLAN 939 OF 1979
LUCE AVE OFF
MAP 24 LOT 13

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 35442/78
RR ROW OFF
MAP 25 LOT 10

0 20 50 100
SCALE: 1" = 20'

MARION SHARED-USE PATH

HIGH POINT ELEV = 40.61
HIGH POINT STA = 157+58.51
PVI STA = 157+58.36
PVI ELEV = 40.77
A.D. = -0.80%
K = 200.00
160' VC
643.4' SSD

PVC: 156+78.51
ELEV: 40.45

PVT: 158+38.21
ELEV: 40.45

60
50
40
30

NAVD 88
BASE ELEV
30.00

156+00	157+00	158+00	159+00	160+00	161+00
39.2 / 40.14	39.5 / 40.52	39.4 / 40.57	39.4 / 40.20	39.1 / 39.81	39.0 / 39.21
39.4 / 40.34	39.5 / 40.61	39.3 / 40.40	39.0 / 40.01	39.1 / 39.61	38.8 / 39.41

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 11 OF 36

CONTINUED ON SHEET 17

CONTINUED ON SHEET 19

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 35442/78
PARLOWTOWN RD
MAP 25 LOT 13

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
ROCHESTER ROAD REAR
MAP 24 LOT 30

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 4772/428
PB/PL 21/343
PLAN 939 OF 1979
LUCE AVE OFF
MAP 24 LOT 13

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 164+00-165+00

PROP. LIMIT OF GRADING (TYP.)

ADJ. WG

ADJ. HYDRANT (SEE CONSTRUCTION DETAILS)

12" WATER MAIN (DUCTILE IRON)

PROP. MODIFIED ROCK FILL

PROP. LOAM & SEED

PROP. LOAM & SEED SHLD

PROP. FULL DEPTH PAVEMENT

Δ=0° 50' 01"
L=65.46' R=4500.00'

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 166+50-168+50

L=65.46' R=4500.00'
Δ=0° 50' 01"

EXISTING WETLAND (TYP.)

WF#M-1 WF#M-2 WF#M-3 WF#M-4 WF#O-1 WF#O-2 WF#N-1 WF#N-4

162 163 164 165 166 167 168

0 20 50 100
SCALE: 1" = 20'

MARION SHARED-USE PATH

HIGH POINT ELEV = 37.09
HIGH POINT STA = 166+81.46
PVI STA = 167+31.46
PVI ELEV = 36.89
A.D. = -0.14%
K = 726.56
100' VC
3319.5' SSD

PVC: 166+81.46
ELEV: 37.09

PVT: 167+81.46
ELEV: 36.62

-0.40%

NAVD 88
BASE ELEV
30.00

60 50 40 30

163+00	164+00	165+00	166+00	167+00	168+00
38.7 / **38.81**	38.4 / **38.41**	37.7 / **38.01**	37.2 / **37.61**	36.7 / **37.01**	36.1 / **36.52**
38.5 / **38.61**	38.0 / **38.21**	37.6 / **37.81**	36.9 / **37.41**	36.5 / **37.22**	36.7 / **36.78**

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

607979_CONST.DWG Plotted on 27-Oct-2023 2:55 PM

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 35442/78
PARLOWTOWN RD
MAP 25 LOT 13

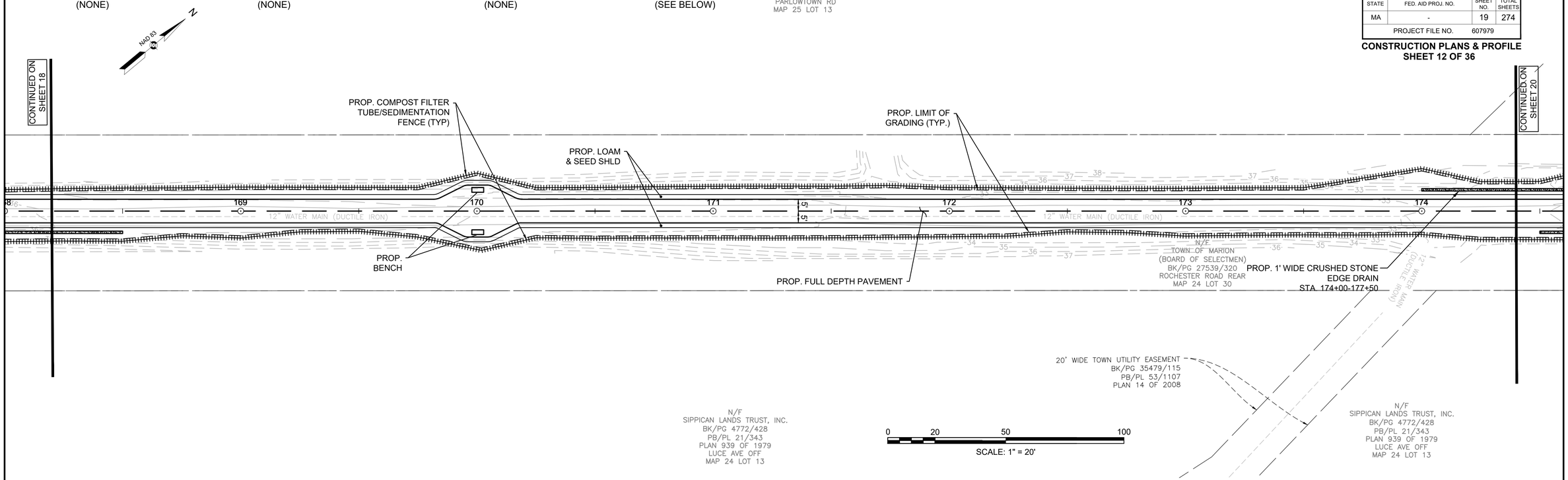
TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	274
PROJECT FILE NO.	607979		

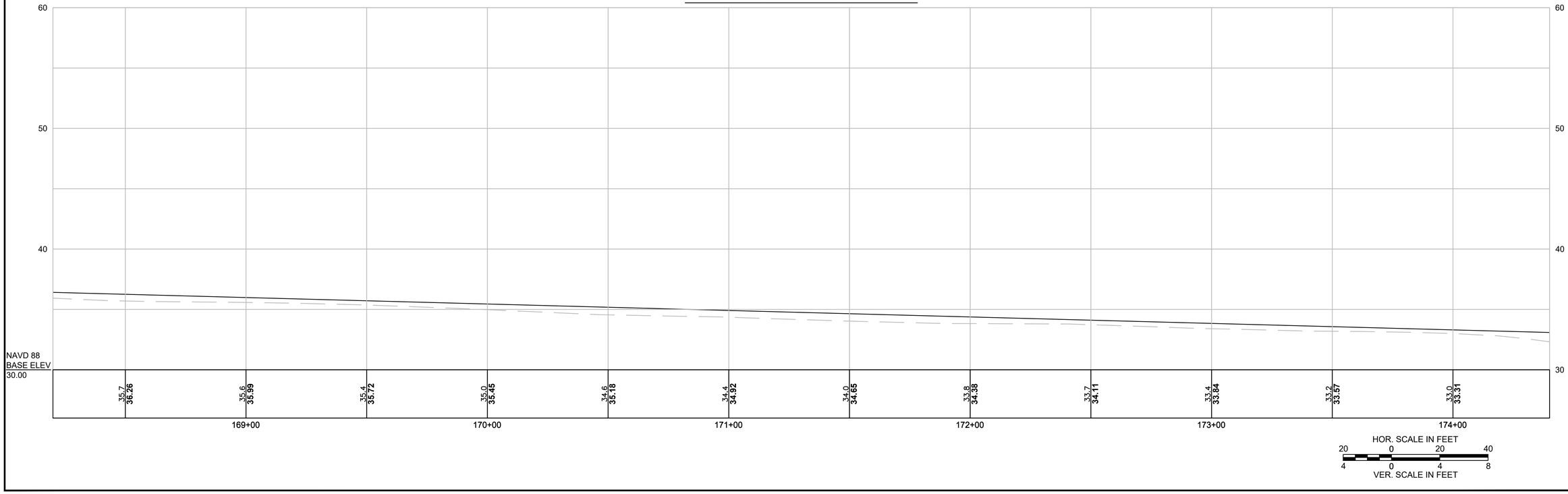
CONSTRUCTION PLANS & PROFILE
SHEET 12 OF 36

Plotted on 27-Oct-2023 2:55 PM

607979_CONST.DWG



MARION SHARED-USE PATH



HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

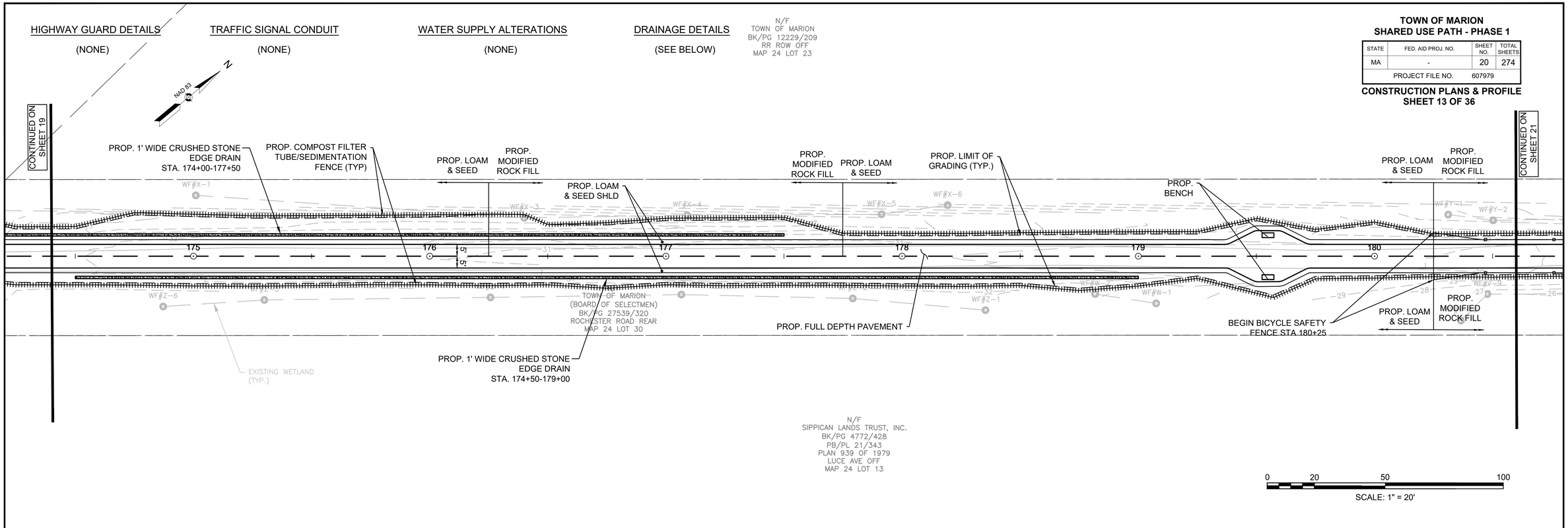
(SEE BELOW)

N/F
TOWN OF MARION
BK/PG 12229/209
RR ROW OFF
MAP 24 LOT 23

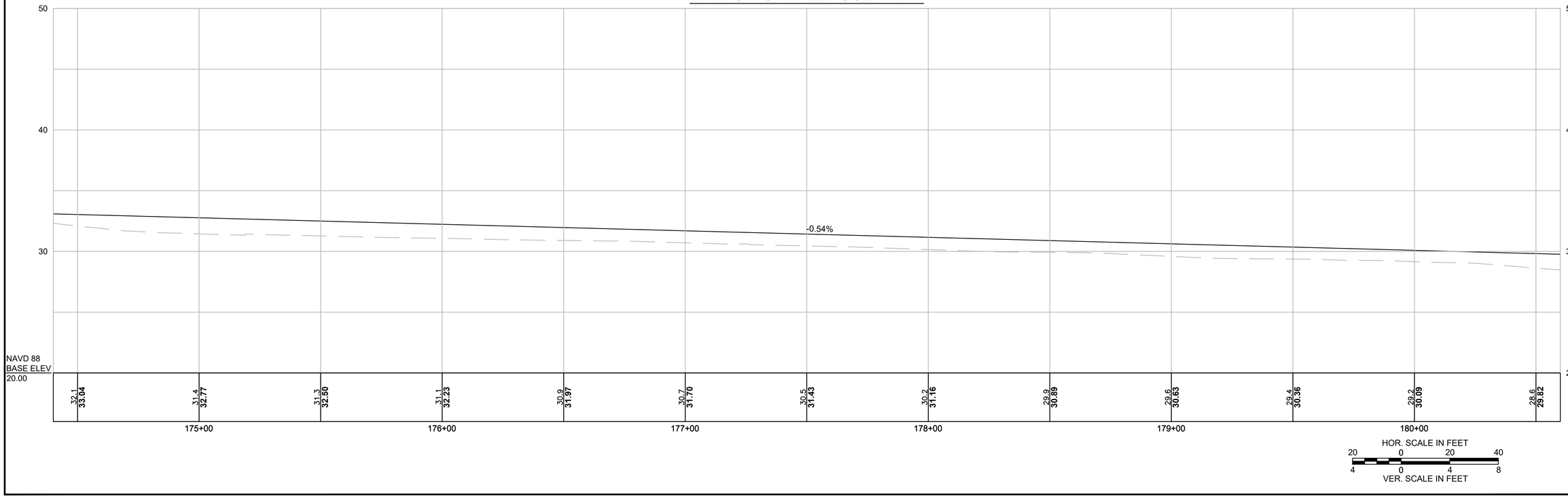
TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 13 OF 36



MARION SHARED-USE PATH



607979_CONST DWG Plotted on 27-Oct-2023 2:55 PM

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 14 OF 36

CONTINUED ON SHEET 20

CONTINUED ON SHEET 22

NAD 83

N/F
TOWN OF MARION
BK/PG 12229/209
RR ROW OFF
MAP 24 LOT 23

FEMA FLOOD ZONE A

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

PROP. LOAM & SEED SHLD

BICYCLE SAFETY FENCE
STA 180+25 - STA 202+25

L=65.35' R=8000.00'
Δ=0° 28' 05"

PROP. LIMIT OF GRADING (TYP.)

Δ=0° 28' 29"
L=66.30' R=8000.00'

PROP. FULL DEPTH PAVEMENT

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
ROCHESTER ROAD REAR
MAP 24 LOT 30

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 185+00-185+53

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 185+59-186+00

EXISTING WETLAND (TYP.)

CULVERT #5
12"ø PVC PIPE (2)
INV. IN: 22.00'
INV. OUT: 20.73'

FEMA FLOOD ZONE A

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 4772/428
PB/PL 21/343
PLAN 939 OF 1979
LUCE AVE OFF
MAP 24 LOT 13

WF#Y-2 WF#Y-3 WF#Y-4 WF#Y-5 WF#Y-6 WF#Y-7 WF#Y-9 WF#D-8 WF#D-7 WF#D-6 WF#D-5

181 182 183 184 185 186

0 20 50 100
SCALE: 1" = 20'

MARION SHARED-USE PATH

	181+00	182+00	183+00	184+00	185+00	186+00
	29.0	28.6	28.3	27.9	27.7	27.6
	29.55	**29.29**	**29.02**	**28.75**	**28.48**	**28.21**
	27.4	27.1	26.6	26.2	26.6	26.3
	27.95	**27.68**	**27.41**	**27.14**	**26.87**	**26.60**

NAVD 88
BASE ELEV
20.00

50 40 30 20

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

607979_CONST.DWG Plotted on 27-Oct-2023 2:55 PM

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 15 OF 36

HIGHWAY GUARD DETAILS
SEE BELOW

TRAFFIC SIGNAL CONDUIT
(NONE)

WATER SUPPLY ALTERATIONS
(NONE)

DRAINAGE DETAILS
(SEE BELOW)

N/F
TOWN OF MARION
(TAX TAKING)
BK/PG 2113/25
ROUTE 195 OFF
MAP 24 LOT 24

CONTINUED ON SHEET 21

CONTINUED ON SHEET 23

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

BICYCLE SAFETY FENCE
STA 180+25 - STA 202+25

PROP. LIMIT OF GRADING (TYP.)

PROP. LOAM & SEED SHLD

TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
ROCHESTER ROAD REAR
MAP 24 LOT 30

PROP. MODIFIED ROCK FILL

PROP. LOAM & SEED

PROP. LOAM & SEED

PROP. MODIFIED ROCK FILL

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 188+00-189+50

PROP. FULL DEPTH PAVEMENT

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 191+50-193+00

EXISTING WETLAND (TYP.)

FEMA FLOOD ZONE A

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 4772/428
PB/PL 21/343
PLAN 939 OF 1979
LUCE AVE OFF
MAP 24 LOT 13

SCALE: 1" = 20'

MARION SHARED-USE PATH

LOW POINT ELEV = 26.03
LOW POINT STA = 187+86.38
PVI STA = 187+79.11
PVI ELEV = 25.91
A.D. = 0.94%
K = 106.82
100' VC

PVC: 187+29.11
ELEV: 26.18

PVT: 188+29.11
ELEV: 26.11

0.40%

HIGH POINT ELEV = 26.97
HIGH POINT STA = 190+67.80
PVI STA = 190+68.07
PVI ELEV = 27.07
A.D. = -0.80%
K = 124.31
100' VC
609.4' SSD

PVC: 190+18.07
ELEV: 26.87

PVT: 191+18.07
ELEV: 26.87

NAVD 88
BASE ELEV
20.00

187+00	188+00	189+00	190+00	191+00	192+00
25.9 / 26.34	25.9 / 26.09	25.8 / 26.04	25.5 / 26.20	25.5 / 26.40	25.3 / 26.60
25.4 / 26.80	25.4 / 26.96	25.3 / 26.93	25.0 / 26.74	25.0 / 26.54	25.0 / 26.33

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

607979_CONST.DWG Plotted on 27-Oct-2023 2:56 PM

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

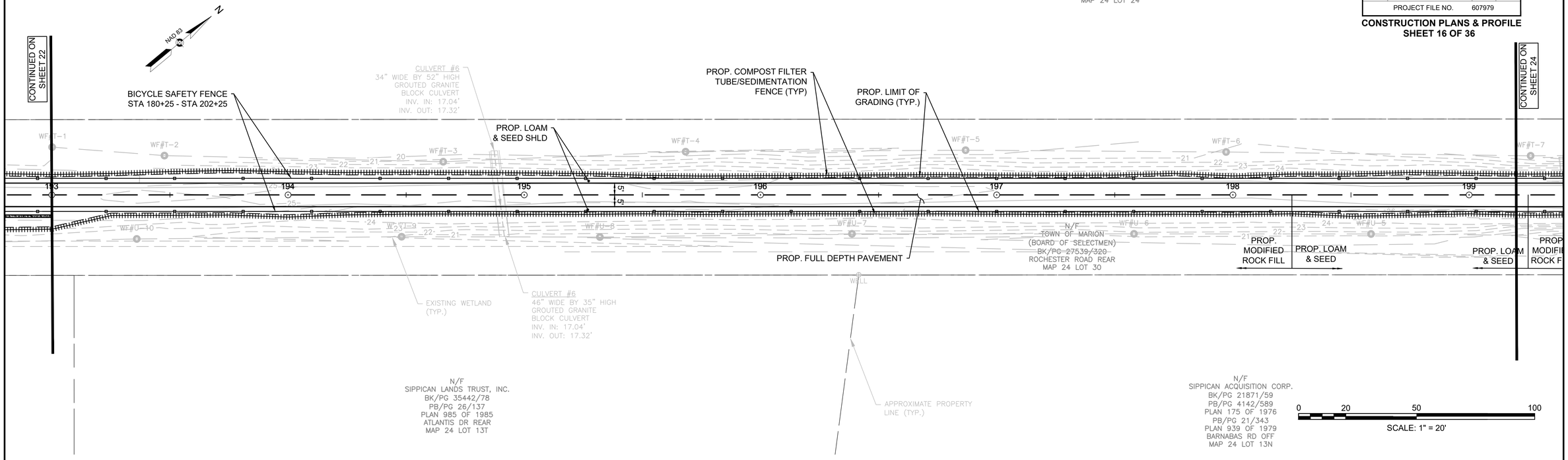
(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

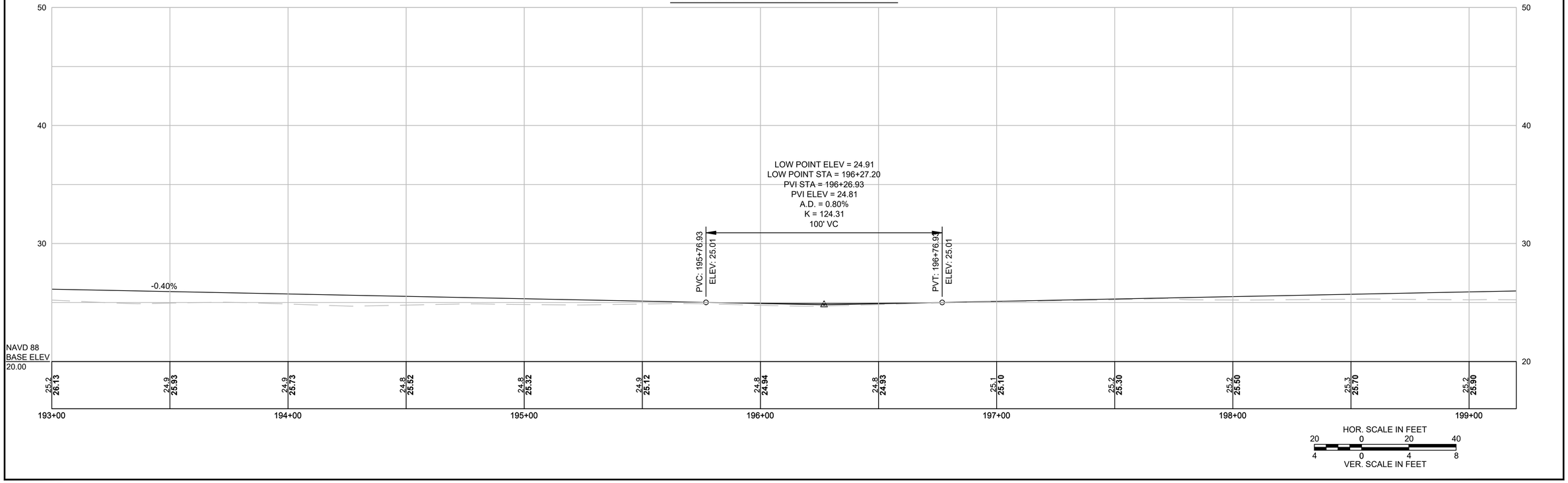
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 16 OF 36

607979_CONST.DWG Plotted on 27-Oct-2023 2:56 PM



MARION SHARED-USE PATH



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 17 OF 36

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

(NONE)

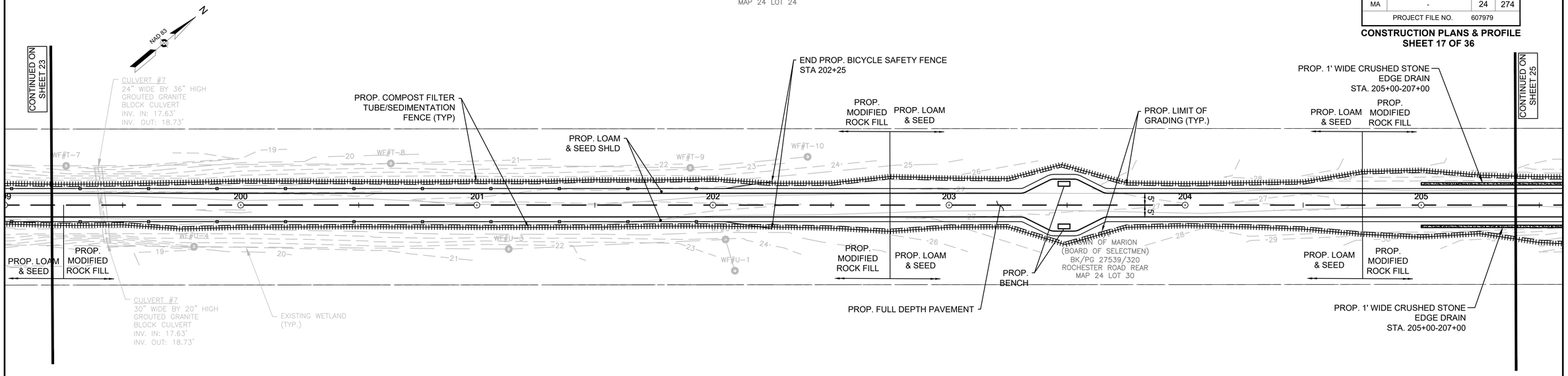
WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

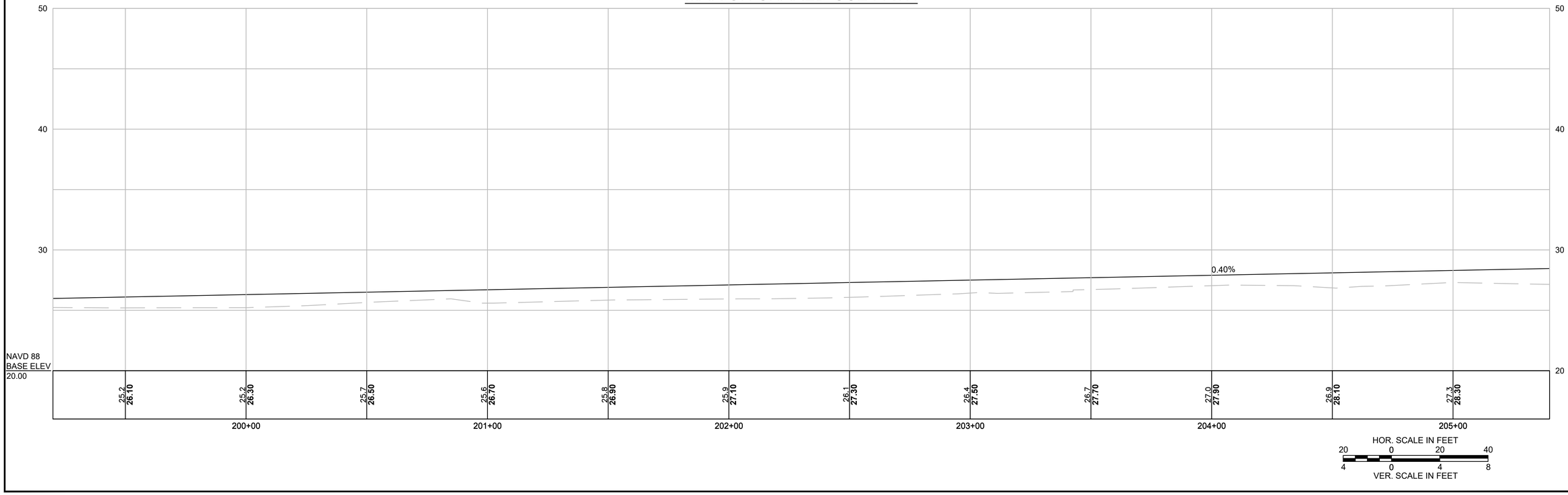
N/F
TOWN OF MARION
(TAX TAKING)
BK/PG 2113/25
ROUTE 195 OFF
MAP 24 LOT 24



N/F
SIPPICAN ACQUISITION CORP.
BK/PG 21871/59
PB/PG 4142/589
PLAN 175 OF 1976
PB/PG 21/343
PLAN 939 OF 1979
BARNABAS RD OFF
MAP 24 LOT 13N

0 20 50 100
SCALE: 1" = 20'

MARION SHARED-USE PATH



HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

607979_CONST.DWG Plotted on 27-Oct-2023 2:56 PM

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 18 OF 36

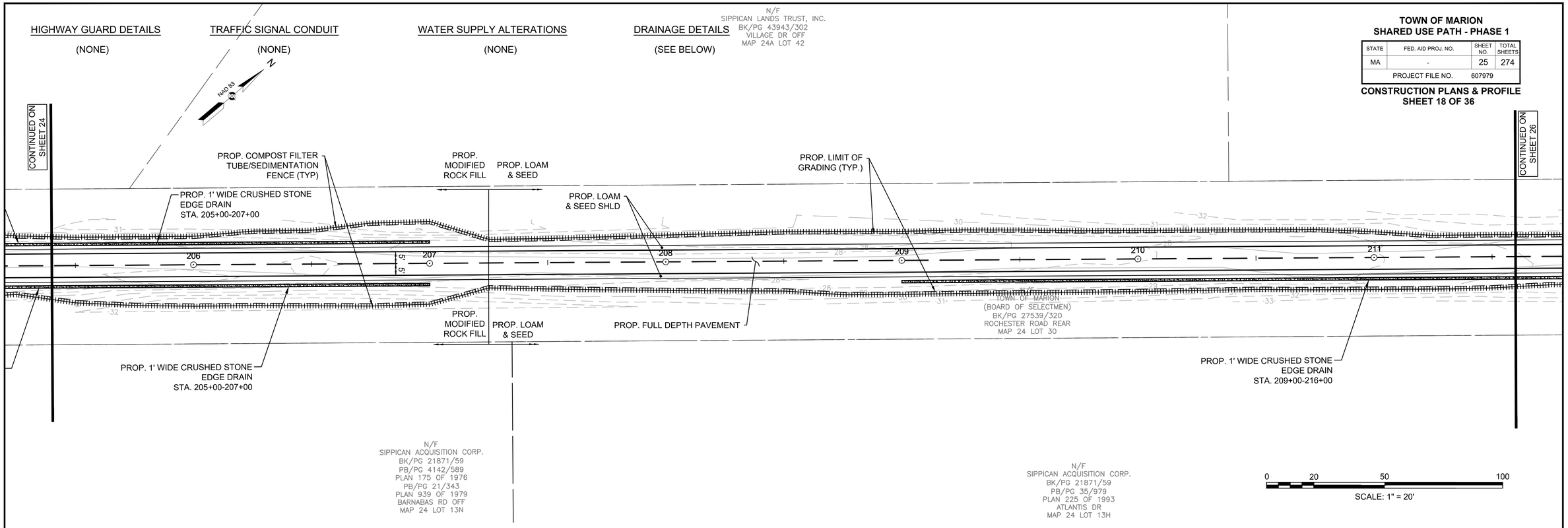
607979_CONST.DWG Plotted on 27-Oct-2023 2:56 PM

HIGHWAY GUARD DETAILS
(NONE)

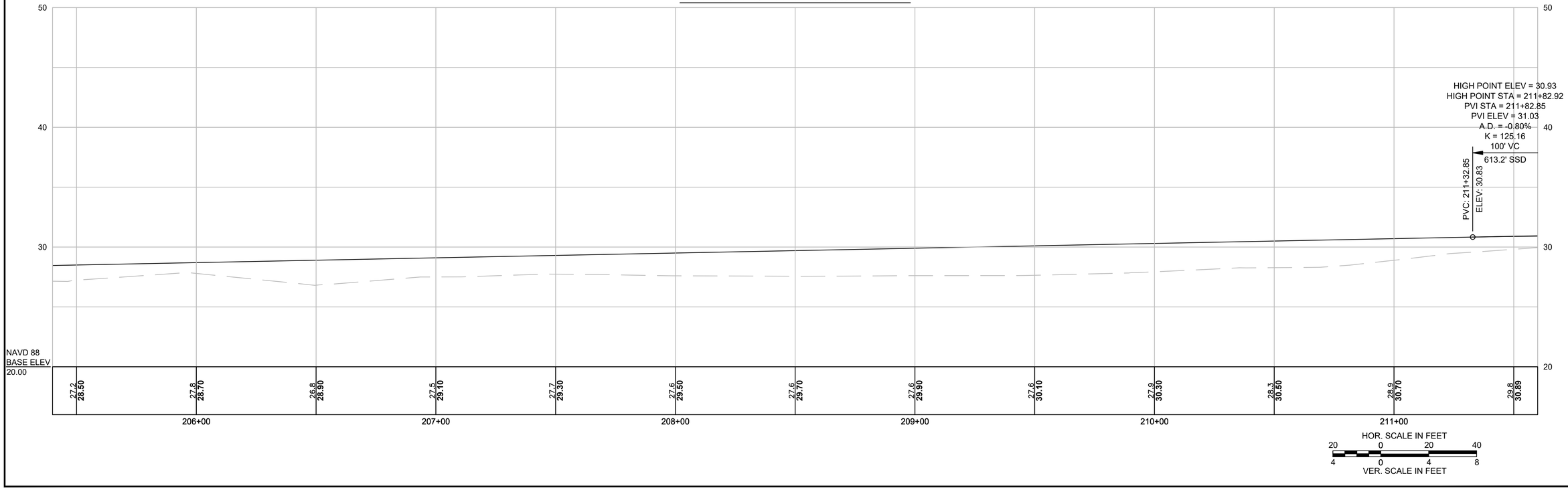
TRAFFIC SIGNAL CONDUIT
(NONE)

WATER SUPPLY ALTERATIONS
(NONE)

DRAINAGE DETAILS
(SEE BELOW)



MARION SHARED-USE PATH



HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

N/F
MARION VILLAGE ESTATES LLC
BK/PG 43959/256
PB/PG 57/1016
PLAN 149 OF 2013
36 VILLAGE DR
MAP 24A LOT 41

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	26	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 19 OF 36

CONTINUED ON SHEET 25

CONTINUED ON SHEET 27

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

PROP. LOAM & SEED SHLD

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 214+00-216+00

PROP. LIMIT OF GRADING (TYP.)

PROP. FULL DEPTH PAVEMENT

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 209+00-216+00

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
ROCHESTER ROAD REAR
MAP 24 LOT 30

N/F
SIPPICAN ACQUISITION CORP.
BK/PG 21871/59
PB/PG 35/979
PLAN 225 OF 1993
ATLANTIS DR
MAP 24 LOT 13H

SCALE: 1" = 20'

MARION SHARED-USE PATH

HIGH POINT ELEV = 30.93
HIGH POINT STA = 211+82.92
PVI STA = 211+82.85
PVI ELEV = 31.03
A.D. = -0.80%
K = 125.16
100' VC
613.2' SSD

PVT: 212+32.85
ELEV: 30.83

NAVD 88
BASE ELEV
20.00

212+00	213+00	214+00	215+00	216+00	217+00
29.6 / **30.92**	28.3 / **30.76**	28.4 / **30.56**	28.3 / **30.37**	29.1 / **30.17**	28.7 / **29.97**
28.4 / **29.77**	27.9 / **29.57**	28.0 / **29.37**	27.5 / **29.17**	27.4 / **28.97**	27.5 / **28.77**

HOR. SCALE IN FEET
VER. SCALE IN FEET

607979_CONST.DWG Plotted on 27-Oct-2023 2:56 PM

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

NAD 83

N/F
MARION VILLAGE ESTATES LLC
BK/PG 43959/256
PB/PG 57/1016
PLAN 149 OF 2013
36 VILLAGE DR
MAP 24A LOT 41

SDWK
LOAM & SEED SHLD
EOP

VILLAGE DR.
(APPROX. LOCATION BASED ON AERIAL IMAGERY)

EOP

N/F
MARION VILLAGE ESTATES LLC
BK/PG 43959/256
PB/PG 57/1016
PLAN 149 OF 2013
36 VILLAGE DR
MAP 24A LOT 41

CONTINUED ON SHEET 26

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

PROP. LOAM & SEED SHLD

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/0001
RAILROAD REAR
MAP 24 LOT 30

MARION SHARED-USE PATH

Δ=13° 23' 27"
L=701.14' R=3000.00'

PROP. LIMIT OF GRADING (TYP.)

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 221+50-223+50

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN
STA. 221+50-223+50

PROP. BENCH

PROP. FULL DEPTH PAVEMENT

CONTINUED ON SHEET 28

N/F
SIPPICAN ASSOCIATES LIMITED PARTNERSHIP
BK/PG 17353/0266
PB/PG 32/324
PLAN 434 OF 1989
15 MILL ST
MAP 24 LOT 13G

N/F
SHERMAN E. BRIGGS, JR., ALICE M. BRIGGS AND ARNOLD BRIGGS
BK/PG 23330/298
PB/PG 53/834
PLAN 749 OF 2007
SPRING ST
MAP 24 LOT 36A

0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 20 OF 36

Plotted on 27-Oct-2023 2:56 PM
607979_CONST.DWG

MARION SHARED-USE PATH

-0.40%

NAVD 88
BASE ELEV
20.00

218+00	219+00	220+00	221+00	222+00	223+00
27.3 / 28.57	26.5 / 28.37	26.6 / 28.17	27.1 / 27.97	27.1 / 27.77	26.8 / 27.57
26.8 / 27.37	26.5 / 27.17	26.3 / 26.97	26.4 / 26.77	26.2 / 26.57	26.3 / 26.38

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

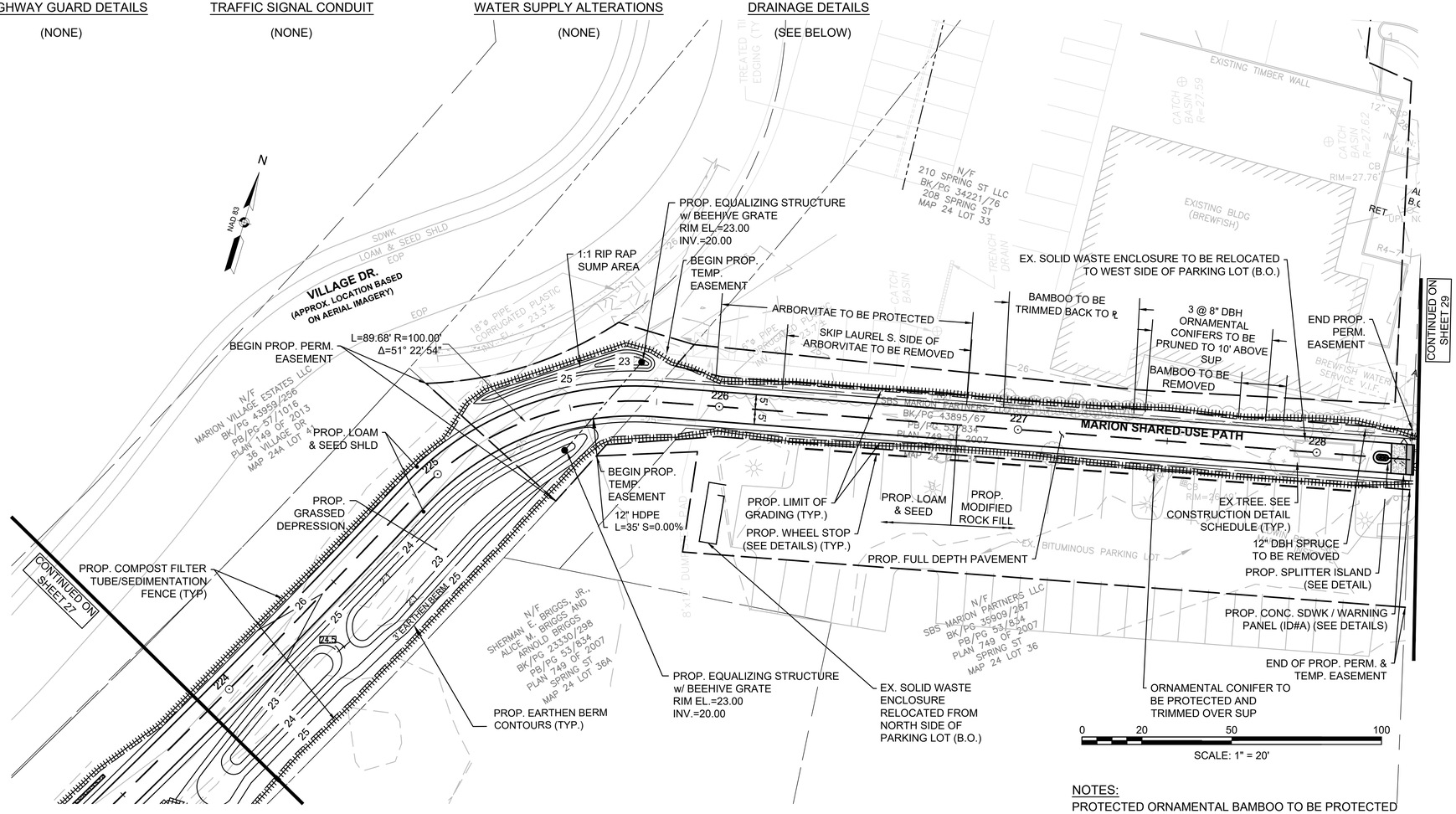
(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	28	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 21 OF 36

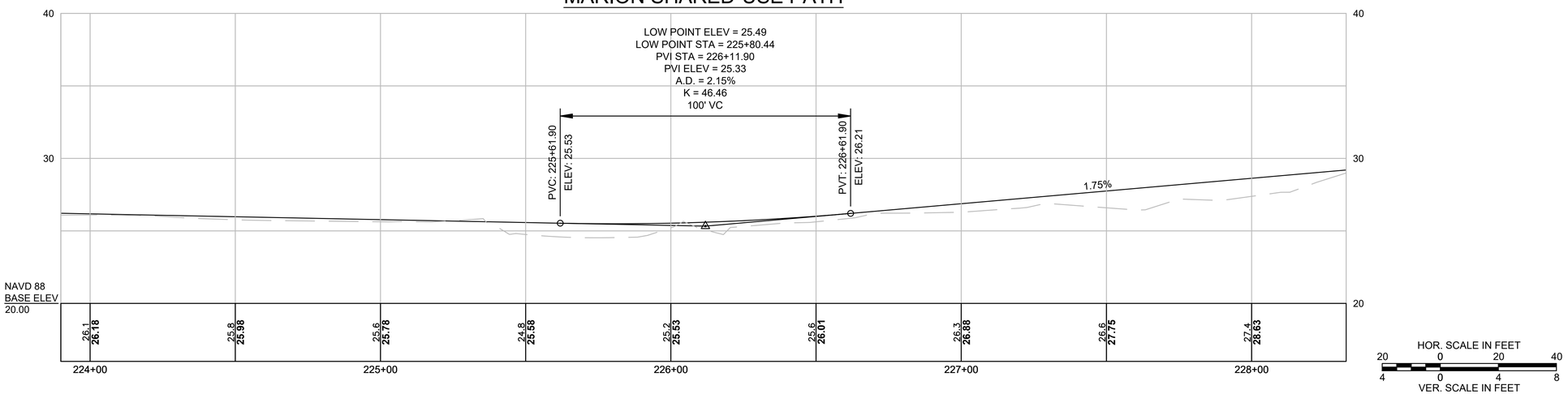
607979_CONST.DWG Plotted on 27-Oct-2023 2:56 PM



NOTES:

PROTECTED ORNAMENTAL BAMBOO TO BE PROTECTED IS APPROXIMATELY OFFSET 2' FROM PROPERTY LINE

MARION SHARED-USE PATH



HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 30

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE SHEET 30

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	29	274
PROJECT FILE NO.		607979	

FRONT ST (RTE 105) AT SPRING ST
CONSTRUCTION PLAN
SHEET 22 OF 36

Y16147.21 MARION PATHWAY (CONSTRUCTION).DWG Plotted on 20-Oct-2023 12:33 PM

CONTINUED ON SHEET NO. 30

N/F
375 FRONT STREET, LLC
BK/PG 47948/92
PB/PG 7/712
375 FRONT ST
MAP 11 LOT 61A

N/F
NANCY GEHRING
BK/PG 41360/197
PB/PG 7/712
373 FRONT ST
MAP 11 LOT 61

N/F
GEHRING NANCY
BK/PG 41360/0197
FRONT ST
MAP 11 LOT 62

N/F
THEODORE LAYCOCK
BK/PG 10097/21
391 FRONT ST
MAP 11 LOT 43

N/F
CAROL A. DITATA AND GABRIEL J. DITATA, TRUSTEES OF THE CAROL A. DITATA REVOCABLE LIVING TRUST
BK/PG 40210/0182
385 FRONT ST
MAP 11 LOT 44

N/F
MEM REALTY TRUST
BK/PG 16177/0114
381 FRONT ST
MAP 11 LOT 45

N/F
MARION OPEN SPACE ACQUISITION COMMISSION
BK/PG 38460/309
FRONT ST
MAP 11 LOT 60

N/F
THEODORE LAYCOCK AND MILTON LAYCOCK
BK/PG 10028/331
PB/PG 43/1158
PLAN 772 OF 2000
FRONT ST
MAP 11 LOT 25

N/F
REAL INVESTMENTS, LLC
BK/PG 37663/170
374 FRONT ST
MAP 13 LOT 17

N/F
REAL INVESTMENTS, LLC
BK/PG 37896/249
368 FRONT ST
MAP 13 LOT 18

N/F
MARION LANDS TRUST LLC
BK/PG 43949/34
PB/PG 57/1016
PLAN 149 OF 2013
VILLAGE DR
MAP 24A LOT 39

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
ROCHESTER ROAD REAR
MAP 24 LOT 30

N/F
210 SPRING ST LLC
BK/PG 34221/76
208 SPRING ST
MAP 24 LOT 33

N/F
SBS MARION PARTNERS LLC
BK/PG 35909/287
PB/PG 53/834
PLAN 749 OF 2007
SPRING ST
MAP 24 LOT 36

N/F
SHERMAN E. BRIGGS, JR., ALICE M. BRIGGS AND ARNOLD BRIGGS
BK/PG 23330/298
PB/PG 53/834
PLAN 749 OF 2007
SPRING ST
MAP 24 LOT 36A

FRONT ST (RTE 105)

SPRING ST

1903 LAYOUT 842
1903 LAYOUT 823
1903 BASELINE
TOWN LAYOUT

PROP HMA DRIVEWAY
R&R UP 100/44 (BY OTHERS)
RET HIGHWAY BOUND
BEGIN PROP HMA BERM
MATCH INTO PROP PATHWAY
END PROP HMA BERM
PROP 4" LOAM AND SEED
PROP PVMT STANDARD MILLING AND OVERLAY
PROP TREE PROTECTION (REFER TO CONSTRUCTION DETAILS SHEET 2 FOR DISPOSITION OF EXIST TREES AND PROP TREATMENTS (TYP))

BEGIN PROP HMA BERM
TRIM VEGETATION
PROP SAWCUT (TYP)
RET HIGHWAY BOUND
PROP TEMP EASEMENT
PROP 4" LOAM AND SEED
END PROP HMA BERM
LIMIT OF WORK
STA 103+00
N2722716.2592
E854957.3386
N35°01'29"E
21.38'
N32°22'02"W
32.81'

LIMIT OF WORK
STA 100+52.91
N2722920.9447
E854820.1752
N3°27'53"E
40.36'
N28°13'07"W
21.51'
S48°00'45"W
31.25'

BEGIN R&R VGC
BEGIN PROP VGC
PROP TEMP EASEMENT
PROP HMA SDWK
PROP SAWCUT (TYP)
5' MIN
END R&R VGC
END PROP VGC
PROP 4" CRUSHED STONE
PROP TOWN ALTERATION
PROP VGC
PROP DWY #1
LIMIT OF PAVING
PROP HMA DRIVEWAY
BEGIN PROP VGC
PROP VGC TRANSITION
PROP HMA SDWK
PROP 4" LOAM AND SEED

BEGIN PROP VGC
PROP HMA SDWK
PROP CEM CONC ISLAND
PROP VGC
R&D BIT CONC ISLAND AND SGC
PROP 4" LOAM AND SEED
PROP FULL DEPTH PVMT
PROP TEMP EASEMENT
BEGIN R&R VGC
END PROP VGC
PROP PVMT STANDARD MILLING AND OVERLAY
END PROP VGC

PROP CR #1
PROP CR #2
PROP CR #PED-20949
PROP CR #PED-8143
BEGIN PROP VGC
PROP HMA SDWK
PROP VGC
RET HIGHWAY BOUND
BEGIN PROP HMA BERM
PROP TEMP EASEMENT
LIMIT OF REGRADING
END PROP HMA BERM
N84°39'17"E
24.12'
LIMIT OF WORK
STA 201+19
N2722644.5810
E854910.7007
N68°01'35"W
29.42'
END R&R VGC
BEGIN PROP VGC
END PROP VGC
PROP 4" LOAM AND SEED
PROP TEMP EASEMENT
MATCH INTO PROP PATHWAY
RET HIGHWAY BOUND
PROP TREE PROTECTION (REFER TO CONSTRUCTION DETAILS SHEET 2 FOR DISPOSITION OF EXIST TREES AND PROP TREATMENTS (TYP))

BENJAMIN BROTHERS MARION INSTITUTE
EXISTING BUILDING (DEMOLISH)
EX. BITUMINOUS PARKING LOT
BREWER WATER SERVICE LINE
CATCH BASIN R=27.59
TRENCH DRAIN

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 28

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE BELOW

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	30	274
PROJECT FILE NO.	607979		

FRONT ST (RTE 105) AT SPRING ST
DRAINAGE & UTILITY PLAN
SHEET 23 OF 36

Plotted on 30-Oct-2023 12:44 PM

Y16147.21 MARION PATHWAY (DRAINAGE & UTILITY PLAN).DWG

CONTINUED ON SHEET NO. 31

N/F
THEODORE LAYCOCK
BK/PG 10097/21
391 FRONT ST
MAP 11 LOT 43

N/F
CAROL A. DITATA AND GABRIEL J. DITATA, TRUSTEES OF THE CAROL A. DITATA REVOCABLE LIVING TRUST
BK/PG 40210/0182
385 FRONT ST
MAP 11 LOT 44

N/F
MEM REALTY TRUST
BK/PG 16177/0114
381 FRONT ST
MAP 11 LOT 45

N/F
MARION OPEN SPACE ACQUISITION COMMISSION
BK/PG 38460/309
FRONT ST OFF
MAP 11 LOT 60

N/F
375 FRONT STREET, LLC
BK/PG 47948/92
PB/PG 7/712
375 FRONT ST
MAP 11 LOT 61A

N/F
NANCY GEHRING
BK/PG 41360/197
PB/PG 7/712
373 FRONT ST
MAP 11 LOT 61

N/F
GEHRING NANCY
BK/PG 41360/0197
FRONT ST
MAP 11 LOT 62

N/F
THEODORE LAYCOCK AND MILTON LAYCOCK
BK/PG 10028/331
PB/PG 43/1158
PLAN 772 OF 2000
FRONT ST
MAP 11 LOT 25

N/F
MARION LANDS TRUST LLC
BK/PG 43949/34
PB/PG 57/1016
PLAN 149 OF 2013
VILLAGE DR
MAP 24A LOT 39

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
ROCHESTER ROAD REAR
MAP 24 LOT 30

N/F
210 SPRING ST LLC
BK/PG 34221/76
208 SPRING ST
MAP 24 LOT 33

N/F
SBS MARION PARTNERS LLC
BK/PG 35909/287
PB/PG 53/834
PLAN 749 OF 2007
SPRING ST
MAP 24 LOT 36

N/F
SHERMAN E. BRIGGS, JR., ALICE M. BRIGGS AND ARNOLD BRIGGS
BK/PG 23330/298
PB/PG 53/834
PLAN 749 OF 2007
SPRING ST
MAP 24 LOT 36A

N/F
REAL INVESTMENTS, LLC
BK/PG 37896/249
368 FRONT ST
MAP 13 LOT 18

N/F
REAL INVESTMENTS, LLC
BK/PG 37663/170
374 FRONT ST
MAP 13 LOT 17

FRONT ST (RTE 105)

SPRING ST

1903 LAYOUT 842
1903 LAYOUT 823
1903 BASELINE
TOWN LAYOUT

R&R UP 100/44 (BO)
ADJ GG (BO)
PROP PULL BOX FOR ELEC SERVICE CONNECTION (EVERSOURCE APPROVED)
PROP 3" CONDUIT FOR ELEC SERVICE CONNECTION
RET UP 100/43
PROP 3" CONDUIT (TYP)
RET HYD
ADJ GG (BO)
PROP RRFB WITH APS PUSH BUTTON
PROP TEMP EASEMENT
ADJ GG (BO)
ADJ SMH
RET UP 100/42
LIMIT OF WORK
STA 103+00
N2722716.2592
E854957.3386
LIMIT OF WORK
STA 100+52.91
N2722920.9447
E854820.1752
PROP TEMP EASEMENT
PROP TOWN ALTERATION
PROP RRFB
R&D CB AND LATERAL PIPE
PROP (APS) PUSH BUTTON ON PEDESTAL
PROP 4' - 12" RCP
PROP 8' - 12" RCP
PROP 5' - 12" RCP
RET UP 100/52
REM UP 100/52 (BO)
PROP TEMP EASEMENT
RET UP
ADJ GG (BO)
PROP TEMP EASEMENT
PROP 19' - 12" RCP
ADJ GG (BO)
ADJ WG
UPGRADE UP #52S (BO)
PROP TEMP EASEMENT
R&R WG
ADJ GG (BO)
LIMIT OF WORK
STA 201+19
N2722644.5810
E854910.7007

DRAINAGE STRUCTURE TABLE						
NO	TYPE	STATION	RIM EL	INV EL IN	INV EL OUT	TREATMENT
①	CB	102+15 RT	28.55	-	26.54	PROP
②	DMH	102+13 RT	28.85	26.50	-	RET EXISTING
③	CB	200+48 RT	28.53	-	26.44	PROP
④	DMH	200+44 LT	28.49	VERIFY IN FIELD	-	CIT CB TO DMH
⑤	CB	200+62 LT	28.37	-	24.37	PROP
⑥	CB	200+23 LT	28.57	-	26.10	PROP
⑦	DMH	102+64 RT	28.64	26.02	25.32	CIT CB TO DMH
⑧	CB	102+46 LT	28.68	-	24.67	ADJ, PROP GRATE
⑨	DMH	102+30 LT	28.70	24.32	21.62	ADJ
⑩	CB	100+58 LT	28.61	23.62	23.62	ADJ

NOTES:
1. ALL PROPOSED MANHOLE COVER ASSEMBLIES SHALL BE BOLT-DOWN PER ENGINEERING DIRECTIVE E-16-003.
2. EXISTING MANHOLE COVER ASSEMBLY TO BE REPLACED WITH BOLT-DOWN ASSEMBLY PER ENGINEERING DIRECTIVE E-16-003.
3. THE CONTRACTOR SHALL CONFIRM THAT THE NEW INVERT ELEVATION SHOWN IS AT OR ABOVE THE EXISTING INVERT ELEVATION OUT PRIOR TO CONSTRUCTING UP GRADIENT DRAINAGE.
4. PROPOSED INVERT INFORMATION IS PROVIDED FOR BIDDING PURPOSES ONLY AND INVERTS MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER WITHOUT ADDITIONAL COMPENSATION EXCEPT AS ALLOWED BY THE STANDARD SPECIFICATIONS.

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 29

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	31	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 24 OF 36

CONTINUED ON SHEET 30

CONTINUED ON SHEET 32

BEGIN PROP. PERM. EASEMENT

END PROP. TEMP. EASEMENT

PROP. CONC. SDWK / WARNING PANEL (ID#B) (SEE DETAIL)

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP)

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 231+00-234+00

PROP. LOAM & SEED

PROP. MODIFIED ROCK FILL

R&D DRAINAGE PIPE SEDIMENT TO INVERT ELEVATION (6 CY±)
EX. OUTLET TO BE MAINTAINED

PROP. MODIFIED ROCK FILL

PROP. LOAM & SEED

PROP. LIMIT OF GRADING (TYP.)

L=14.94' R=250.00'
Δ=3° 25' 26"

PROP. LOAM & SEED SHLD

L=79.23' R=500.00'
Δ=9° 04' 45"

Δ=11° 02' 12"
L=96.31' R=500.00'

MARION SHARED-USE PATH

PROP. FULL DEPTH PAVEMENT

PROP. SPLITTER ISLAND (SEE DETAIL)

END PROP. TEMP. EASEMENT

BEGIN PROP. PERM. EASEMENT

EX TREE. SEE CONSTRUCTION DETAIL SCHEDULE (TYP.)

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 231+00-233+50

MEMORIAL REALTY TRUST
BK/PG 12477/0114
381 FRONT ST
MAP 11 LOT 45

THEODORE LAYCOCK
BK/PG 10097/21
391 FRONT ST
MAP 11 LOT 43

MARION OPEN SPACE ACQUISITION COMMISSION
BK/PG 38460/309
FRONT ST
MAP 11 LOT 57

375 FRONT STREET, LLC
BK/PG 47948/92
PB/PG 417/12
375 FRONT ST
MAP 11 LOT 61A

MARION LANDS TRUST, LLC
BK/PG 45518/286
PB/PG 403/552
PLAN 62 OF 1977
HOLLY KNOLL
MAP 11 LOT 65

105 SOUTH MARION WAREHAM MATTAPOISETT (ROUTE 6) ROAD ACADEMY

CRUSHED STONE CHECK DAM

CRUSHED STONE CHECK DAM

157" RCP WITH FES

FEMA ZONE X

FEMA ZONE AE (EL. 15' NAVD88)

0 20 50 100
SCALE: 1" = 20'

MARION SHARED-USE PATH

LOW POINT ELEV = 25.97
LOW POINT STA = 231+10.09
PVI STA = 230+60.09
PVI ELEV = 26.85
A.D. = 1.33%
K = 75.15
100' VC

PVC: 230+10.09
ELEV: 28.40

PVT: 231+10.09
ELEV: 25.97

-3.10%

-1.77%

230+00	231+00	232+00	233+00	234+00	235+00	236+00
27.0 / **28.71**	25.9 / **27.27**	25.8 / **26.15**	24.8 / **25.26**	23.6 / **24.38**	22.7 / **23.50**	21.9 / **22.61**	21.0 / **21.73**	20.1 / **20.85**	19.5 / **19.96**	18.6 / **19.08**	17.9 / **18.20**	17.3 / **17.32**

40
30
20
8
LEV

HOR. SCALE IN FEET
20 0 20 40

VER. SCALE IN FEET
4 0 4 8

607979_CONST.DWG Plotted on 27-Oct-2023 2:56 PM

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

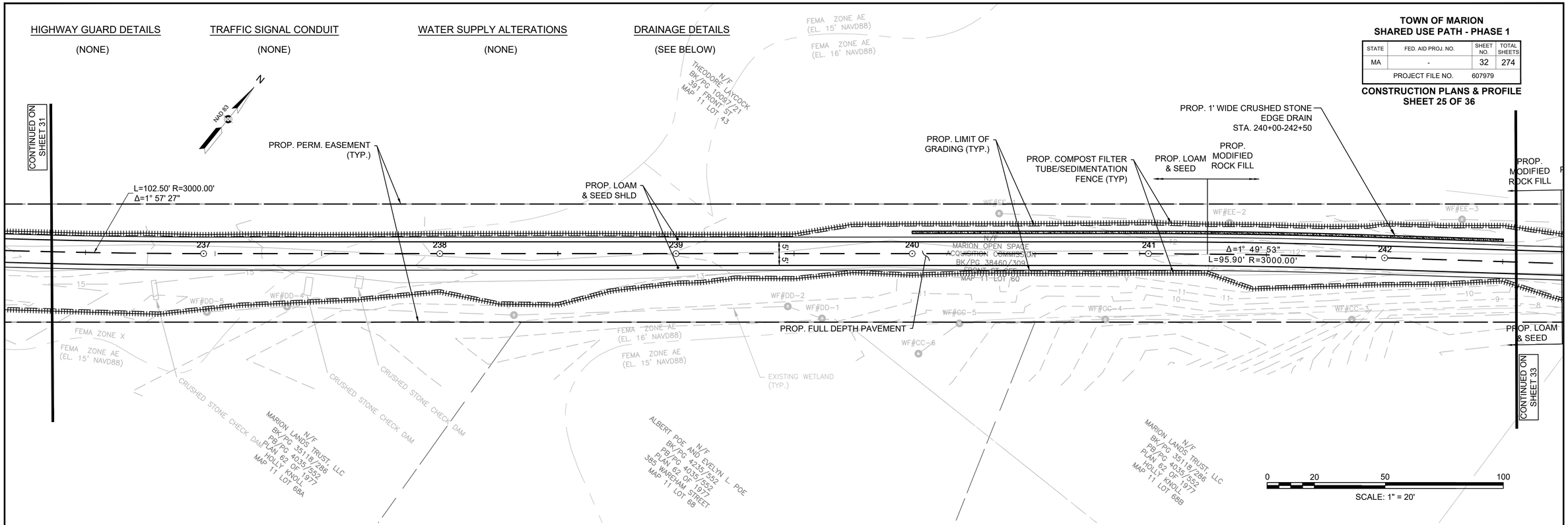
DRAINAGE DETAILS

(SEE BELOW)

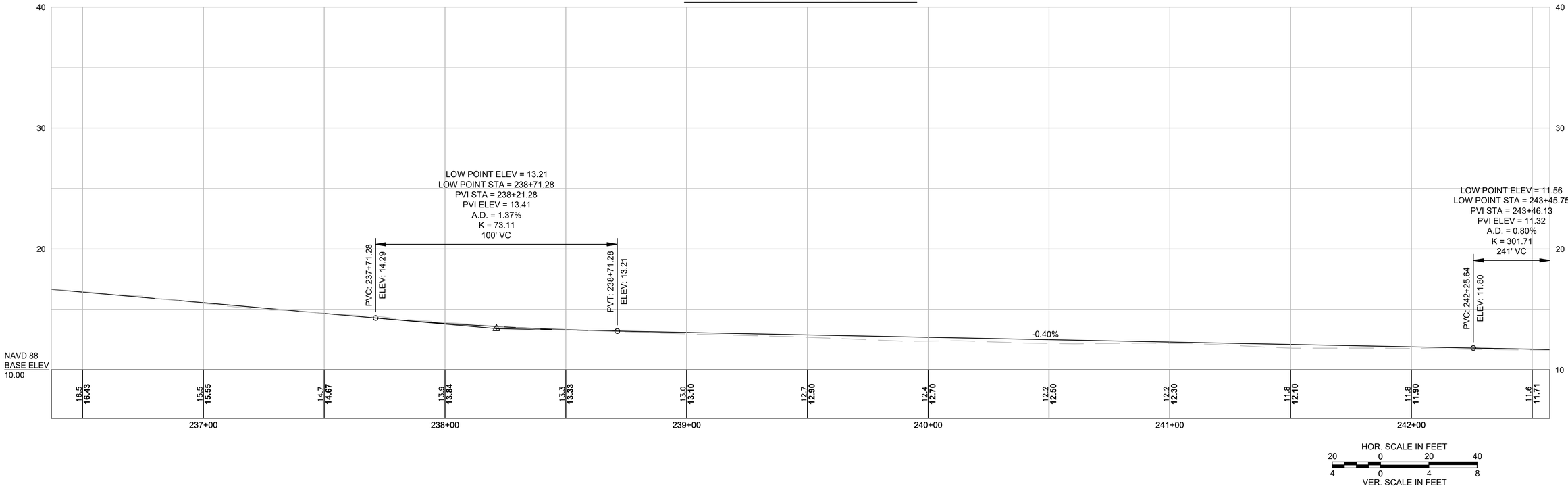
TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	32	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 25 OF 36



MARION SHARED-USE PATH



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HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	33	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 26 OF 36

MARION SHARED-USE PATH

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HIGHWAY GUARD DETAILS

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

TRAFFIC SIGNAL CONDUIT

(NONE)

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	34	274
PROJECT FILE NO.		607979	

CONSTRUCTION PLANS & PROFILE
SHEET 27 OF 36

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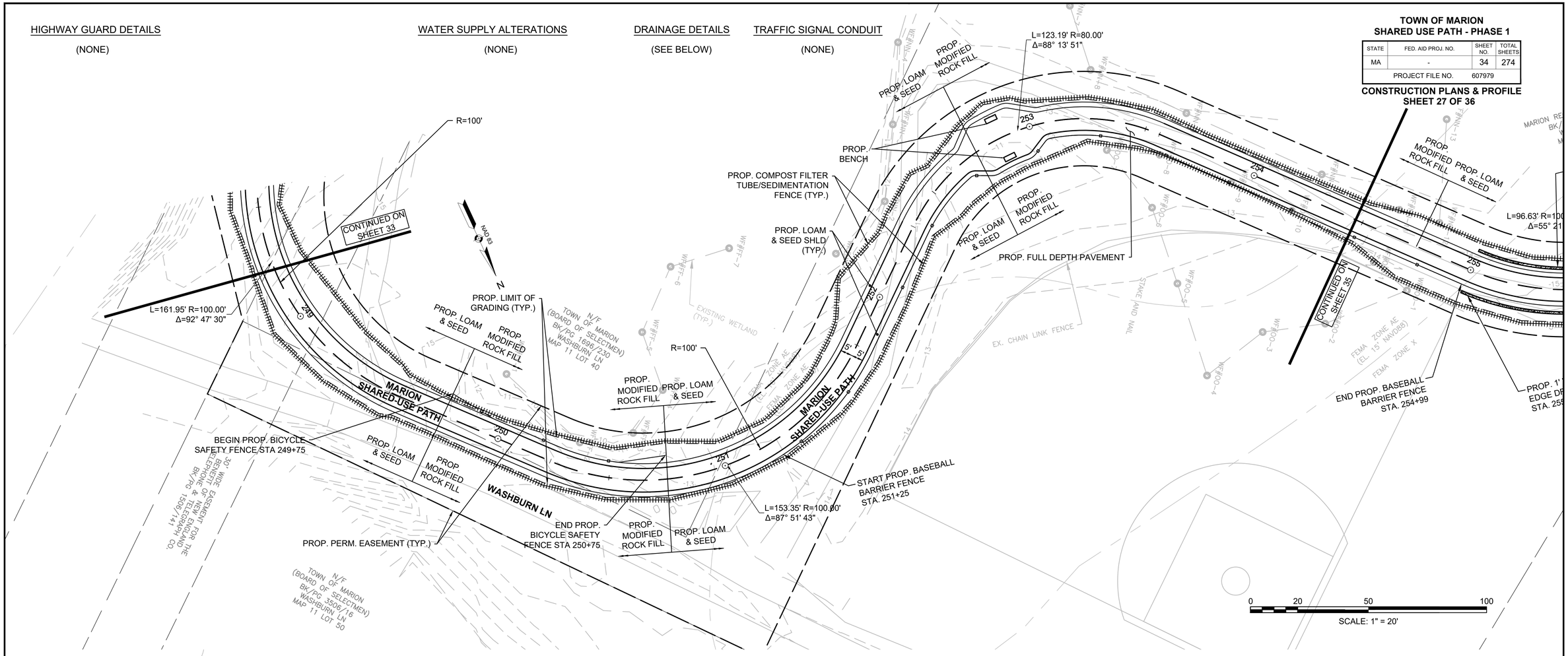
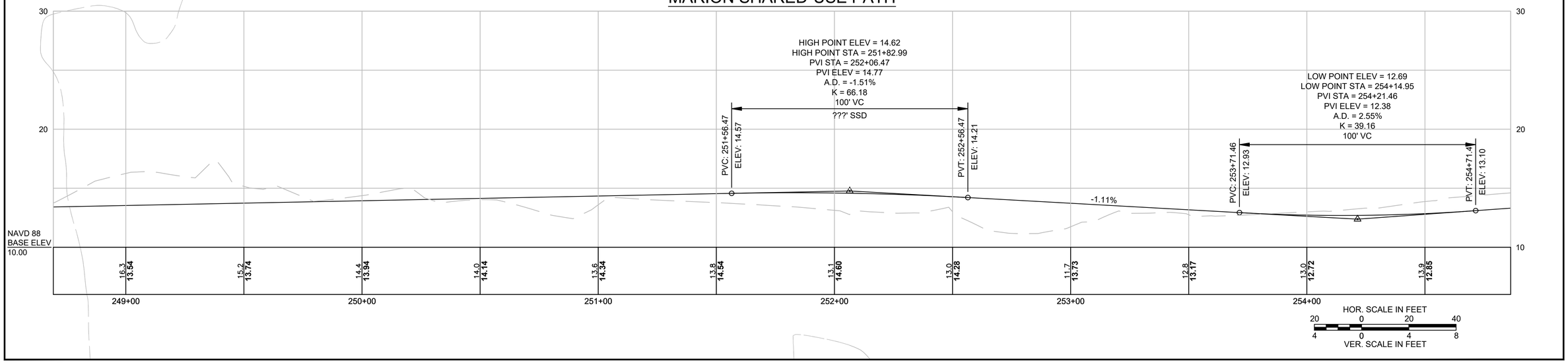


MARION SHARED-USE PATH



HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

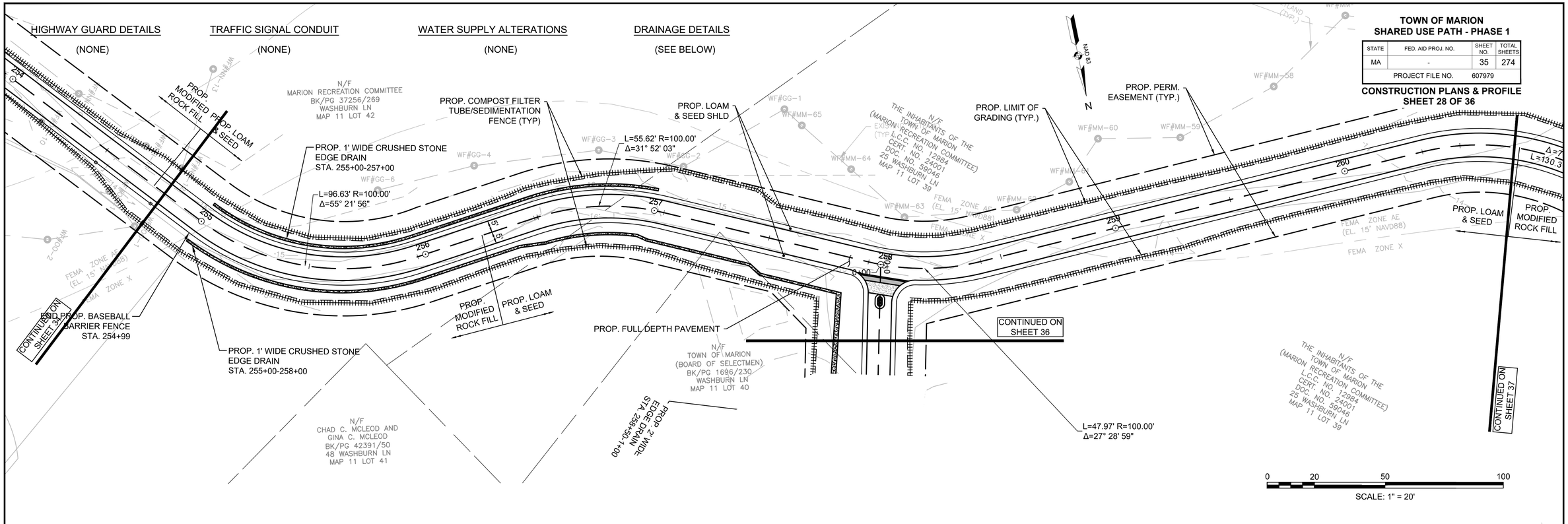
DRAINAGE DETAILS

(SEE BELOW)

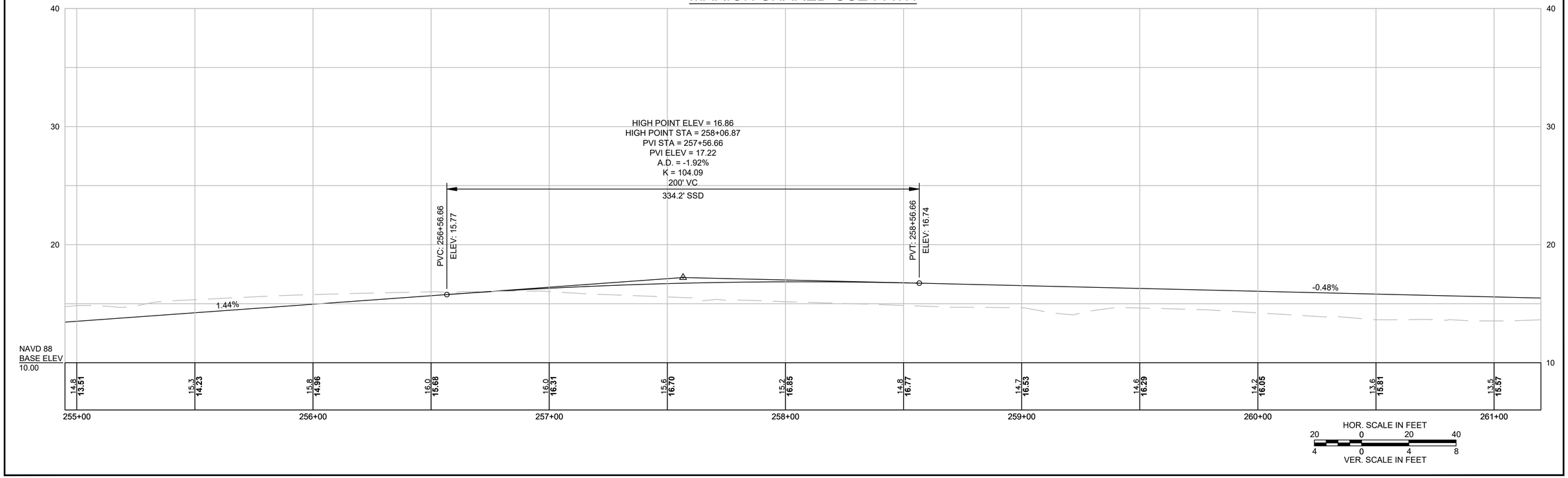
TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	35	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 28 OF 36



MARION SHARED-USE PATH



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HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

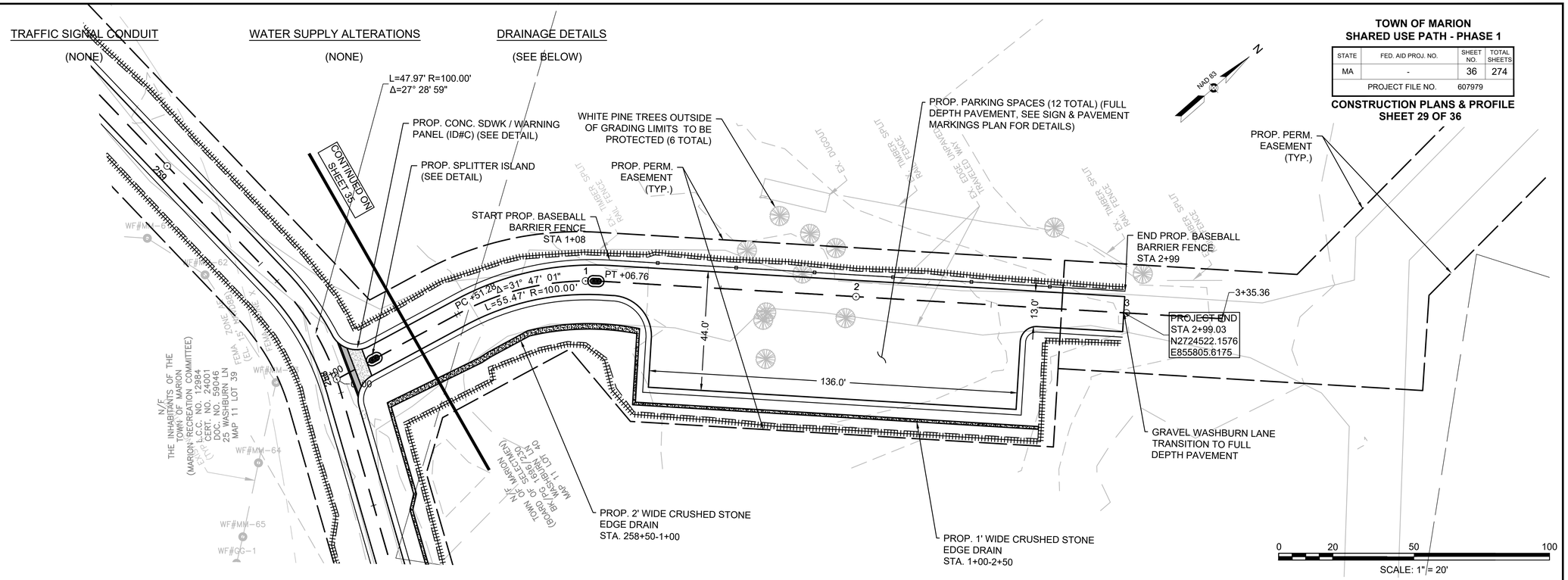
DRAINAGE DETAILS

(SEE BELOW)

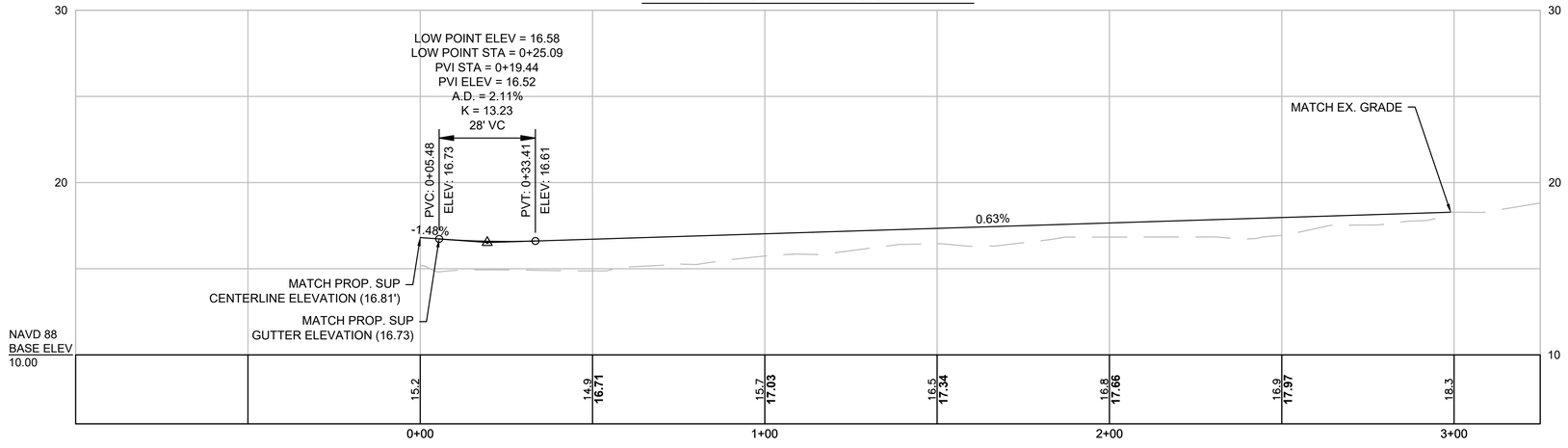
TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	36	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 29 OF 36



MARION SHARED-USE PATH



HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

607979_CONST.DWG Plotted on 27-Oct-2023 2:57 PM

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	274
PROJECT FILE NO.	607979		

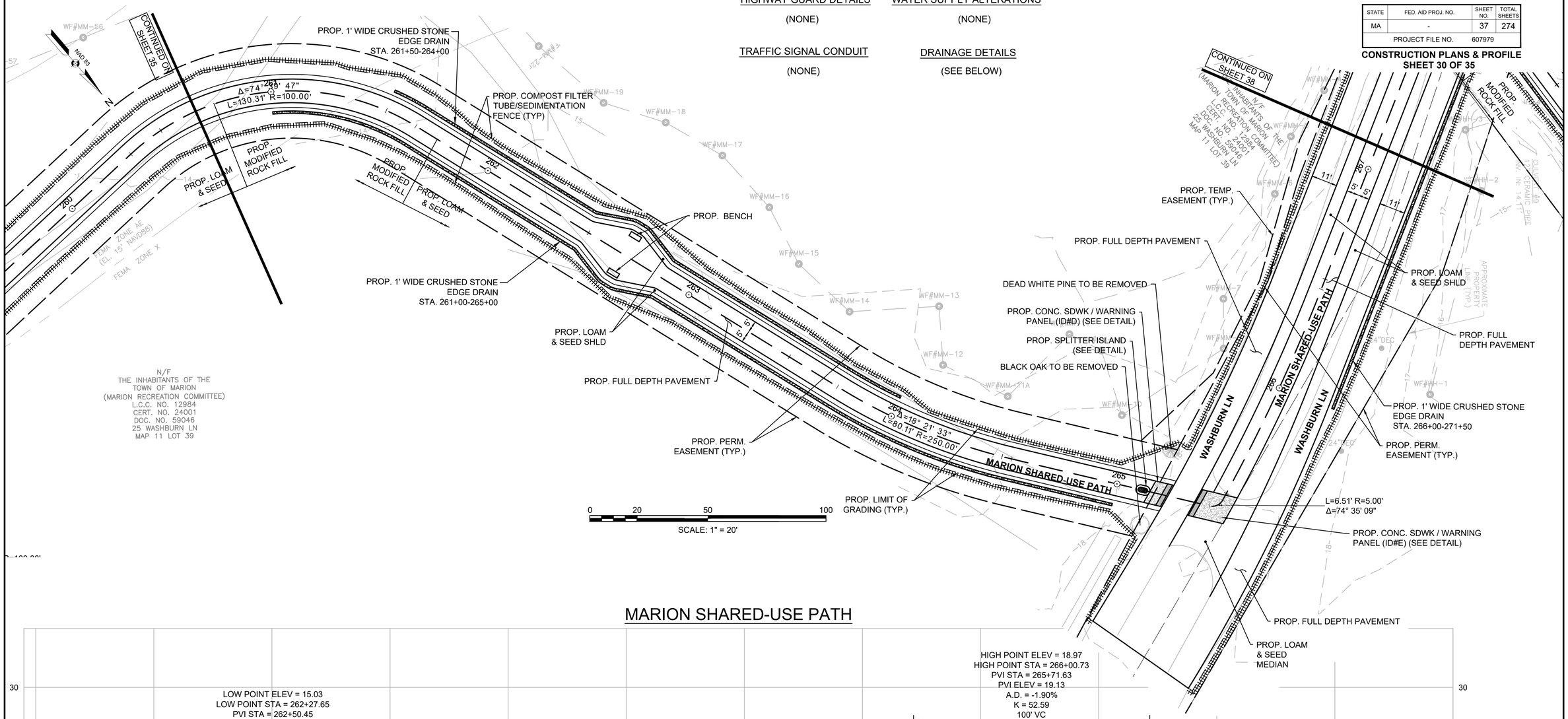
CONSTRUCTION PLANS & PROFILE
SHEET 30 OF 35

HIGHWAY GUARD DETAILS
(NONE)

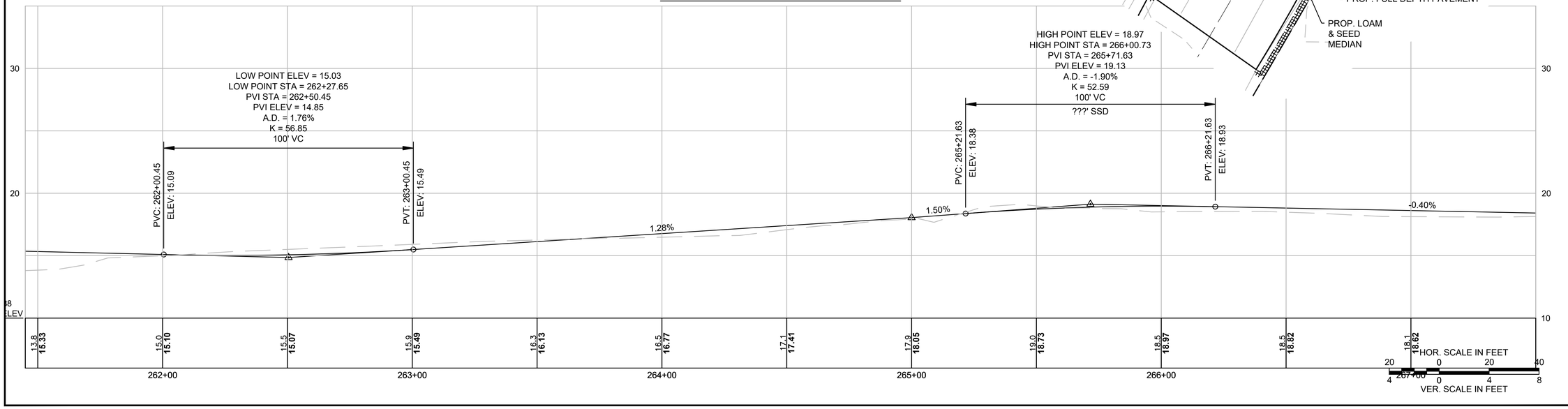
WATER SUPPLY ALTERATIONS
(NONE)

TRAFFIC SIGNAL CONDUIT
(NONE)

DRAINAGE DETAILS
(SEE BELOW)



MARION SHARED-USE PATH



607979_CONST.DWG Plotted on 27-Oct-2023 2:57 PM

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

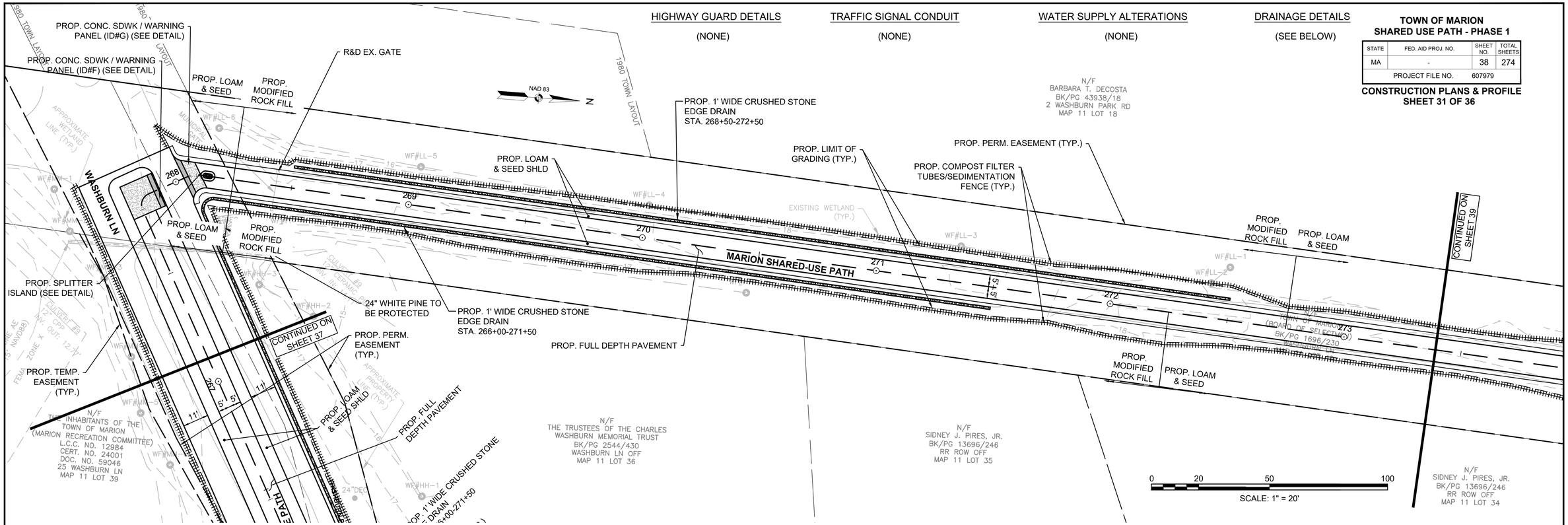
(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

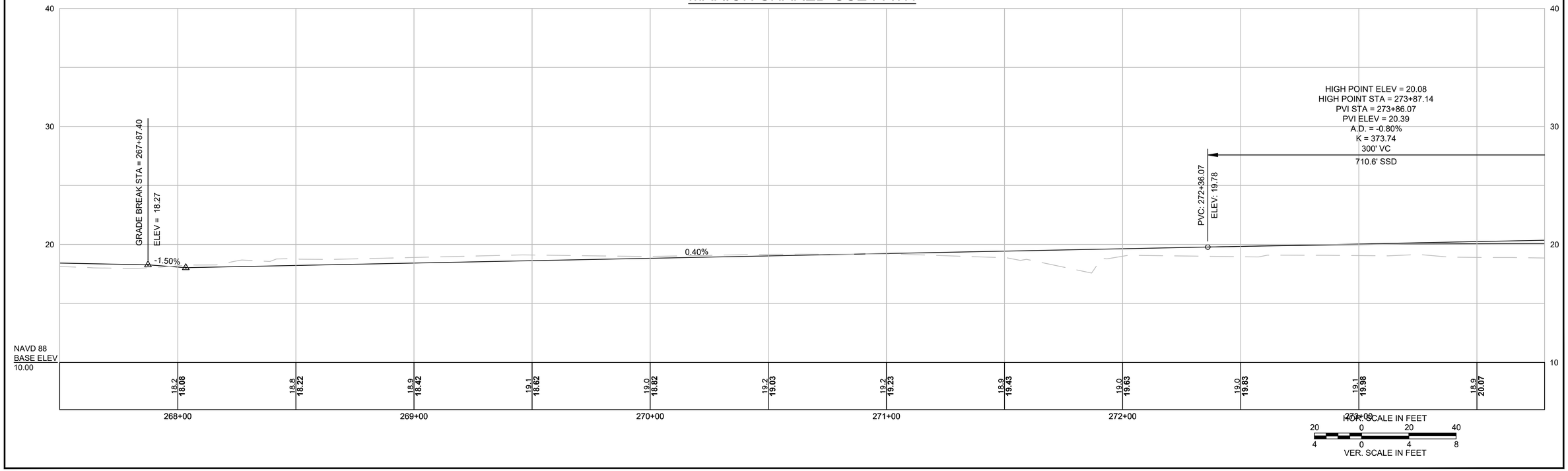
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	38	274
PROJECT FILE NO.		607979	

CONSTRUCTION PLANS & PROFILE
SHEET 31 OF 36

607979_CONST.DWG Plotted on 27-Oct-2023 2:57 PM



MARION SHARED-USE PATH



HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

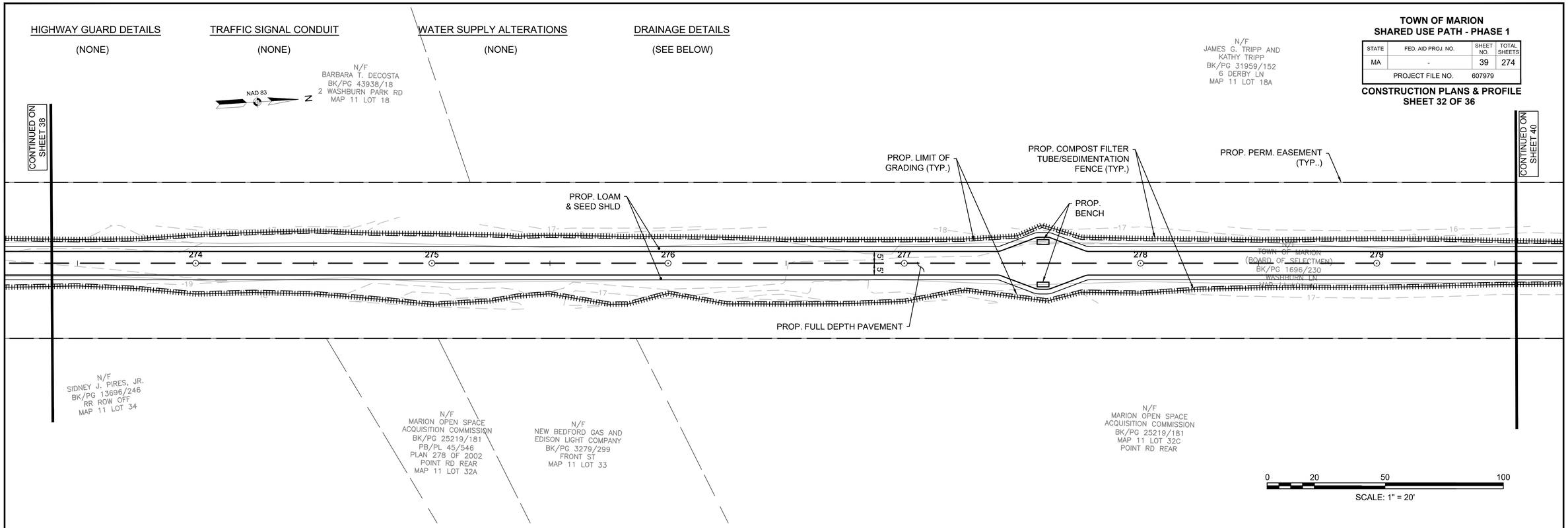
(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

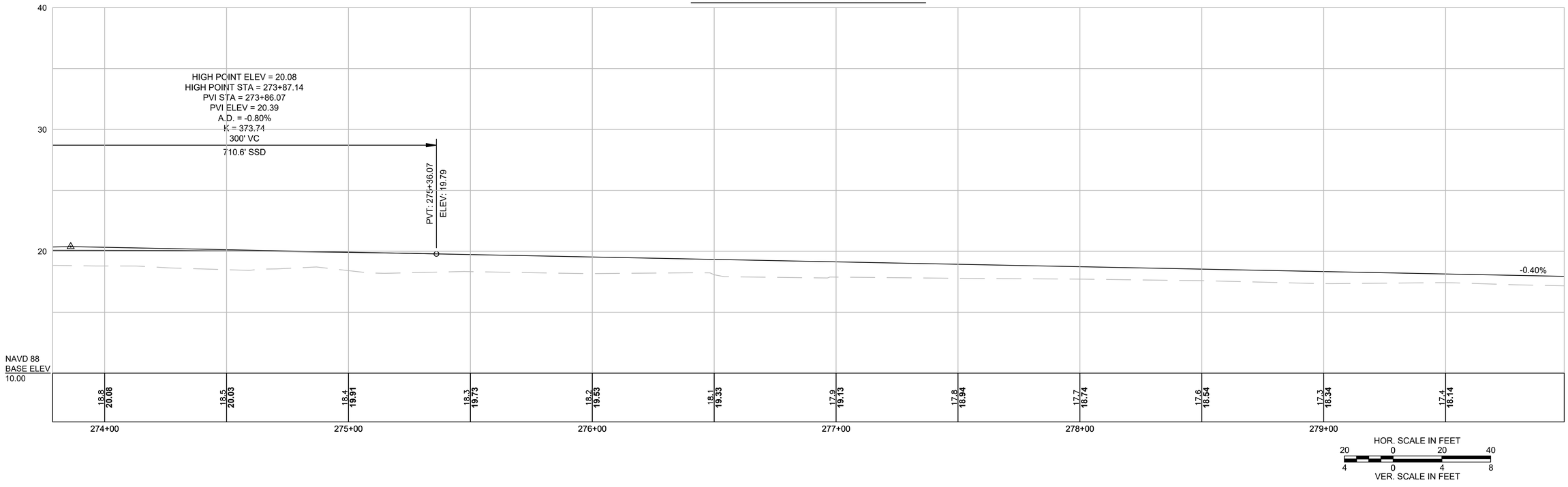
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 32 OF 36

607979_CONST.DWG Plotted on 27-Oct-2023 2:57 PM



MARION SHARED-USE PATH



HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

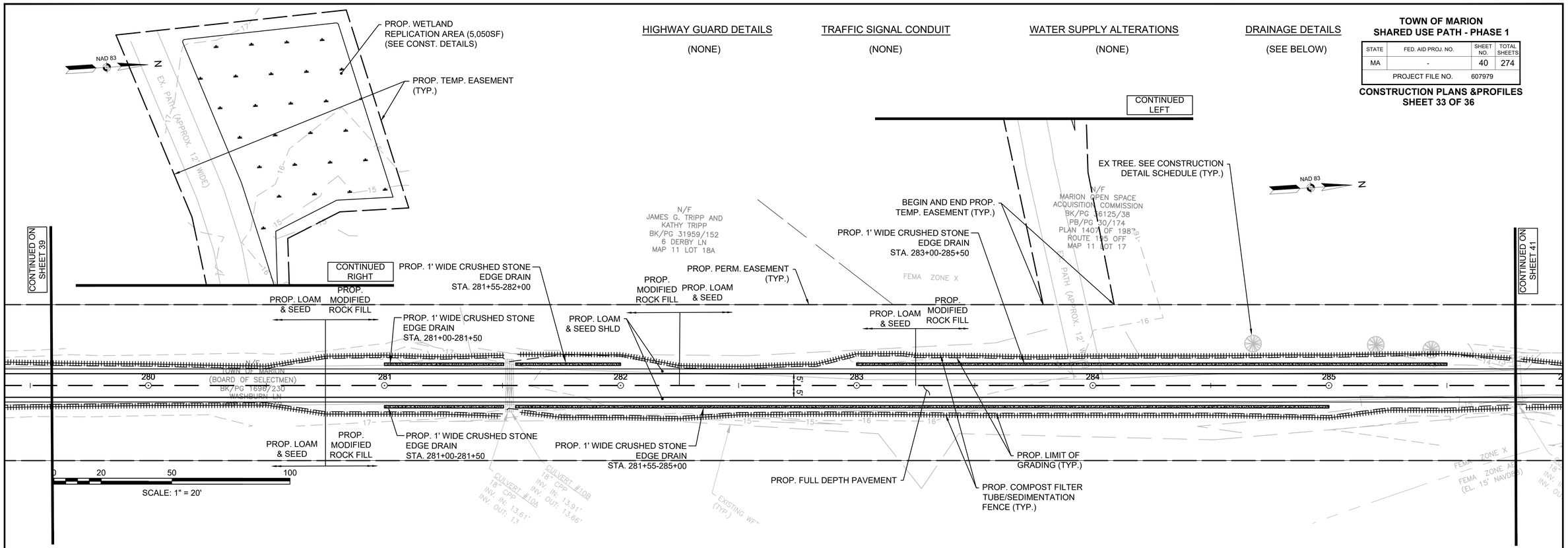
(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

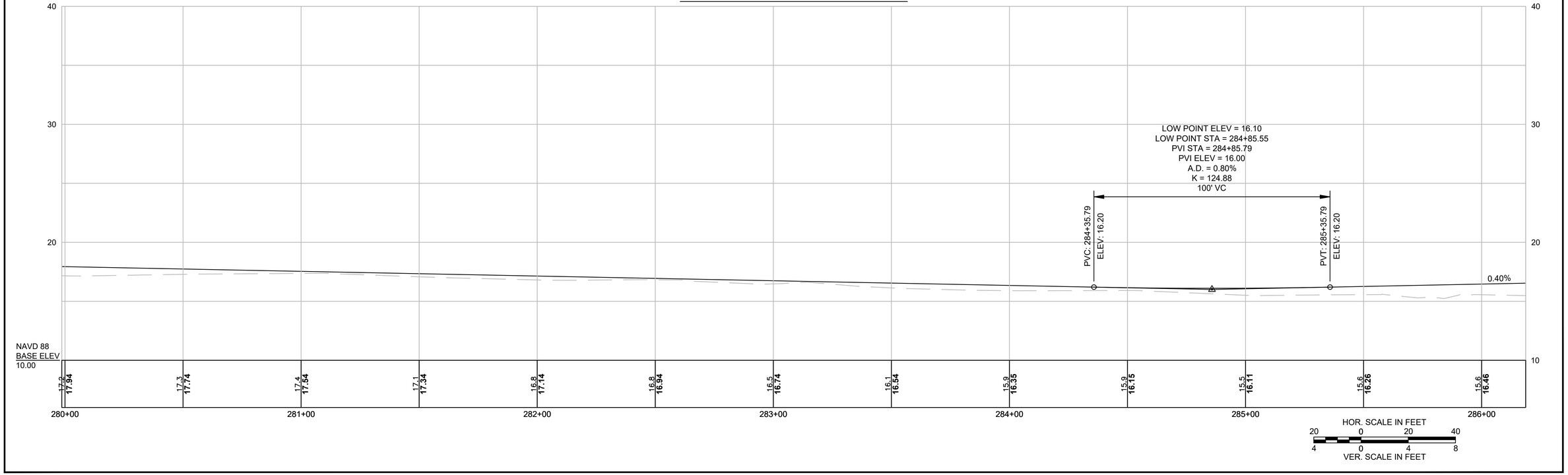
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	274
PROJECT FILE NO.		607979	

CONSTRUCTION PLANS &PROFILES
SHEET 33 OF 36

607979_CONST.DWG Plotted on 27-Oct-2023 2:58 PM



MARION SHARED-USE PATH



HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

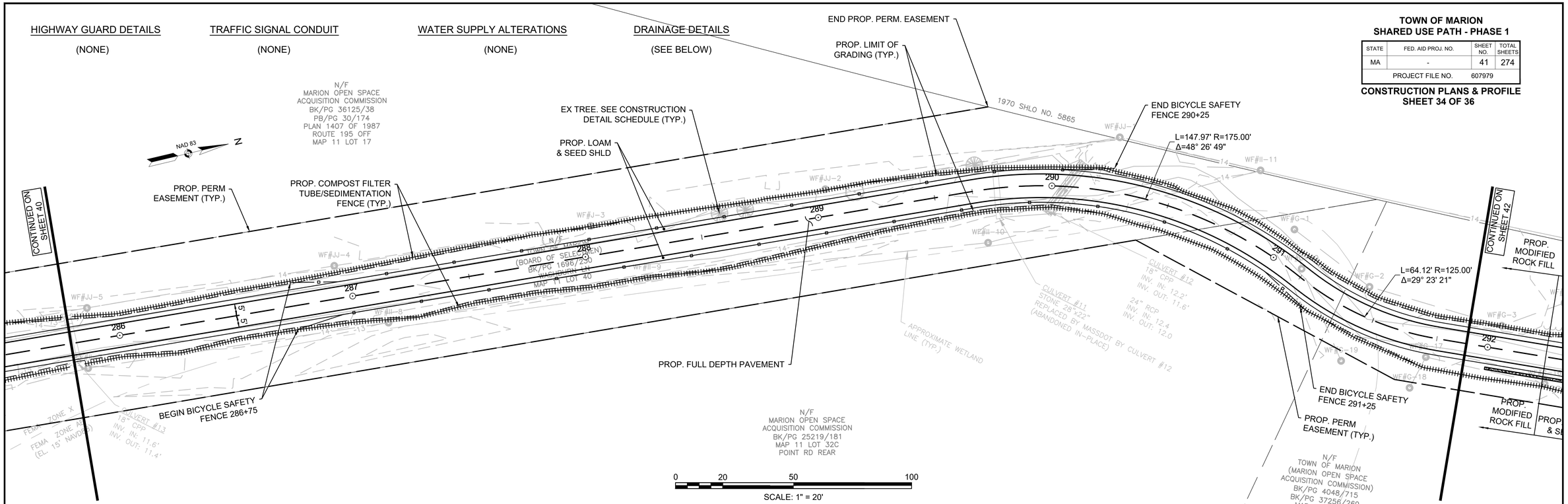
(SEE BELOW)

TOWN OF MARION
SHARED USE PATH - PHASE 1

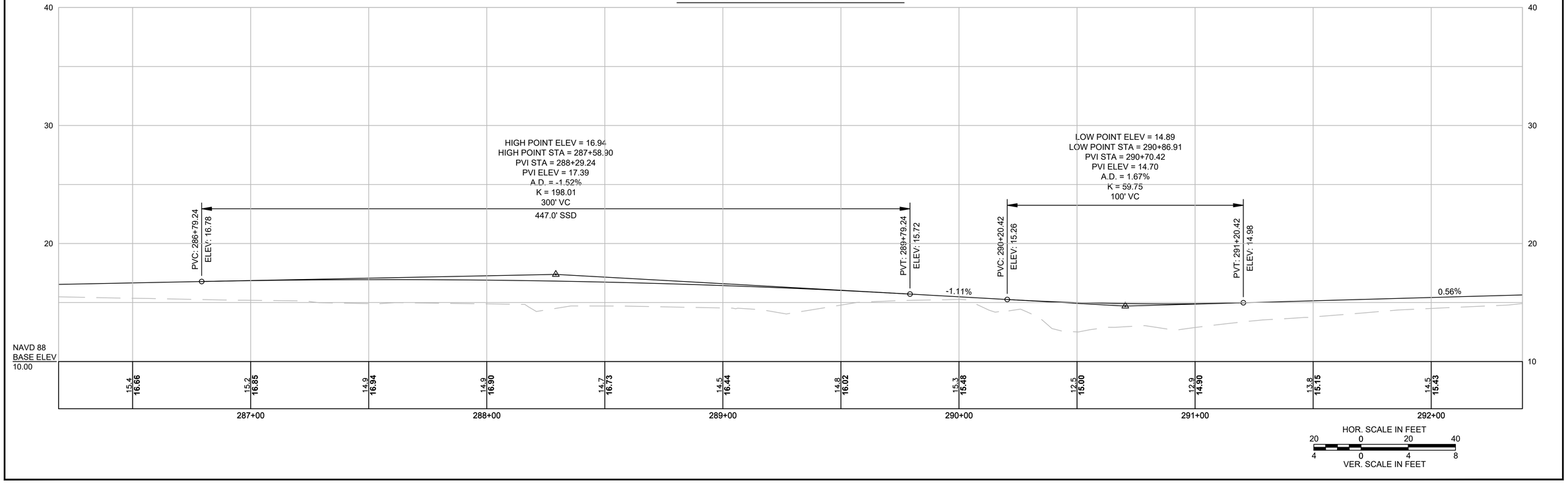
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	41	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 34 OF 36

607979_CONST.DWG Plotted on 27-Oct-2023 2:58 PM



MARION SHARED-USE PATH



HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

(SEE BELOW)

NAD 83

N

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 35 OF 36

CONTINUED ON SHEET 41

CONTINUED ON SHEET 43

.12' R=125.00'
9° 23' 21"

PROP. MODIFIED ROCK FILL

PROP. LOAM & SEED

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 292+50-293+50

PROP. LIMIT OF GRADING (TYP.)

PROP. COMPOST FILTER TUBE/SEDIMENTATION FENCE (TYP.)
1970 SHLO NO. 5865

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 295+50-299+00

292

293

294

296

297

298

Δ=4° 25' 13"
L=77.15' R=1000.00'

MARION SHARED-USE PATH

Δ=5° 00' 14"
L=104.79' R=1000.00'

EX TREE. SEE CONSTRUCTION DETAIL SCHEDULE (TYP.)

PROP. PERM EASEMENT

PROP. 1' WIDE CRUSHED STONE EDGE DRAIN STA. 292+00-293+00

PROP. LOAM & SEED SHLD

PROP. FULL DEPTH PAVEMENT

N/F
TOWN OF MARION
(MARION OPEN SPACE ACQUISITION COMMISSION)
BK/PG 4048/715
BK/PG 37256/269
MAP 11 LOT 26
ROUTE 195 OFF

N/F
TOWN OF MARION
(MARION OPEN SPACE ACQUISITION COMMISSION)
BK/PG 4048/715
BK/PG 37256/269
MAP 11 LOT 26
ROUTE 195 OFF

APPROXIMATE WETLAND LINE (TYP.)

FEMA ZONE X

FEMA ZONE AE
(EL. 15' NAVD88)

N/F
STEVEN A. BRIGGS
BK/PG 14555/347
PB/PL 783 OF 1955
MAP 11 LOT 28
POINT RD

N/F
SHERMAN E. BRIGGS, JR. AND ALICE M. BRIGGS
BK/PG 4464/497
PB/PL 783 OF 1955
MAP 11 LOT 27
1132 POINT RD

END PROP
EAS

0 20 50 100

SCALE: 1" = 20'

MARION SHARED-USE PATH

HIGH POINT ELEV = 16.10
HIGH POINT STA = 293+44.97
PVI STA = 293+45.40
PVI ELEV = 16.24
A.D. = -1.13%
K = 88.40
100' VC
447.8' SSD

LOW POINT ELEV = 15.23
LOW POINT STA = 295+35.37
PVI STA = 295+61.52
PVI ELEV = 15.01
A.D. = 2.39%
K = 41.80
100' VC

HIGH POINT ELEV = 20.36
HIGH POINT STA = 298+69.33
PVI STA = 298+80.52
PVI ELEV = 21.00
A.D. = -6.32%
K = 15.81
100' VC
447.8' SSD

PVC: 292+95.40
ELEV: 15.96

PVT: 293+95.40
ELEV: 15.96

PVC: 295+11.52
ELEV: 15.30

PVT: 296+11.52
ELEV: 15.92

PVC: 298+40.82
ELEV: 20.03

-0.57%

1.82%

NAVD 88
BASE ELEV
10.00

293+00		294+00		295+00		296+00		297+00		298+00	
15.1	**15.71**	16.9	**15.99**	14.6	**16.10**	15.0	**15.93**	14.4	**15.65**	14.5	**15.36**
15.3	**15.25**	14.7	**15.73**	16.7	**16.62**	16.6	**17.53**	17.8	**18.44**	18.4	**19.36**

HOR. SCALE IN FEET
20 0 20 40

VER. SCALE IN FEET
4 0 4 8

607979_CONST.DWG Plotted on 27-Oct-2023 2:58 PM

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	43	274
PROJECT FILE NO.	607979		

CONSTRUCTION PLANS & PROFILE
SHEET 36 OF 36

607979_CONST.DWG Plotted on 27-Oct-2023 2:58 PM

HIGHWAY GUARD DETAILS

(NONE)

TRAFFIC SIGNAL CONDUIT

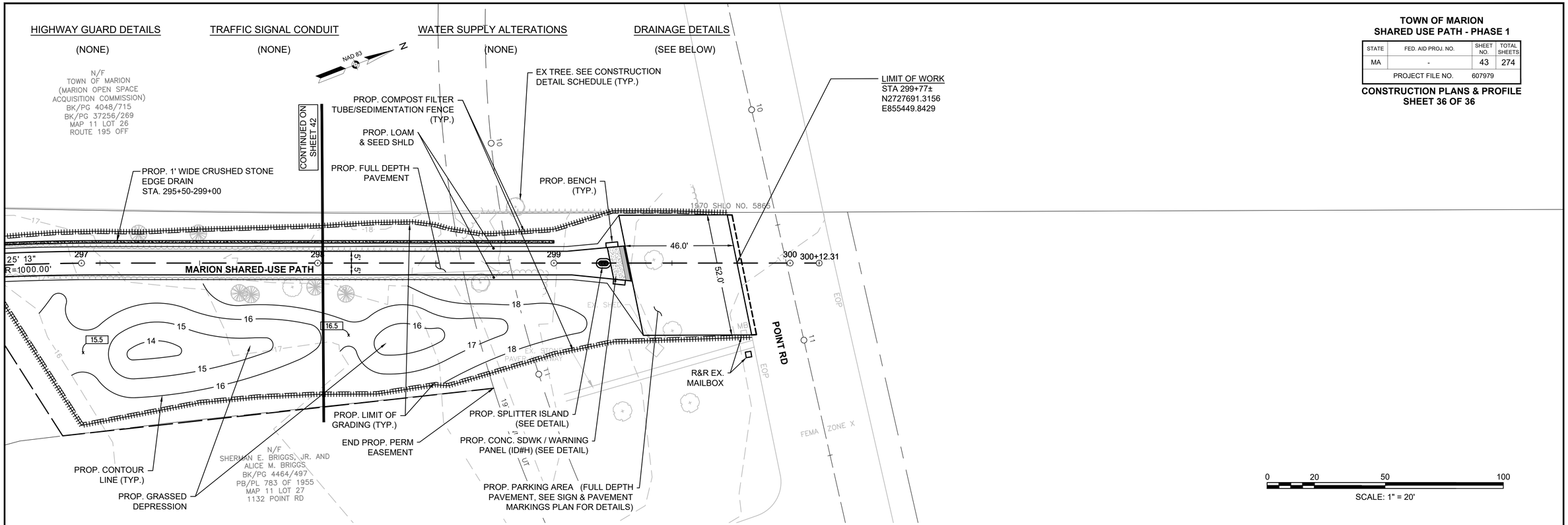
(NONE)

WATER SUPPLY ALTERATIONS

(NONE)

DRAINAGE DETAILS

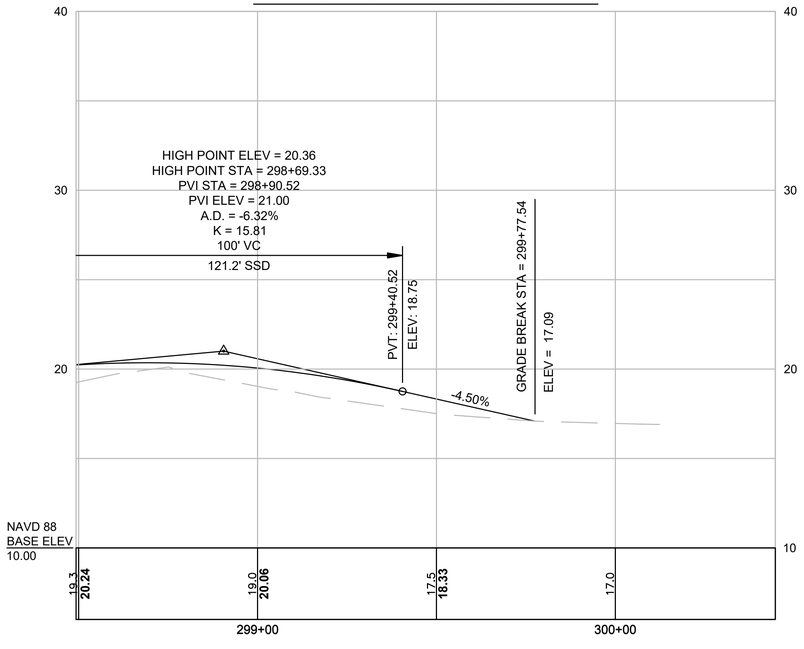
(SEE BELOW)



0 20 50 100

SCALE: 1" = 20'

MARION SHARED-USE PATH



HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

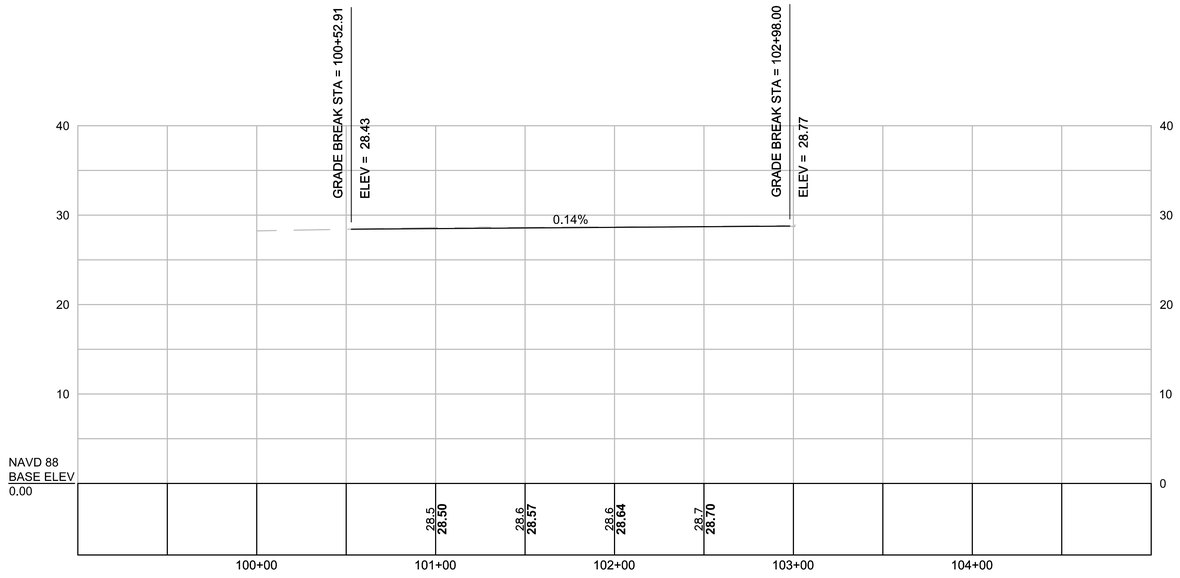
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	44	274
PROJECT FILE NO.	607979		

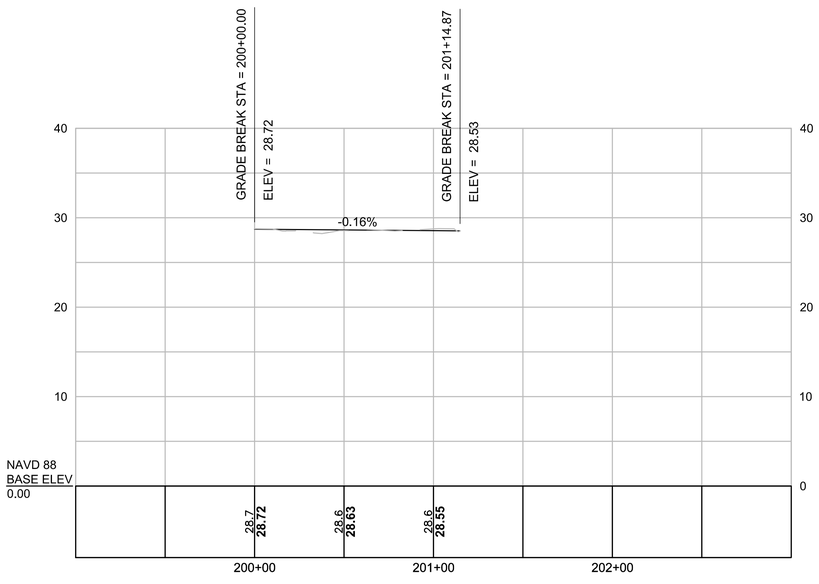
FRONT ST (RTE 105) AT SPRING ST
PROFILES
SHEET 1 OF 1

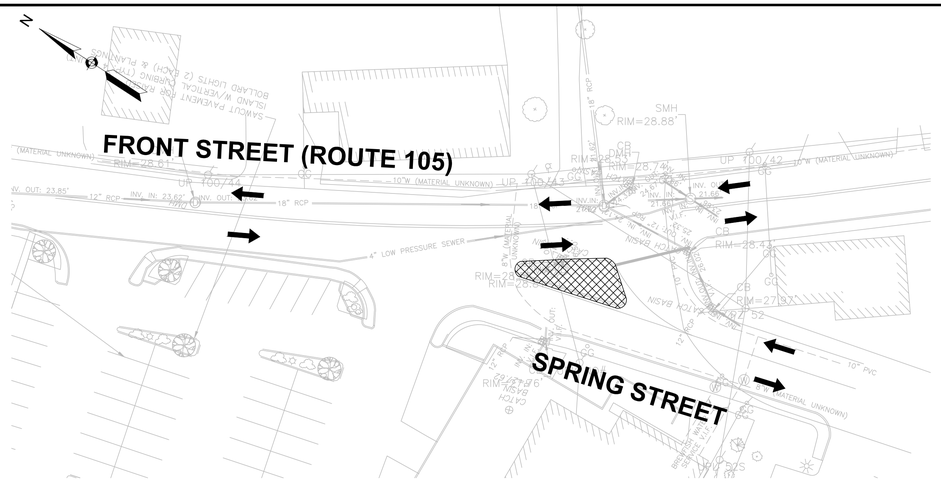
Plotted on 20-Oct-2023 12:34 PM
Y16147.21 MARION PATHWAY (PROFILE).DWG

FRONT STREET

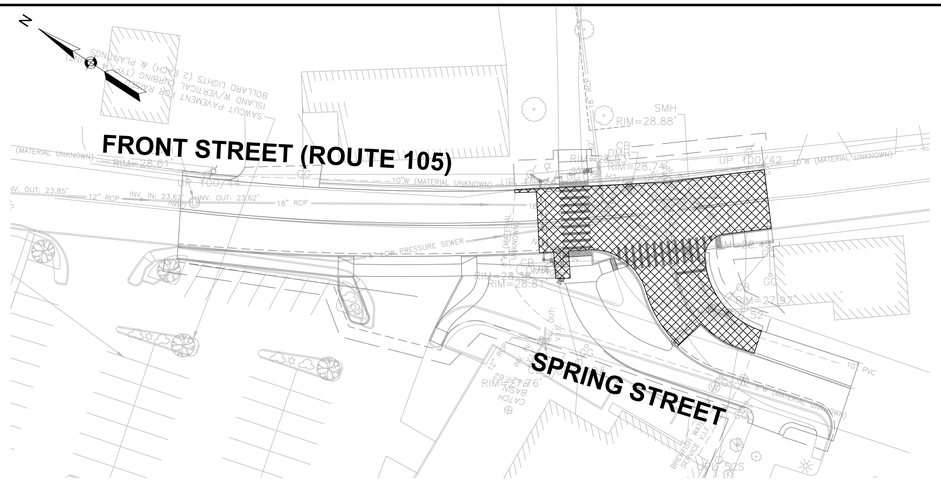


SPRING STREET

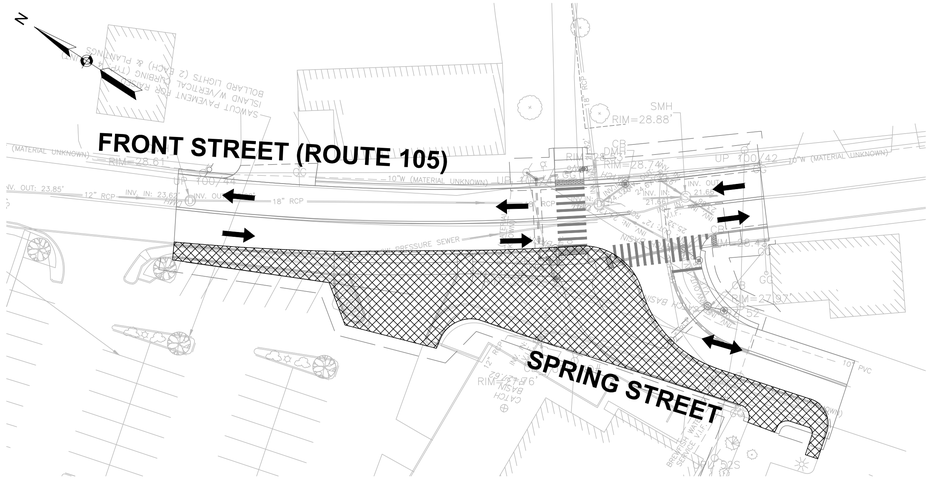




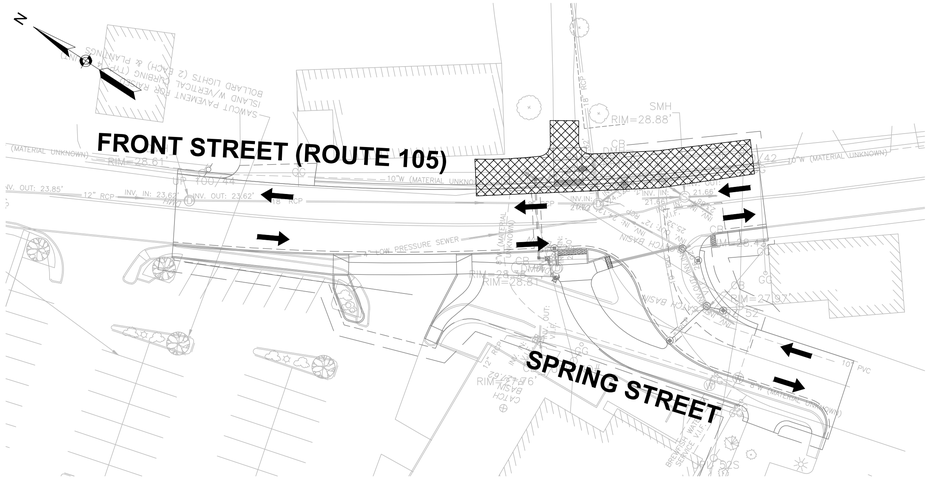
PHASE 1
1" = 30'



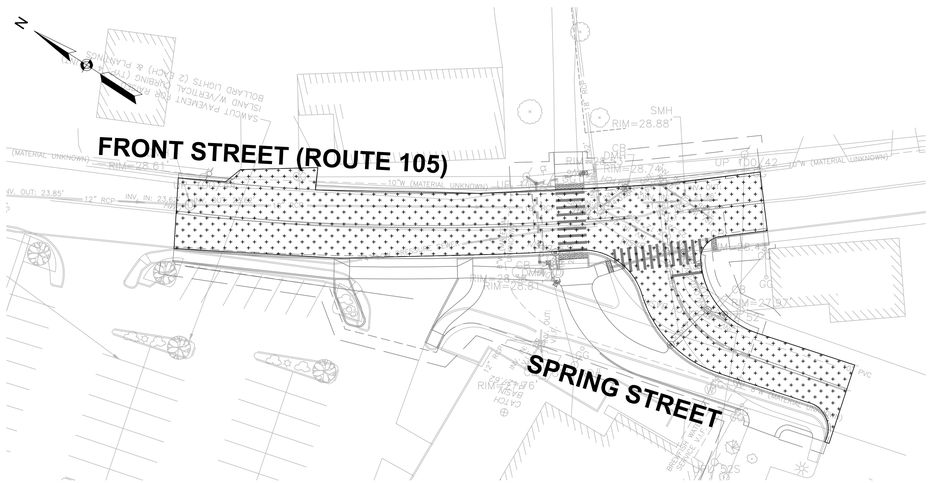
PHASE 2
1" = 30'



PHASE 3
1" = 30'



PHASE 4
1" = 30'



PHASE 5
1" = 30'

PHASE 1: REMOVAL OF EXISTING CHANNELIZING ISLAND
CONSTRUCTION OF FULL DEPTH PAVEMENT

PHASE 2: INSTALLATION OF DRAINAGE AND CONDUIT
CONSTRUCTION OF FULL DEPTH PAVEMENT

PHASE 3: CONSTRUCTION OF SHARED USE PATH AND SIDEWALK ON WESTERN SIDE
INSTALLATION OF RRFB

PHASE 4: CONSTRUCTION OF SHARED USE PATH ON EASTERN SIDE
INSTALLATION OF RRFB

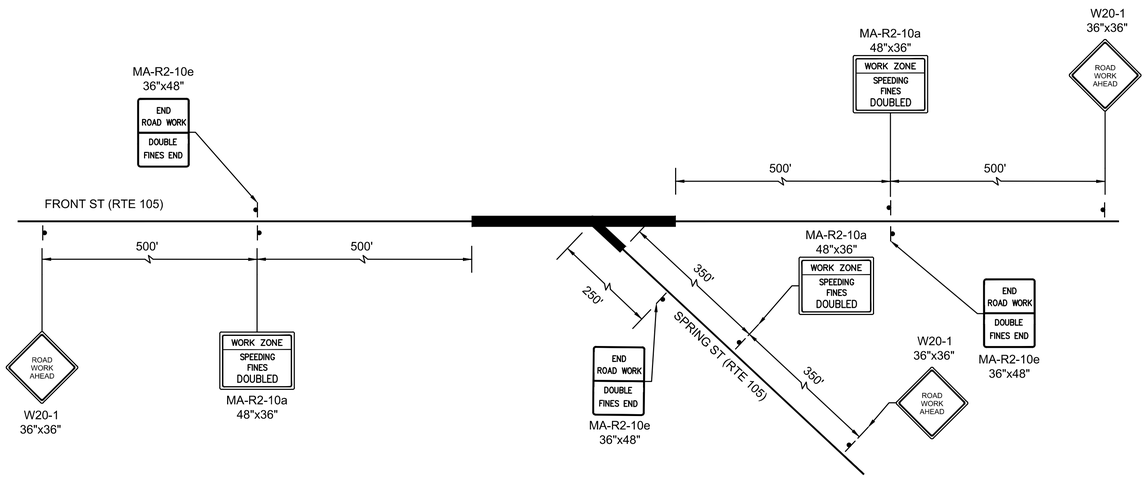
PHASE 5: MILL AND OVERLAY PAVEMENT

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	45	274
PROJECT FILE NO.	607979		

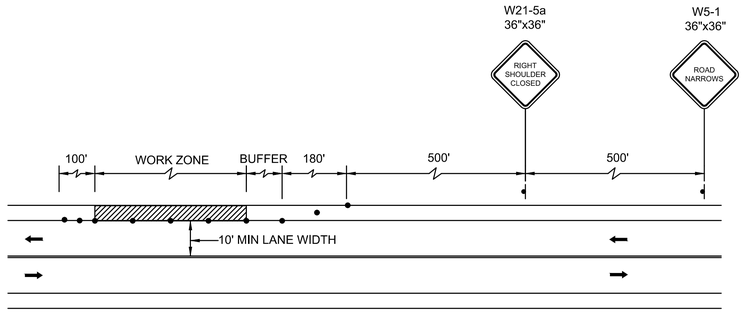
FRONT ST (RTE 105) AT SPRING ST
CONSTRUCTION PHASING PLAN
SHEET 1 OF 1

Y16147.21 MARION PATHWAY (CONSTRUCTION PHASING).DWG Plotted on 20-Oct-2023 12:35 PM



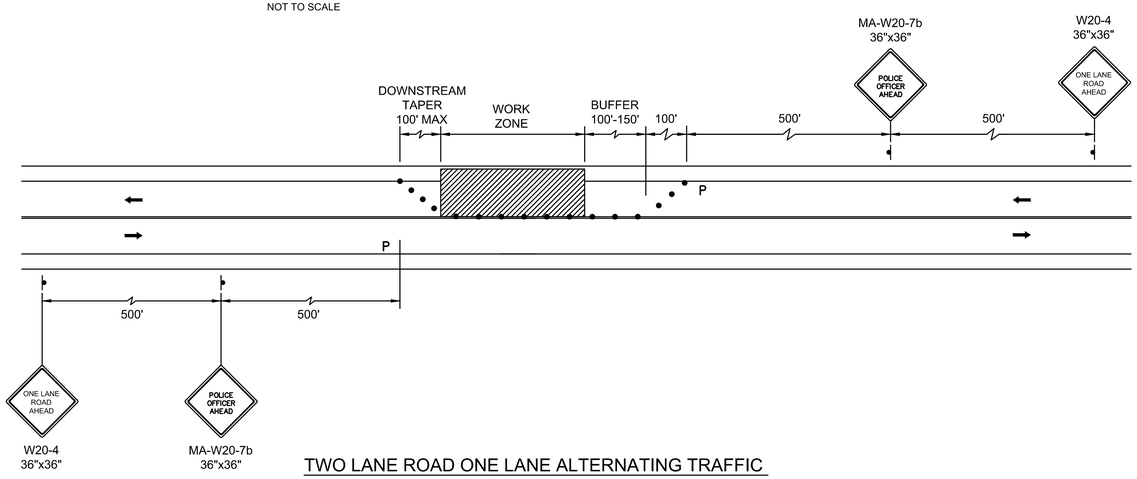
PROJECT LIMIT SIGNING

NOT TO SCALE



TWO LANE ROAD SHOULDER CLOSURE

NOT TO SCALE



TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC

NOT TO SCALE

TEMPORARY TRAFFIC CONTROL NOTES:

1. ALL TRAFFIC CONTROL DEVICES AND WORK ZONE SET-UPS ARE TO BE IN ACCORDANCE WITH MASSDOT AND MUTCD STANDARDS.
2. DRUM SPACING SHALL BE 35 FEET ON FRONT ST (RTE 105) AND 30 FEET ON SPRING ST (RTE 105).
3. MINIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS AND CONES) IS EQUAL IN FEET TO THE POSTED SPEED LIMIT IN MILES PER HOUR.
4. ALL SIGNS SHOWN SHALL BE MOUNTED ON SUITABLE TEMPORARY SUPPORTS SUCH THAT SIGNS ARE CLEARLY VISIBLE TO APPROACHING TRAFFIC.
5. MAINTAIN ACCESS TO ALL DRIVEWAYS AND PEDESTRIAN SIDEWALKS AT ALL TIMES, UNLESS OTHERWISE NOTED.
6. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
7. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
8. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
9. MINIMUM LANE WIDTH IS 10 FEET, MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
10. ADA COMPLIANT PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES, INCLUDING PROPER BARRICADES, RAILINGS, RAMPS, AND SIGNAGE FOR PEDESTRIAN DETOURS OR BYPASSES.
11. CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
12. TEMPORARY FACILITIES, INCLUDING BUT NOT LIMITED TO, TEMPORARY PEDESTRIAN PASSAGEWAYS AROUND A CONSTRUCTION SITE, SHALL COMPLY WITH 521 CMR.

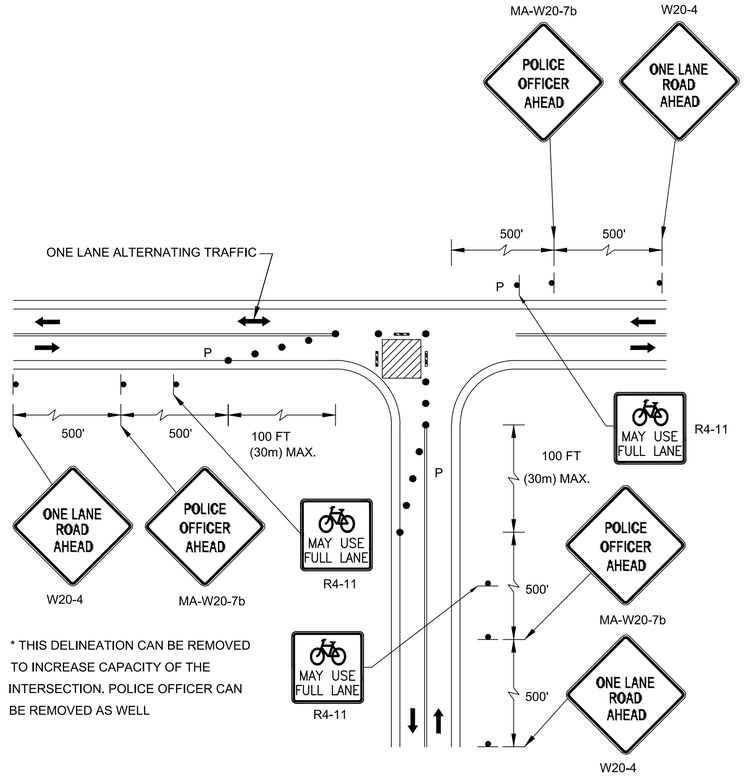
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	46	274
PROJECT FILE NO.	607979		

FRONT ST (RTE 105) AT SPRING ST
TEMPORARY TRAFFIC CONTROL PLAN
SHEET 1 OF 3

LEGEND:

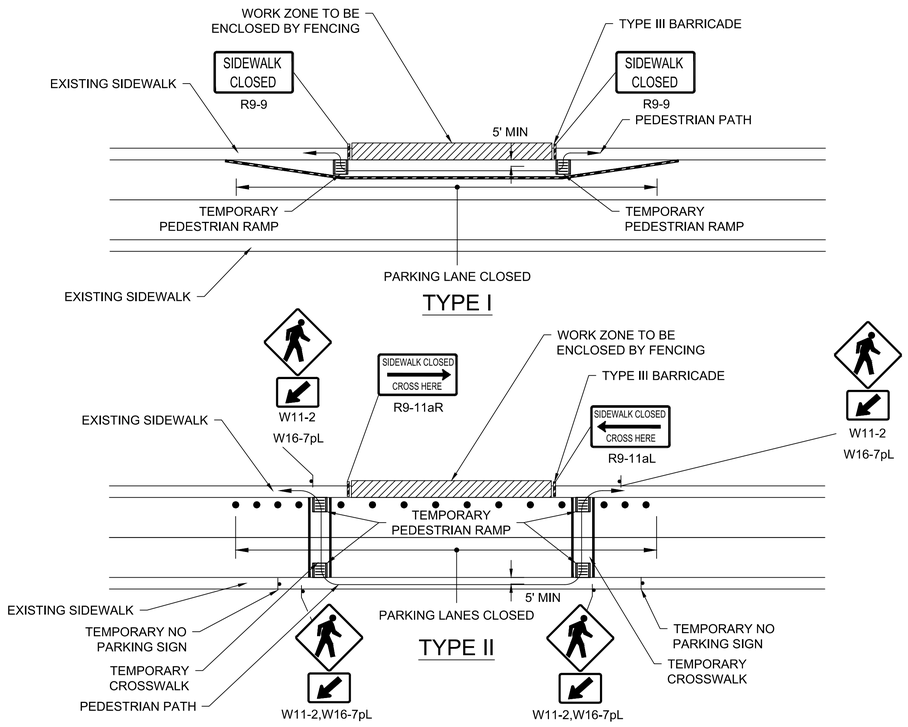
- WORK AREA
- SIGN
- CHANNELIZING DEVICE
- FLASHING ARROW BOARD
- TYPE III BARRICADE
- PEDESTRIAN CHANNELIZING DEVICE
- PEDESTRIAN WALKWAY AND RAMP
- P/F — POLICE/FLAGGER
- ARROW PANEL SUPPORT TRAILER
- FLOW DIRECTION



TYPICAL TEMPORARY QUADRANT CLOSURE ON TWO-LANE ROAD

NOT TO SCALE

Y16147.21 MARION PATHWAY (TTCP).DWG Plotted on 20-Oct-2023 12:36 PM



PEDESTRIAN BYPASS

NOT TO SCALE

NOTES

1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER. TEMPORARY CURB RAMPS WILL BE REQUIRED AT ALL TEMPORARY CROSSWALK LOCATIONS THAT DO NOT HAVE AN EXISTING ADA COMPLIANT RAMP.
5. BYPASS IS TO BE USED IN CONJUCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
6. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THIS WALKWAY EXCEEDS 200 FEET THEN A 5 FOOT X 5 FOOT PASSING ZONE. (FOR SHORT TERM SETUPS < 10 HOURS, THIS CONDITION MAY BE WAIVED. A NOTE WOULD NEED TO BE INCLUDED IN THE TTCP THAT STATES HOW THE CONTRACTOR SHOULD ADDRESS THIS ISSUE.)

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	47	274
PROJECT FILE NO.	607979		

FRONT ST (RTE 105) AT SPRING ST
TEMPORARY TRAFFIC CONTROL PLAN
SHEET 2 OF 3

Plotted on 20-Oct-2023 12:36 PM
Y16147.21 MARION PATHWAY (TTCP).DWG

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	48	274
PROJECT FILE NO.	607979		

FRONT ST (RTE 105) AT SPRING ST
TEMPORARY TRAFFIC CONTROL PLAN
SHEET 3 OF 3

Plotted on 20-Oct-2023 12:36 PM
Y16147.21 MARION PATHWAY (TTCP).DWG

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

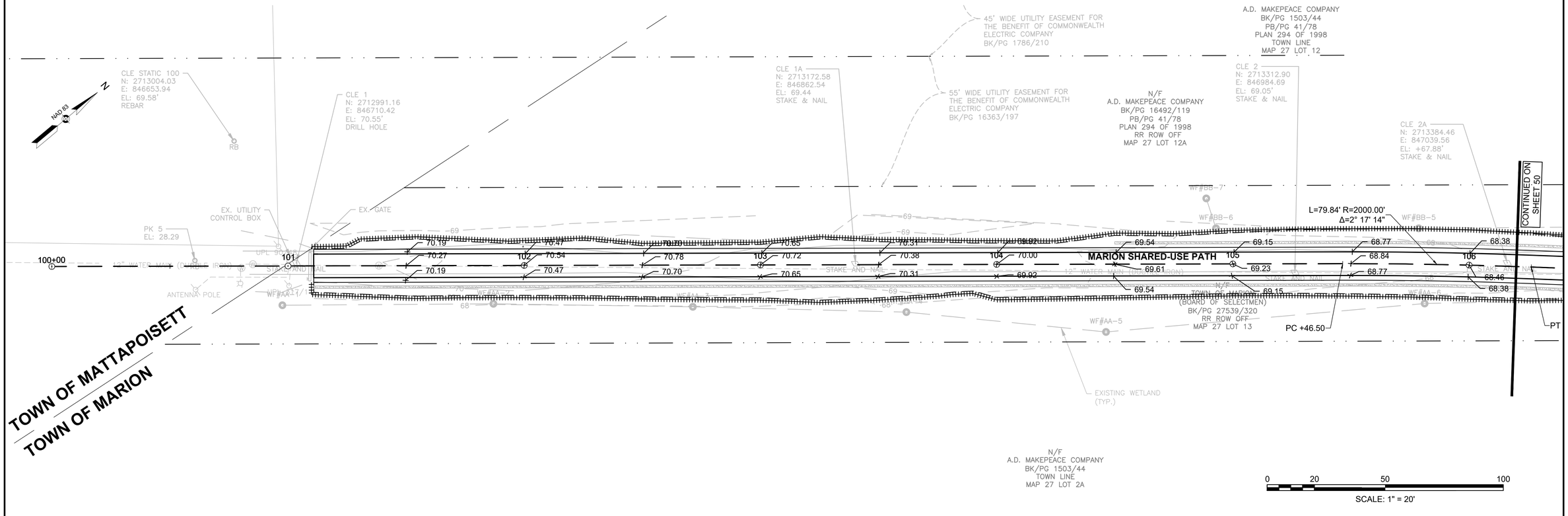
IDENTIFICATION NUMBER	SIZE OF SIGN (IN)		TEXT	TEXT DIMENSIONS (IN)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR		BACKGROUND	LEGEND	BORDER		
MA-R2-10a	48	36	WORK ZONE / SPEEDING FINE DOUBLED	SEE MASSDOT STANDARDS			3	FLOURESCENT ORANGE /WHITE	BLACK	BLACK	12.00	36.00
MA-R2-10e	36	48	END ROAD WORK / DOUBLE FINES END				3	FLOURESCENT ORANGE /WHITE	BLACK	BLACK	12.00	36.00
MA-W20-7b	36	36	POLICE OFFICER AHEAD				3	FLOURESCENT ORANGE	BLACK	BLACK	9.00	27.00
R4-11	30	30	MAY USE FULL LANE	SEE 2009 MUTCD			3	WHITE	BLACK	BLACK	6.25	18.75
R9-9	24	18	SIDEWALK CLOSED				2	WHITE	BLACK	BLACK	3.00	6.00
R9-11R	24	18	SIDEWALK CLOSED → CROSS HERE				2	WHITE	BLACK	BLACK	3.00	6.00
R9-11L	24	18	SIDEWALK CLOSED ← CROSS HERE				2	WHITE	BLACK	BLACK	3.00	6.00
W5-1	36	36	ROAD NARROWS				1	FLOURESCENT ORANGE	BLACK	BLACK	9.00	9.00
W11-2	30	30					4	FLUORESCENT ORANGE	BLACK	BLACK	6.25	25.00
W16-7P	24	12					4	FLUORESCENT ORANGE	BLACK	BLACK	2.00	8.00
W20-1	36	36	ROAD WORK AHEAD				3	FLOURESCENT ORANGE	BLACK	BLACK	9.00	27.00
W20-4	36	36	ONE LANE ROAD AHEAD				3	FLOURESCENT ORANGE	BLACK	BLACK	9.00	27.00
W21-5aR	36	36	RIGHT SHOULDER CLOSED				1	FLOURESCENT ORANGE	BLACK	BLACK	9.00	9.00
											TOTAL =	240.75

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	49	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 1 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM



SURVEY CONTROL POINT LOCATIONS (NAD83 MA STATE PLANE)
(PROVIDED BY ALAN M. GRADY, MA-PLS #37732)

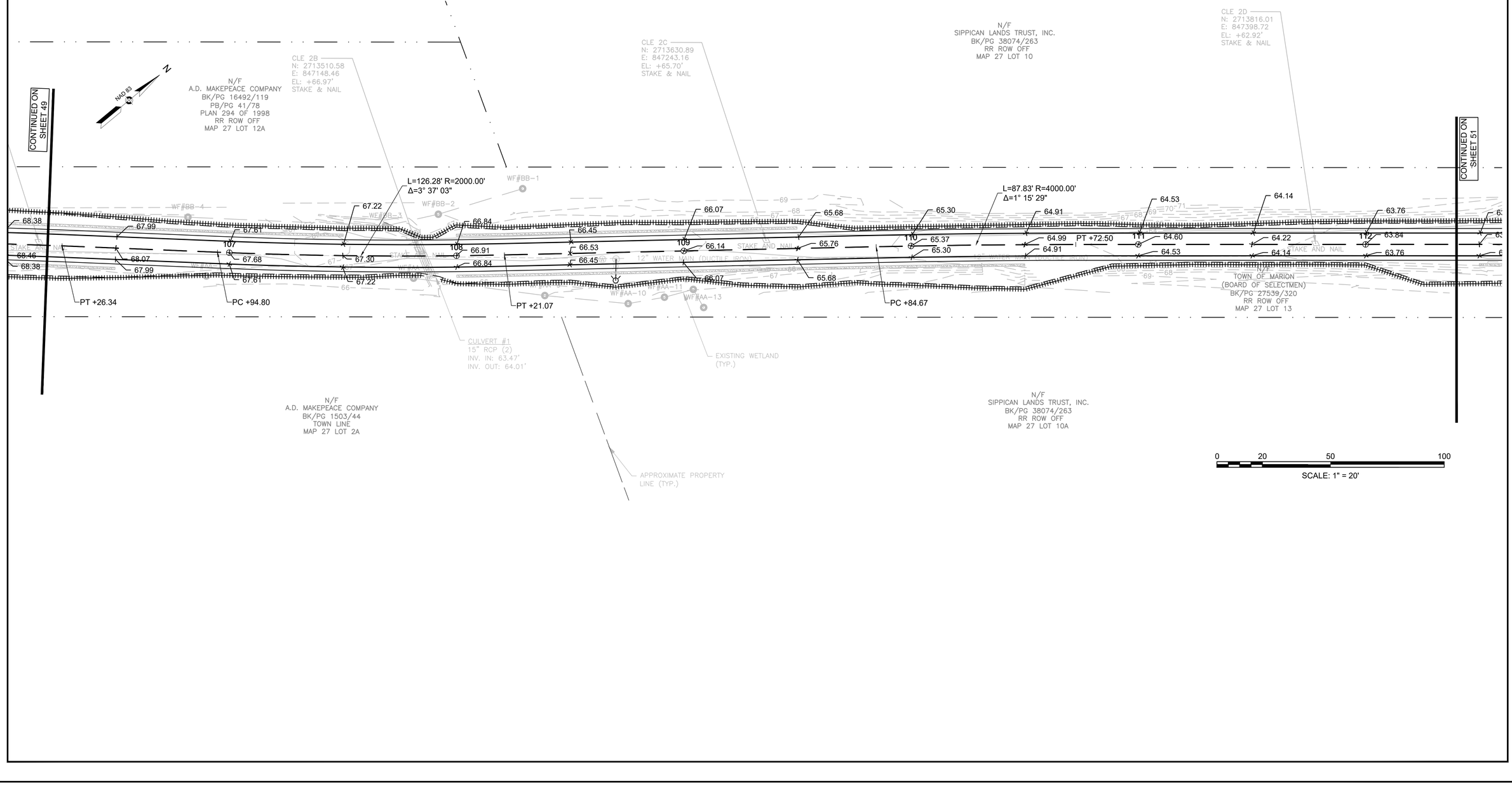
POINT ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	2727693.1729	855450.2479	17.2888	MAG SET POINT ROAD
2	2727638.0571	855824.8416	15.0987	MAG SET POINT ROAD
3	2724762.6272	855113.3845	18.2293	DH IN STONE WASHBURN PARK
4	2722947.2229	854773.0125	28.4901	PK BREW FISH
5	2722970.5225	854776.4407	28.2963	MAG FND AT CURB
6	2722767.7813	854888.0868	28.8387	PK FND IN ISLAND
7	2713004.0253	846653.9414	69.5790	I ROD CLE STATIC 1
8	2714417.3948	847898.5878	57.1314	I ROD SET MID PATH
9	2714433.2414	847836.3534	59.5490	I ROAD SET NEAR ROCK
10	2719449.3267	852090.3212	26.7364	IR SET AT SWAMP

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	50	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 2 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	51	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 3 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 38074/263
RR ROW OFF
MAP 27 LOT 10

NAD 83

CLE 2E
N: 2713902.10
E: 847467.99
EL: +62.05'
STAKE & NAIL

CLE 2F
N: 2714152.77
E: 847680.31
EL: +59.43'
STAKE & NAIL

CLE
N: ;
E: ;
EL: +57.97'
STAKE & NAIL

CONTINUED ON SHEET 49

CONTINUED ON SHEET 52

63.38 63.46 63.38
63.00 63.08 63.00
62.62 62.70 62.62
62.24 62.32 62.24
61.86 61.94 61.86
61.48 61.56 61.48
61.10 61.18 61.10
60.72 60.80 60.72
60.34 60.41 60.34
59.96 60.03 59.96
59.58 59.65 59.58
59.20 59.27 59.20
59.62 58.89 59.82

113 114 115 116 117 118

STAKE AND NAIL

12" WATER MAIN (DUCTILE IRON)

L=62.54' R=5000.00'
Δ=0° 43' 00"

L=61.96' R=4500.00'
Δ=0° 47' 20"

PT +51.61

PC +77.06

PT +39.61

PC +89.65

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
RR ROW OFF
MAP 27 LOT 13

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 38074/263
RR ROW OFF
MAP 27 LOT 10A

WF#A-1 WF#A-2 WF#A-3 WF#A-4 WF#A-5 WF#A-6
WF#B-10 WF#B-12 WF#B-14 WF#B-16 WF#B-18

EXISTING WETLAND (TYP.)

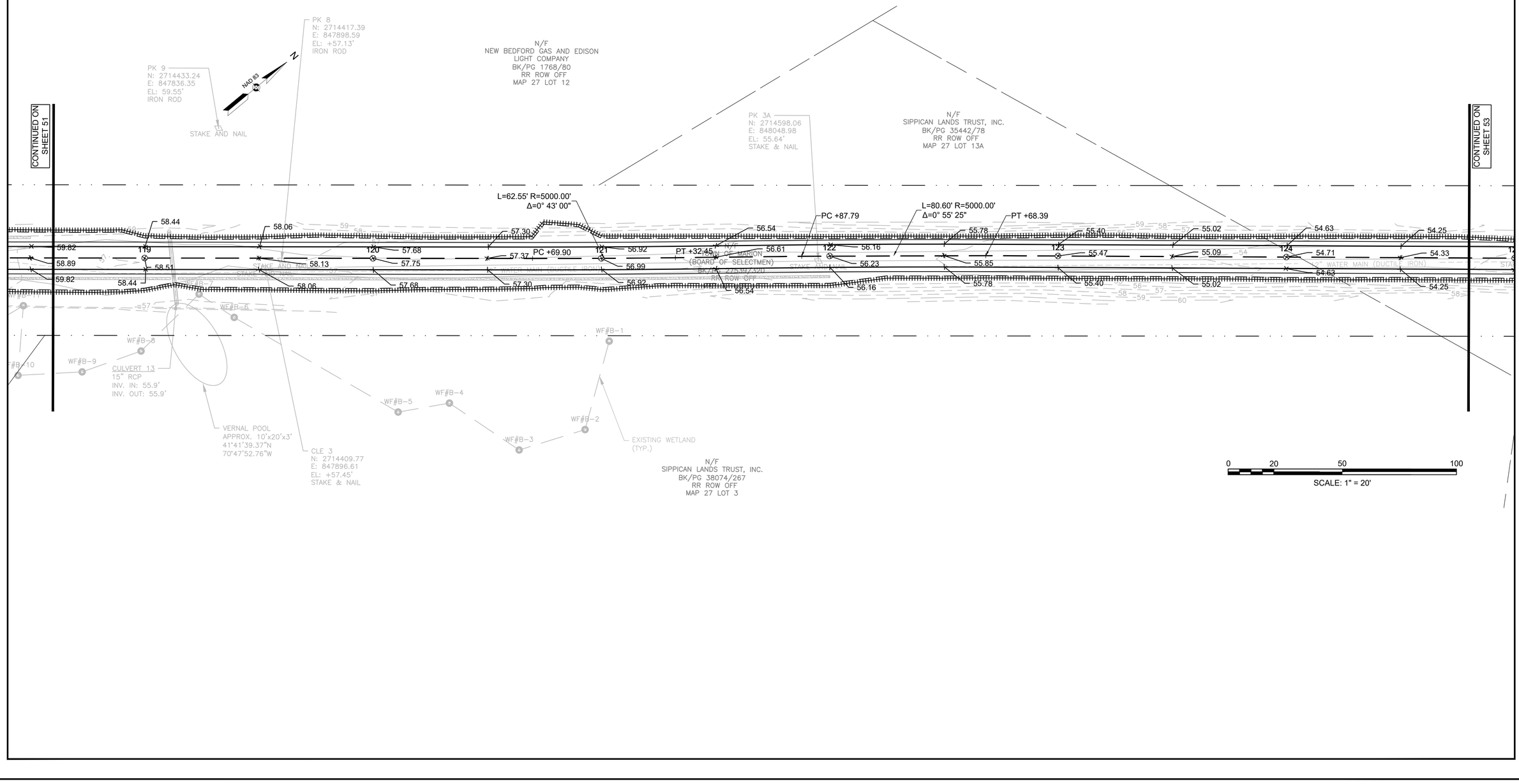
0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	52	271
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 4 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM

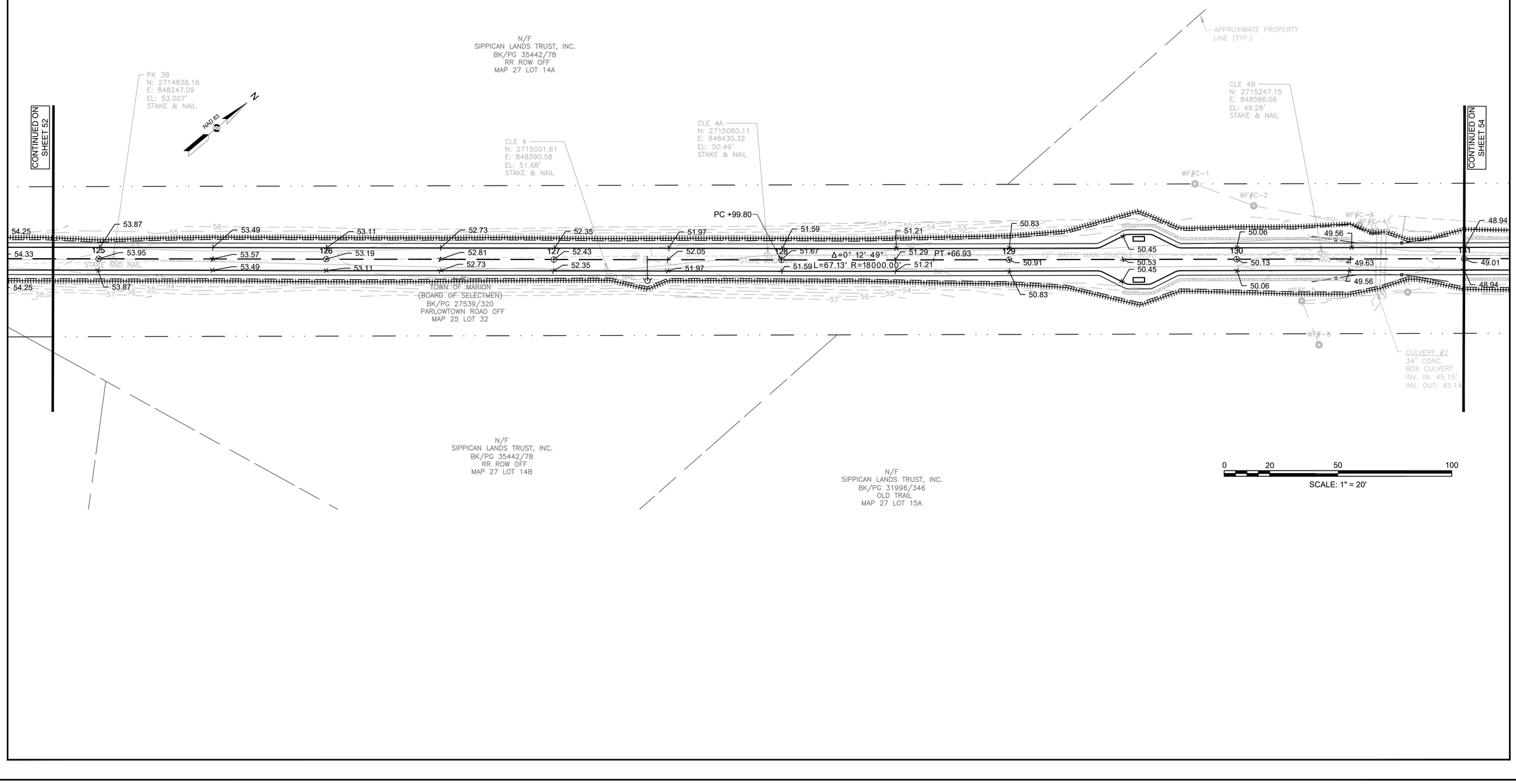


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	53	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 5 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM

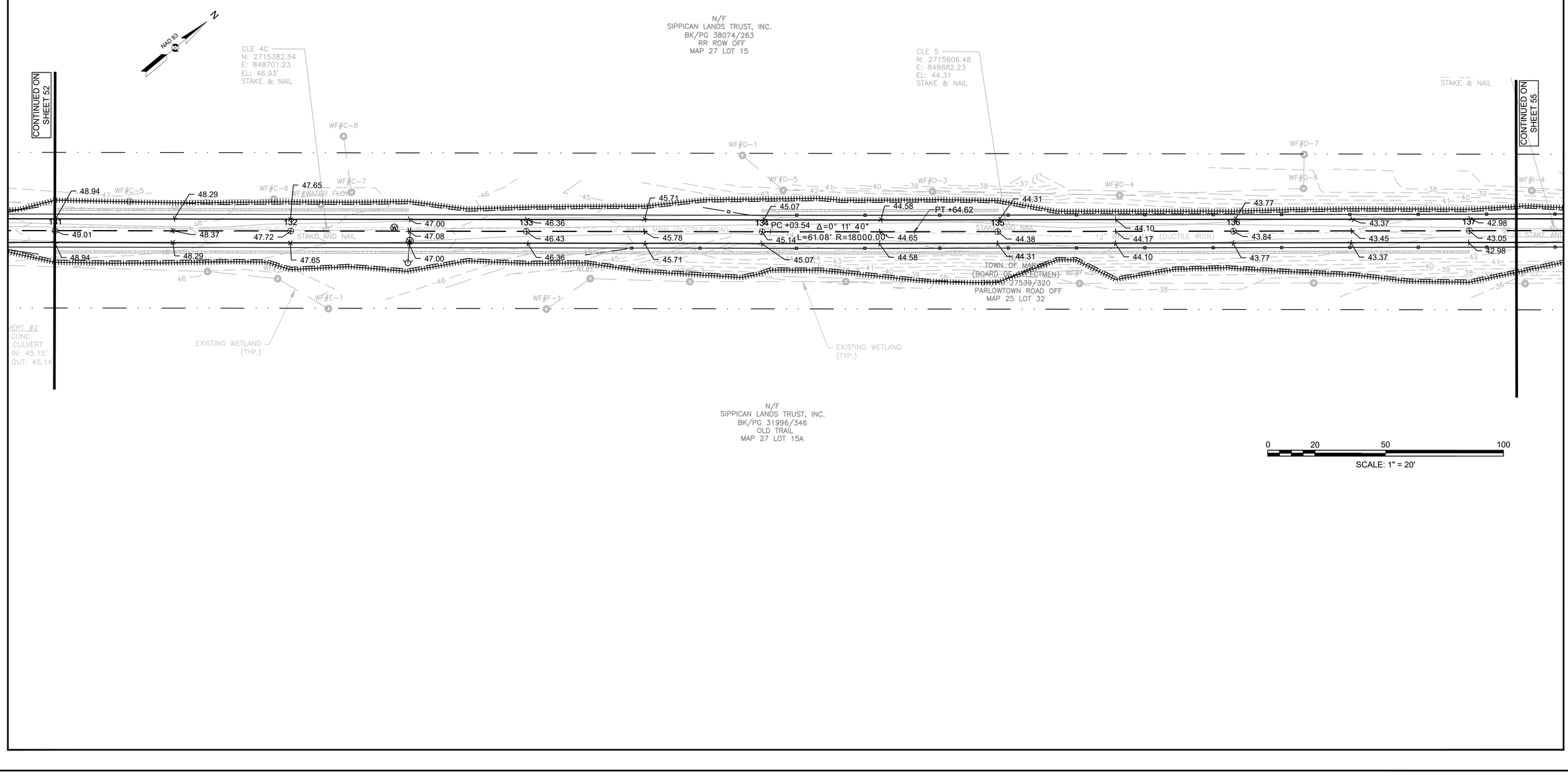


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	54	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 6 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM

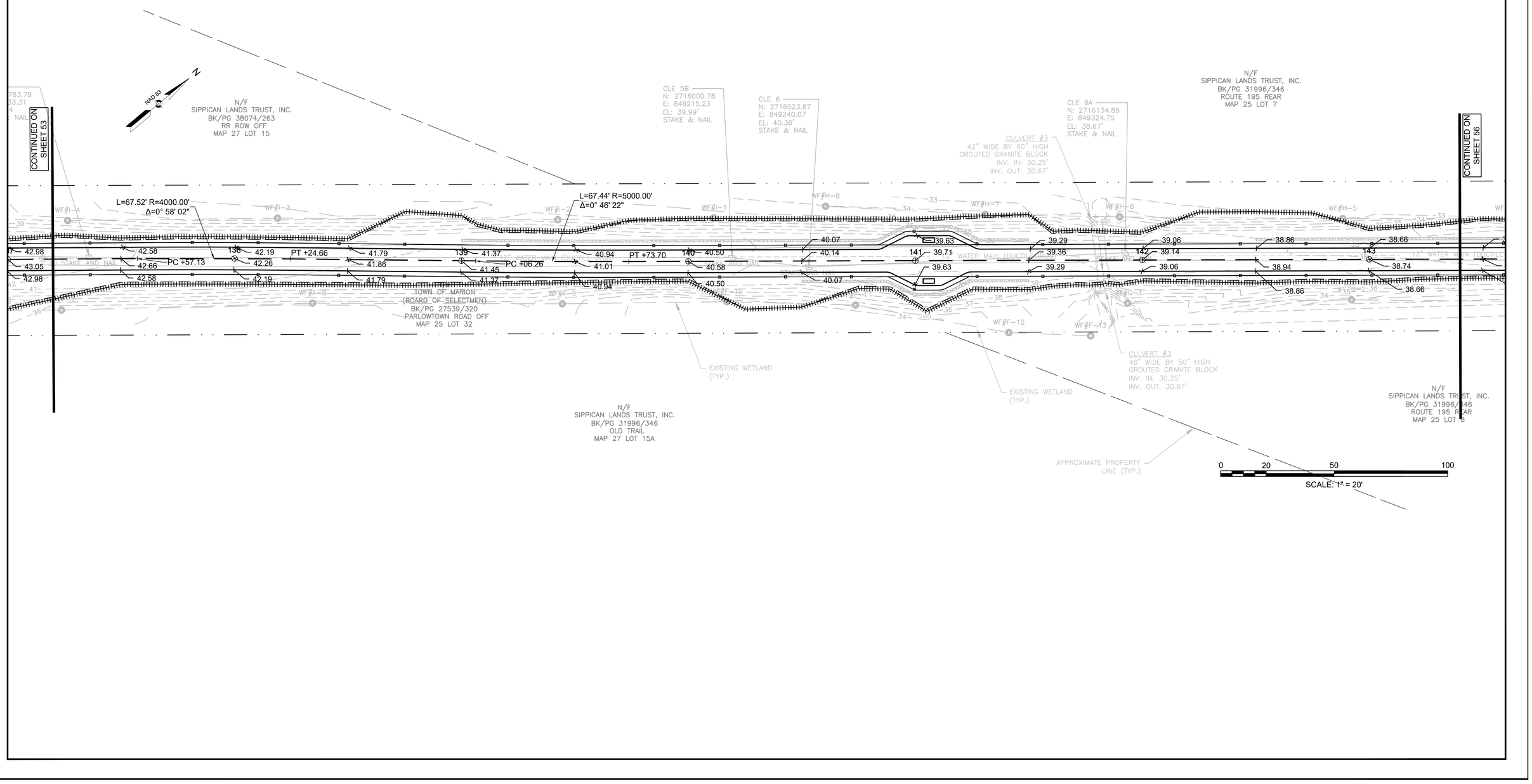


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	55	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 7 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM

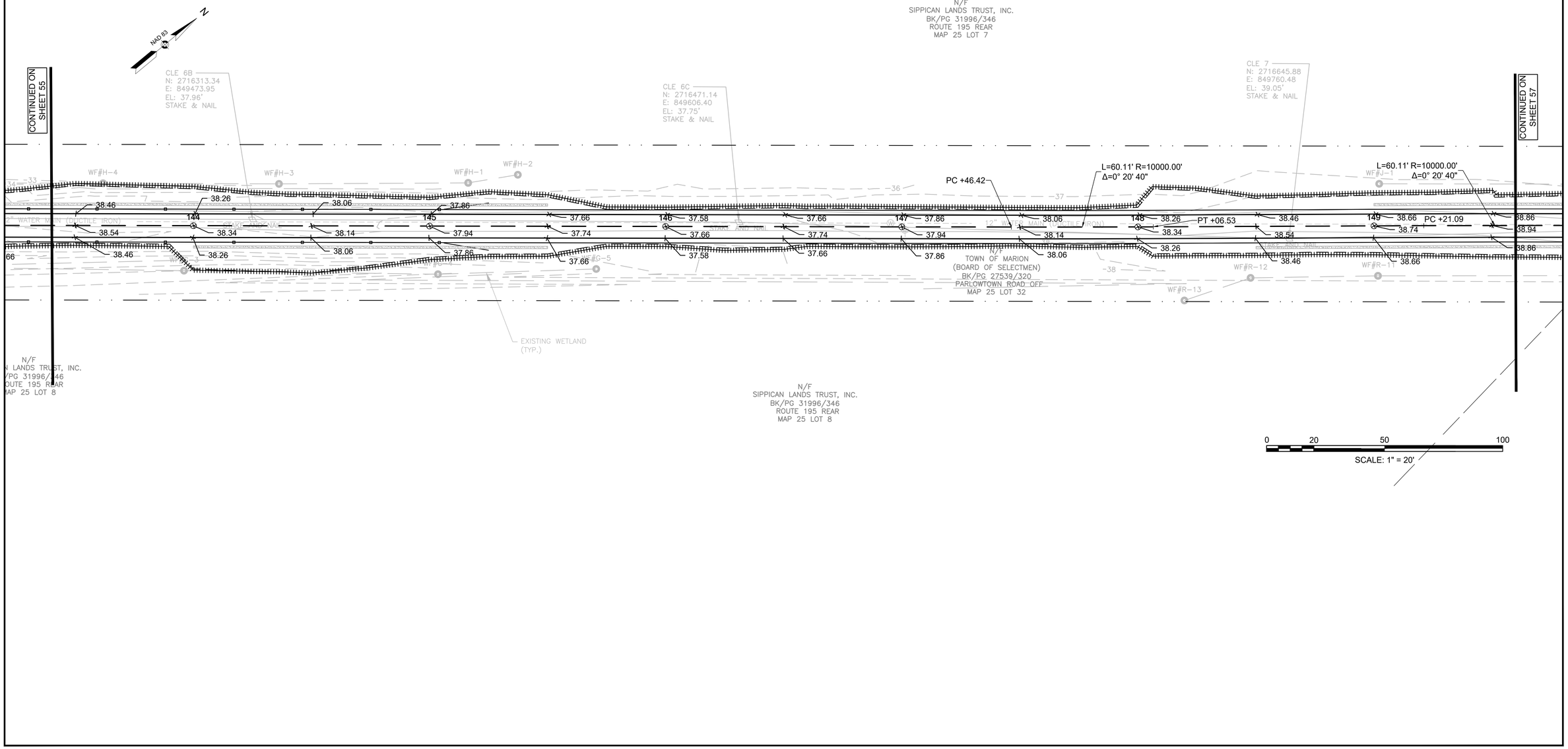


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	56	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 8 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM

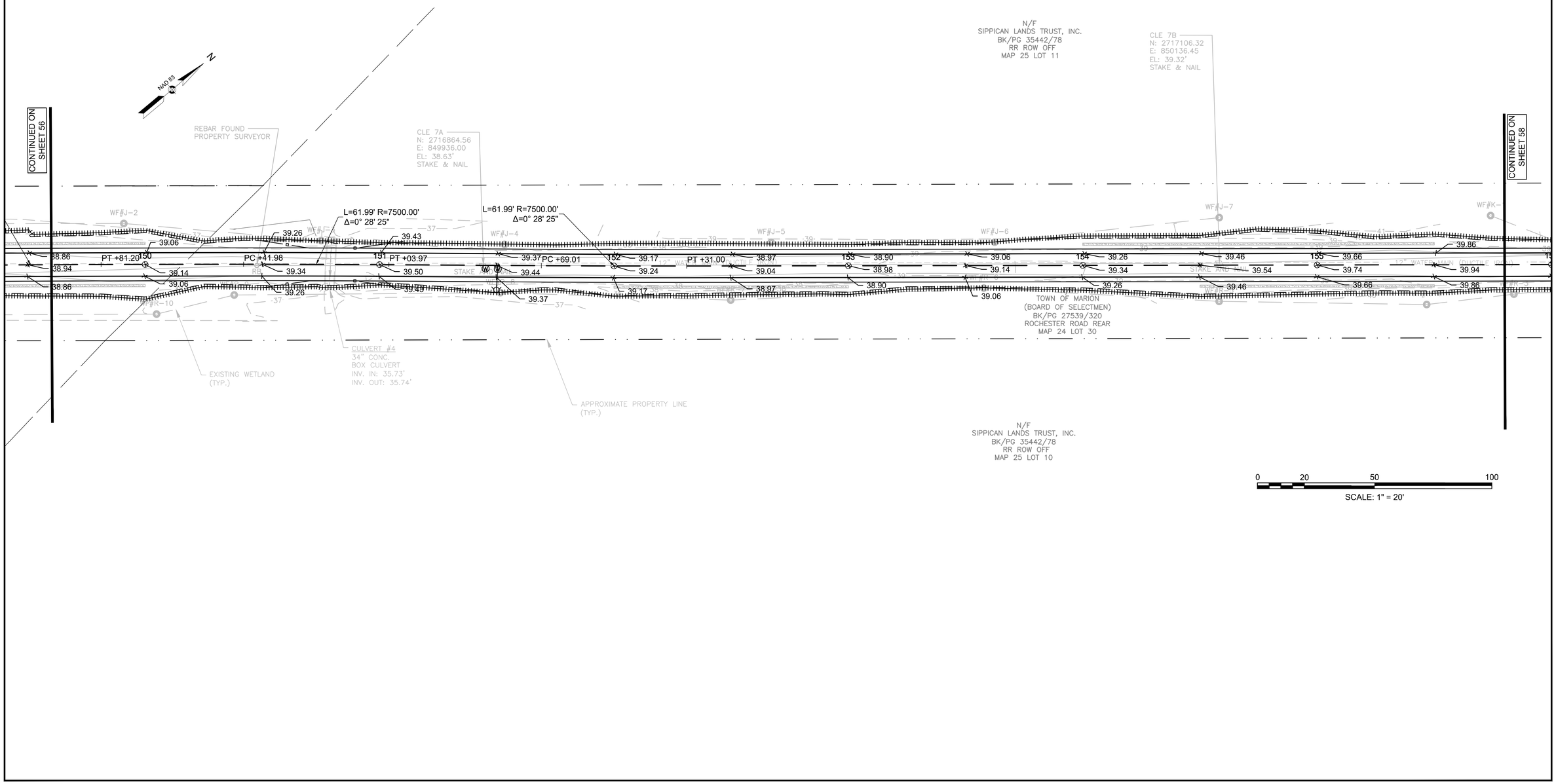


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	57	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 9 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM

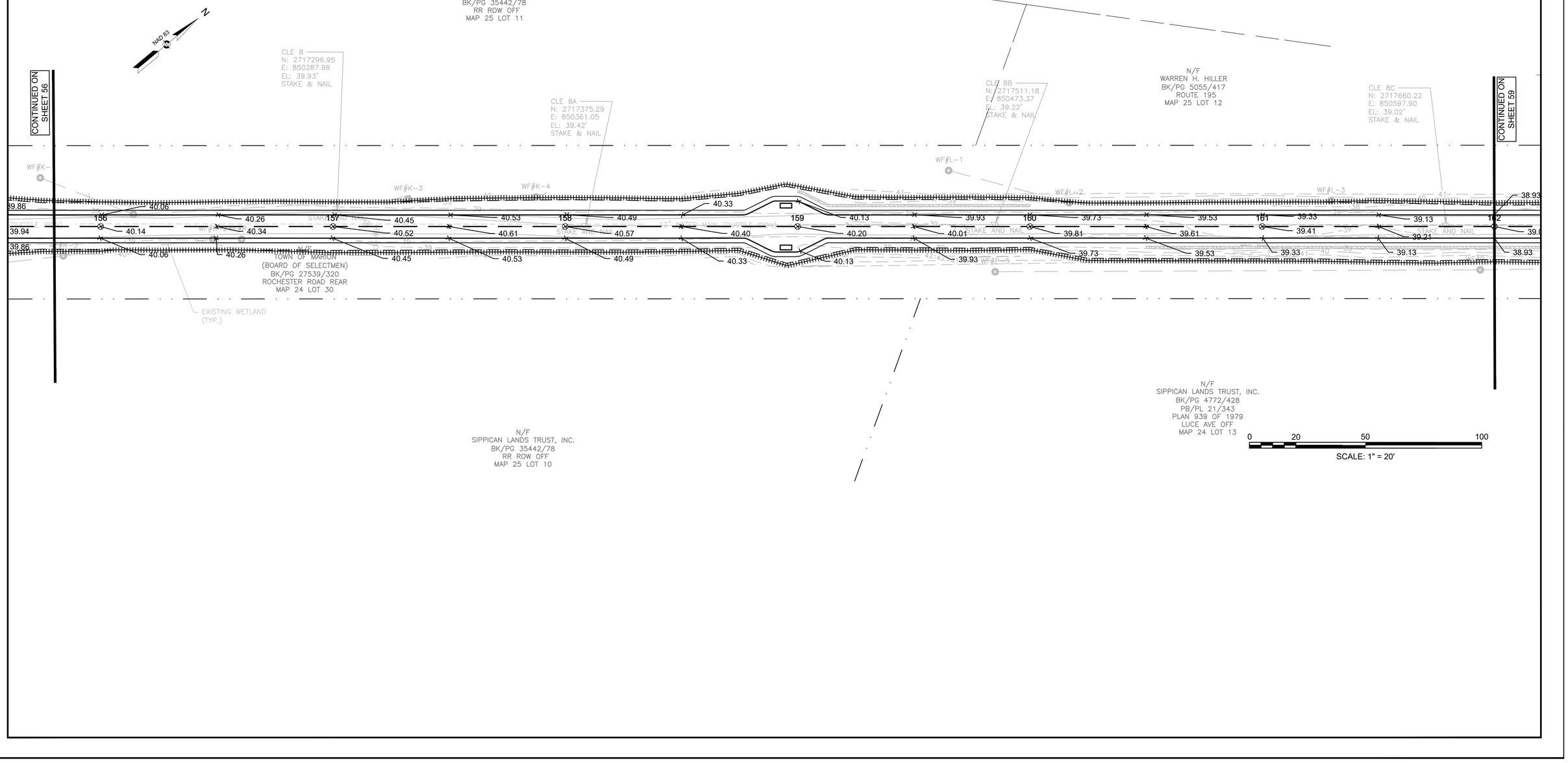


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	58	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 10 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM

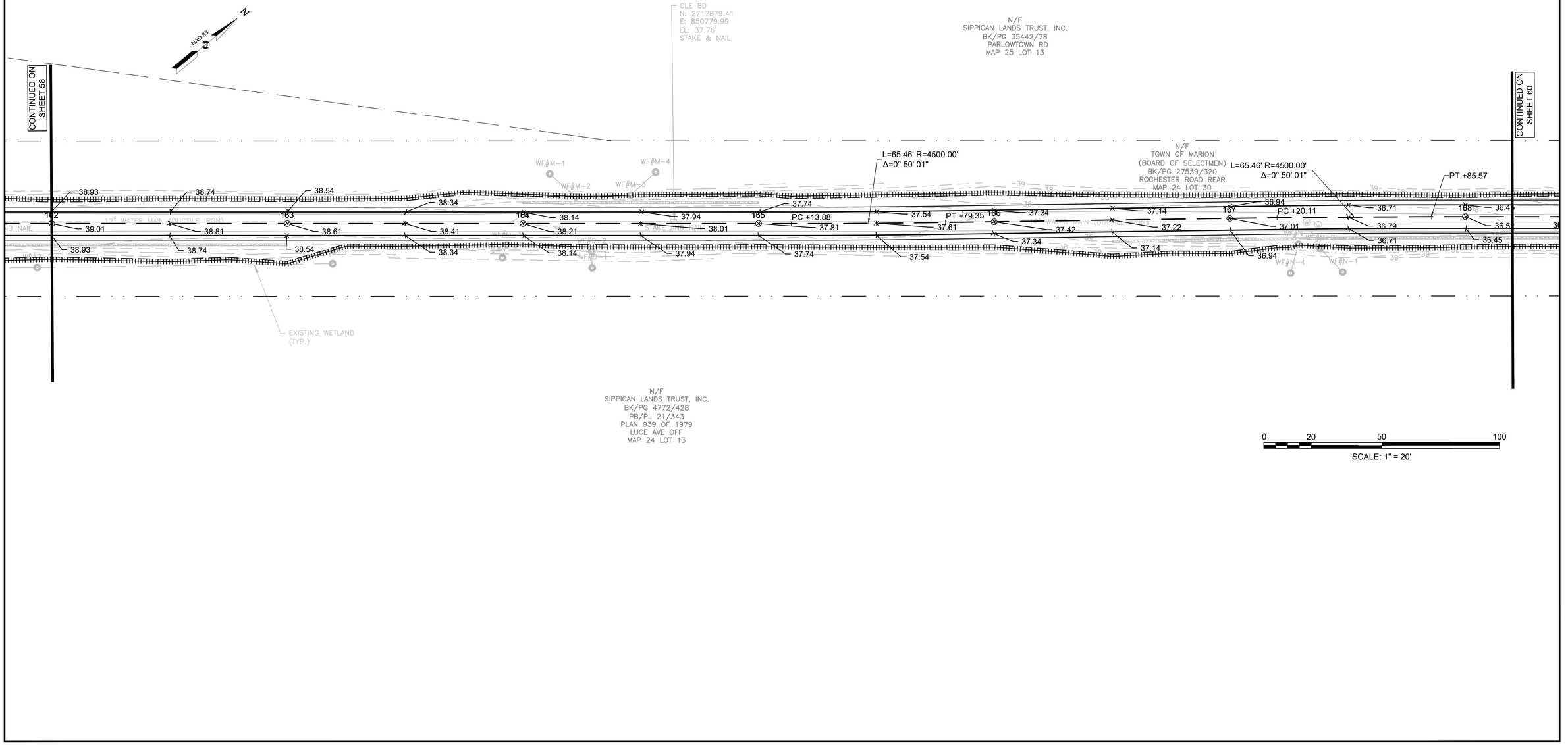


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	59	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 11 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	60	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 12 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:25 AM

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 35442/78
PARLOWTOWN RD
MAP 25 LOT 13

NAD 83

CLE 9
N: 2718187.10
E: 851036.39
EL: 35.62'
STAKE & NAIL

CLE 10
N: 2718459.80
E: 851262.89
EL: 33.93'
STAKE & NAIL

CLE 11
N: 2718616.25
E: 851394.30
EL: 32.71'
STAKE & NAIL

CONTINUED ON SHEET 59

CONTINUED ON SHEET 61

85.57

8	36.45		36.18	169	35.91		35.64	170	35.38		35.11	171	34.84		34.57	34.38	172	34.30		34.04	173	33.77		33.50	174	33.23
9	36.51	36.26			35.99		35.72		35.45		35.18		34.92		34.65					34.11		33.84		33.58		33.31
	36.45		36.18		35.91		35.64		35.38		35.11		34.84		34.57			34.30		34.04		33.77		33.50		33.23

STAKE AND NAIL

12" WATER MAIN (DUCTILE IRON)

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
ROCHESTER ROAD REAR
MAP 24 LOT 30

12" WATER MAIN (DUCTILE IRON)

20' WIDE TOWN UTILITY EASEMENT
BK/PG 35479/115
PB/PL 53/1107
PLAN 14 OF 2008

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 4772/428
PB/PL 21/343
PLAN 939 OF 1979
LUCE AVE OFF
MAP 24 LOT 13

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 4772/428
PB/PL 21/343
PLAN 939 OF 1979
LUCE AVE OFF
MAP 24 LOT 13

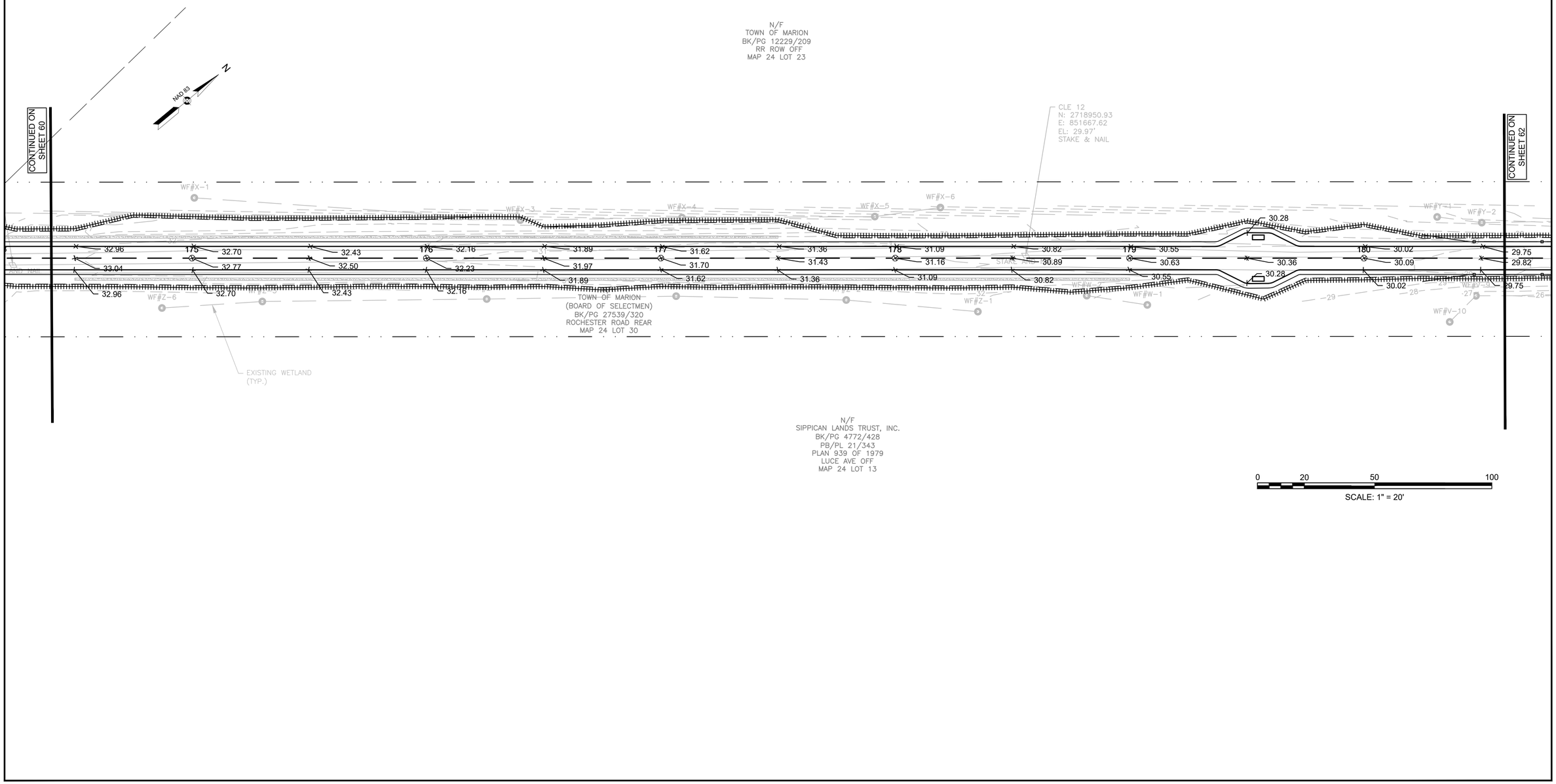
0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	61	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 13 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM



0 20 50 100

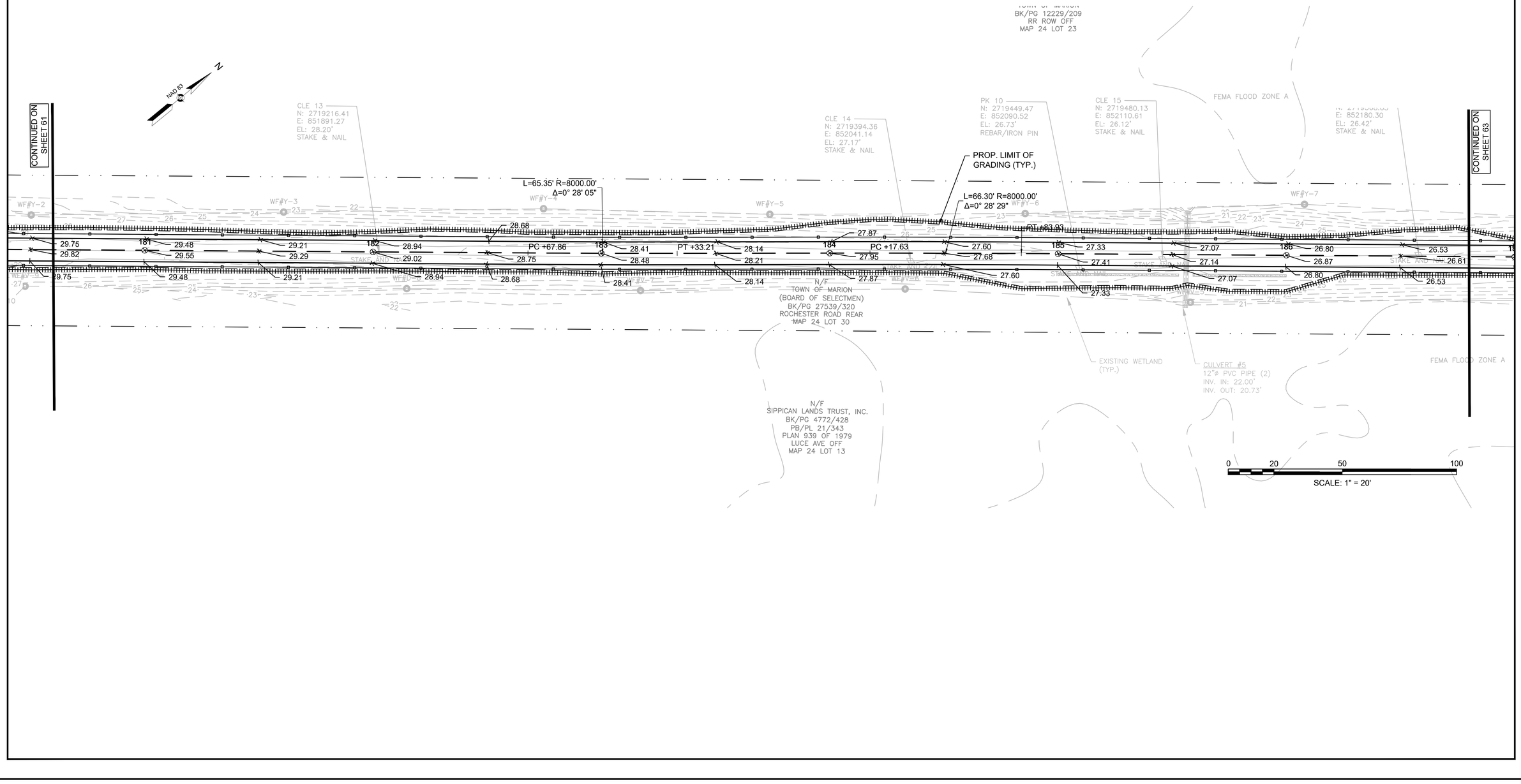
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	62	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 14 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	63	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 15 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM

CONTINUED ON SHEET 62

CONTINUED ON SHEET 64

NAD 83

N/F
TOWN OF MARION
(TAX TAKING)
BK/PG 2113/25
ROUTE 195 OFF
MAP 24 LOT 24

CLE 17
N: 2719746.53
E: 852329.48
EL: 25.53'
STAKE & NAIL

CLE 18
N: 2719998.68
E: 852539.59
EL: 25.50'
STAKE & NAIL

WF#Y-8
WF#Y-9
WF#Y-10
WF#Y-11
WF#S-1
WF#S-2
WF#S-3
WF#S-4
WF#T-1
WF#V-1
WF#V-2
WF#V-3
WF#U-12
WF#U-13

187 26.26 26.34 26.01 26.09
188 25.96 26.04 26.12 26.20
189 26.32 26.40 26.52 26.60
190 26.72 26.80 26.88 26.96
191 26.85 26.93 26.66 26.74
192 26.46 26.54 26.26 26.33
193 26.06 26.13

26.53 26.61 26.53 26.26 26.01 25.96 26.12 26.32 26.52 26.72 26.88 26.85 26.66 26.46 26.26 26.06

STAKE AND NAIL

TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
ROCHESTER ROAD REAR
MAP 24 LOT 30

FEMA FLOOD ZONE A

EXISTING WETLAND
(TYP.)

CB (TYP.)

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 4772/428
PB/PL 21/343
PLAN 939 OF 1979
LUCE AVE OFF
MAP 24 LOT 13

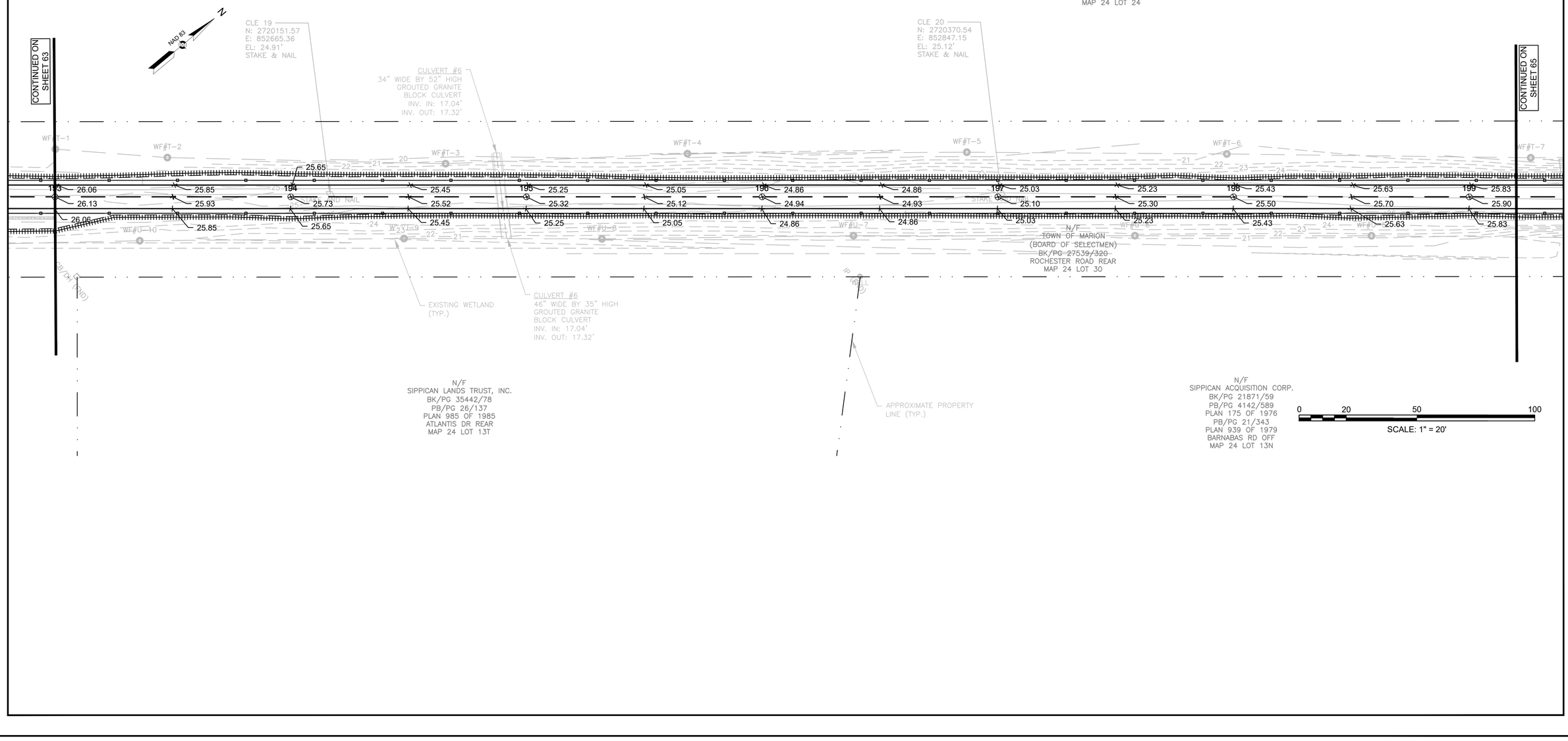
0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	64	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 16 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM

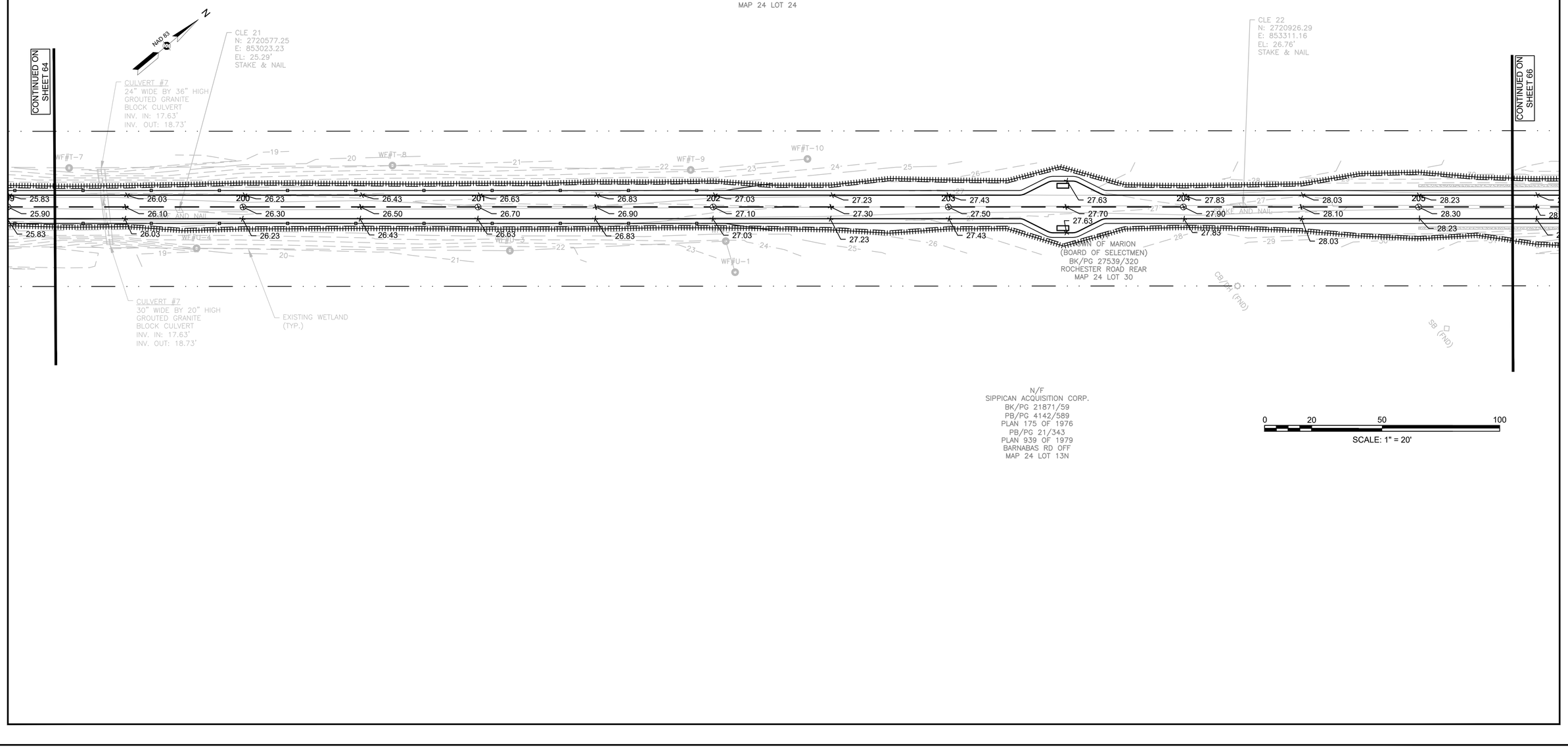


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	65	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 17 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	66	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 18 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM

N/F
SIPPICAN LANDS TRUST, INC.
BK/PG 43943/302
VILLAGE DR OFF
MAP 24A LOT 42

CLE 23
N: 2721038.03
E: 853404.27
EL: 27.43'
STAKE & NAIL

NAD 83

CLE 24
N: 2721299.26
E: 853623.98
EL: 27.74'
STAKE & NAIL

CONTINUED ON SHEET 65

CONTINUED ON SHEET 67

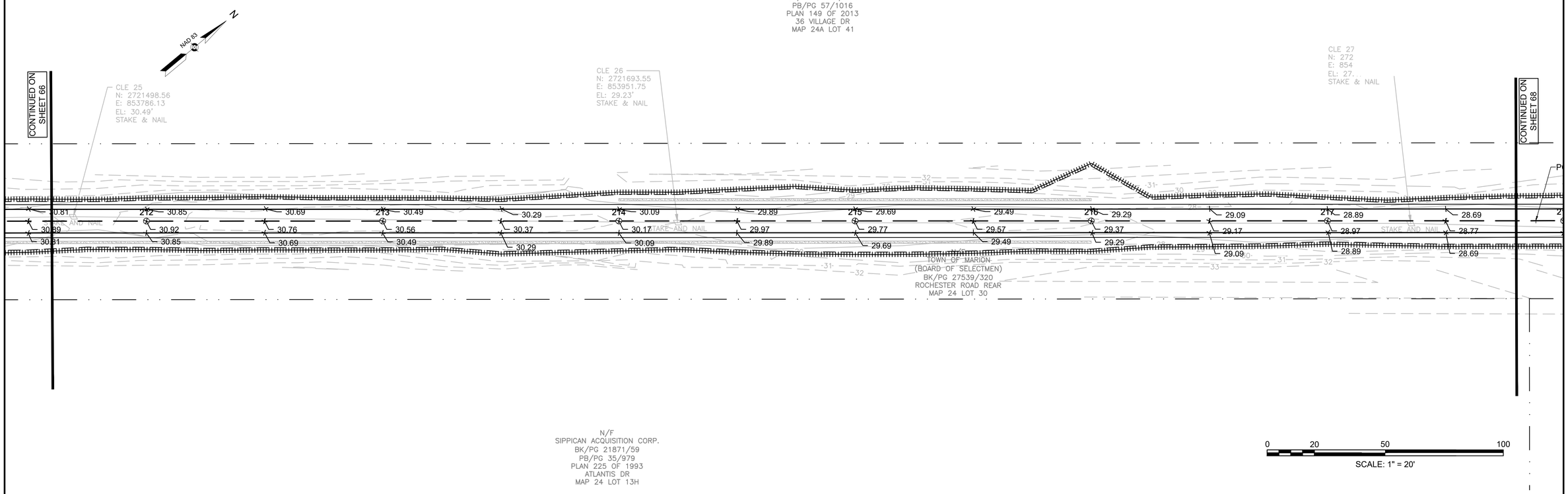
| | | |

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	67	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 19 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM

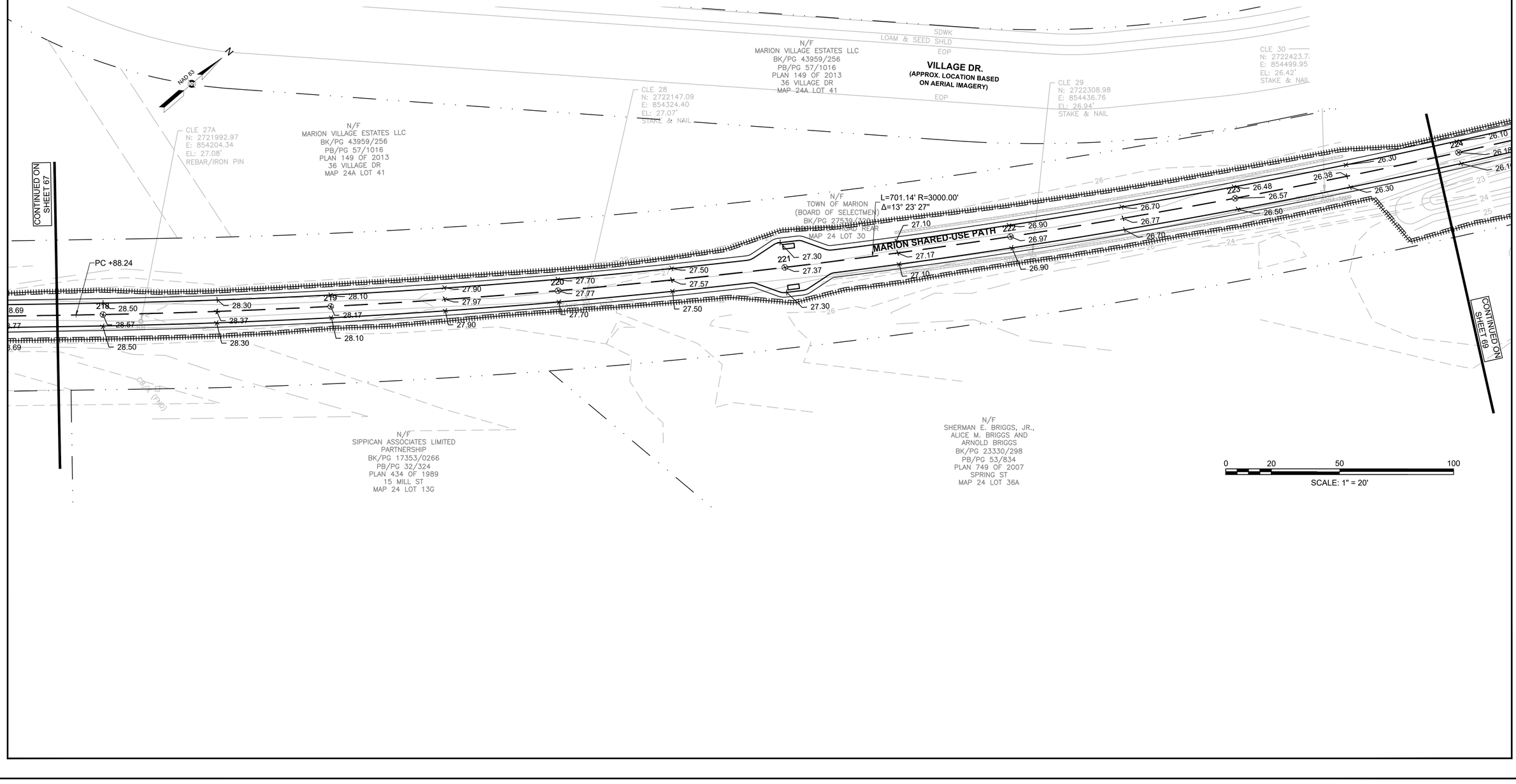


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	68	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 20 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM

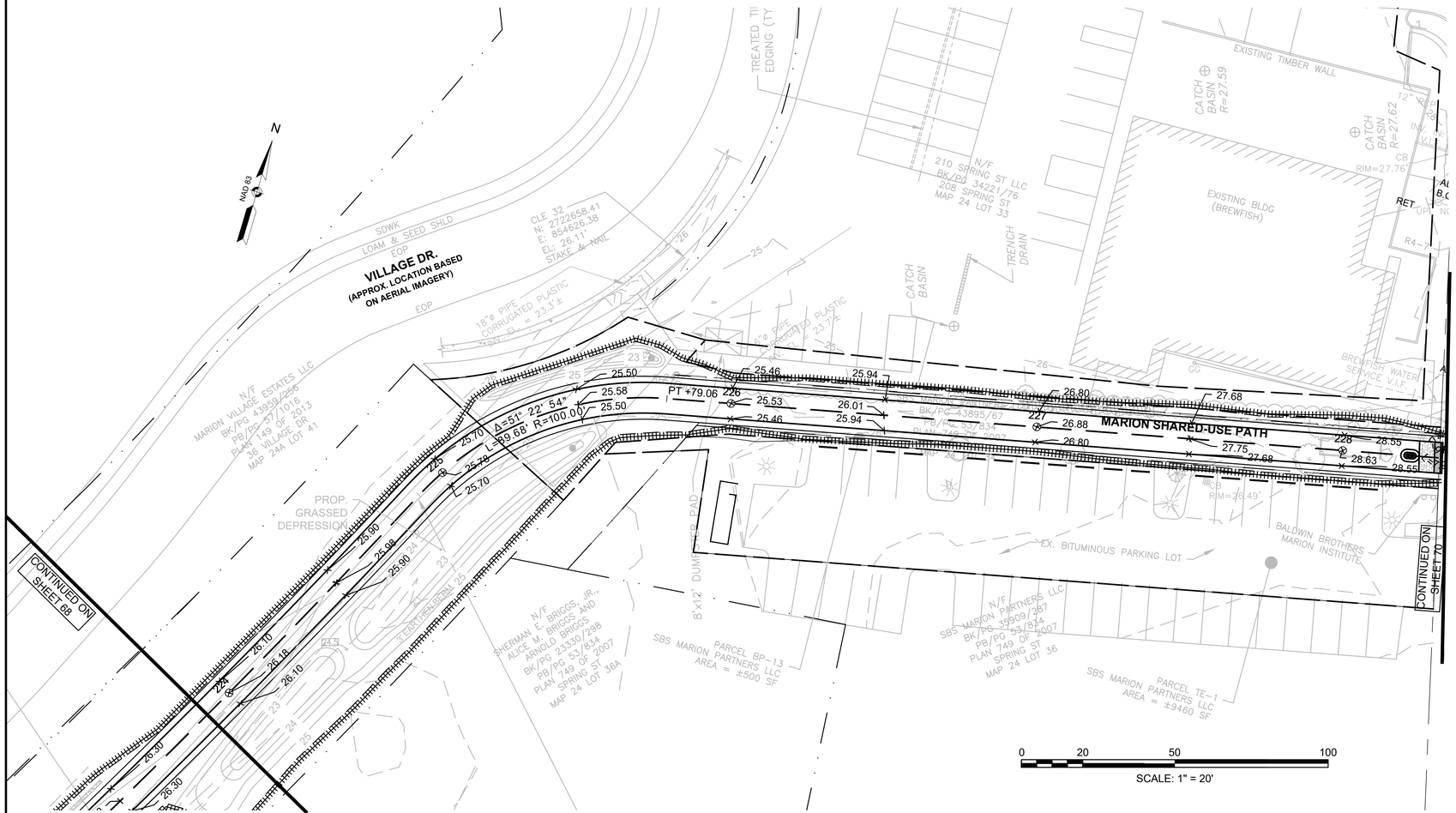


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	69	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 21 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM



TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	70	274
PROJECT FILE NO.		607979	

FRONT ST (RTE 105) AT SPRING ST
CURB TIE & GRADING
SHEET 22 OF 35

Y16147.21 MARION PATHWAY (CURB TIE).DWG Plotted on 20-Oct-2023 12:36 PM

CURVE TABLE				
CURVE #	RADIUS	LENGTH	TANGENT	DELTA
C100	950.00	227.95	114.523	13°44'52"
C101	1027.57	125.32	62.739	6°59'16"
C102	10.00	3.79	1.920	21°44'06"
C103	3.00	2.88	1.561	54°58'45"
C104	3.00	6.44	5.519	122°56'40"
C105	25.00	33.80	20.048	77°27'09"
C106	50.00	48.55	26.379	55°37'49"
C107	10.00	15.80	10.096	90°32'46"
C109	35.00	40.27	22.695	65°55'18"
C110	10.00	15.53	9.827	89°00'09"

FRONT STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	100+00.00	2722968.129	854796.241		S26°53'46"E 65.85'	100+65.85	2722909.405	854826.029
C1	100+65.85	2722909.405	854826.029	R=900.00' Δ=12°51'50" L=202.07' T=101.46'		102+67.91	2722740.925	854936.817
L2	102+67.91	2722740.925	854936.817		S39°45'36"E 82.09'	103+50.00	2722677.823	854989.317

SPRING STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	200+00.00	2722748.604	854930.500		S50°14'24"W 24.81'	200+24.81	2722732.734	854911.426
C2	200+24.81	2722732.734	854911.426	R=40.00' Δ=64°55'27" L=45.33' T=25.45'		200+70.14	2722691.846	854898.315
L3	200+70.14	2722691.846	854898.315		S14°41'03"E 76.25'	201+46.39	2722618.083	854917.645

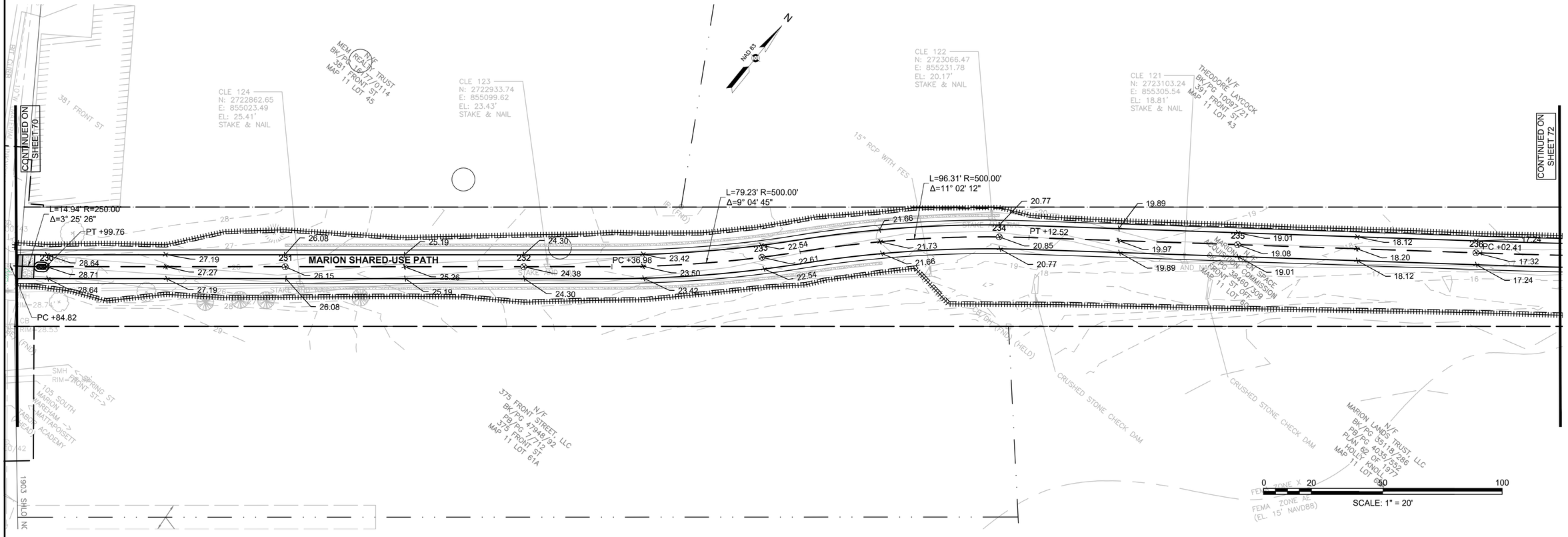
0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	71	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 23 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM

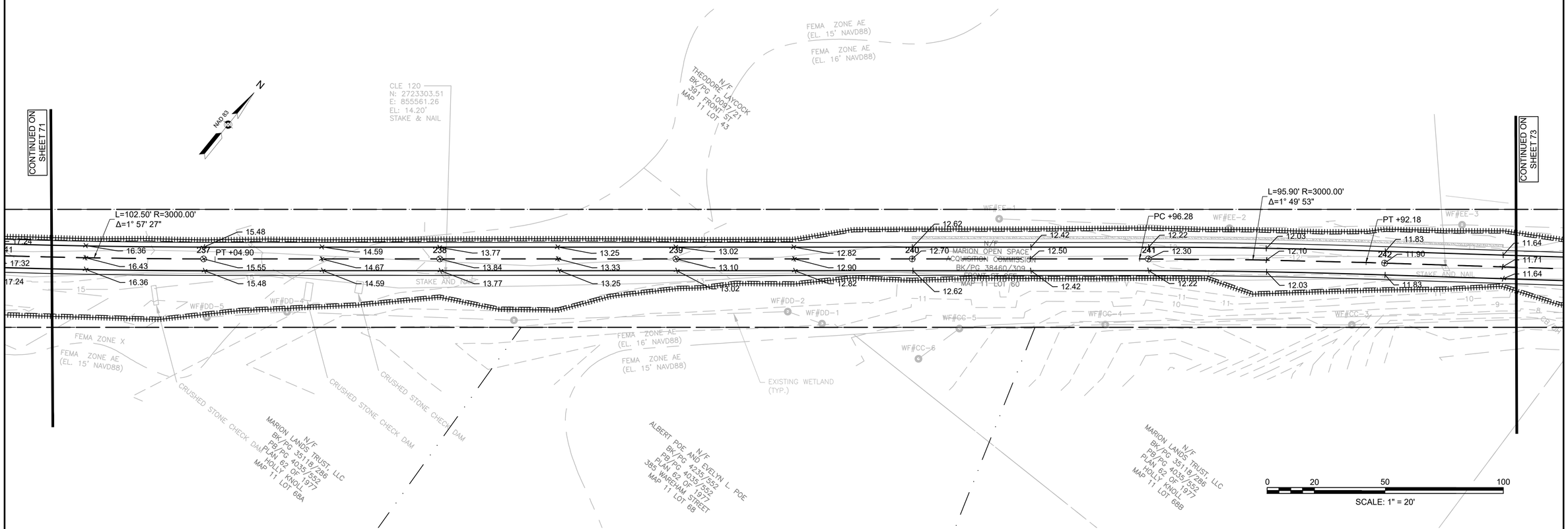


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	72	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 24 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:26 AM

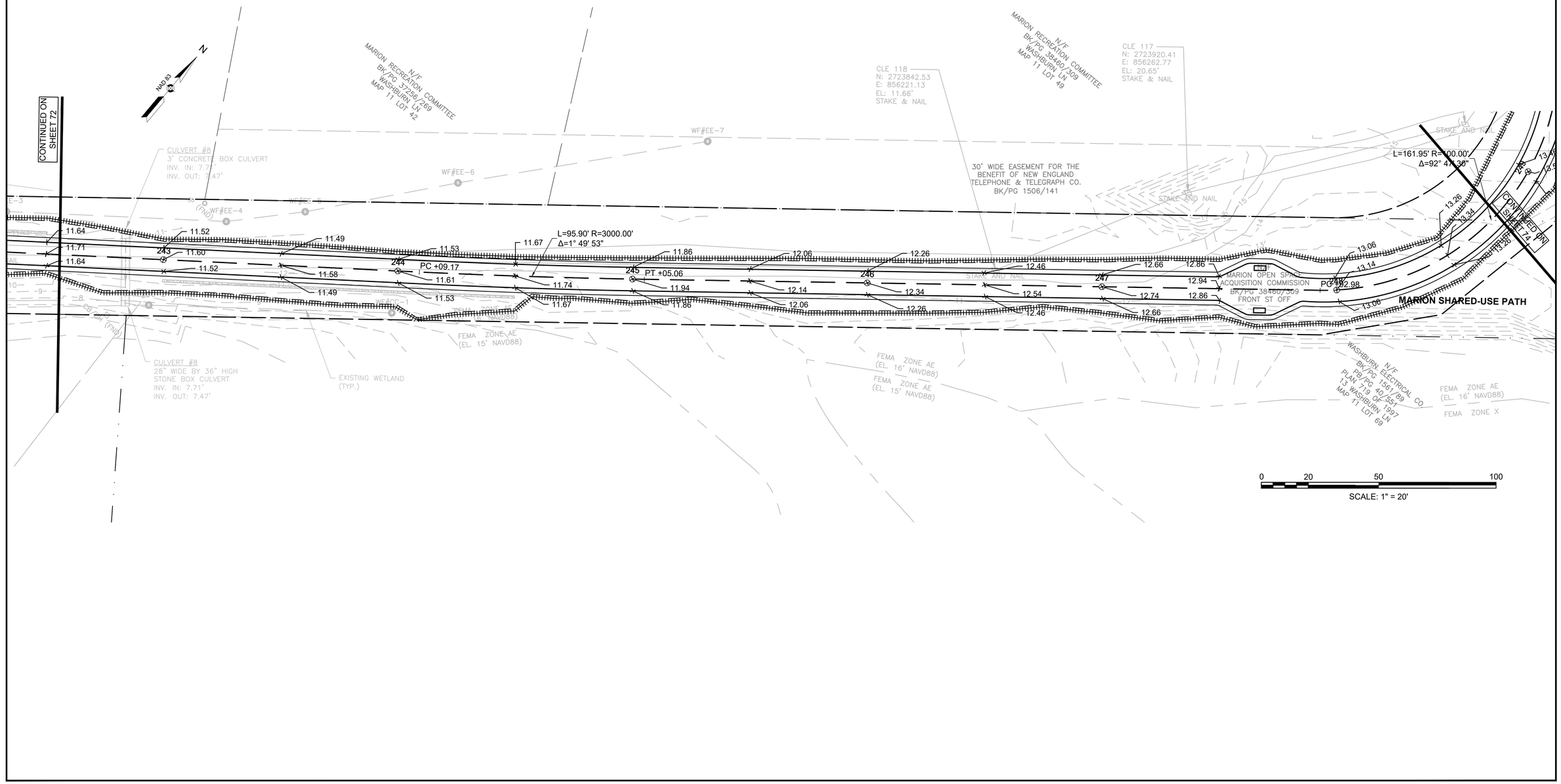


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	73	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 25 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	74	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 26 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM

CONTINUED ON SHEET 73

CONTINUED ON SHEET 75

MARION SHARED USE PATH

WASHBURN LN

L=161.95' R=100.00'
Δ=92° 47' 30"

PC +24.16
PT +54.93
PT +77.51
PC +33.09
PT +56.29
+99.91

L=153.35' R=100.00'
Δ=87° 51' 43"

Δ=88° 25' 31"
L=123.19' R=80.00'

L=96.63' R=100
Δ=55° 21'

N/F TOWN OF MARION (BOARD OF SELECTMEN) BK/PG 1696/230 WASHBURN LN MAP 11 LOT 40

N/F TOWN OF MARION (BOARD OF SELECTMEN) BK/PG 3506/16 WASHBURN LN MAP 11 LOT 50

EXISTING WETLAND (TYP.)

EX. CHAIN LINK FENCE

FEMA ZONE AE (EL. 15' NAVD88)

FEMA ZONE X

CLE 113
N: 2724241.61
E: 855906.53
EL: 14.82'
STAKE & NAIL

CLE 114
N: 2724167.53
E: 856043.83
EL: 14.50'
STAKE & NAIL

30' WIDE EASEMENT FOR THE BENEFIT OF NEW ENGLAND TELEPHONE & TELEGRAPH CO. BK/PG 1509/141

0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	75	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 27 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM

N/F
MARION RECREATION COMMITTEE
BK/PG 37256/269
WASHBURN LN
MAP 11 LOT 42

CONTINUED ON SHEET 74

N/F
THE INHABITANTS OF THE TOWN OF MARION
(MARION RECREATION COMMITTEE)
L.C.C. NO. 12984
DOC. CERT. NO. 59045
25 WASHBURN LN
MAP 11 LOT 39

N/F
THE INHABITANTS OF THE TOWN OF MARION
(MARION RECREATION COMMITTEE)
L.C.C. NO. 12984
DOC. CERT. NO. 59046
29 WASHBURN LN
MAP 11 LOT 39

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 1696/230
WASHBURN LN
MAP 11 LOT 40

N/F
CHAD C. MCLEOD AND
GINA C. MCLEOD
BK/PG 42391/50
48 WASHBURN LN
MAP 11 LOT 41

CLE 113
N: 2724241.61
E: 855906.53
EL: 14.82'
STAKE & NAIL

CLE 112
N: 2724234.53
E: 855767.67
EL: 15.82'
STAKE & NAIL

CLE 111
N: 2724295.36
E: 855609.80
EL: 15.16'
STAKE & NAIL

PC +48.54
Δ=55° 21' 56"
L=96.63' R=100.00'
PC +99.91
PC +96.55
Δ=31° 52' 03"
L=55.62' R=100.00'
PT +04.16
PT +41.25
PC +93.28
L=47.97' R=100.00'
Δ=27° 28' 59"
PC +33.81
L=130.3
Δ=7

CONTINUED ON SHEET 76

CONTINUED ON SHEET 77

FEMA ZONE AE (EL. 15' NAVD88)
FEMA ZONE X
STAKE AND NAIL

NAD 83
N

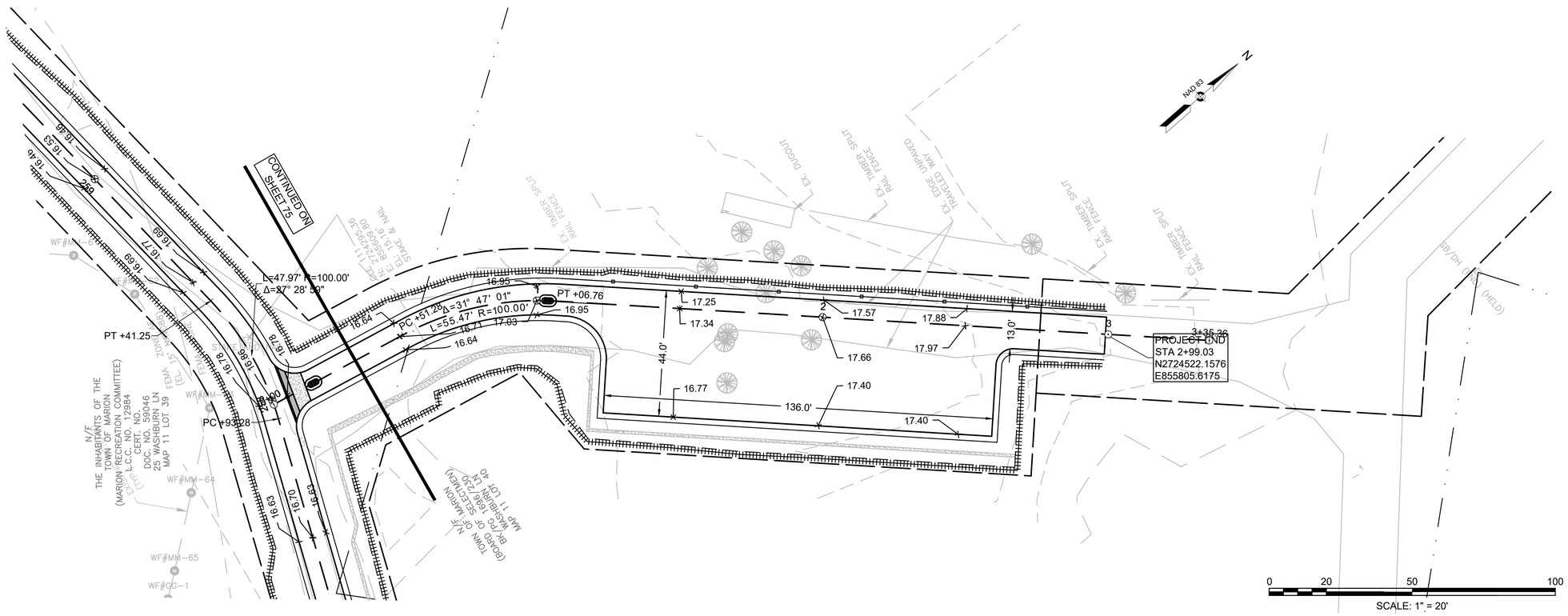
0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	76	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 28 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM

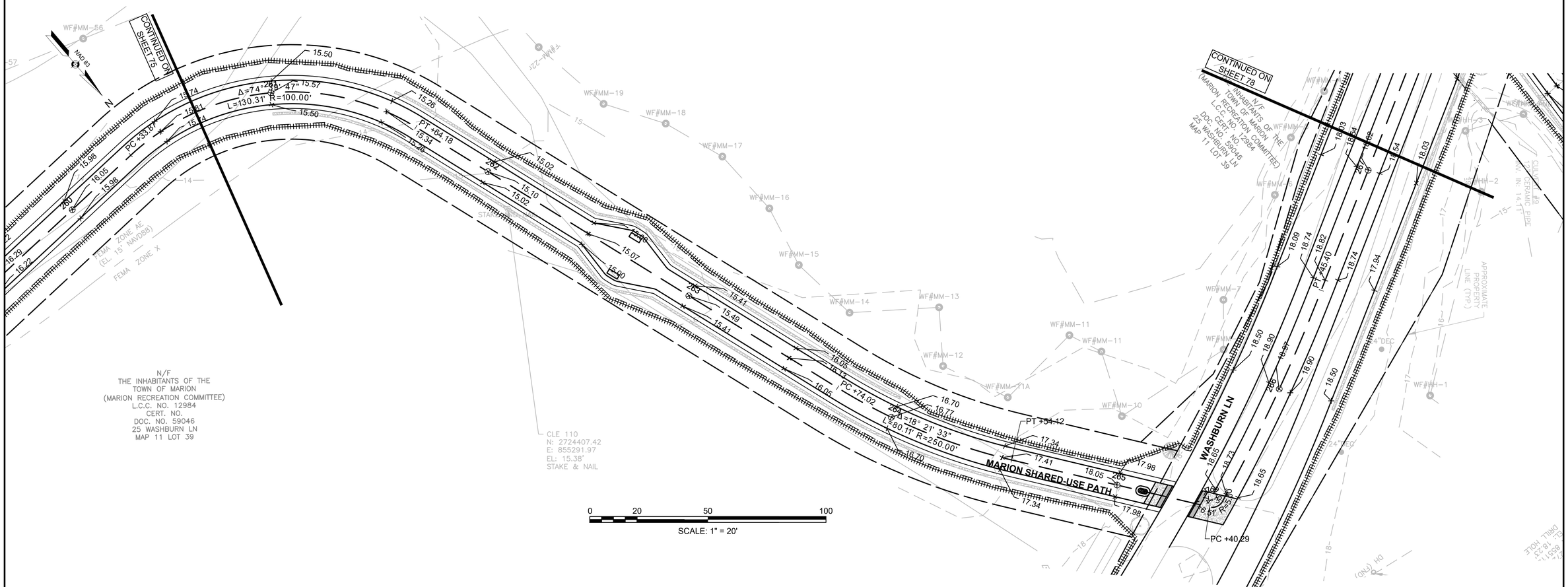


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	77	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 29 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	78	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 30 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM

1980 TOWN LAYOUT

1980 TOWN LAYOUT

CLE 108
N: 2724656.45
E: 854928.59
EL: 18.82'
STAKE & NAIL

NAD 83

1980 TOWN LAYOUT

N/F
BARBARA T. DECOSTA
BK/PG 43938/18
2 WASHBURN PARK RD
MAP 11 LOT 18

CLE 107
N: 2725021.50
E: 854943.89
EL: 19.09'
STAKE & NAIL

WASHBURN PARK PL

MARION SHARED-USE PATH

EXISTING WETLAND (TYP.)

CONTINUED ON SHEET 79

CONTINUED ON SHEET 77

N/F
THE INHABITANTS OF THE TOWN OF MARION
(MARION RECREATION COMMITTEE)
L.C.C. NO. 12984
CERT. NO.
DOC. NO. 59046
25 WASHBURN LN
MAP 11 LOT 39

N/F
THE TRUSTEES OF THE CHARLES WASHBURN MEMORIAL TRUST
BK/PG 2544/430
WASHBURN LN OFF
MAP 11 LOT 36

N/F
SIDNEY J. PIRES, JR.
BK/PG 13696/246
RR ROW OFF
MAP 11 LOT 35

N/F
SIDNEY J. PIRES, JR.
BK/PG 13696/246
RR ROW OFF
MAP 11 LOT 34

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 1696/230
WASHBURN LN

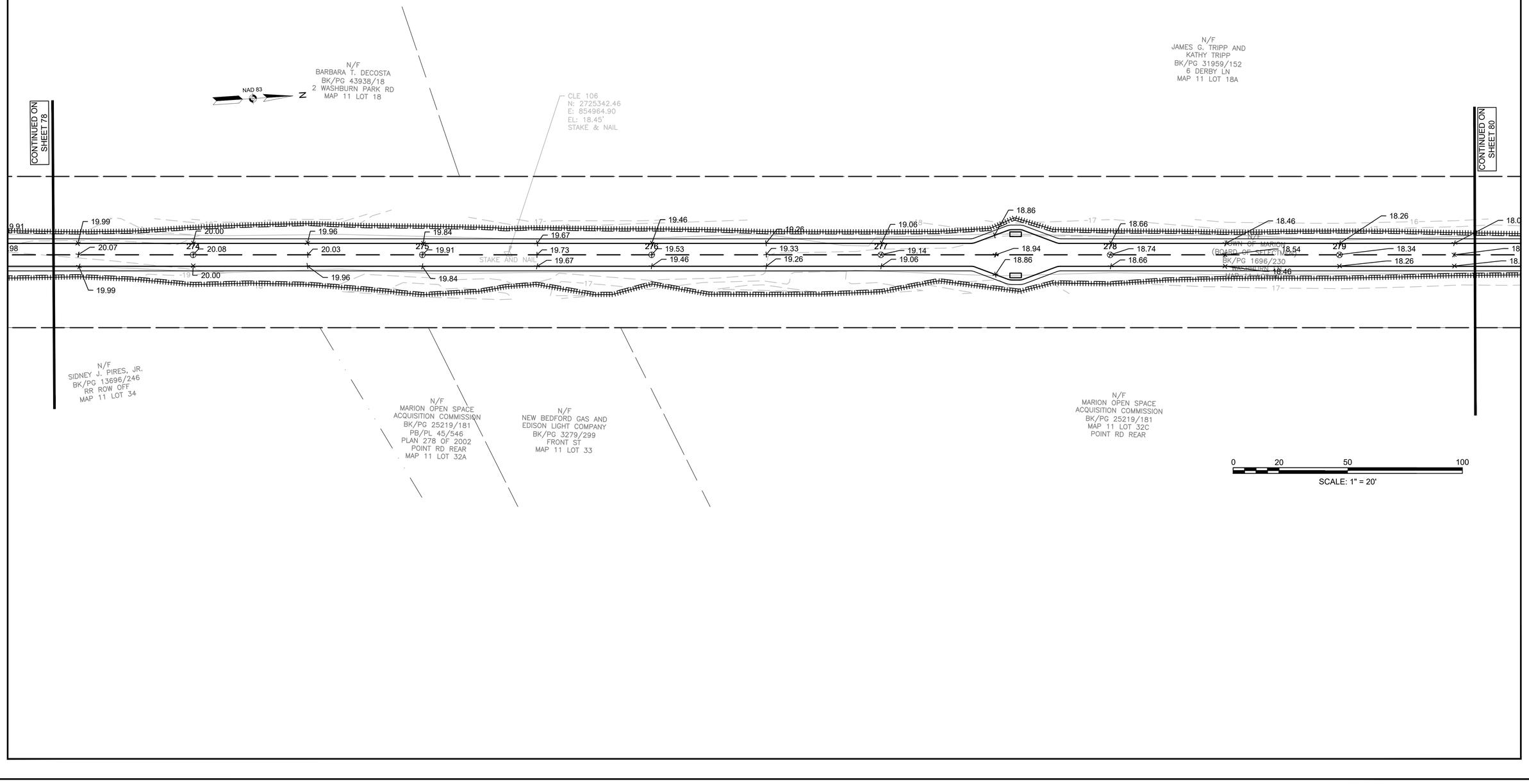
0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	79	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 31 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM

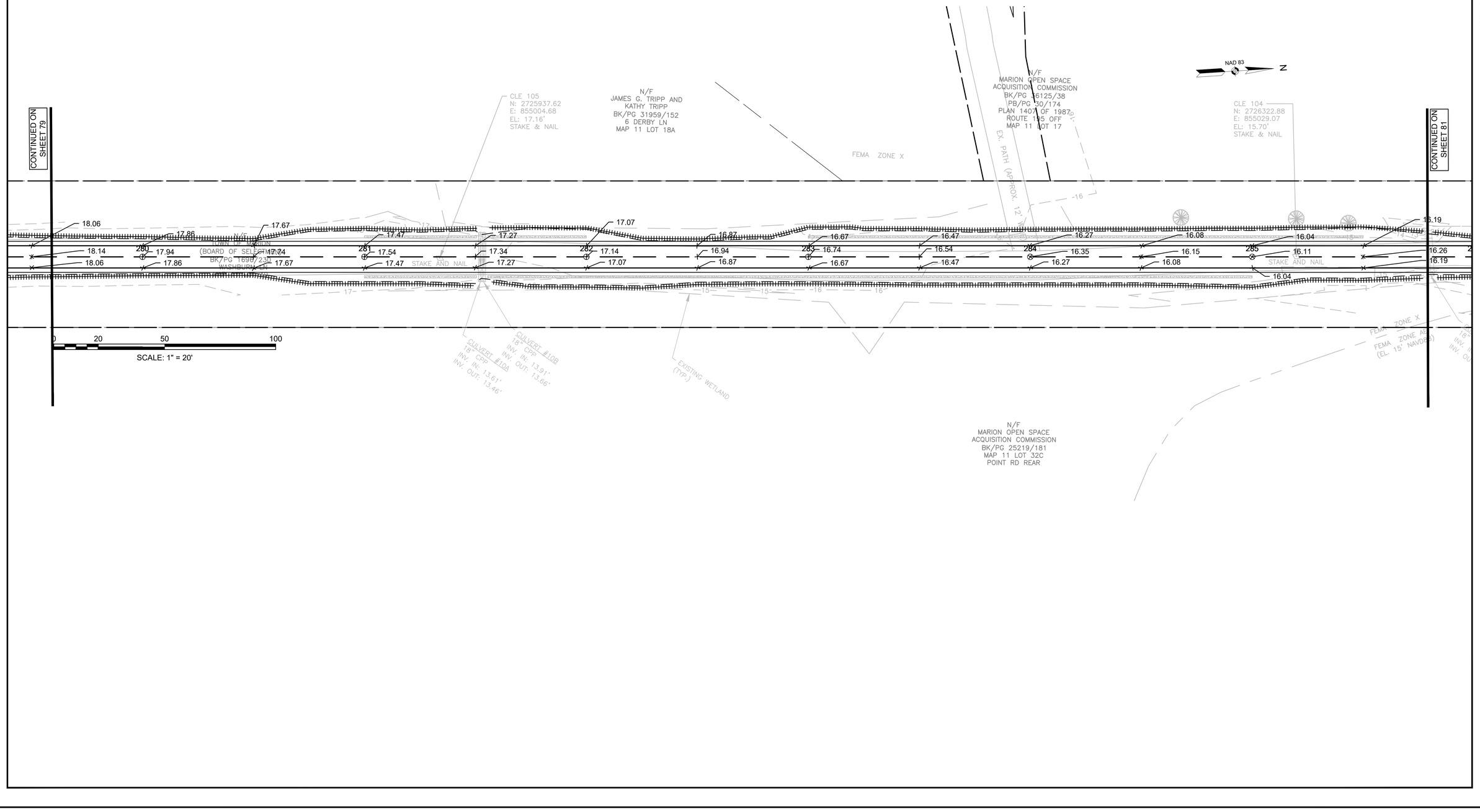


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	80	271
PROJECT FILE NO.	607979		

CURB TIE AND GRADING
SHEET 32 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM

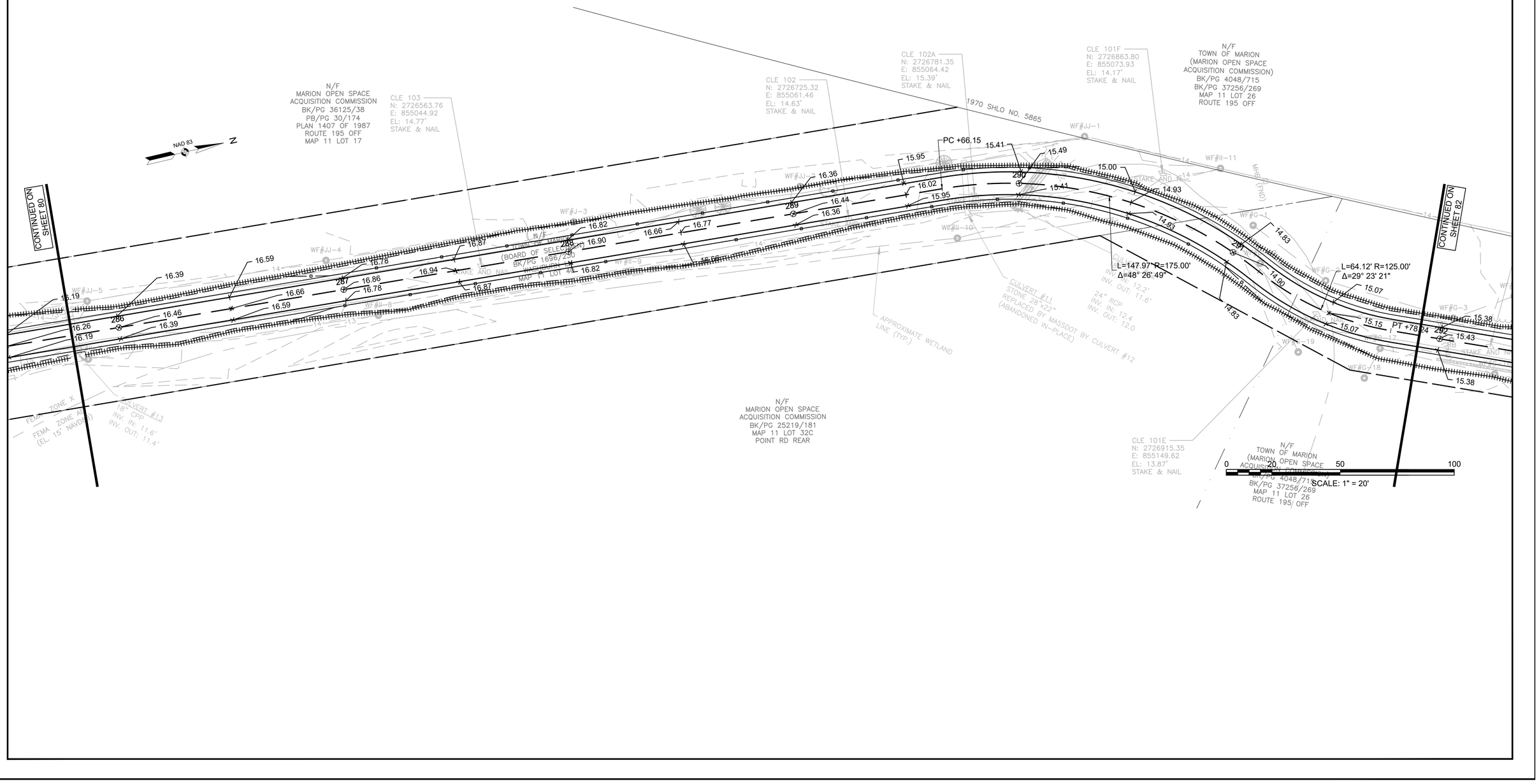


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	81	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 33 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM

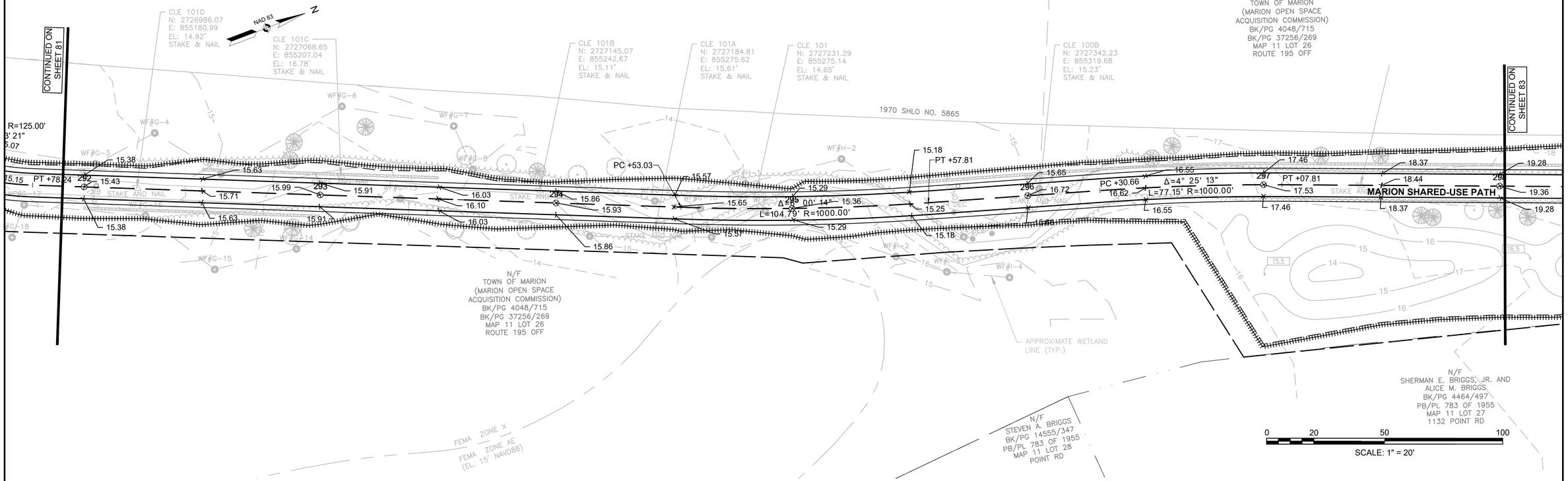


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	82	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 34 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	83	274
PROJECT FILE NO.	607979		

CURB TIE & GRADING
SHEET 35 OF 35

607979_CURB TIE & GRADING.DWG Plotted on 27-Oct-2023 11:27 AM

N/F
TOWN OF MARION
(MARION OPEN SPACE
ACQUISITION COMMISSION)
BK/PG 4048/715
BK/PG 37256/269
MAP 11 LOT 26
ROUTE 195 OFF

NAD 83 N

CLE 100A
N: 2727470.82
E: 855364.27
EL: 17.80'
STAKE & NAIL

CONTINUED ON SHEET 82

CLE 100
N: 2727609.43'
E: 855417.80
EL: 19.54'
STAKE & NAIL

PK 1
N: 2727693.17
E: 855450.25
EL: 17.29'
PK NAIL

1970 SHLO NO. 5865

MHB (FND)

25' 13"
R=1000.00'

PT +07.81

MARION SHARED-USE PATH

STAKE AND NAIL

297 298 299 300 300+12.31

17.46 18.37 19.28 20.19 20.27 20.76 19.75

17.53 18.44 19.36 20.83 20.02

17.46 18.37 19.28 20.19 20.76

46.0'

52.0'

19.60

EX. SHED

MB

EX. STONE PAVER PATIO

TOP LAYOUT

EOP

POINT RD

FEMA ZONE X

15.5 16.5

N/F
SHERMAN E. BRIGGS, JR. AND
ALICE M. BRIGGS
BK/PG 4464/497
PB/PL 783 OF 1955
MAP 11 LOT 27
1132 POINT RD

0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	84	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 1 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:43 PM

N
NAD 83

CLE STATIC 100
N: 2713004.03
E: 846653.94
EL: 69.58'
REBAR

RB

CLE 1
N: 2712991.16
E: 846710.42
EL: 70.55'
DRILL HOLE

LIMIT OF WORK
STA 100+98.6
N2712986.5661
E846708.2446

EX. UTILITY CONTROL BOX

EX. GATE

PK 5
EL: 28.29

100+00

UPL

12" WATER MAIN (DUCTILE IRON)

STAKE AND NAIL

ANTENNA POLE

WF#AA-1

W8-3

DYL (UNDER CONST. BL)

TRAFFIC FLOW ARROW (TYP.)
(INFORMATIONAL ONLY, DO NOT INSTALL)

45' WIDE UTILITY EASEMENT FOR THE BENEFIT OF COMMONWEALTH ELECTRIC COMPANY BK/PG 1786/210

55' WIDE UTILITY EASEMENT FOR THE BENEFIT OF COMMONWEALTH ELECTRIC COMPANY BK/PG 16363/197

CLE 1A
N: 2713172.58
E: 846862.54
EL: 69.44
STAKE & NAIL

N/F
A.D. MAKEPEACE COMPANY
BK/PG 16492/119
PB/PG 41/78
PLAN 294 OF 1998
RR ROW OFF
MAP 27 LOT 12A

A.D. MAKEPEACE COMPANY
BK/PG 1503/44
PB/PG 41/78
PLAN 294 OF 1998
TOWN LINE
MAP 27 LOT 12

CLE 2
N: 2713312.90
E: 846984.69
EL: 69.05'
STAKE & NAIL

CLE 2A
N: 2713384.46
E: 847039.56
EL: +67.88'
STAKE & NAIL

101 102 103 104 105 106

5' 5'

MARION SHARED-USE PATH

WF#BB-7 WF#BB-6 WF#BB-5

WF#AA-7 WF#AA-6 WF#AA-5

69 70 68

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 27539/320
RR ROW OFF
MAP 27 LOT 13

EXISTING WETLAND (TYP.)

CONTINUED ON SHEET 85

TOWN OF MATTAPOISETT
TOWN OF MARION

N/F
A.D. MAKEPEACE COMPANY
BK/PG 1503/44
TOWN LINE
MAP 27 LOT 2A

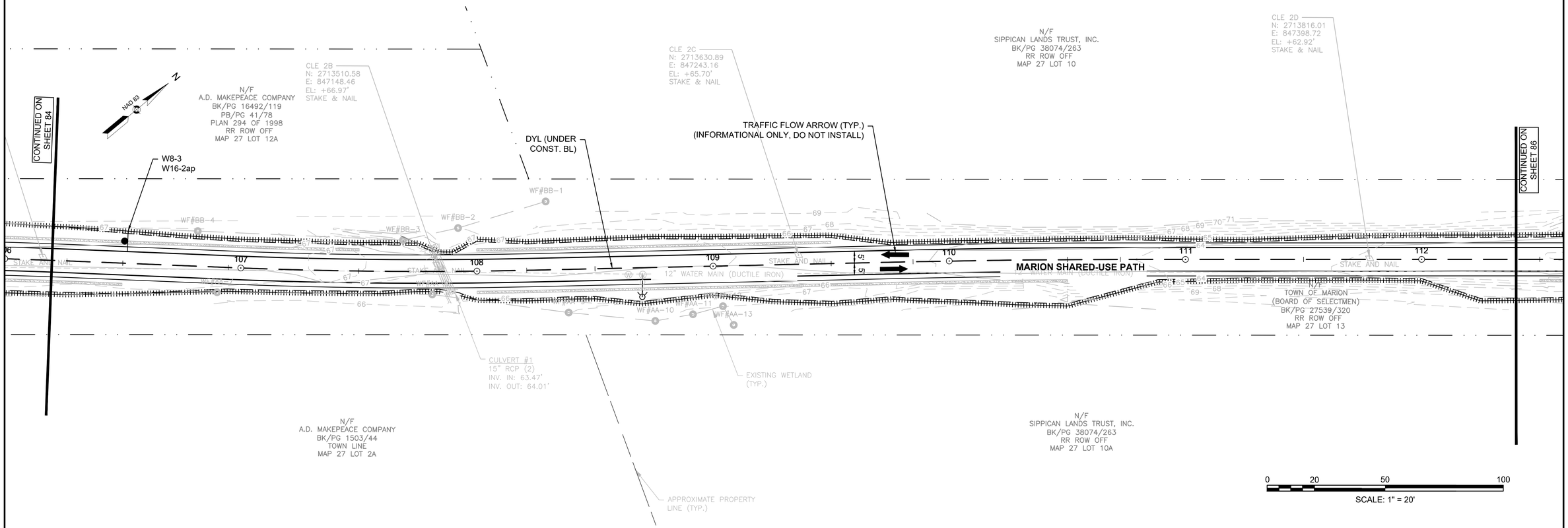
0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	85	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 2 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:43 PM

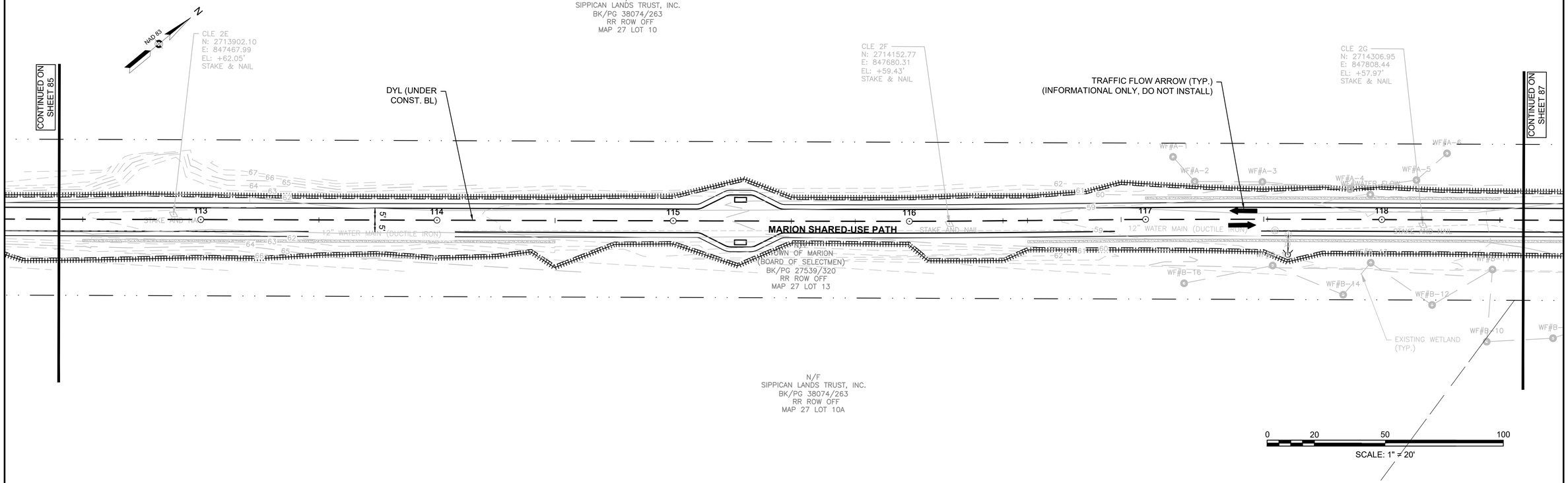


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	86	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 3 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:44 PM

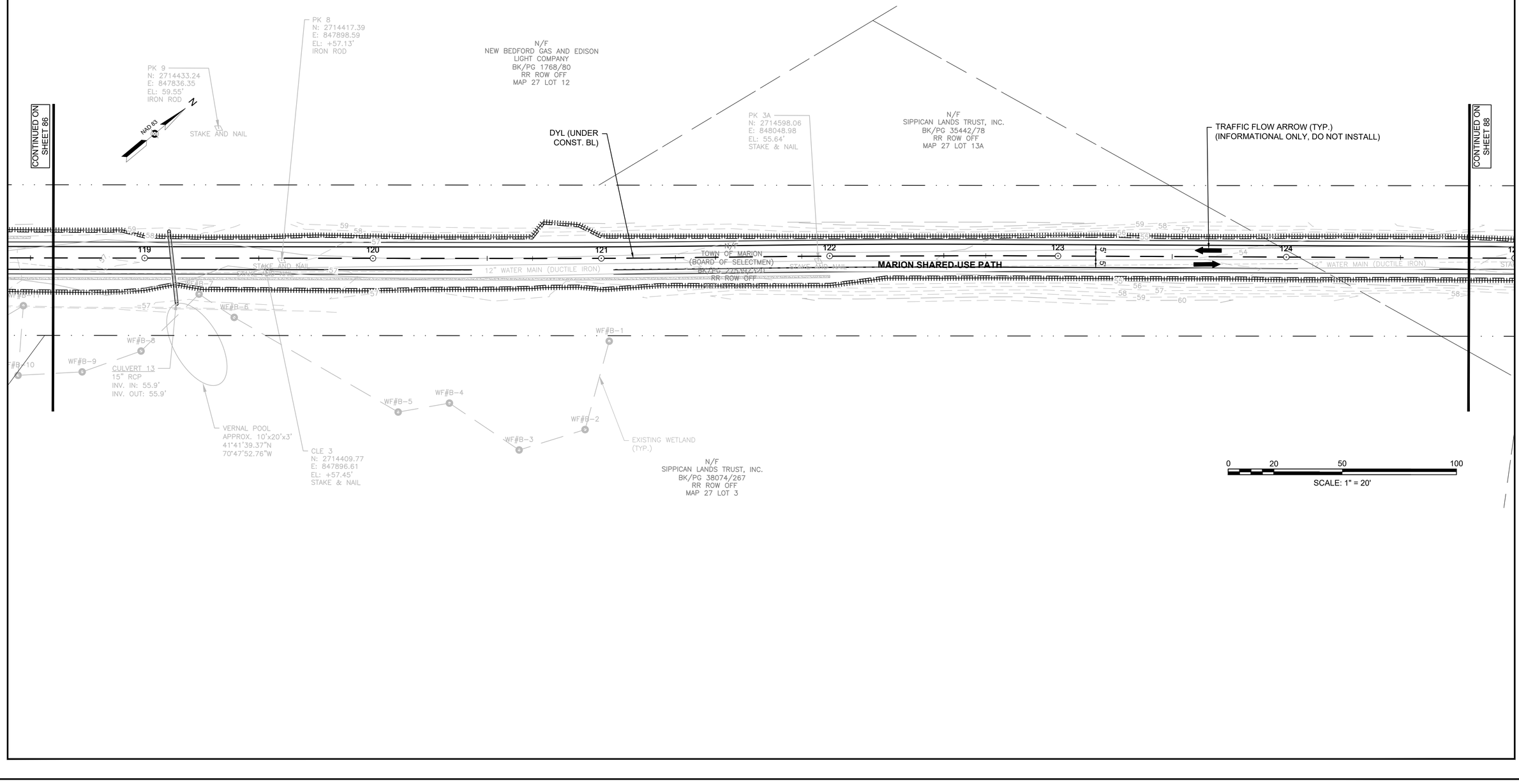


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	87	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 4 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:44 PM

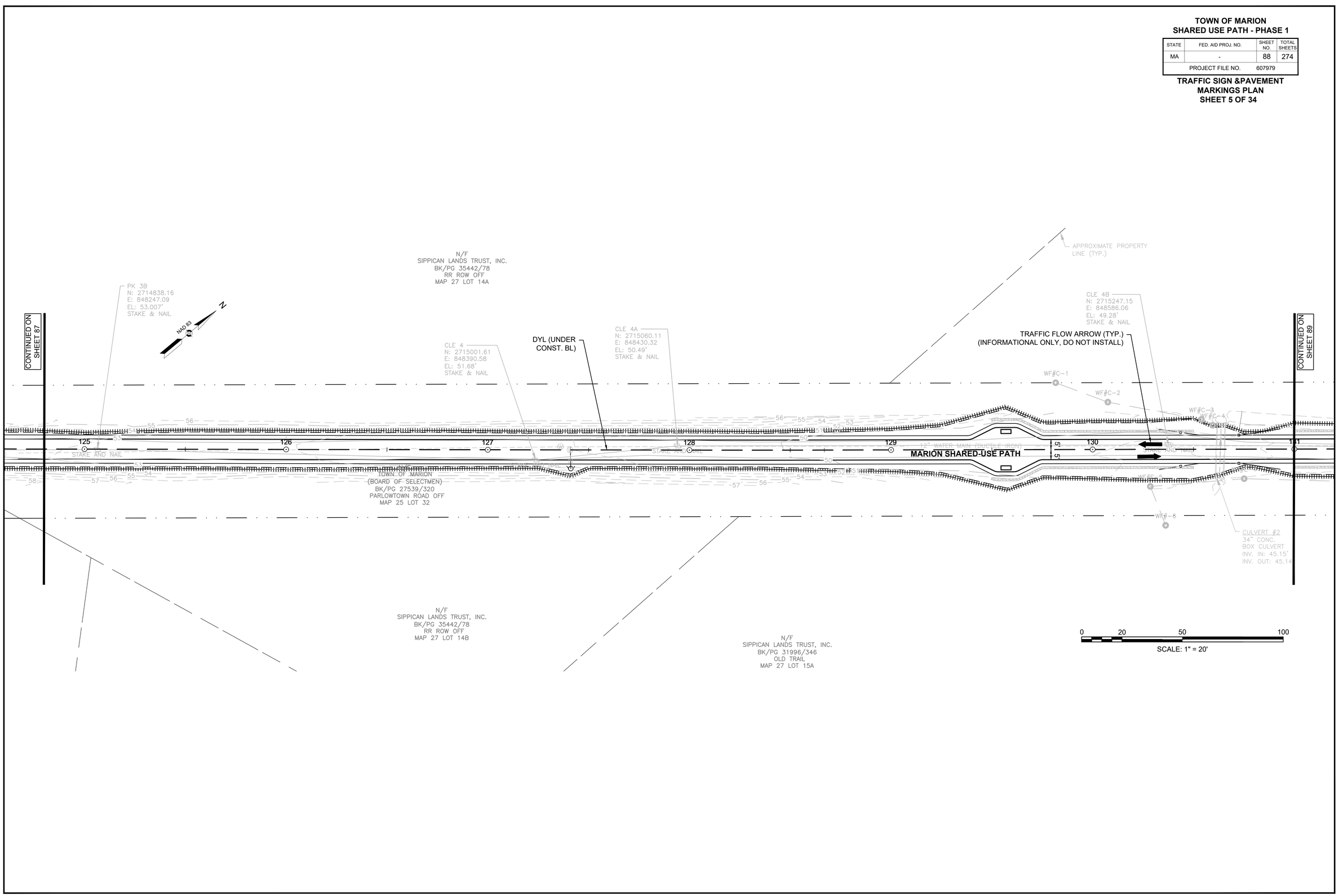


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	88	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 5 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:44 PM

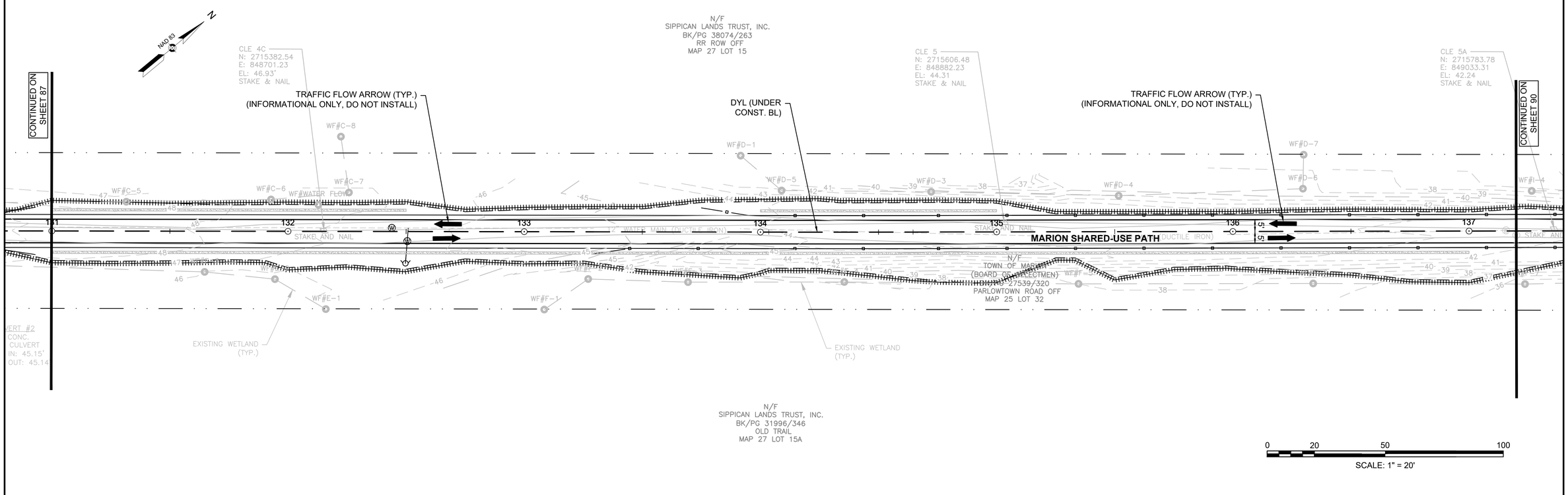


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	89	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 6 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:44 PM

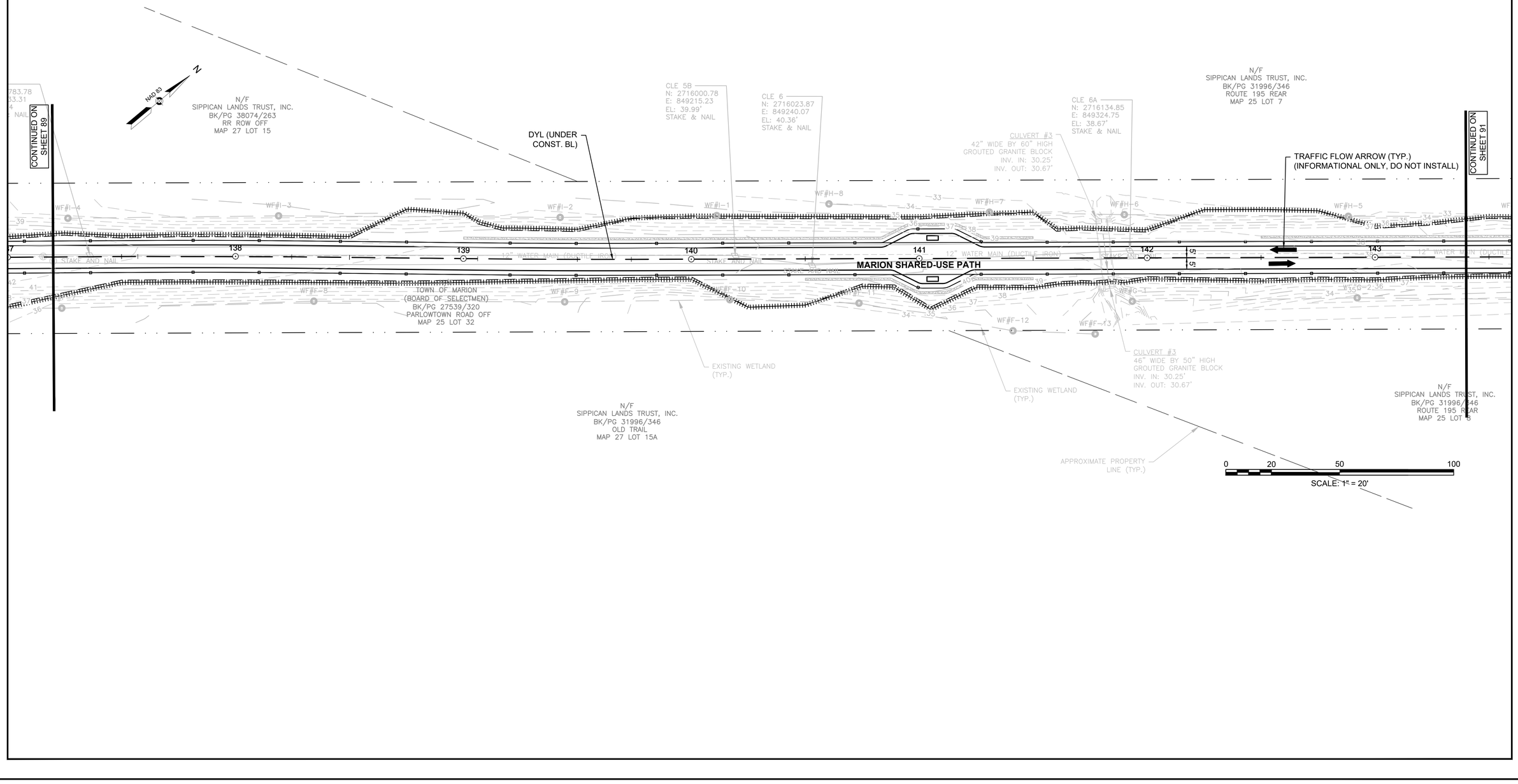


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	90	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 7 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:44 PM

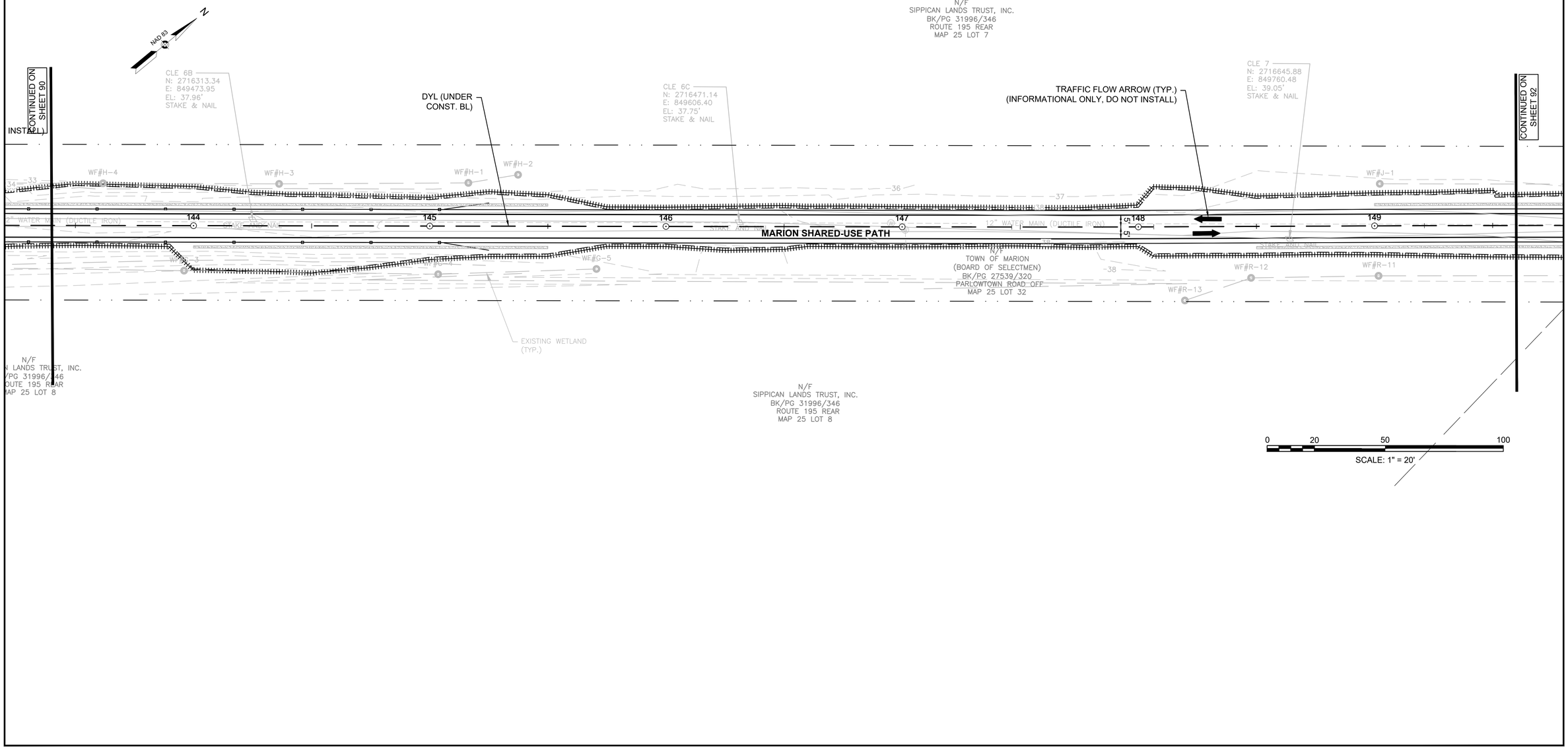


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	91	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 8 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:44 PM

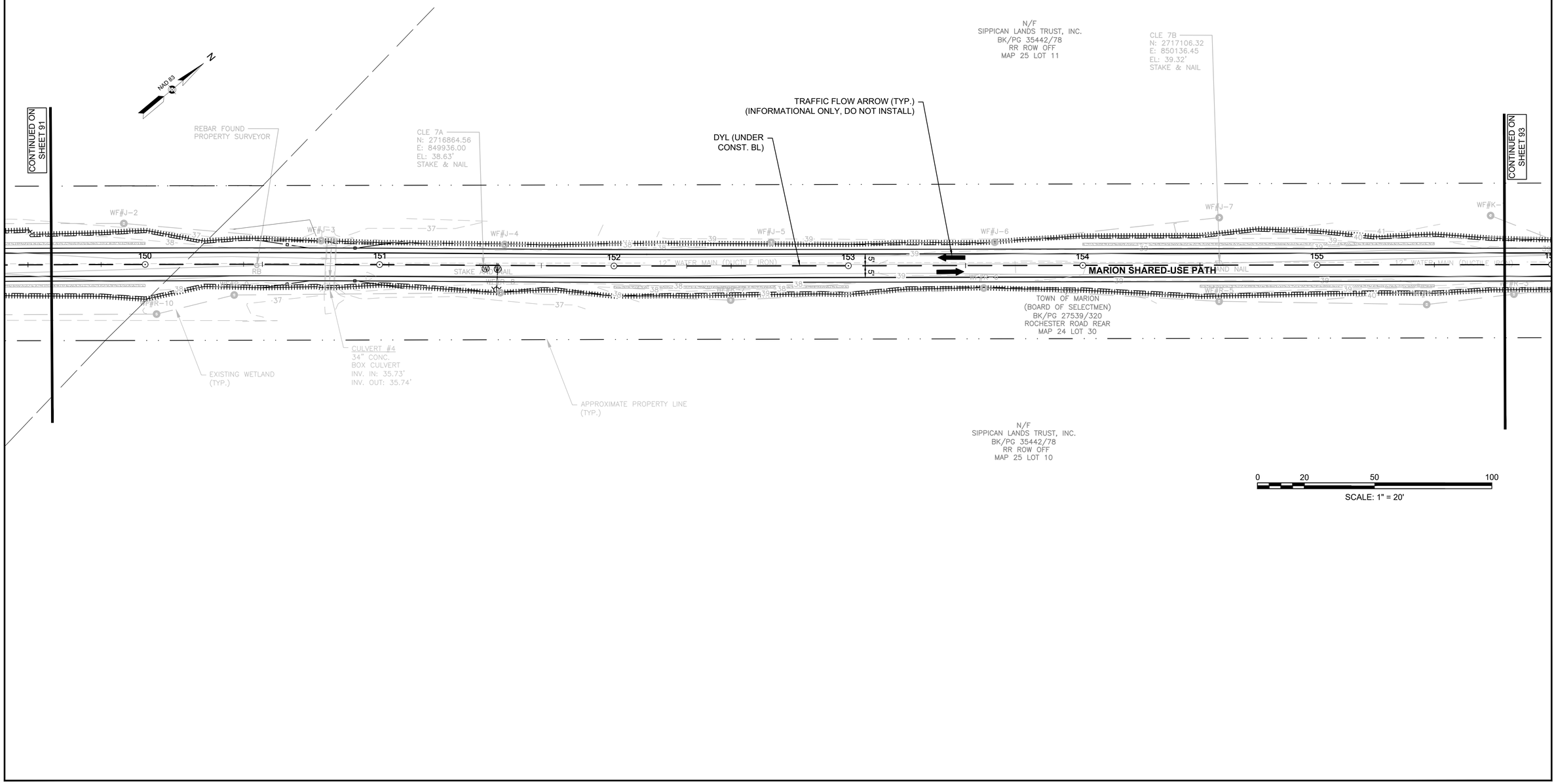


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	92	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 9 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:44 PM

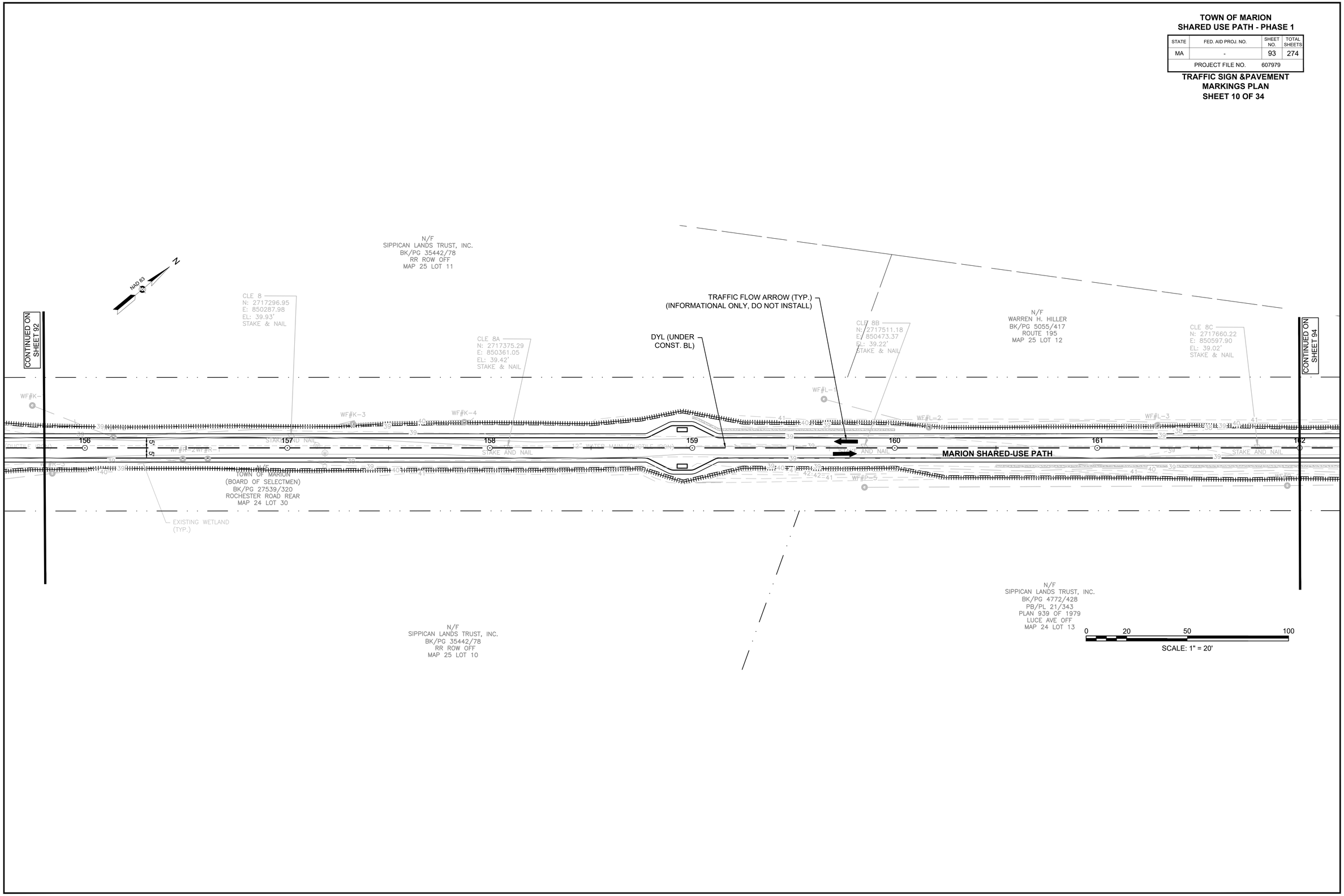


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	93	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 10 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:45 PM

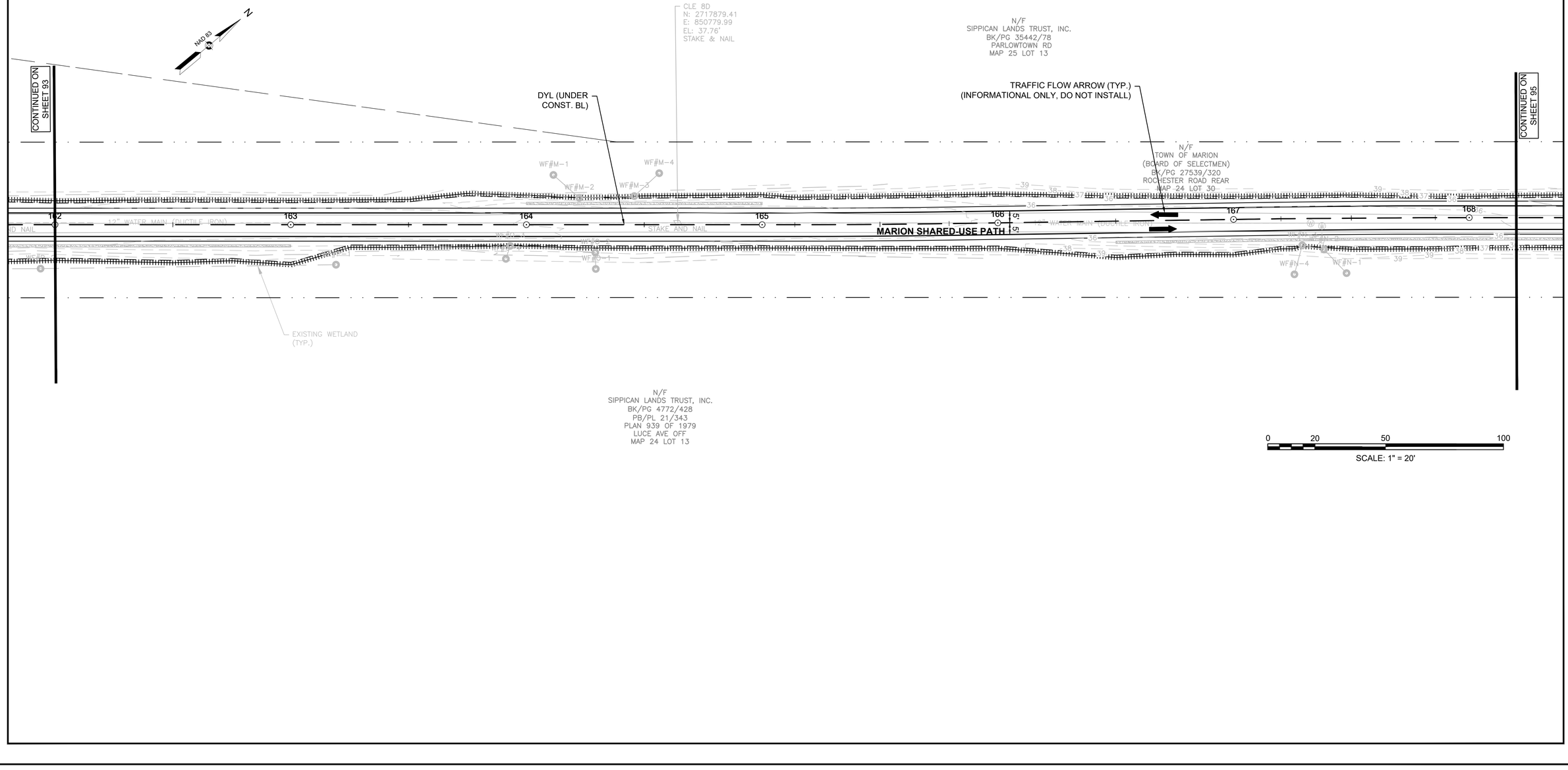


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	94	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 11 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:45 PM

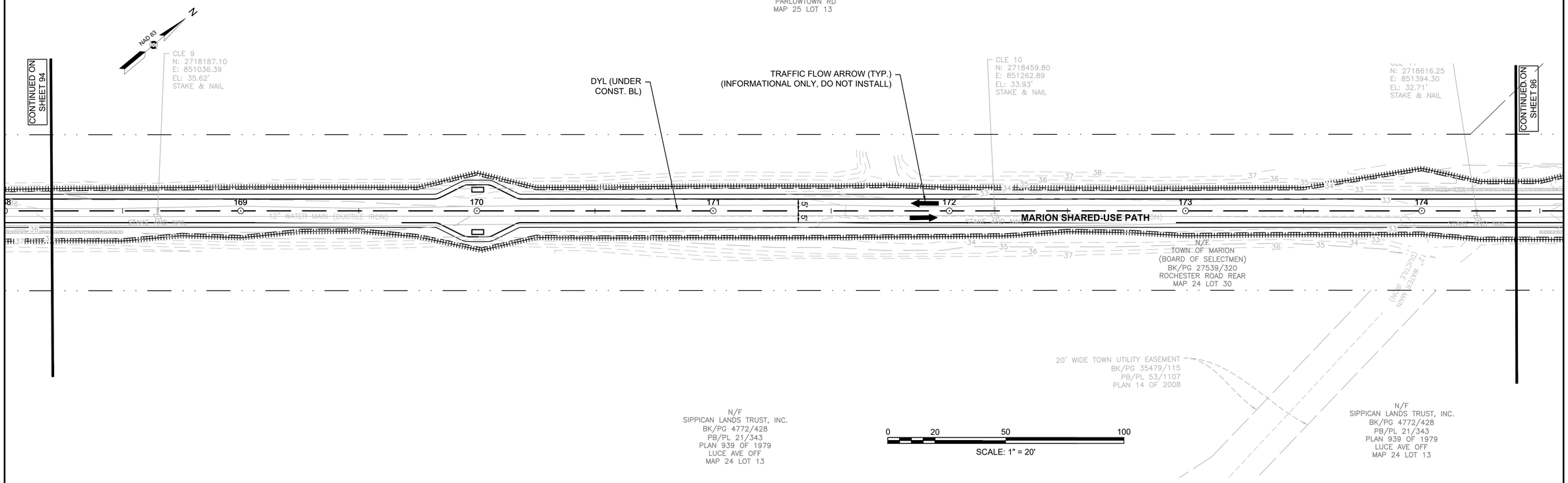


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	95	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 12 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:45 PM

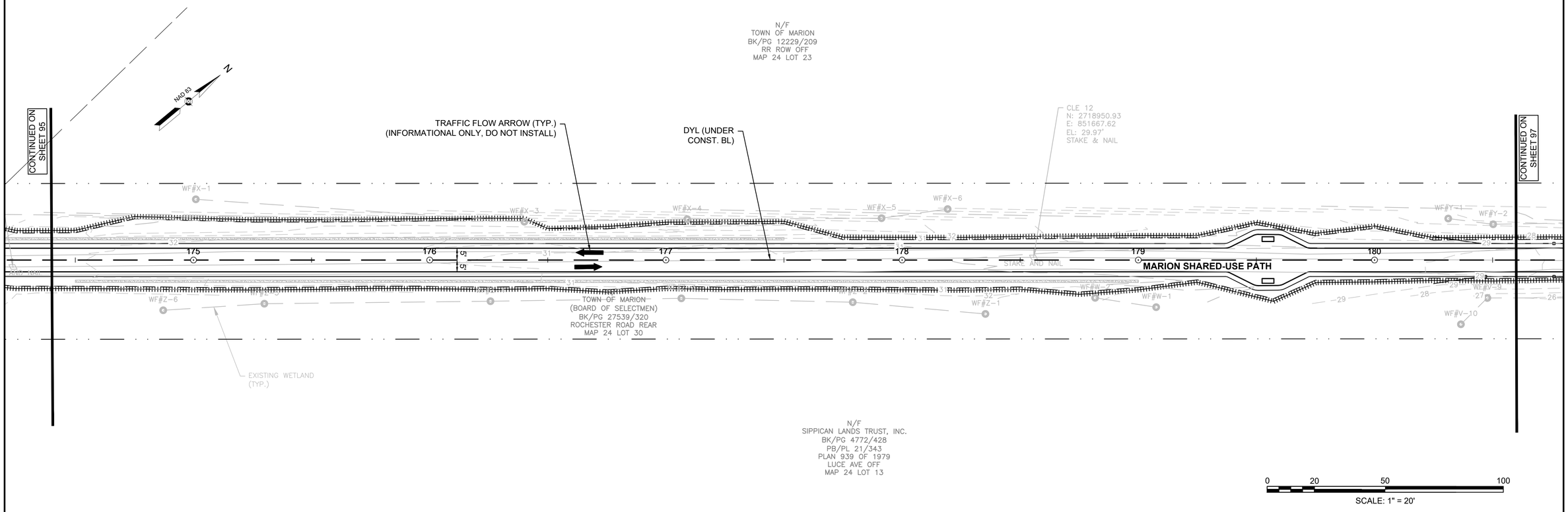


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	96	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 13 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:45 PM

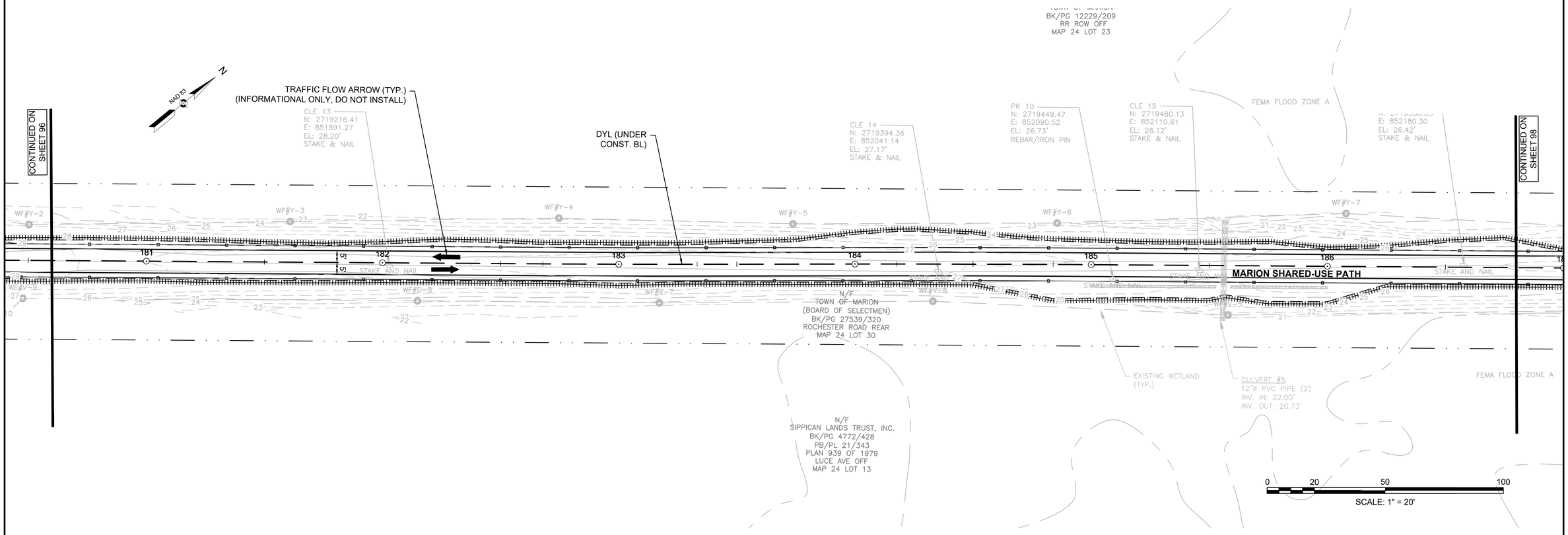


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	97	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 14 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:45 PM

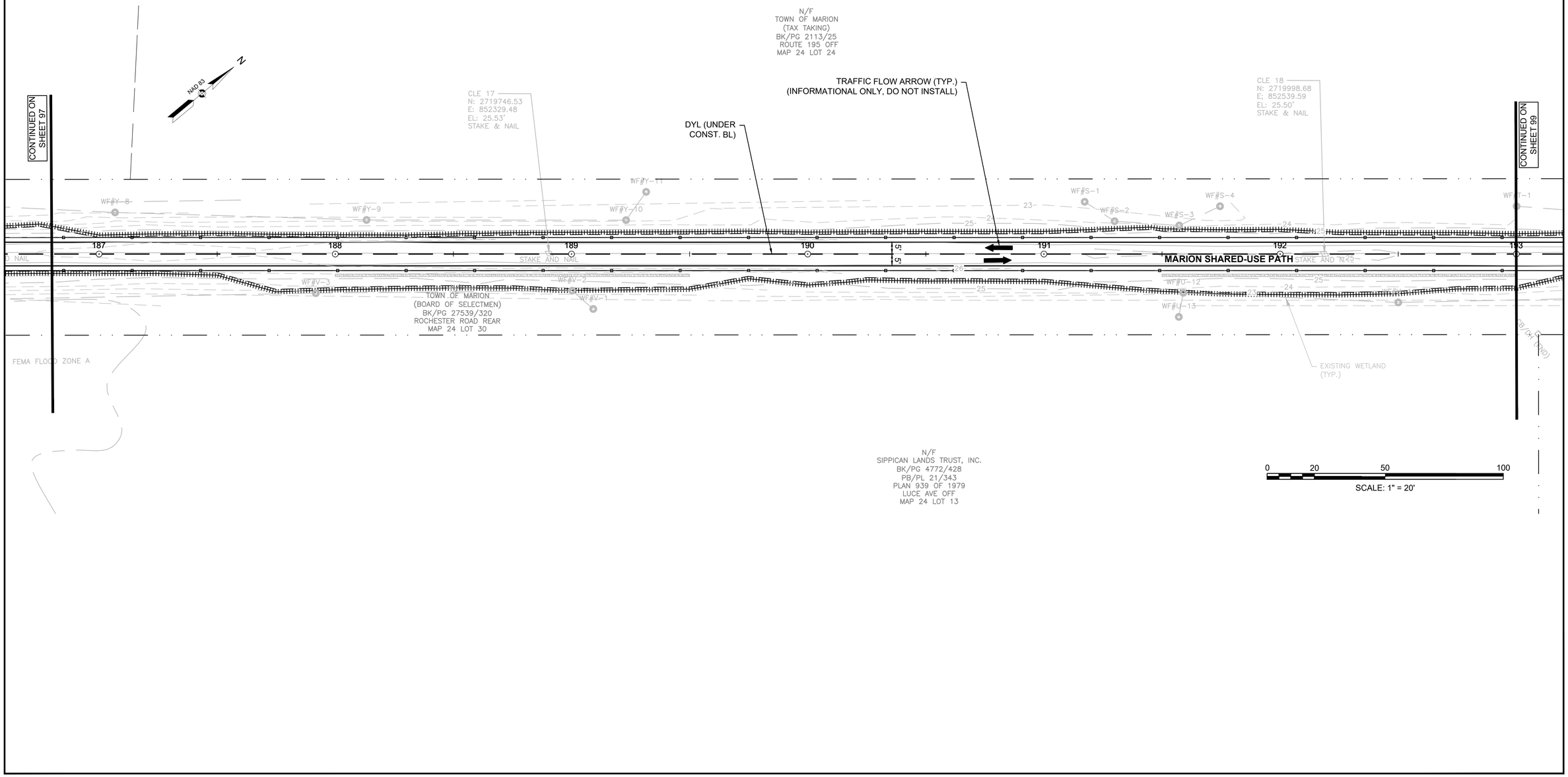


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	98	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 15 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:45 PM

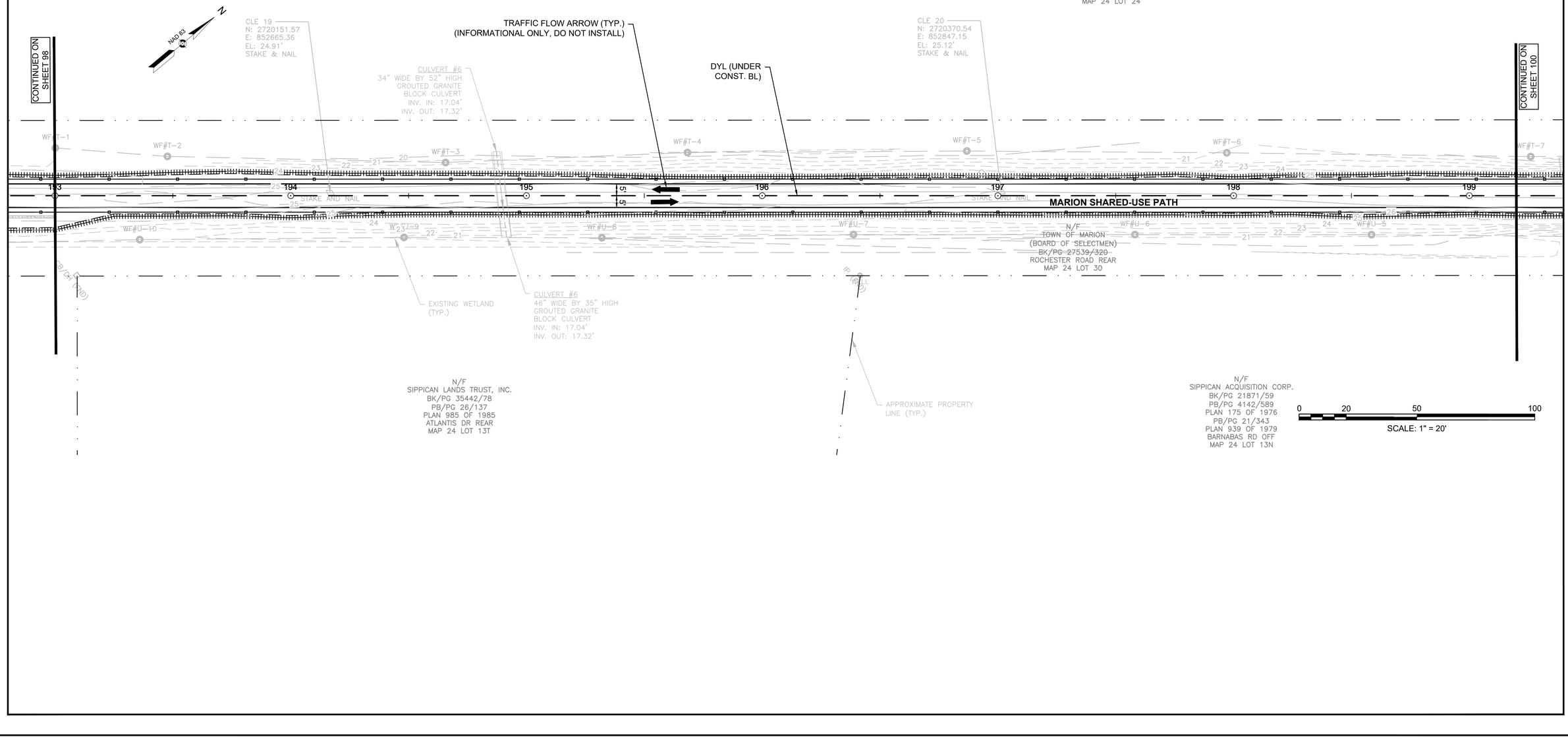


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	99	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 16 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:45 PM

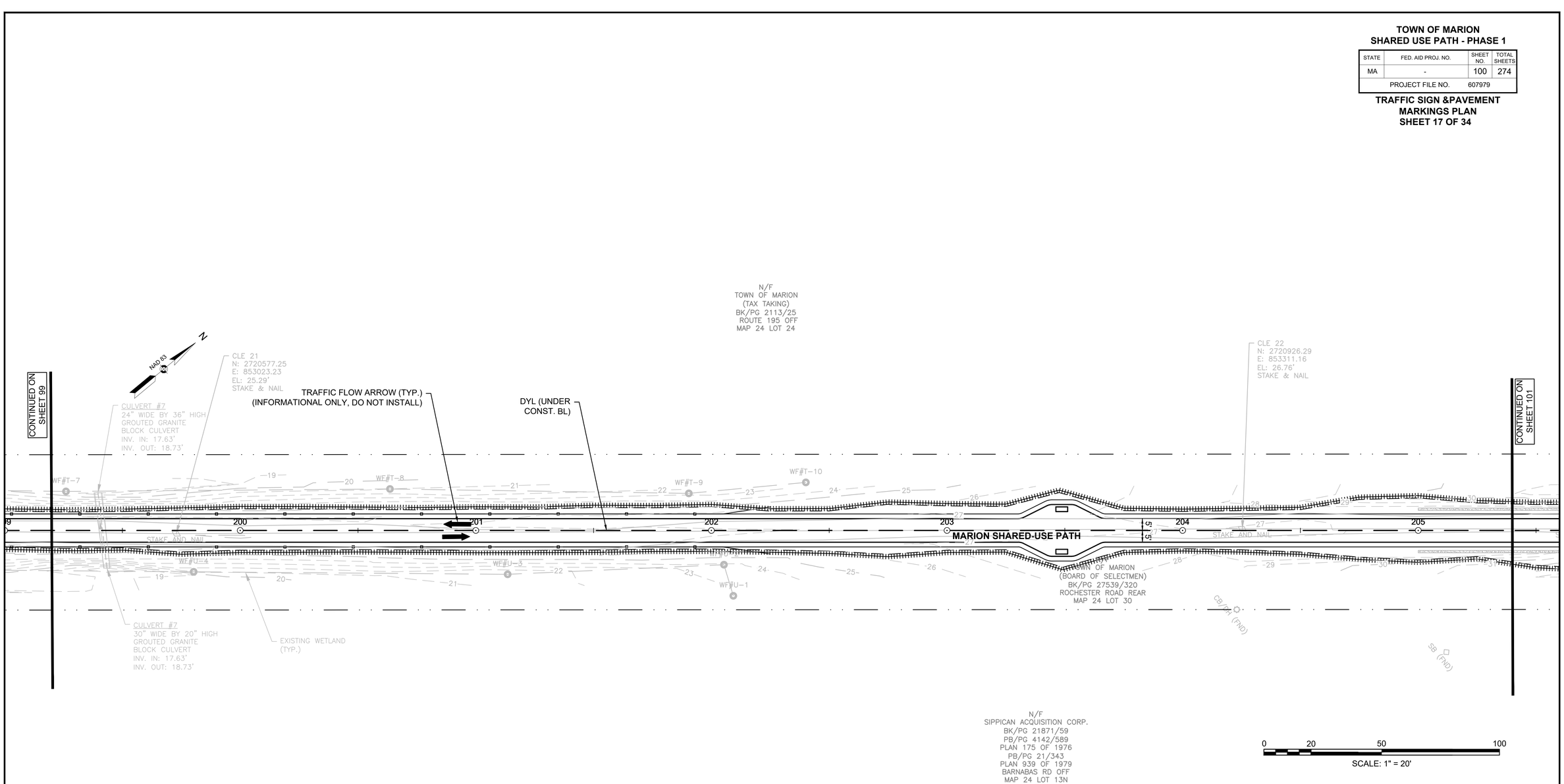


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	100	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 17 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:45 PM

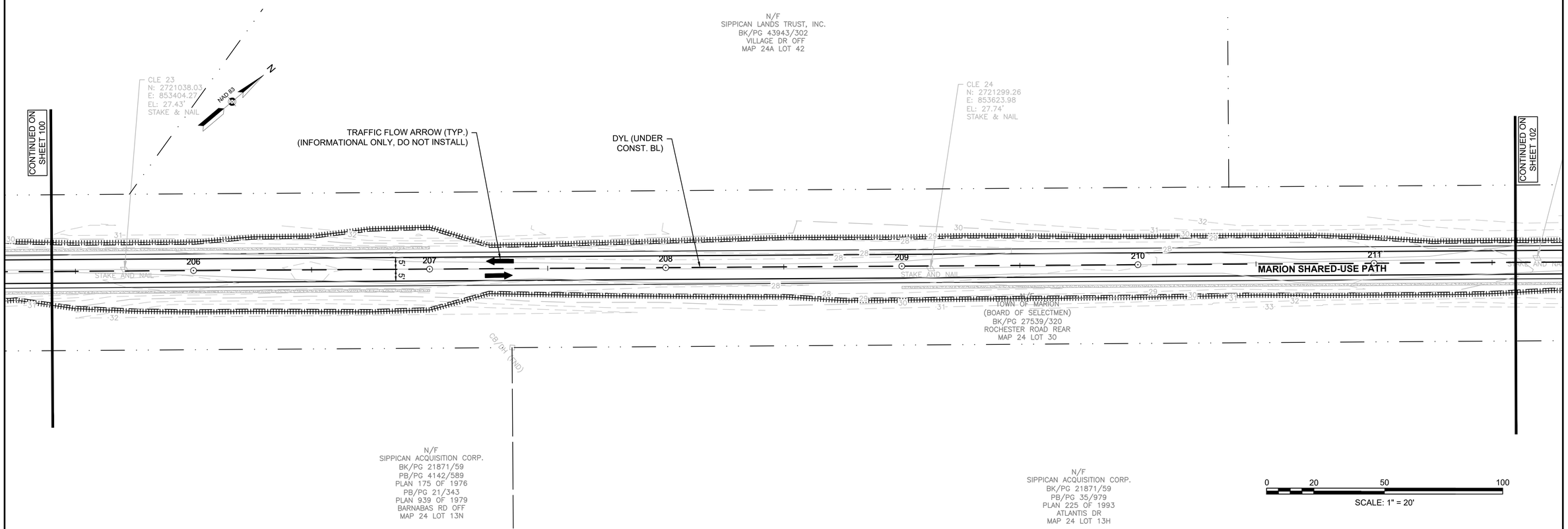


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	101	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 18 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM

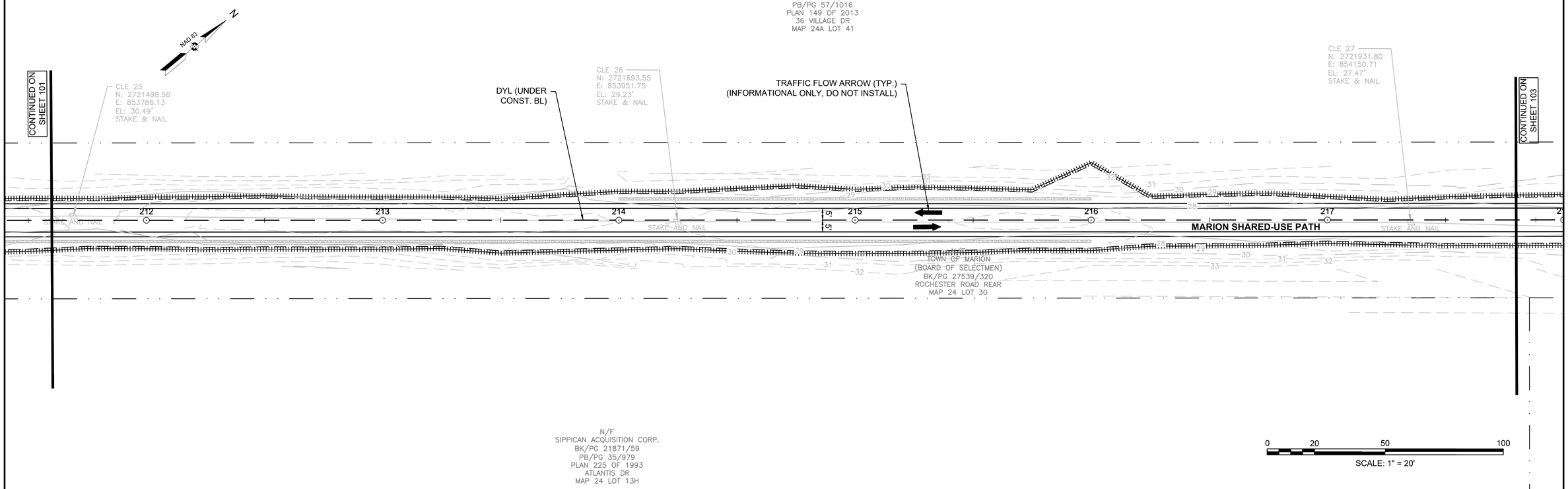


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	102	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 19 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM

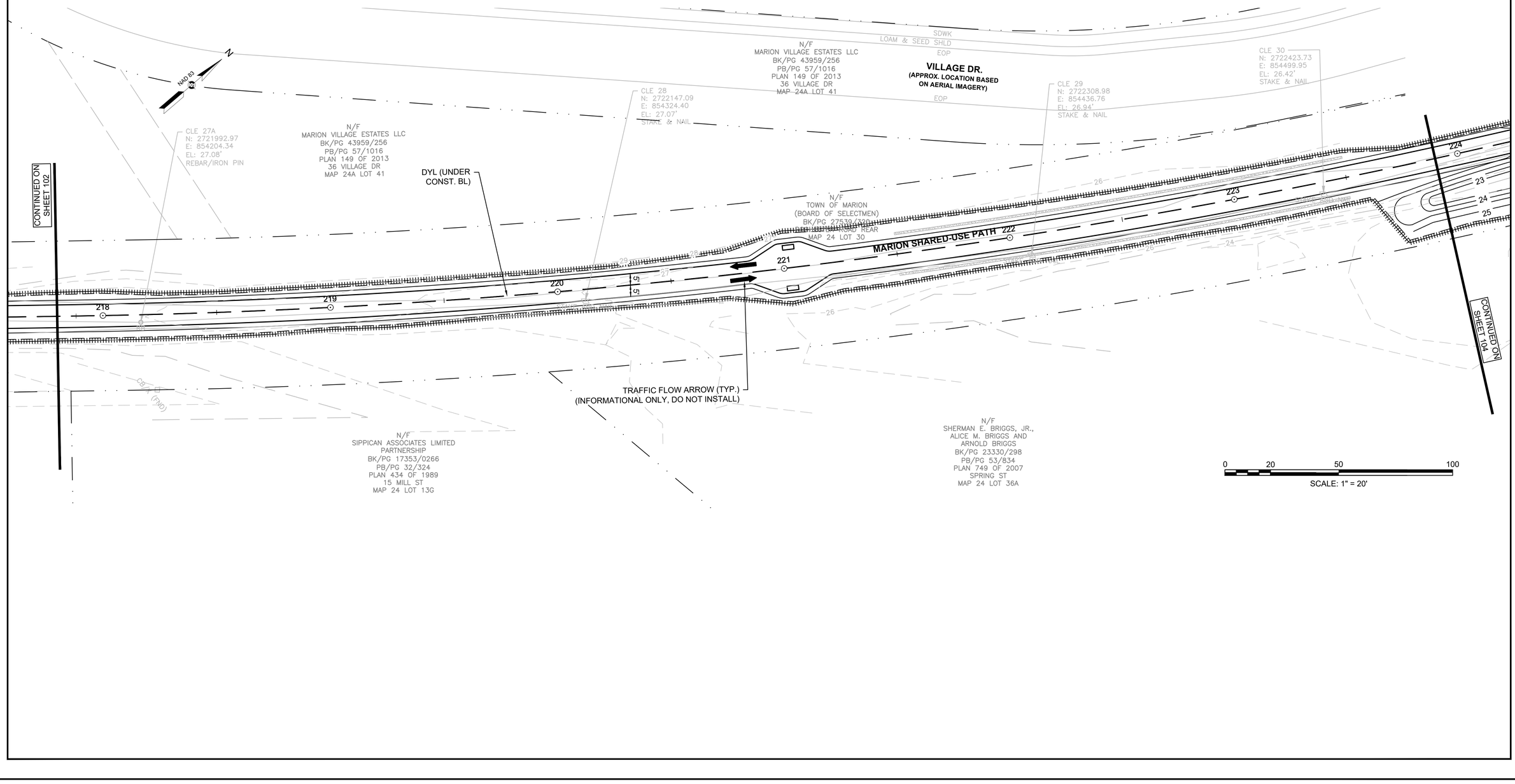


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	103	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 20 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM

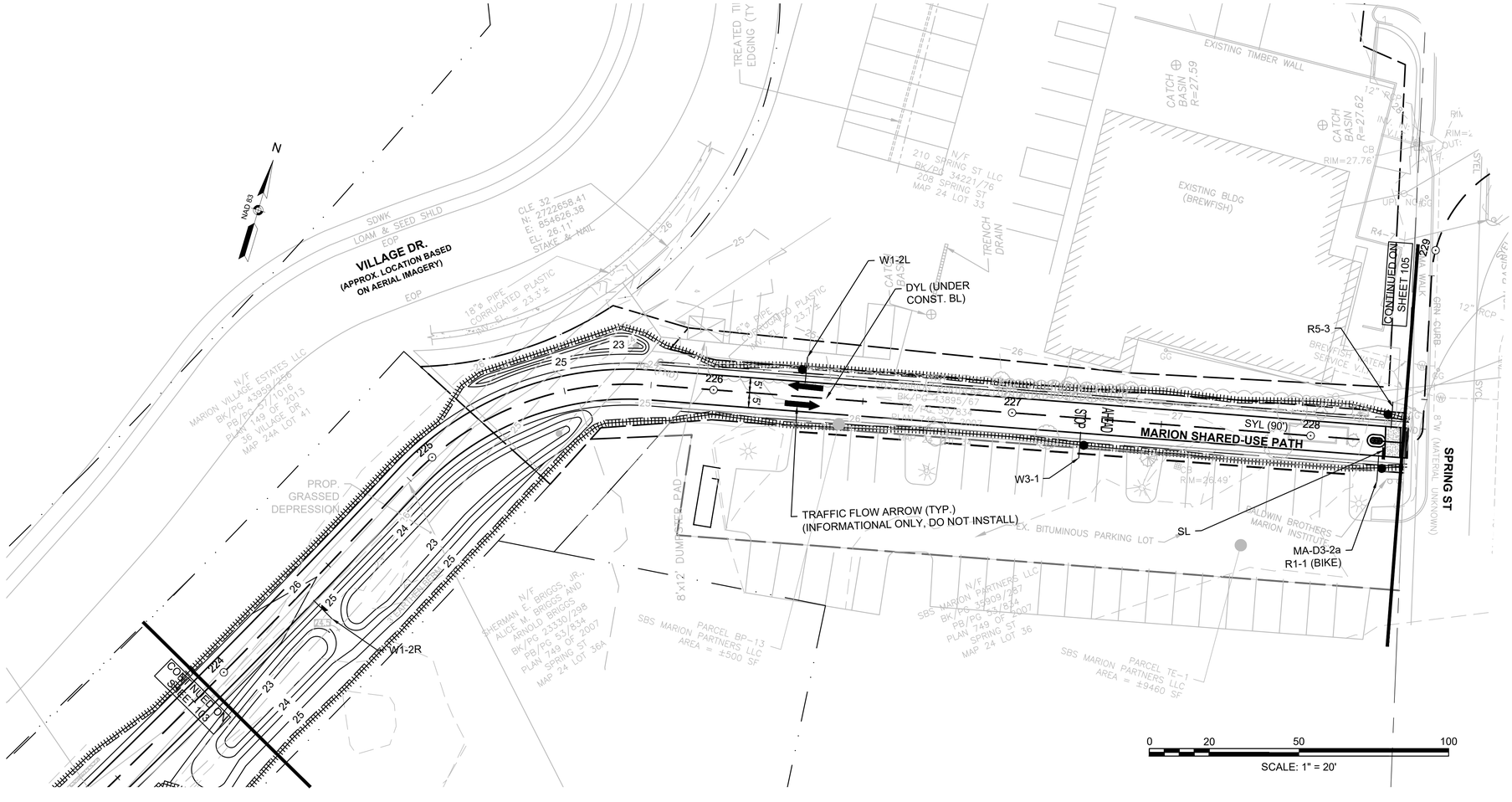


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	104	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 21 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM



TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	105	274
PROJECT FILE NO.	607979		

FRONT ST (RTE 105) AT SPRING ST
TRAFFIC SIGNS & PAVEMENT MARKING PLAN
SHEET 22 OF 34

Y16147.21 MARION PATHWAY (SIGN & PM).DWG Plotted on 20-Oct-2023 12:37 PM

CONTINUED ON SHEET NO. 106

CONTINUED ON SHEET NO. 104

FRONT ST (RTE 105)

SPRING ST

1903 LAYOUT 842

1903 LAYOUT 823

1903 BASELINE

TOWN LAYOUT

MATCH EXIST PVMT MARKINGS

LIMIT OF WORK
STA 100+52.91
N2722920.9447
E854820.1752

LIMIT OF WORK
STA 103+00
N2722716.2592
E854957.3386

LIMIT OF WORK
STA 201+19
N2722644.5810
E854910.7007

PROP RRFB (SEE DETAIL) WITH APS PUSHBUTTON

PROP 4' TRAFFIC SIGNAL PEDESTAL WITH APS PUSHBUTTON FOR RRFB

PROP W11-15 W16-9P

INSET 1

INSET 2

PROP MA-D3-1 (PBS)

PROP MA-D3-2 (PBS)

R&R

R&D

RET

PROP OM1-1

MATCH EXIST PVMT MARKINGS

100+00

101

102

103

103+50

201

201+46.39

160' DBYL

19' DBYL

33' DBYL

95' DBYL

10' CW

12' CW

+34.13

+46.93

25±50

TABOR ACADEMY (AHEAD)

105 SOUTH MARION WAREHAM –> <–MATTAPOISETT

BREW FISH BAR AND EATERY

BALDWIN BROTHERS MARION INSTITUTE

EX. BITUMINOUS PARKING LOT

CATCH BASIN R=27.62

CATCH BASIN R=27.59

TRENCH DRAIN

SAWCUT PAVEMENT FOR RAISED ISLAND W/VERTICAL CURBING (TYP. 4 COUNT) BOLLARD LIGHTS (2 EACH) & PLANTINGS

0 20 50 100
SCALE: 1" = 20'

INSET 1
SCALE: 1" = 2'

TRAFFIC SIGNAL BASE
4"
20"
TRAFFIC SIGNAL POST

INSET 2
SCALE: 1" = 2'

TRAFFIC SIGNAL BASE
20"
4"
TRAFFIC SIGNAL POST

RRFB BUTTON BASE
RRFB BUTTON POST
20"
4"

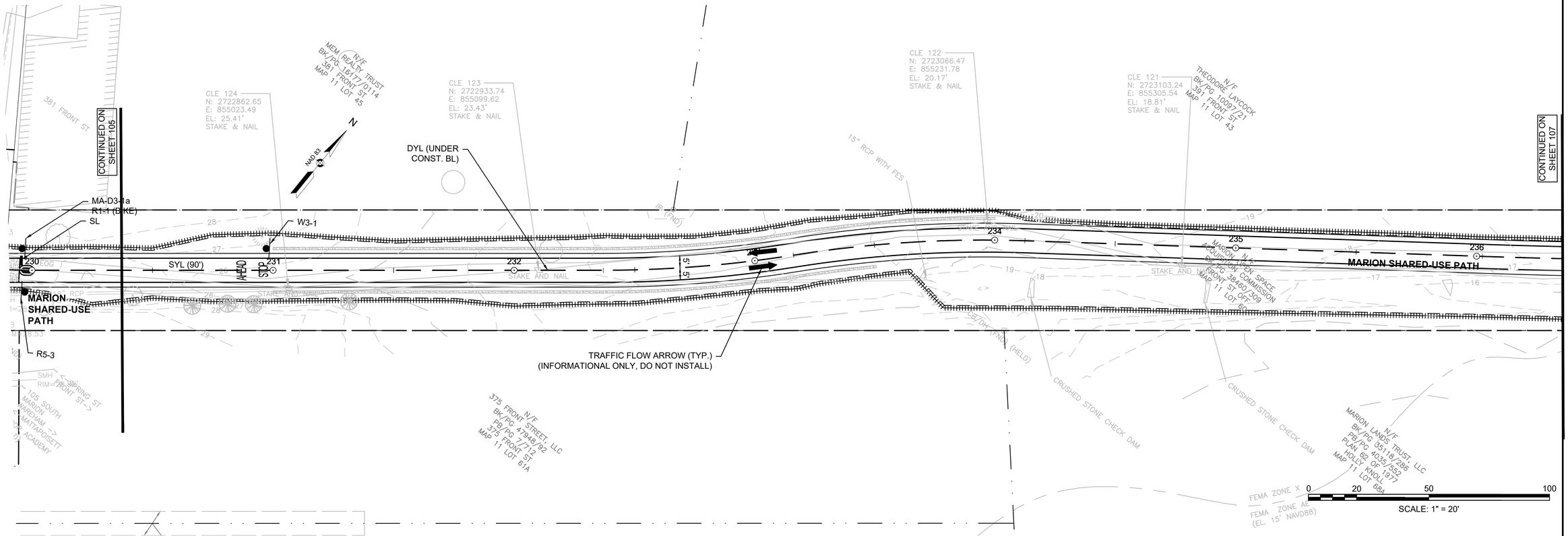
HOR. SCALE IN FEET
2 0 2 4
VER. SCALE IN FEET
2 0 2 4

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	106	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 23 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM

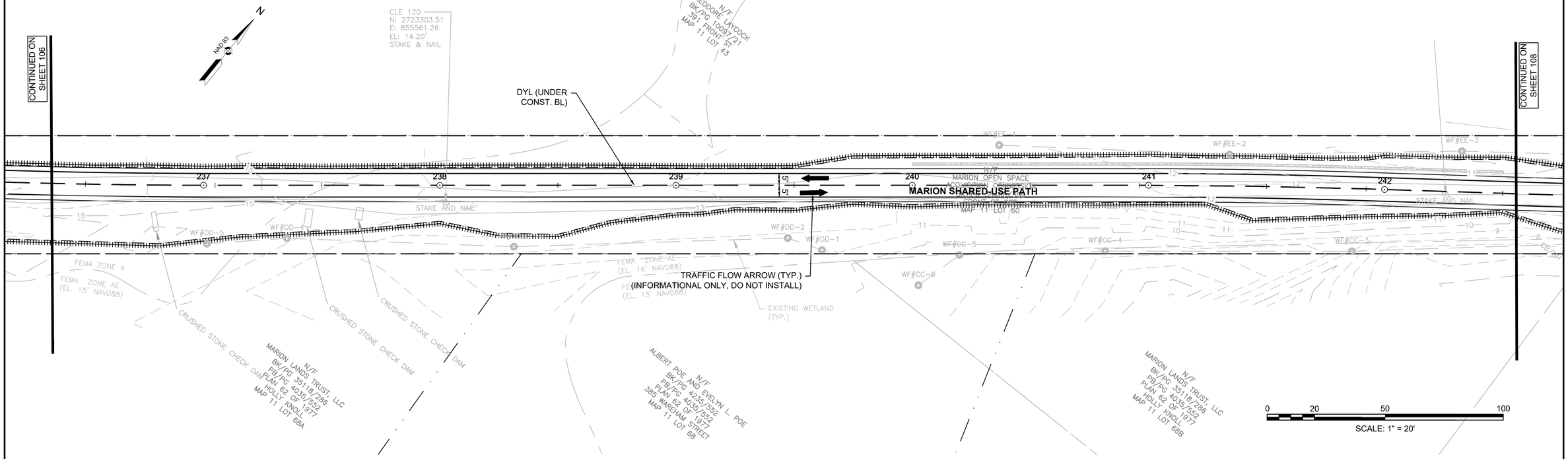


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	107	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 24 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM

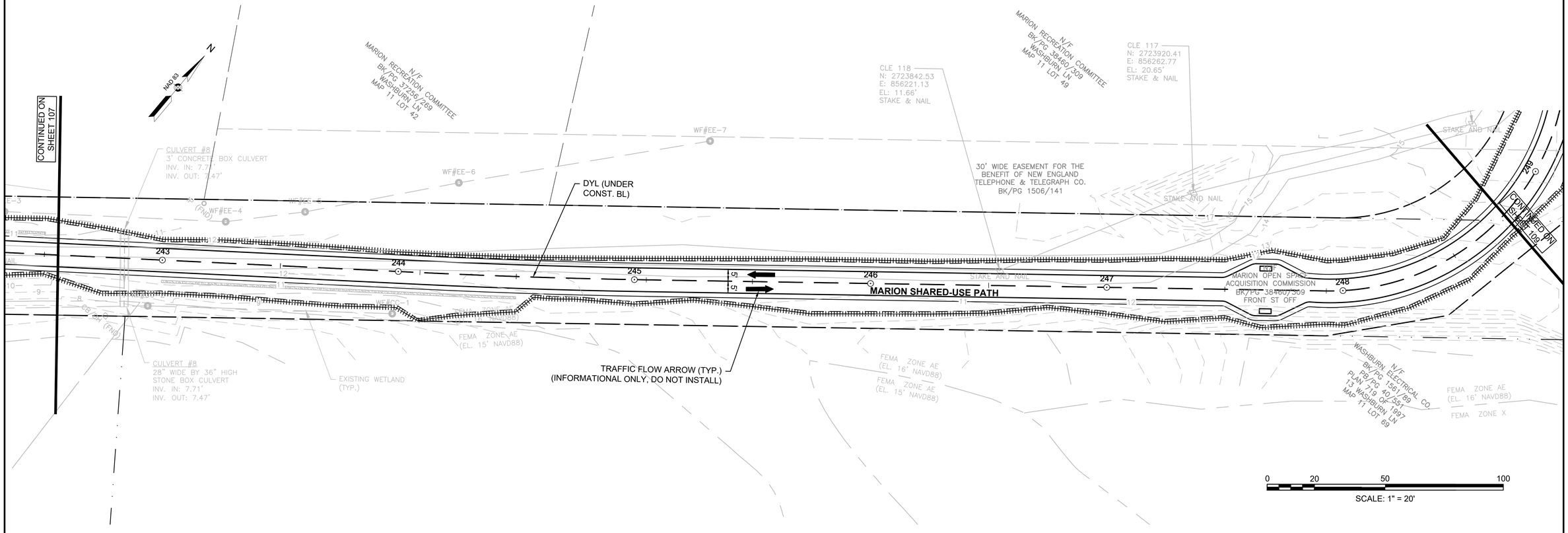


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	108	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 25 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	109	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 26 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	110	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 27 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM

CONTINUED ON SHEET 109

CONTINUED ON SHEET 111

NAD 83

N/F
MARION RECREATION COMMITTEE
BK/PG 37256/269
WASHBURN LN
MAP 11 LOT 42

N/F
THE INHABITANTS OF THE TOWN OF MARION
(MARION RECREATION COMMITTEE)
L.C.C. NO. 12984
DOC. CERT. NO. 59046
25 WASHBURN LN
MAP 11 LOT 39

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 1696/230
WASHBURN LN
MAP 11 LOT 40

N/F
CHAD C. MCLEOD AND
GINA C. MCLEOD
BK/PG 42391/50
48 WASHBURN LN
MAP 11 LOT 41

DYL (UNDER CONST. BL)

W1-2R

TRAFFIC FLOW ARROW (TYP.)
(INFORMATIONAL ONLY, DO NOT INSTALL)

W1-2L

MARION SHARED-USE PATH

R1-1 (BIKE)

CONTINUOUS SYL BTWN SPLITTER ISLANDS

W3-1

AHEAD

R7-8
R7-8P

R5-3

EX. TIMBER SPLIT RAIL FENCE

16'

10' TYP.

SWL (TYP.)

20' (TYP.)

24'

EX. DUGOUT

EX. TIMBER SPLIT RAIL FENCE

W8-3

EX. EDGE UNPAVED TRAVELED WAY

PROJECT END
STA 2+99.03
N2724522.1576
E855805.6175

EX. TIMBER SPLIT RAIL FENCE

CLE 113
N: 2724241.61
E: 855906.53
EL: 14.82'
STAKE & NAIL

CLE 112
N: 2724234.53
E: 855767.67
EL: 15.82'
STAKE & NAIL

CLE 111
N: 2724295.36
E: 855609.80
EL: 15.16'
STAKE & NAIL

FEMA ZONE AE
(EL. 15' NAVD88)

FEMA ZONE X

APPROX. EDGE OF GRAVEL (FROM AERIALS)

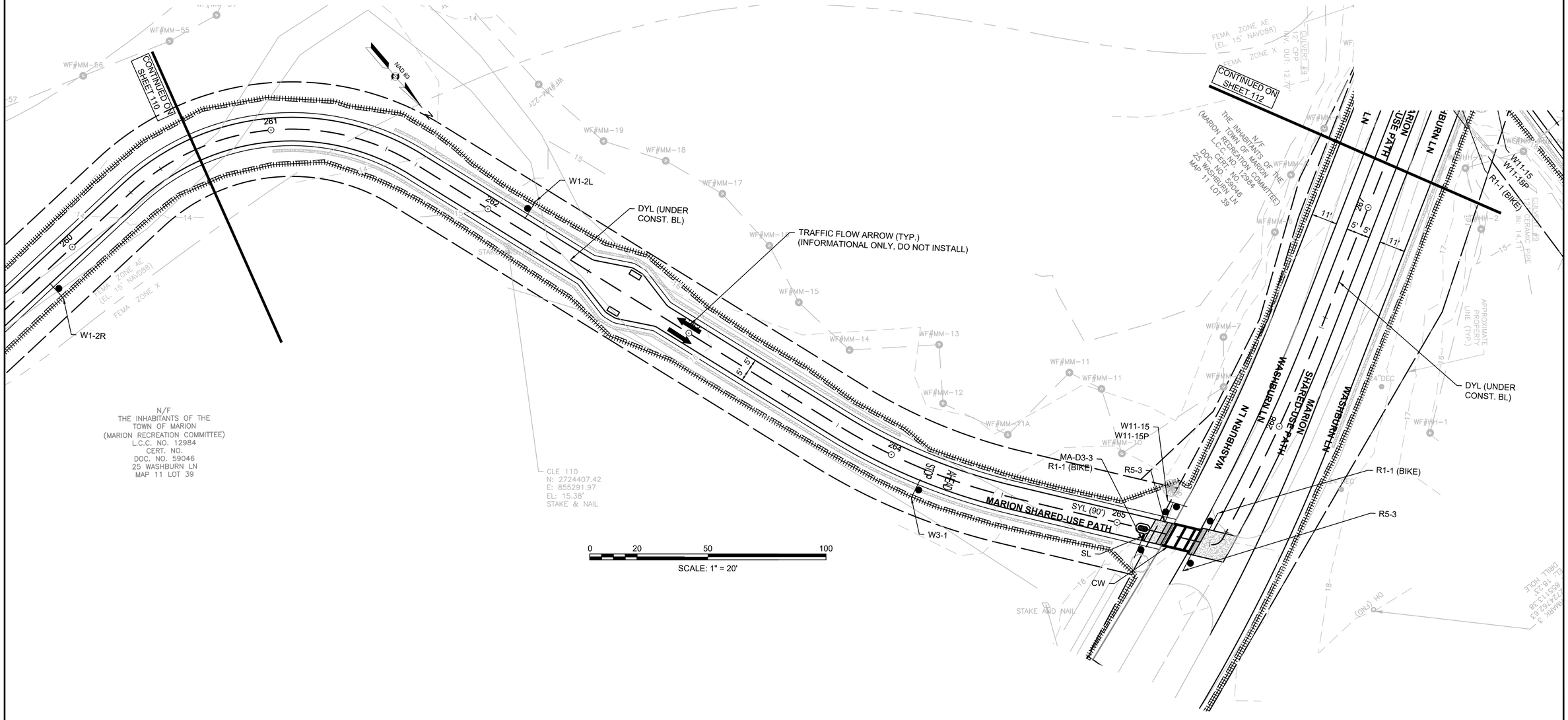
0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	111	274
PROJECT FILE NO.	607979		

TRAFFIC SIGNS & PAVEMENT MARKINGS PLAN
SHEET 28 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	112	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 29 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM

1980 TOWN LAYOUT

R5-3

WASHBURN LN

R5-3

CW

MA-D3-3
R1-1 (BIKE)

SL

R4-7

SYL (90')

W3-1

TRAFFIC FLOW ARROW (TYP.)
(INFORMATIONAL ONLY, DO NOT INSTALL)

CLE 108
N: 2724656.45
E: 854928.59
EL: 18.82'
STAKE & NAIL

NAD 83
N

N/F
BARBARA T. DECOSTA
BK/PG 43938/18
2 WASHBURN PARK RD
MAP 11 LOT 18

APPROXIMATE WETLAND LINE (TYP.)

WF#LL-6
WF#LL-5
WF#LL-4
WF#LL-3
WF#LL-2
WF#LL-1
WF#MM-1
WF#HH-2
WF#MM-2
WF#MM-3
WF#MM-4
WF#MM-5
WF#HH-1

EXISTING WETLAND (TYP.)

DYL (UNDER CONST. BL)

TRAFFIC FLOW ARROW (TYP.)
(INFORMATIONAL ONLY, DO NOT INSTALL)

CLE 107
N: 2725021.50
E: 854943.89
EL: 19.09'
STAKE & NAIL

MARION SHARED-USE PATH

269

270

271

272

273

5'

5'

W11-15
W11-15P

R1-1 (BIKE)

WASHBURN LN

MARION SHARED-USE PATH

WASHBURN LN

267

5'

5'

11'

11'

CULVERT #9
24" CERAMIC PIPE
IN: 14.1'

CULVERT #8
12" CPP
INV. OUT: 12.7'

FEMA ZONE X (NAVD88)

APPROXIMATE PROPERTY LINE (TYP.)

24"DEC

CONTINUED ON SHEET 111

CONTINUED ON SHEET 113

N/F
INHABITANTS OF THE
TOWN OF MARION
(MARION RECREATION COMMITTEE)
L.C.C. NO. 12984
CERT. NO.
DOC. NO. 59046
25 WASHBURN LN
MAP 11 LOT 39

N/F
THE TRUSTEES OF THE CHARLES
WASHBURN MEMORIAL TRUST
BK/PG 2544/430
WASHBURN LN OFF
MAP 11 LOT 36

BENCH
N: 27
E: 85
EL: 18
DRILL

N/F
SIDNEY J. PIRES, JR.
BK/PG 13696/246
RR ROW OFF
MAP 11 LOT 35

N/F
TOWN OF MARION
(BOARD OF SELECTMEN)
BK/PG 1696/230
WASHBURN LN

N/F
SIDNEY J. PIRES, JR.
BK/PG 13696/246
RR ROW OFF
MAP 11 LOT 34

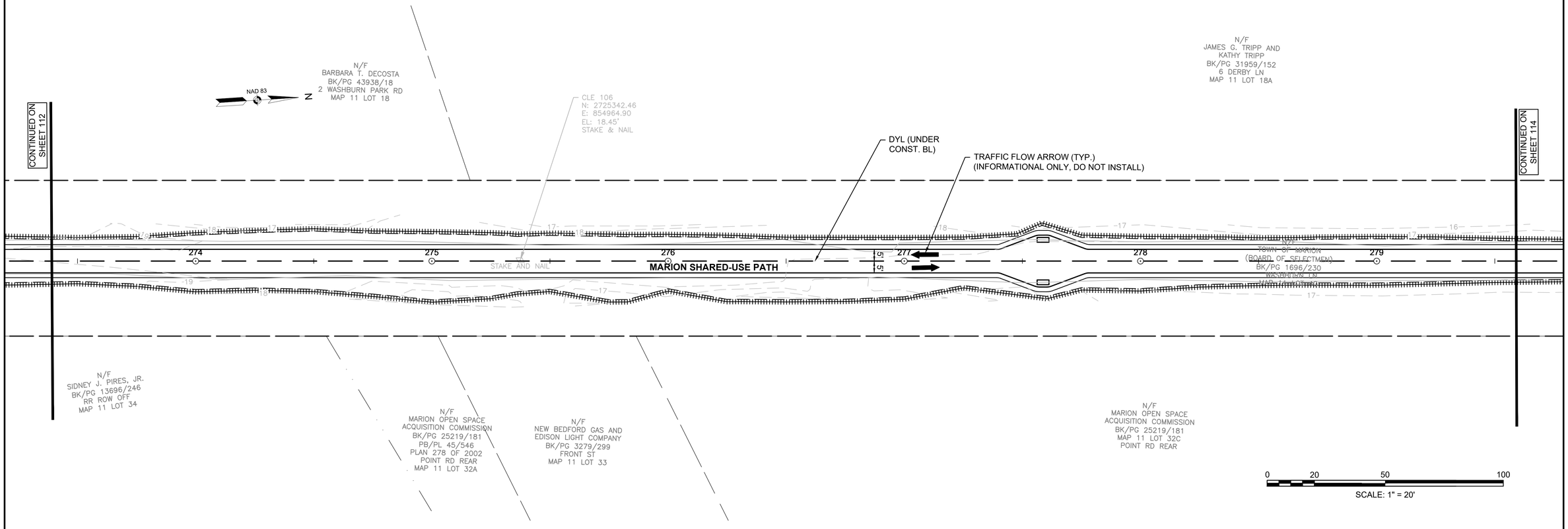
0 20 50 100
SCALE: 1" = 20'

TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	113	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 30 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:46 PM

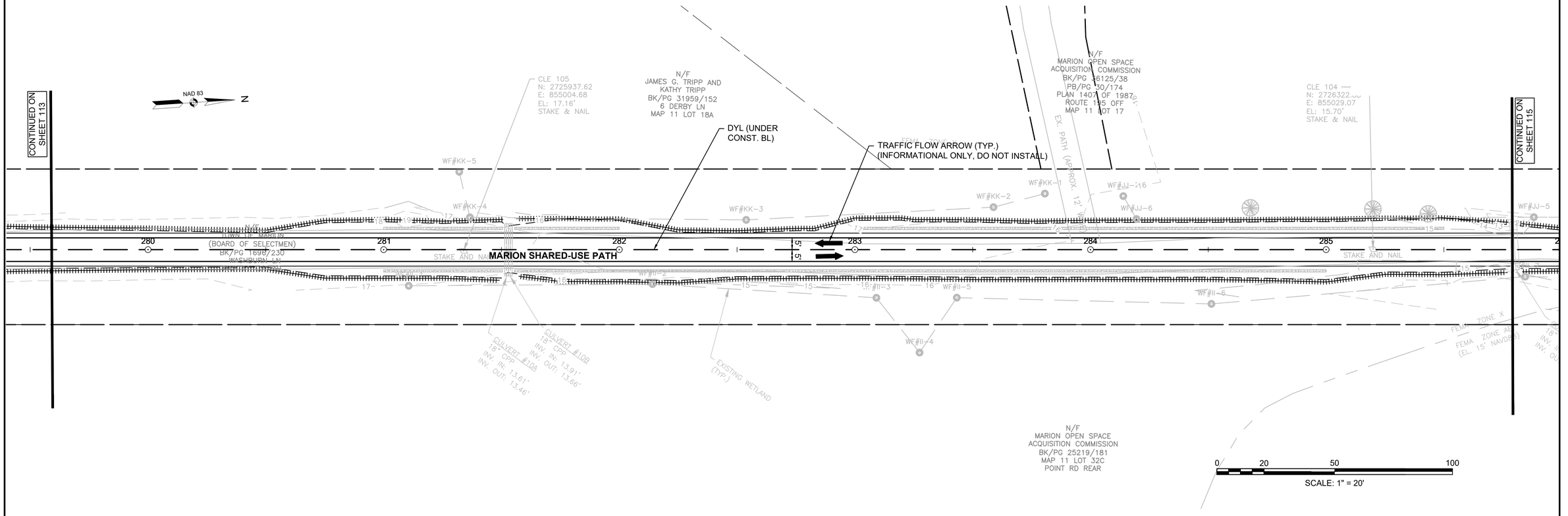


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	114	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 31 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:47 PM

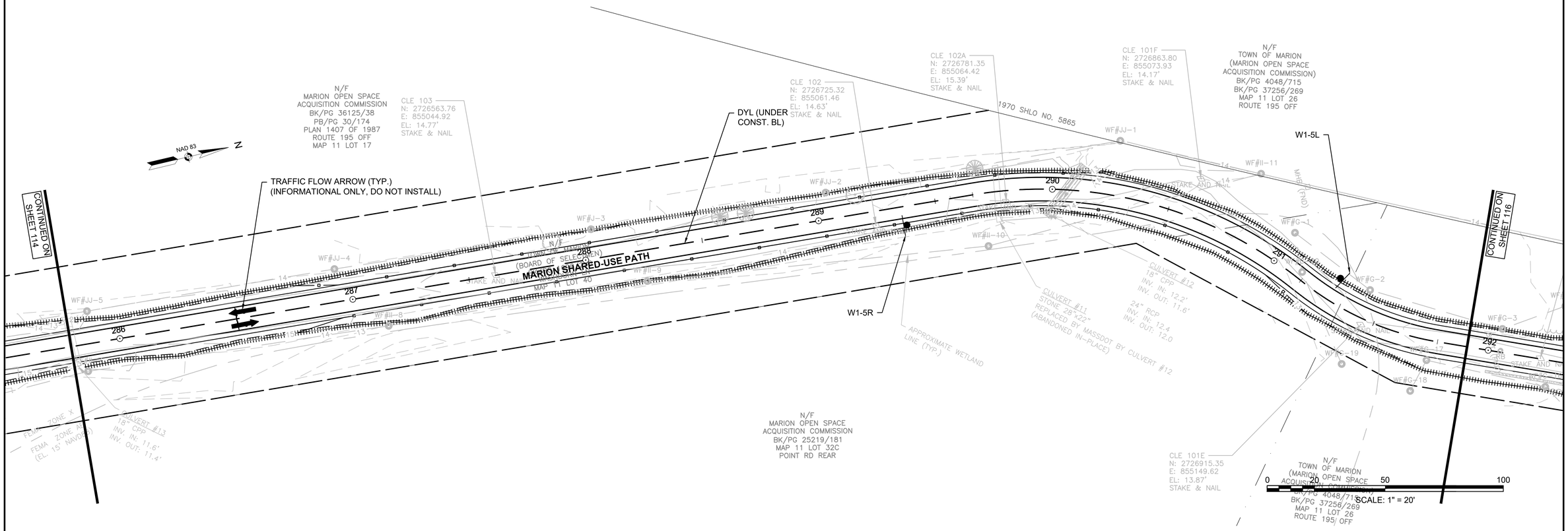


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	115	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN &PAVEMENT MARKINGS PLAN
SHEET 32 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:47 PM

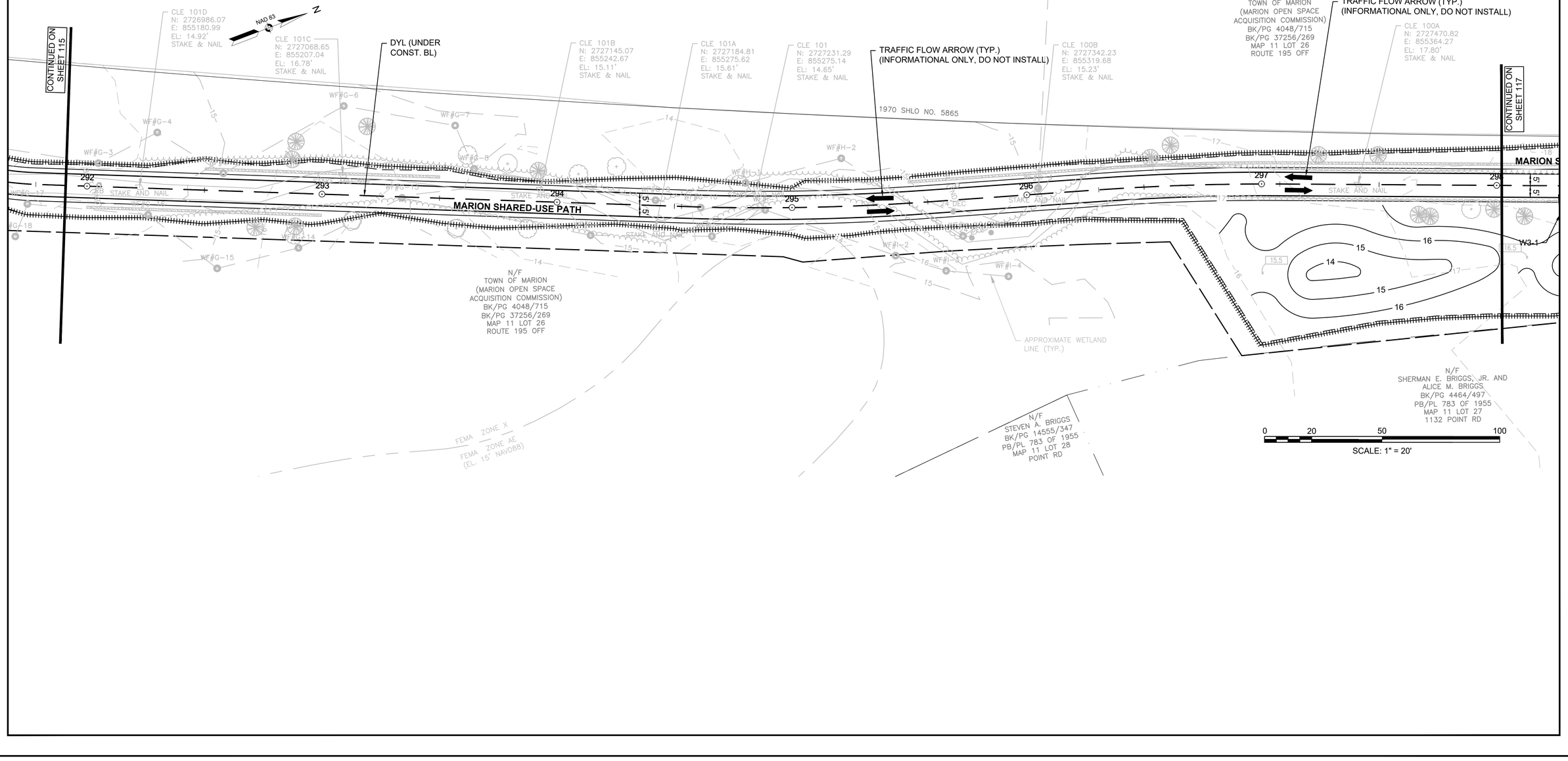


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	116	274
PROJECT FILE NO.	607979		

TRAFFIC SIGNS & PAVEMENT MARKINGS PLAN
SHEET 33 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:47 PM

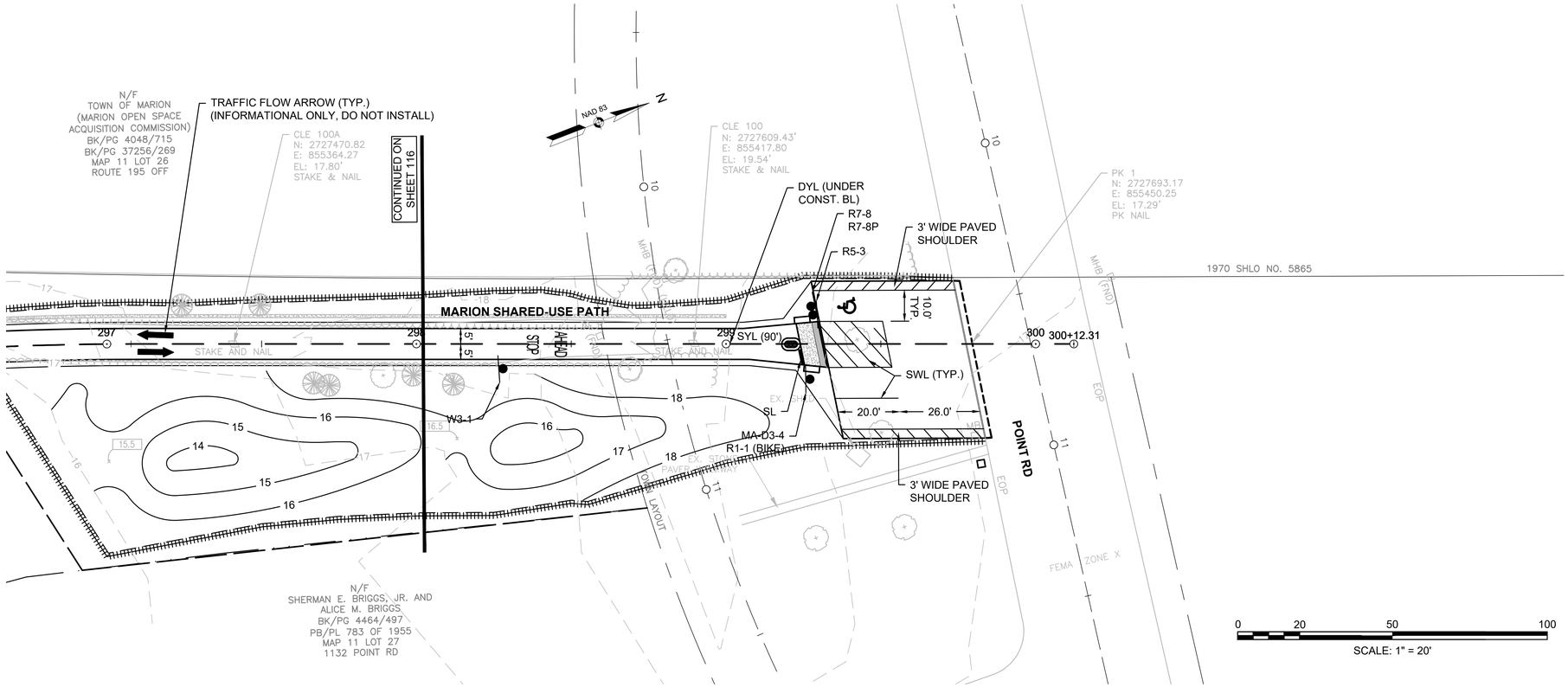


TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	117	274
PROJECT FILE NO.	607979		

TRAFFIC SIGNS & PAVEMENT MARKINGS PLAN
SHEET 34 OF 34

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:47 PM



TOWN OF MARION
SHARED USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	118	274
PROJECT FILE NO.	607979		

TRAFFIC SIGN SUMMARY
SHEET 1 OF 1

607979_SIGN & PM.DWG Plotted on 27-Oct-2023 2:47 PM

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
MA-D3-1 (PBS)	24"	12"	FRONT ST	SEE MASSDOT STANDARDS			2	SEE MASSDOT STANDARDS			P5-1 2-REQ	2.00	4.00
MA-D3-1A (PBS)	24"	8"	Front St	4"/3"	SEE 2009 MUTCD	N/A	1	GREEN	WHITE	WHITE	MOUNT W/ R1-1(BIKE) (1)	1.33	1.33
MA-D3-2 (PBS)	24"	12"	SPRING ST	SEE MASSDOT STANDARDS			2	SEE MASSDOT STANDARDS			MOUNT WITH MA-D3-1 (2)	2.00	4.00
MA-D3-2A (PBS)	24"	8"	Spring St	4"/3"	SEE 2009 MUTCD	N/A	1	GREEN	WHITE	WHITE	MOUNT W/ R1-1(BIKE) (1)	1.33	1.33
MA-D3-3	24"	8"	Washburn Ln	4"/3"	SEE 2009 MUTCD	N/A	2	GREEN	WHITE	WHITE	MOUNT W/ R1-1(BIKE) (2)	1.33	2.66
MA-D3-4	24"	8"	Point Rd	4"/3"	SEE 2009 MUTCD	N/A	1	GREEN	WHITE	WHITE	MOUNT W/ R1-1(BIKE) (1)	1.33	1.33
R1-1(BIKE)	18"	18"	STOP	SEE 2009 MUTCD			8	RED	WHITE	RED	P5-1 8-REQ'D	2.25	18.00
R4-7	18"	24"					1	WHITE	BLACK	WHITE	P5-1 1-REQ'D	3.00	3.00
R5-3	24"	24"	NO MOTOR VEHICLES				8	WHITE	BLACK	WHITE	P5-1 8-REQ'D	4.00	32.00
R7-8	12"	18"	RESERVED PARKING				2	WHITE	GREEN	GREEN	P5-1 2-REQ	1.50	3.00
R7-8P	12"	6"	VAN ACCESSIBLE	4"/3"	SEE 2009 MUTCD	N/A	2	WHITE	GREEN	GREEN	MOUNT W/ R7-8 (2)	1.00	2.00
R10-25	9"	12"	PUSH BUTTON TO TURN ON WARNING LIGHTS	SEE 2009 MUTCD			2	SEE 2009 MUTCD			MOUNT W/ RRFB	0.75	1.50

*PBS – PAINTED BOTH SIDES

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
W1-2R	18"	18"		SEE 2009 MUTCD			3	YELLOW	BLACK	BLACK	P5-1 3-REQ'D	2.25	6.75
W1-2L	18"	18"					4	YELLOW	BLACK	BLACK	P5-1 4-REQ'D	2.25	9.00
W1-5L	18"	18"					1	YELLOW	BLACK	BLACK	P5-1 1-REQ'D	2.25	2.25
W1-5R	18"	18"					1	YELLOW	BLACK	BLACK	P5-1 1-REQ'D	2.25	2.25
W3-1	18"	18"					6	YELLOW	BLACK RED WHITE	BLACK	P5-1 6-REQ'D	2.25	13.50
W8-3	18"	18"	PAVEMENT ENDS				3	YELLOW	BLACK	BLACK	P5-1 3-REQ'D	2.25	6.75
W11-15	30"	30"					6	SEE 2009 MUTCD			MOUNT W/ RRFB 4-REQ P5-1 2-REQ	6.25	37.50
W11-15P	24"	18"	TRAIL XING				2				MOUNT W/ W11-15 (2)	3.00	6.00
W16-2AP	24"	12"	500 FT				1	YELLOW	BLACK	BLACK	MOUNT W/ R7-8 (1)	2.00	2.00
W16-7PL	24"	12"					4	SEE 2009 MUTCD			MOUNT W/ W11-15P (2) MOUNT W/ RRFB (2)	4.00	16.00
W16-7PR	24"	12"					4				MOUNT W/ W11-15P (2) MOUNT W/ RRFB (2)	4.00	16.00
W16-9P	24"	12"	AHEAD				2				MOUNT W/ W11-15 (2)	2.00	4.00
OM1-1	18"	18"					1				P5-1 1-REQ	2.25	2.25

TOTAL: 198.40 SF

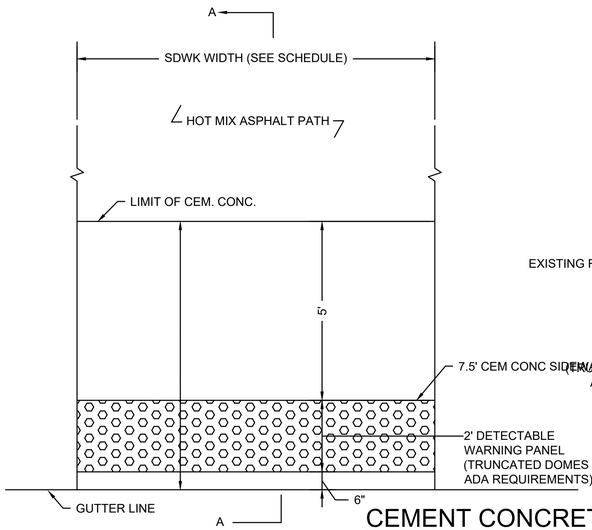
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	119	274
PROJECT FILE NO.		607979	

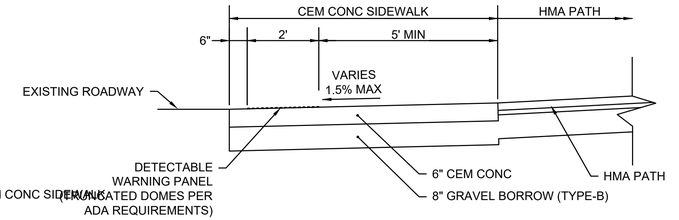
CONSTRUCTION DETAILS
SHEET 1 OF 5

PROPOSED CEMENT CONCRETE SIDEWALK/WARNING PANEL SCHEDULE

ID	GUTTER CL STATION	GUTTER LENGTH / SLOPE	SDWK LENGTH / SLOPE
A	228+32.54	10.0' / 1.5%	7.5' / 1.75%±
B	229+87.25	10.0' / 1.5%	7.5' / -3.1%±
C	0+5.43	10.0' / 1.5%	7.5' / -1.5%±
D	265+22.14	10.0' / 1.5%	7.5' / 1.5%±
E	265+33.67	12.0 / 1.5%	15.0' / 1.5%±
F	267+92.40	15.0 / 1.5%	15.0' / 0.4%±
G	268+03.78	10.0' / 1.5%	7.5' / 0.4%±
H	299+31.61	10.0' / 1.5%	7.5' / -4.0%±



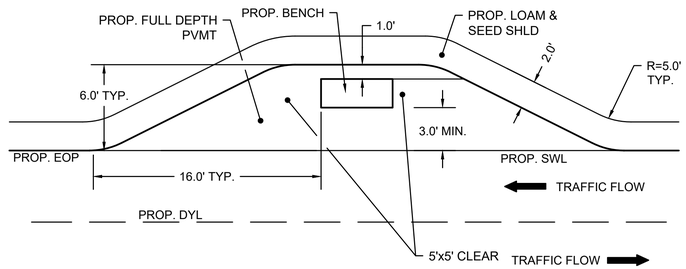
PLAN



SECTION A-A

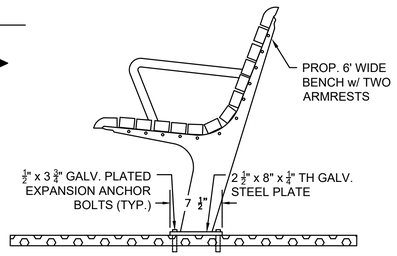
NOTE:
1. CONTRACTOR SHALL INSTALL DETECTABLE WARNING PANELS WITHIN 30 INCHES OF GUTTER IN CONFORMANCE WITH MASSDOT STANDARD DETAIL 107.6.5 AT ALL ROAD CROSSINGS.
2. SEE CONSTRUCTION SCHEDULES ABOVE FOR DETAILS.

CEMENT CONCRETE SIDEWALK/WARNING PANEL



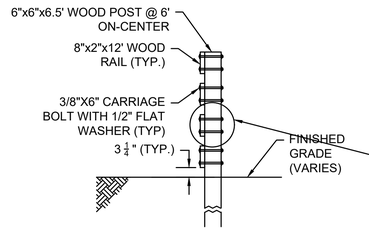
TYPICAL REST AREA DETAIL

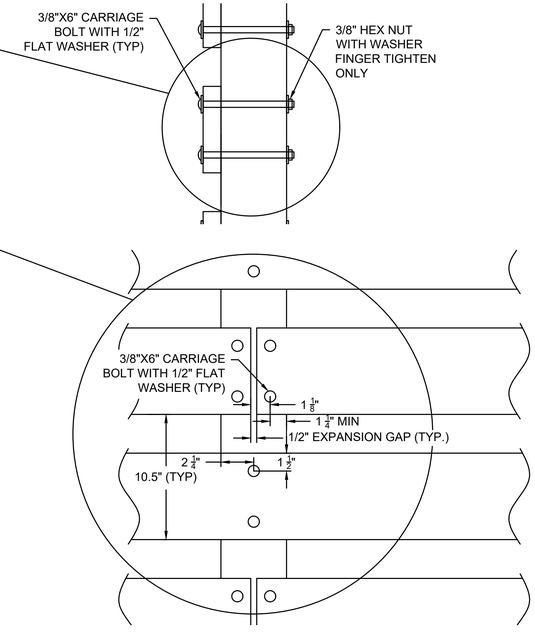
GRAPHIC SCALE
0 2.5 5 10
(IN FEET)
1 INCH = 5 FEET



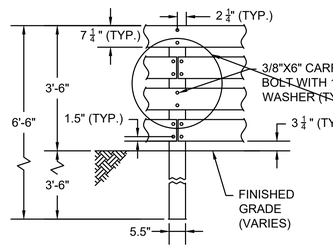
WOOD AND STEEL BENCH

NOT TO SCALE





NOT TO SCALE



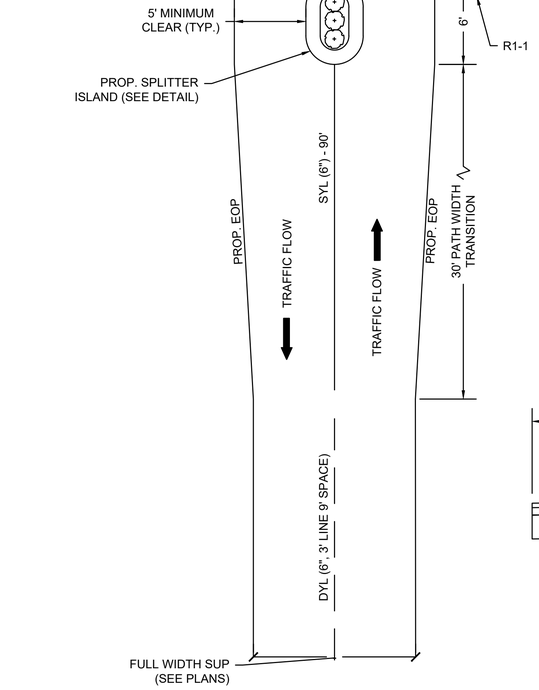
BICYCLE SAFETY FENCE

GRAPHIC SCALE
0 1 2 4
(IN FEET)
1 INCH = 2 FEET

PROPOSED BICYCLE SAFETY FENCE SCHEDULE

STATIONS		END TREATMENT*	
BEGIN	END	BEGIN	END
STA 130+33 L+R	STA 130+93 L+R	TAPER	TAPER
STA 133+25 R	STA 145+25 R	TAPER	TAPER
STA 133+75 L	STA 145+25 L	TAPER	TAPER
STA 150+50 L+R	STA 151+10 L+R	TAPER	TAPER
STA 180+25 L+R	STA 202+25 L+R	TAPER	TAPER
STA 249+75 L	STA 250+75 L	TAPER	TAPER
STA 286+75 L	STA 290+25 L	TAPER	TAPER
STA 286+75 R	STA 291+25 R	TAPER	TAPER

*END TREATMENT TAPERS SHALL ANGLE AWAY FROM THE SUP TRAVEL WAY FOR A DISTANCE OF 20 FEET MEASURED ALONG THE SUP CONSTRUCTION BASELINE. THE BLUNT END OF THE TAPER SHALL REFLECT A MINIMUM OFFSET OF 3 FEET FROM THE PROJECTED LINE OF THE MAIN FENCE SEGMENT.



SPLITTER ISLAND TYPICAL PLAN VIEW

NOT TO SCALE

GRAPHIC SCALE
0 1 2 4
(IN FEET)
1 INCH = 2 FEET

EXCAVATE TO REQUIRED DEPTH AND BACKFILL WITH PLANTING MIX

SHRUBS SHALL BE SET PLUMB

WATER BY FLOODING TWICE IN FIRST TWO HOURS AFTER PLANTING. WATER & MAINTAIN AS PER STANDARD SPECIFICATIONS

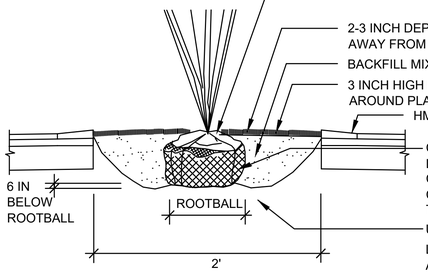
CROWN OF PLANT TO BE 2 INCHES MIN. ABOVE FINISHED GRADE AFTER SETTLING

2-3 INCH DEPTH AGED PINE BARK MULCH (PULL AWAY FROM BASE OF SHRUB)

BACKFILL MIX PER SPECIAL PROVISIONS

3 INCH HIGH EARTH WATERING SAUCER AROUND PLANTING BED

HMA BERM



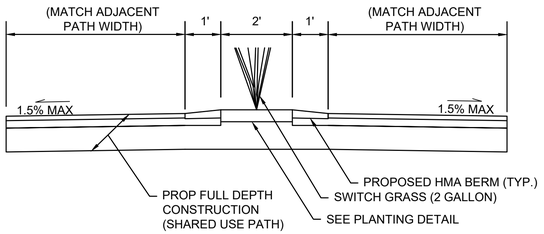
COMPLETELY REMOVE SYNTHETIC BURLAP AND LACING. FOR CONTAINERIZED PLANTS, REMOVE CONTAINER PRIOR TO PLANTING. SCORE SIDES OF CONTAINER AND LOOSEN ANY ROOTS ENCIRCLING THE ROOT BALL

UNDISTURBED SUBGRADE

LOOSE OR CRACKED ROOTBALLS WILL NOT BE ACCEPTED FOR PLANTING

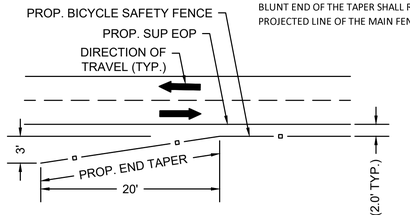
PLANTING DETAIL

NOT TO SCALE



TYPICAL SPLITTER ISLAND SECTION

GRAPHIC SCALE
0 1 2 4
(IN FEET)
1 INCH = 2 FEET



BICYCLE SAFETY FENCE TAPER DETAIL

NOT TO SCALE

BICYCLE SAFETY FENCE NOTES:
1. WOOD POSTS, RAILS AND BLOCKS SHALL BE SOUTHERN YELLOW PINE CONFORMING TO MASSDOT MATERIAL SPECIFICATION M8.07.2.
2. ALL NUTS, BOLTS AND WASHERS SHALL CONFORM TO MASSDOT MATERIAL SPECIFICATION M8.07.0.
3. CONTRACTOR TO RESTORE WOOD TREATMENT AND FILL VOIDS WITH EPOXY AFTER DRILLING FOR COUNTER SUNK HARDWARE.
4. WOOD SIZES SHOWN ARE NOMINAL TO MATCH COMMON INDUSTRY SIZES.
5. SAFETY FENCE/HIGHWAY GUARD LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
6. BOLTS SHALL HAVE A MINIMUM 2" THREAD, WASHERS SHALL BE 1" DIAMETER CUT STEEL.

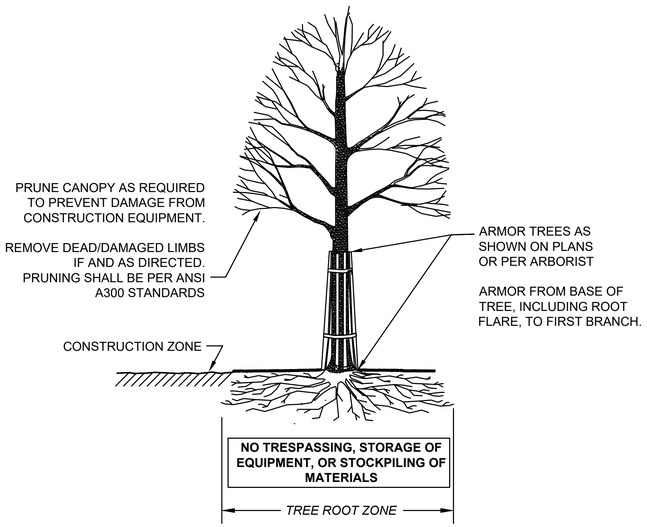
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	120	274
PROJECT FILE NO.	607979		

CONSTRUCTION DETAILS
SHEET 2 OF 5

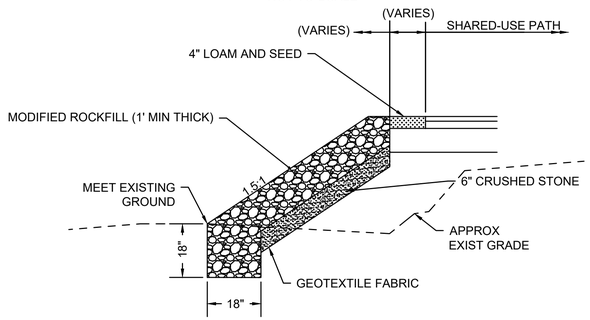
Existing Tree Locations to be Protected

STA	L/R	Offset	Diameter	Type	Condition/ Notes
226+73	L	7'		INK	To be removed
226+75	R	9'		OAK	To be protected and trimmed
226+96	L	10'		RBIRCH	To be protected
227+12	R	7'	3"	RM	To be protected and trimmed
227+19	L	10'		RBIRCH	To be removed
227+39	L	10'		BIRCH	To be protected and trimmed over SUP
227+47	R	11'		OCONIF	To be protected and trimmed over SUP
227+89	R	4'		JMAPLE	To be removed
227+93	L	8'		DOG (4)	To be removed & reset to Brewfish lot
228+02	L	9'	6"	ARBOR	To be removed
228+15	L	9'	12"	SPRUCE	To be removed
230+05	R	14.5'	18"	OAK	To be protected
230+10	L	14'	18"	CHERRY	To be protected
230+42	R	10.5'	20"	RM	To be protected
230+66	R	14.5'	24"	WP	To be removed
230+72	R	14'	15"	WP	To be removed
230+90	R	14'	24"	WP	To be protected
230+94	L	14'	22"	SMAPLE	To be protected and pruned to 10' above SUP
231+31	R	13'	24"	WP	Dead to be removed
1+58	L	15'		WP	To be protected
1+66	R	11'		WP	To be removed
1+67	R	8'		WP	To be removed
1+68	R	25'		WP	To be protected
1+70	L	28'		WP	To be protected
1+80	L	8'		WP	To be removed
1+81	L	22'		WP	To be protected
1+91	L	17'		WP	To be protected
1+97	R	8'		WP	To be removed
2+71	L	30'		WP	To be protected
265+64	L	19.5'		WP	Dead to be removed
265+59	R	14.5'	24"	BOAK	To be removed
267+99	R	21'	19"	WP	To be removed
284+12	L	17'	19"	WP	To be removed
284+64	L	17'	19"	WP	To be removed
284+88	L	15'	18"	WP	To be removed
287+41	L	10'	12"	BOAK	To be protected
288+03	L	8.5'	15"	WP	To be removed
288+14	L	8.5'	15"	WP	To be removed
288+61	L	8'	12"	BOAK	To be removed
289+13	L	11'		WP	Dead WP to be removed
292+26	R	15'		WP	To be protected
292+41	R	17.5'		RM	Diseased to be removed
292+41	R	14'		WP	To be protected
292+34	L	14'	10"	WP	To be protected
292+41	L	21'	16"	WP	To be protected
292+66	R	11'	20"	WOAK	Twin trunk to be protected
292+71	L	30'	15"	WP	To be protected
293+11	R	12.5'		WOAK	To be protected
293+13	L	18.5'	16"	RM	Diseased to be removed
293+31	L	21'		TUPELO	To be protected
293+41	R	12'	12"	RM	Stump sprout to be removed
293+44	L	13'		WP	To be removed
293+61	L	12'		RM	Twin trunk to be removed
293+76	L	16'		WOAK	Twin trunk to be protected
294+30	L	10'	22"	WOAK	To be protected
296+11	R	21'		WP	To be protected
296+18	R	22.5'		WP	To be protected
296+77	R	17.5'		WP	To be protected
297+02	L	12'		WP	To be protected
297+17	L	13'		WP	To be protected
297+27	R	13'		WP	To be protected
297+45	R	10'		ASPEN	To be protected
297+52	R	10'		WP	To be protected
297+64	R	13'		WP	To be removed
298+22	R	8'	30"	BOAK	To be protected
298+36	L	23'	12"	BOAK	To be trimmed for overhead clearance
298+27	R	60'	10"	WOAK	To be protected
298+52	R	60'	12"	WOAK	To be protected



TREE PROTECTION - TRUNK

NOT TO SCALE



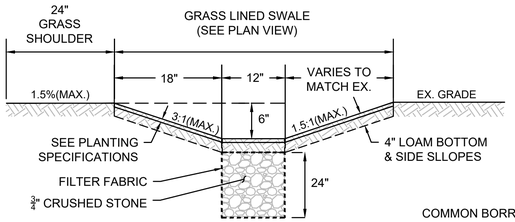
MODIFIED ROCKFILL SLOPE TREATMENT

GRAPHIC SCALE
0 1 2 4
(IN FEET)
1 INCH = 2 FEET

GRASSED DEPRESSION DETAIL

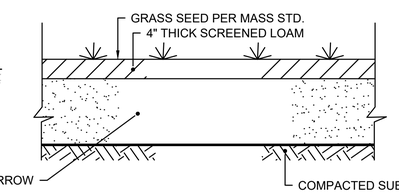
NOT TO SCALE

NOTE:
GRASSED DEPRESSION BOTTOM AREA AND SIDE SLOPES TO BE SEEDED WITH NEW ENGLAND CONSERVATION/WILDLIFE MIX AS SUPPLIED BY NEW ENGLAND WETLAND PLANTS, INC. (OR APPROVED EQUAL)



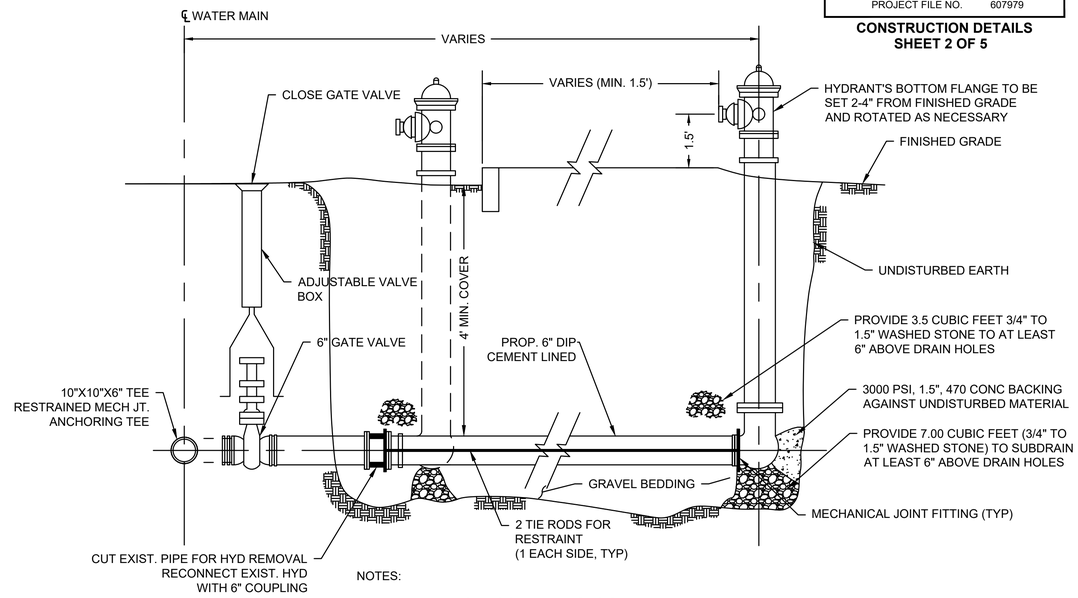
EDGE DRAIN / SWALE DETAIL

NOT TO SCALE



LOAM & SEED DETAIL

NOT TO SCALE

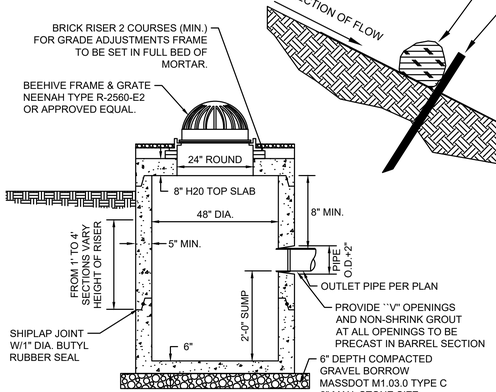


NOTES:

1. ALL WATER GATES & HYDRANTS TO OPEN LEFT
2. ALL MECHANICAL RESTRAINT DEVICES, STONE, GRAVEL, ETC. NECESSARY TO INSTALL OR REMOVE AND RESET HYDRANTS ARE INCIDENTAL TO ITEM 376.2

HYDRANT REMOVE AND RESET DETAIL

NOT TO SCALE

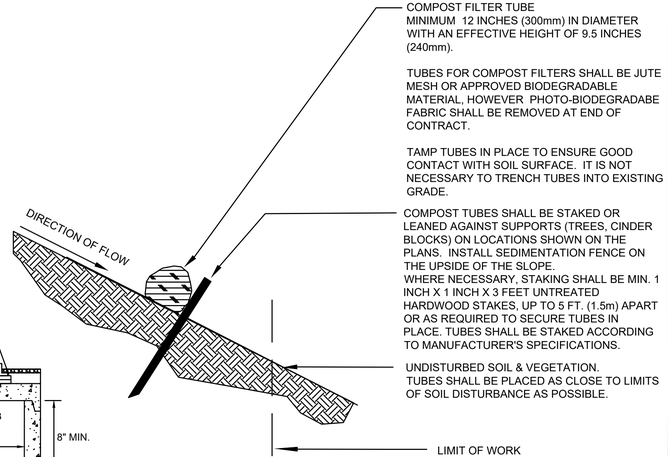


PROPOSED EQUALIZING STRUCTURE

NOTES:

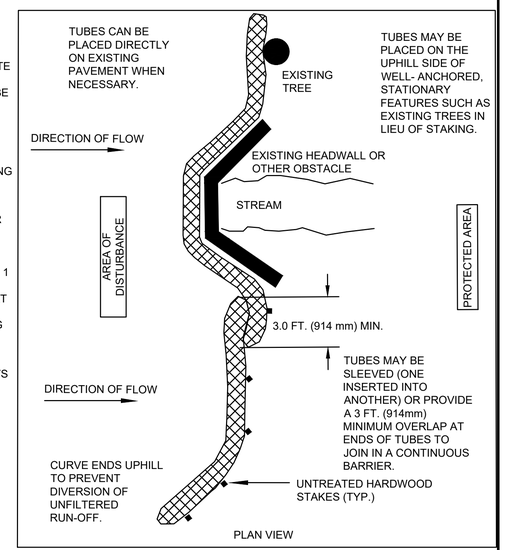
NOT TO SCALE

1. CATCH DESIGN TO CONFORM TO ASTM C478 LATEST REVISION.
2. CONCRETE SHALL BE WET CAST 4000 P.S.I. @ 28 DAYS.
3. USE FLAT TOP H20 LOAD SLAB WHEN HEIGHT OF CONE SECTION IS LESS.
4. FILL OUTSIDE FACE OF ALL MANHOLE JOINTS WITH NON-SHRINK MORTAR.
5. BASE SECTION TO BE MONOLITHIC.



COMPOST FILTER TUBE DETAIL

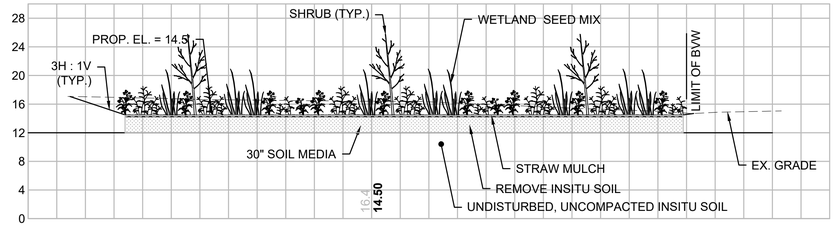
NOT TO SCALE



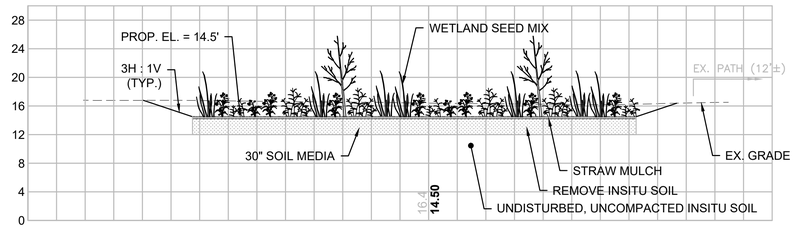
NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES/SILT FENCE ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. FASTEN SEDIMENTATION FENCE FABRIC AND SUPPORT WIRE SECURELY TO THE UPSLOPE SIDE OF THE FENCE POST WITH WIRE TIES OR STAPLES. EXTEND WIRE 6 INCHES INTO THE TRENCH.
5. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
6. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
7. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

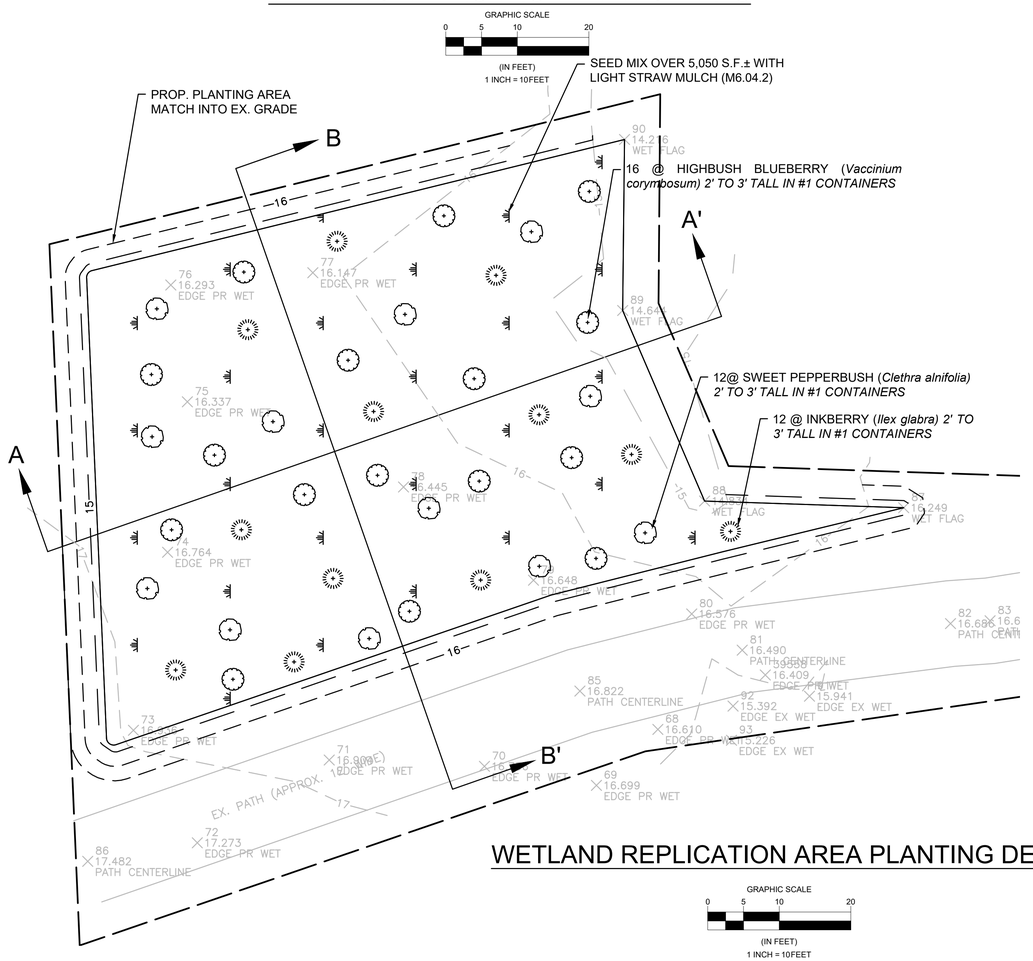
WETLAND REPLICATION SECTION A-A'



WETLAND REPLICATION SECTION B-B'



WETLAND REPLICATION AREA DETAILS



WETLAND REPLICATION AREA PLANTING DETAIL

GRAPHIC SCALE
0 5 10 20
(IN FEET)
1 INCH = 10FEET

CONSTRUCTION SEQUENCING

1. INSTALL SILT FENCE AND/OR OR OTHER APPROPRIATE TEMPORARY EROSION CONTROL DEVICES TO PREVENT SEDIMENT FROM LEAVING OR ENTERING THE WETLAND REPLICATION AREA DURING CONSTRUCTION.
2. ALL DOWN-GRADIENT PERIMETER SEDIMENT CONTROL MUST BE IN PLACE BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITY BEGINS.
3. PERFORM CONTINUOUS INSPECTIONS OF EROSION CONTROL PRACTICES.
4. ROUGH GRADE THE SITE. LEAVE A MINIMUM OF 3 FEET OF COVER OVER THE WETLAND REPLICATION AREA TO PROTECT THE UNDERLYING SOILS FROM CLOGGING.
5. SEED AND MULCH ALL AREAS AFTER DISTURBANCE.
6. CONSTRUCT WETLAND REPLICATION UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA.
7. REMOVE TEMPORARY EROSION CONTROL DEVICES AFTER THE CONTRIBUTING DRAINAGE AREA IS ADEQUATELY VEGETATED.

GENERAL NOTES

1. IN THE EVENT THAT SEDIMENT IS INTRODUCED INTO THE WETLAND REPLICATION AREA DURING OR IMMEDIATELY FOLLOWING EXCAVATION, THIS MATERIAL SHALL BE REMOVED FROM THE WETLAND REPLICATION AREA PRIOR TO CONTINUING CONSTRUCTION.
2. GRADING OF WETLAND REPLICATION AREA SHALL BE ACCOMPLISHED USING LOW-COMPACTION EARTH-MOVING EQUIPMENT TO PREVENT COMPACTION OF UNDERLYING SOILS.
3. ALL SUB MATERIALS BELOW THE SPECIFIED WETLAND DEPTH (ELEVATION) SHALL BE UNDISTURBED, UNLESS OTHERWISE NOTED.

PLANTING LIST FOR WETLAND REPLICATION AREA (±5,050 SF)

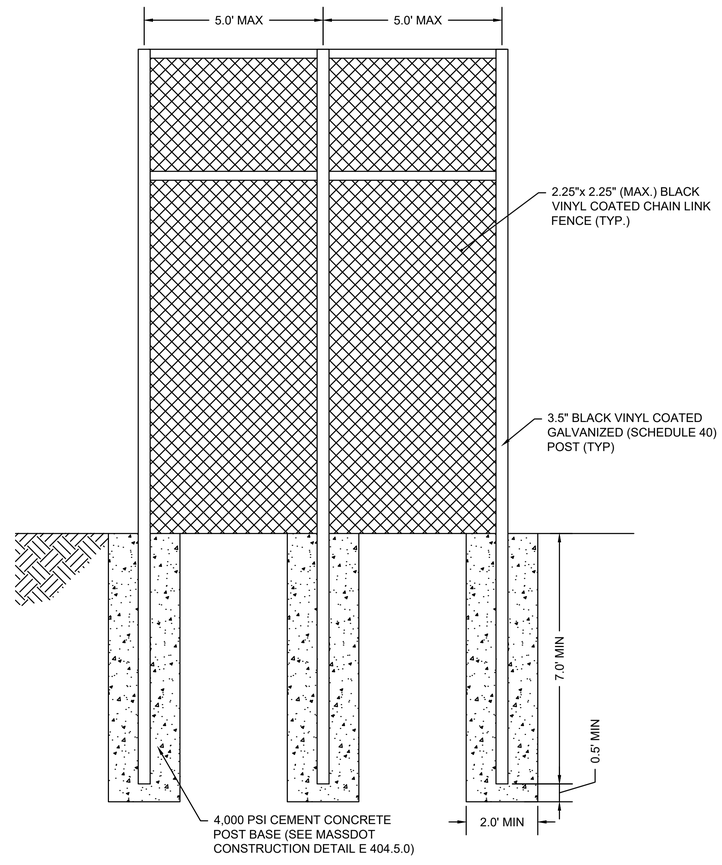
EROSION CONTROL/RESTORATION SEED MIX (2 POUND MINIMUM SEED SUITED FOR MOIST DISTURBED GROUND INCLUDING WATER-TOLERANT GRASSES)

- 12 @ SWEET PEPPERBUSH (*Clethra alnifolia) 2' TO 3' TALL IN #1 CONTAINERS*
- 12 @ INKBERRY (*Ilex glabra) 2' TO 3' TALL IN #1 CONTAINERS*
- 16 @ HIGHBUSH BLUEBERRY (*Vaccinium corymbosum) 2' TO 3' TALL IN #1 CONTAINERS*

TOWN OF MARION
SHARED-USE PATH - PHASE 1

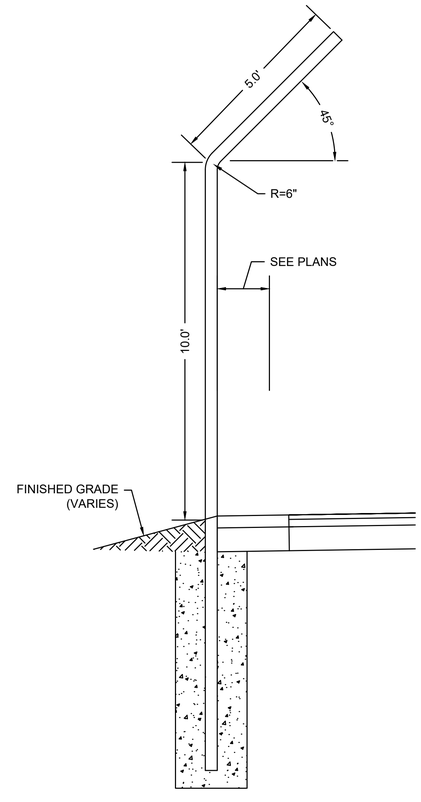
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	121	274
PROJECT FILE NO.	607979		

CONSTRUCTION DETAILS
SHEET 3 OF 5



BASEBALL BARRIER FENCE DETAIL

GRAPHIC SCALE
0 1 2 4
(IN FEET)
1 INCH = 2 FEET

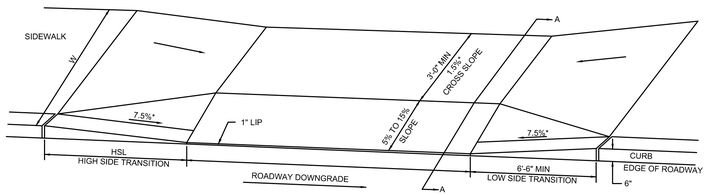


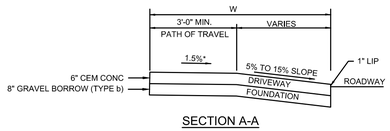
NOTE:
1. BASEBALL BARRIER FENCE & POSTS TO BE INSTALLED IN ACCORDANCE WITH MASSDOT CHAIN LINK FENCE CONSTRUCTION DETAILS.
2. FENCE POSTS TO BE A SINGLE PIECE OF GALVANIZED STEEL, NO BENDING ON SITE IS PERMITTED.

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	122	274
PROJECT FILE NO.	607979		

FRONT ST (RTE 105) AT SPRING ST
CONSTRUCTION DETAILS
SHEET 4 OF 5





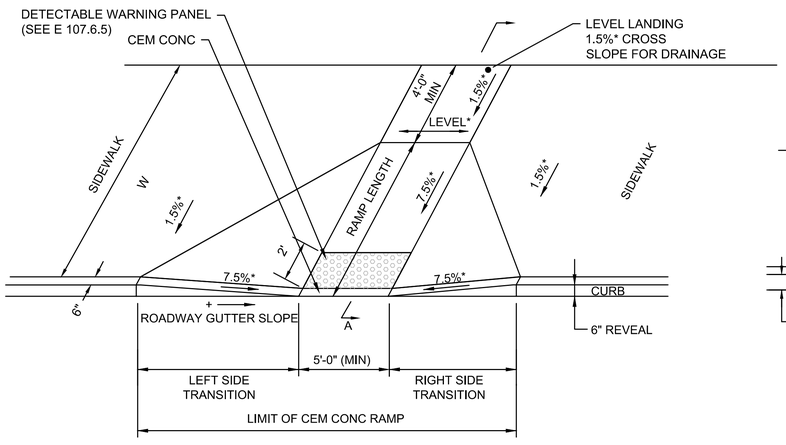
SECTION A-A

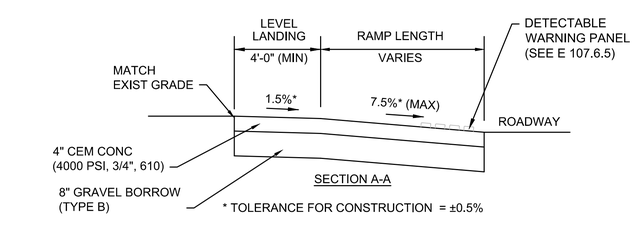
* TOLERANCE FOR CONSTRUCTION = ±0.5%

DRIVEWAY SCHEDULE									
DWY #	LOCATION			ROADWAY GUTTER SLOPE	SIDEWALK WIDTH (W)	LEFT SIDE TRANSITION		RIGHT SIDE TRANSITION	
	STREET	STATION	OFFSET			REVEAL	LENGTH	REVEAL	LENGTH
1	FRONT ST	101+50	14' RT	-0.20%	5'-0"	6"	6'-6"	6"	6'-6"

DRIVEWAY

MASSDOT STANDARD E107.7.0
NOT TO SCALE



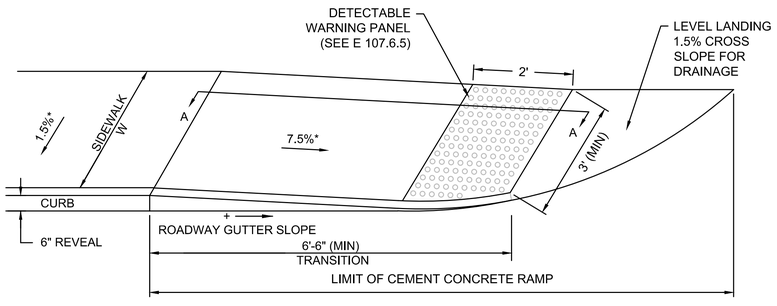


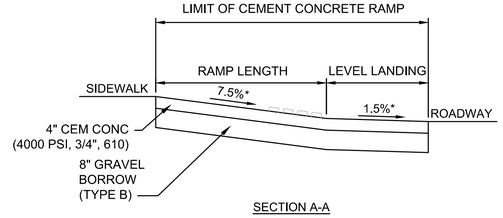
SECTION A-A

* TOLERANCE FOR CONSTRUCTION = ±0.5%

CURB RAMP - TYPE A

MASSDOT STANDARD E107.3.0
NOT TO SCALE





SECTION A-A

* TOLERANCE FOR CONSTRUCTION = ±0.5%

CURB RAMP - TYPE B

MASSDOT STANDARD E107.6.0
NOT TO SCALE

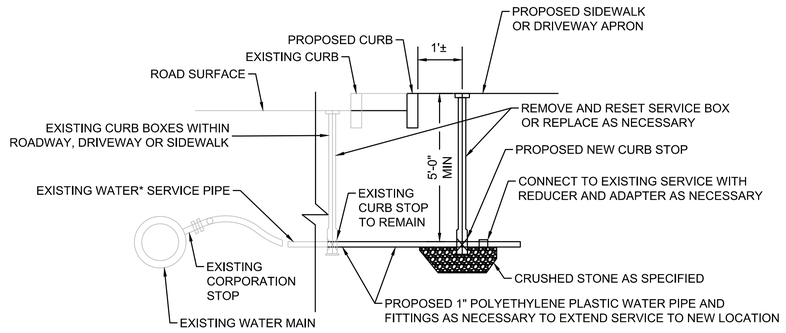
NOTES:
1. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE AND GRADE SHALL BE INCLUDED IN THE COST OF THE PIPE.
2. THE CONTRACTOR SHALL VERIFY, PRIOR TO CONSTRUCTION, THE EXISTING CONDITIONS WITHIN THE PROJECT AREA AND IMMEDIATELY NOTIFY THE ENGINEER OF DISCREPANCIES WHICH ARE FOUND.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY "DIG-SAFE" AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO ANY EXCAVATION WITHIN THE PROJECT AREA.
4. ALL SITE FEATURES WHICH ARE TO BE DISPOSED OF, INCLUDING EXISTING PAVEMENT, SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
5. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. EXISTING AND NEWLY CONSTRUCTED DRAINAGE SYSTEMS IN THE PROXIMITY OF THE CONSTRUCTION SHALL BE LEFT CLEAN AND IN GOOD OPERABLE CONDITION.
6. NO EXCAVATIONS SHALL BE LEFT UNPROTECTED AT THE END OF ANY WORK PERIOD. A STEEL PLATE OR DECKING SHALL BE TEMPORARILY PLACED OVER ALL EXCAVATIONS WHEN NOT ACTIVELY IN USE.
7. ALL EXISTING FEATURES WHICH ARE "TO REMAIN" AND WHICH ARE DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
8. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
9. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
10. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SANITARY SEWER STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND ADJUST ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
11. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
12. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
13. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
14. JOINTS BETWEEN NEW HOT MIX ASPHALT ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
15. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
16. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING ROADWAY LIGHTING WITHIN THE PROJECT LIMITS UNTIL OTHERWISE DIRECTED IN WRITING BY THE ENGINEER.
17. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
18. ALL TREE PROTECTION IS TO BE LOCATED WITHIN THE EXISTING STATE AND/OR TOWN LAYOUTS.

CURB RAMP SCHEDULE												
CR #	TYPE	LOCATION			ROADWAY GUTTER SLOPE	SIDEWALK WIDTH (W)	WIDTH OF RAMP ENTRANCE	DEPTH OF LEVEL LANDING	RAMP LENGTH	LEFT SIDE TRANSITION		RIGHT SIDE TRANSITION	
		STREET	STATION	OFFSET						REVEAL	LENGTH	REVEAL	LENGTH
1	A	FRONT ST	102+19	14' LT	-0.16%	12'-0"	12'-0"	5'-0"	5'-6"	-	-	-	-
2	A	FRONT ST	102+19	13' RT	-0.12%	12'-0"	12'-0"	7'-0"	6'-0"	-	-	6"	6'-6" LS
PED-8143	A	FRONT ST	102+35	20' RT	0.47%	5'-0"	5'-0"	18'-9"	7'-0"	6"	6'-6" LS	-	-
PED-20949	B	FRONT ST	102+77	16' RT	-1.13%	5'-0"	4'-0"	5'-0"	7'-3"	6"	7'-3" LS	-	-

CURB RAMP NOTES:
1. ALL CURB RAMP CONSTRUCTION SHALL CONFORM TO MASSDOT ENGINEERING DIRECTIVE E-12-005.
2. DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED CURB RAMPS AND SHALL CONFORM TO THE DIMENSIONS SHOWN IN MASSDOT CONSTRUCTION STANDARD E 107.6.5R. REFER TO THE SPECIAL PROVISIONS.
3. A POSITIVE ROADWAY GUTTER SLOPE INDICATES THE ROADWAY GRADE IS INCREASING RELATIVE TO THE BASELINE. A NEGATIVE ROADWAY GUTTER SLOPE INDICATES THE ROADWAY GRADE IS DECREASING RELATIVE TO THE BASELINE.
4. "LS" REPRESENTS LOW SIDE AND "HS" REPRESENTS HIGH SIDE.

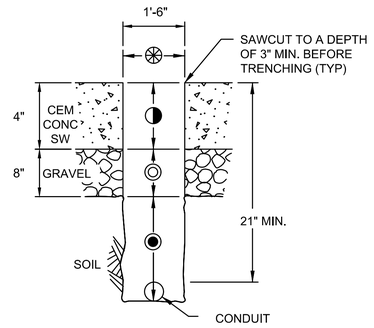
Plotted on 20-Oct-2023 12:38 PM
Y:\16147.21 MARION PATHWAY (CONSTRUCTION DETAILS).DWG

Plotted on 20-Oct-2023 4:36 PM
Y:\16147.21 MARION PATHWAY (CONSTRUCTION DETAILS).DWG



NOTES:
1. IF EXISTING WATER SERVICE LINE IS NOT PLASTIC, CONTRACTOR SHALL INFORM MARION WATER & SEWER DIVISION. NO CONNECTION SHALL BE MADE UNTIL THE MARSHFIELD WATER DEPARTMENT DETERMINES IF THE EXISTING LINE IS SUITABLE TO BE EXTENDED OR MUST BE REPLACED TO THE MAIN.

CURB STOP RELOCATION DETAIL
NOT TO SCALE



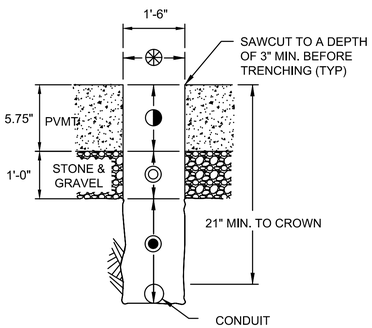
⊛ WIDTH OF TRENCH AS REQUIRED TO PROPERLY INSTALL CONDUIT AND BACKFILL. (ONE FULL PANEL WIDTH ON CONC. SIDEWALKS).

◑ RESTORE SIDEWALK.

◉ BACKFILL WITH EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE AND APPROVED BY THE ENGINEER.

◎ REPLACE SUBBASE IN KIND.

CONDUIT TRENCH IN CEM CONC SIDEWALK DETAIL
NOT TO SCALE



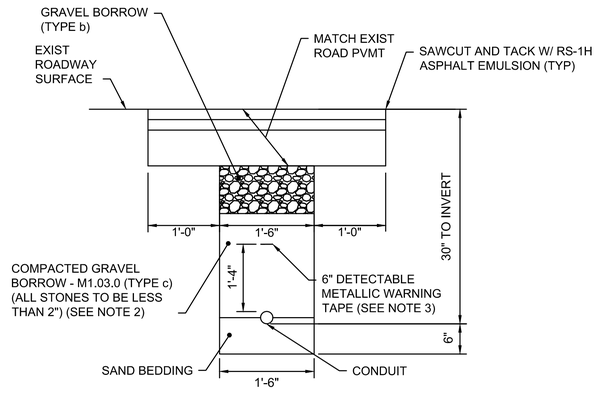
⊛ WIDTH OF TRENCH AS REQUIRED TO PROPERLY INSTALL CONDUIT AND BACKFILL. (ONE FULL PANEL WIDTH ON CONC. SIDEWALKS).

◑ RESTORE PLATFORM PAVEMENT OR ROADWAY.

◉ BACKFILL WITH EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE AND APPROVED BY THE ENGINEER.

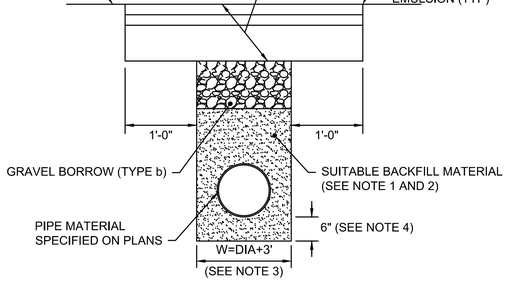
◎ REPLACE SUBBASE IN KIND.

CONDUIT TRENCH IN PAVEMENT DETAIL
NOT TO SCALE



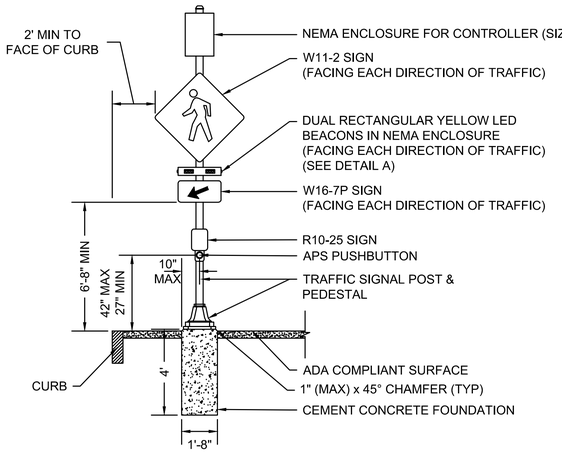
NOTES:
1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT.
2. CONTROL DENSITY FILL SHALL BE USED AS DETERMINED BY THE ENGINEER AND MEET THE REQUIREMENTS OF SUBSECTION M4.08.0
3. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

CONDUIT CROSSING ROADWAY
NOT TO SCALE

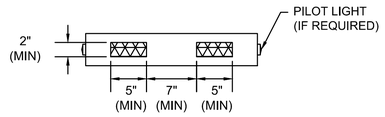


NOTES:
1. BACKFILL MATERIAL SHALL BE EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE AND APPROVED BY THE ENGINEER. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6 INCHES IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 12 INCHES OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3 INCHES.
2. IN CASE WHERE FILLING MATERIAL CAN NOT BE THOROUGHLY COMPACTED DUE TO OTHER UTILITY CONDUIT OR PIPES IN THE TRENCH, OR OTHER REASONS AS DETERMINED BY THE ENGINEER, CONTROLLED DENSITY FILL MAY BE USED.
3. TRENCHES FOR PIPES SHALL BE EXCAVATED TO THE SUFFICIENT WIDTH TO PERMIT THOROUGH TAMPING OF BACKFILL MATERIAL UNDER THE HAUNCHES.
4. SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, OR OTHER SUITABLE MATERIAL THOROUGHLY COMPACTED.

DRAINAGE TRENCH DETAIL
NOT TO SCALE

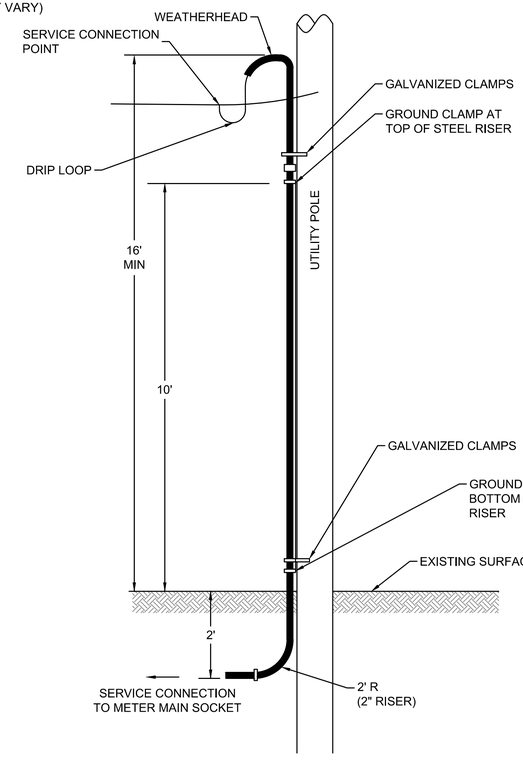


NOTES:
1. CROSSWALK AND ADA COMPLIANT RAMPS NOT SHOWN. SEE PLANS FOR LOCATIONS.
2. REFER TO SPECIAL PROVISIONS FOR SIGN DIMENSIONS.
3. ALL CONDUIT, PULL BOXES, SERVICE CONNECTIONS, AND EQUIPMENT GROUNDING REQUIRED FOR AC POWER IS NOT SHOWN IN THIS DETAIL AND SHALL BE PAID FOR SEPARATELY UNDER THEIR RESPECTIVE PAY ITEMS
4. ACCESS TO ALL PEDESTRIAN ACTUATED CONTROLS SHALL BE ADA/AAB COMPLIANT.
5. *0.5% CONSTRUCTION TOLERANCE FOR CROSS SLOPE.
6. FLASH PERIOD TO BE TIMED PER GUIDANCE FOR PEDESTRIAN CLEARANCE INTERVAL IN SECTION 4E.06 OF THE MUTCD, BASED ON 3 FT/SEC WALKING SPEED.
7. ASSEMBLIES UTILIZING AC POWER WILL REQUIRE THE ADDITIONAL INSTALLATION OF A METER SOCKET.

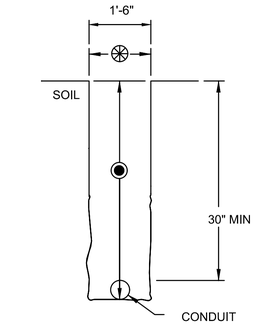


DETAIL A: DUAL YELLOW BEACON

RECTANGULAR RAPID FLASHING BEACON (RRFB)
NOT TO SCALE



SERVICE CONNECTION
NOT TO SCALE



⊛ WIDTH OF TRENCH AS REQUIRED TO PROPERLY INSTALL CONDUIT AND BACKFILL.

◉ BACKFILL WITH EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE AND APPROVED BY THE ENGINEER.

CONDUIT TRENCH IN PAVEMENT DETAIL
NOT TO SCALE

NOTES:
1. INSTALLATION REQUIREMENTS MAY VARY BY UTILITY COMPANY. COORDINATE WITH UTILITY FOR INSTALLATION REQUIREMENTS.
2. TRANSITION FROM GRS TO PVC CONDUIT WITHIN 6" OF THE GROUND ON SERVICE POLE.
3. TRANSITION CONDUIT FROM 2'-0" (MIN) DEPTH AT THE POLE TO 3'-0" (MIN) DEPTH BASED ON THE CABLE BENDING RADIUS FOR ALL CONDUIT RUNS.

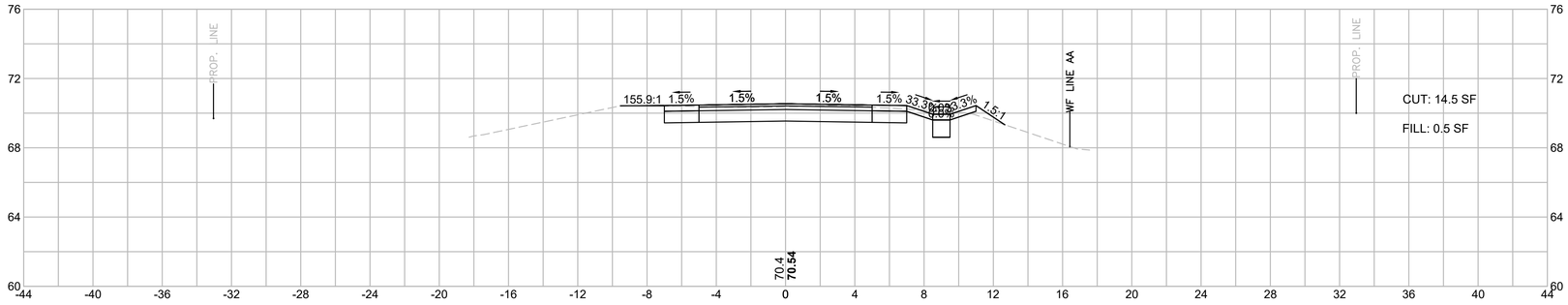
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	124	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 1 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

102+00



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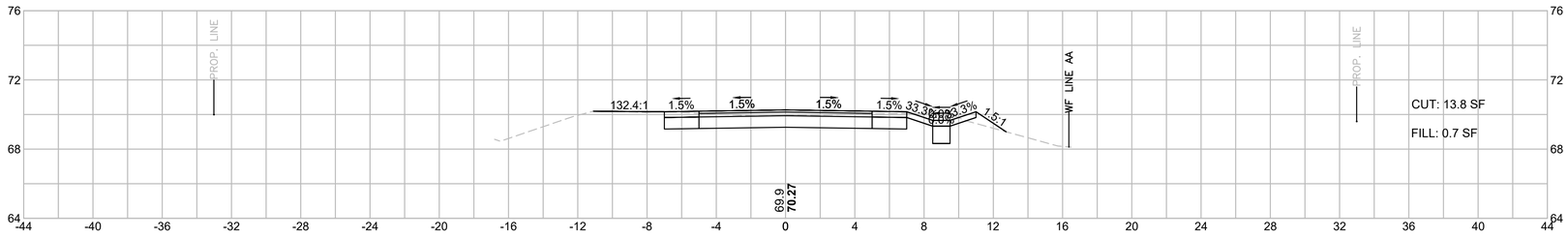

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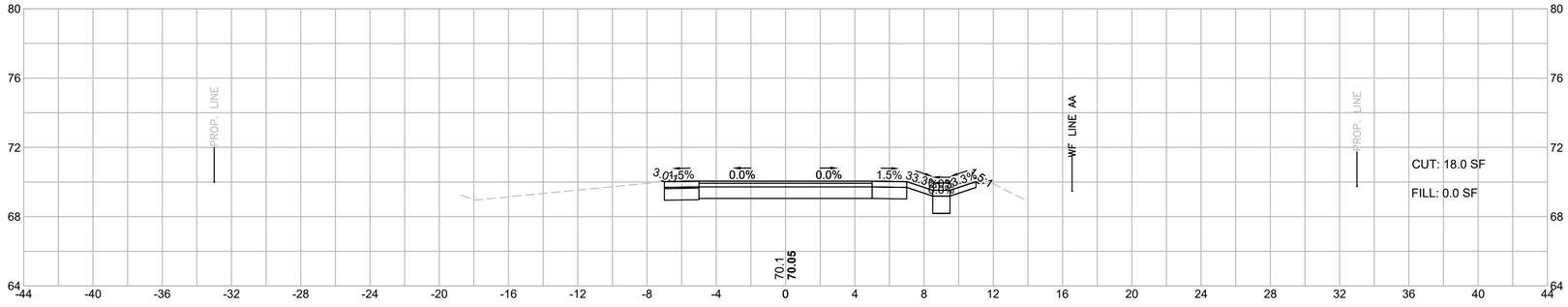

HOR. SCALE IN FEET
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VER. SCALE IN FEET

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	125	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 2 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

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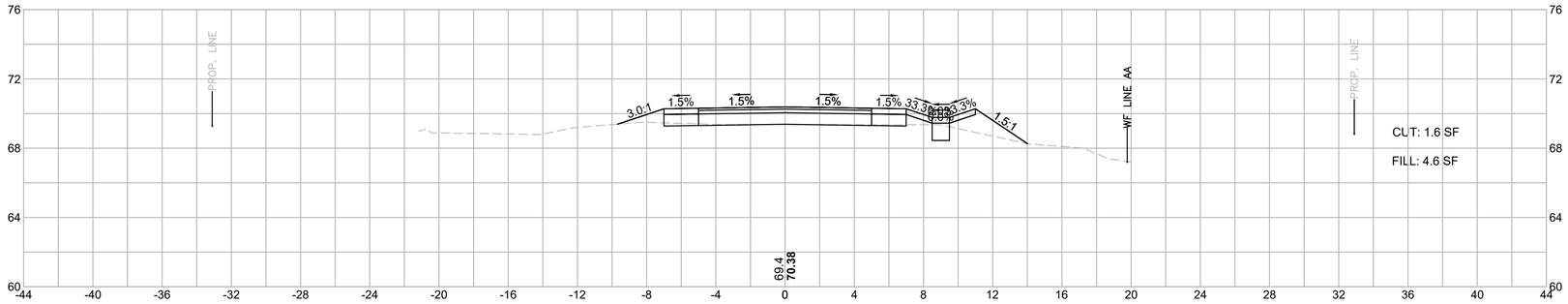

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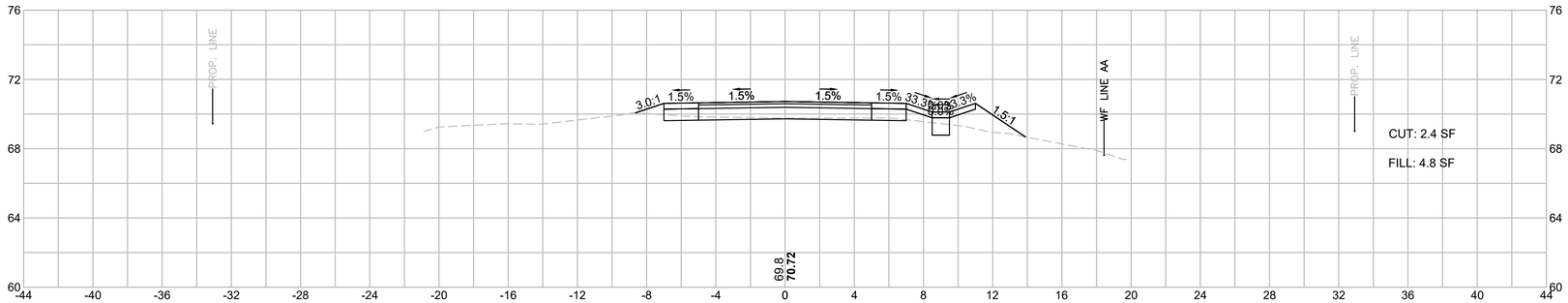

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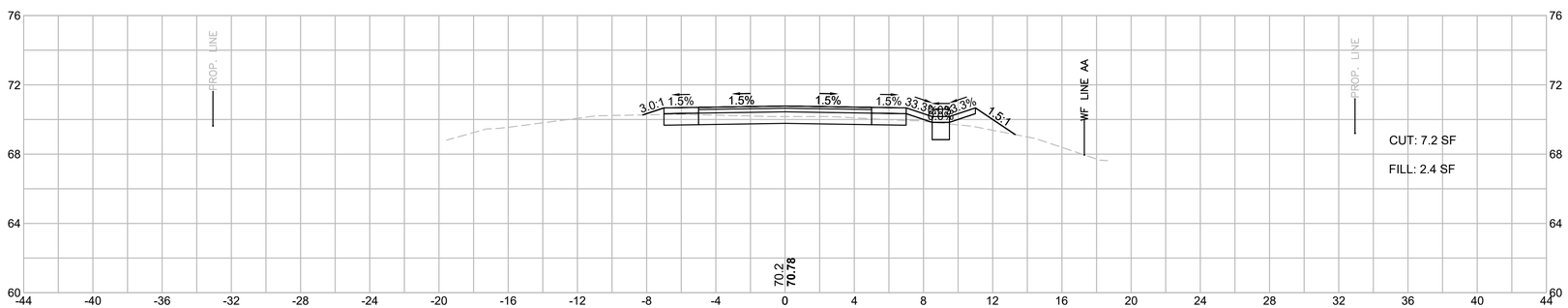

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VER. SCALE IN FEET

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	126	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 3 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

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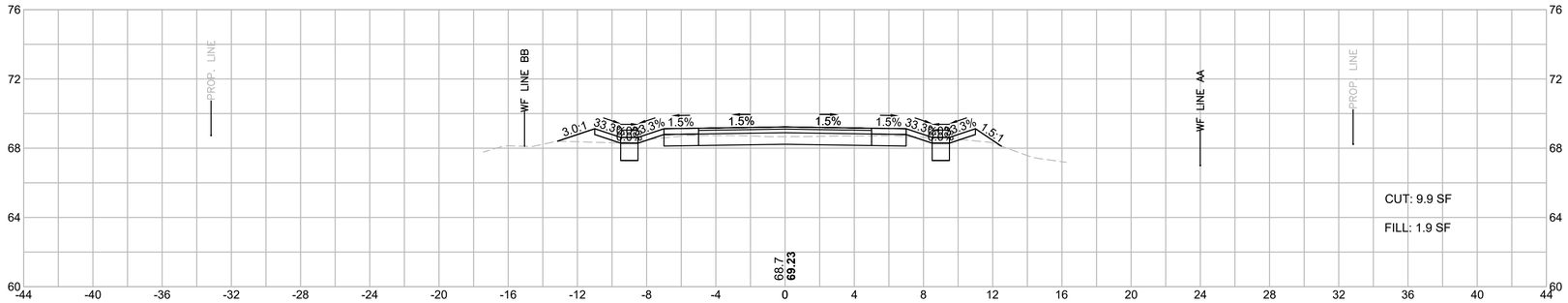

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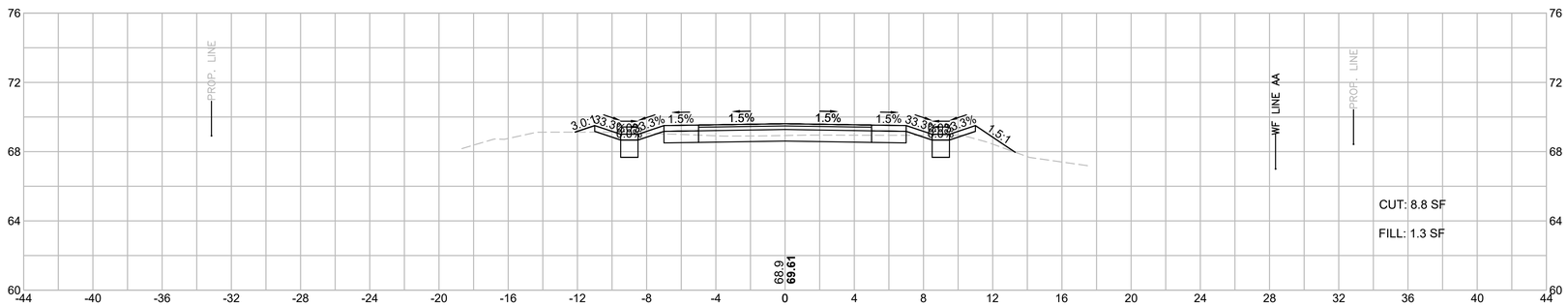

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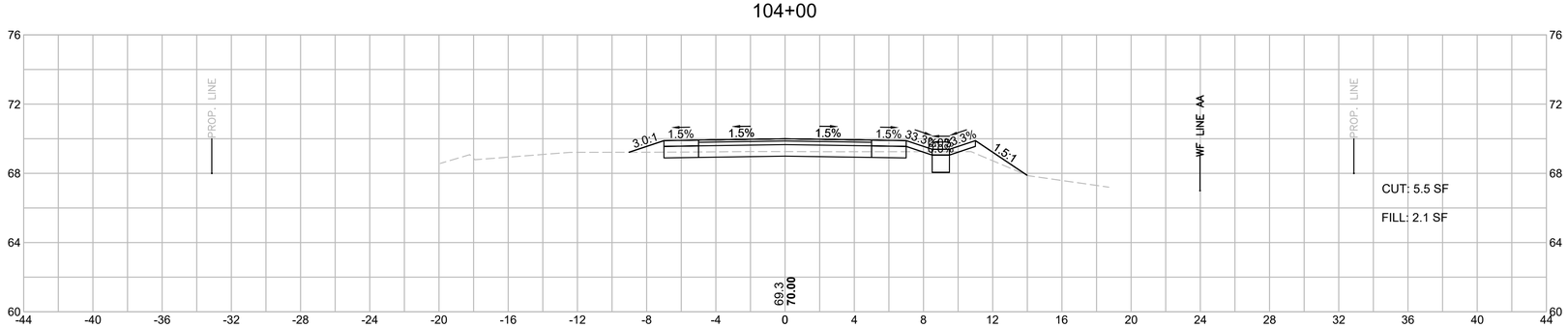

HOR. SCALE IN FEET
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VER. SCALE IN FEET

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	127	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 4 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

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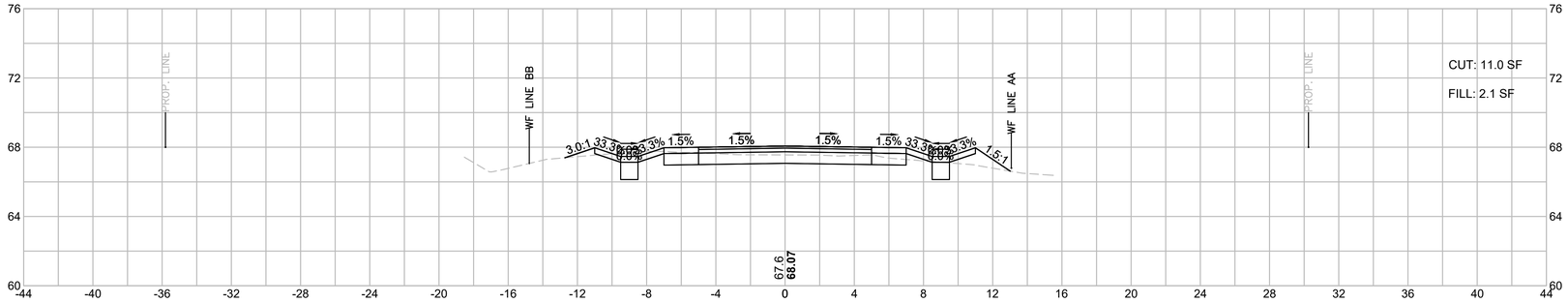

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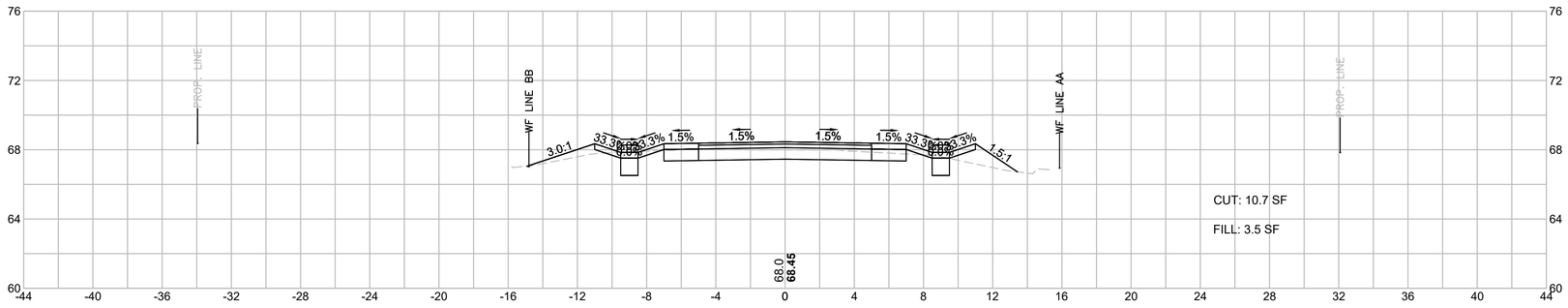

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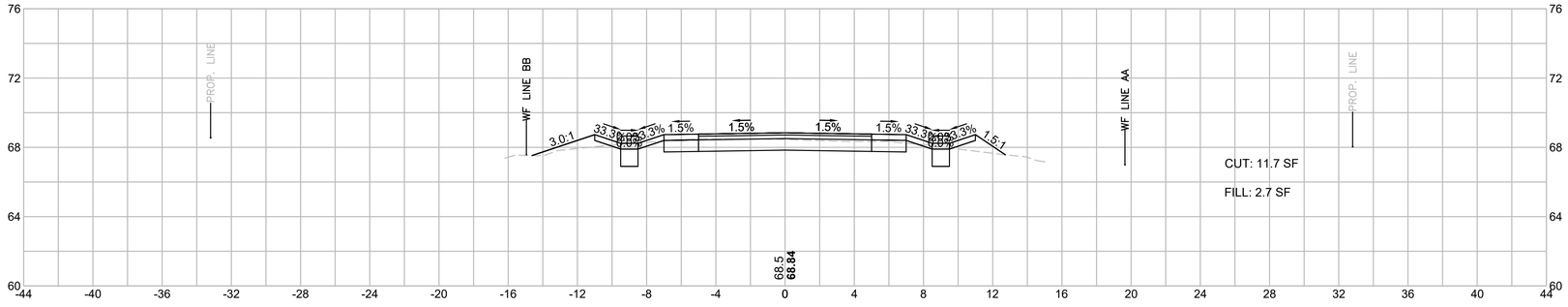

HOR. SCALE IN FEET
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VER. SCALE IN FEET
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TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	128	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 5 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

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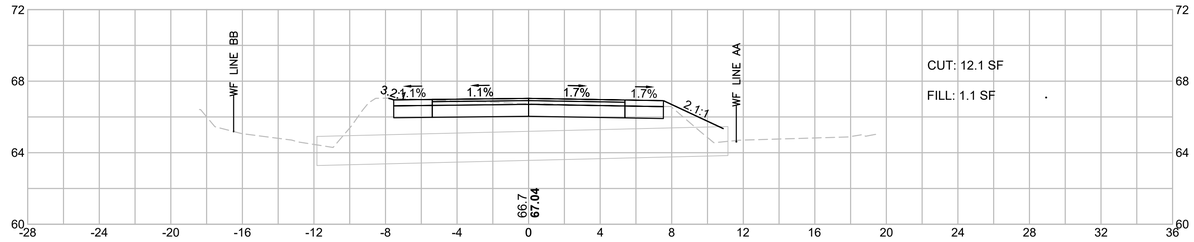

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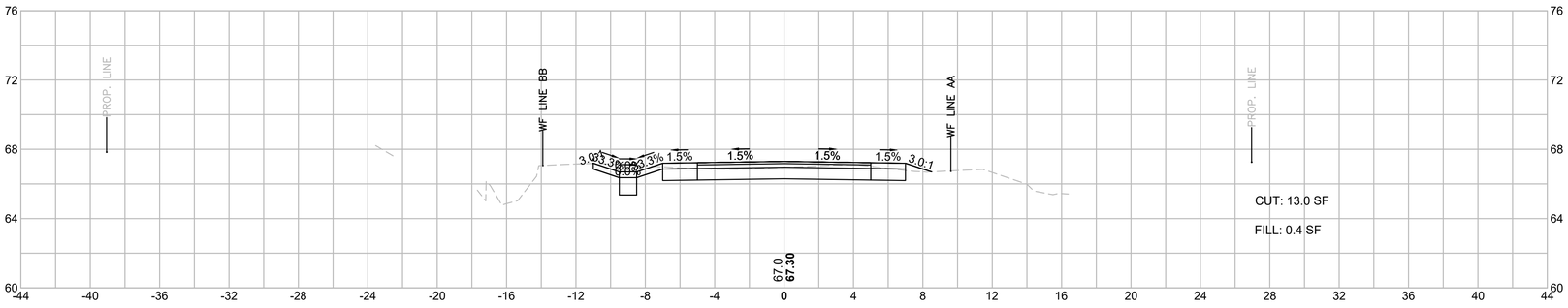

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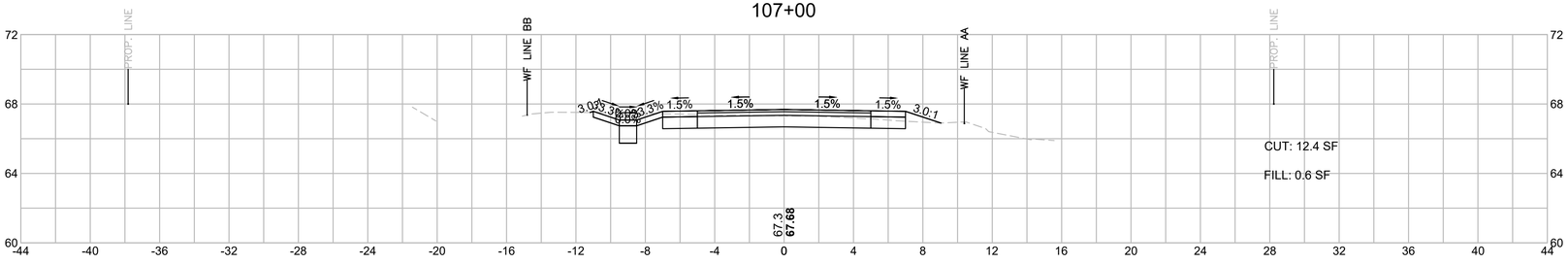

HOR. SCALE IN FEET
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VER. SCALE IN FEET
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TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	129	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 6 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

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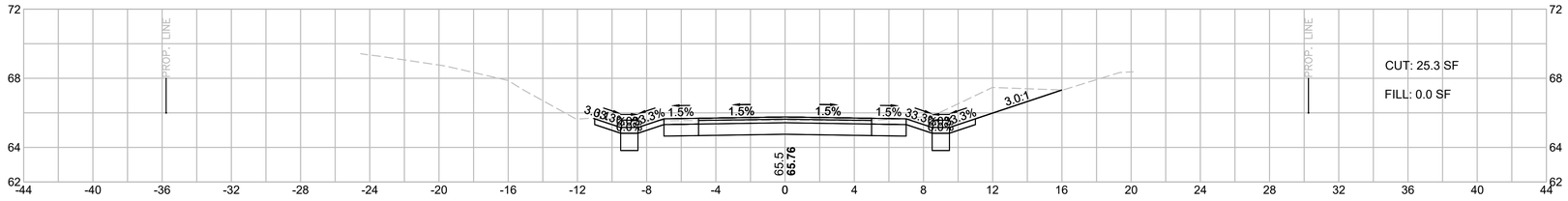

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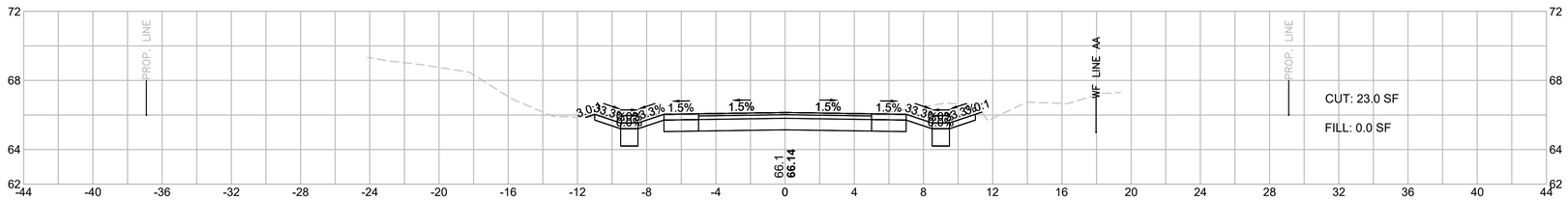

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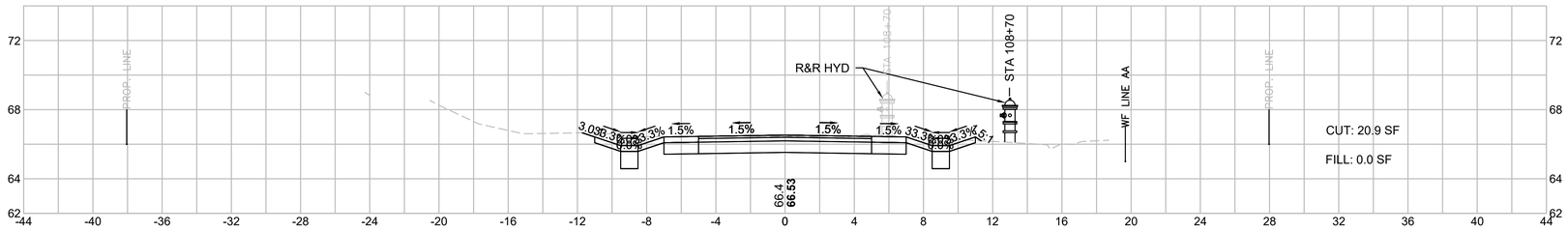

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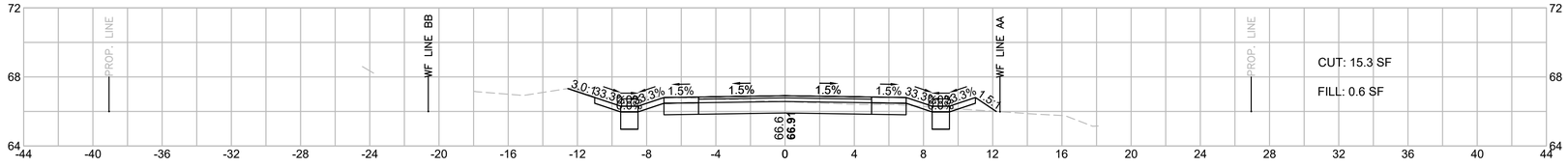

HOR. SCALE IN FEET
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VER. SCALE IN FEET
4 0 4 8

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	130	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 7 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

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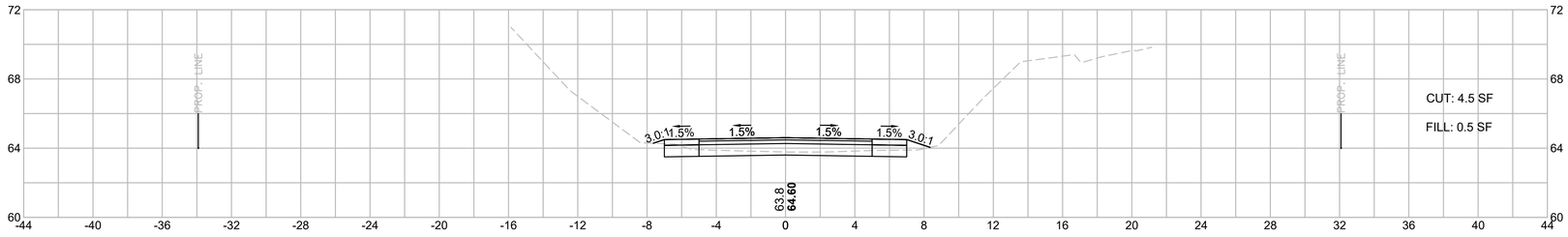

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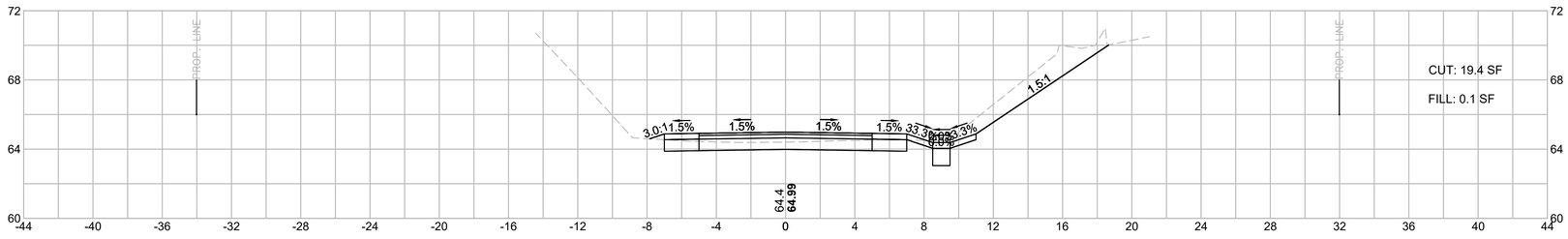

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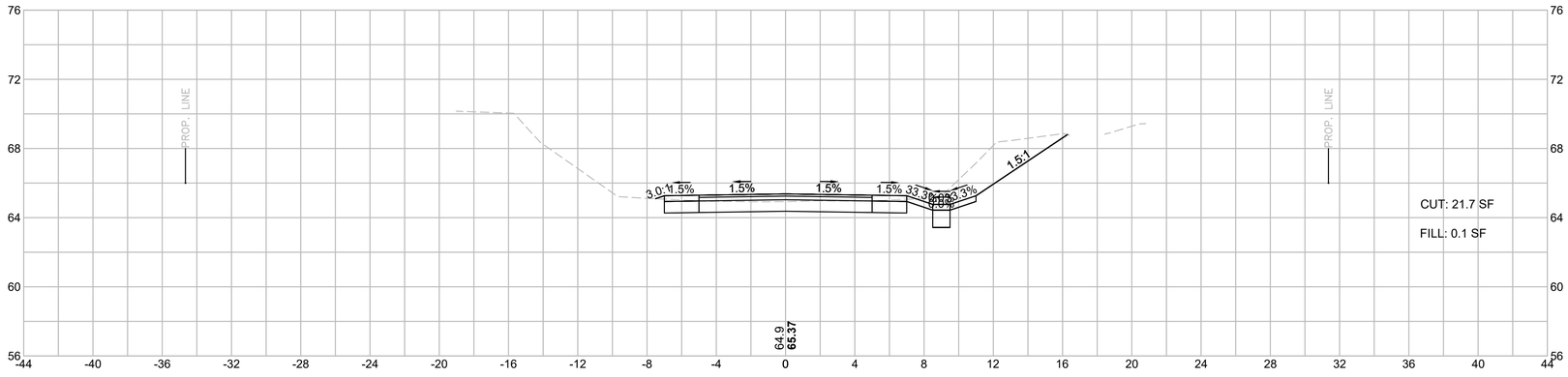

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	131	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 8 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

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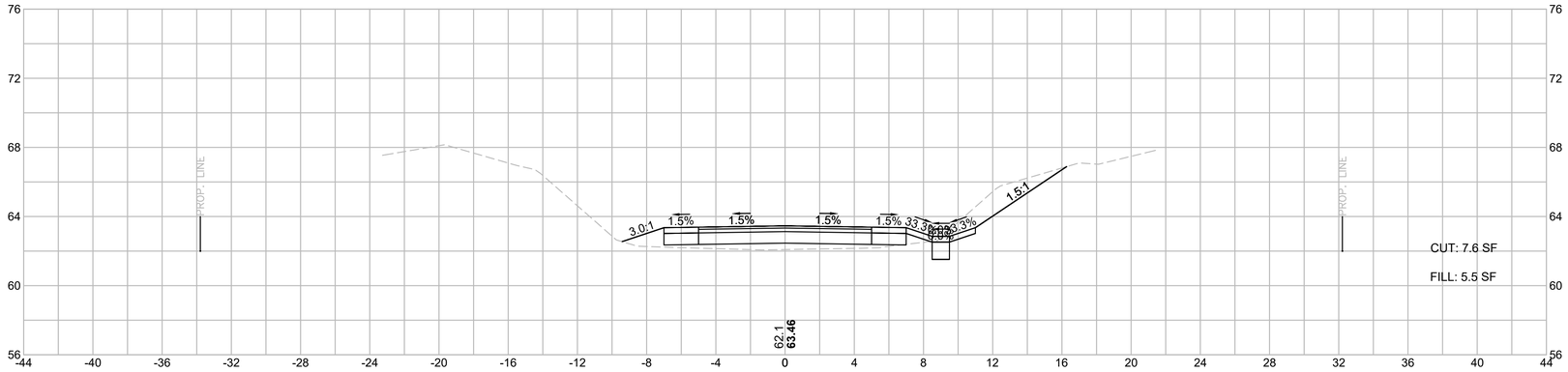

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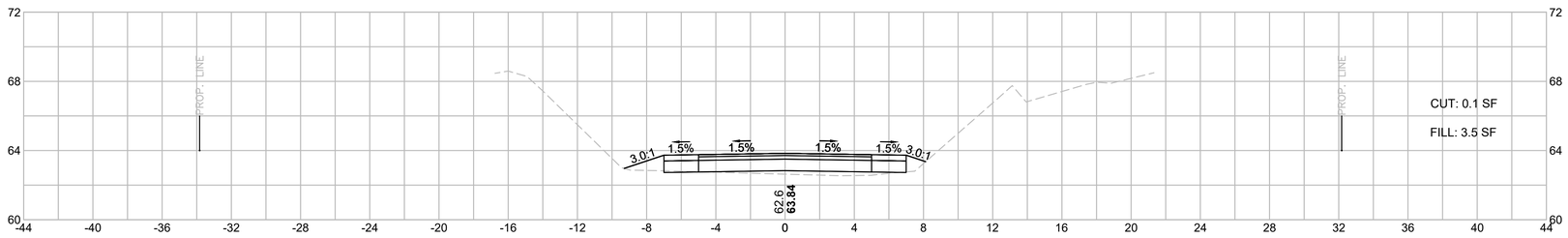

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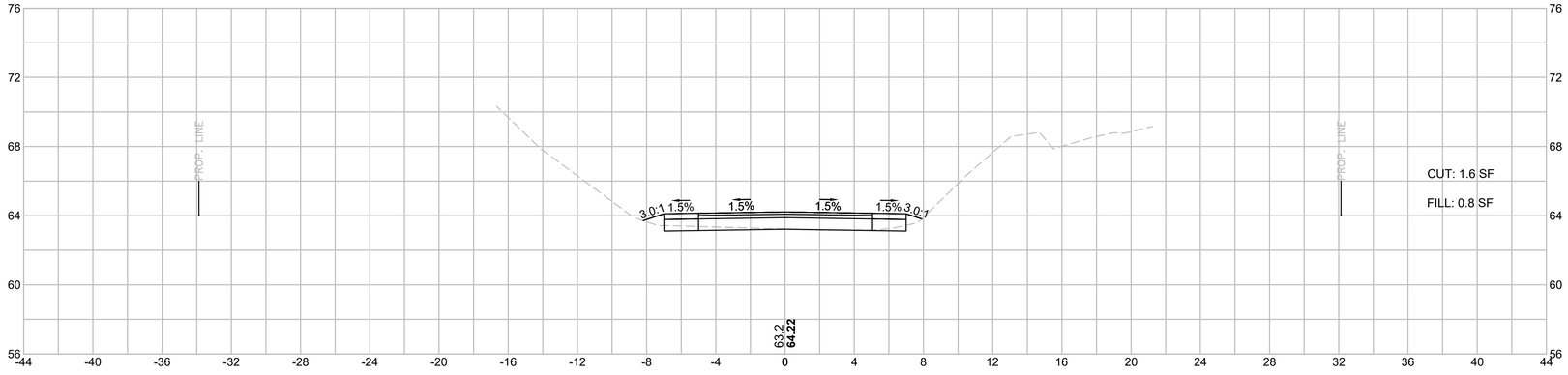


HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

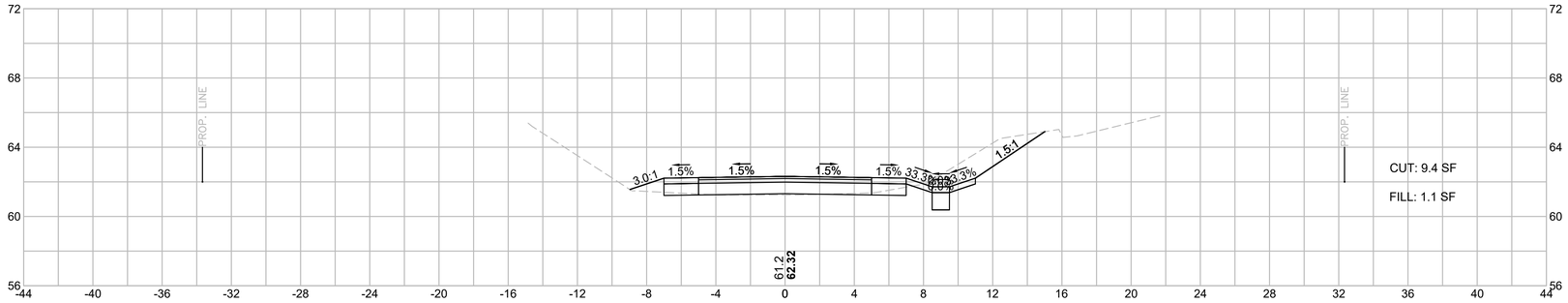
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	132	274
PROJECT FILE NO.	607979		

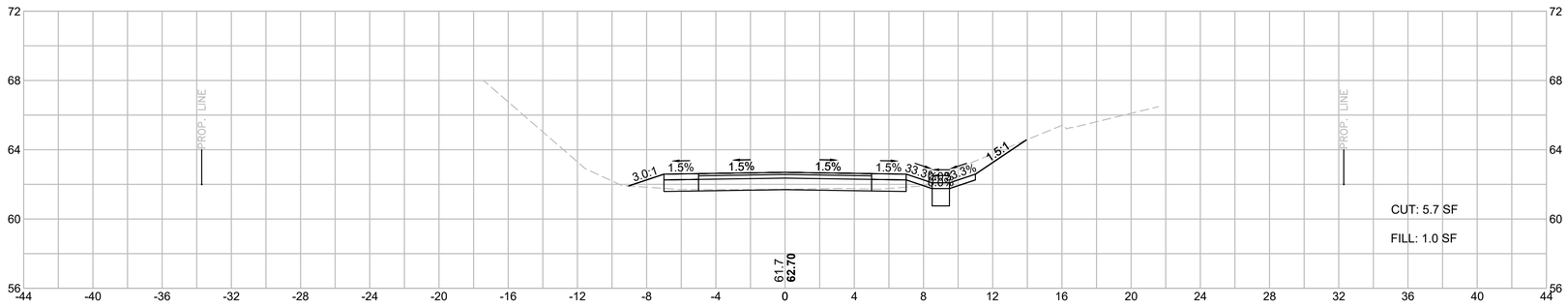
CROSS SECTIONS
SHEET 9 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

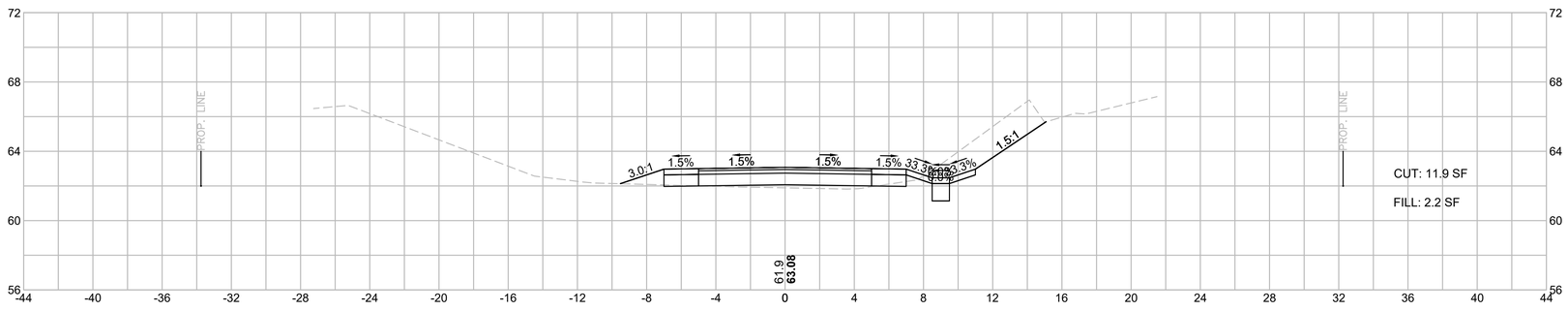
114+00



113+50



113+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

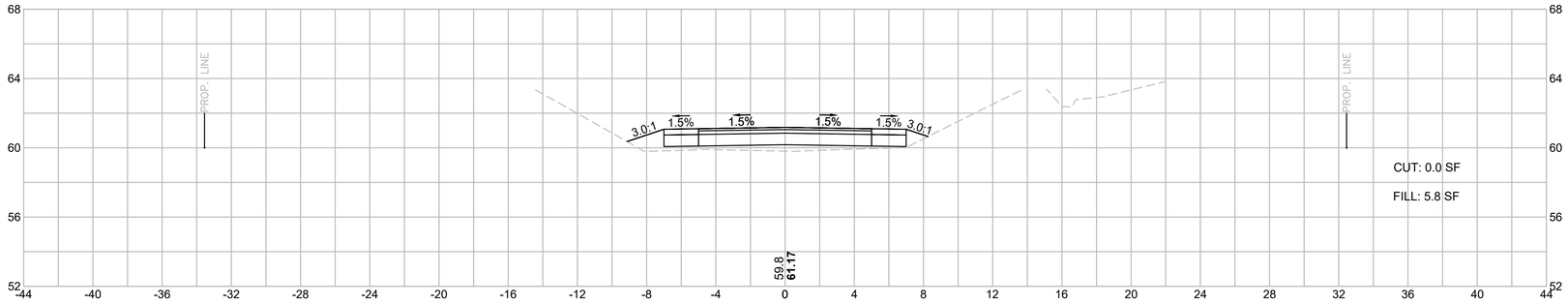
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	133	274
PROJECT FILE NO.	607979		

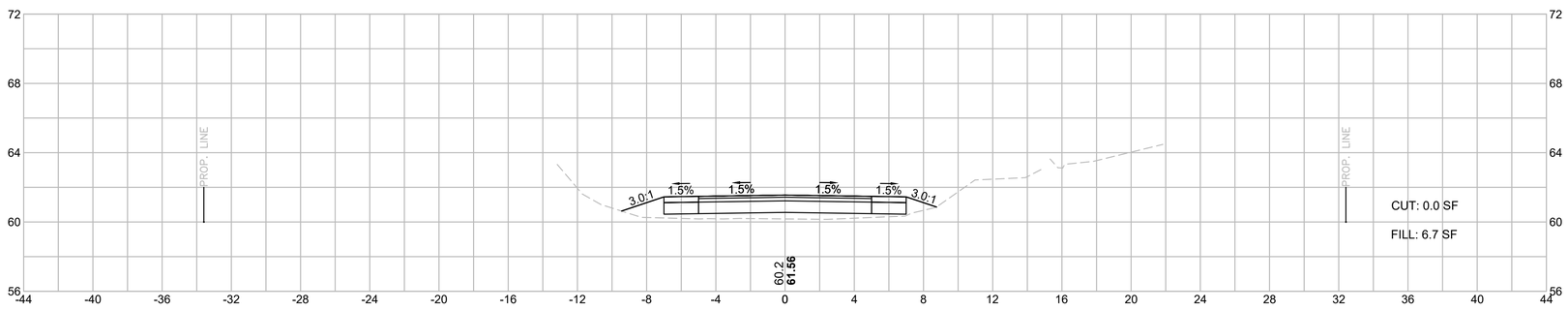
CROSS SECTIONS
SHEET 10 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

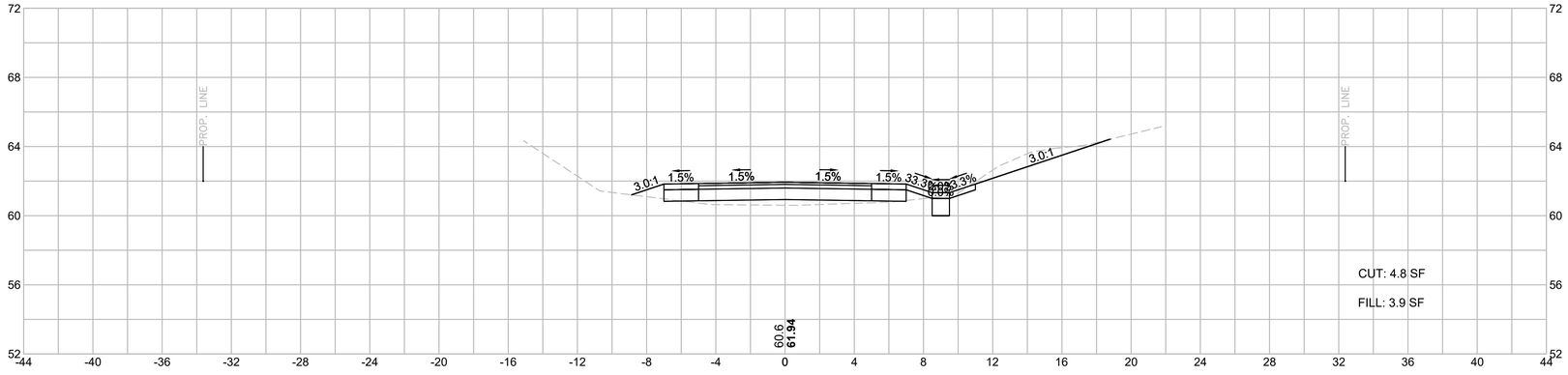
115+50



115+00



114+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

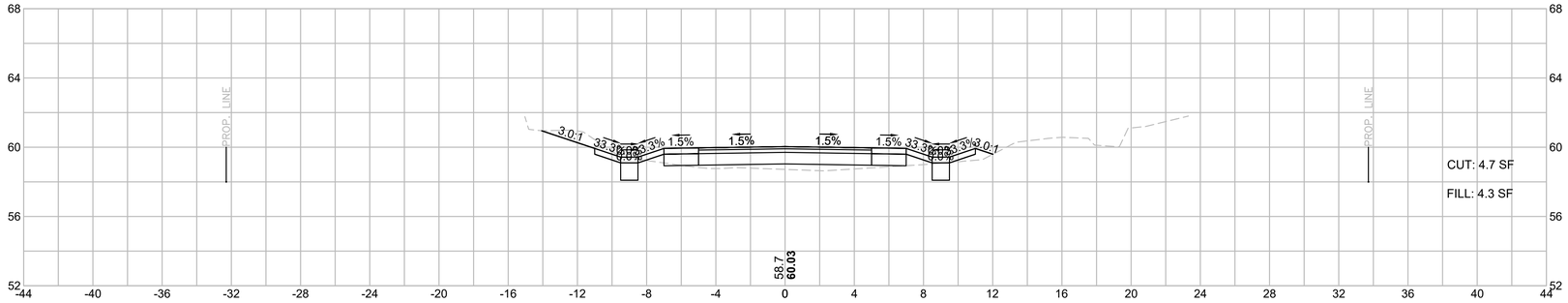
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	134	274
PROJECT FILE NO.	607979		

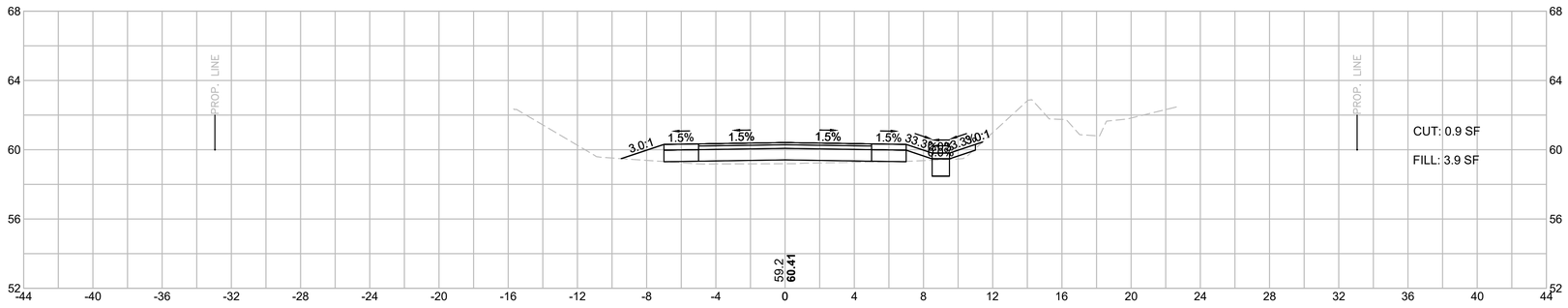
CROSS SECTIONS
SHEET 11 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

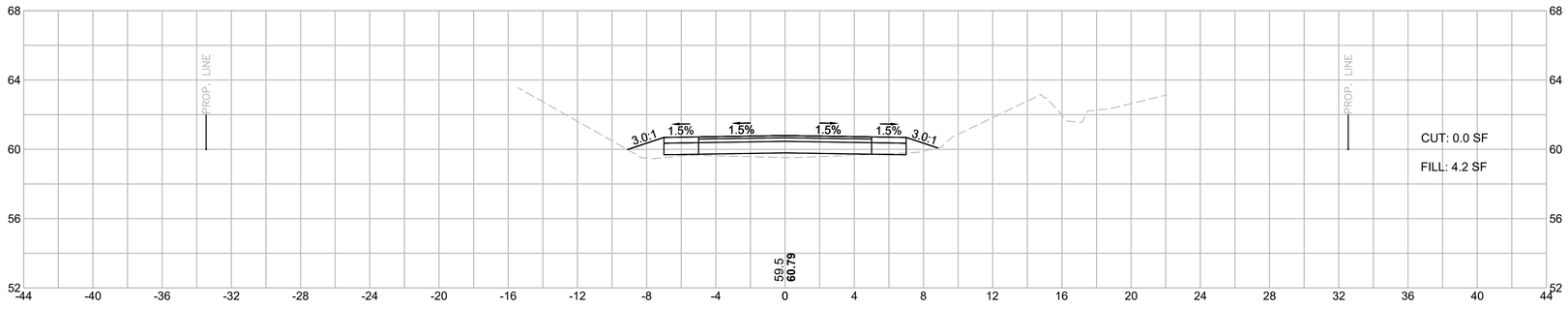
117+00



116+50



116+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

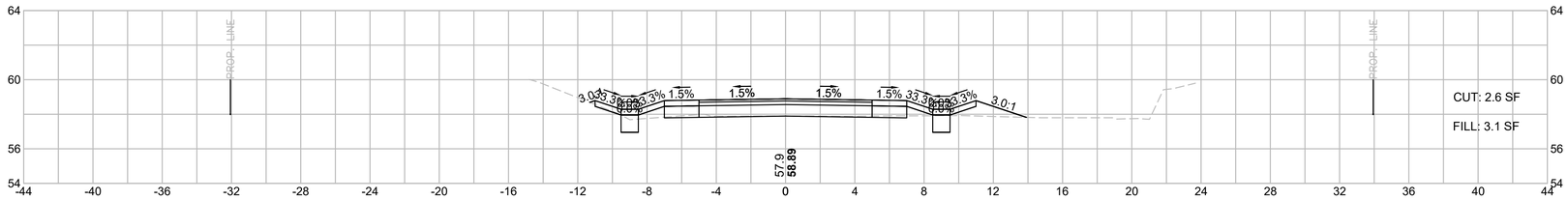
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	135	274
PROJECT FILE NO.	607979		

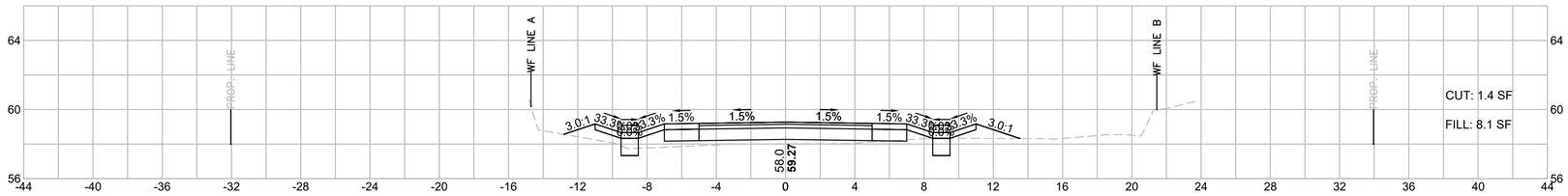
CROSS SECTIONS
SHEET 12 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

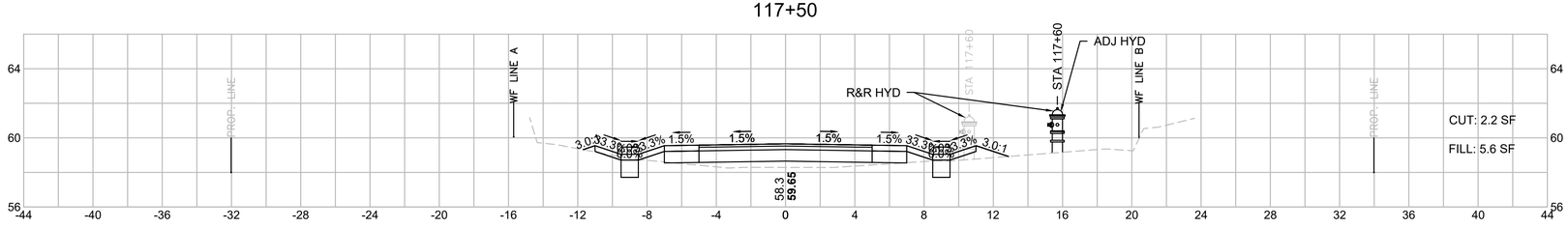
118+50



118+00



117+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

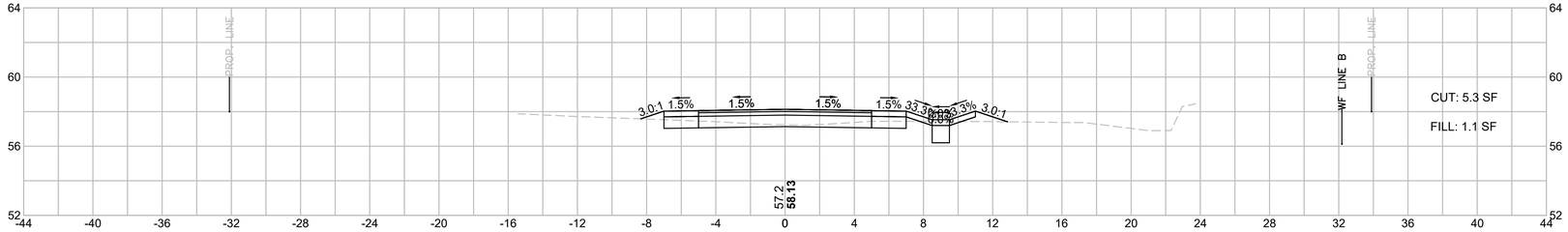
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	136	274
PROJECT FILE NO.	607979		

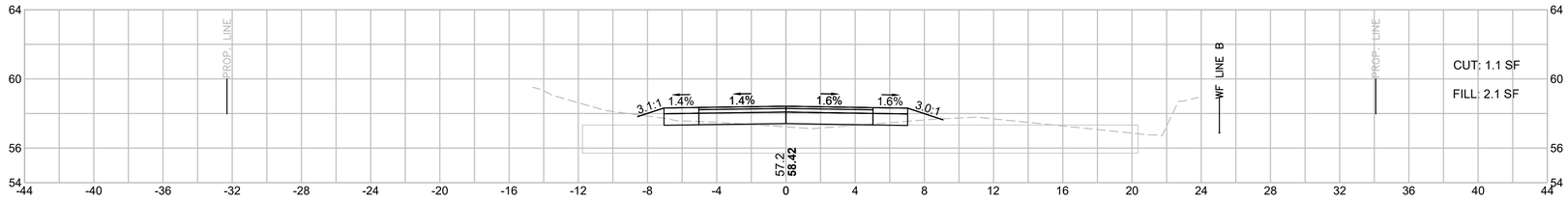
CROSS SECTIONS
SHEET 13 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

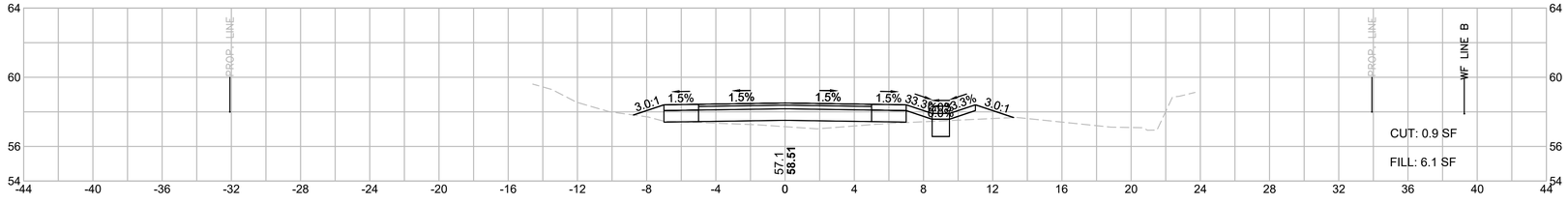
119+50



119+12



119+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

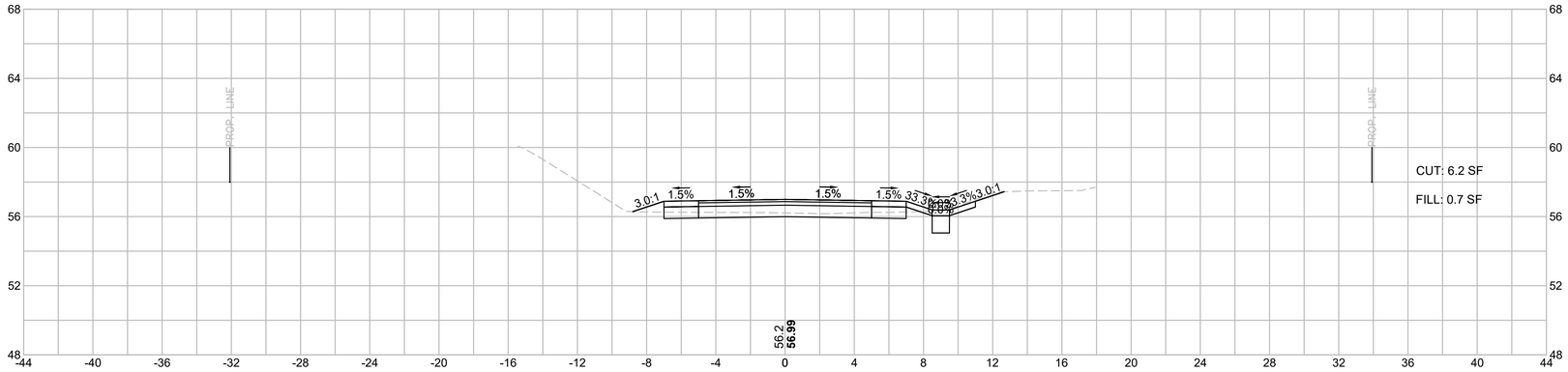
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	137	274
PROJECT FILE NO.	607979		

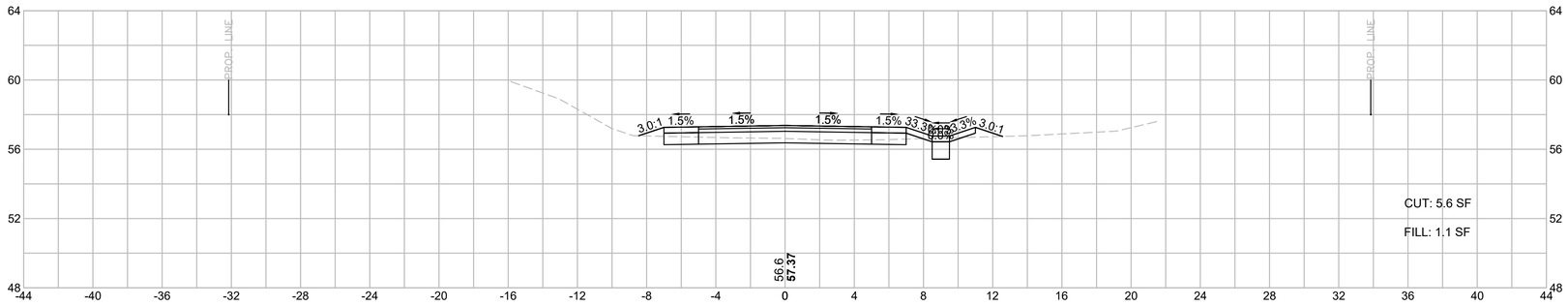
CROSS SECTIONS
SHEET 14 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

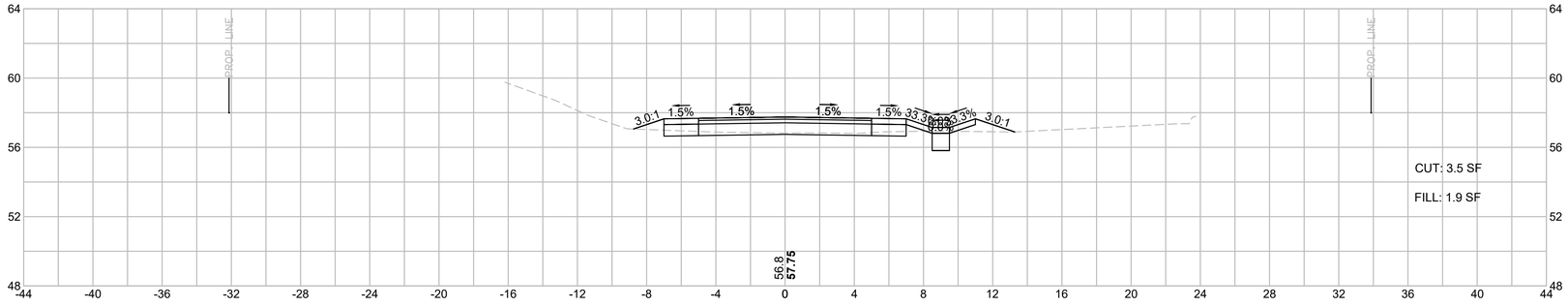
121+00



120+50



120+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

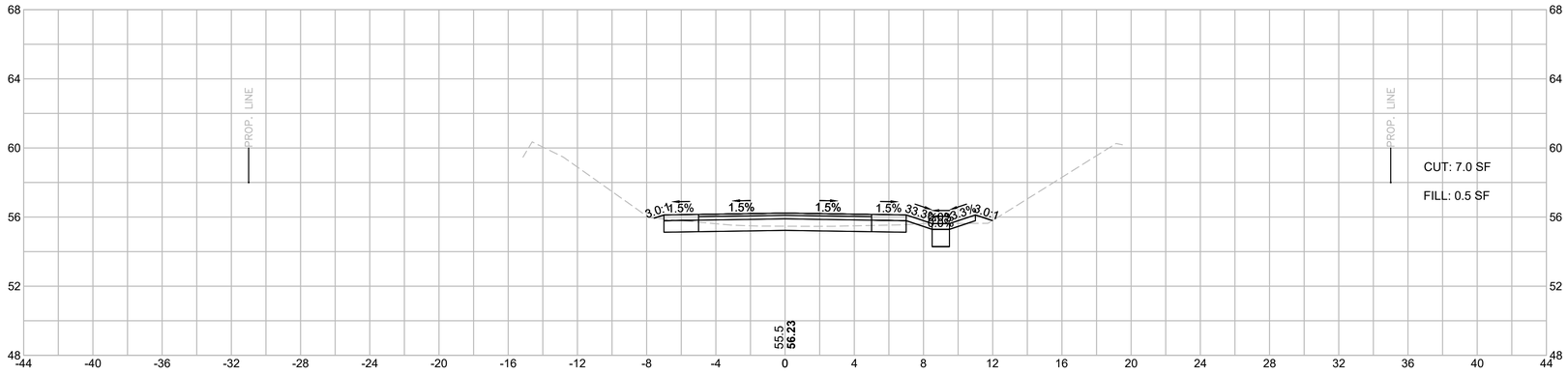
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	138	274
PROJECT FILE NO.	607979		

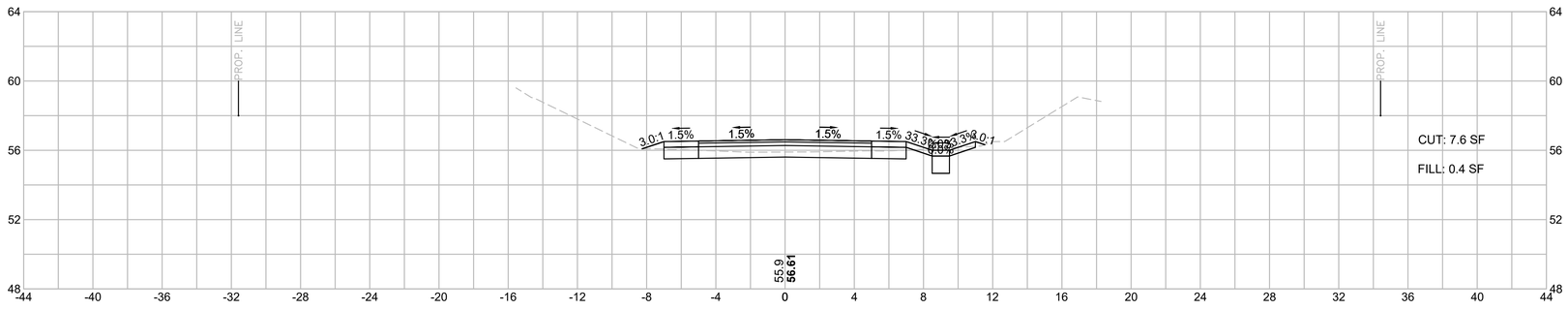
CROSS SECTIONS
SHEET 15 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

122+00



121+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

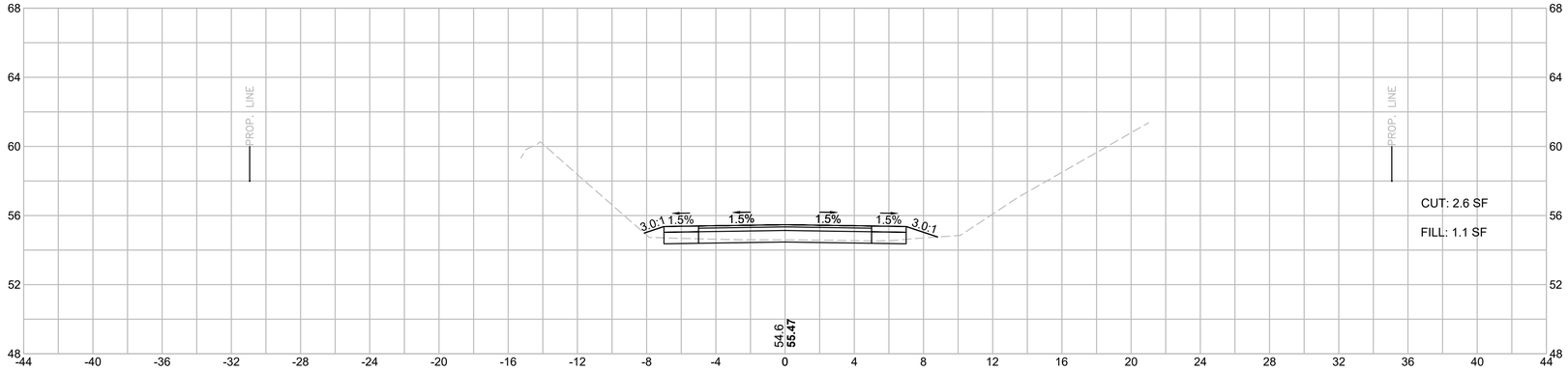
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	139	274
PROJECT FILE NO.	607979		

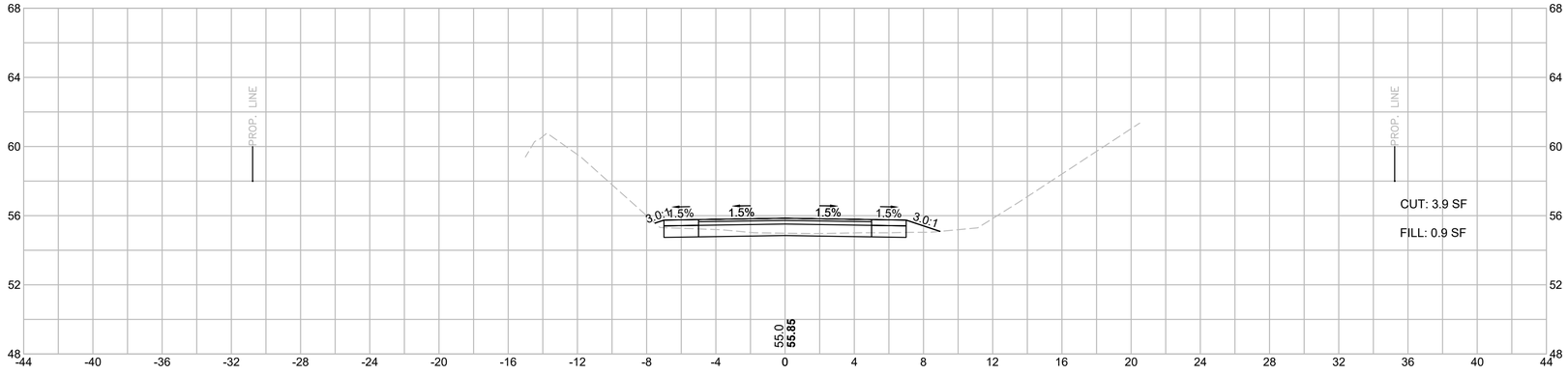
CROSS SECTIONS
SHEET 16 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

123+00



122+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

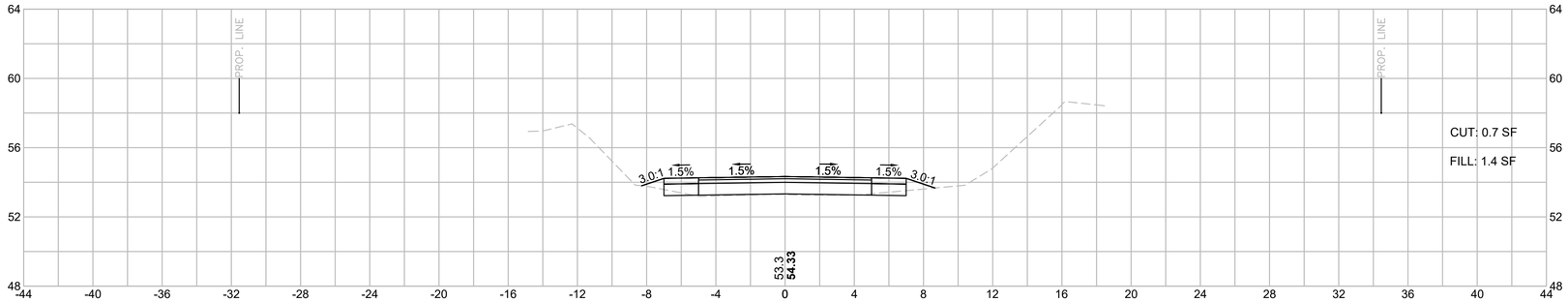
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	140	274
PROJECT FILE NO.	607979		

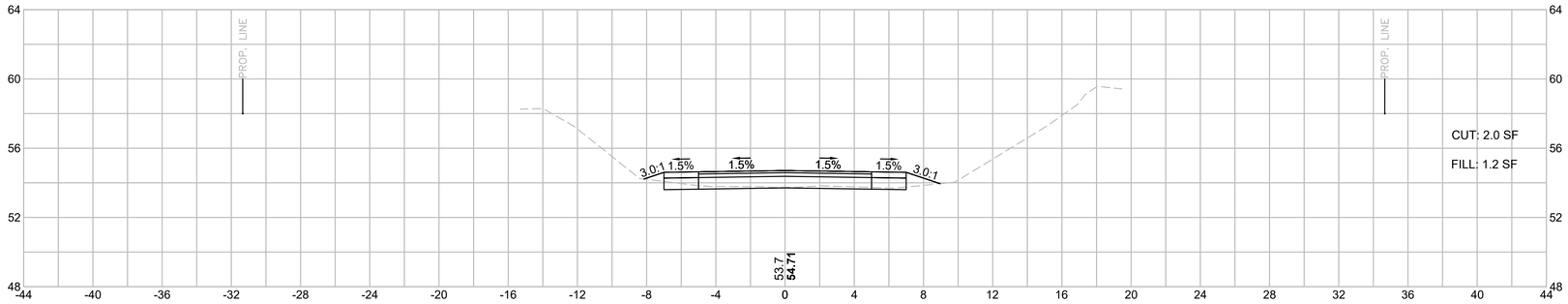
CROSS SECTIONS
SHEET 17 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

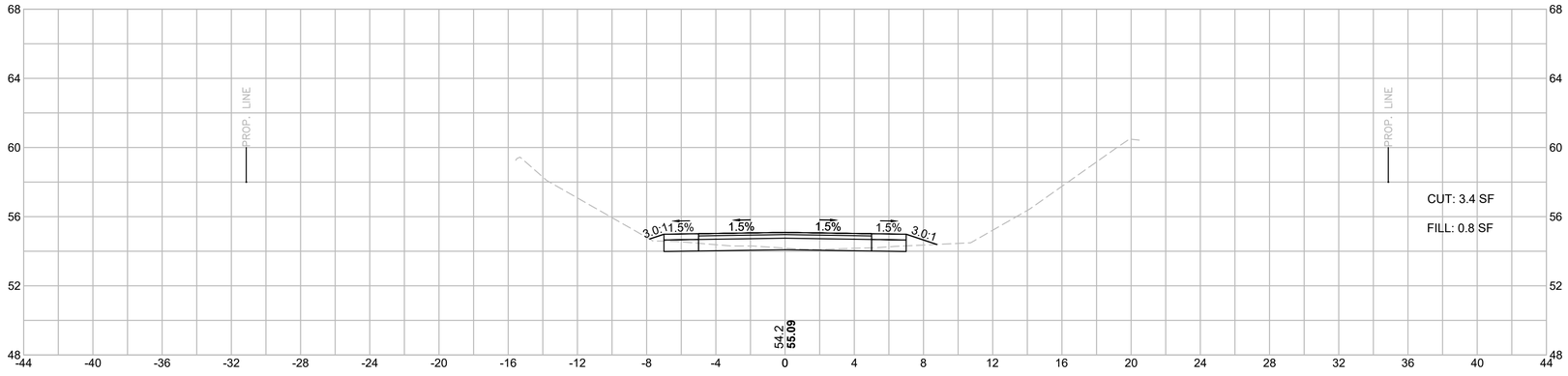
124+50



124+00



123+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

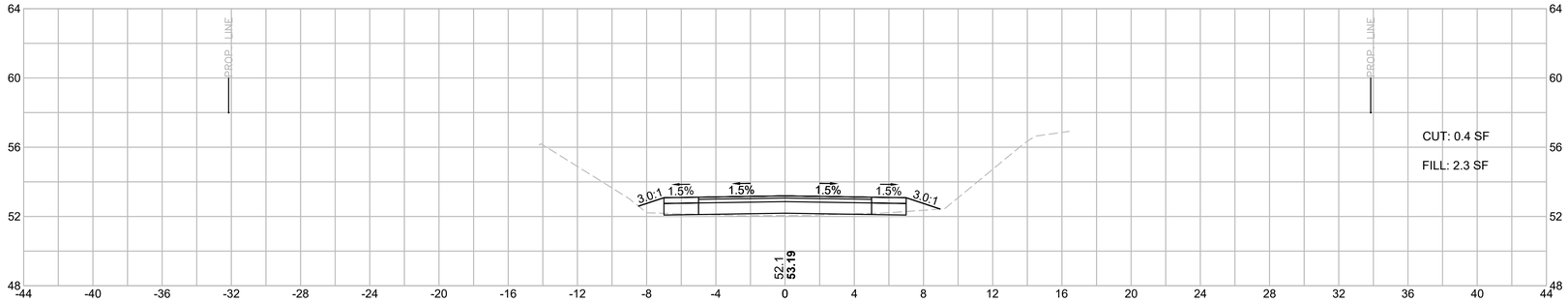
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	141	274
PROJECT FILE NO.	607979		

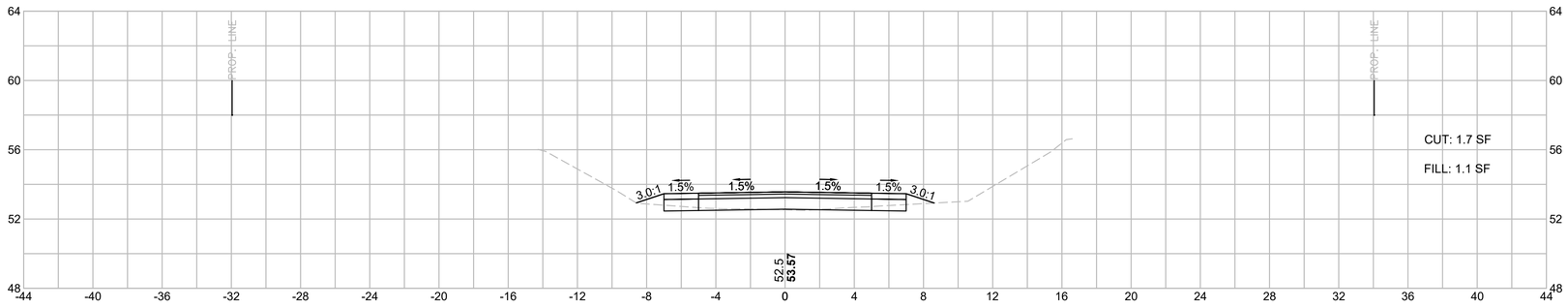
CROSS SECTIONS
SHEET 18 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

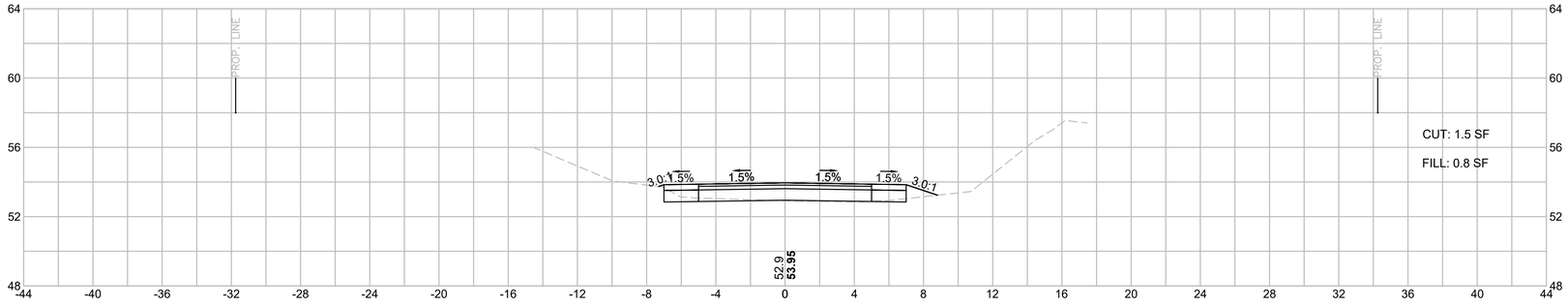
126+00



125+50



125+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

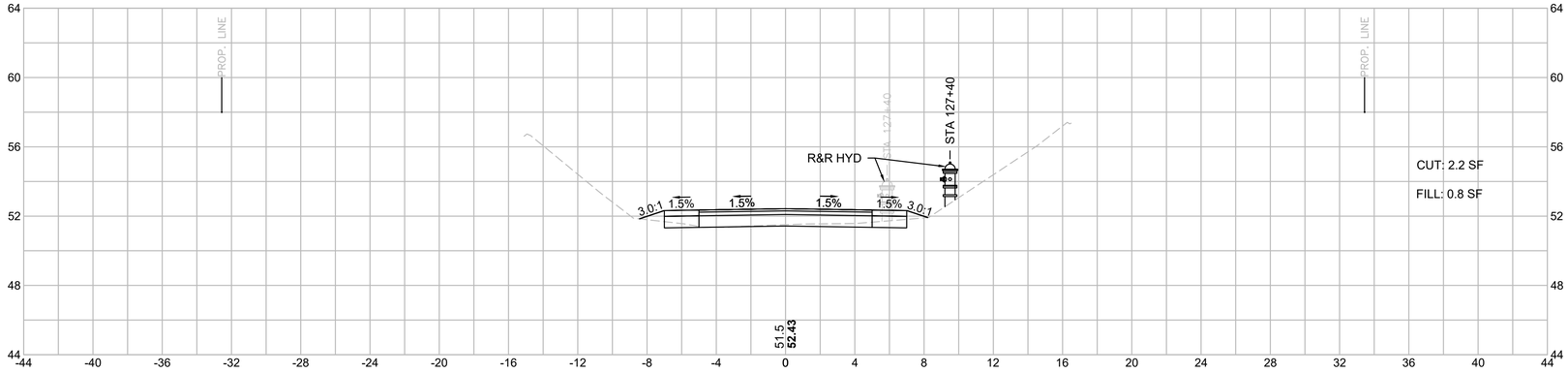
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	142	274
PROJECT FILE NO.	607979		

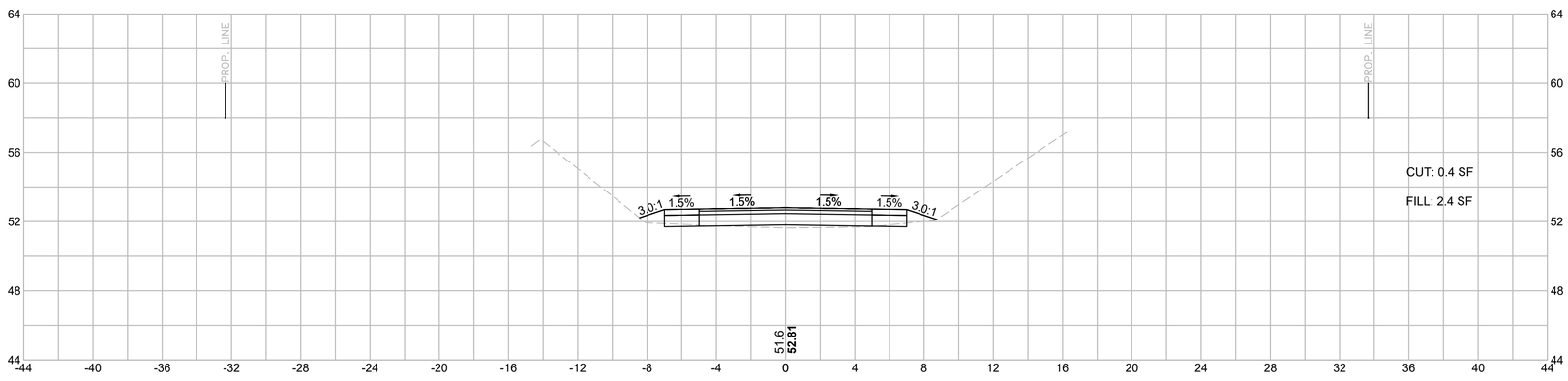
CROSS SECTIONS
SHEET 19 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

127+00



126+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

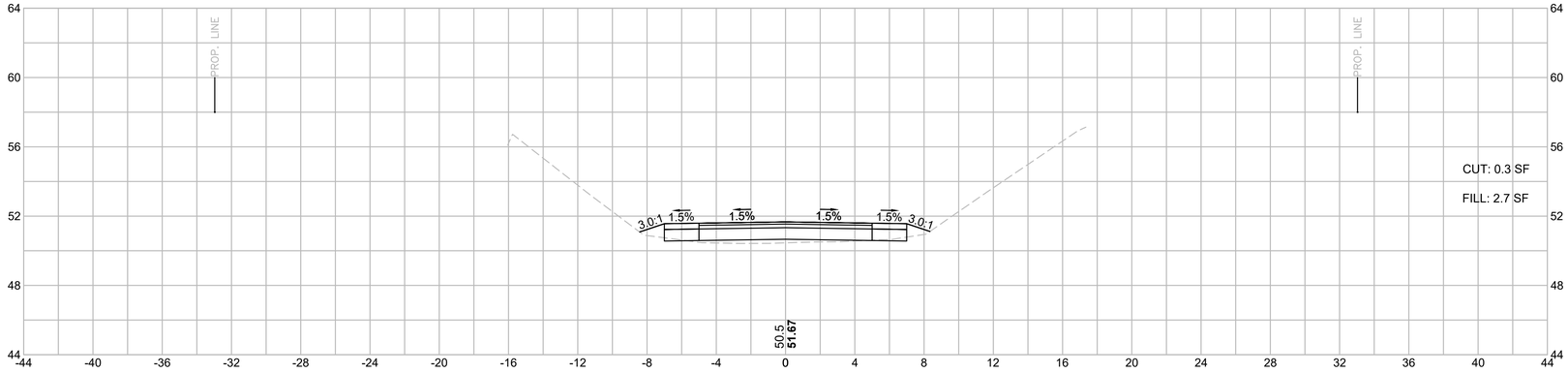
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	143	274
PROJECT FILE NO.	607979		

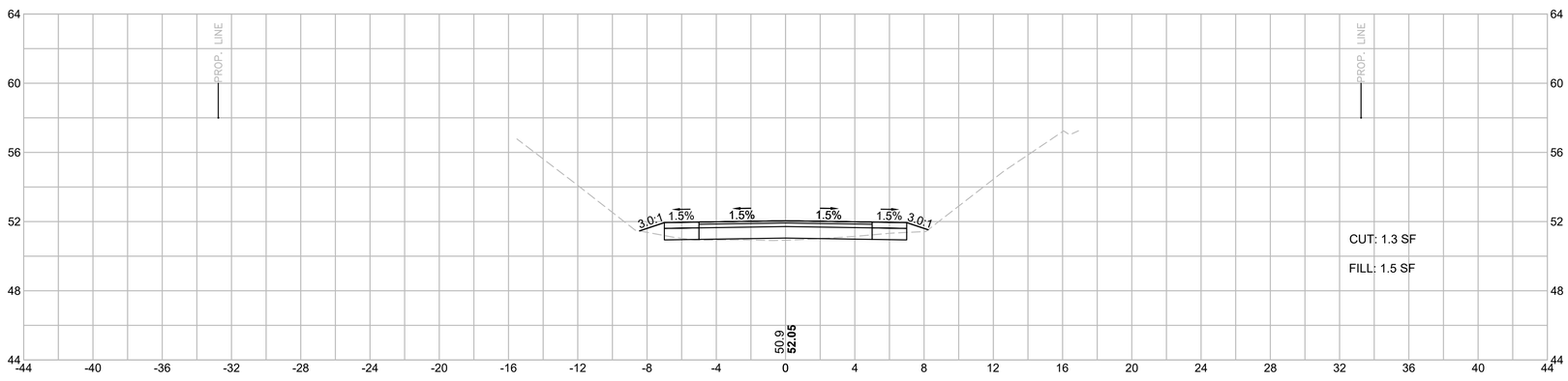
CROSS SECTIONS
SHEET 20 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

128+00



127+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

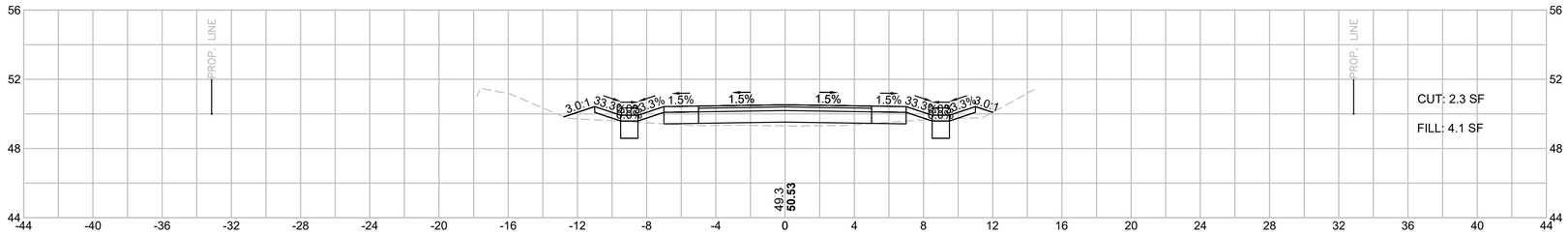
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	144	274
PROJECT FILE NO.	607979		

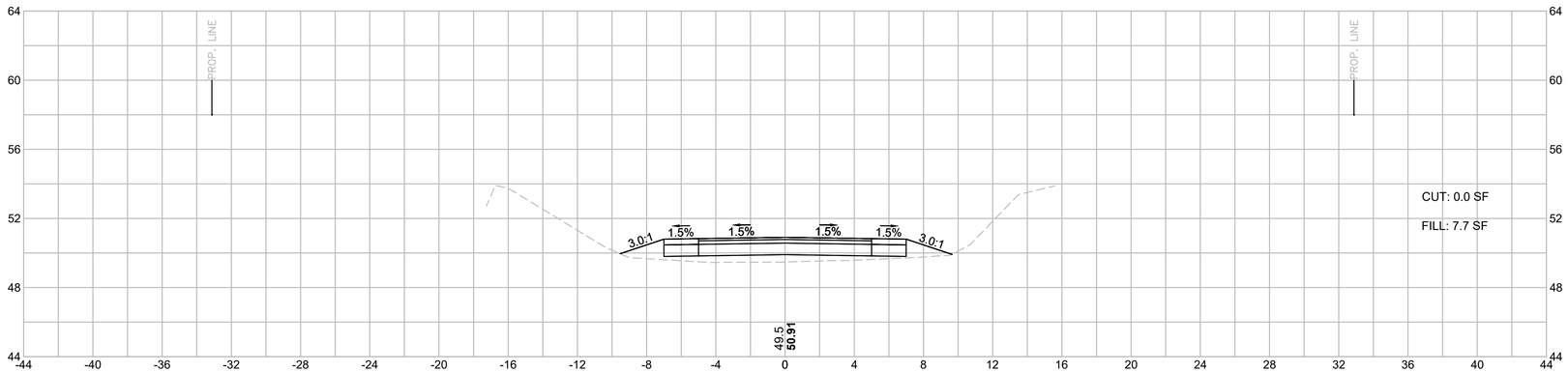
CROSS SECTIONS
SHEET 21 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

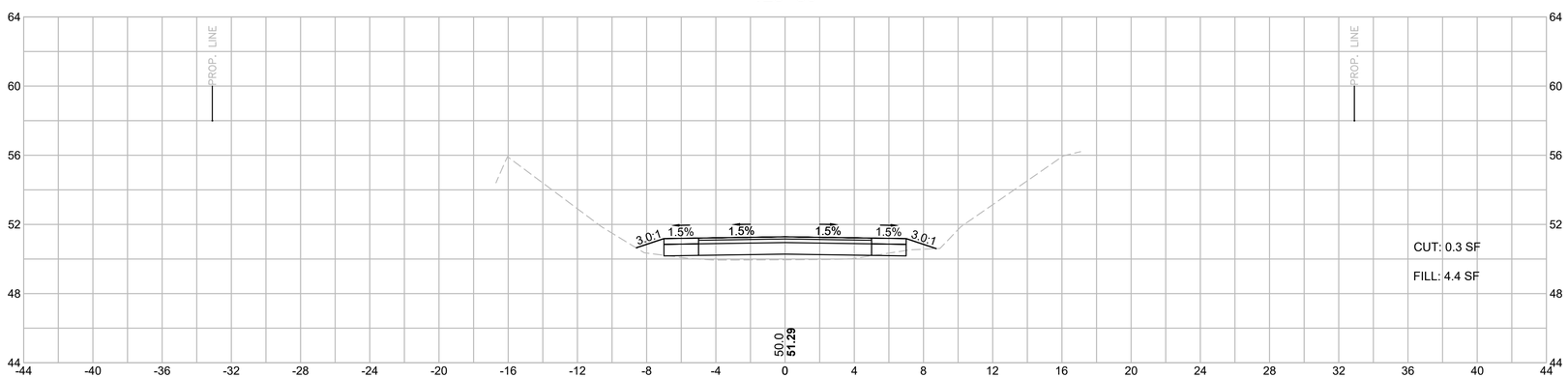
129+50



129+00



128+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

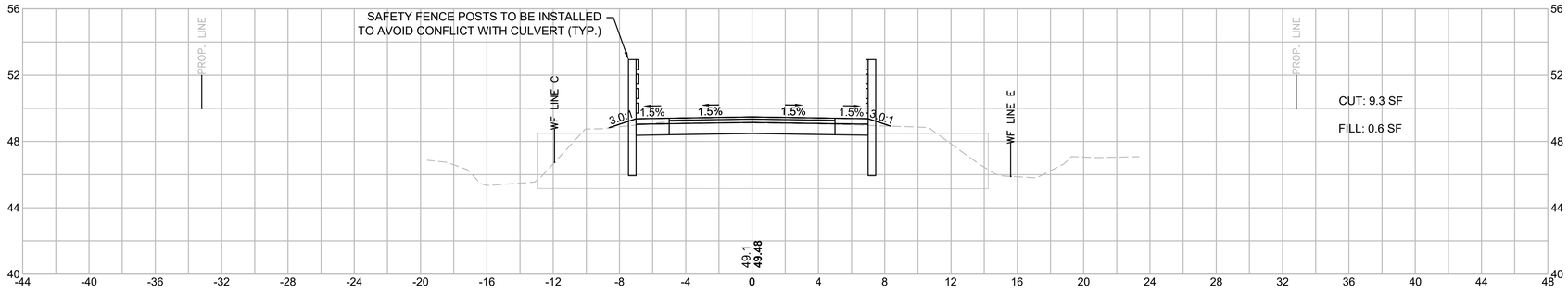
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	145	274
PROJECT FILE NO.	607979		

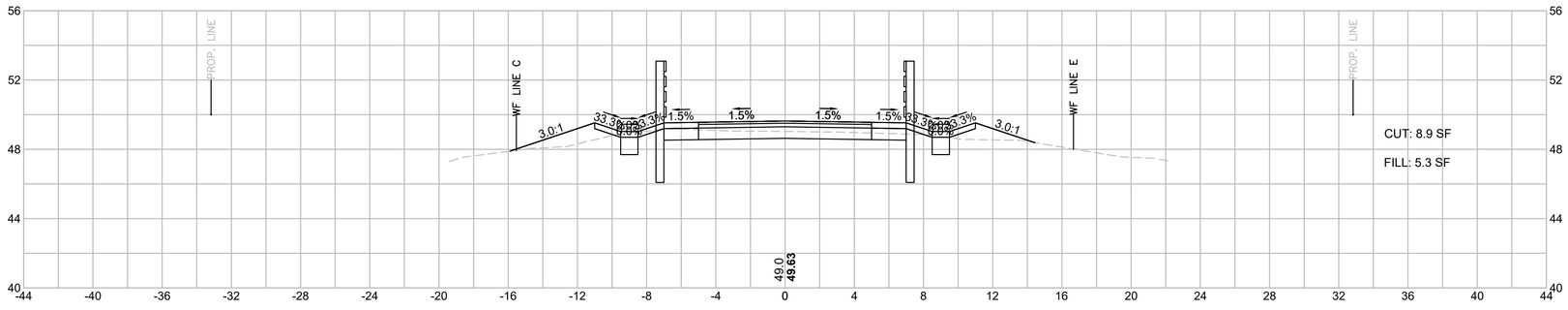
CROSS SECTIONS
SHEET 22 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

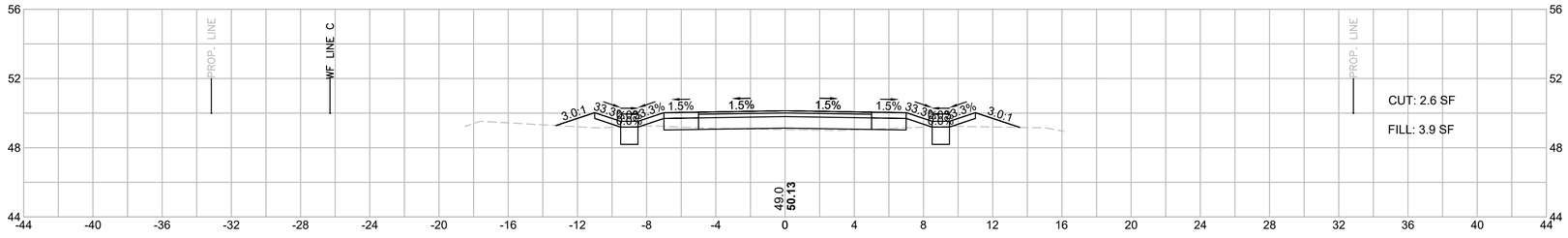
130+63.35



130+50



130+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

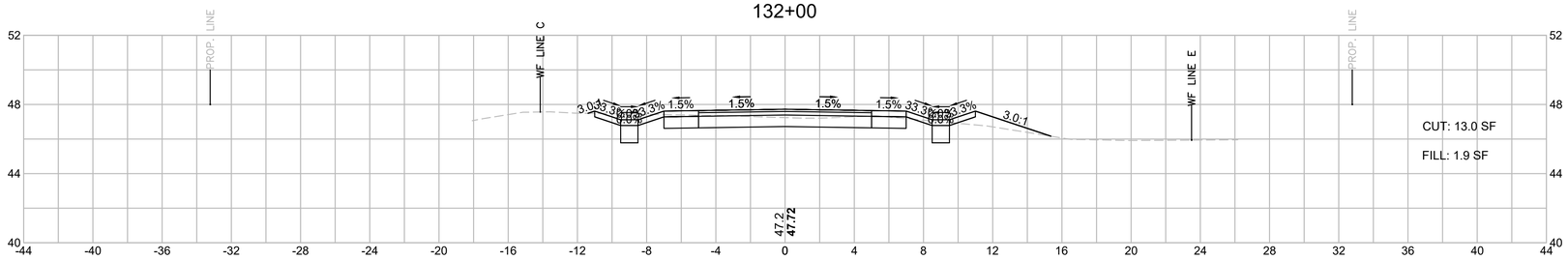
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	146	274
PROJECT FILE NO.	607979		

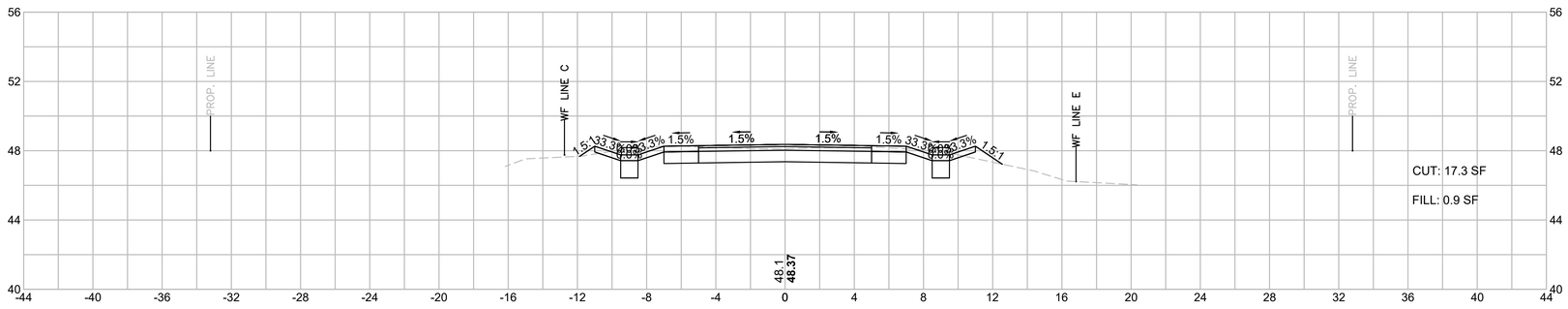
CROSS SECTIONS
SHEET 23 OF 151

Plotted on 28-Sep-2017 3:43 PM
607979_XSECT.DWG

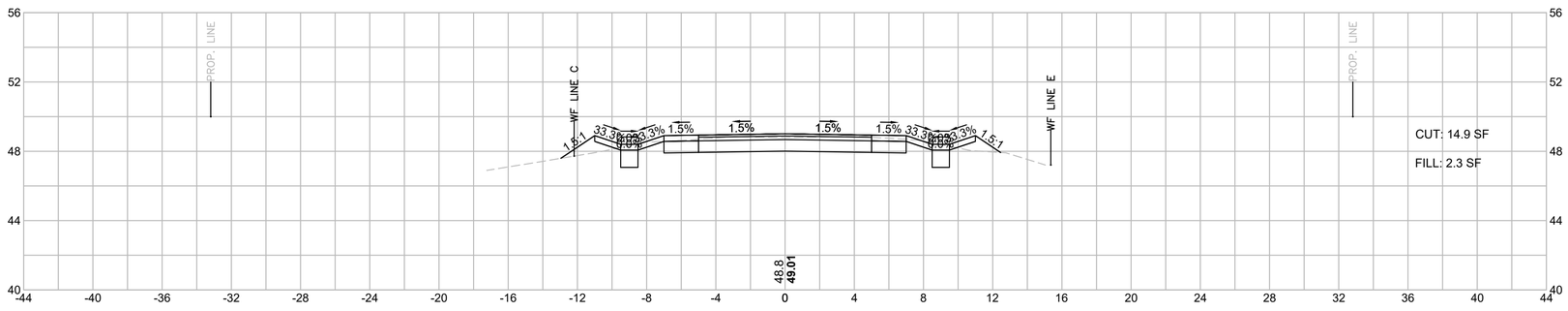
132+00



131+50



131+00



HOR. SCALE IN FEET
VER. SCALE IN FEET

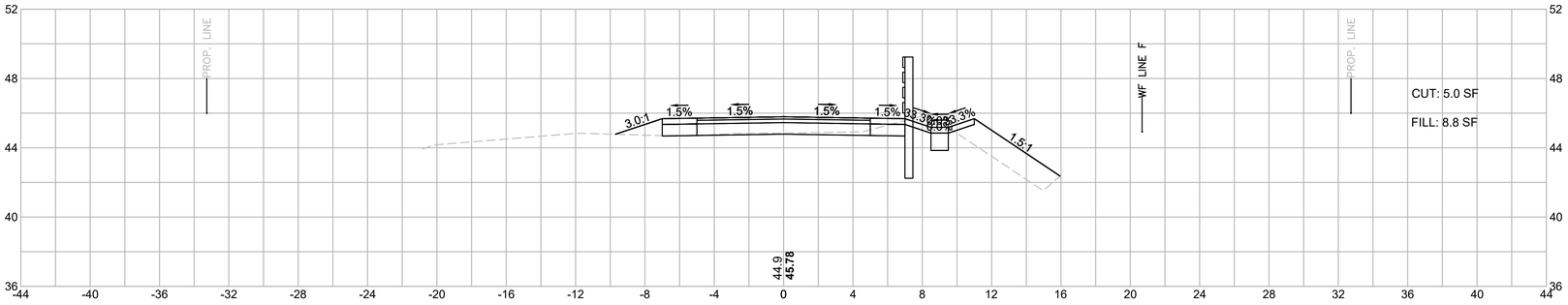
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	147	274
PROJECT FILE NO.	607979		

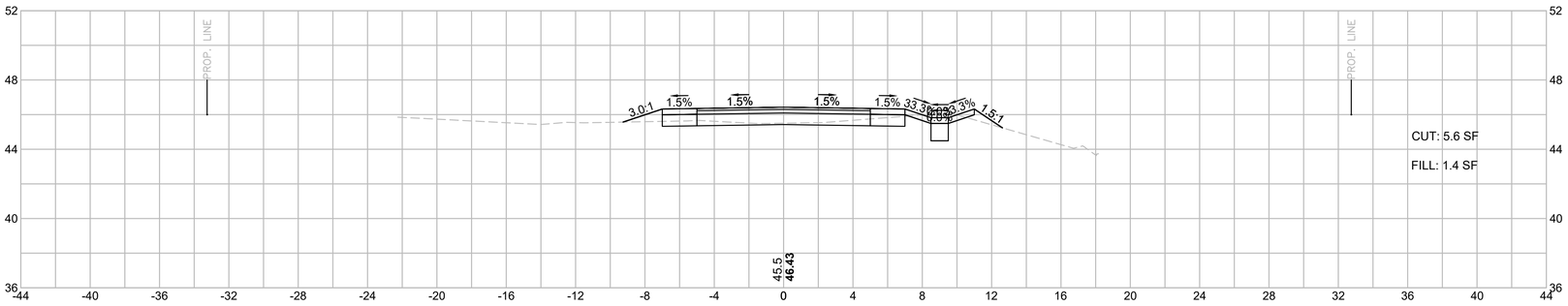
CROSS SECTIONS
SHEET 24 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

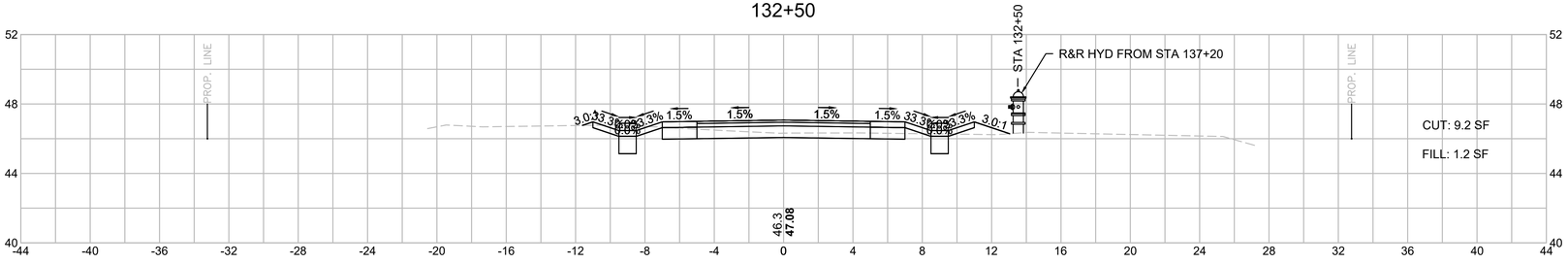
133+50



133+00



132+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

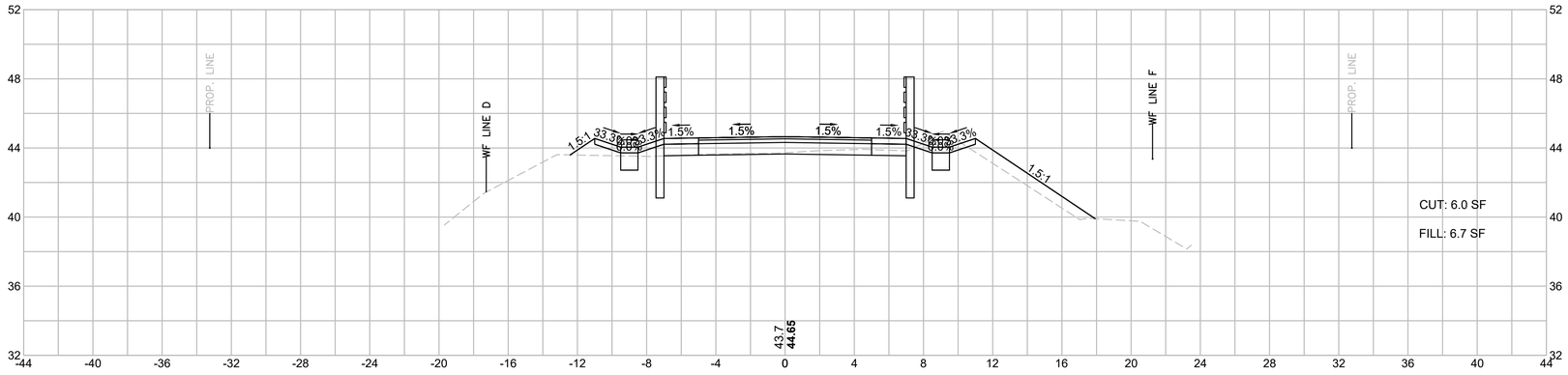
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	148	274
PROJECT FILE NO.	607979		

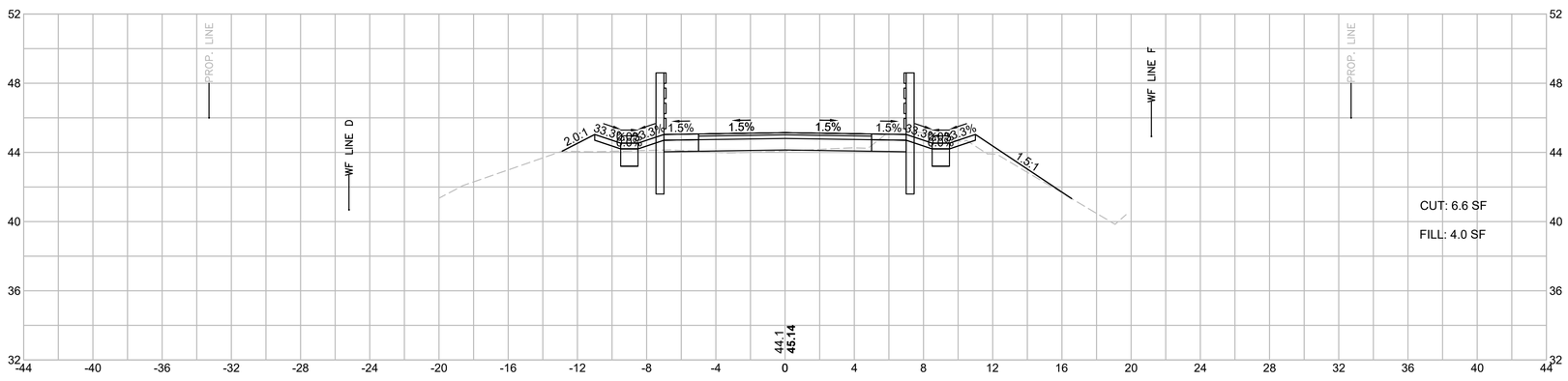
CROSS SECTIONS
SHEET 25 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

134+50



134+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

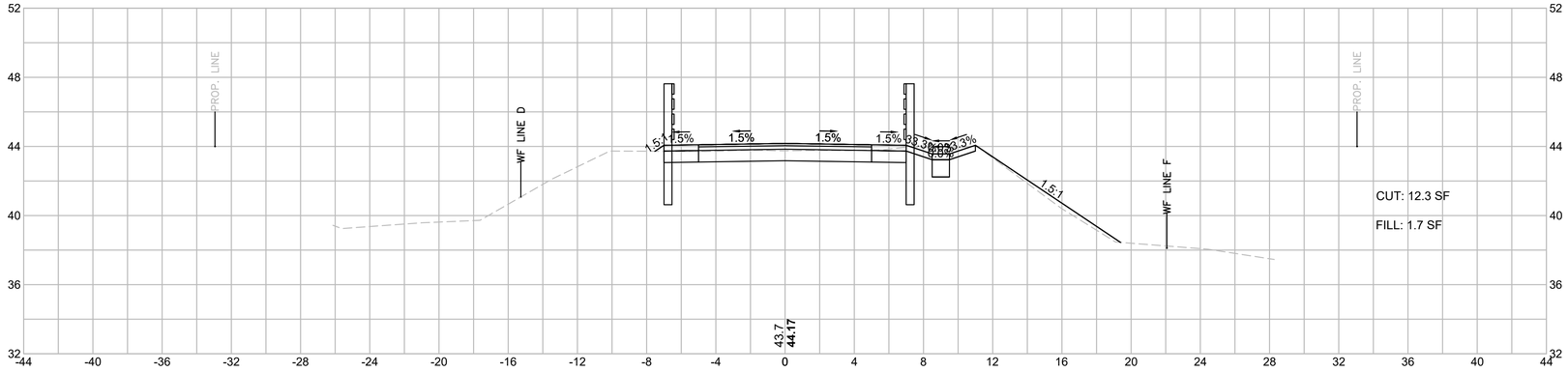
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	149	274
PROJECT FILE NO.	607979		

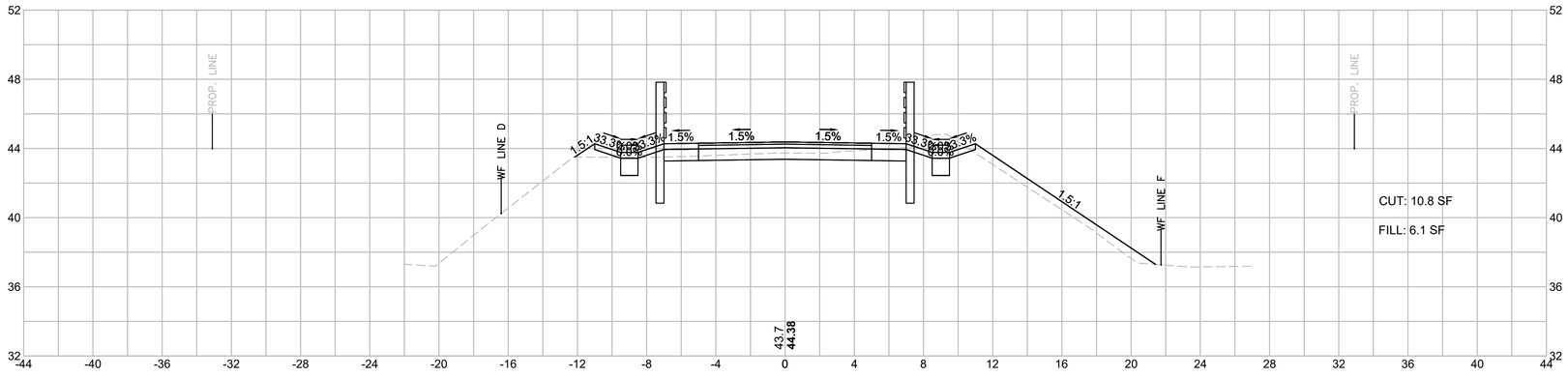
CROSS SECTIONS
SHEET 26 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

135+50



135+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

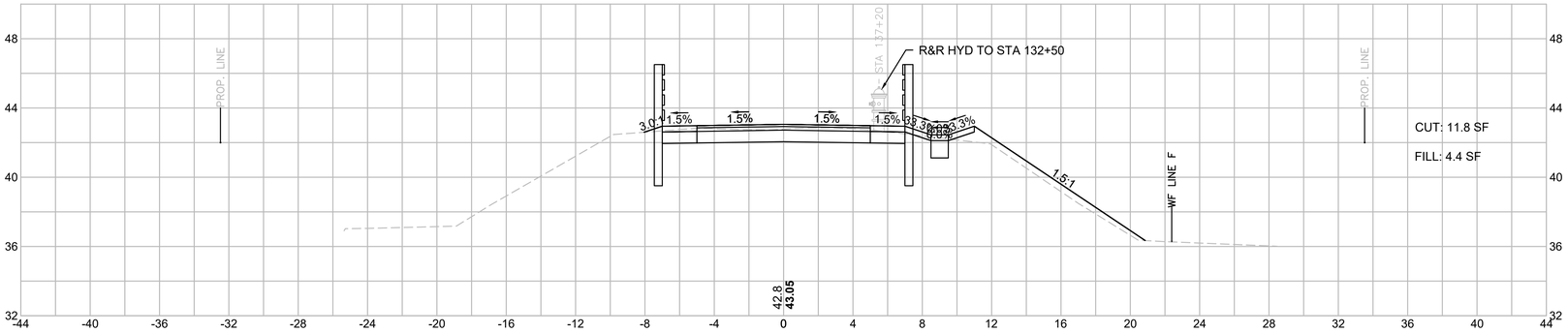
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	150	274
PROJECT FILE NO.	607979		

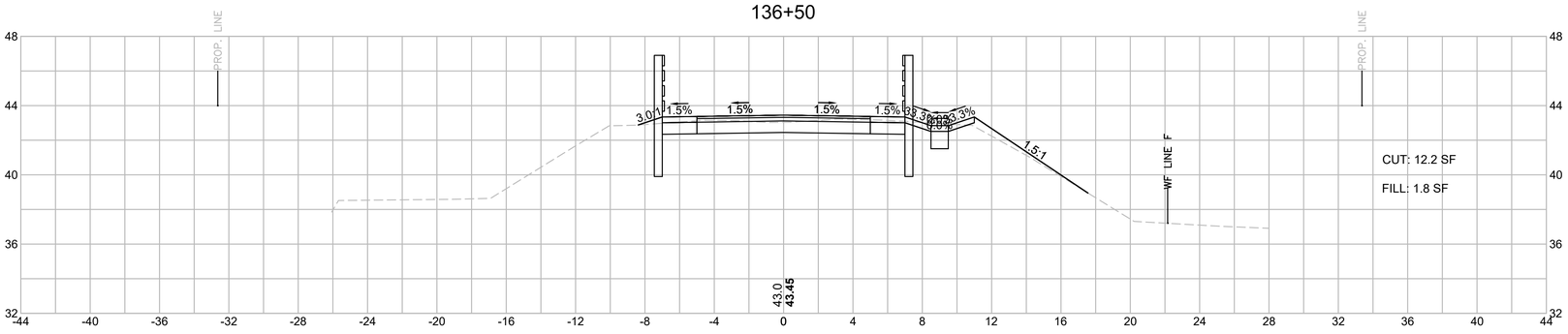
CROSS SECTIONS
SHEET 27 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

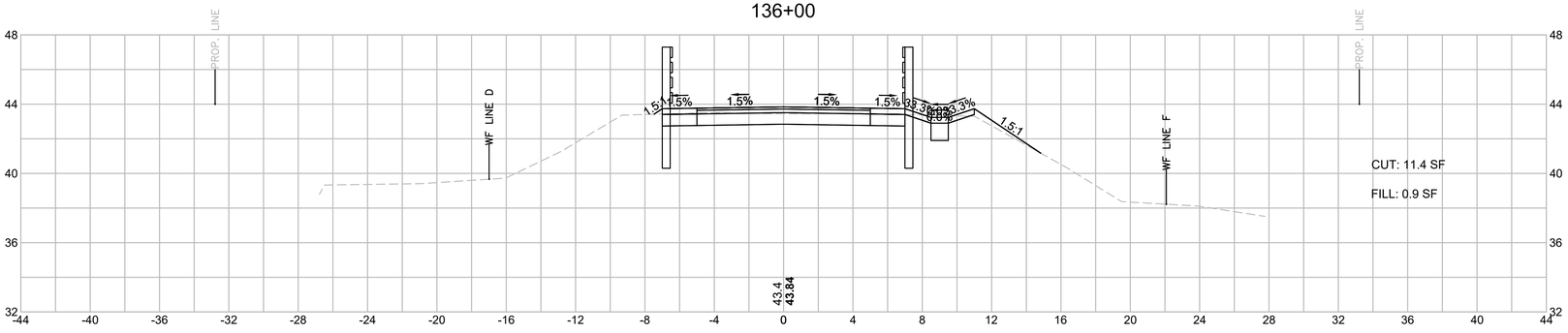
137+00



136+50



136+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

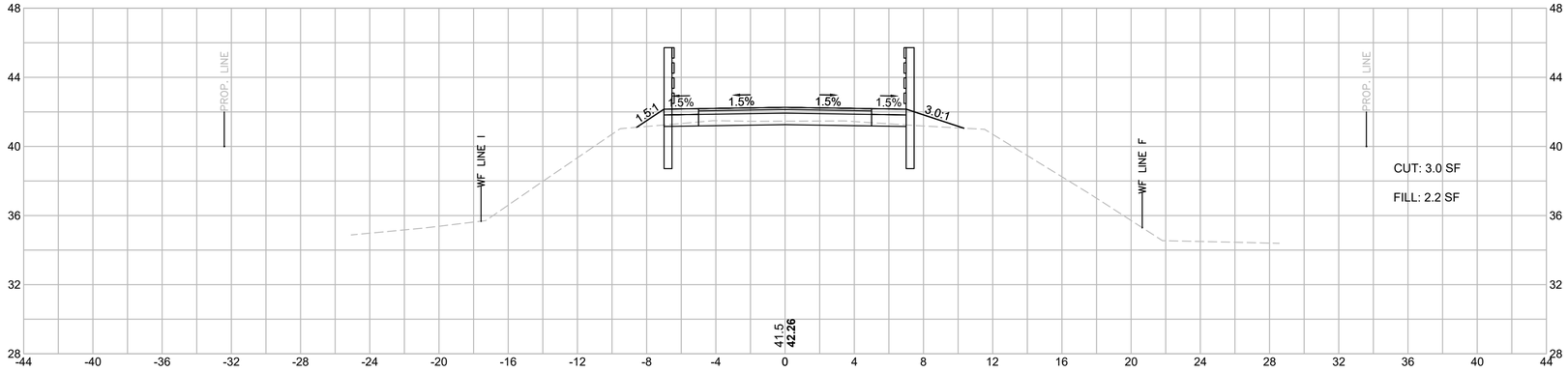
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	151	274
PROJECT FILE NO.	607979		

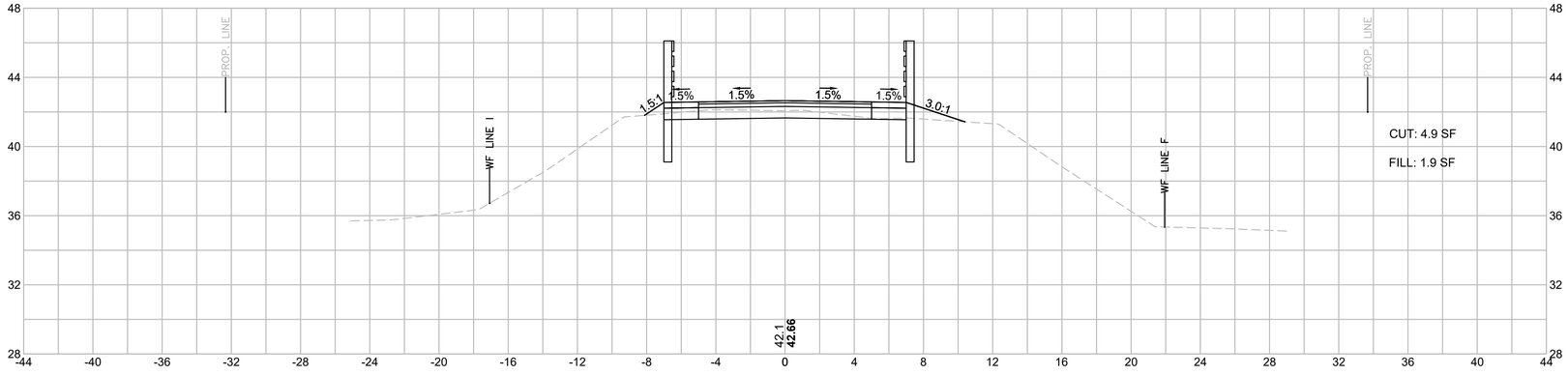
CROSS SECTIONS
SHEET 28 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

138+00



137+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

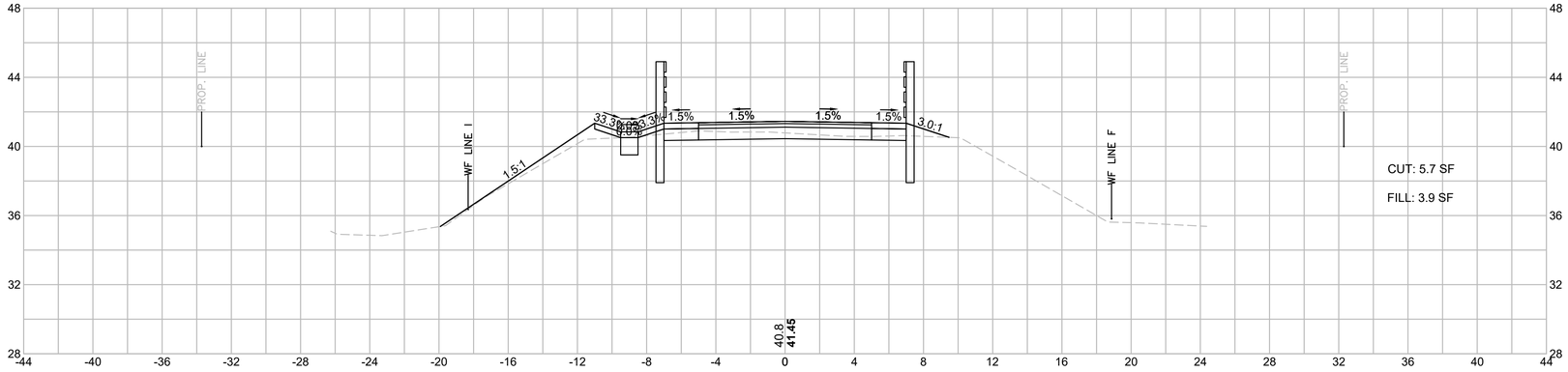
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	152	274
PROJECT FILE NO.	607979		

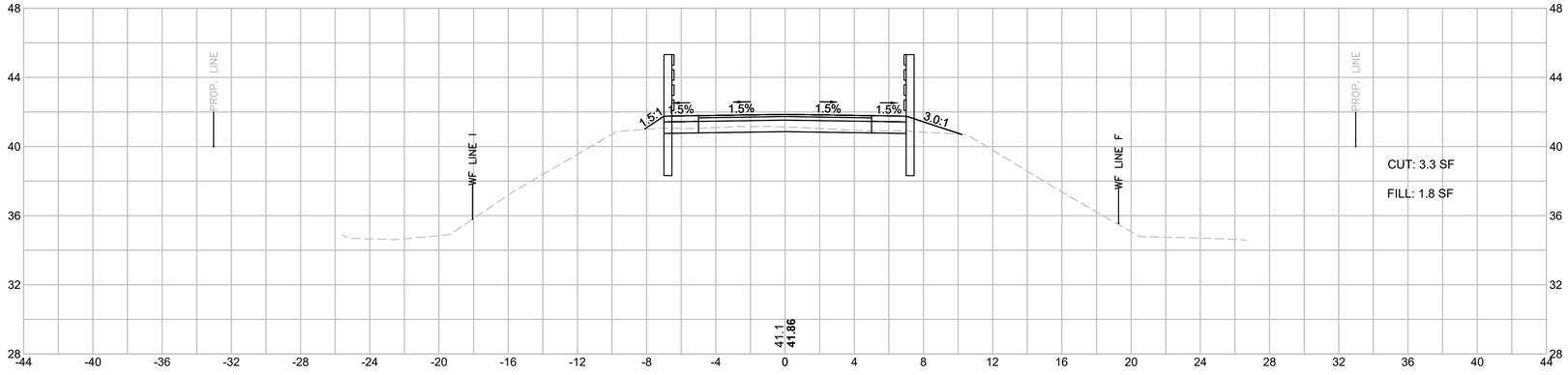
CROSS SECTIONS
SHEET 29 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

139+00



138+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

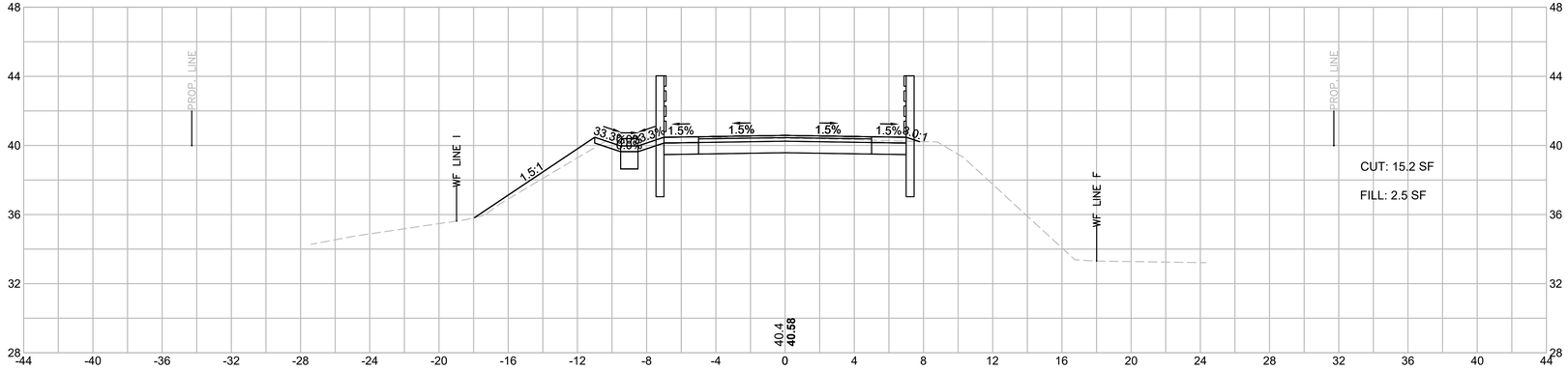
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	153	274
PROJECT FILE NO.	607979		

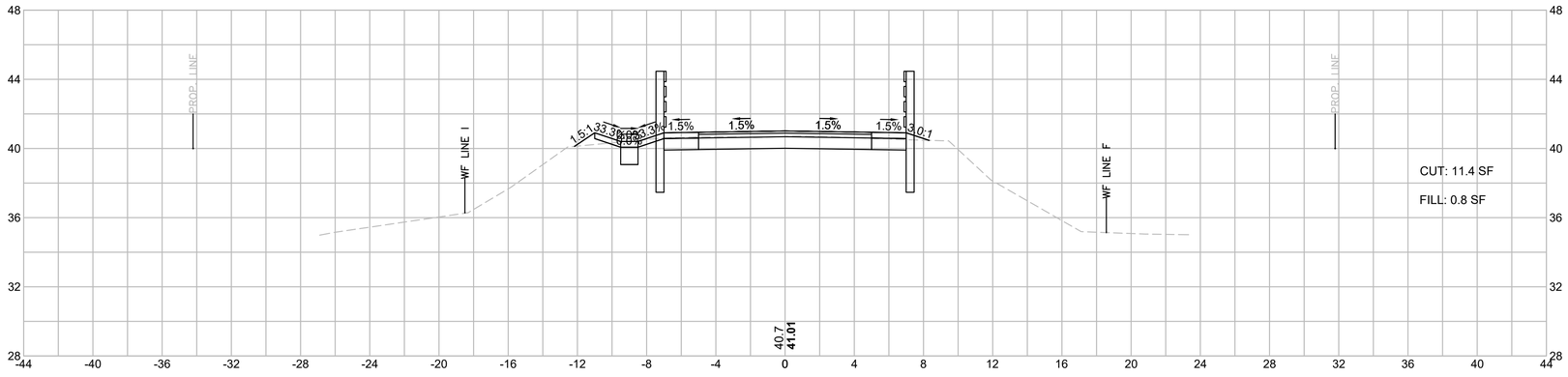
CROSS SECTIONS
SHEET 30 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

140+00



139+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

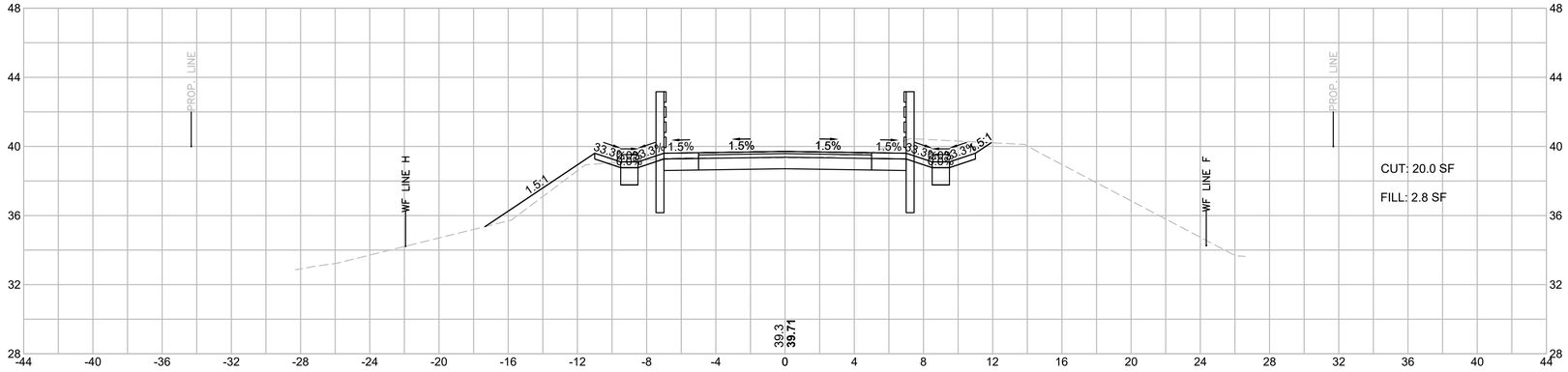
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	154	274
PROJECT FILE NO.	607979		

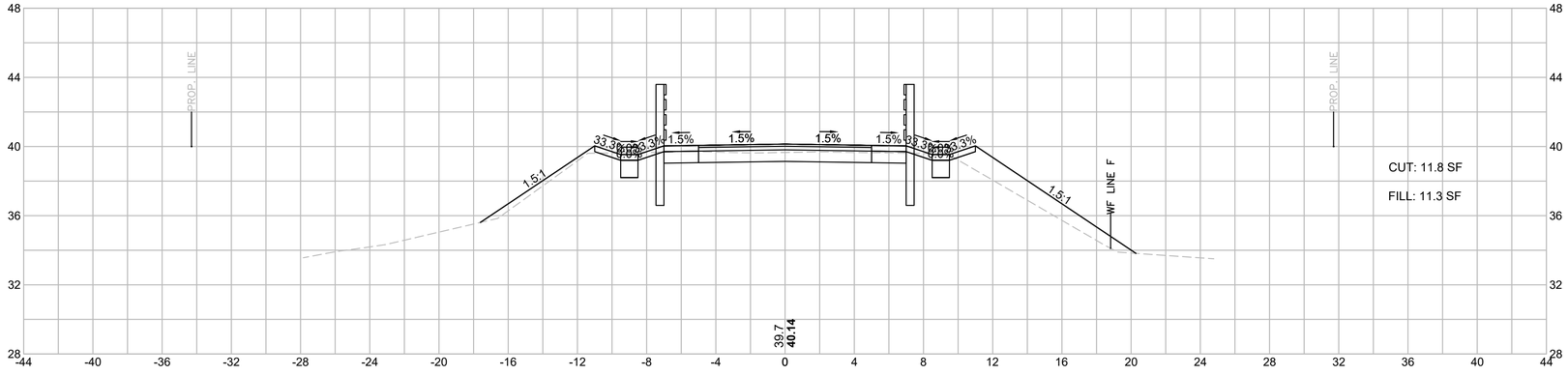
CROSS SECTIONS
SHEET 31 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

141+00



140+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

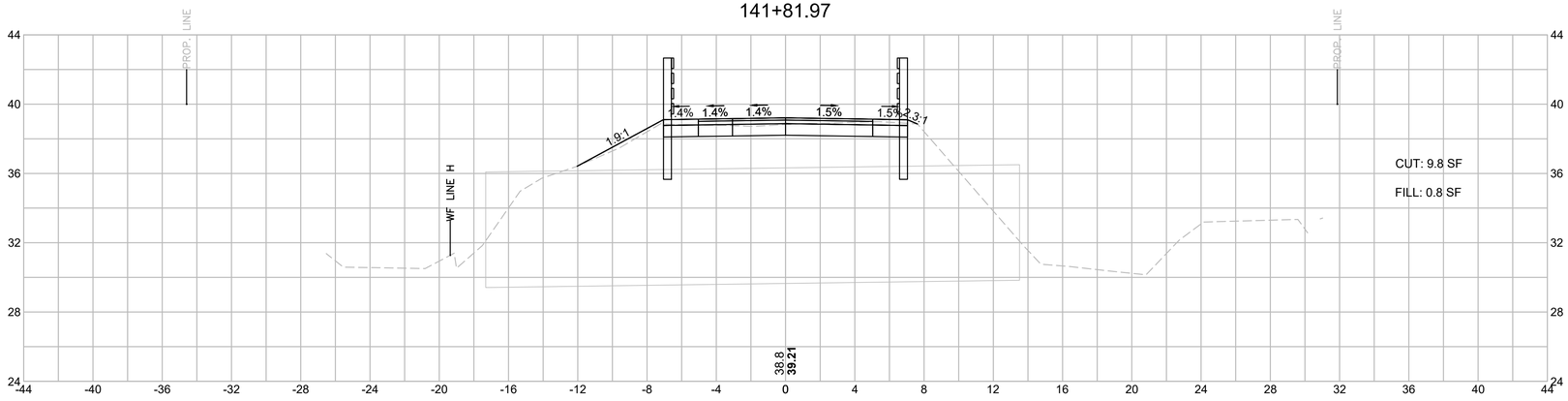
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	155	274
PROJECT FILE NO.	607979		

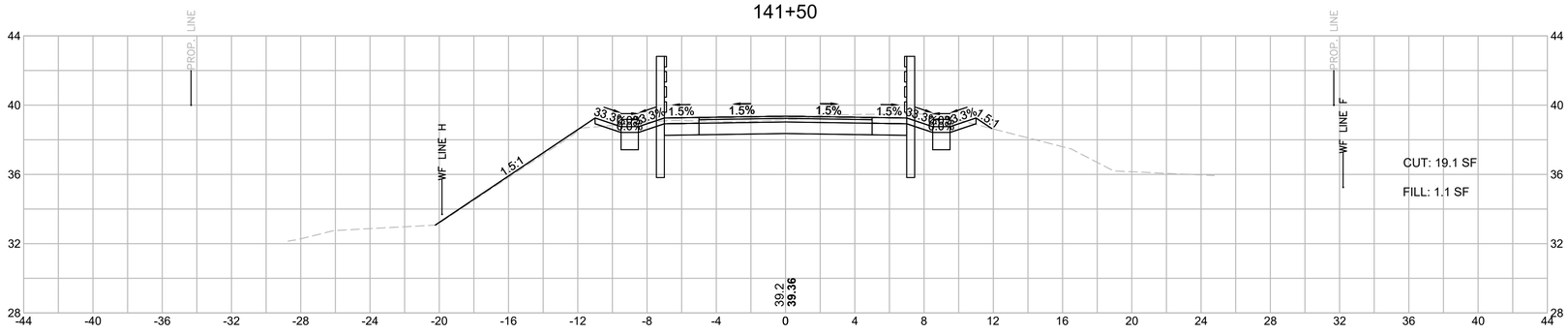
CROSS SECTIONS
SHEET 32 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

141+81.97



141+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

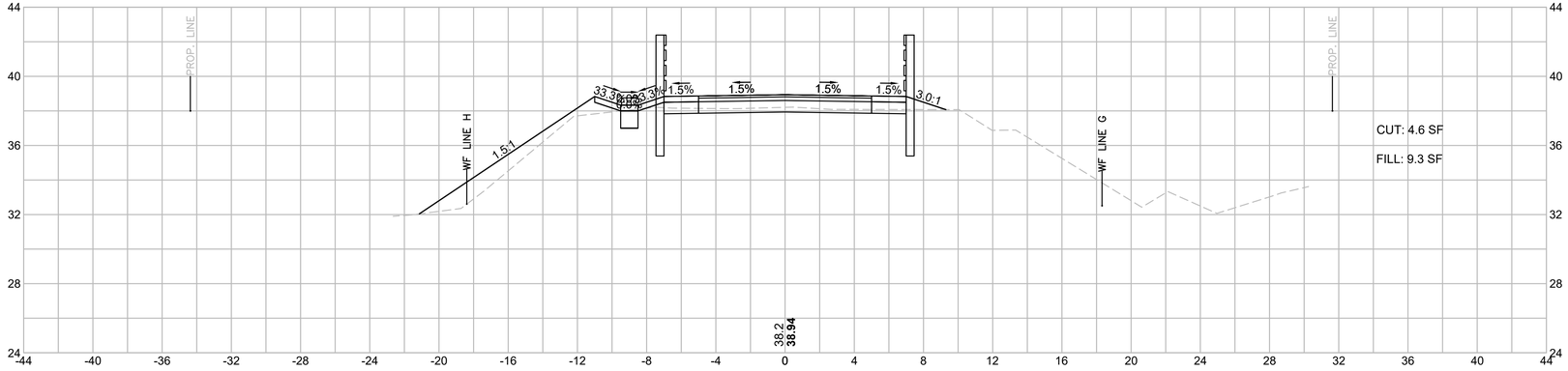
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	156	274
PROJECT FILE NO.	607979		

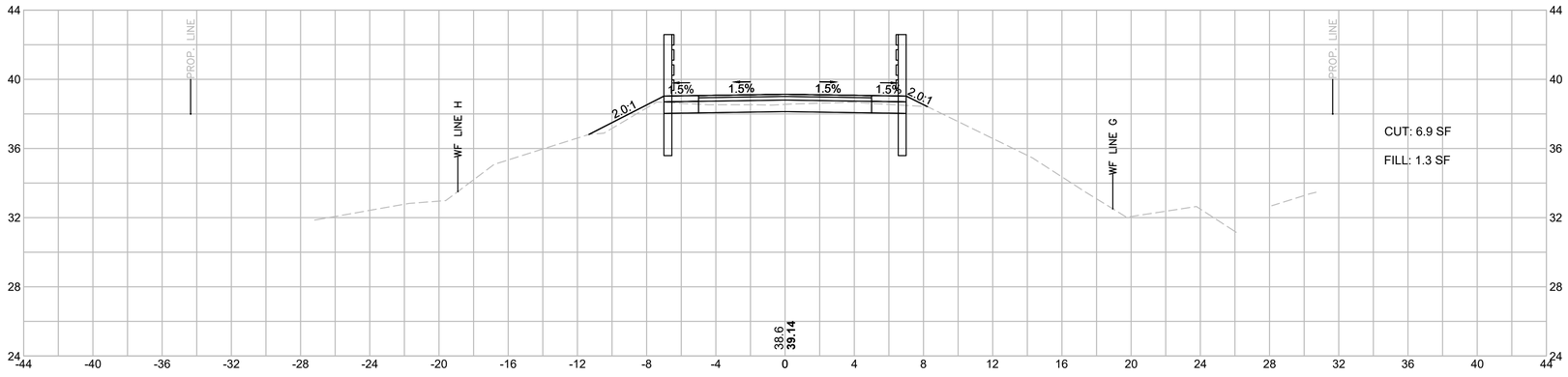
CROSS SECTIONS
SHEET 33 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

142+50



142+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

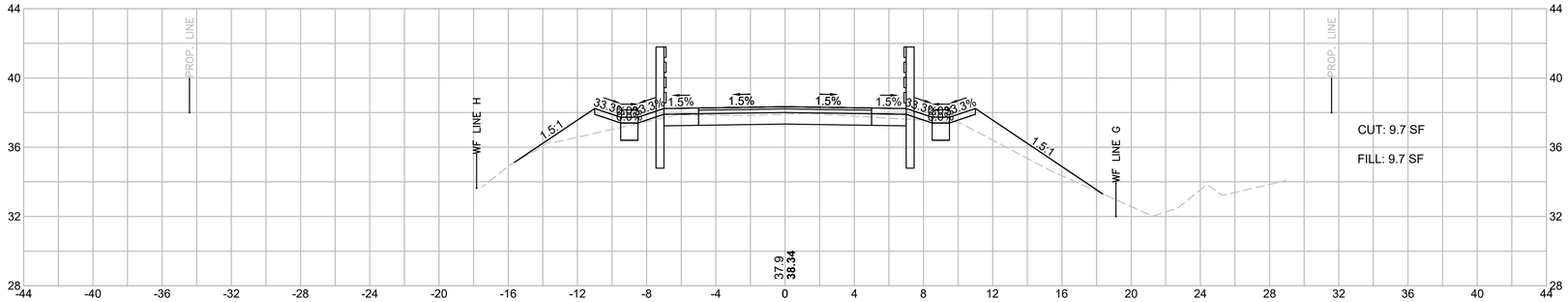
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	157	274
PROJECT FILE NO.	607979		

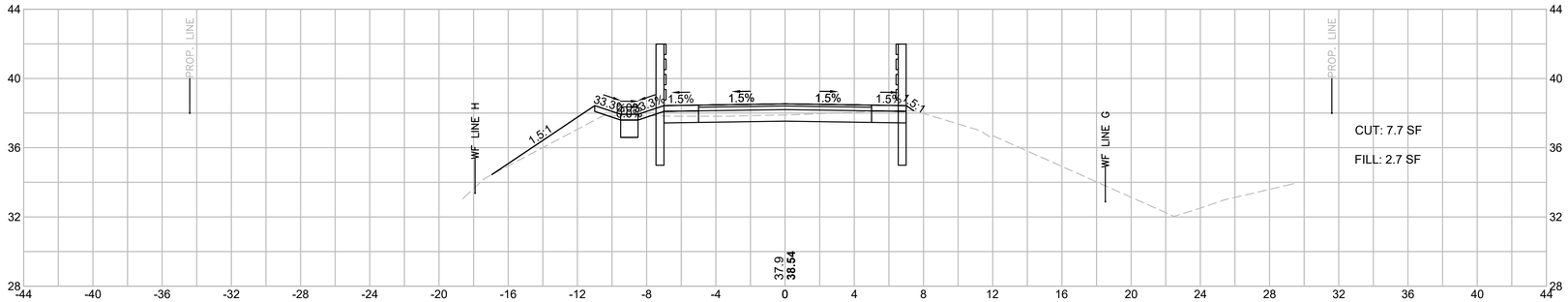
CROSS SECTIONS
SHEET 34 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

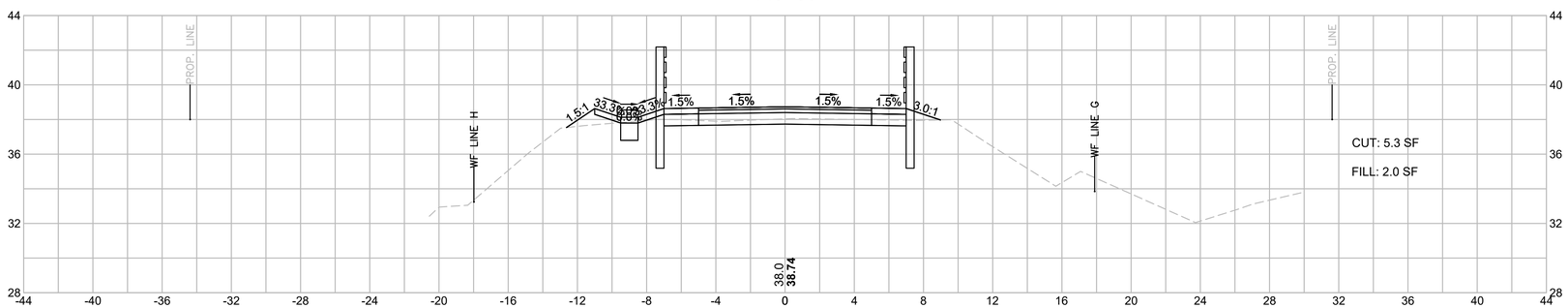
144+00



143+50



143+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

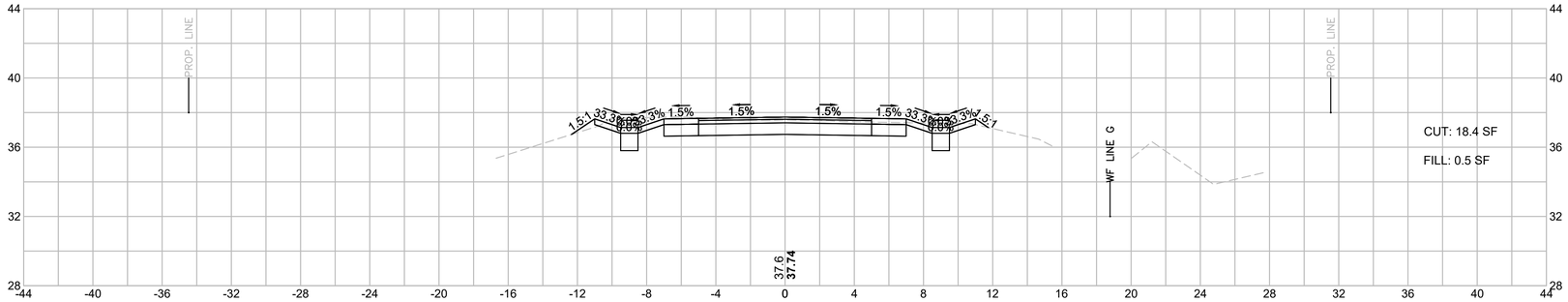
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	158	274
PROJECT FILE NO.	607979		

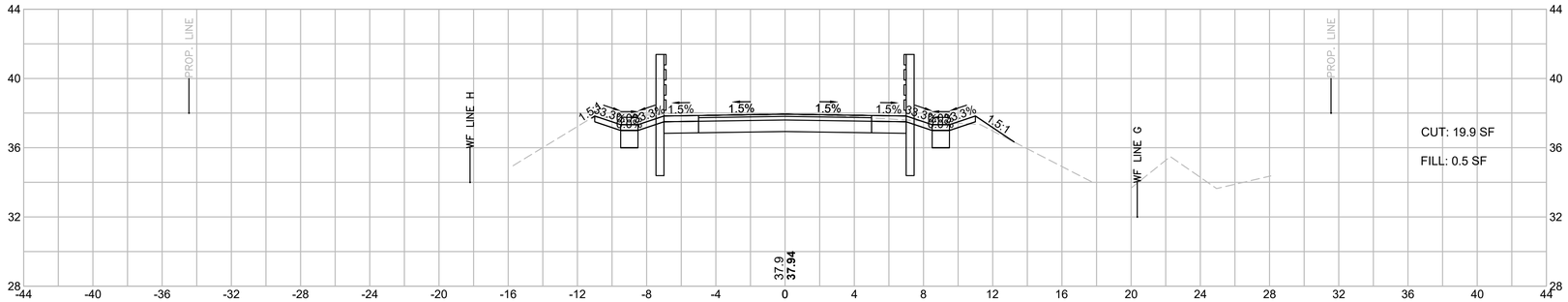
CROSS SECTIONS
SHEET 35 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

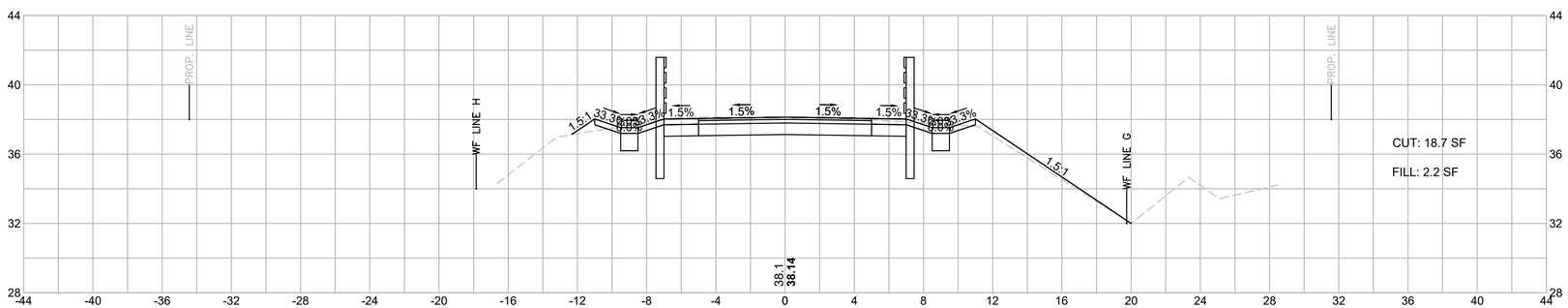
145+50



145+00



144+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

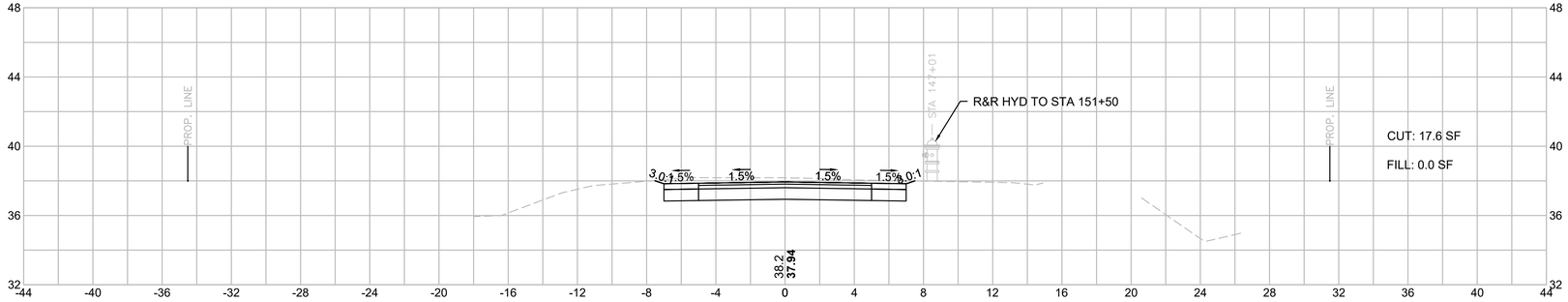
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	159	274
PROJECT FILE NO.	607979		

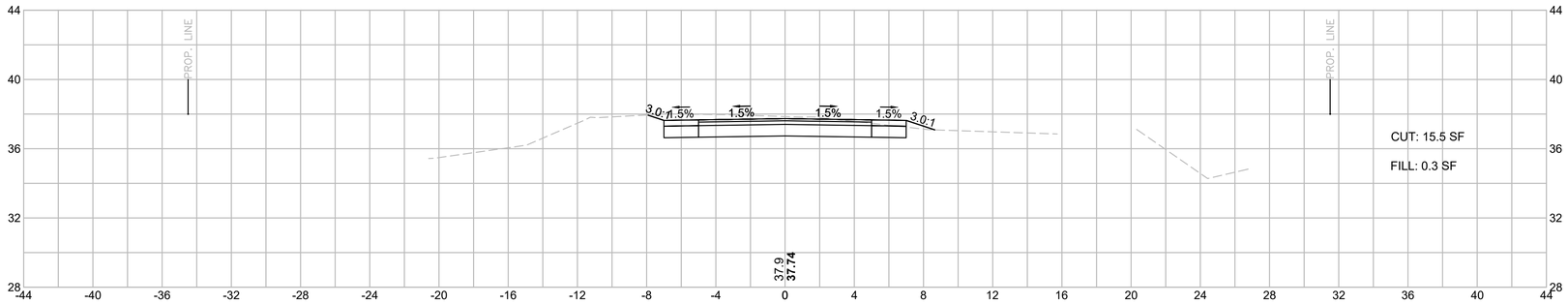
CROSS SECTIONS
SHEET 36 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

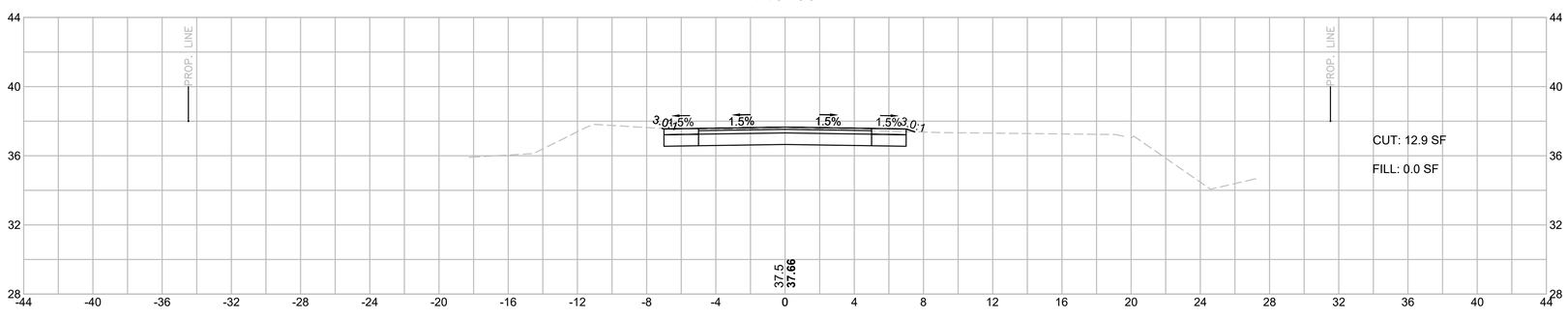
147+00



146+50



146+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

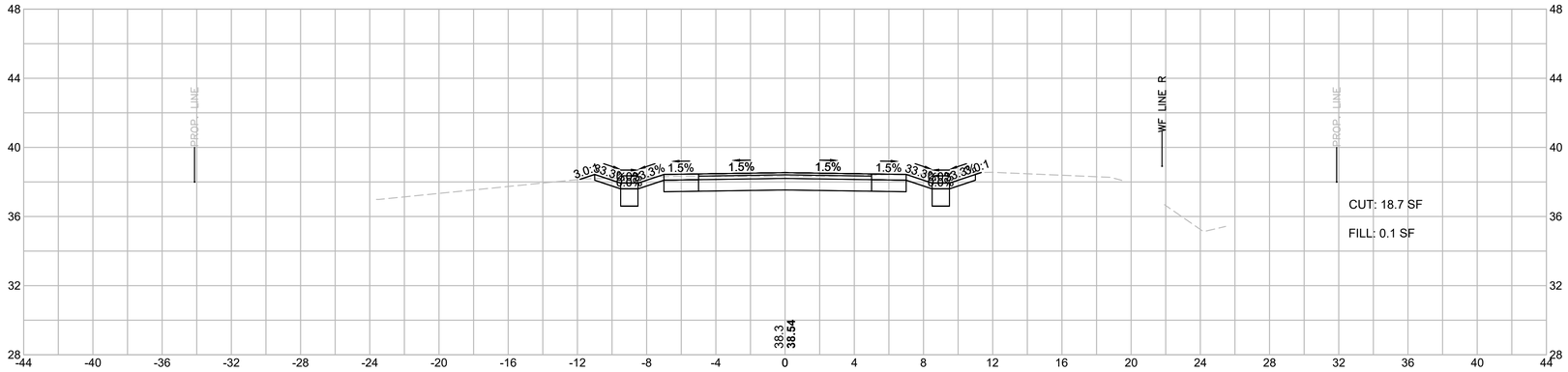
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	160	274
PROJECT FILE NO.	607979		

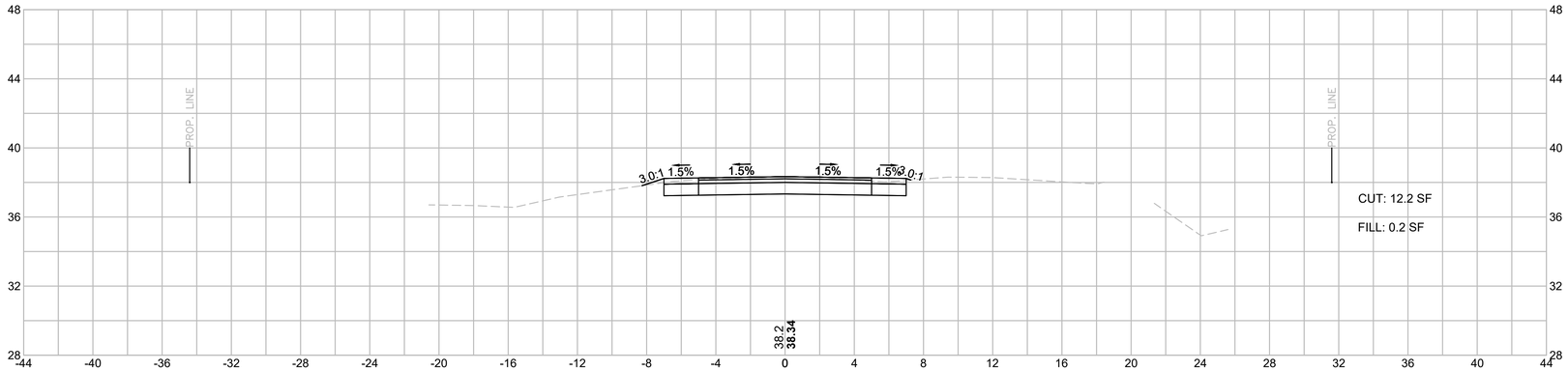
CROSS SECTIONS
SHEET 37 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

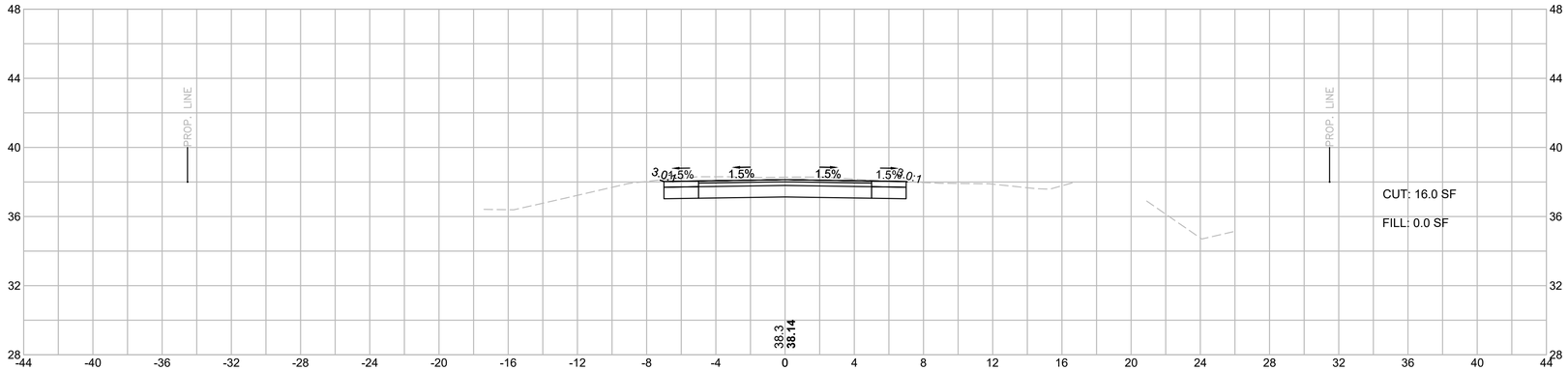
148+50



148+00



147+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

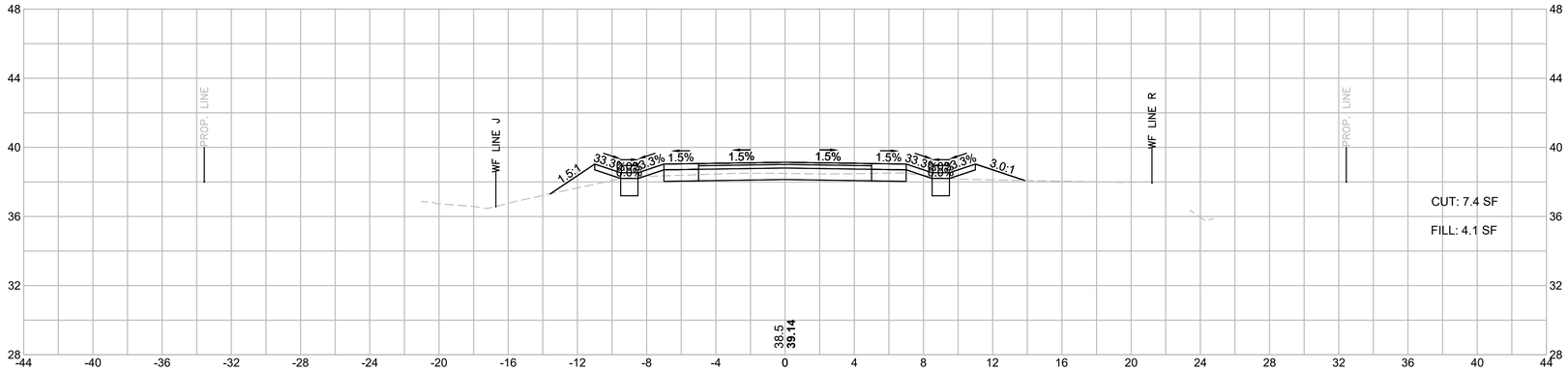
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	161	274
PROJECT FILE NO.	607979		

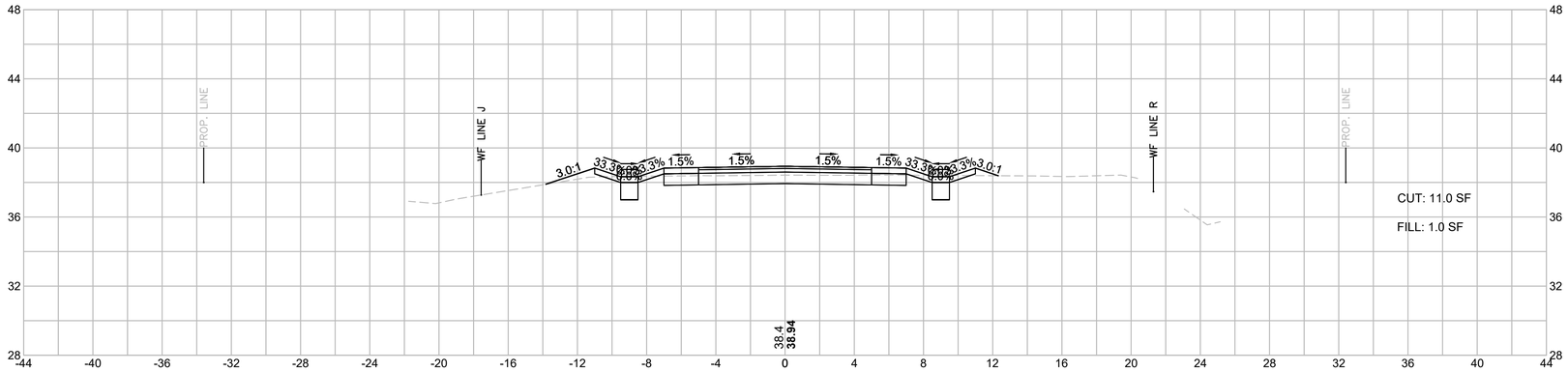
CROSS SECTIONS
SHEET 38 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

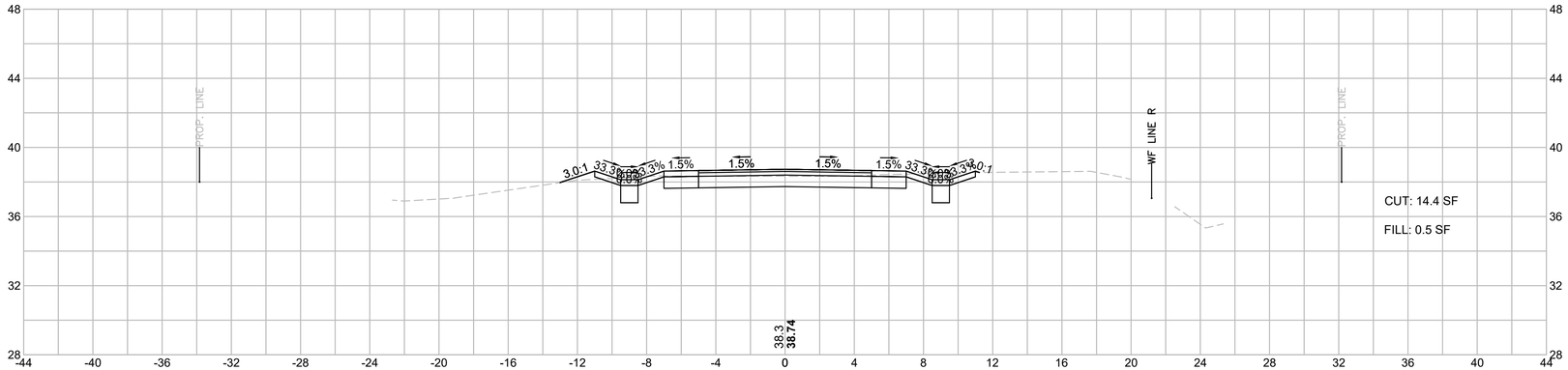
150+00



149+50



149+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

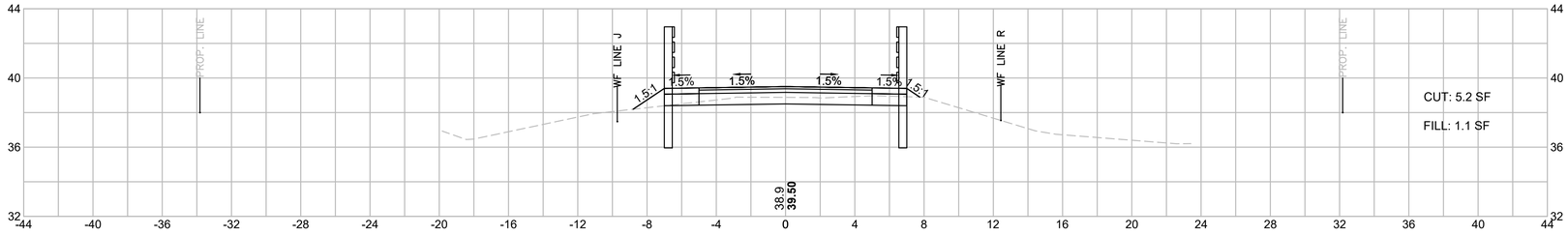
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	162	274
PROJECT FILE NO.	607979		

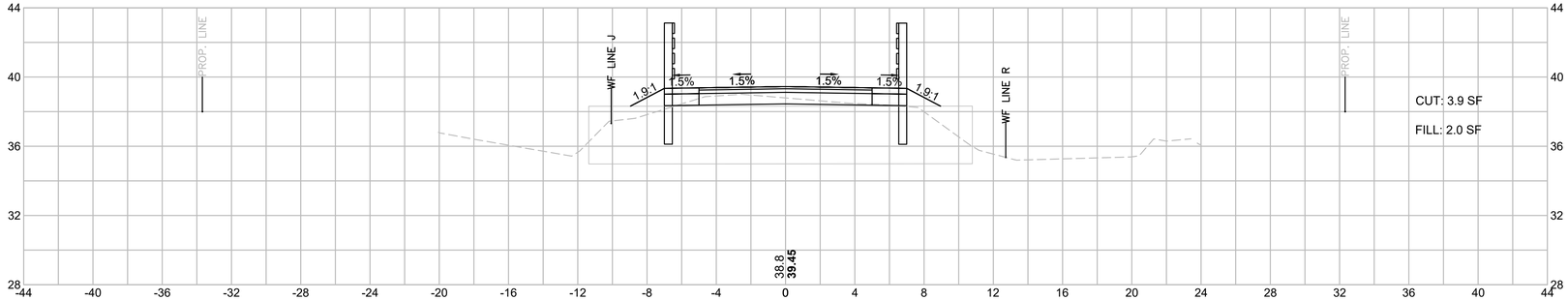
CROSS SECTIONS
SHEET 39 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

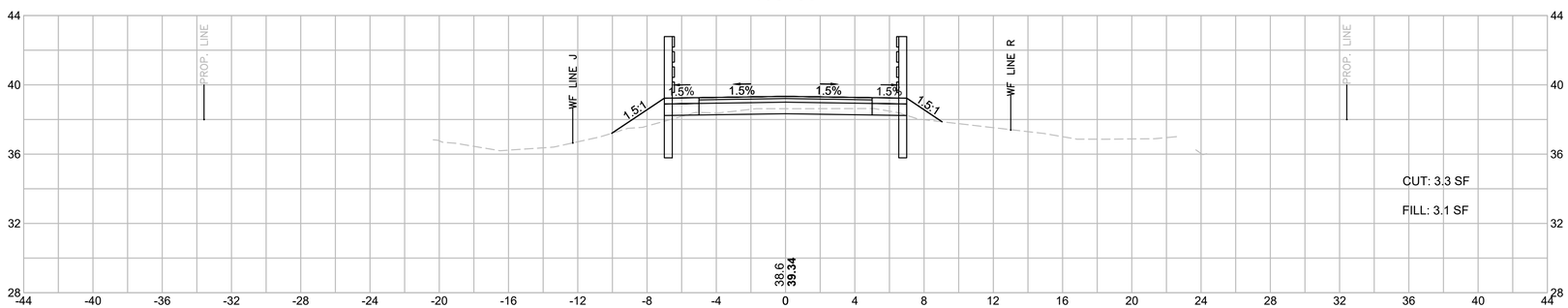
151+00



150+78.96



150+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

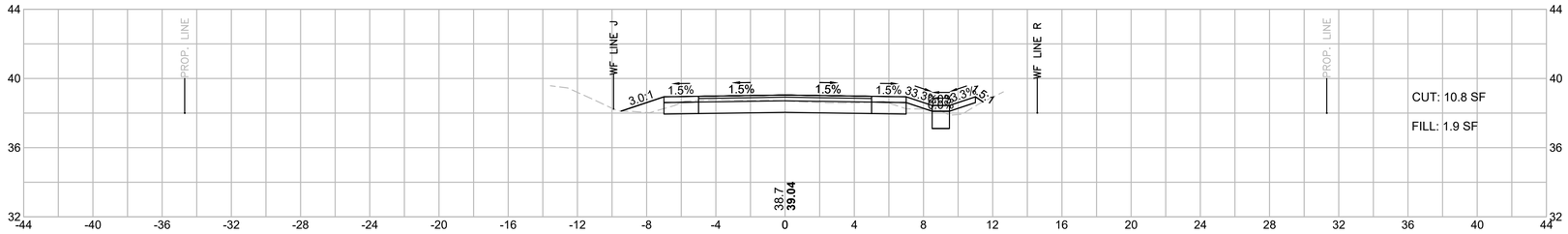
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	163	274
PROJECT FILE NO.	607979		

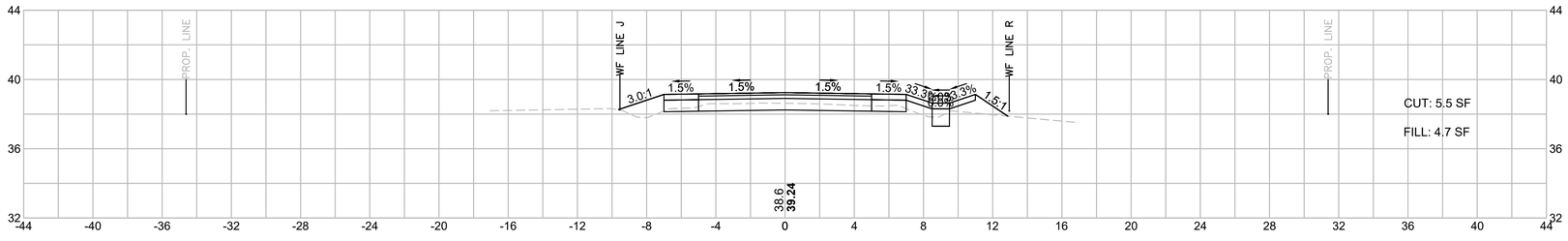
CROSS SECTIONS
SHEET 40 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

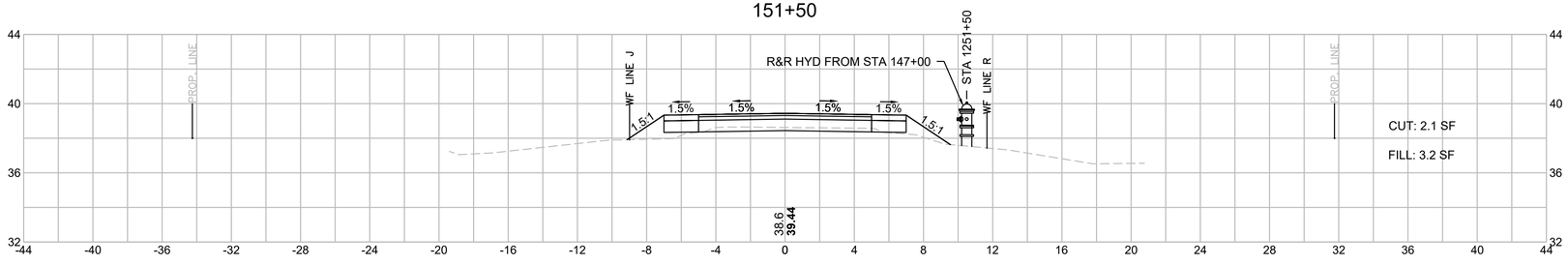
152+50



152+00



151+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

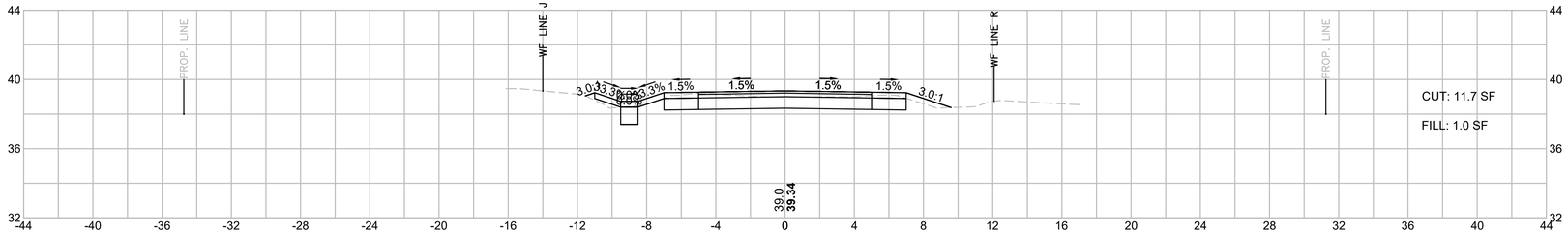
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	164	274
PROJECT FILE NO.	607979		

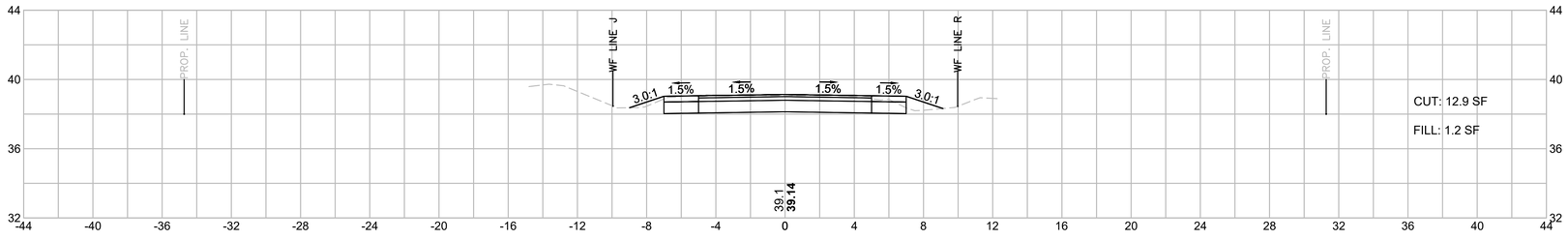
CROSS SECTIONS
SHEET 41 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

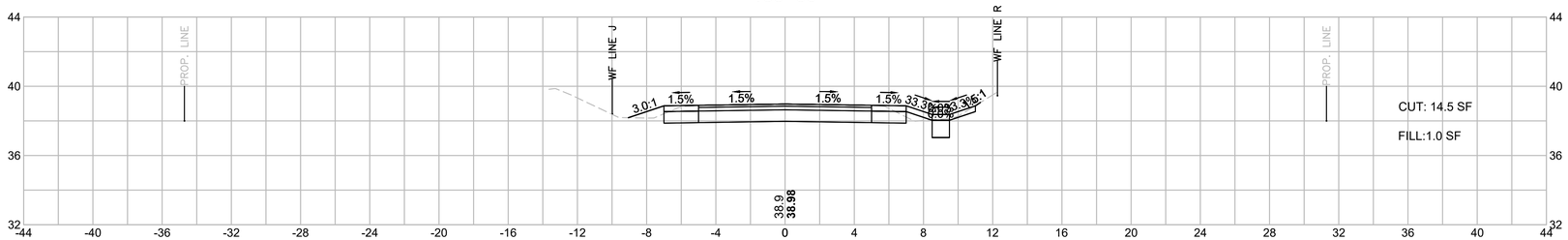
154+00



153+50



153+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

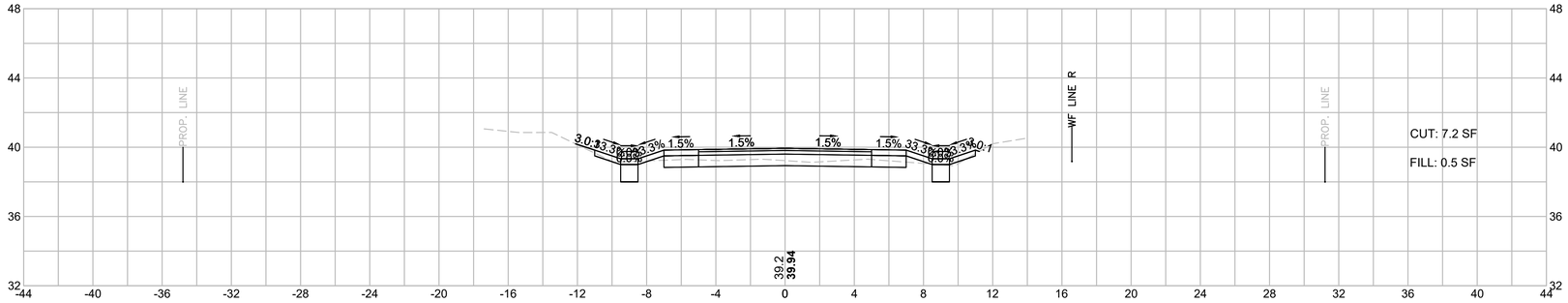
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	165	274
PROJECT FILE NO.	607979		

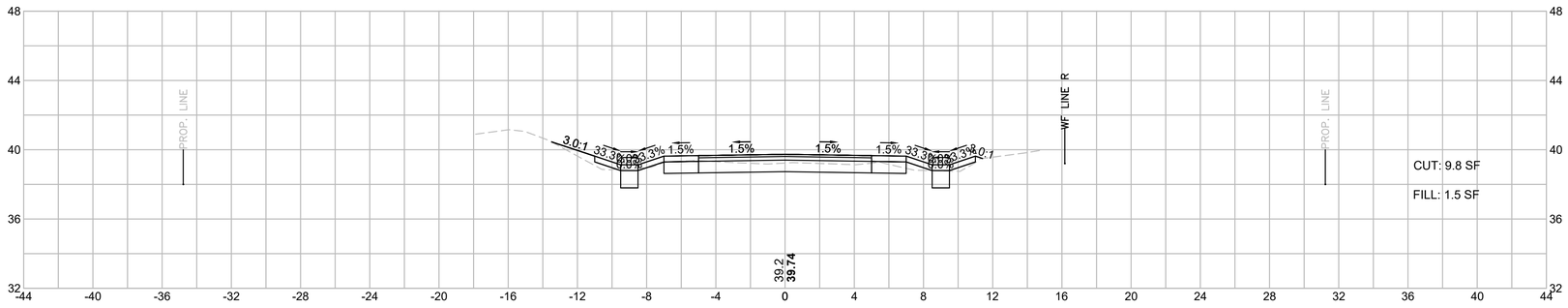
CROSS SECTIONS
SHEET 42 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

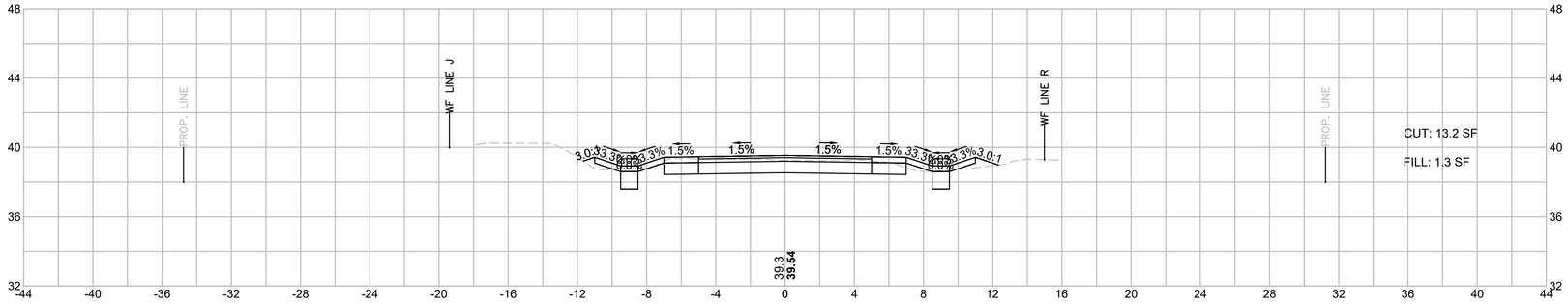
155+50



155+00



154+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

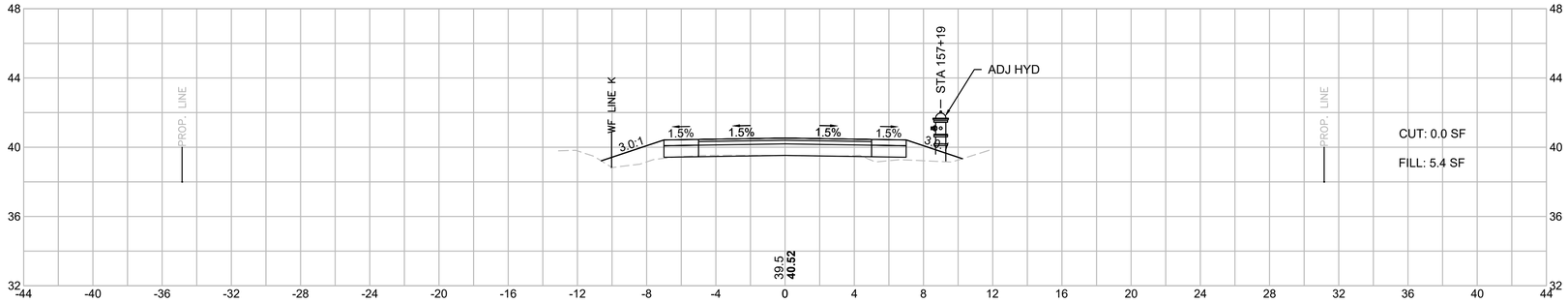
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	166	274
PROJECT FILE NO.	607979		

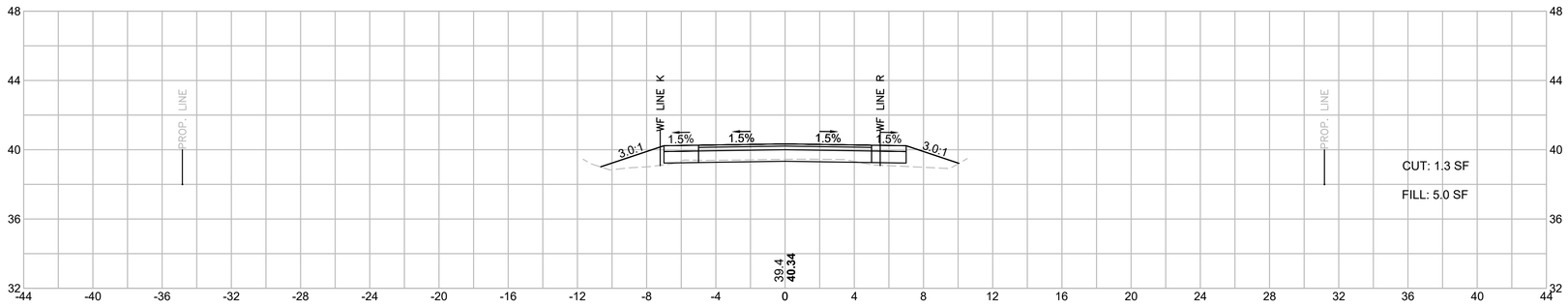
CROSS SECTIONS
SHEET 43 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

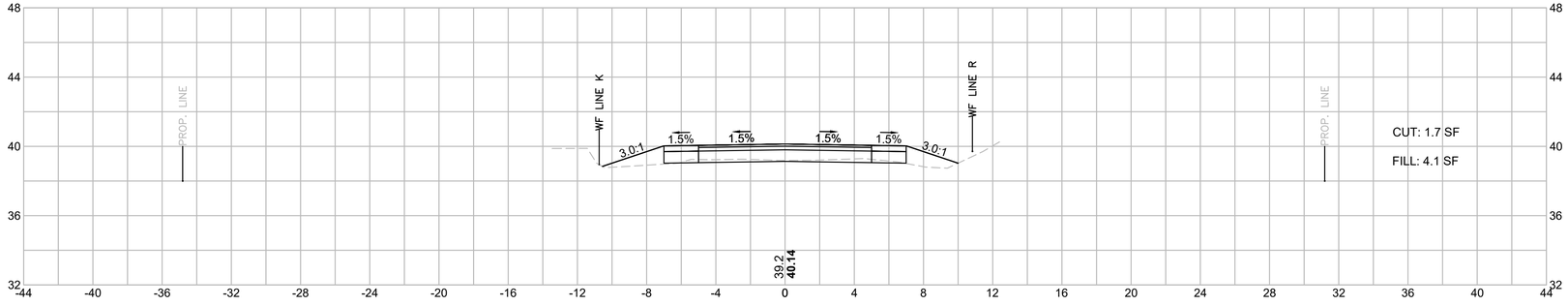
157+00



156+50



156+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

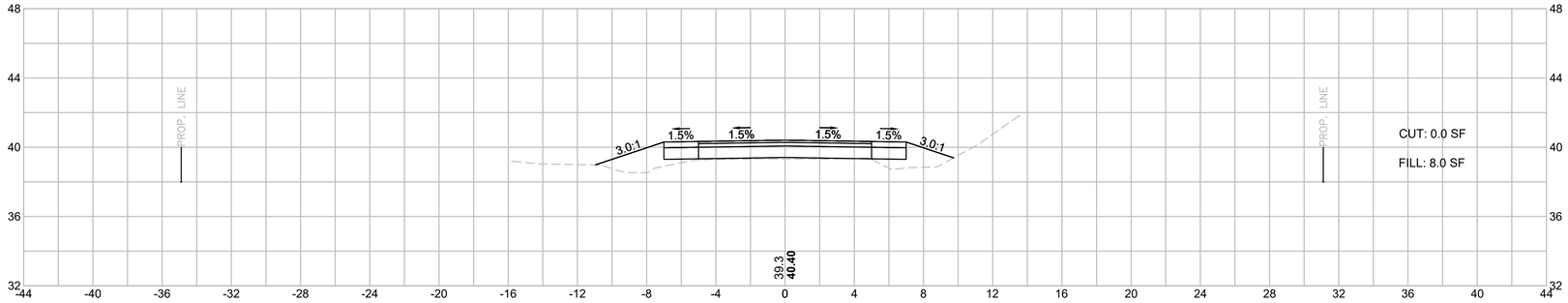
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	167	274
PROJECT FILE NO.	607979		

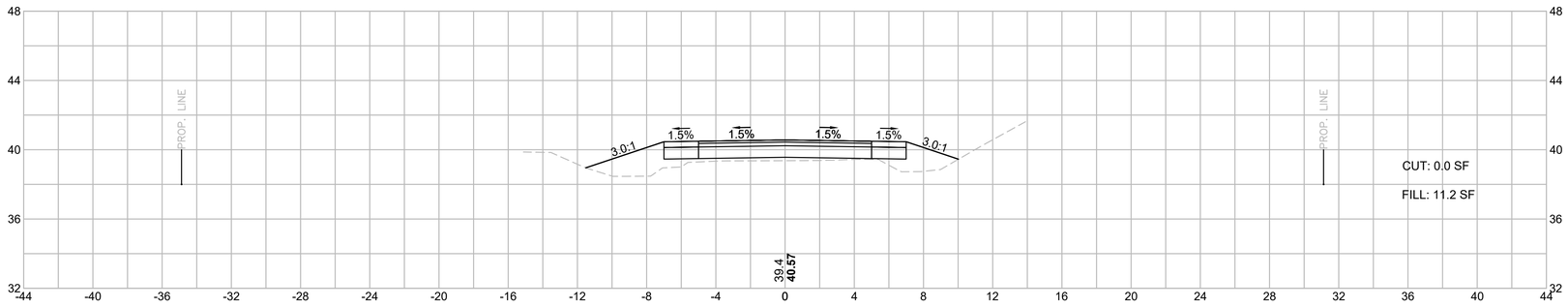
CROSS SECTIONS
SHEET 44 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

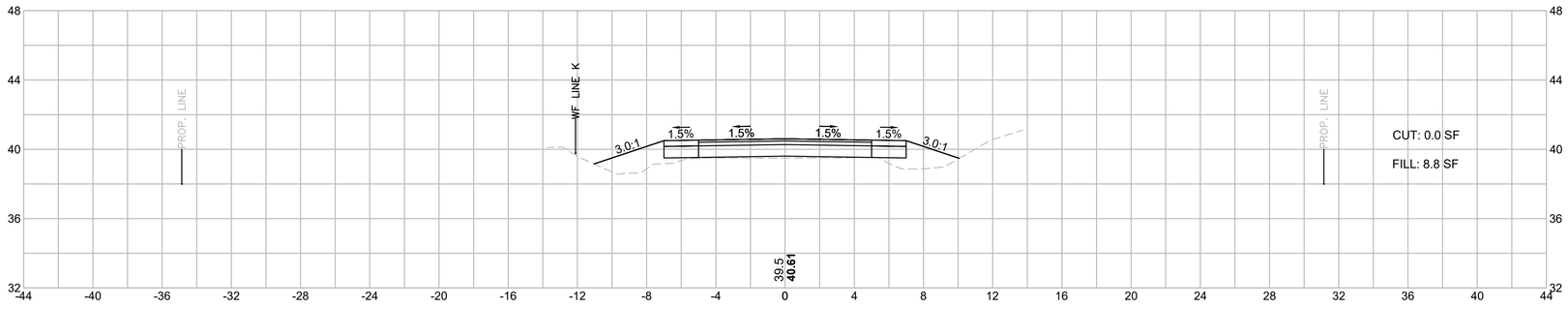
158+50



158+00



157+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

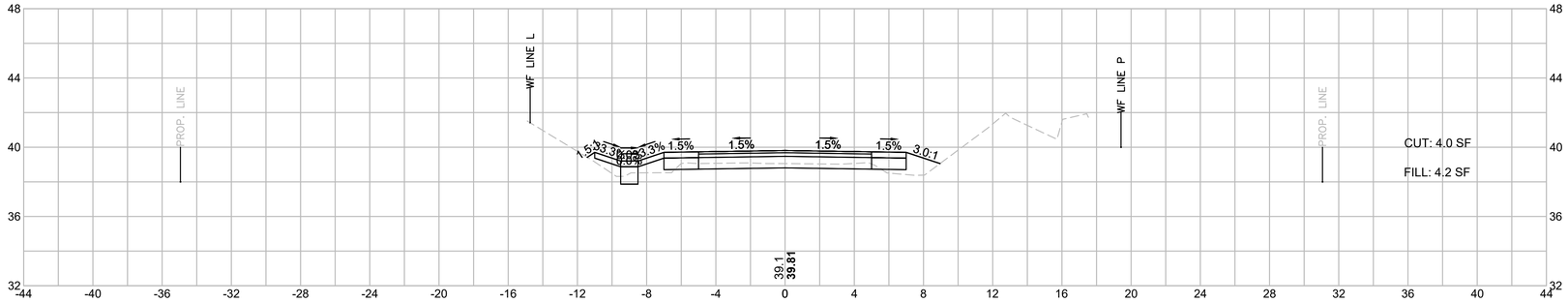
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	168	274
PROJECT FILE NO.	607979		

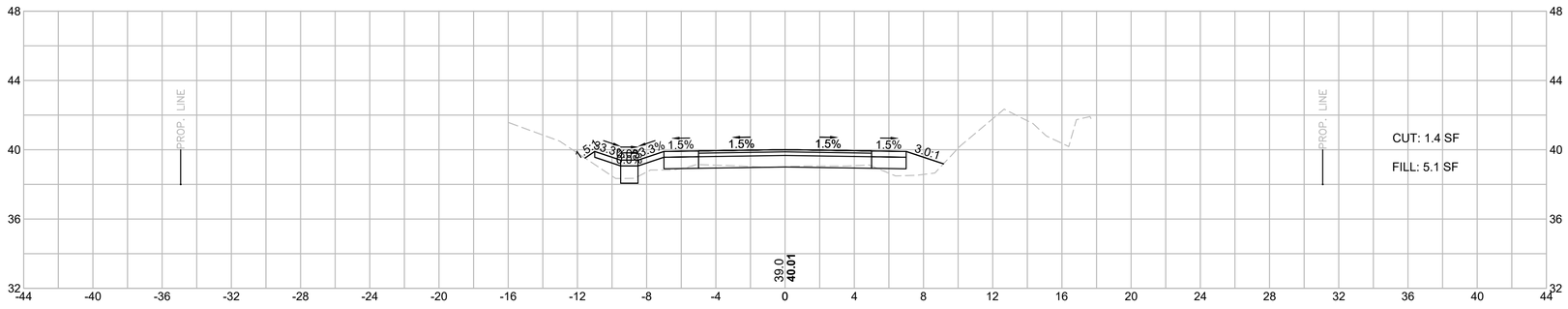
CROSS SECTIONS
SHEET 45 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

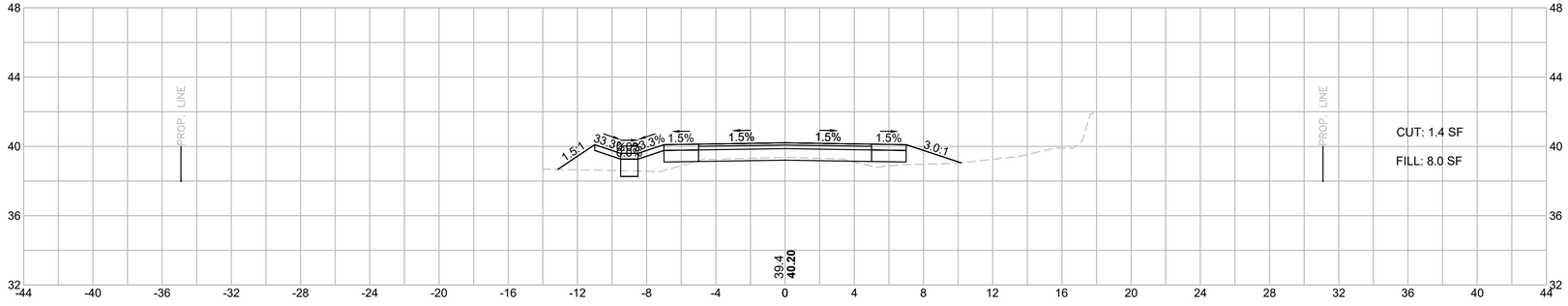
160+00



159+50



159+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

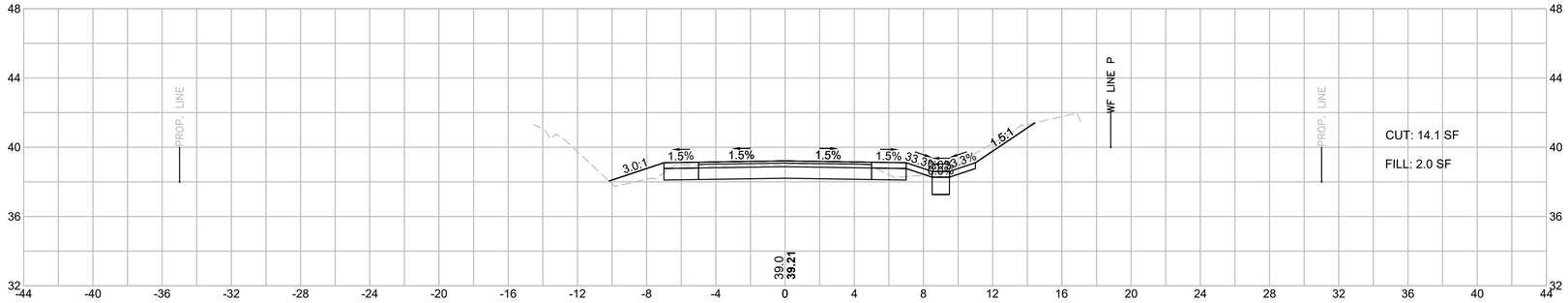
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	169	274
PROJECT FILE NO.	607979		

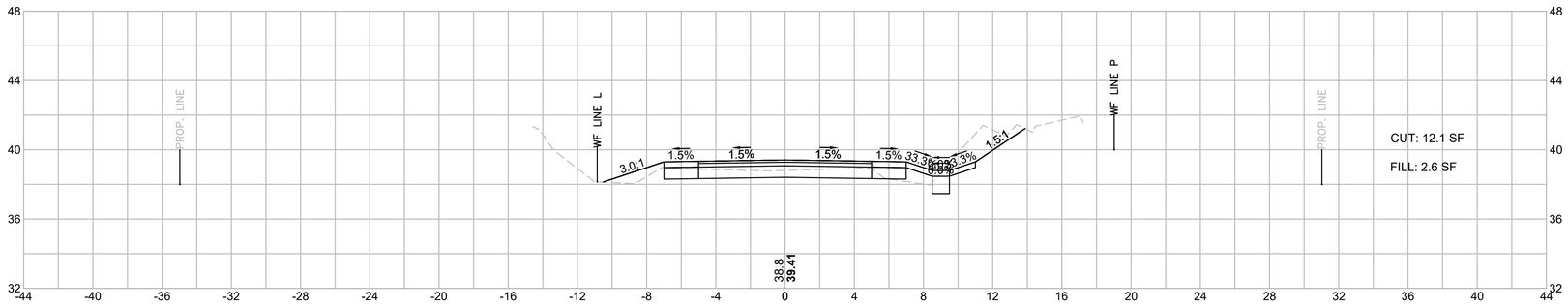
CROSS SECTIONS
SHEET 46 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

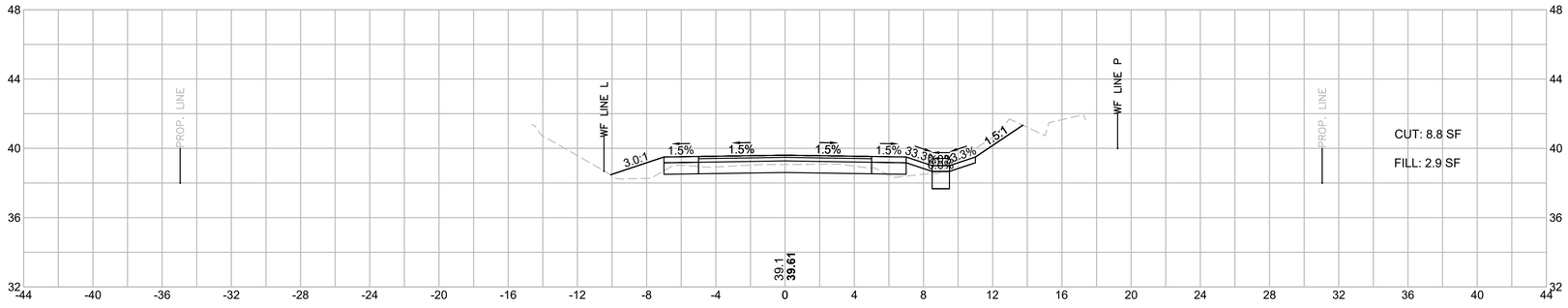
161+50



161+00



160+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

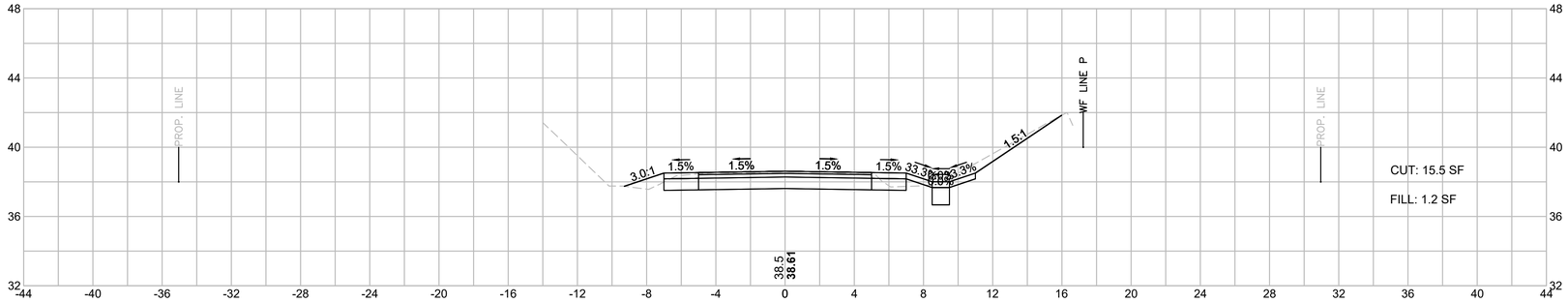
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	170	274
PROJECT FILE NO.	607979		

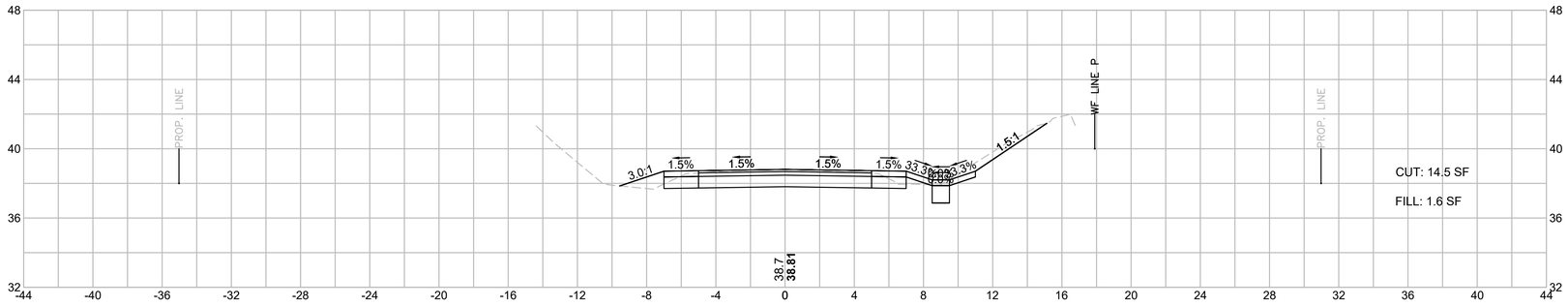
CROSS SECTIONS
SHEET 47 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

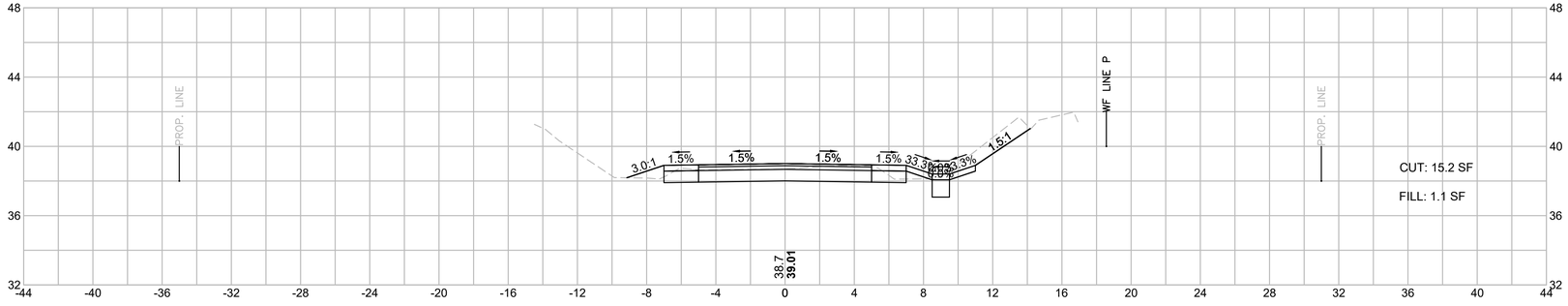
163+00



162+50



162+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

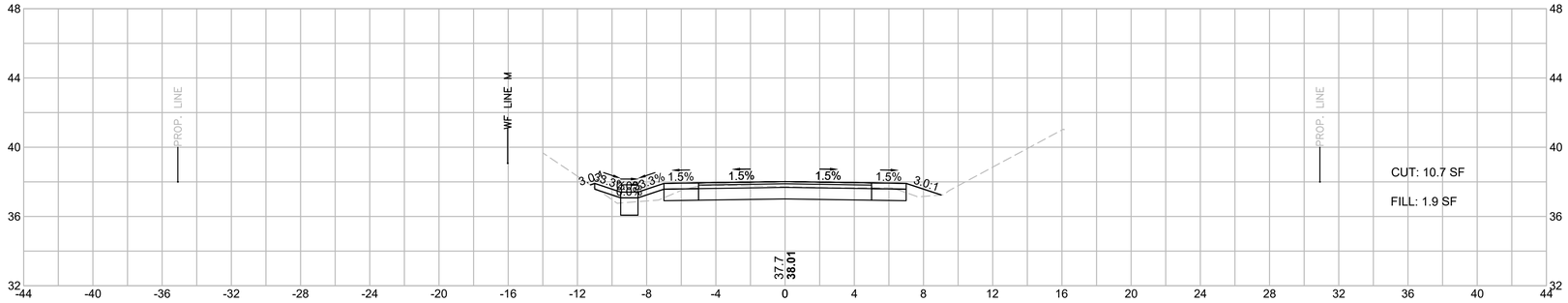
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	171	274
PROJECT FILE NO.	607979		

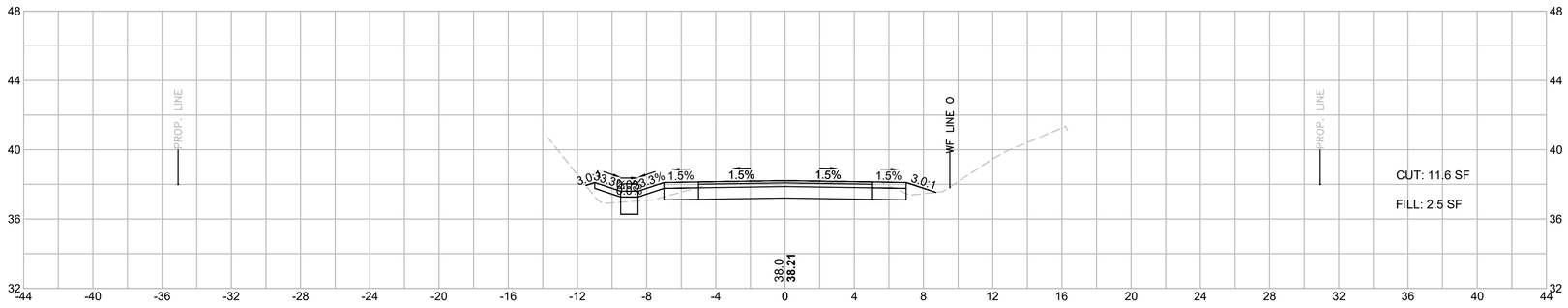
CROSS SECTIONS
SHEET 48 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

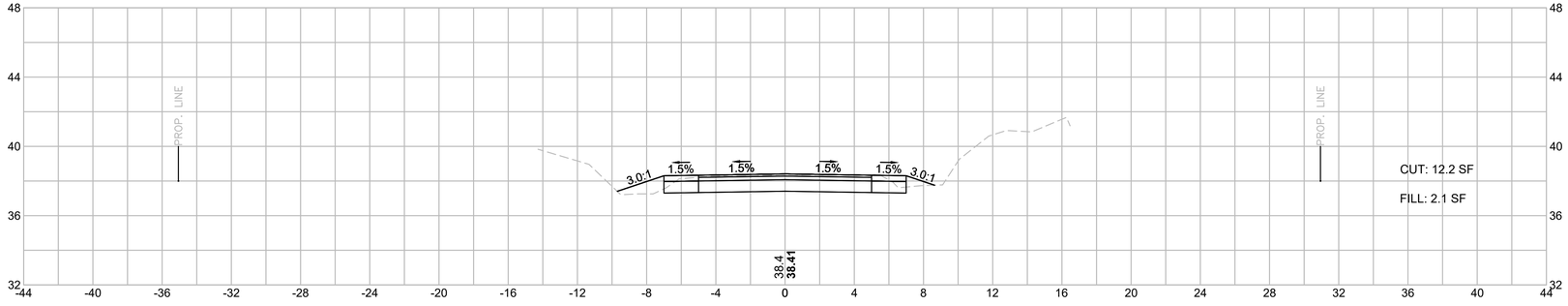
164+50



164+00



163+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

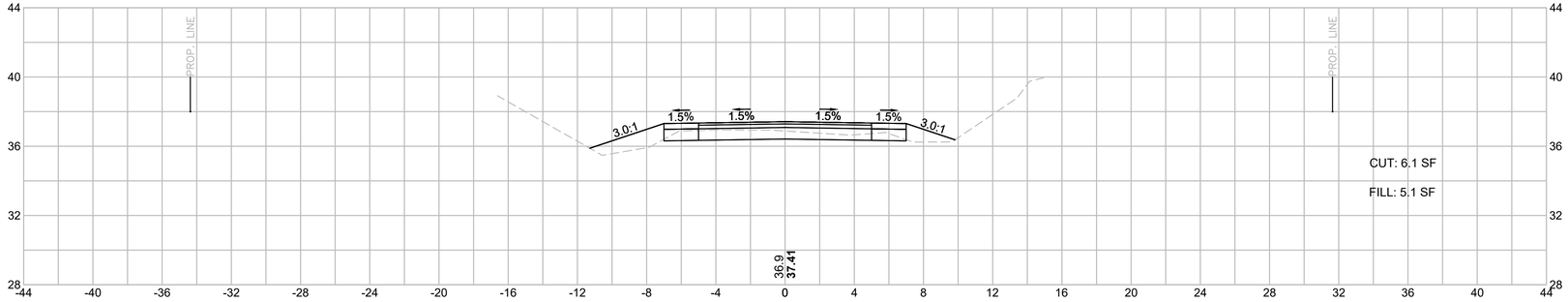
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	172	274
PROJECT FILE NO.	607979		

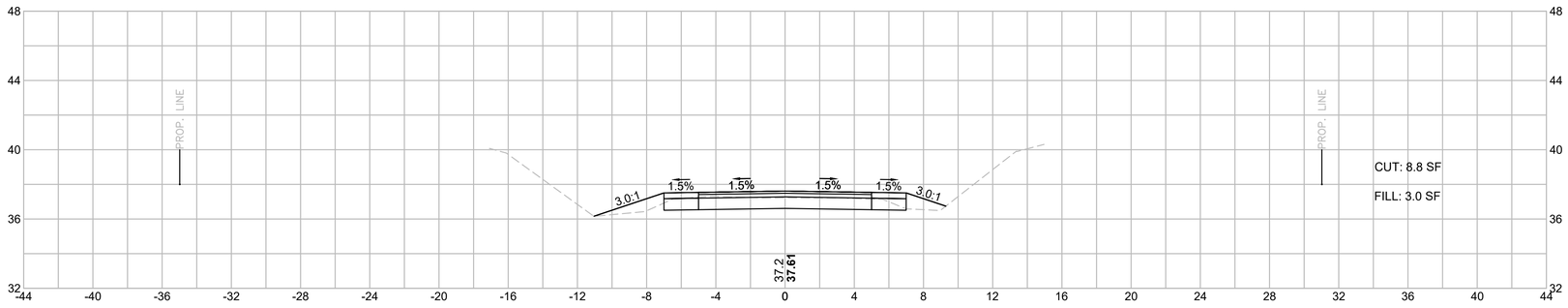
CROSS SECTIONS
SHEET 49 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

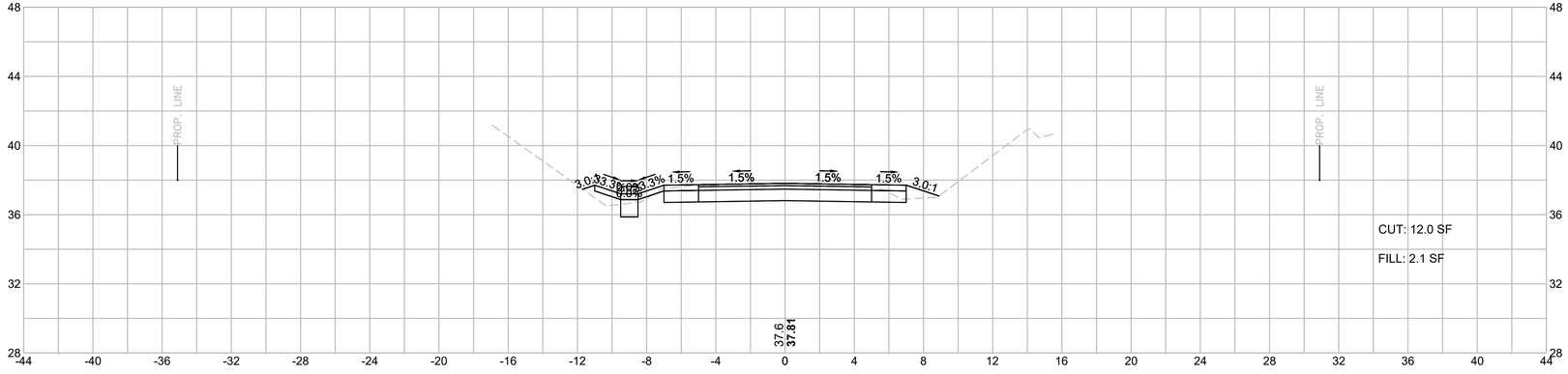
166+00



165+50



165+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

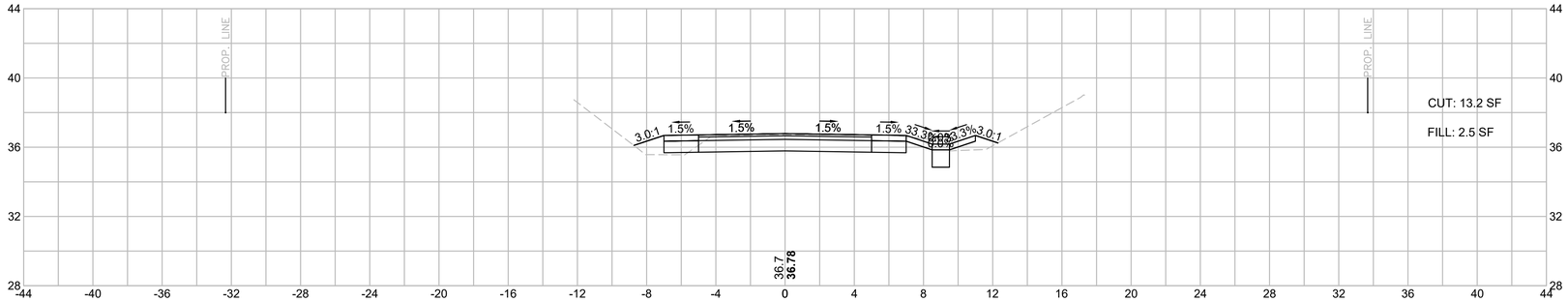
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	173	274
PROJECT FILE NO.	607979		

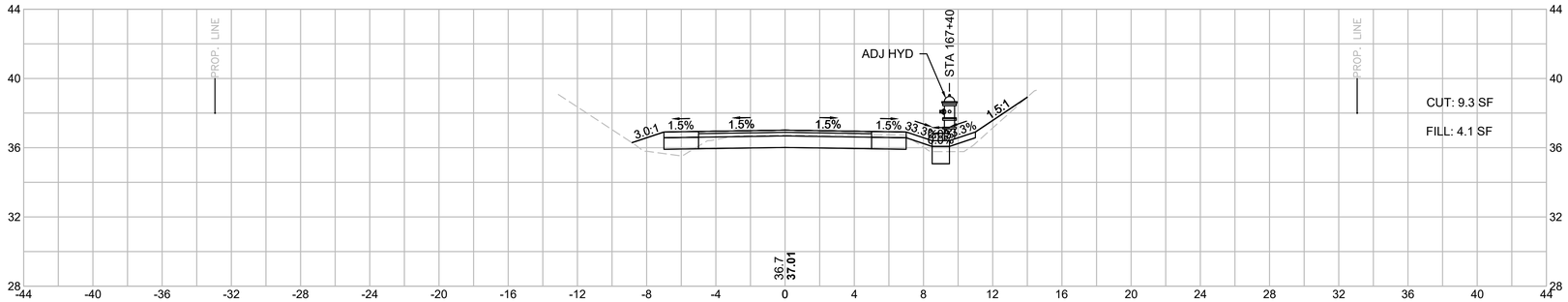
CROSS SECTIONS
SHEET 50 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

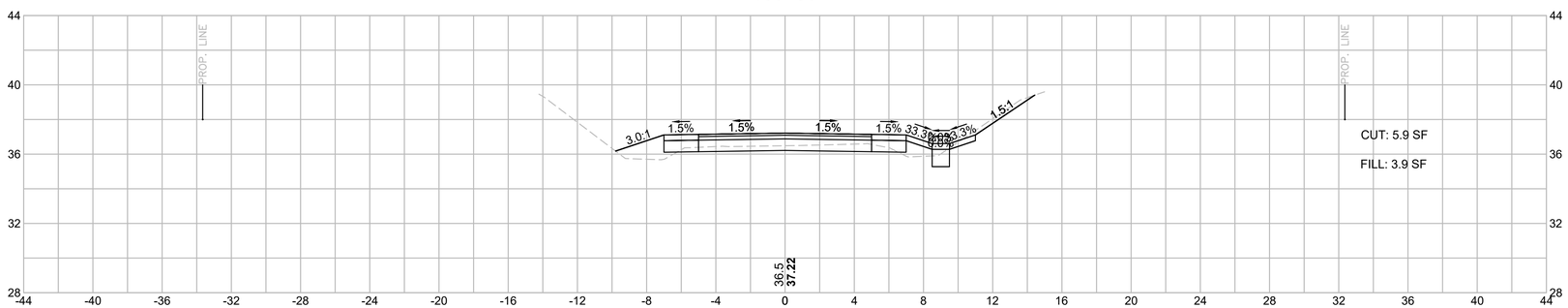
167+50



167+00



166+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

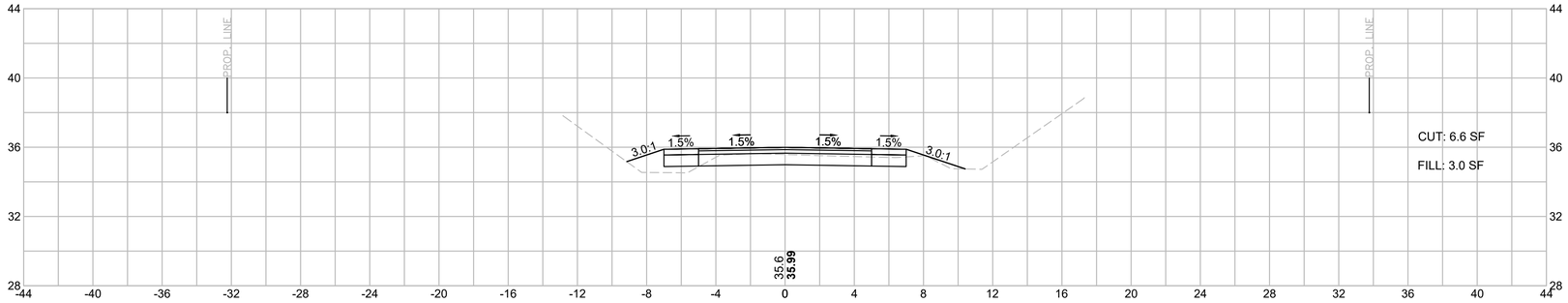
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	174	274
PROJECT FILE NO.	607979		

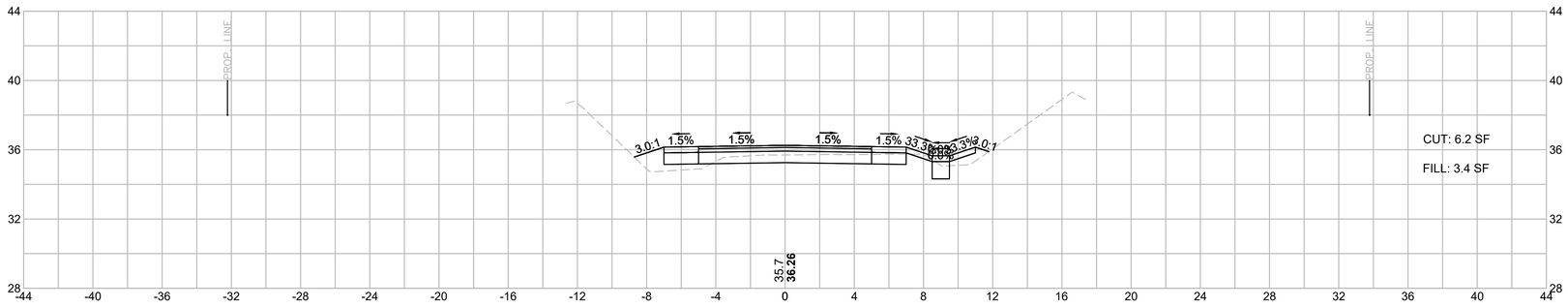
CROSS SECTIONS
SHEET 51 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

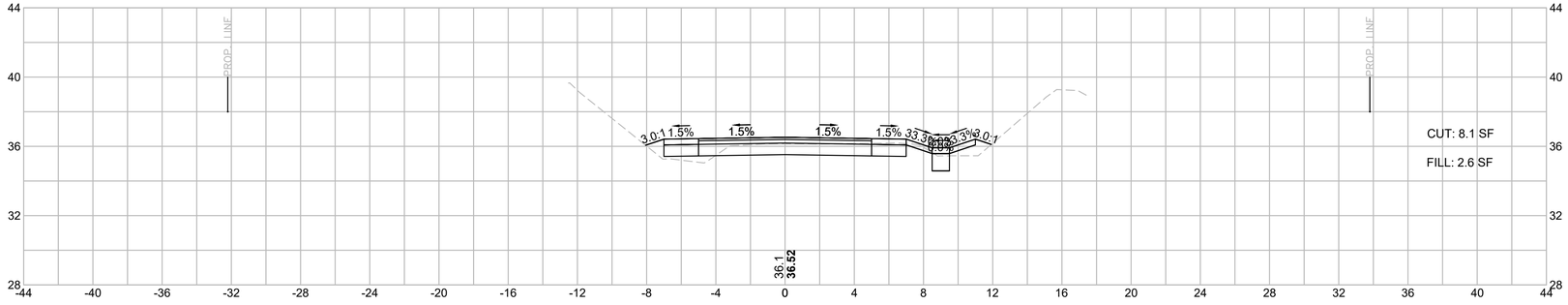
169+00



168+50



168+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

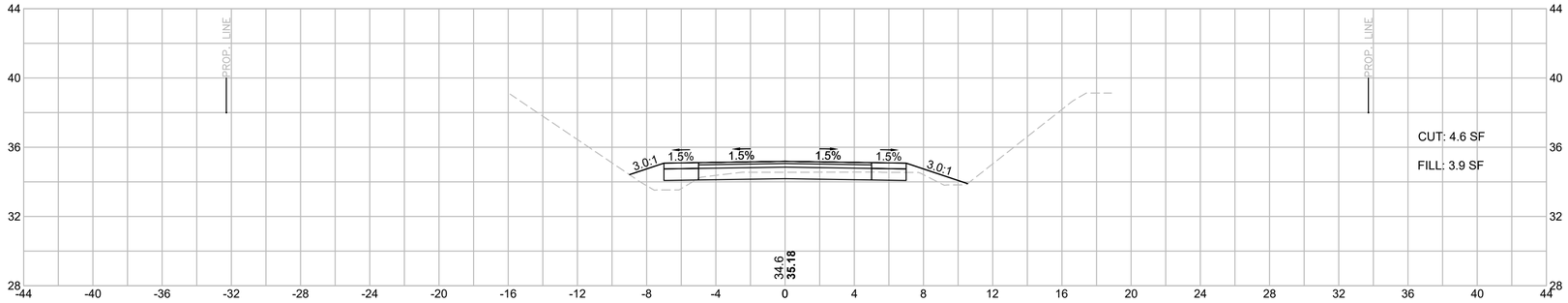
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	175	274
PROJECT FILE NO.	607979		

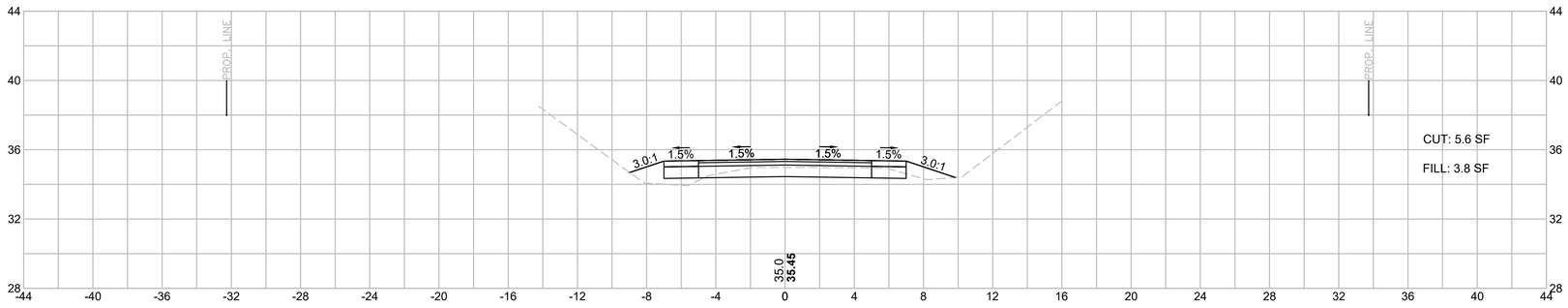
CROSS SECTIONS
SHEET 52 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

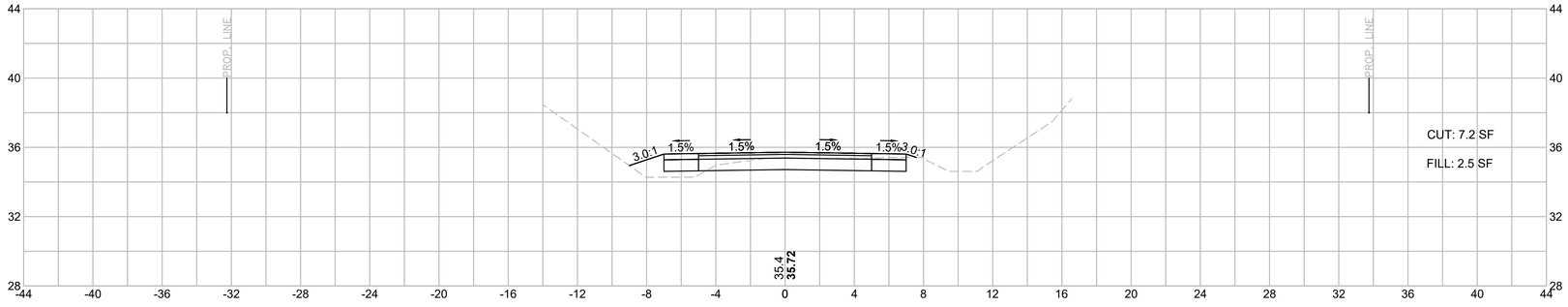
170+50



170+00



169+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

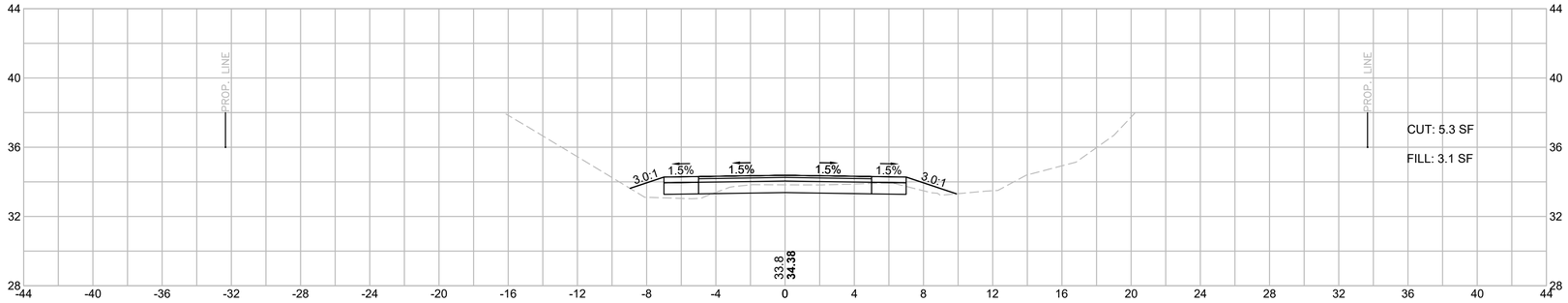
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	176	274
PROJECT FILE NO.	607979		

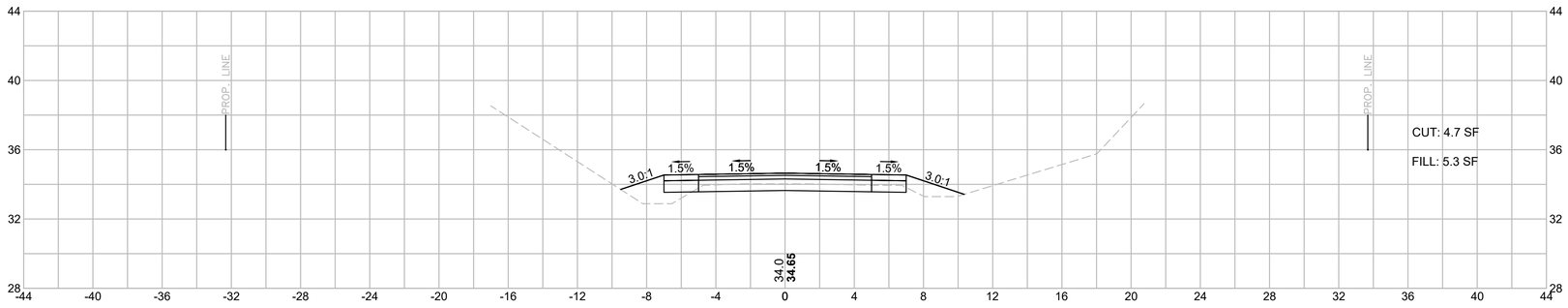
CROSS SECTIONS
SHEET 53 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

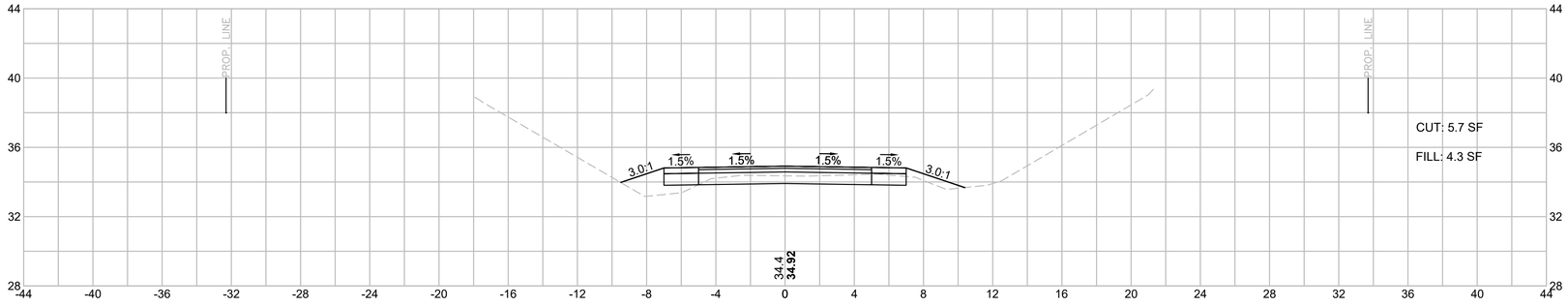
172+00



171+50



171+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

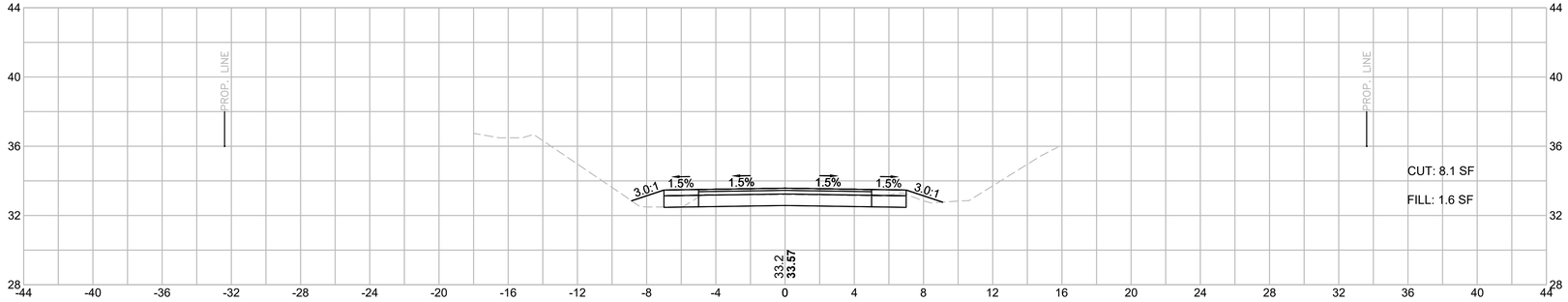
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	176	274
PROJECT FILE NO.	607979		

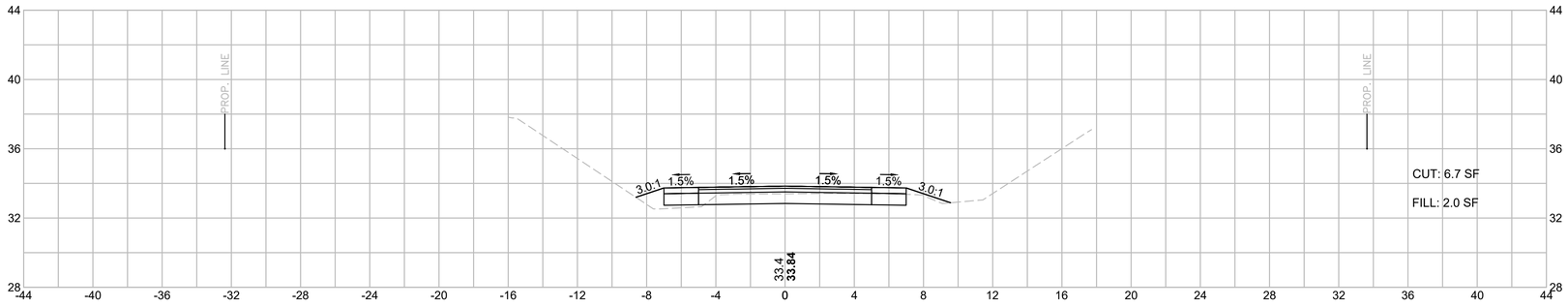
CROSS SECTIONS
SHEET 54 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

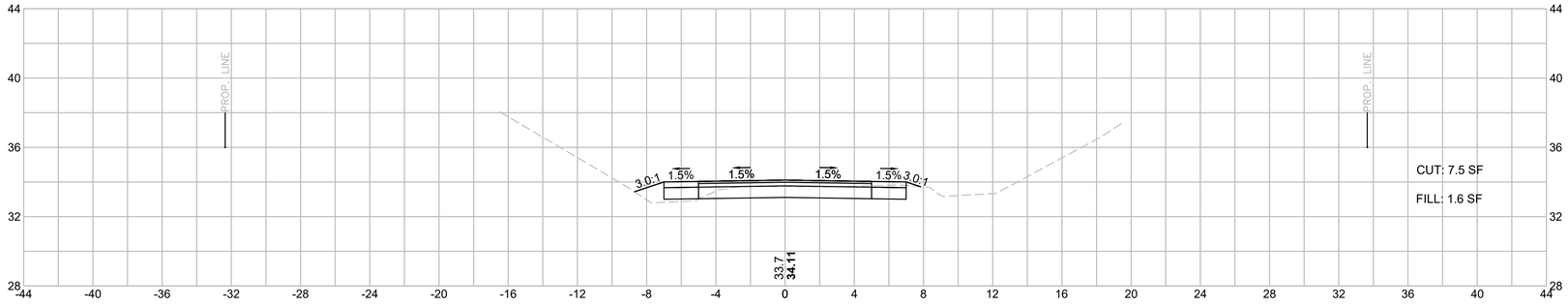
173+50



173+00



172+50



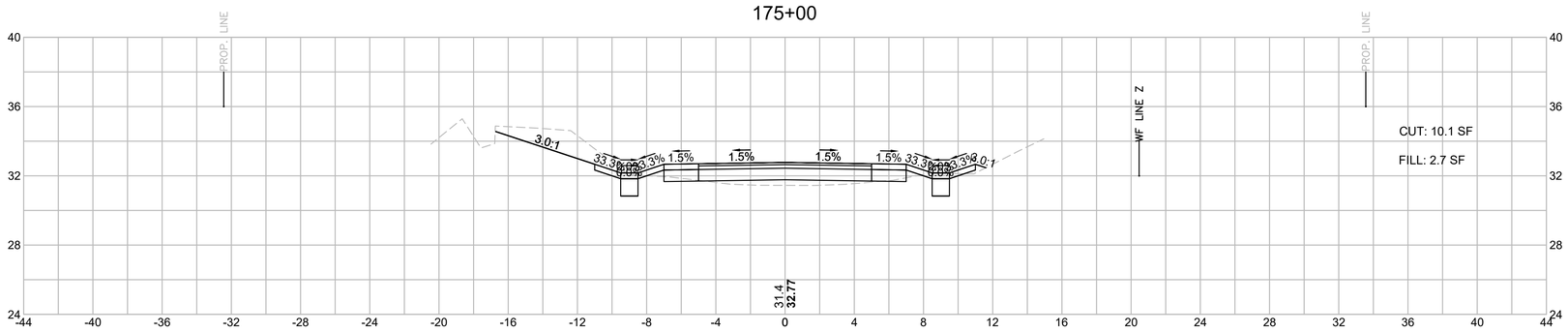
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

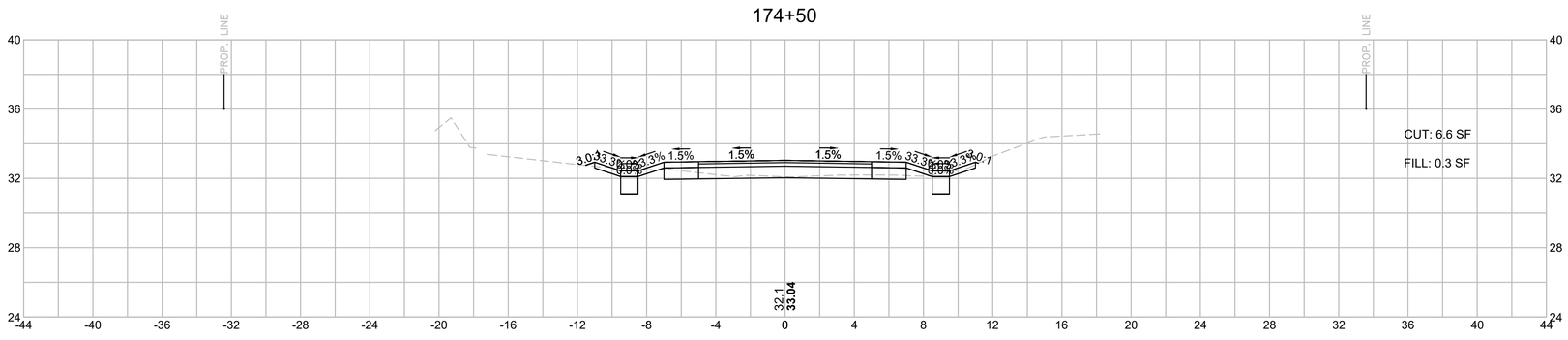
TOWN OF MARION
SHARED-USE PATH - PHASE 1

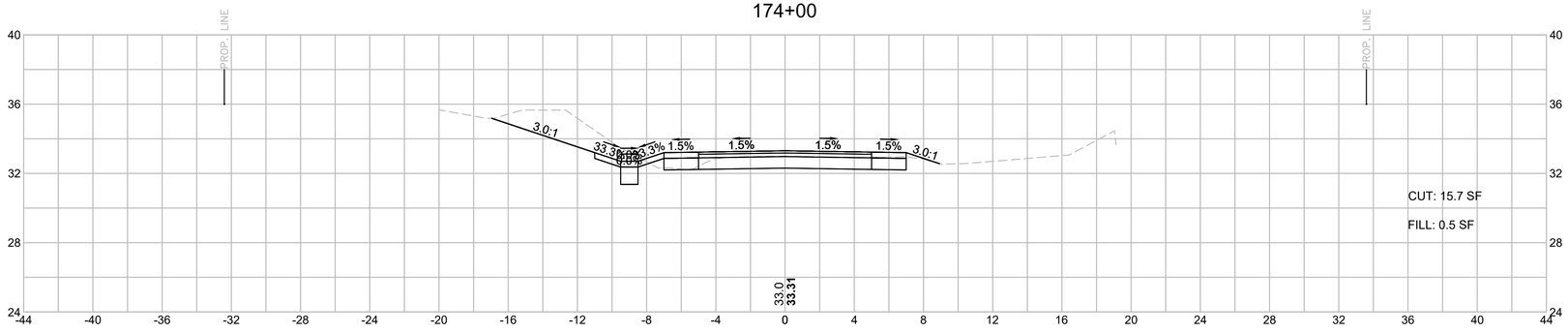
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	178	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 55 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM







HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

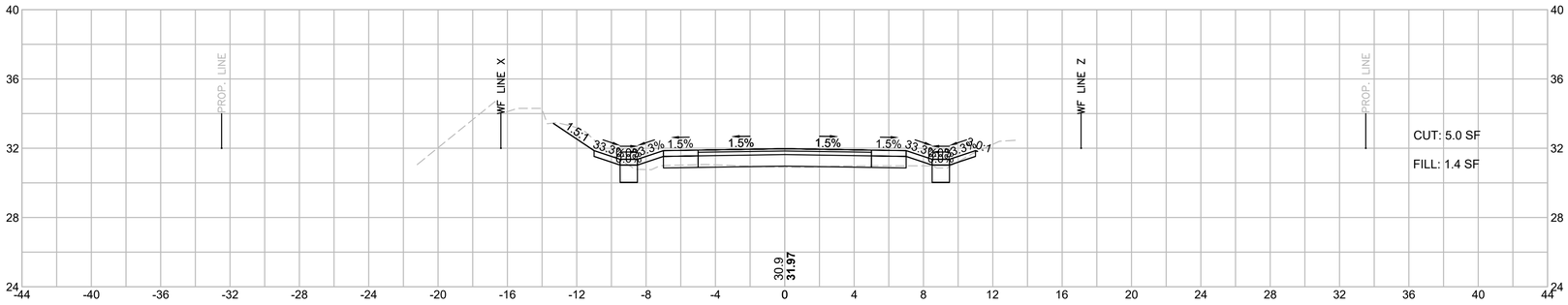
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	179	274
PROJECT FILE NO.	607979		

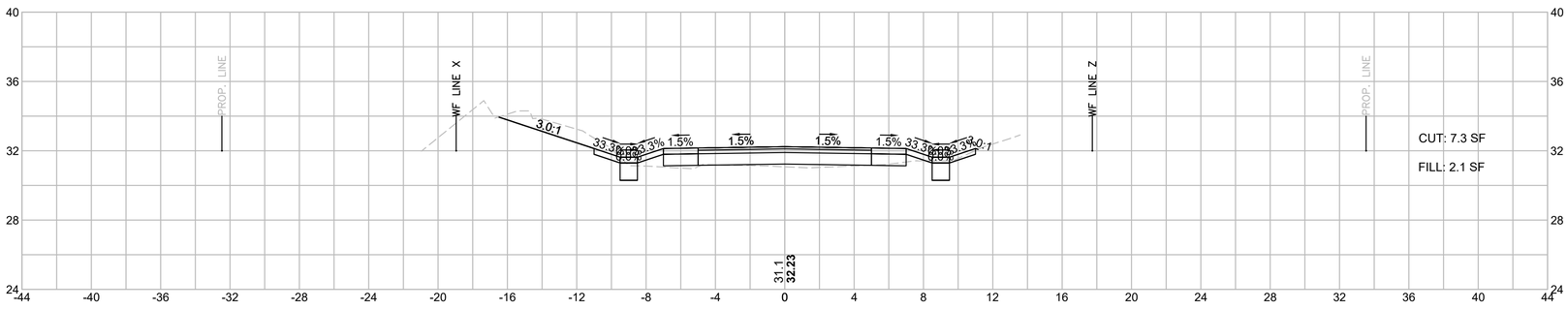
CROSS SECTIONS
SHEET 56 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

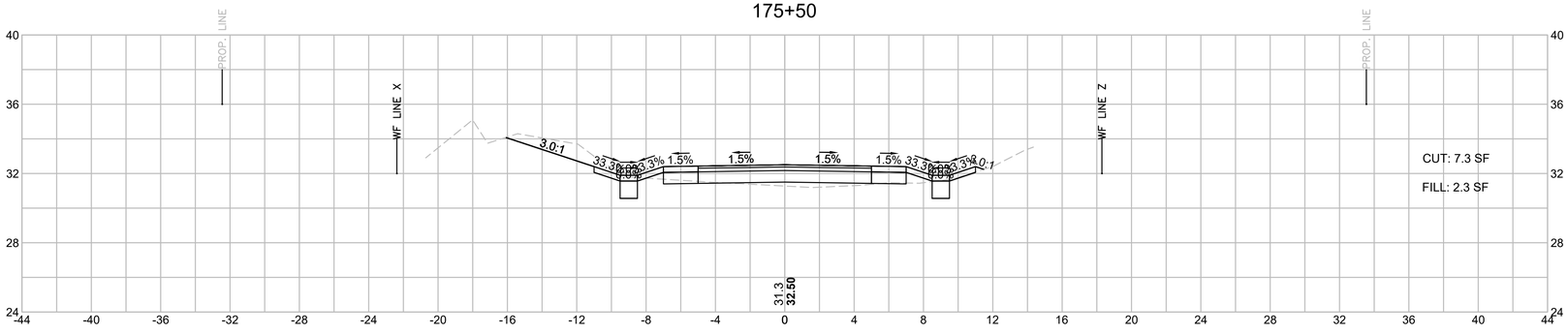
176+50



176+00



175+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

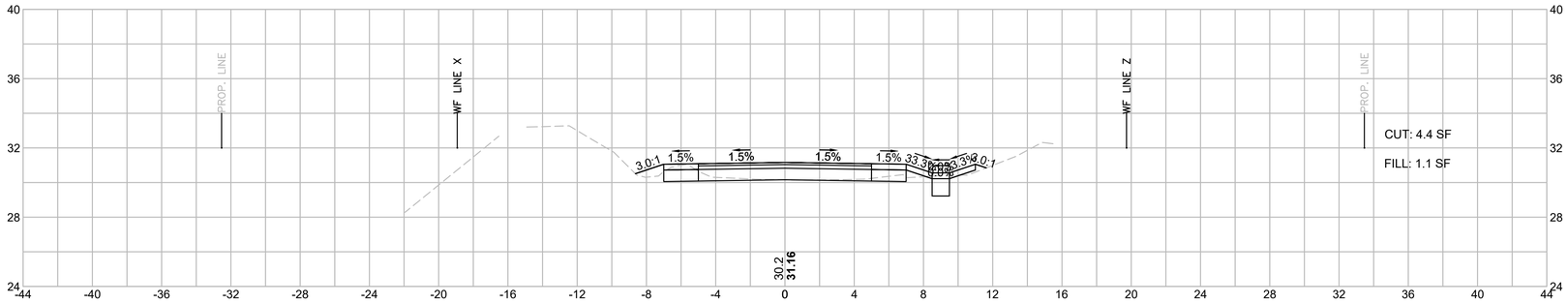
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	180	274
PROJECT FILE NO.	607979		

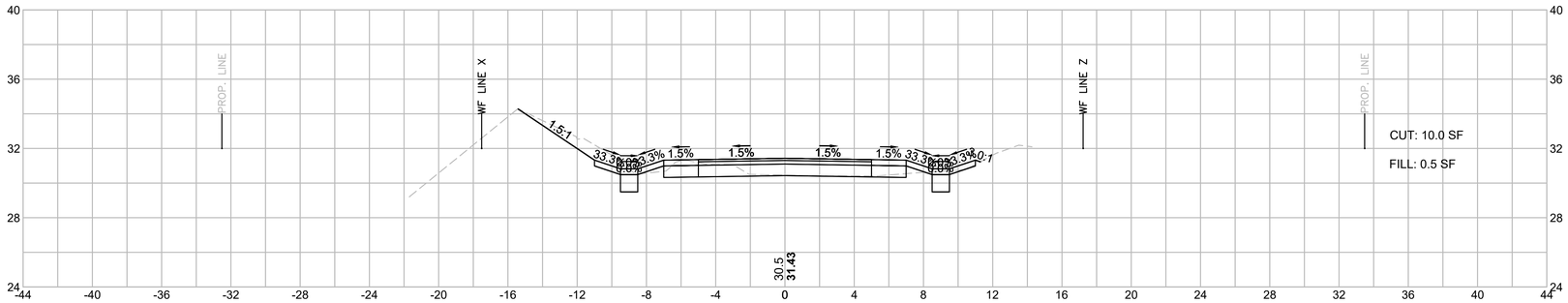
CROSS SECTIONS
SHEET 57 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

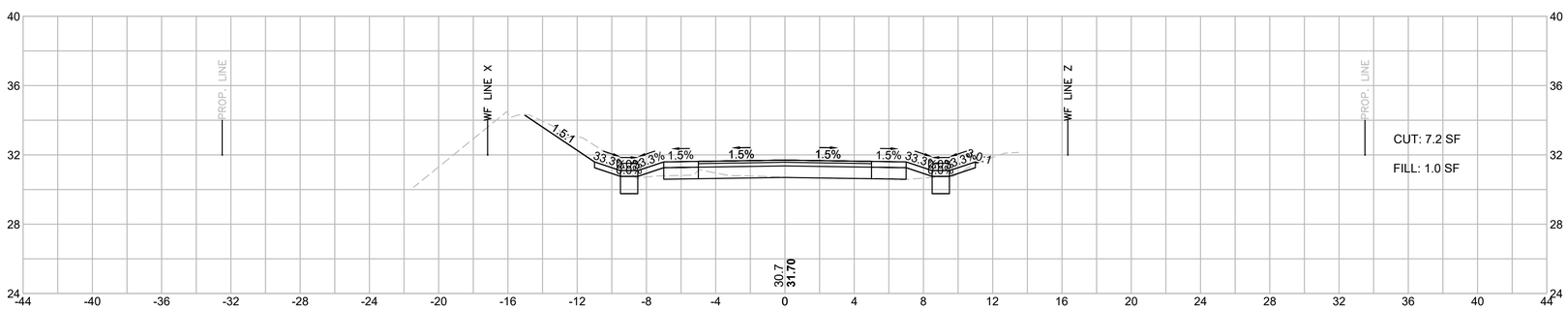
178+00



177+50



177+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

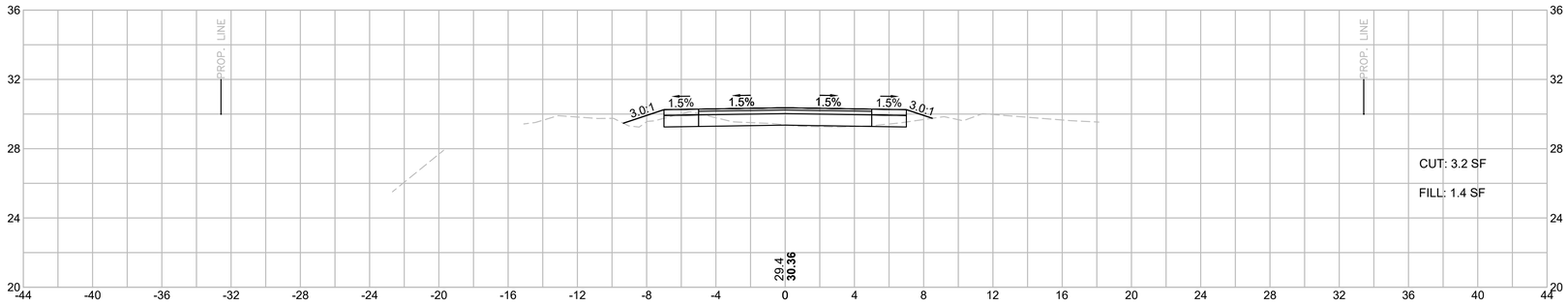
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	181	274
PROJECT FILE NO.	607979		

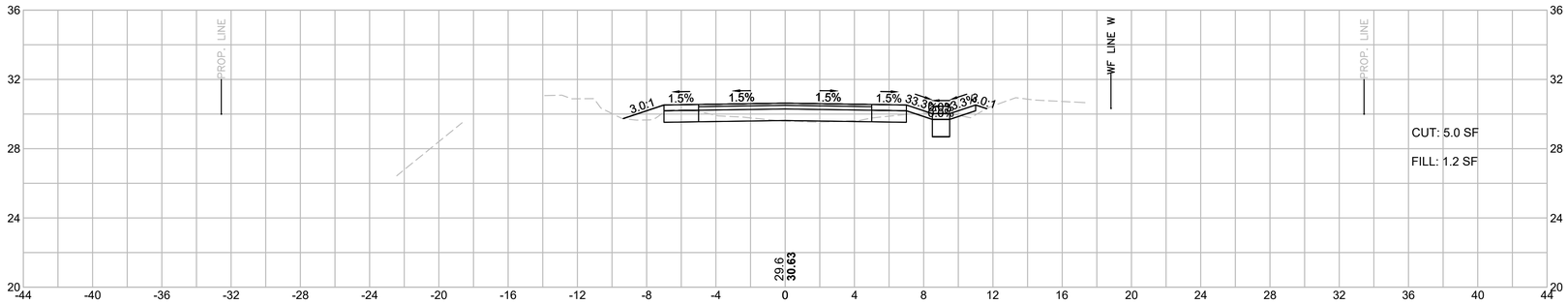
CROSS SECTIONS
SHEET 58 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

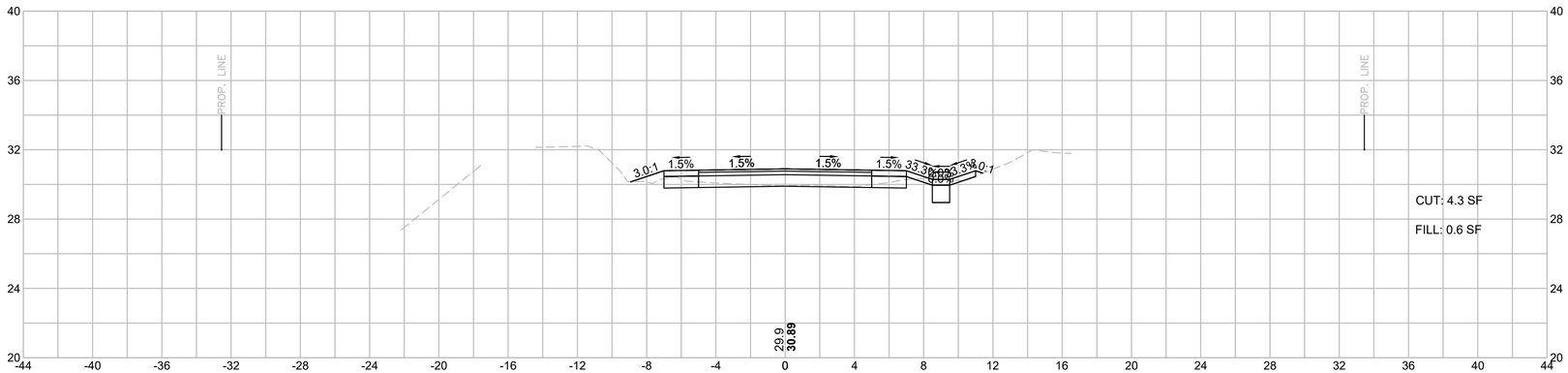
179+50



179+00



178+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

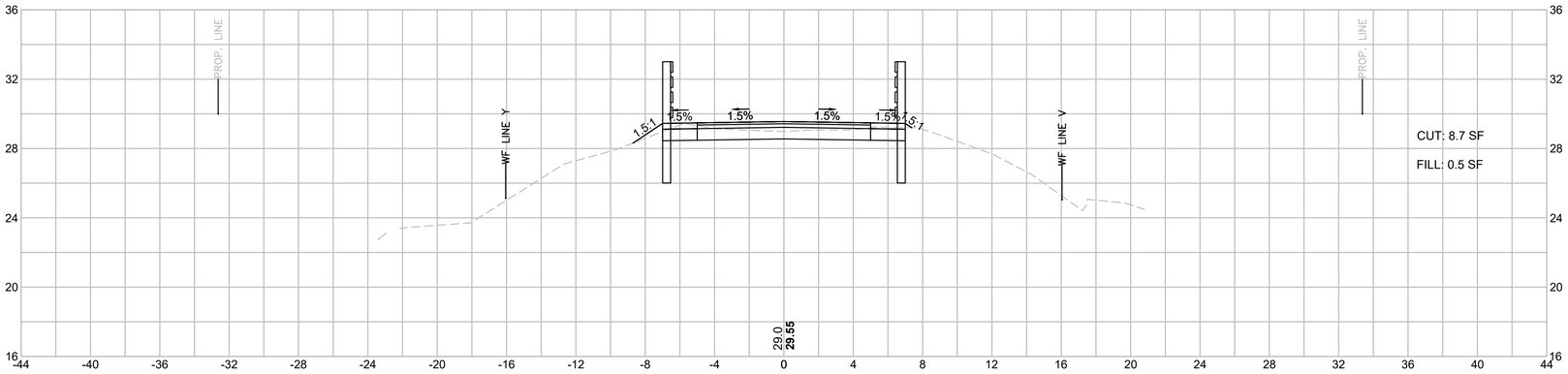
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	182	274
PROJECT FILE NO.	607979		

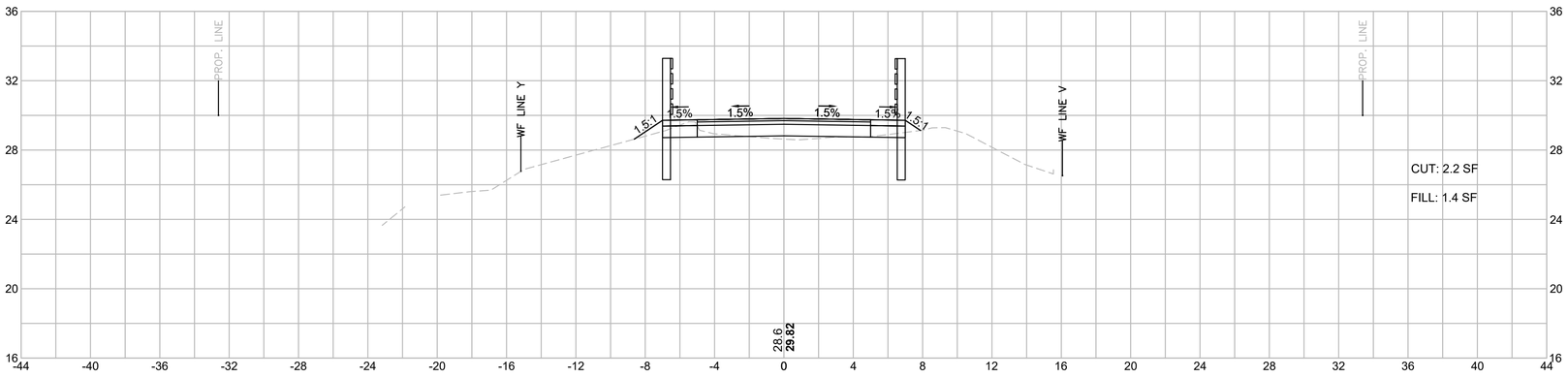
CROSS SECTIONS
SHEET 59 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

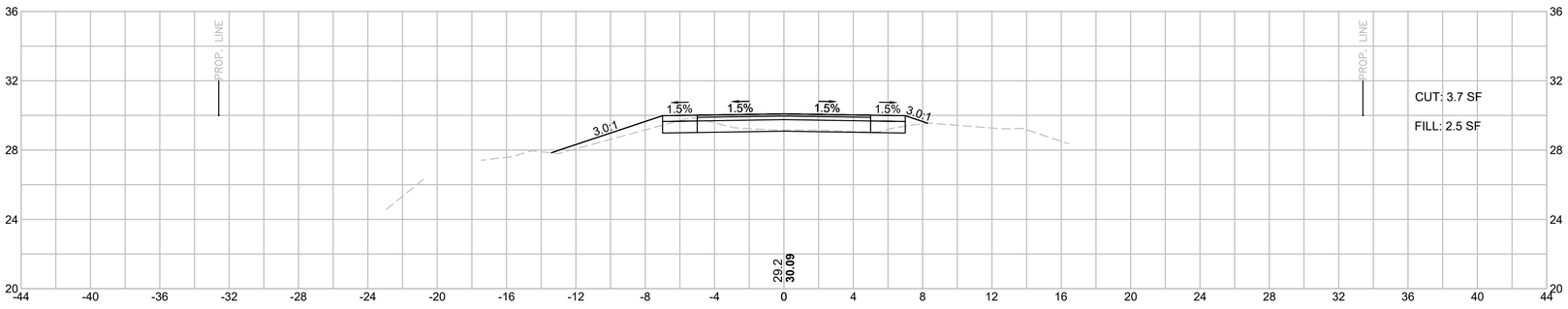
181+00



180+50



180+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

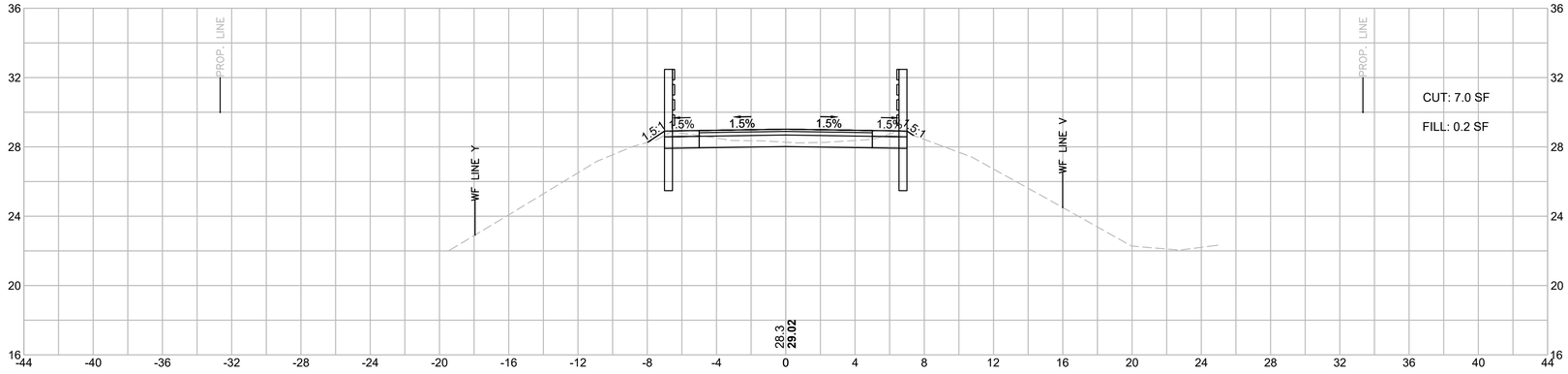
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	183	274
PROJECT FILE NO.	607979		

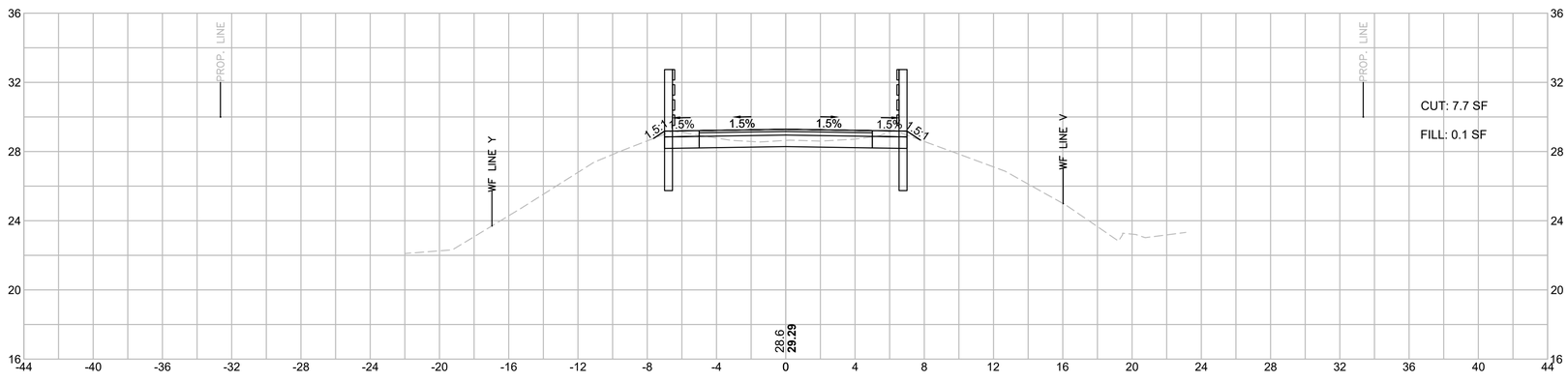
CROSS SECTIONS
SHEET 60 OF 151

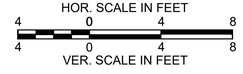
607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

182+00



181+50





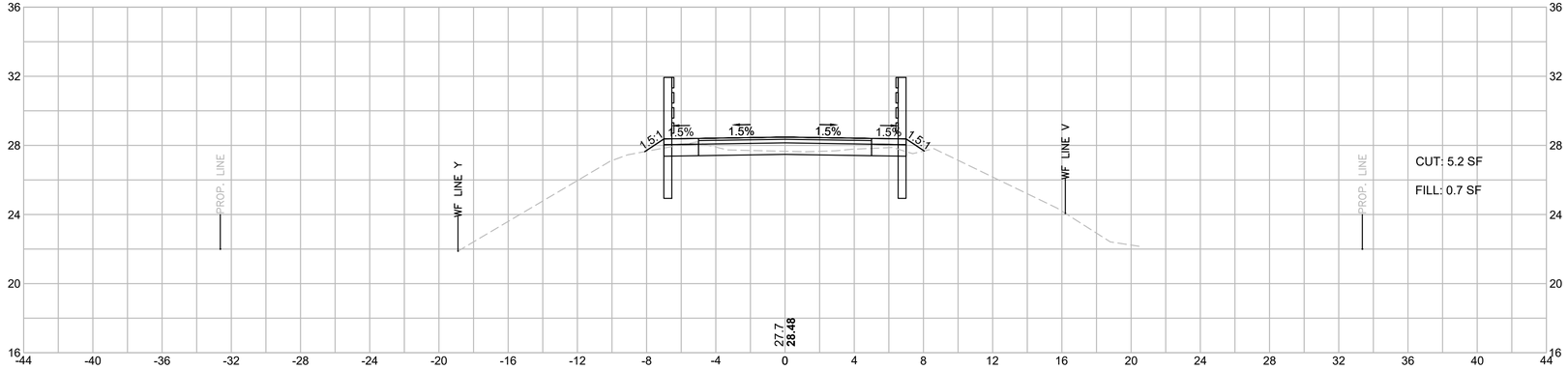
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	184	274
PROJECT FILE NO.	607979		

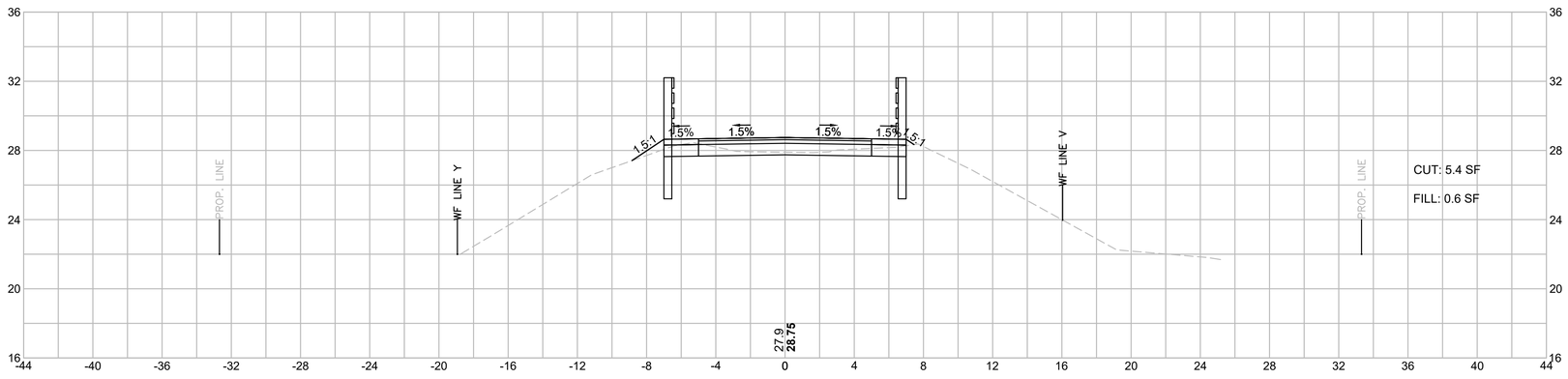
CROSS SECTIONS
SHEET 61 OF 151

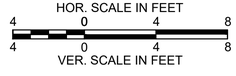
607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

183+00



182+50





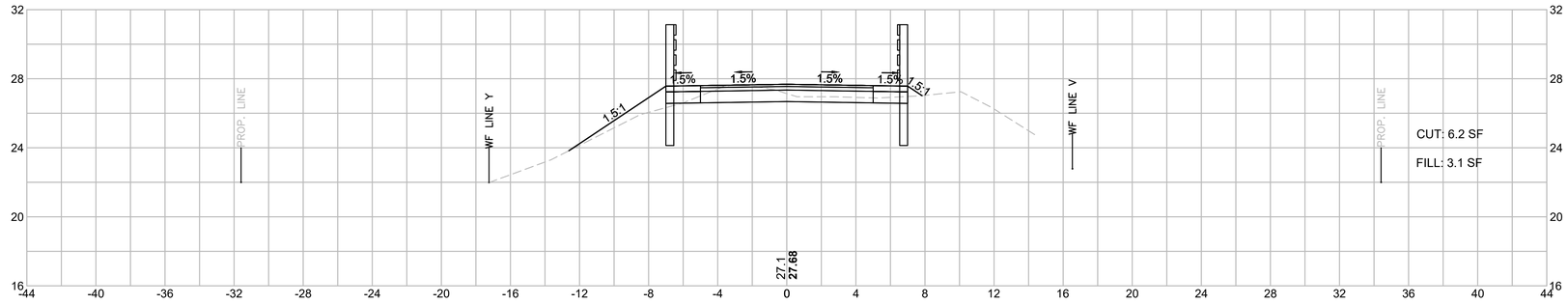
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	185	274
PROJECT FILE NO.	607979		

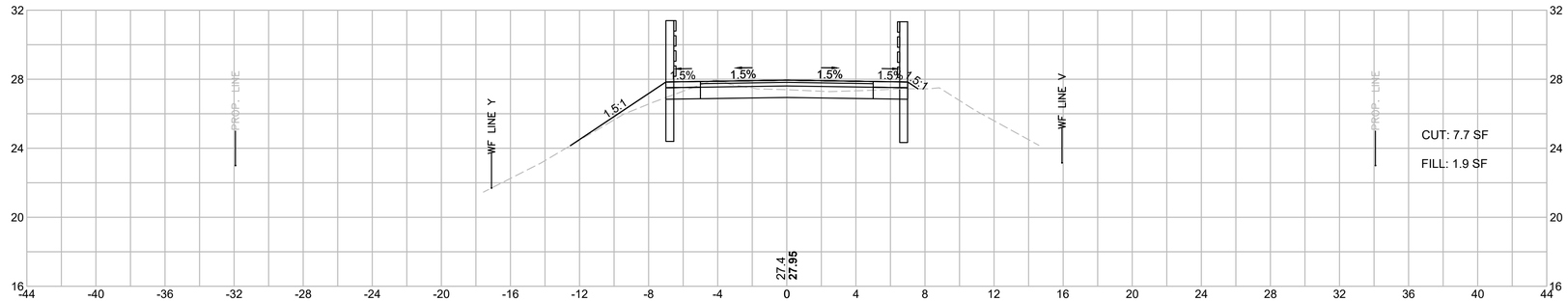
CROSS SECTIONS
SHEET 62 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

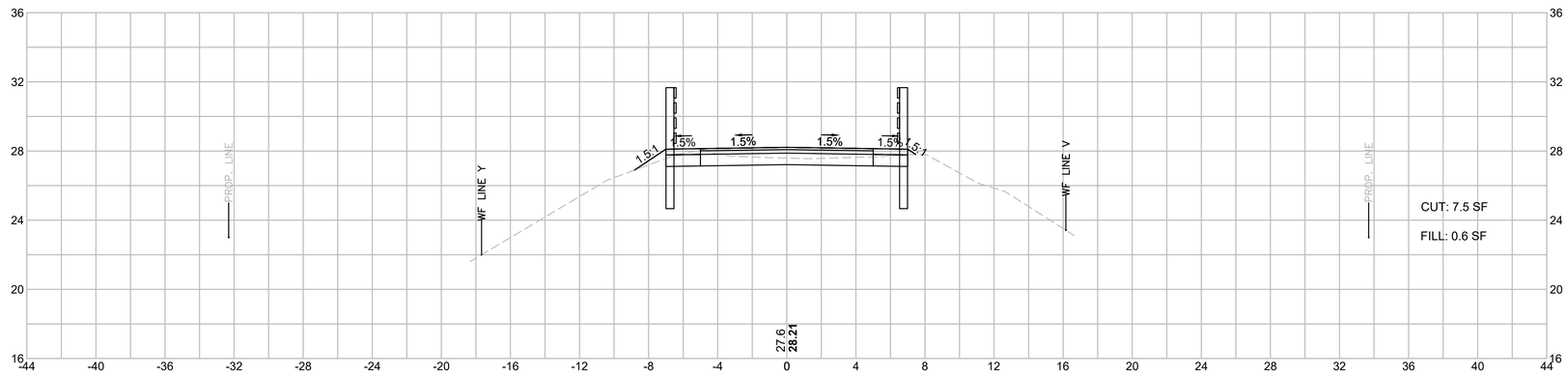
184+50



184+00



183+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

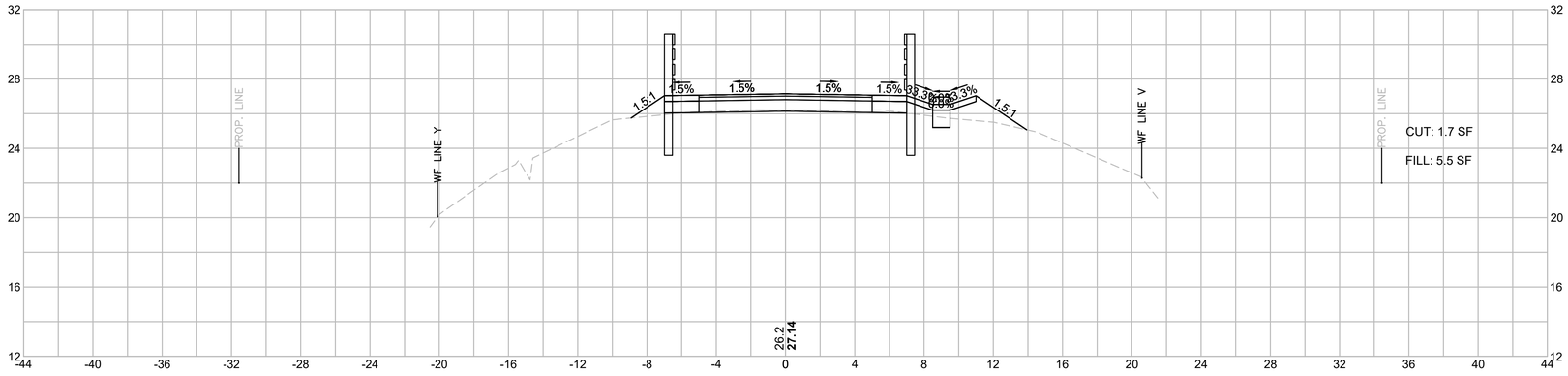
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	186	274
PROJECT FILE NO.	607979		

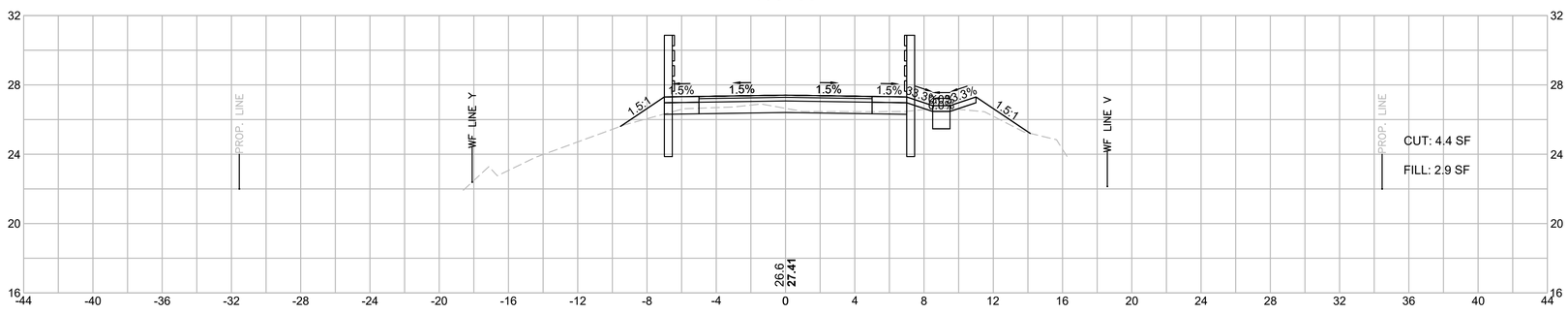
CROSS SECTIONS
SHEET 63 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

185+50



185+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

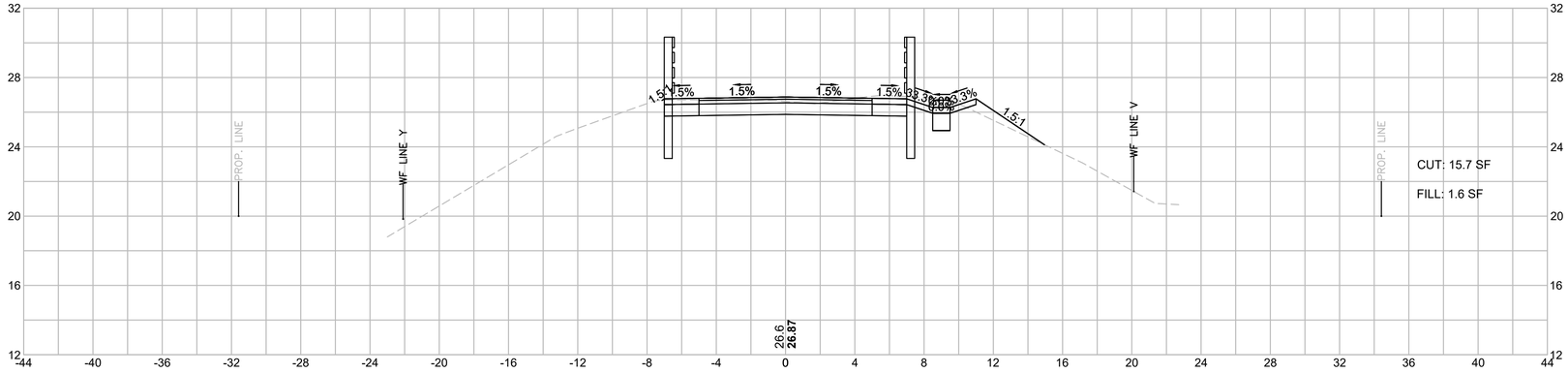
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	187	274
PROJECT FILE NO.	607979		

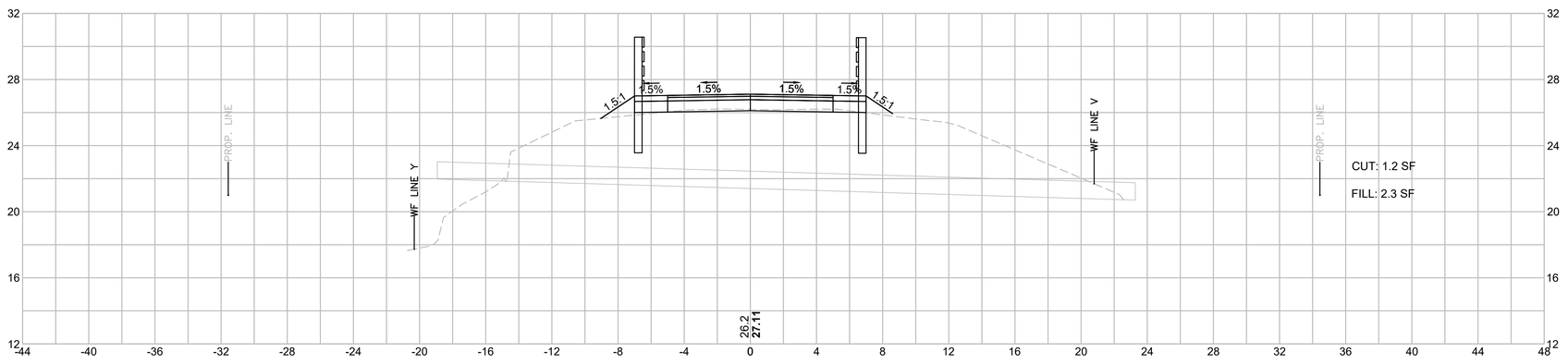
CROSS SECTIONS
SHEET 64 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

186+00



185+55.72



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

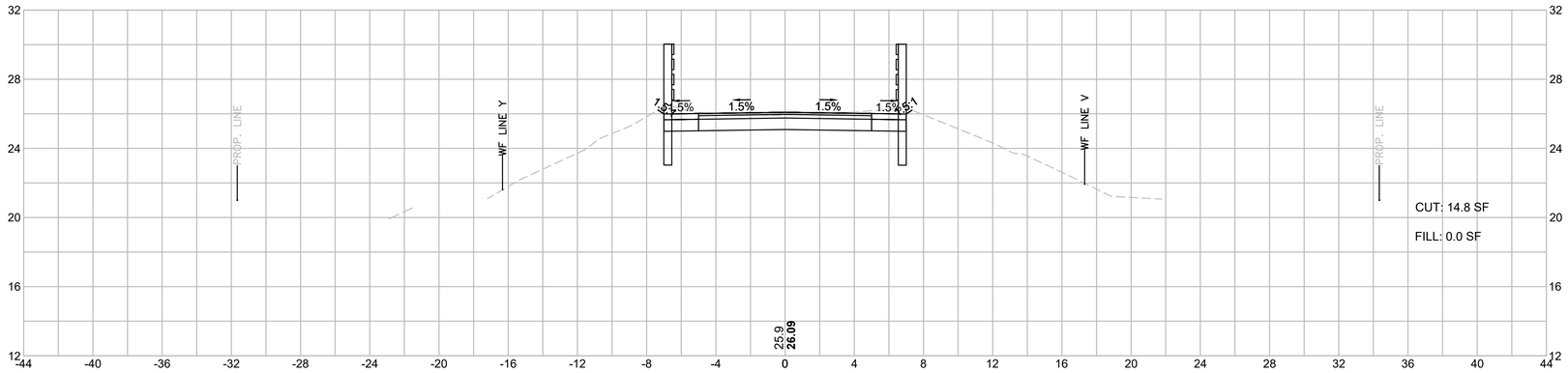
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	188	274
PROJECT FILE NO.	607979		

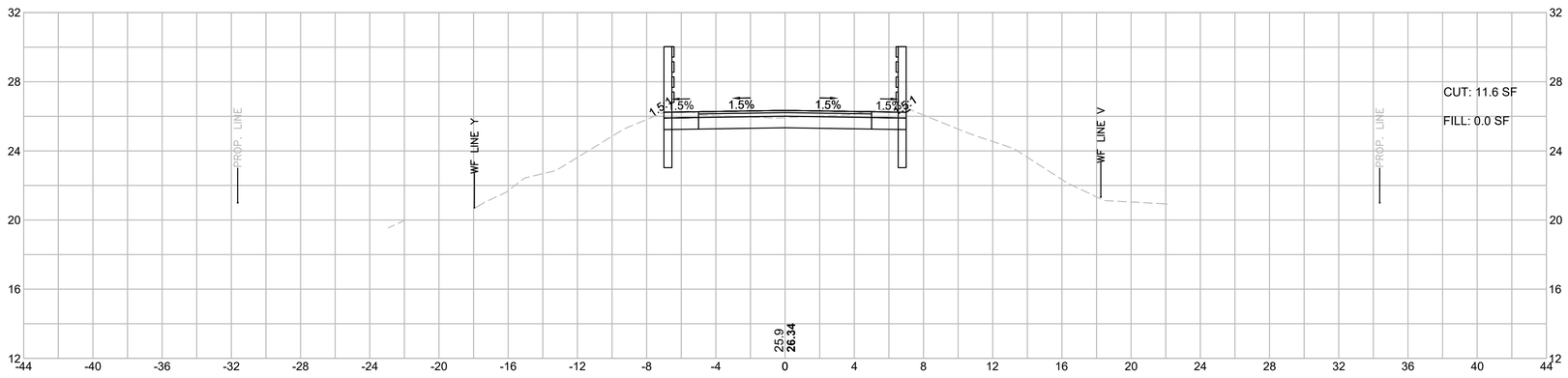
CROSS SECTIONS
SHEET 65 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

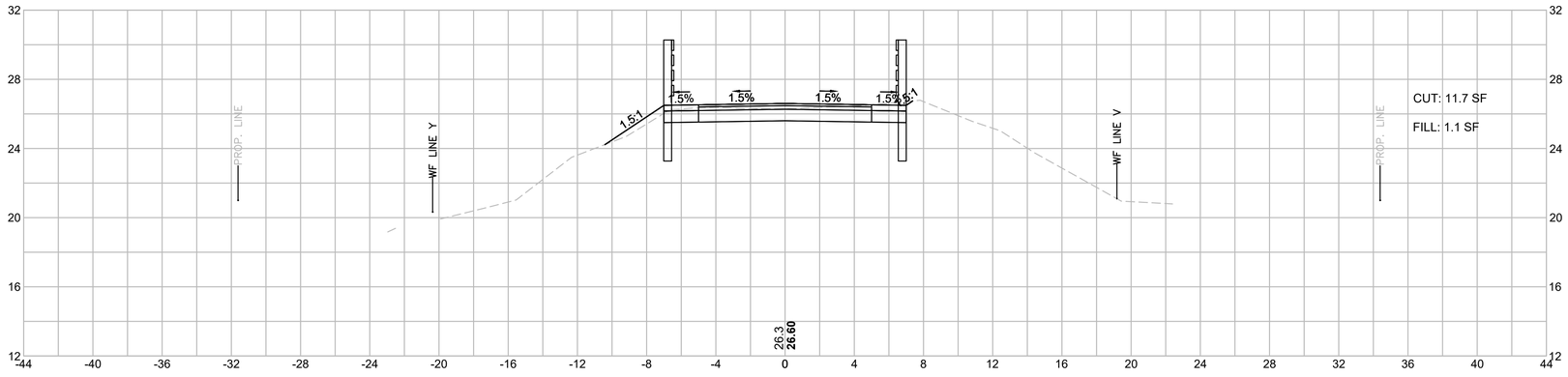
187+50



187+00



186+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

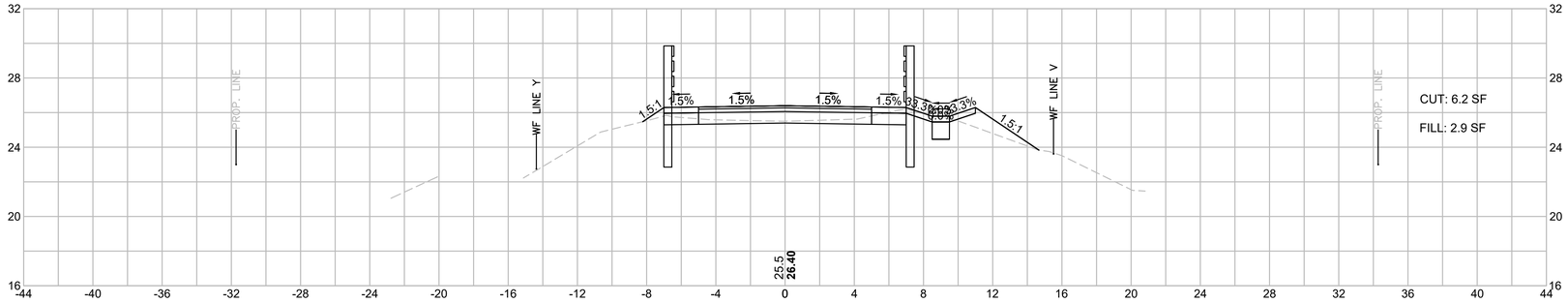
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	189	274
PROJECT FILE NO.	607979		

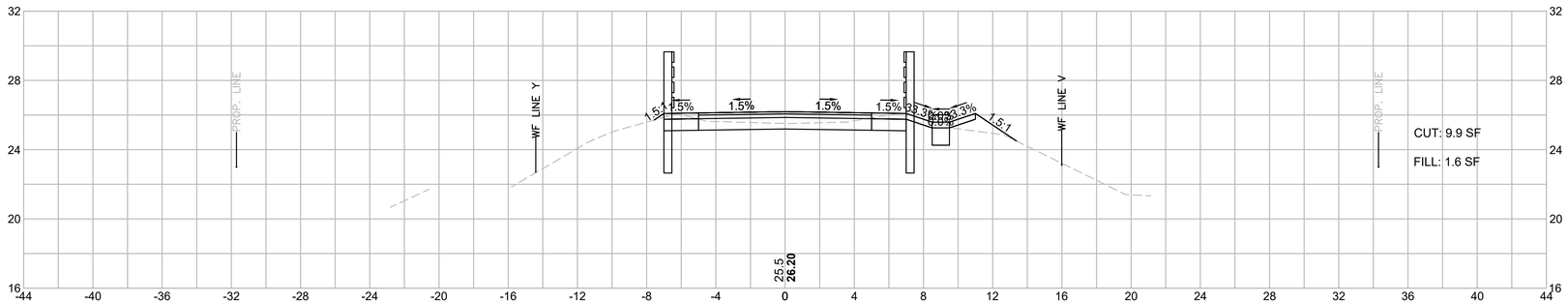
CROSS SECTIONS
SHEET 66 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

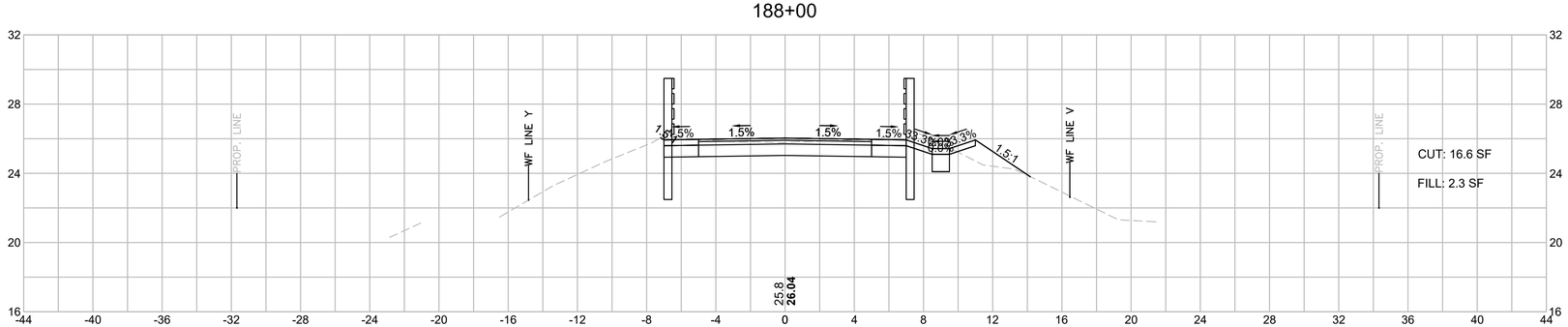
189+00



188+50



188+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

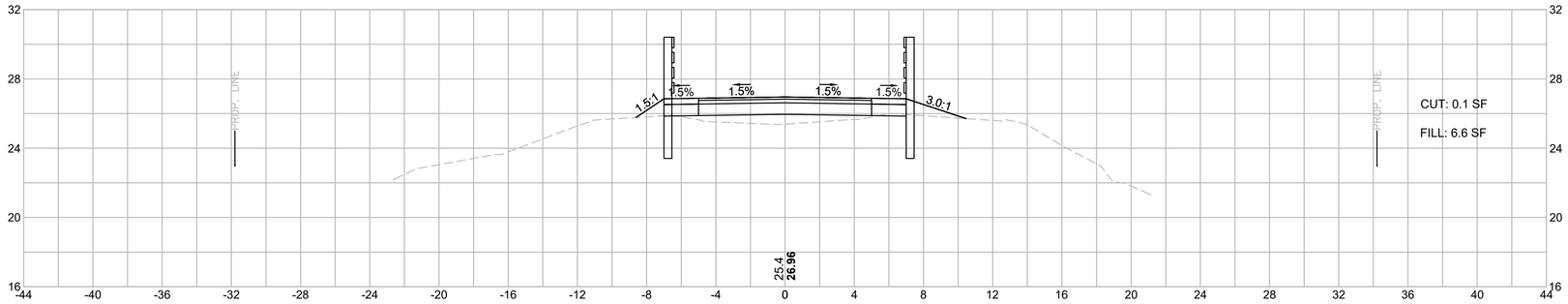
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	190	274
PROJECT FILE NO.	607979		

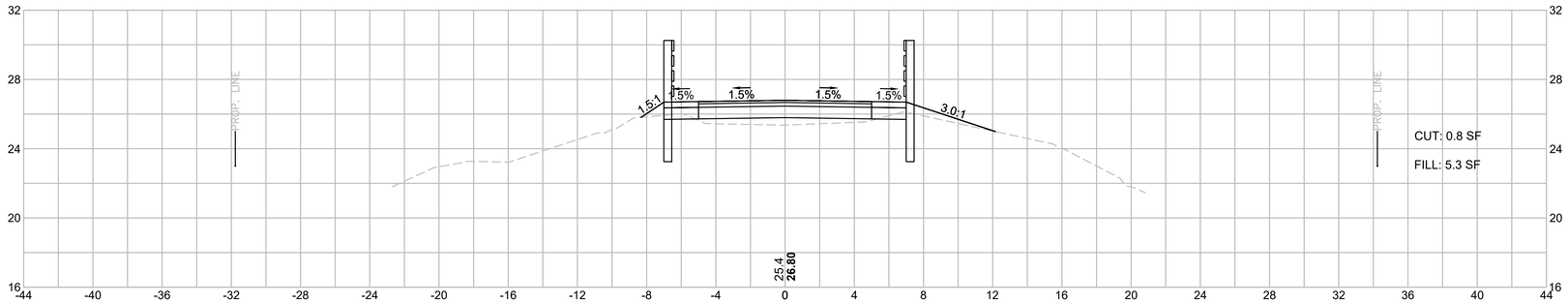
CROSS SECTIONS
SHEET 67 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

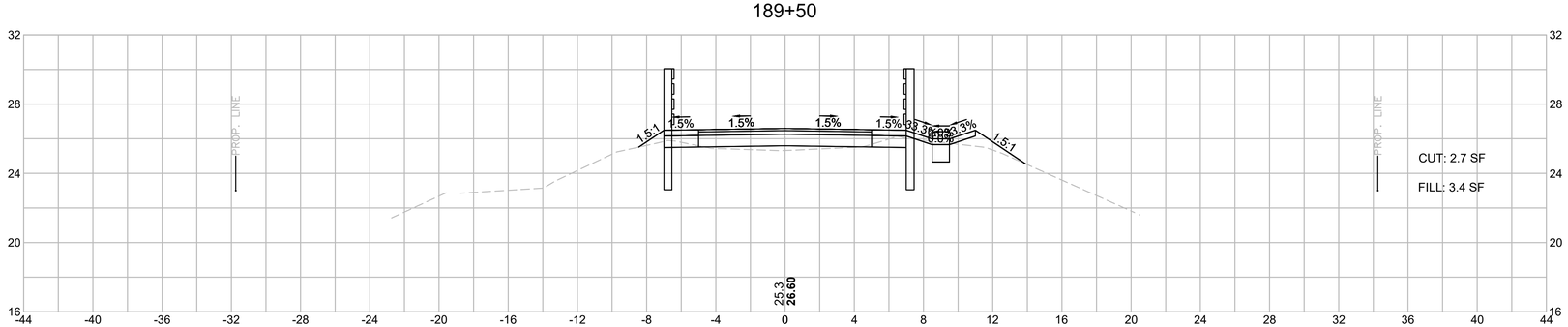
190+50



190+00



189+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

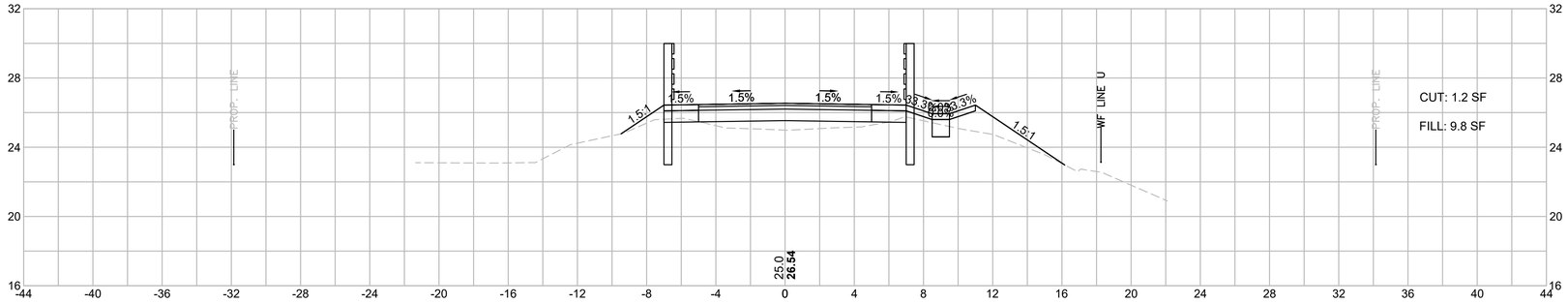
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	191	274
PROJECT FILE NO.	607979		

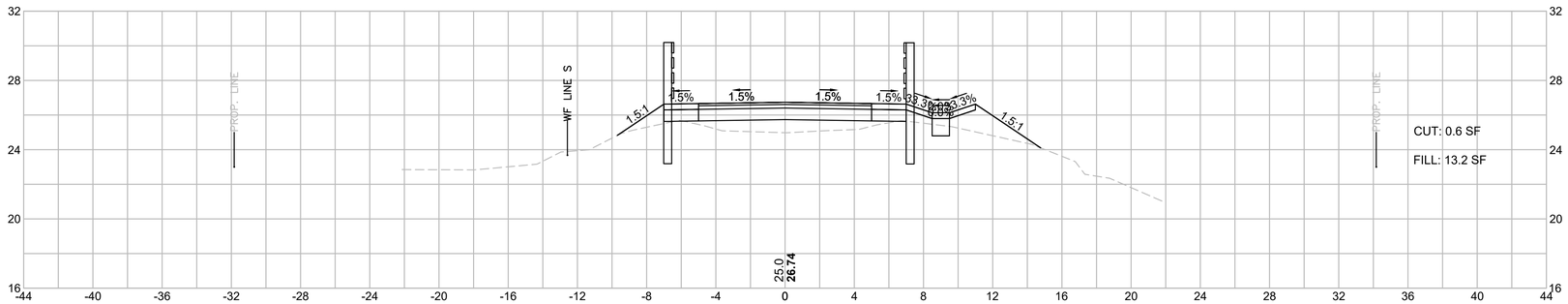
CROSS SECTIONS
SHEET 68 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

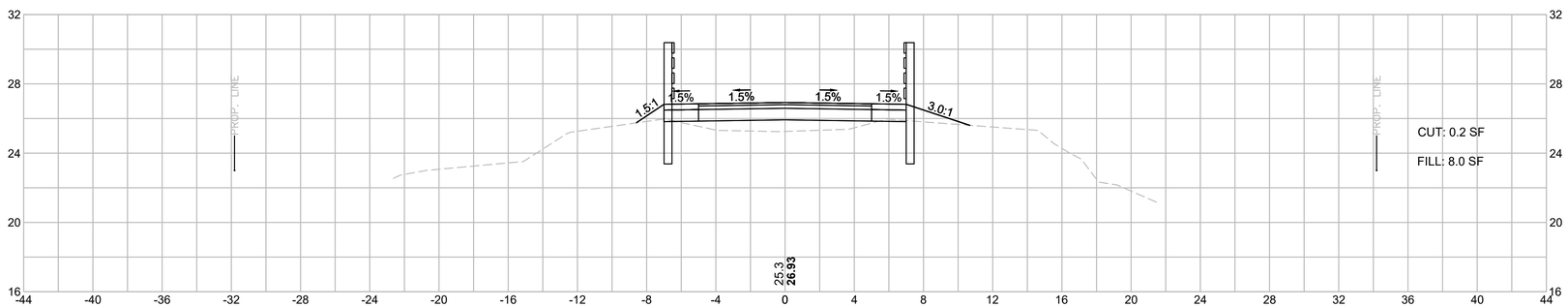
192+00



191+50



191+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

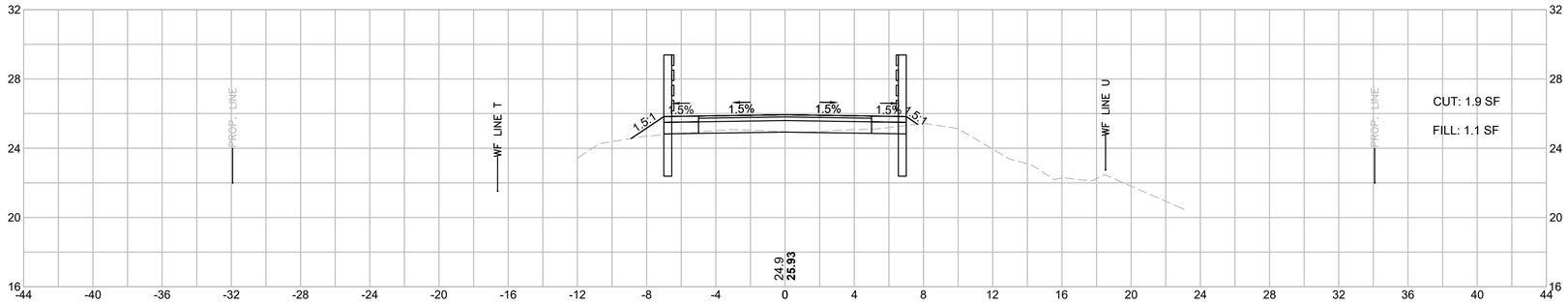
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	192	274
PROJECT FILE NO.	607979		

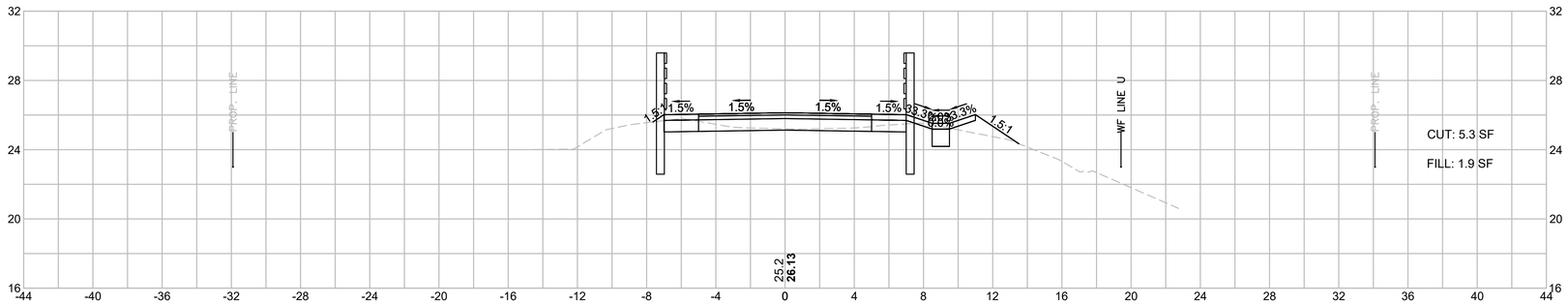
CROSS SECTIONS
SHEET 69 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

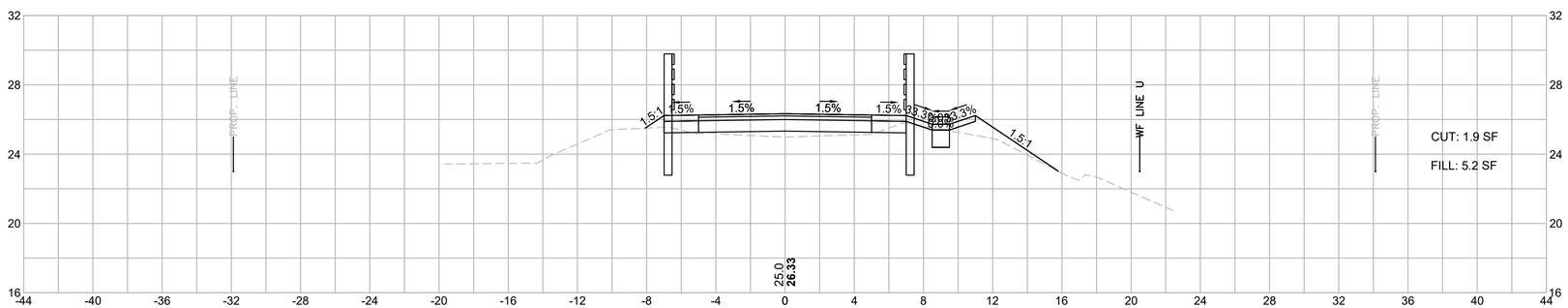
193+50



193+00



192+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

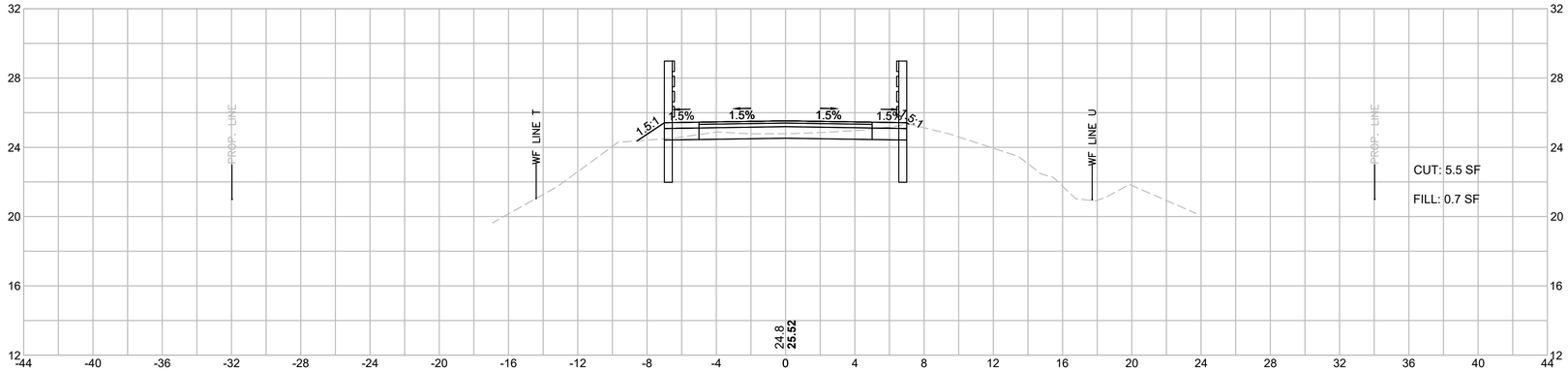
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	193	274
PROJECT FILE NO.	607979		

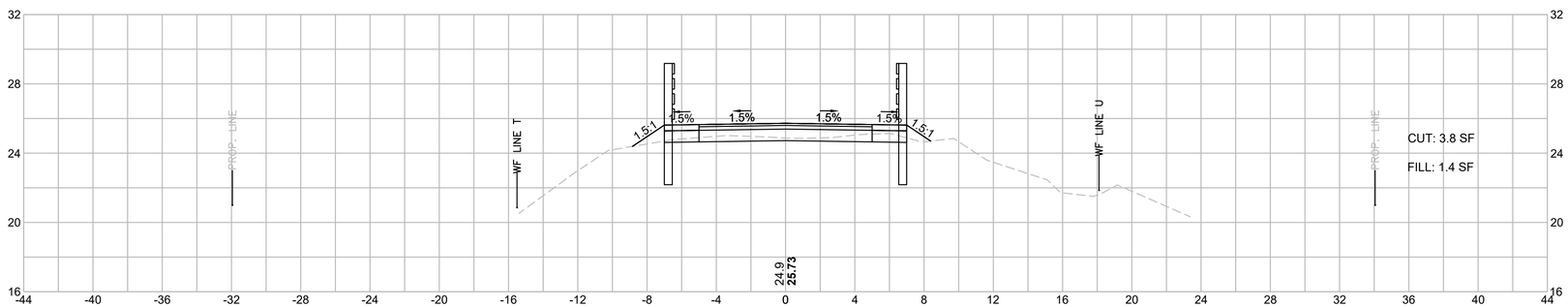
CROSS SECTIONS
SHEET 70 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

194+50



194+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

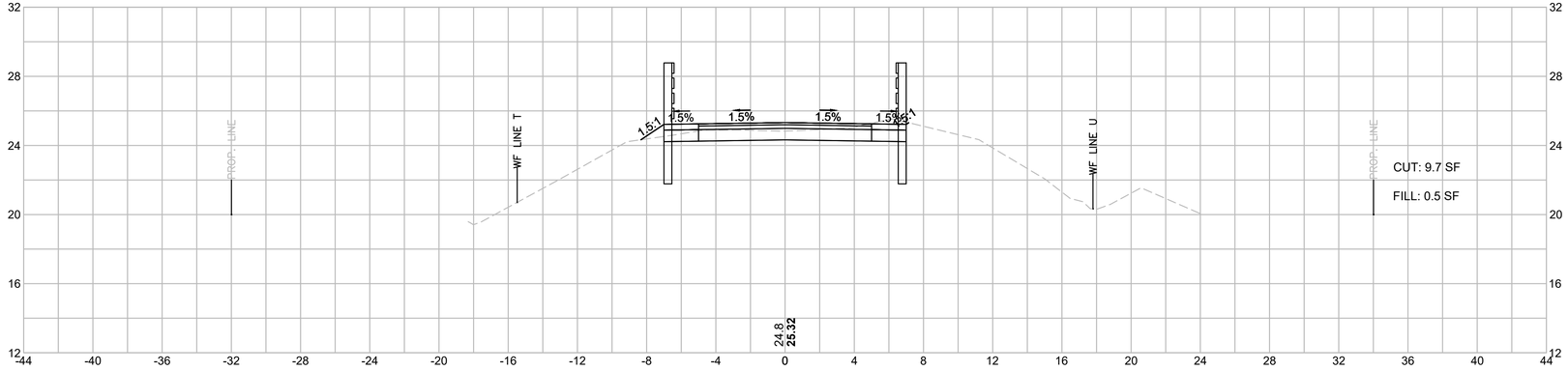
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	194	274
PROJECT FILE NO.	607979		

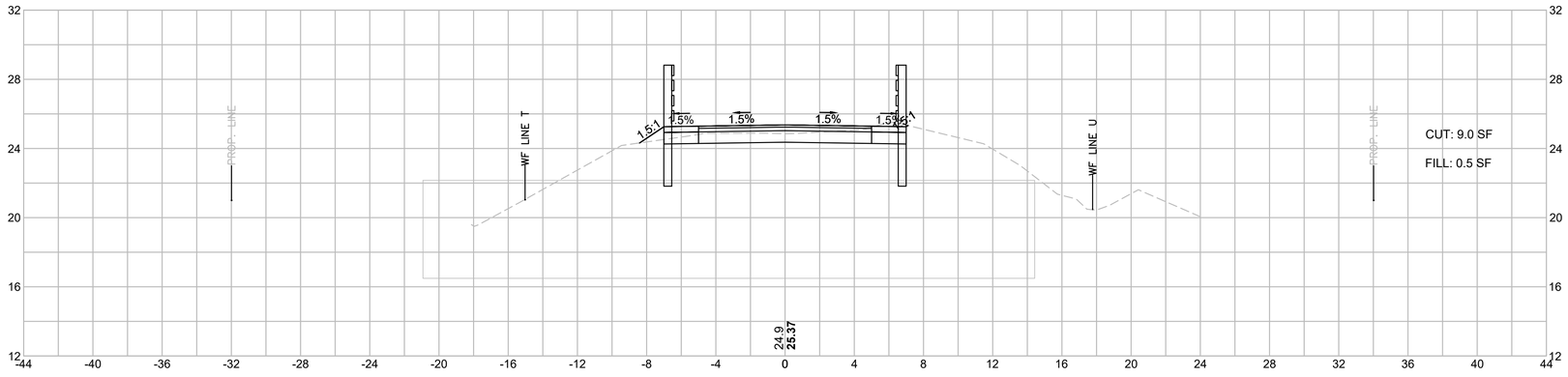
CROSS SECTIONS
SHEET 71 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

195+00



194+89.09



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

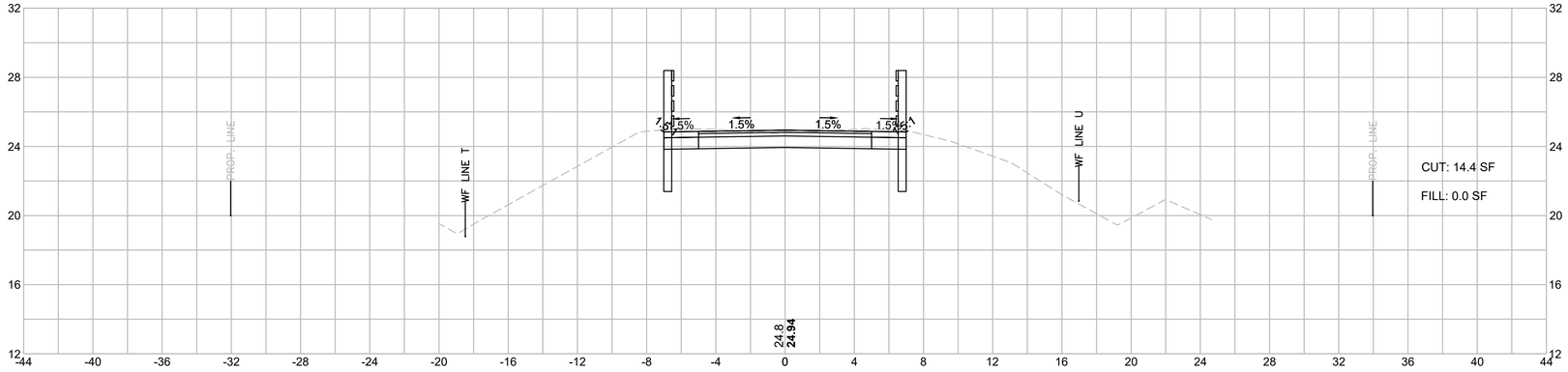
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	195	274
PROJECT FILE NO.	607979		

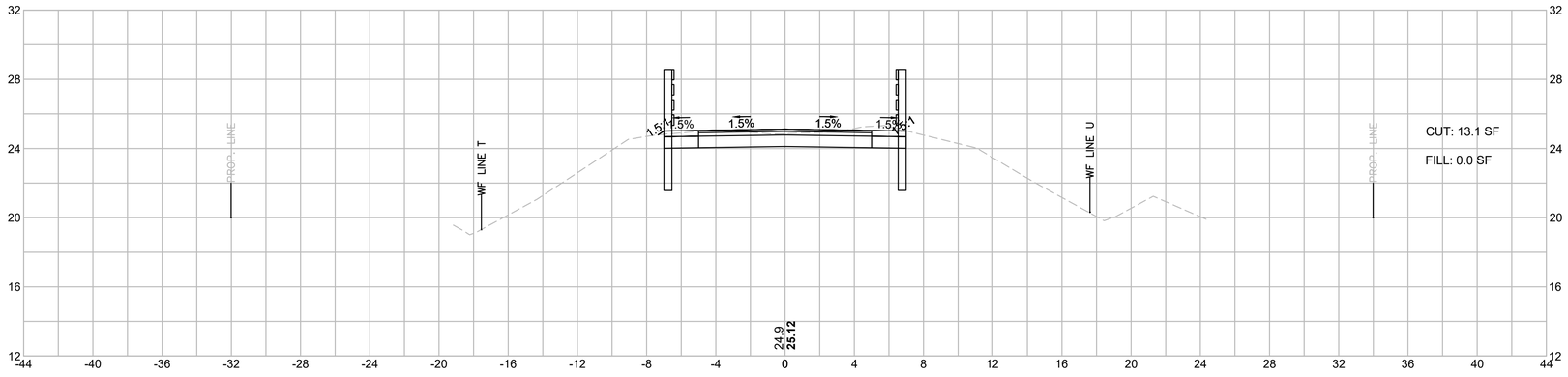
CROSS SECTIONS
SHEET 72 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

196+00



195+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

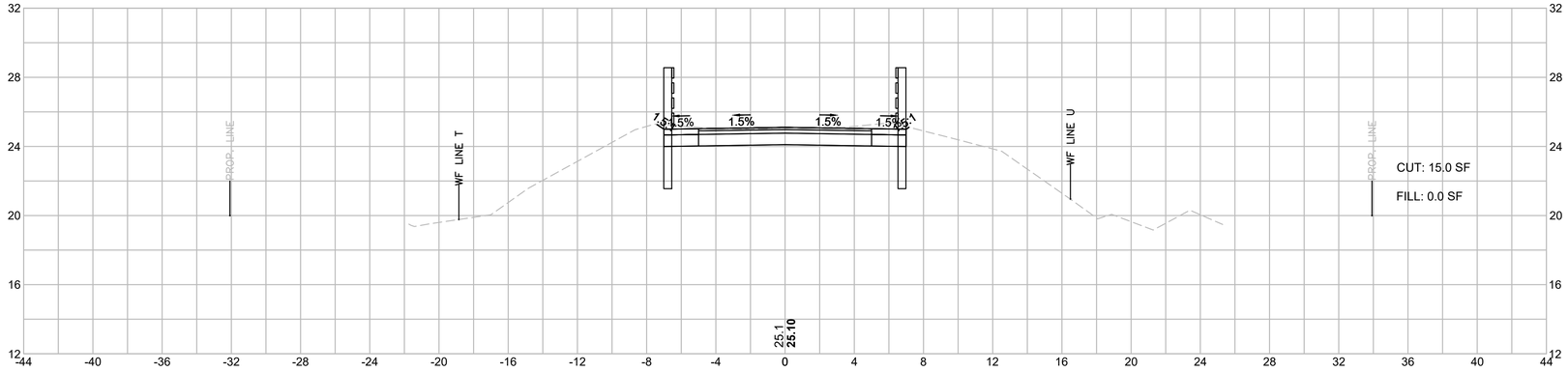
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	196	274
PROJECT FILE NO.	607979		

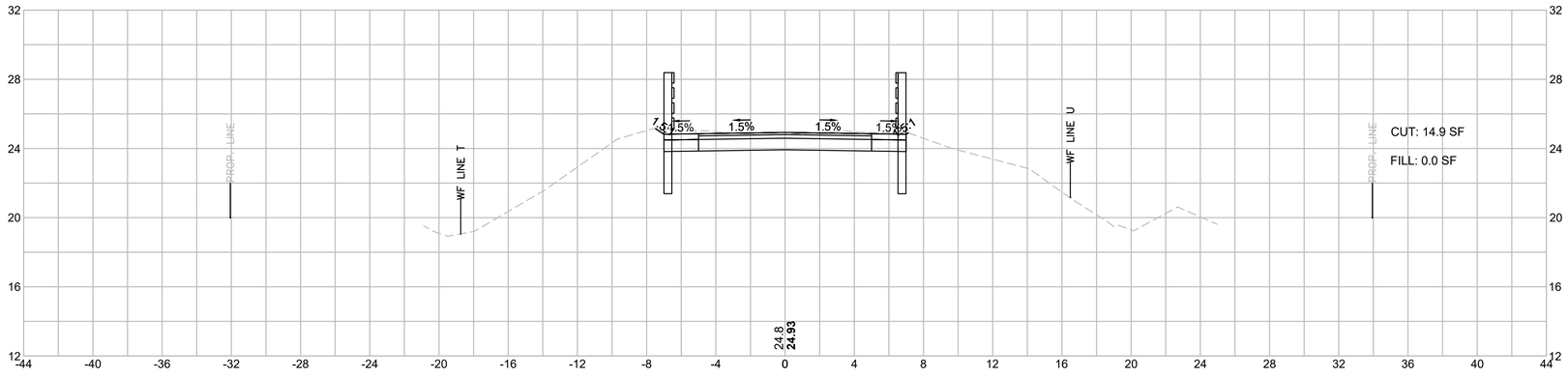
CROSS SECTIONS
SHEET 73 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

197+00



196+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

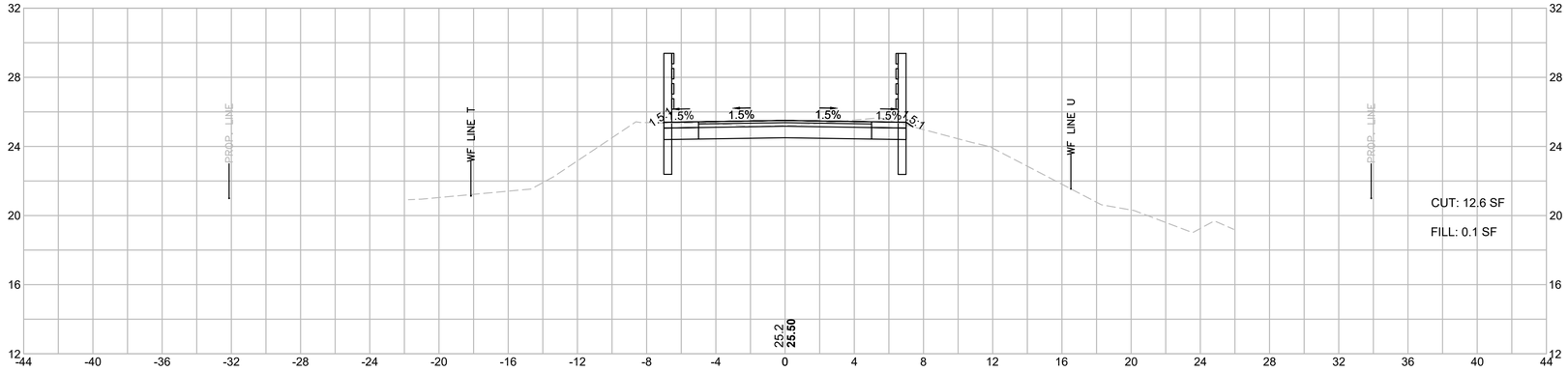
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	197	274
PROJECT FILE NO.	607979		

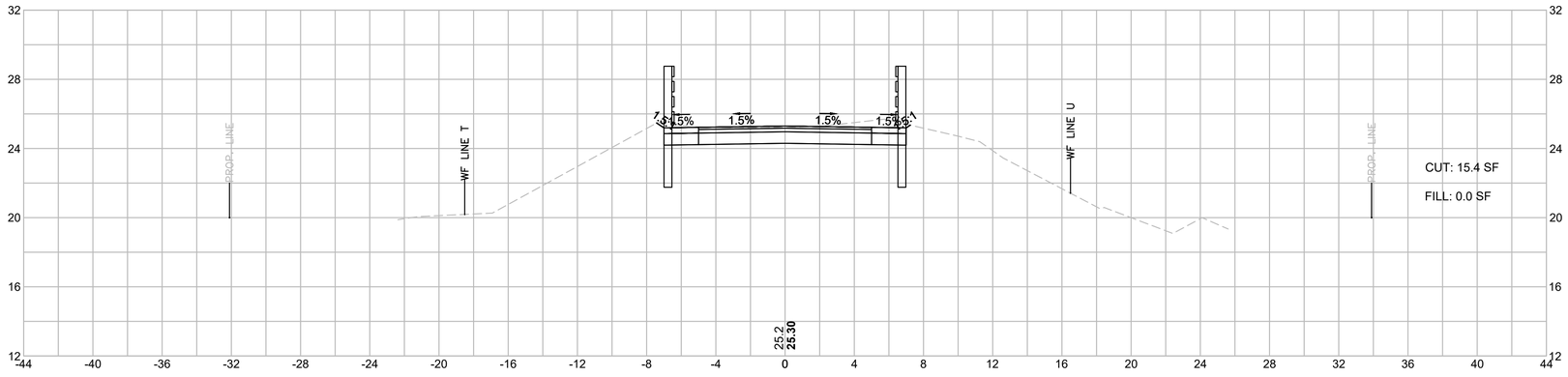
CROSS SECTIONS
SHEET 74 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

198+00



197+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

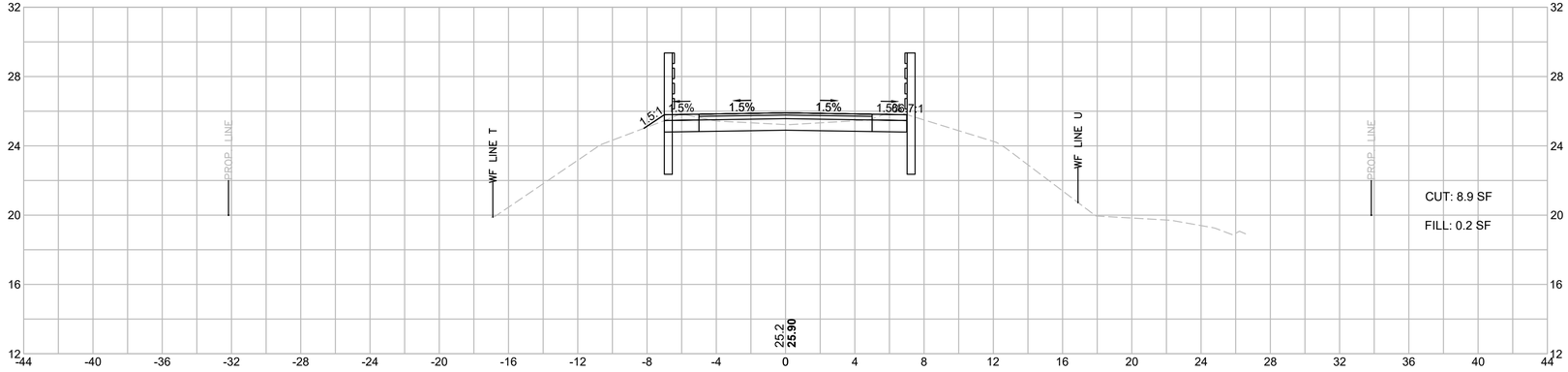
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	198	274
PROJECT FILE NO.	607979		

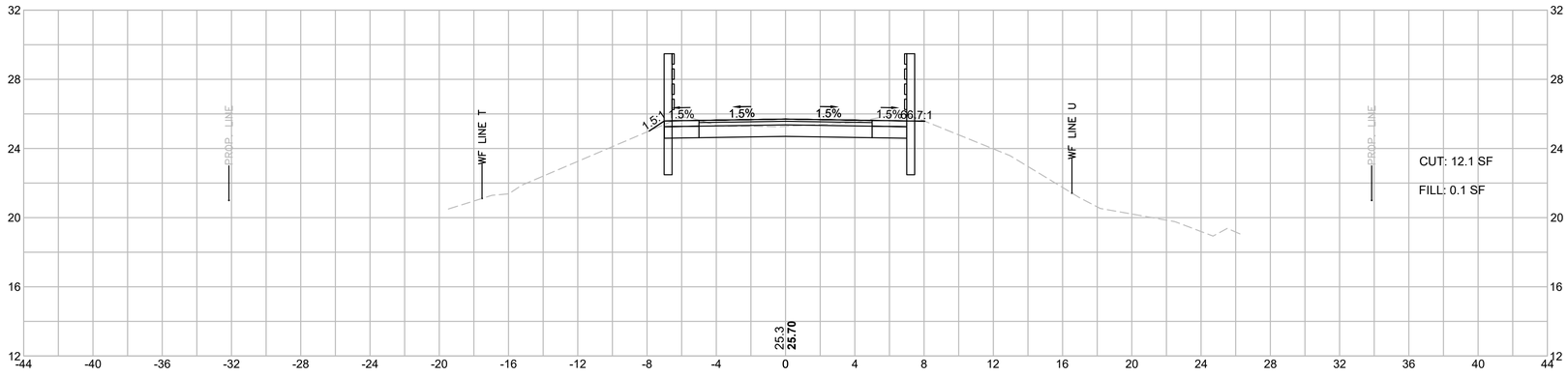
CROSS SECTIONS
SHEET 75 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

199+00



198+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

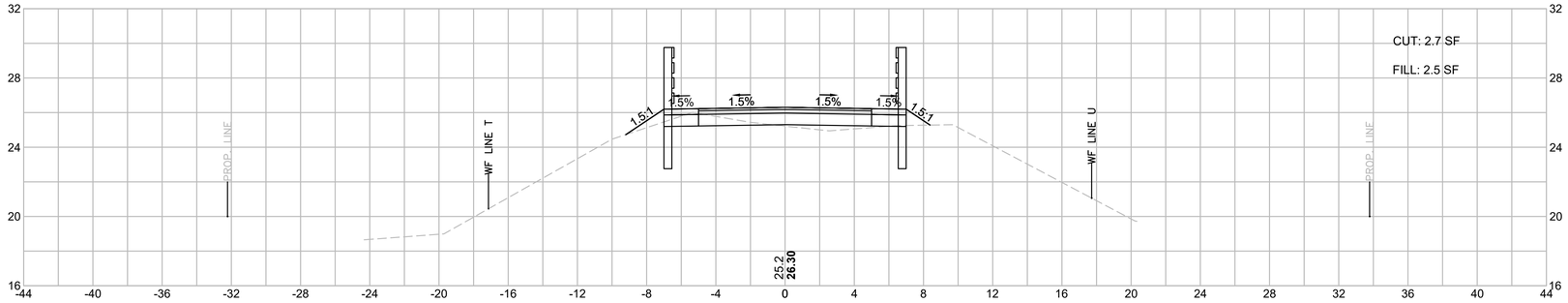
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	199	274
PROJECT FILE NO.	607979		

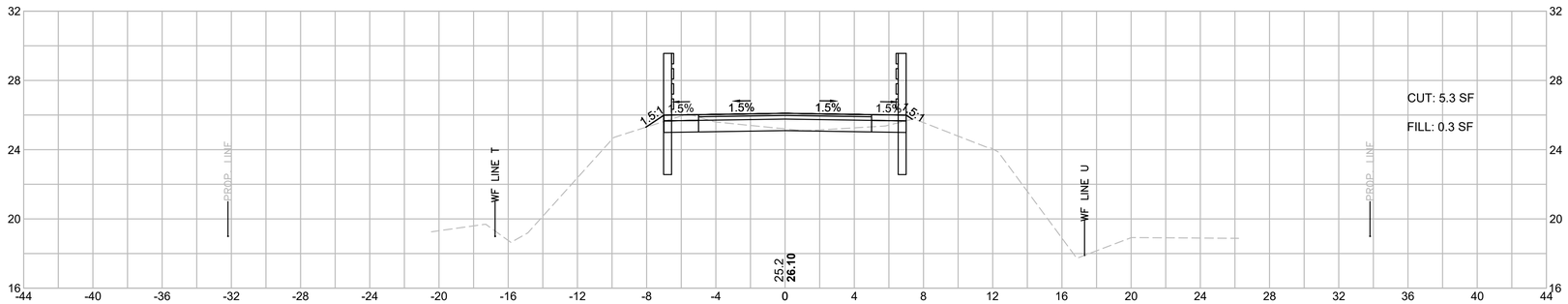
CROSS SECTIONS
SHEET 76 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

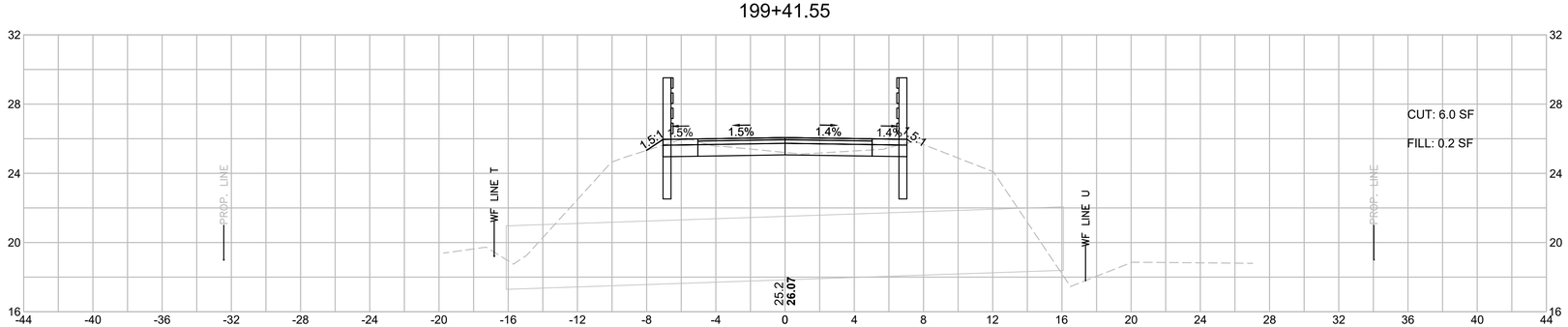
200+00



199+50



199+41.55



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

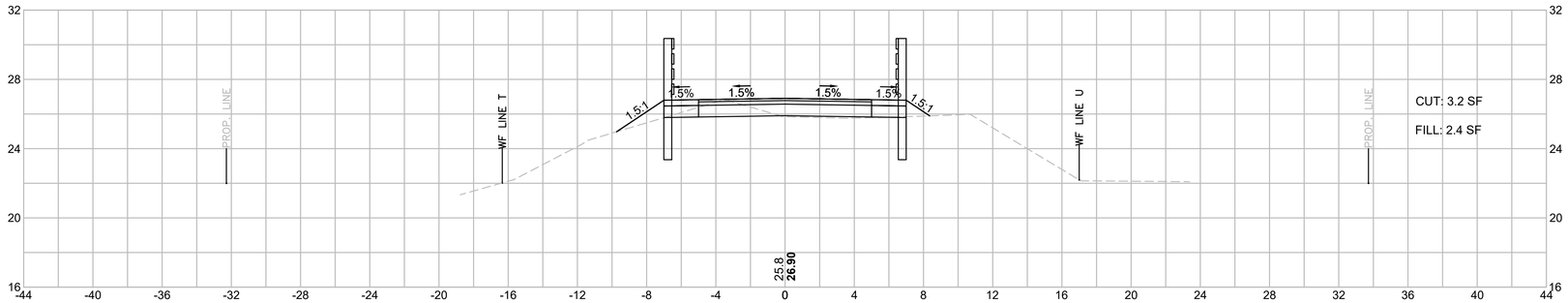
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	200	274
PROJECT FILE NO.	607979		

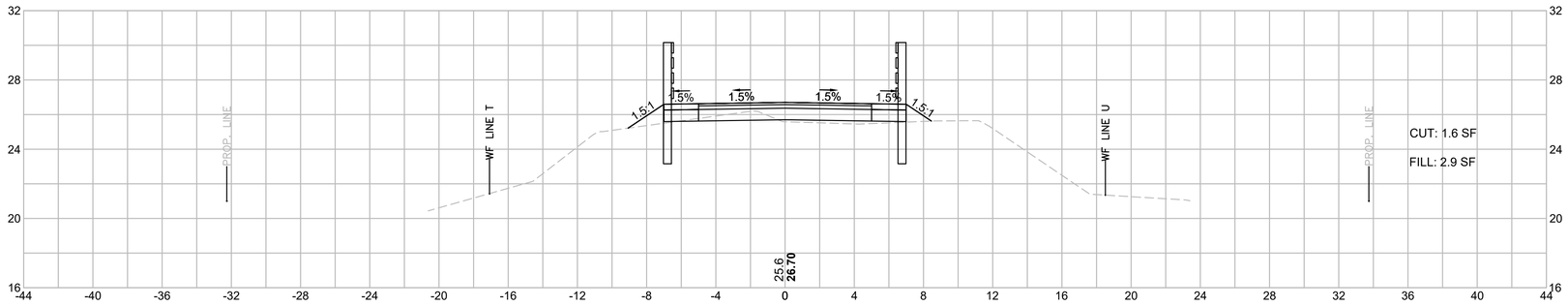
CROSS SECTIONS
SHEET 77 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

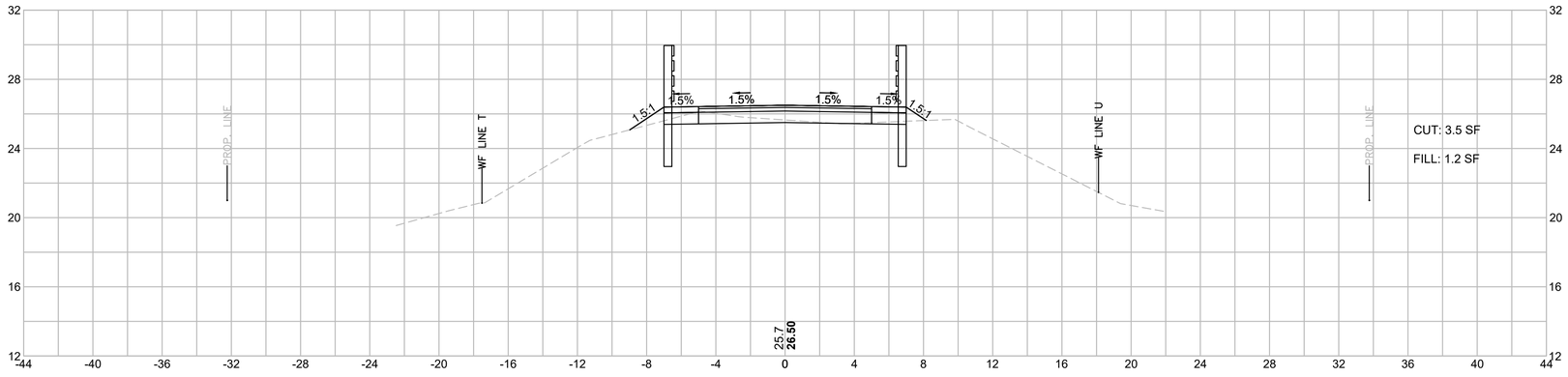
201+50



201+00



200+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

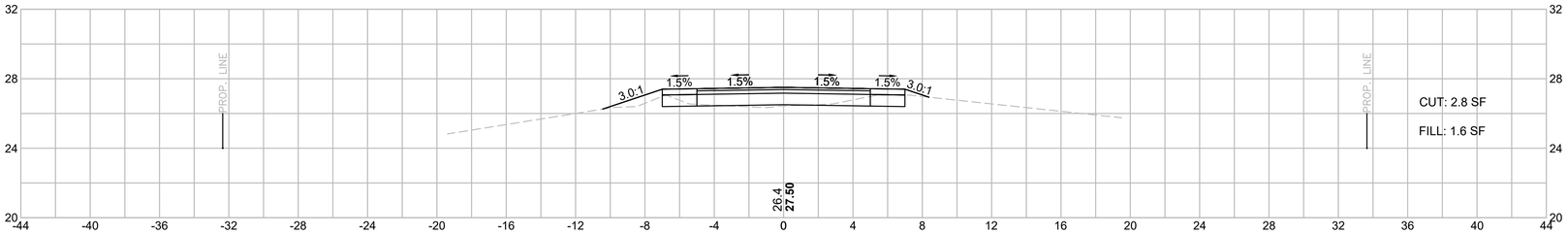
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	201	274
PROJECT FILE NO.	607979		

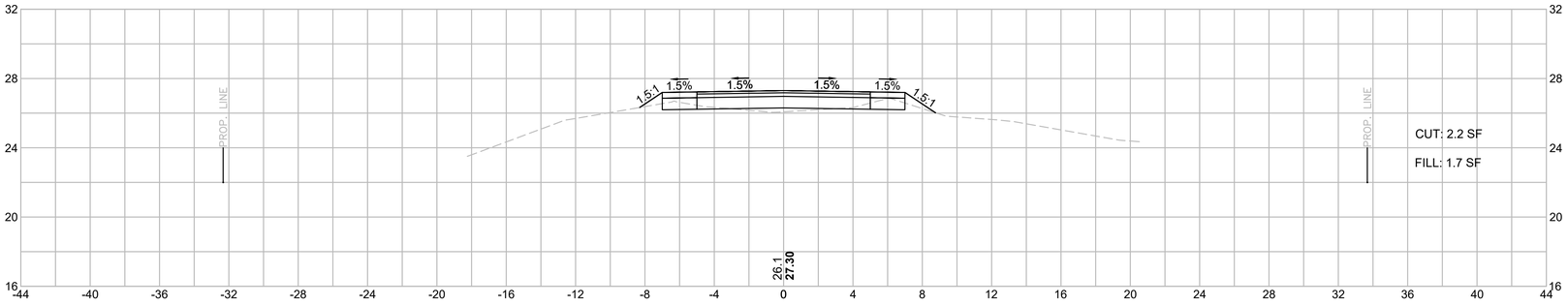
CROSS SECTIONS
SHEET 78 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

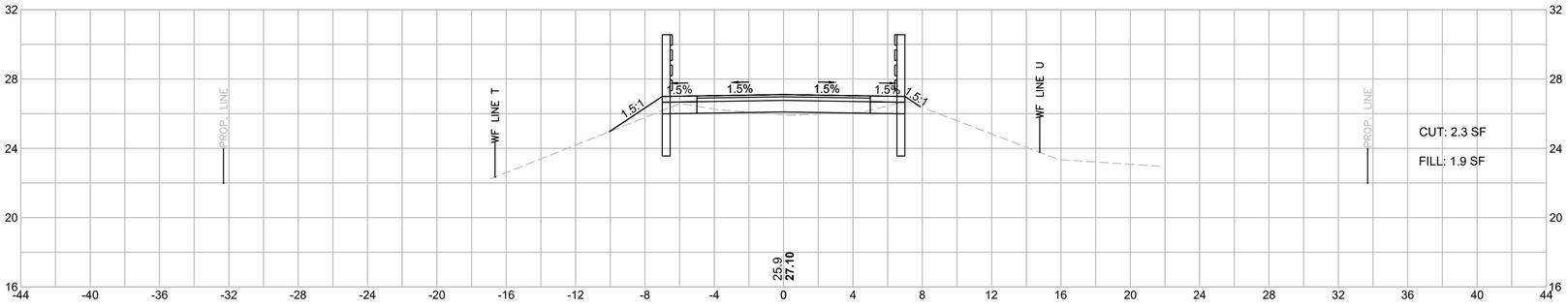
203+00



202+50



202+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

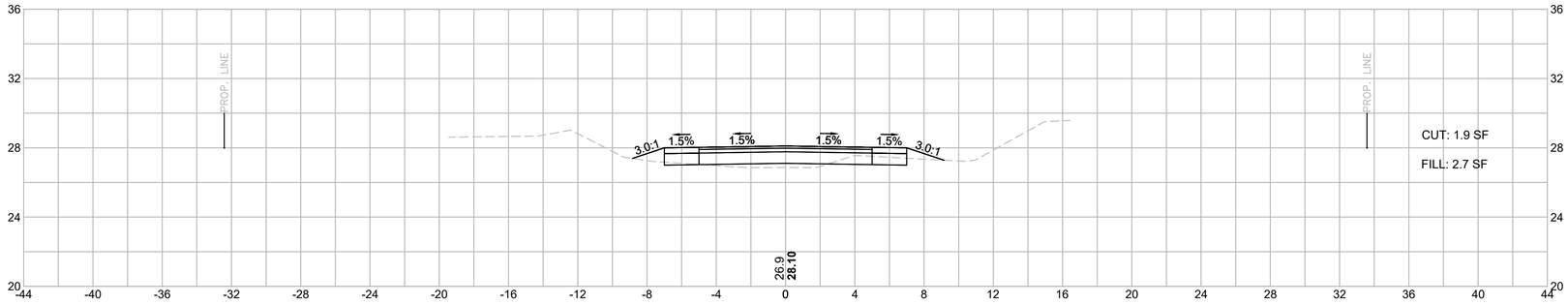
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	202	274
PROJECT FILE NO.	607979		

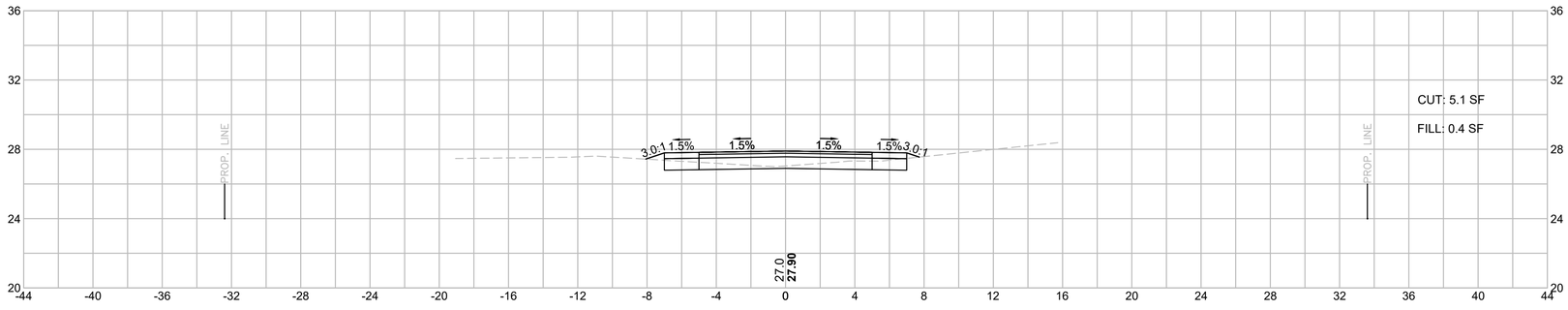
CROSS SECTIONS
SHEET 79 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

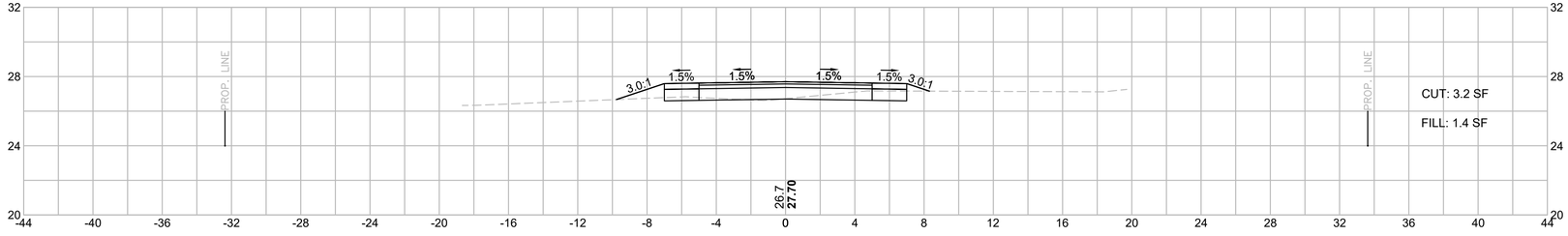
204+50



204+00



203+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

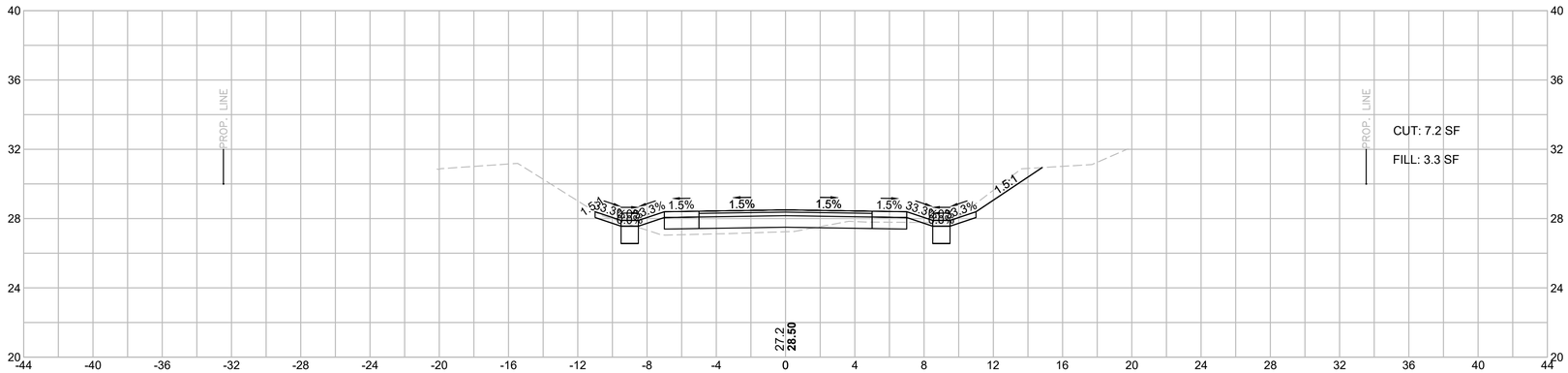
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	203	274
PROJECT FILE NO.	607979		

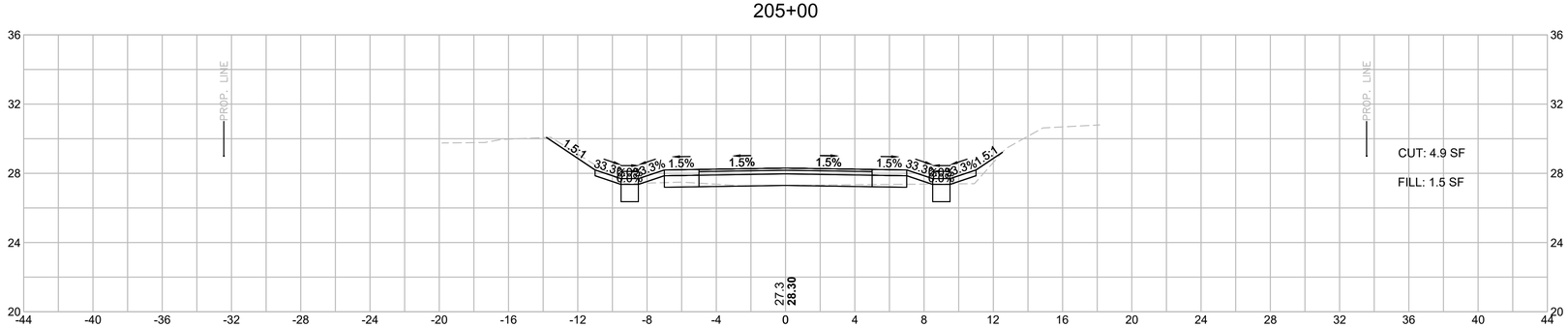
CROSS SECTIONS
SHEET 80 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

205+50



205+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

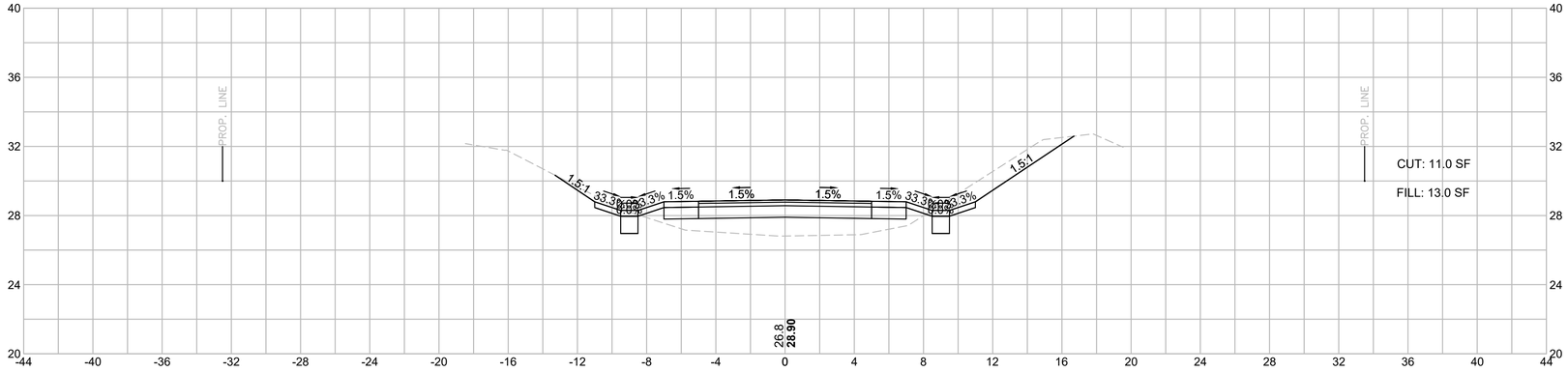
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	204	274
PROJECT FILE NO.	607979		

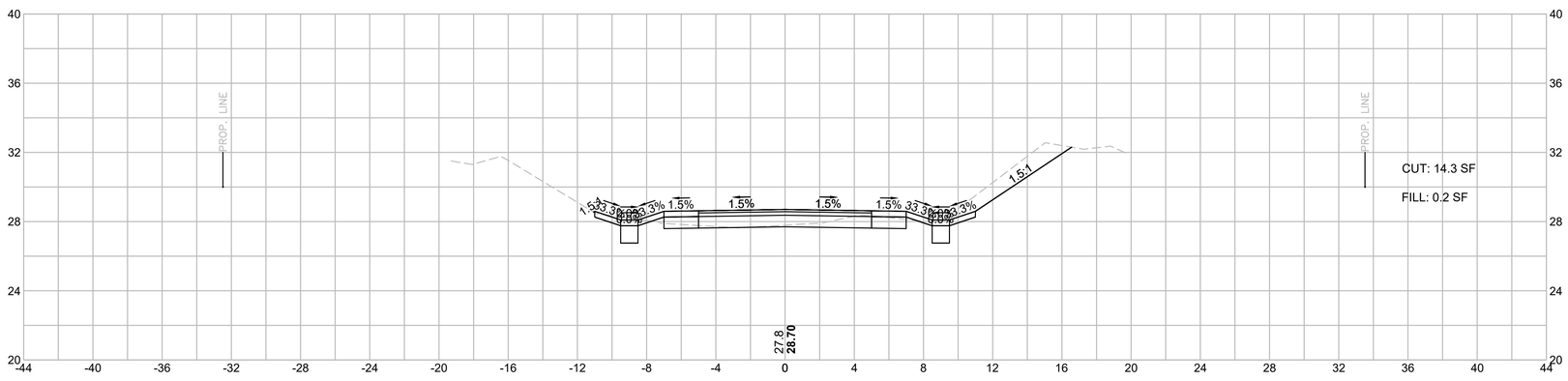
CROSS SECTIONS
SHEET 81 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

206+50



206+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

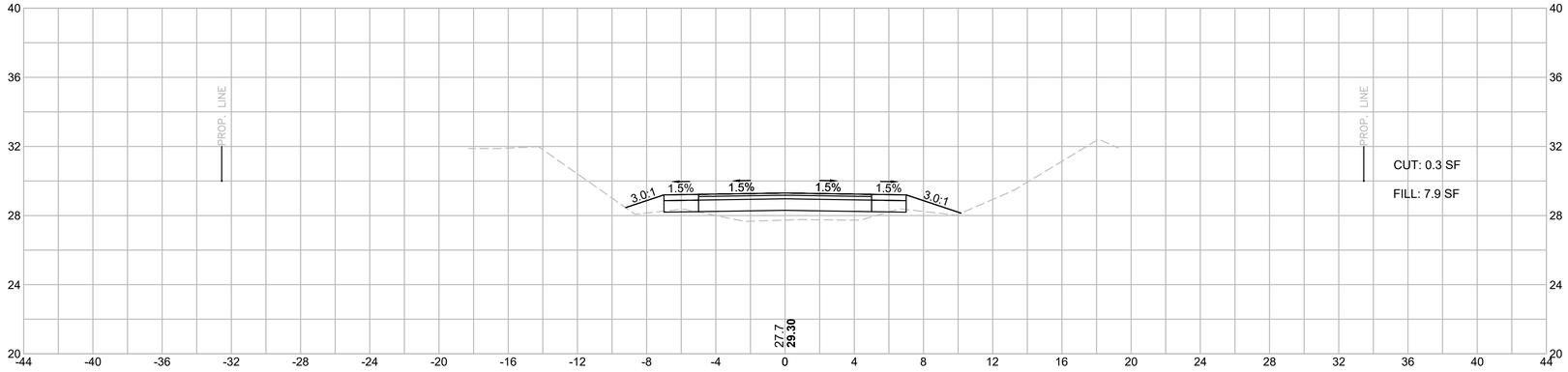
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	205	274
PROJECT FILE NO.	607979		

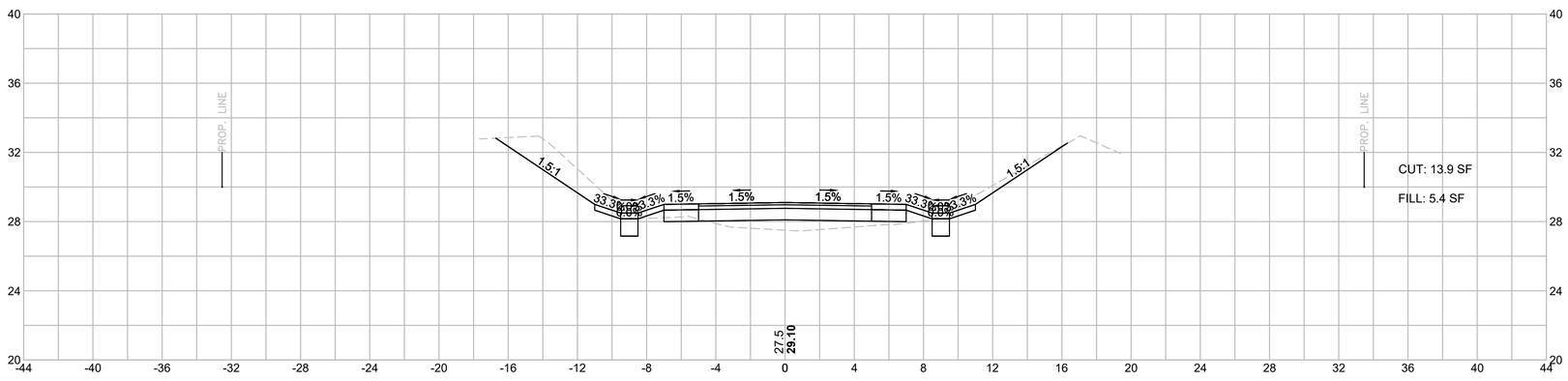
CROSS SECTIONS
SHEET 82 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

207+50



207+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

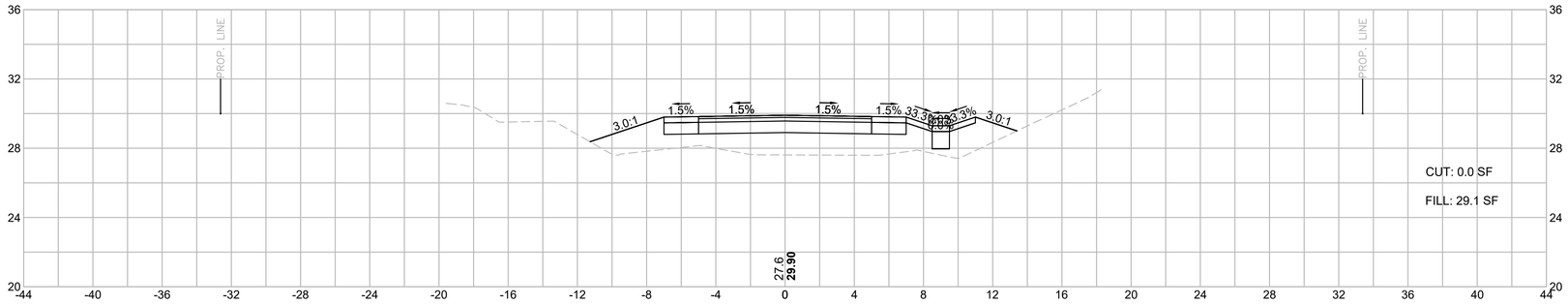
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	206	274
PROJECT FILE NO.	607979		

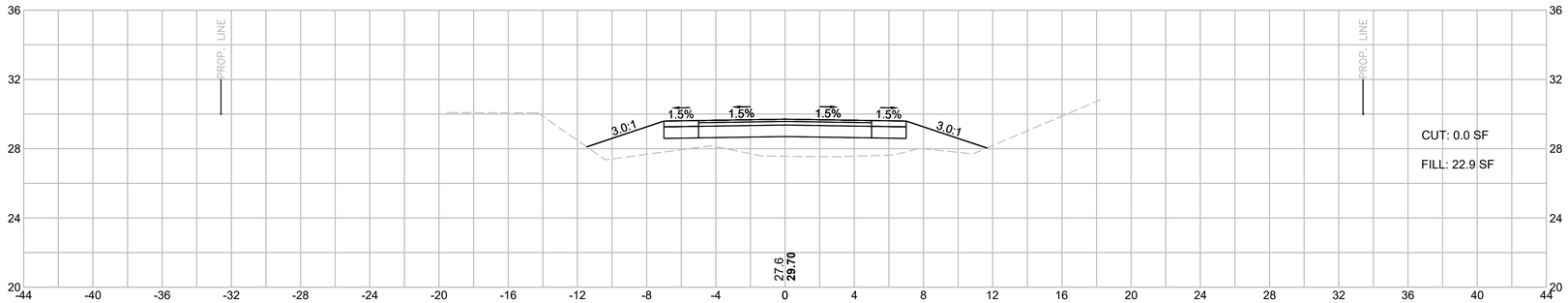
CROSS SECTIONS
SHEET 83 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

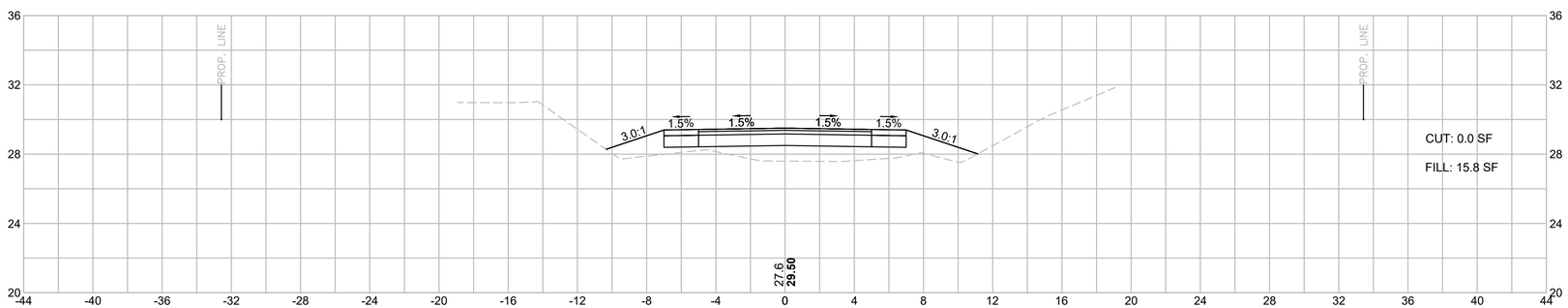
209+00



208+50



208+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

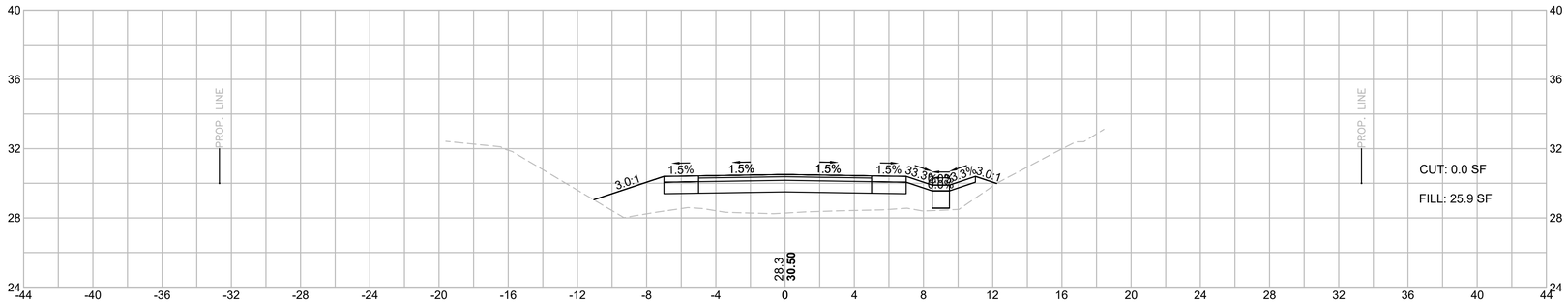
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	207	274
PROJECT FILE NO.	607979		

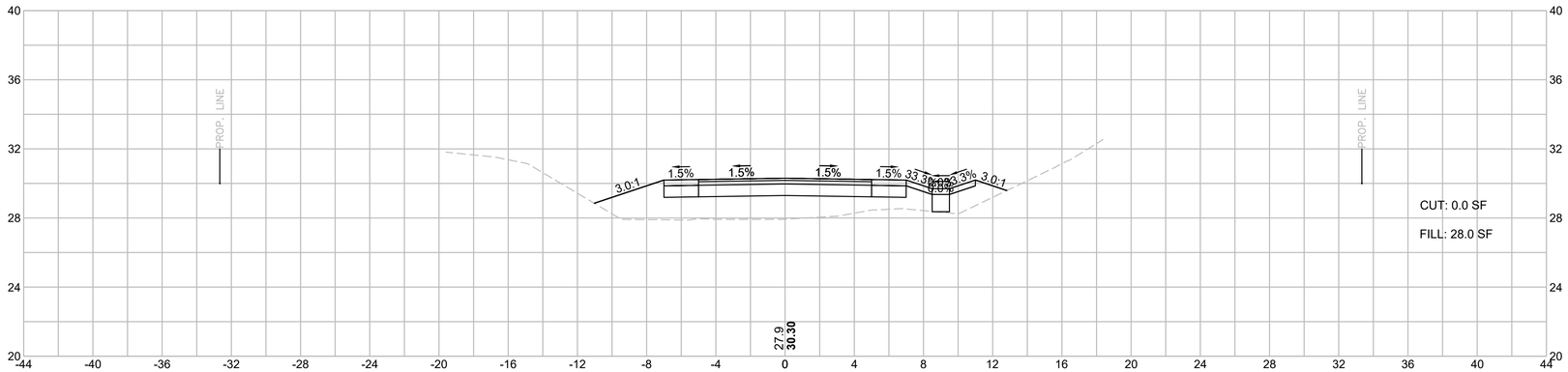
CROSS SECTIONS
SHEET 84 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

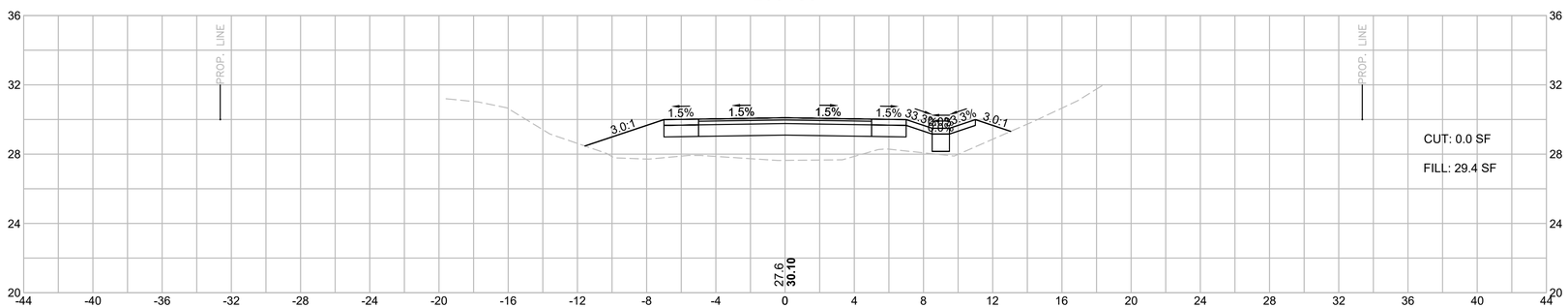
210+50



210+00



209+50



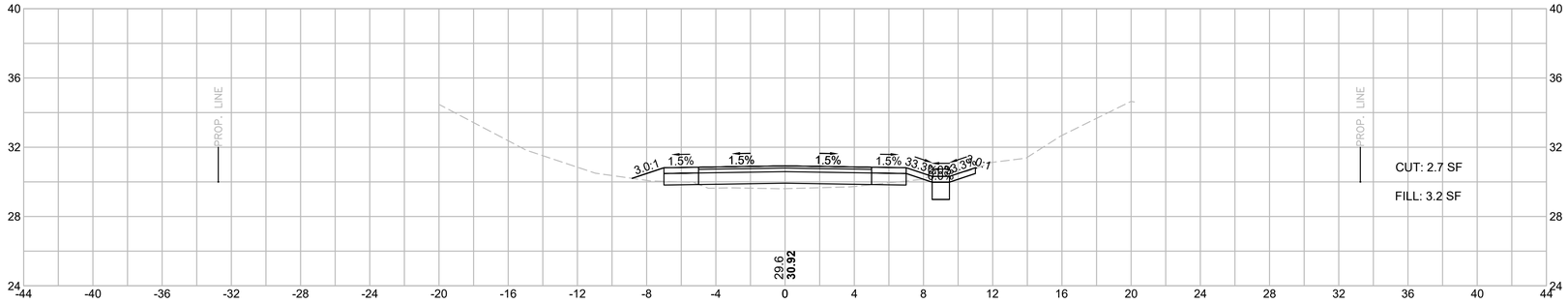
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

TOWN OF MARION
SHARED-USE PATH - PHASE 1

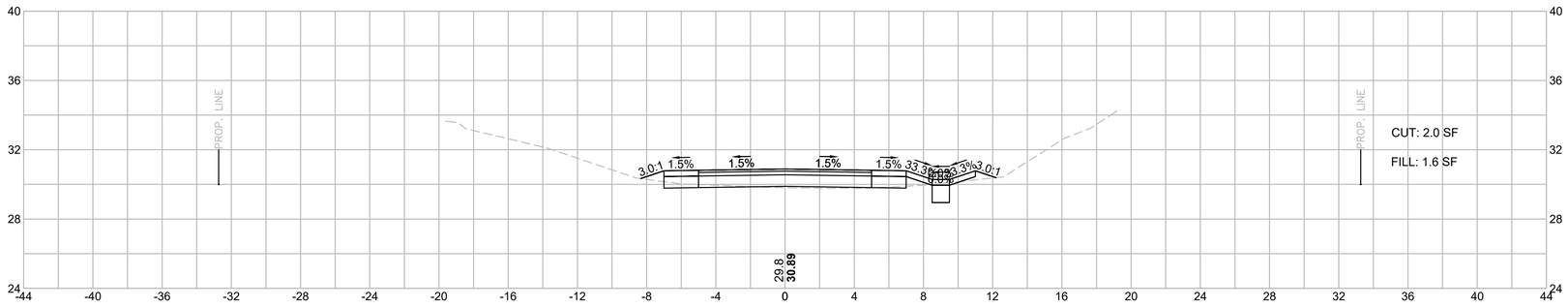
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	208	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 85 OF 151

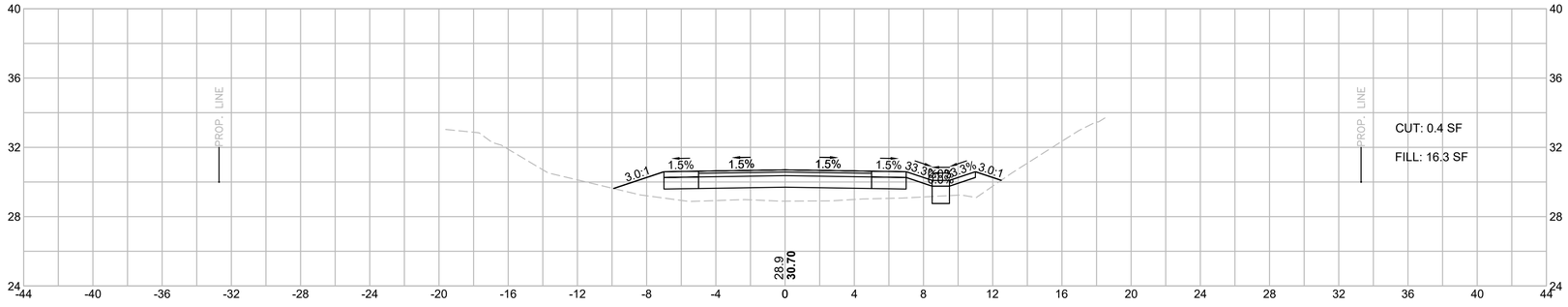
212+00



211+50



211+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

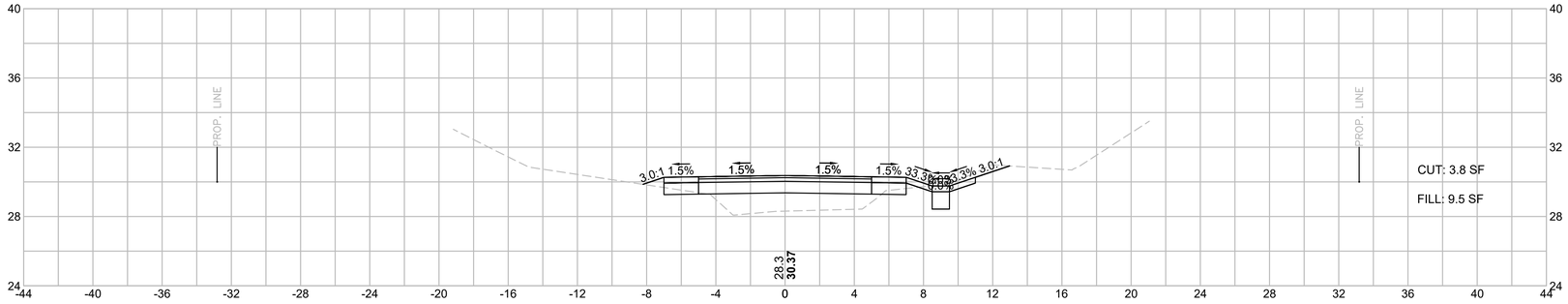
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	209	274
PROJECT FILE NO.	607979		

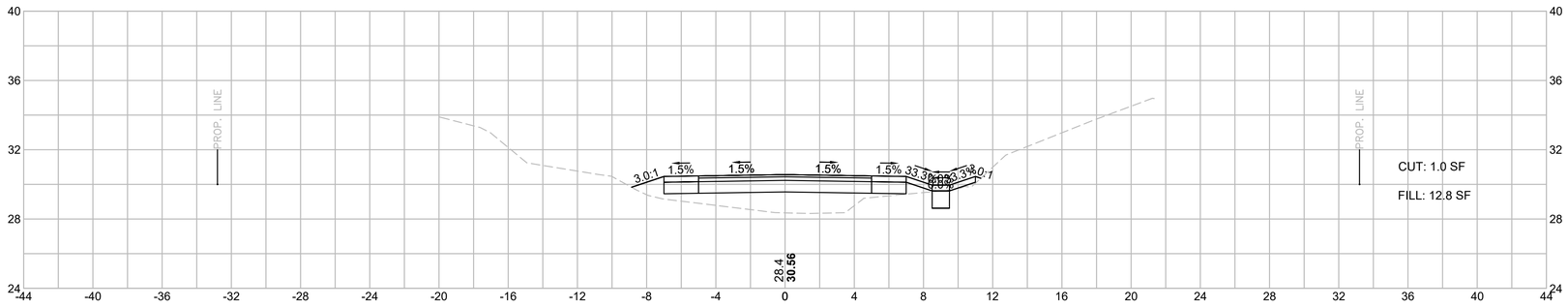
CROSS SECTIONS
SHEET 86 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

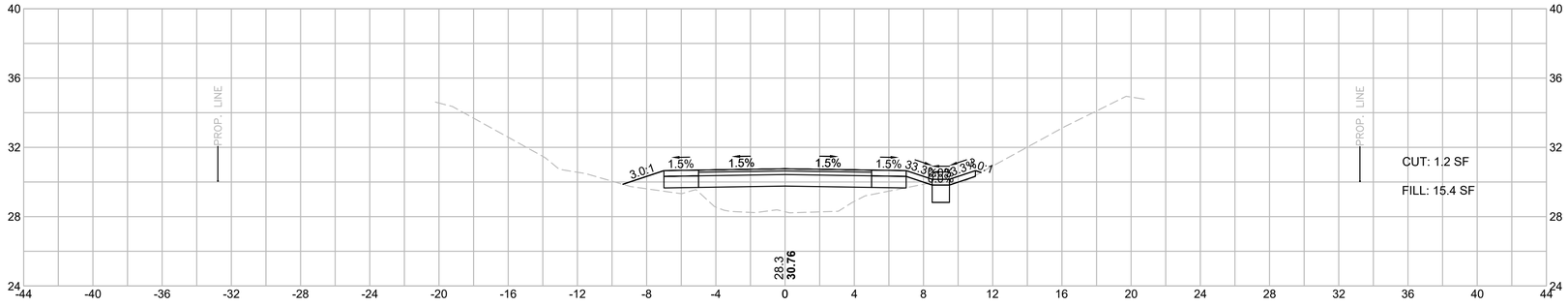
213+50



213+00



212+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

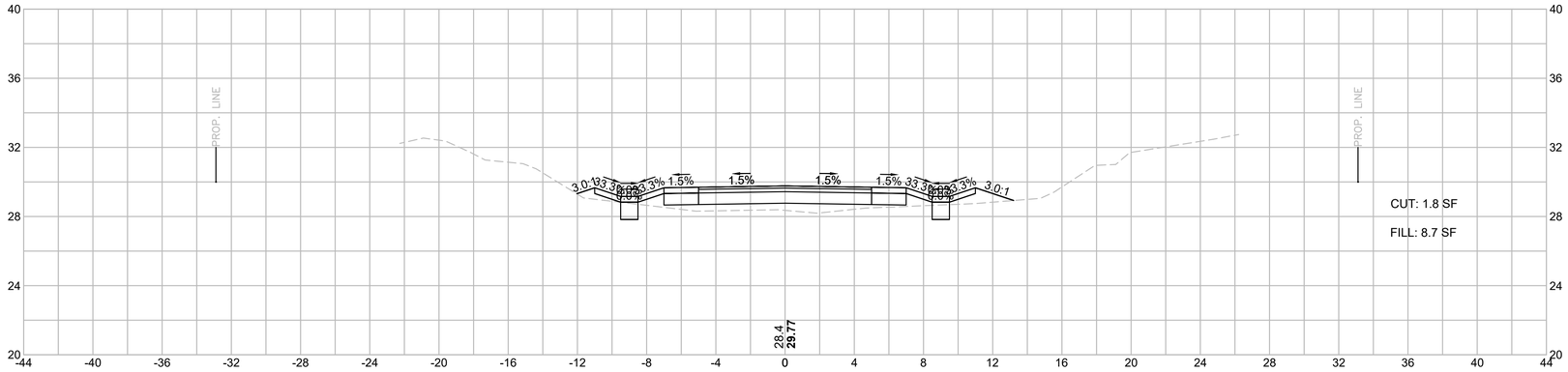
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	210	274
PROJECT FILE NO.	607979		

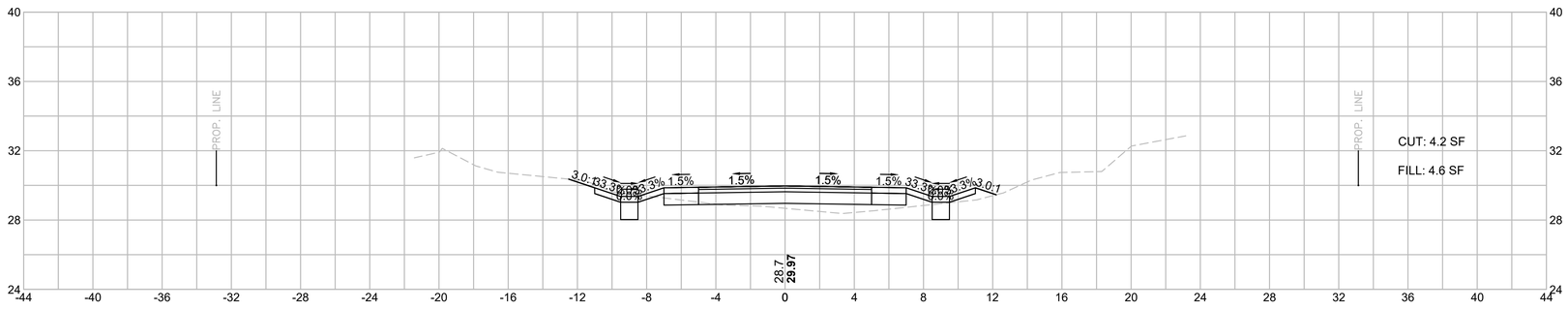
CROSS SECTIONS
SHEET 87 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

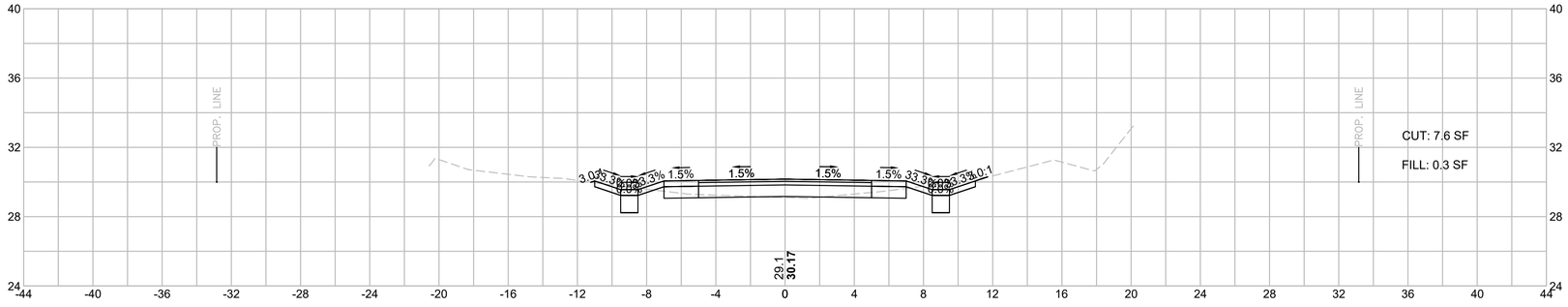
215+00



214+50



214+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

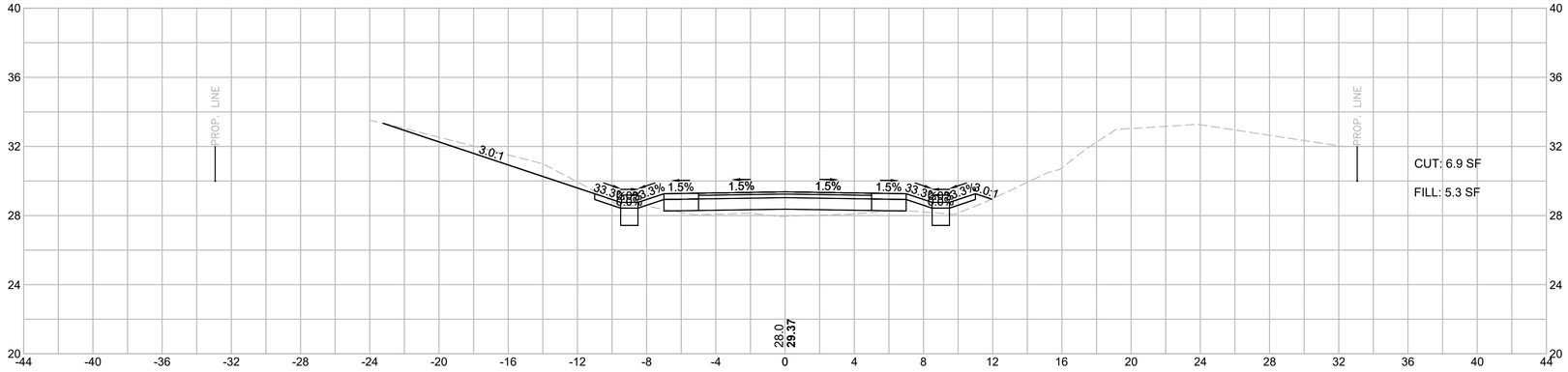
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	211	274
PROJECT FILE NO.	607979		

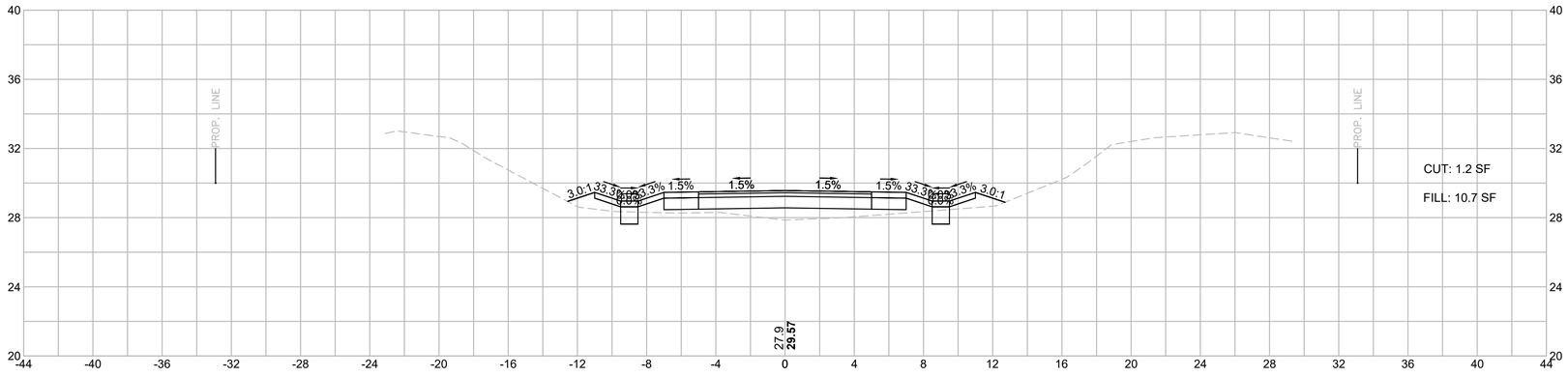
CROSS SECTIONS
SHEET 88 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

216+00



215+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

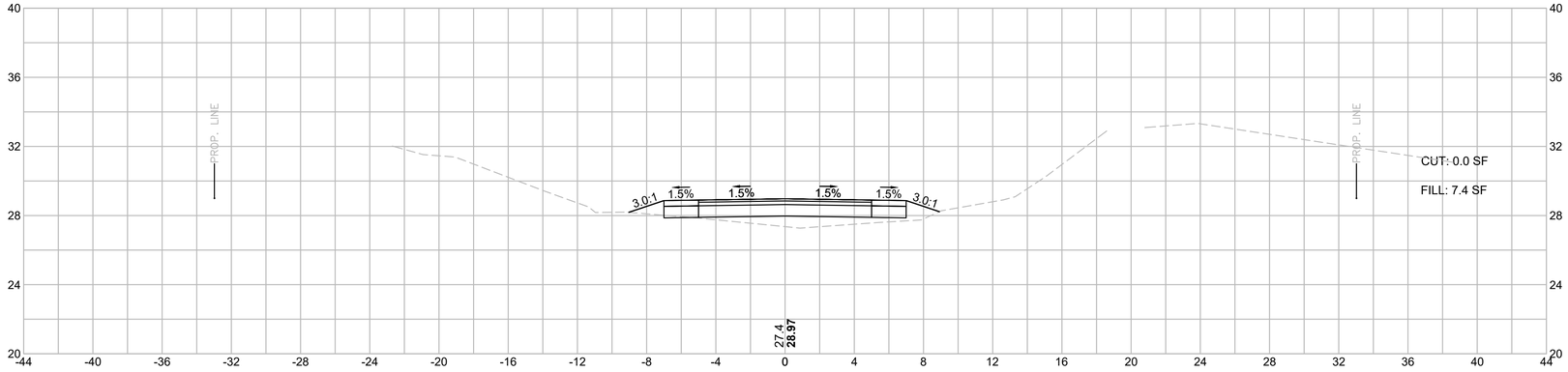
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	212	274
PROJECT FILE NO.	607979		

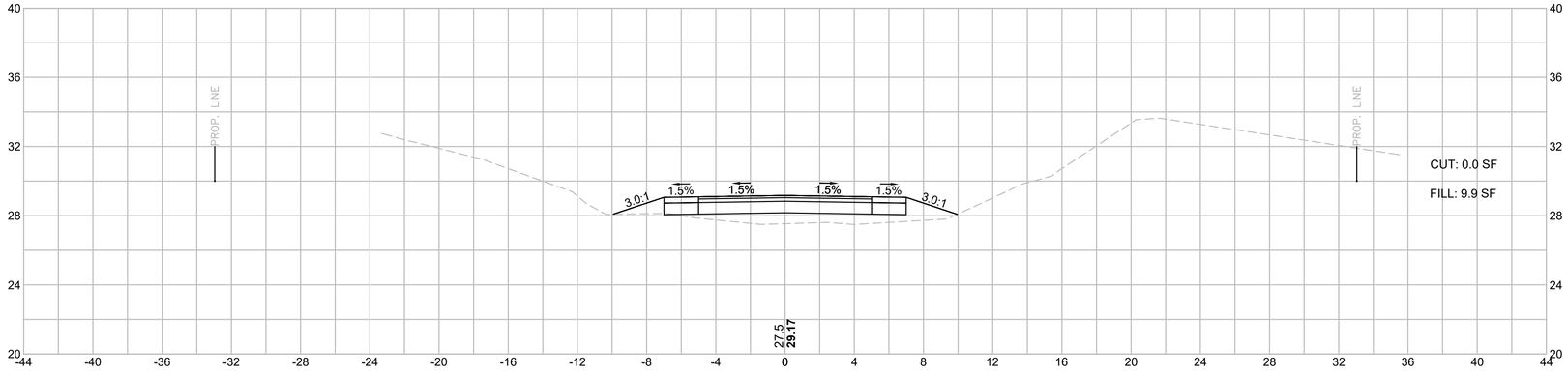
CROSS SECTIONS
SHEET 89 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

217+00



216+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

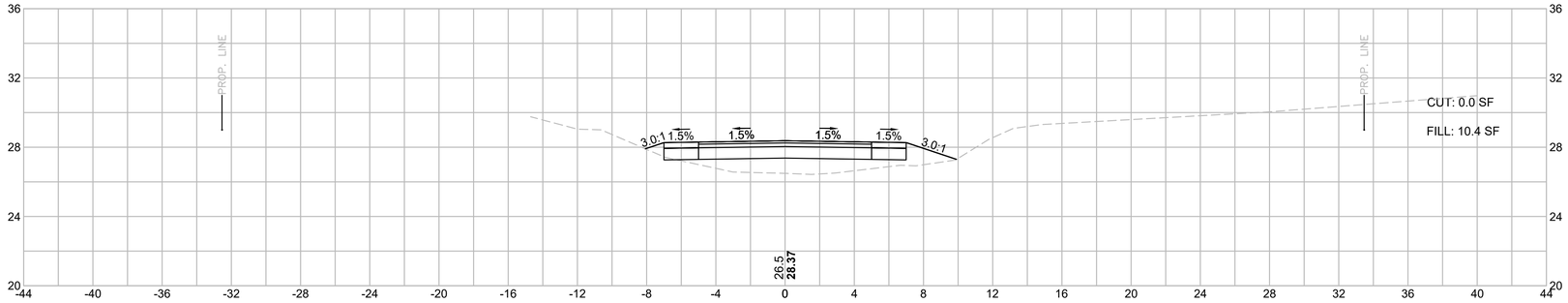
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	213	274
PROJECT FILE NO.	607979		

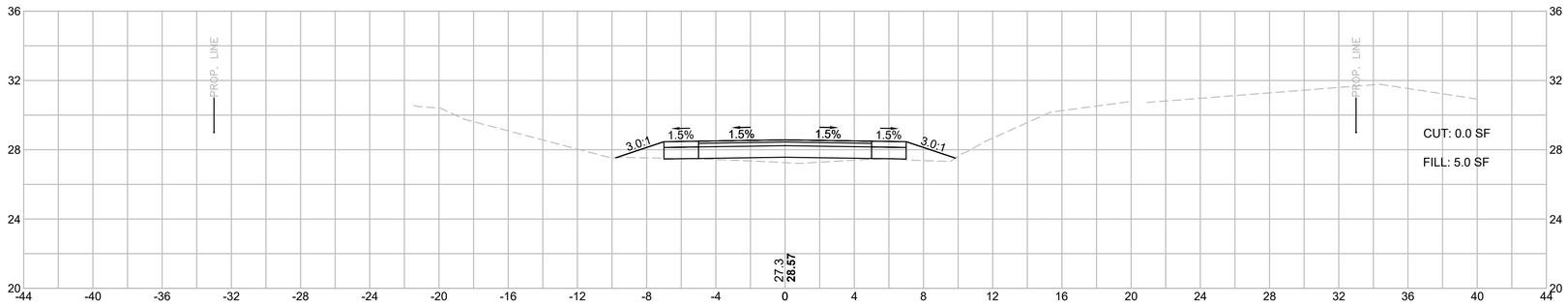
CROSS SECTIONS
SHEET 90 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

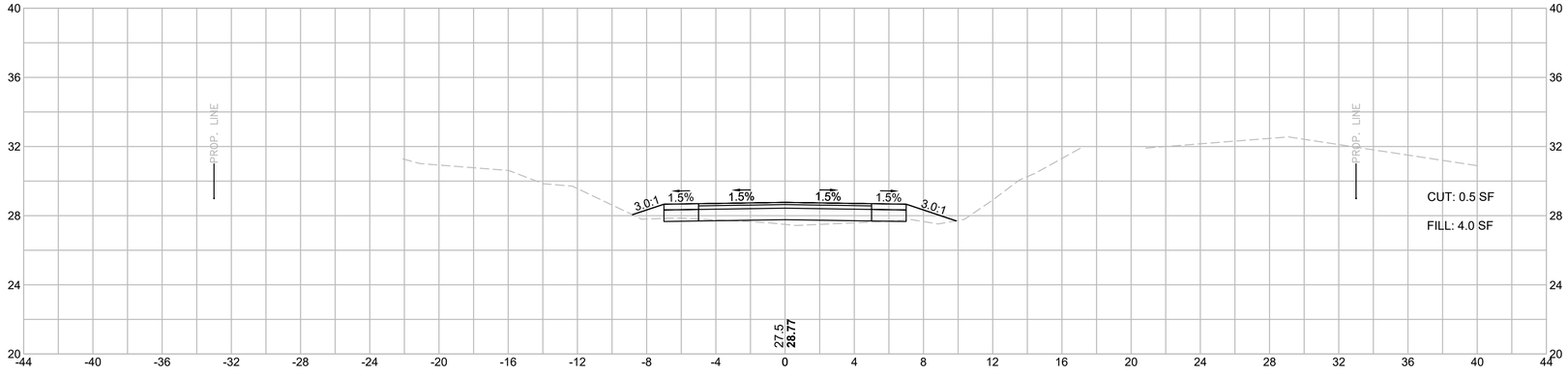
218+50



218+00



217+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

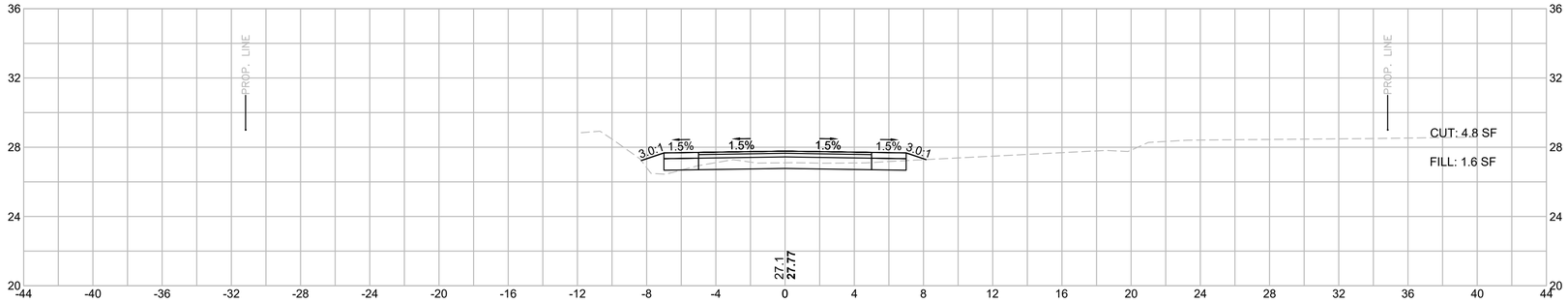
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	214	274
PROJECT FILE NO.	607979		

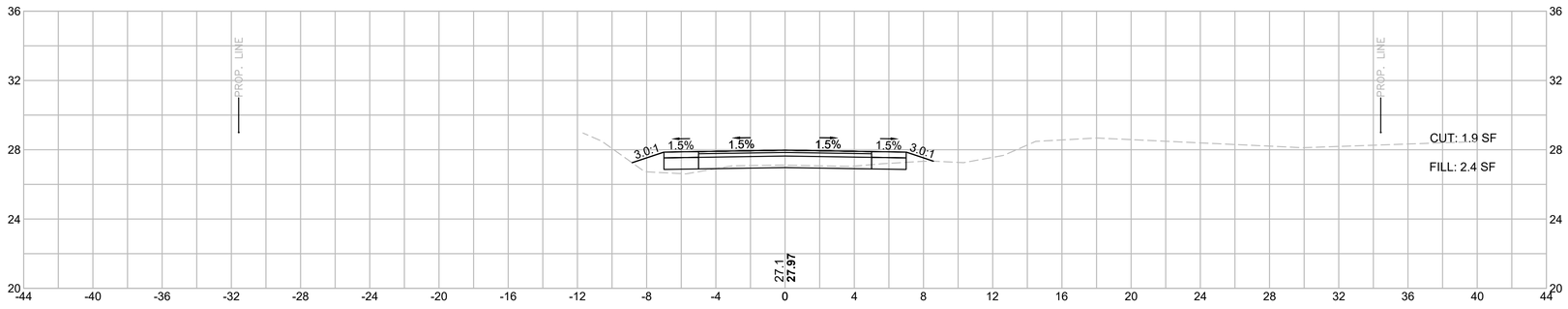
CROSS SECTIONS
SHEET 91 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

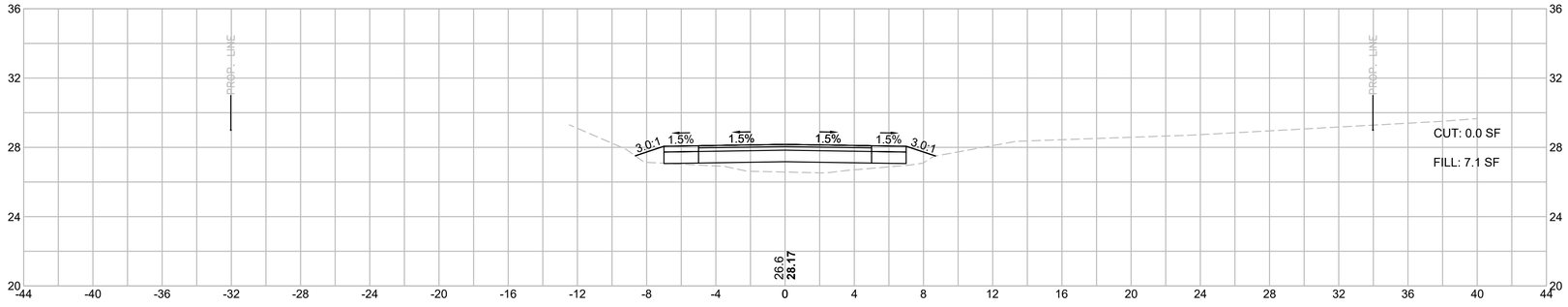
220+00



219+50



219+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

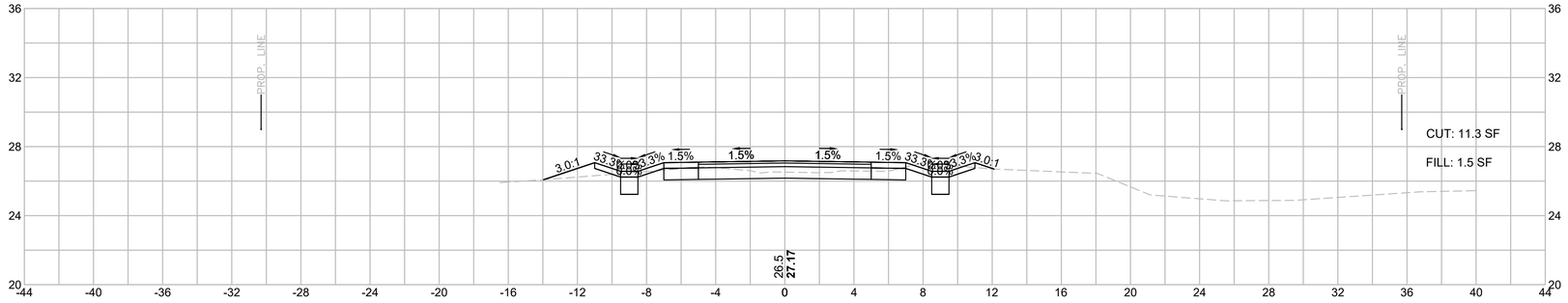
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	215	274
PROJECT FILE NO.	607979		

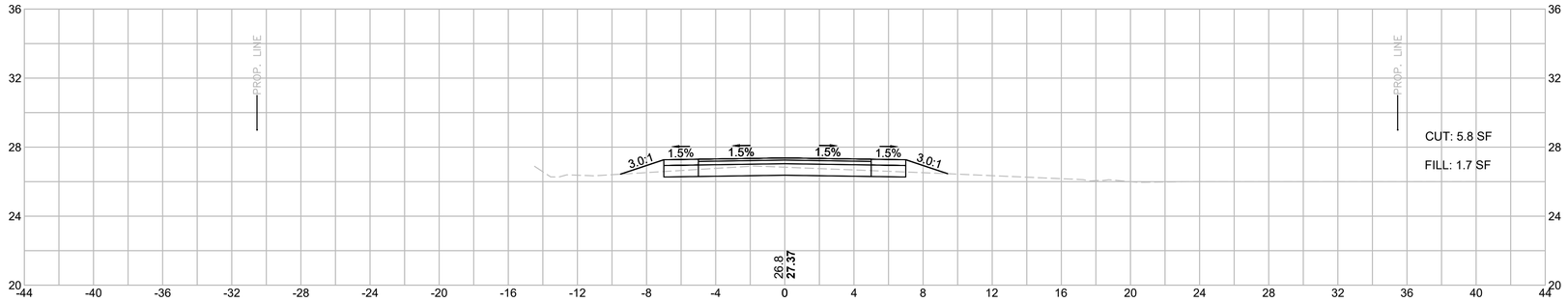
CROSS SECTIONS
SHEET 92 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

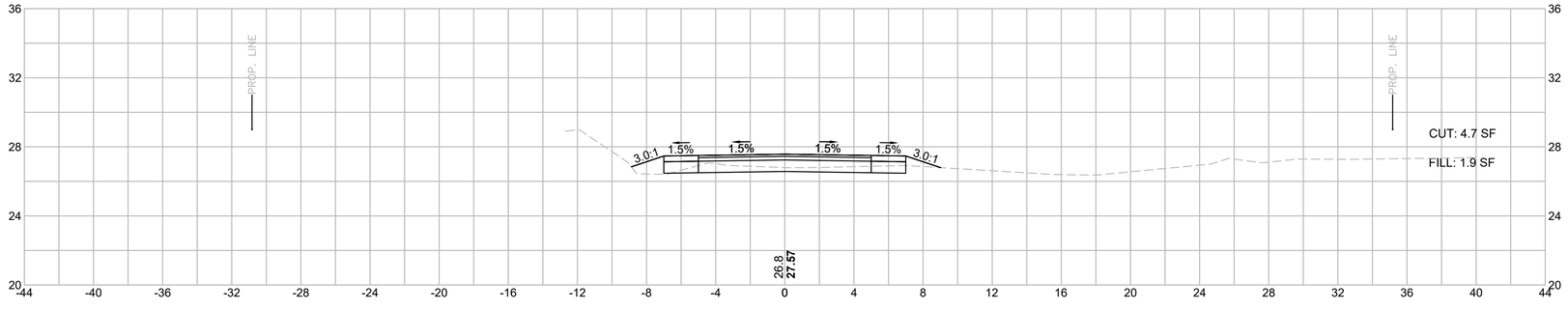
221+50



221+00



220+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

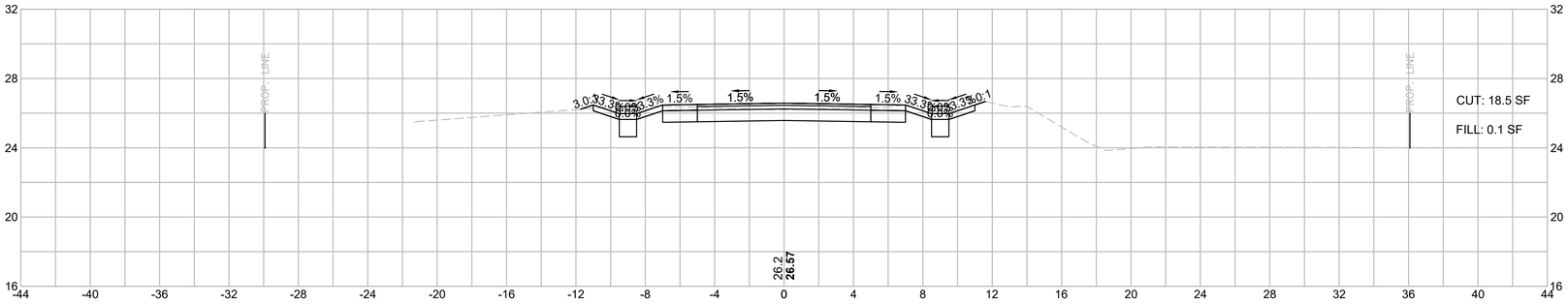
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	216	274
PROJECT FILE NO.	607979		

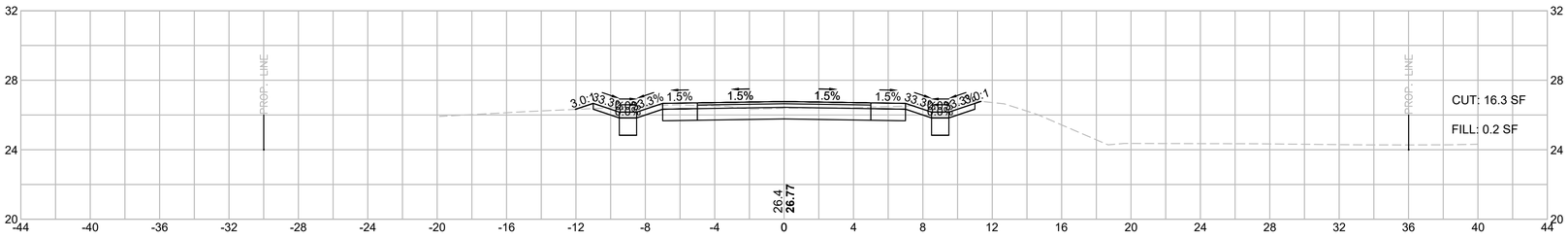
CROSS SECTIONS
SHEET 93 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

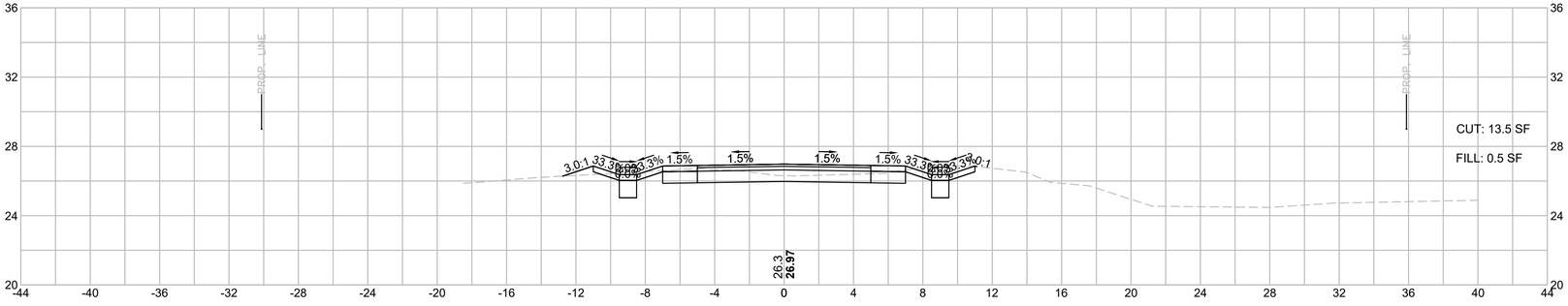
223+00



222+50



222+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

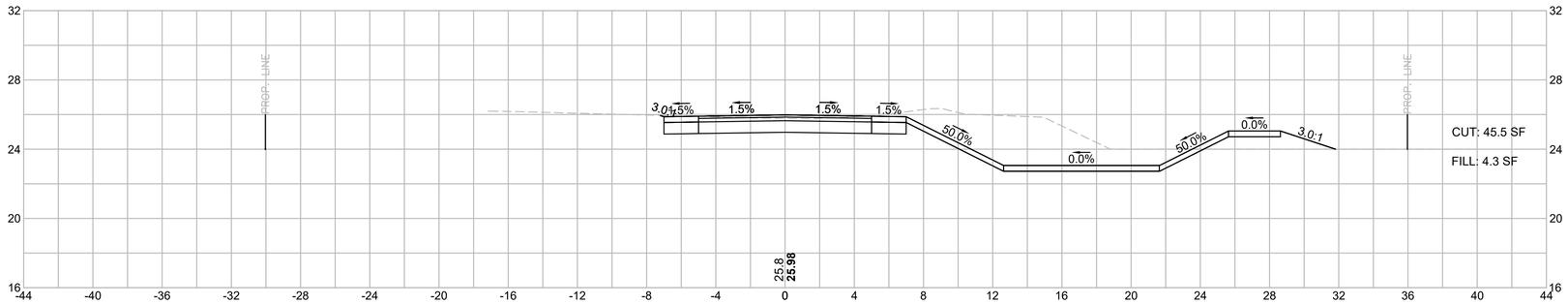
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	217	274
PROJECT FILE NO.	607979		

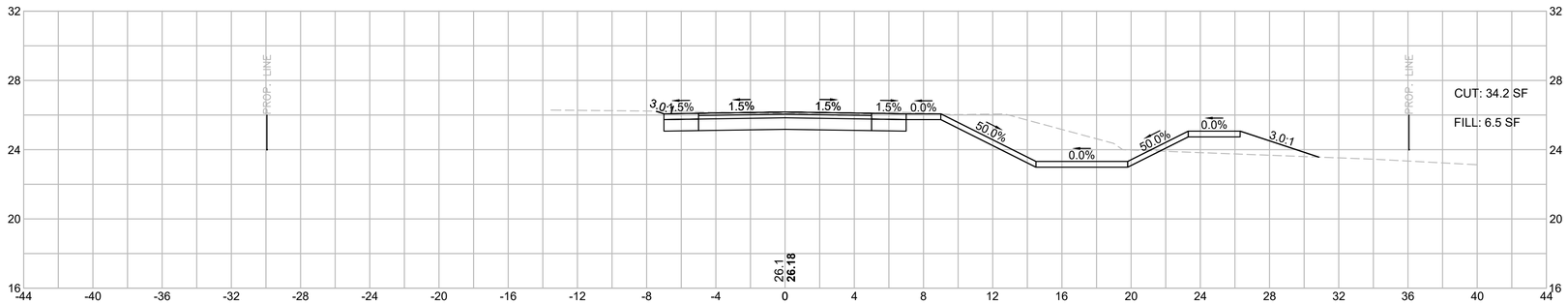
CROSS SECTIONS
SHEET 94 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

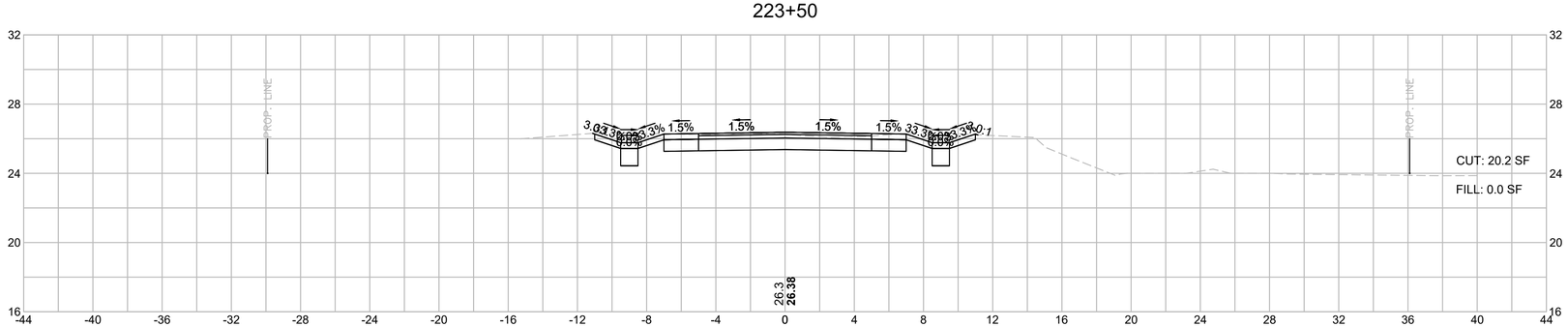
224+50



224+00



223+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

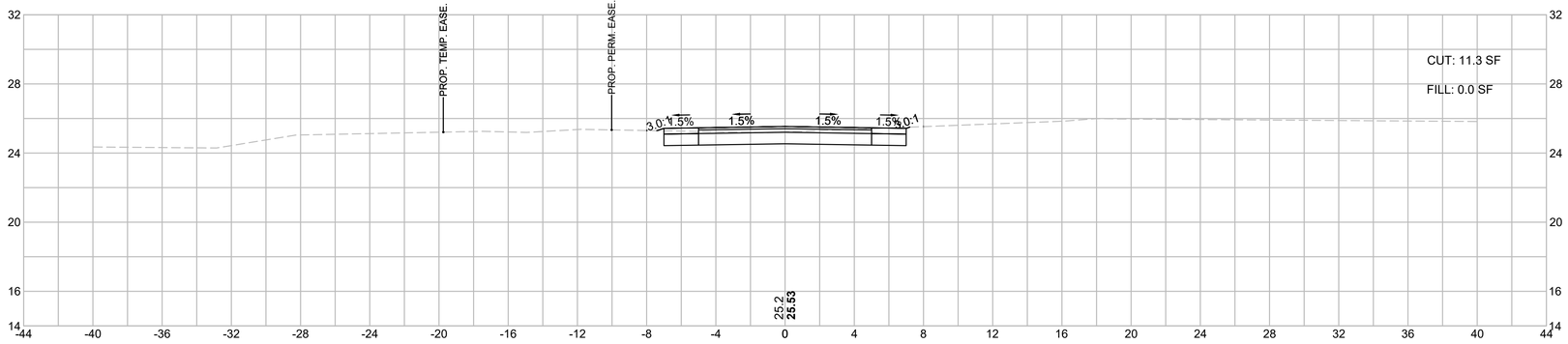
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	218	274
PROJECT FILE NO.	607979		

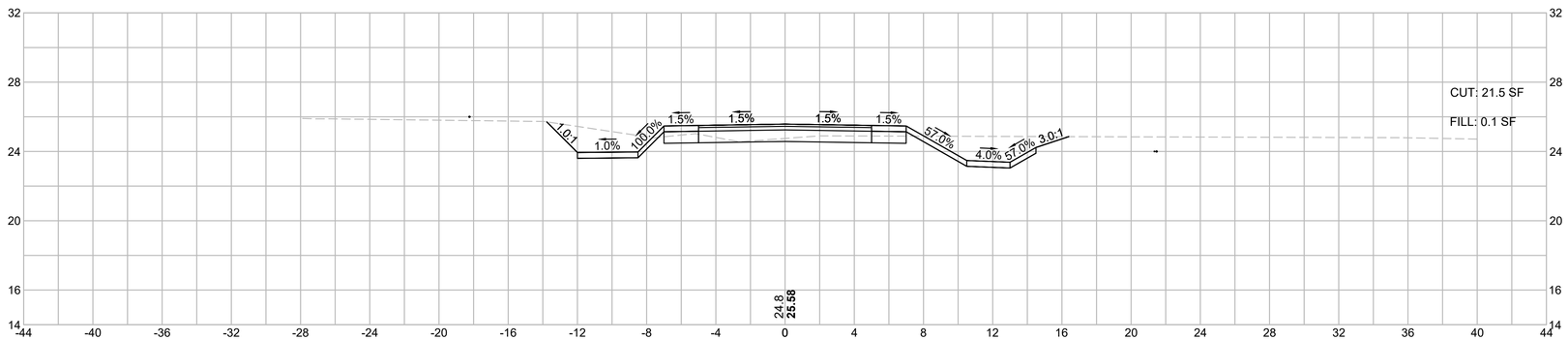
CROSS SECTIONS
SHEET 95 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

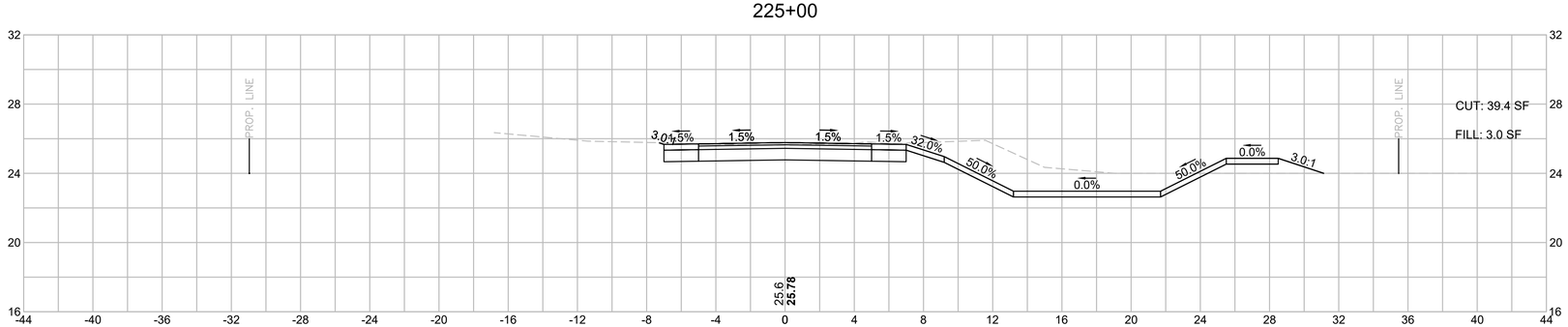
226+00



225+50



225+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

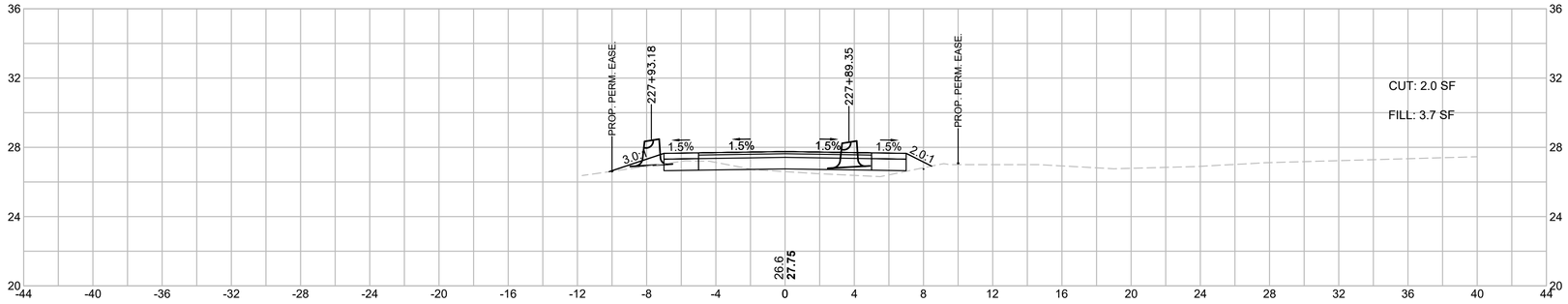
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	219	274
PROJECT FILE NO.	607979		

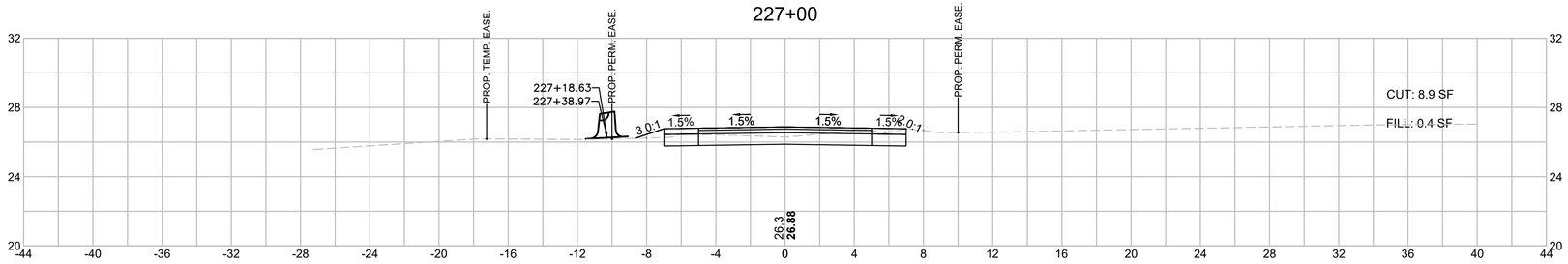
CROSS SECTIONS
SHEET 96 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

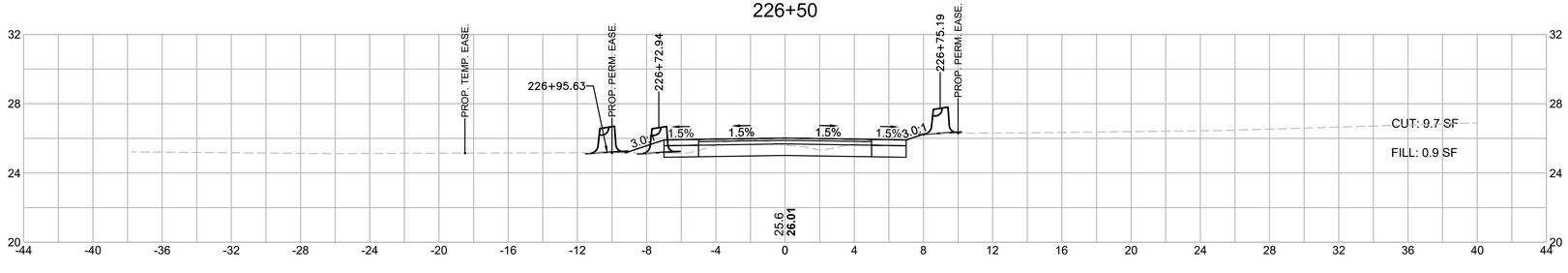
227+50



227+00



226+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

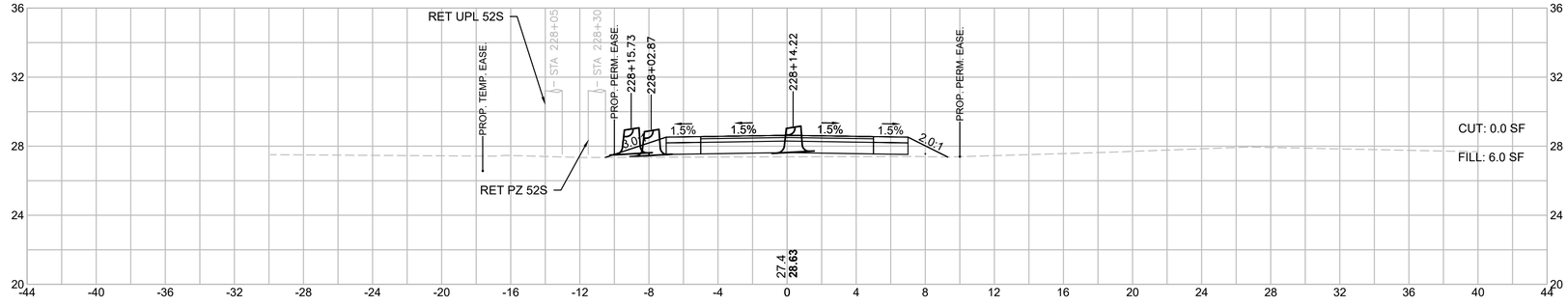
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	220	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 97 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

228+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

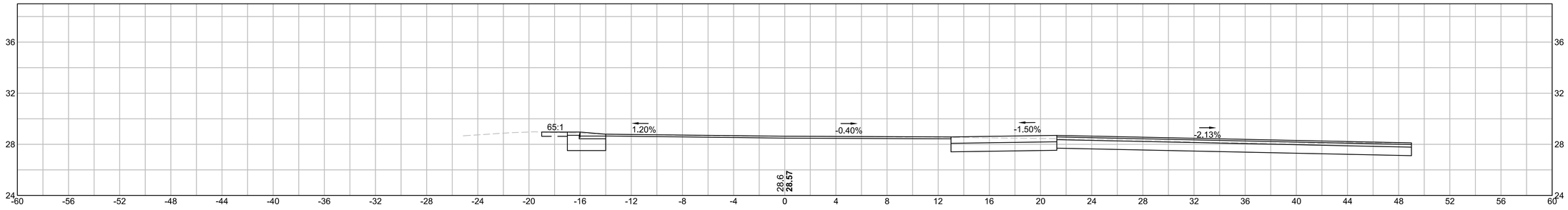
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	221	274
PROJECT FILE NO.	607979		

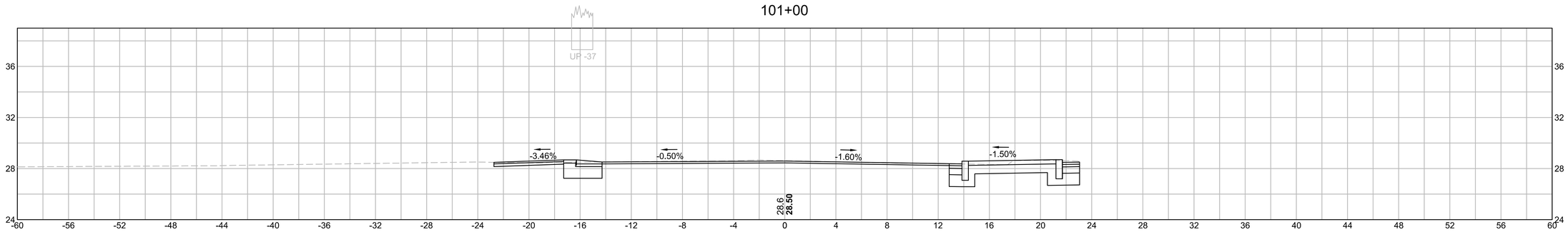
FRONT ST (RTE 105) AT SPRING ST
CROSS SECTION
SHEET 98 OF 151

Plotted on 10-Mar-2015 3:39 PM
Y16147.21 MARION PATHWAY (CROSS SECTIONS).DWG

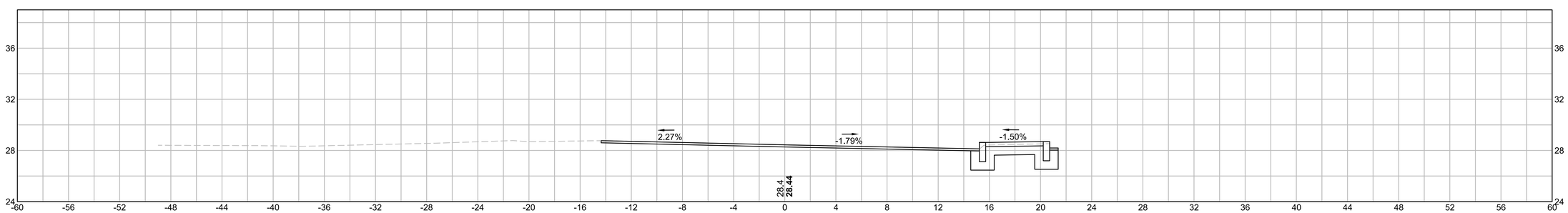
101+50



101+00



100+55



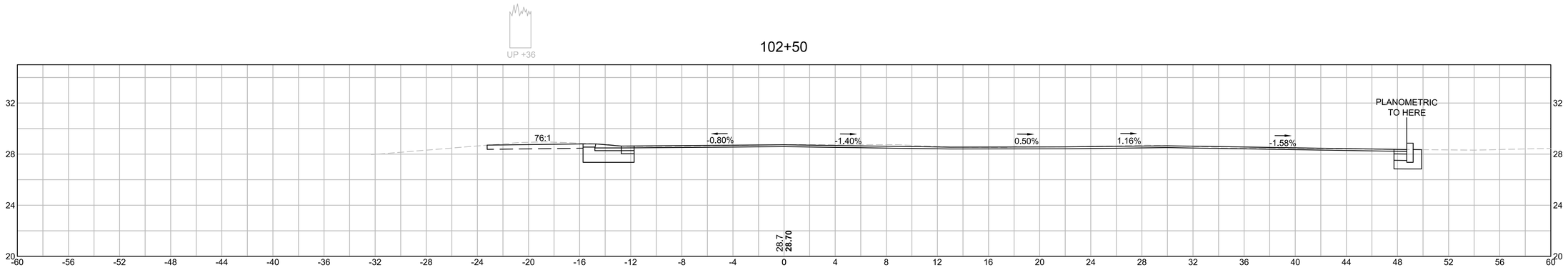
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	222	274
PROJECT FILE NO.	607979		

FRONT ST (RTE 105) AT SPRING ST
CROSS SECTION
SHEET 99 OF 151

Plotted on 10-Mar-2015 3:39 PM
Y16147.21 MARION PATHWAY (CROSS SECTIONS).DWG



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

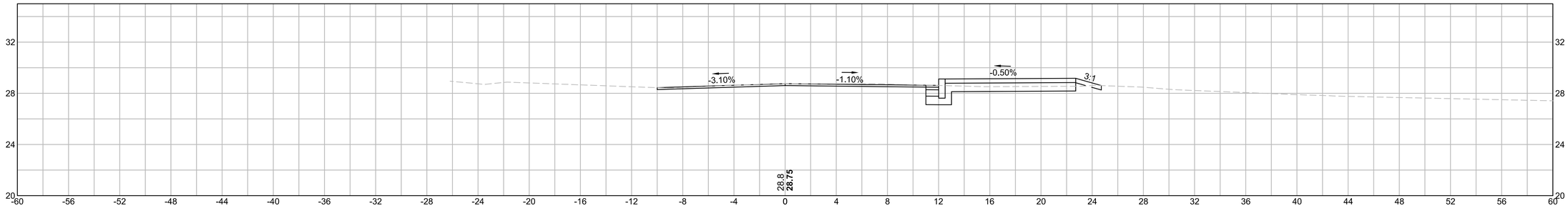
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	223	274
PROJECT FILE NO.	607979		

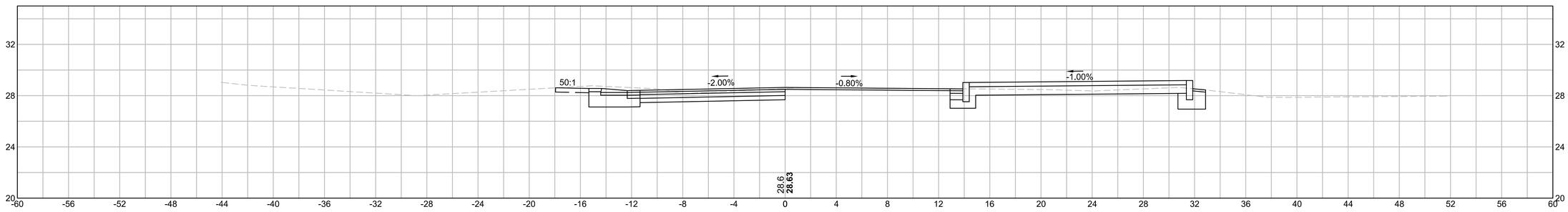
FRONT ST (RTE 105) AT SPRING ST
CROSS SECTION
SHEET 100 OF 151

Plotted on 10-Mar-2015 3:39 PM
Y16147.21 MARION PATHWAY (CROSS SECTIONS).DWG

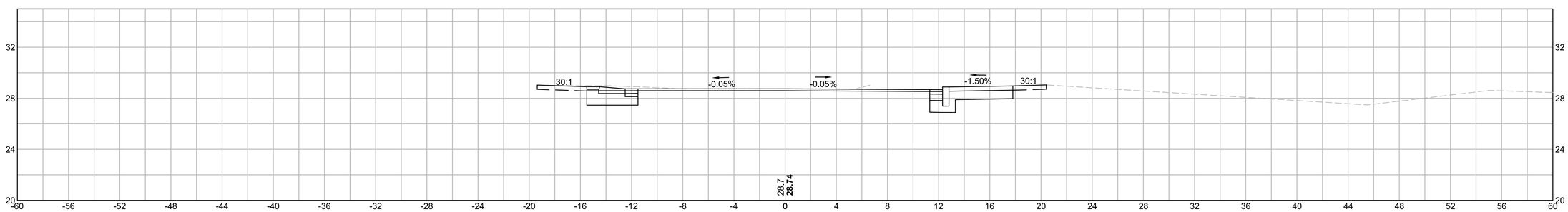
201+00



200+50



103+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

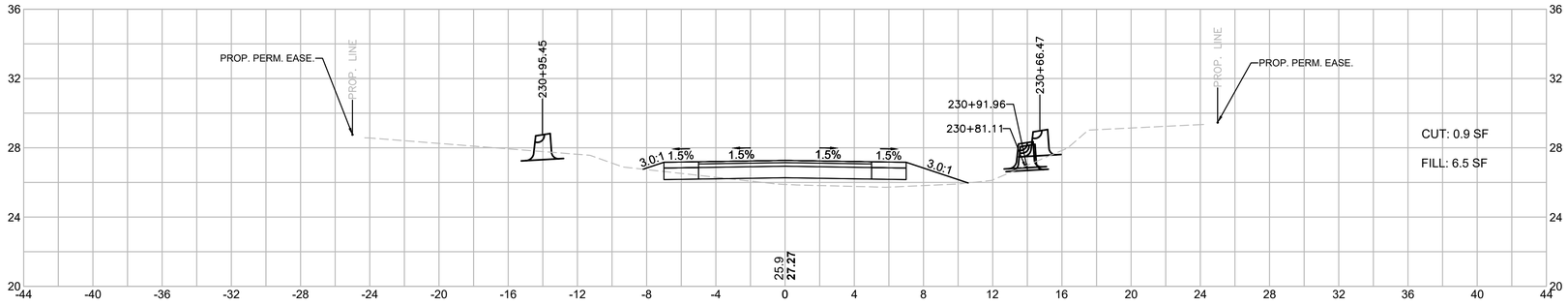
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	224	274
PROJECT FILE NO.	607979		

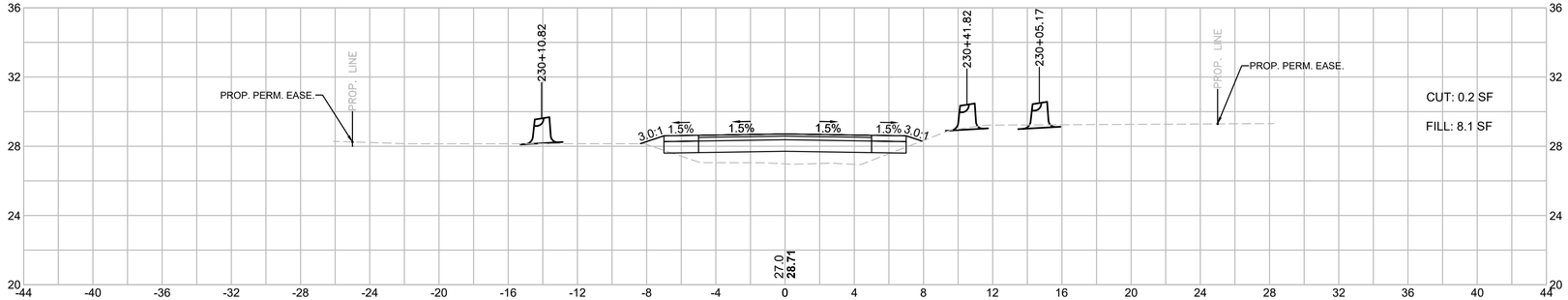
CROSS SECTIONS
SHEET 101 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

230+50



230+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

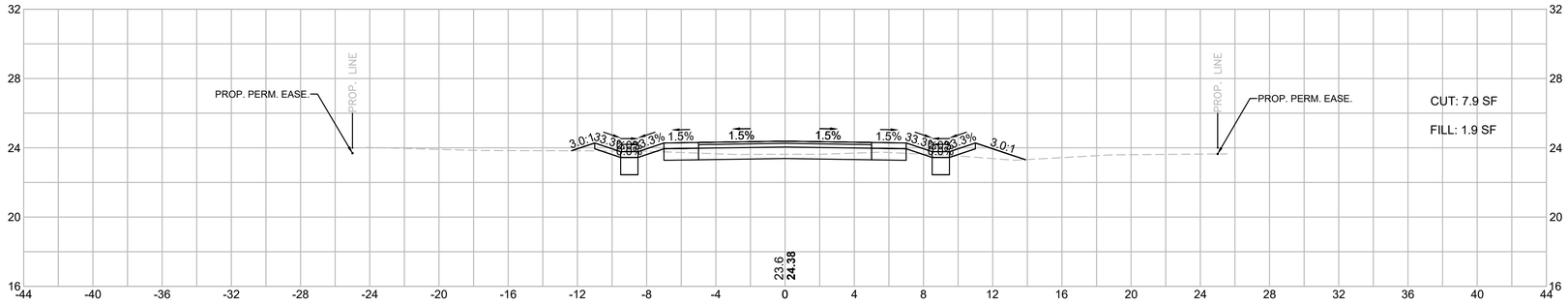
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	225	274
PROJECT FILE NO.	607979		

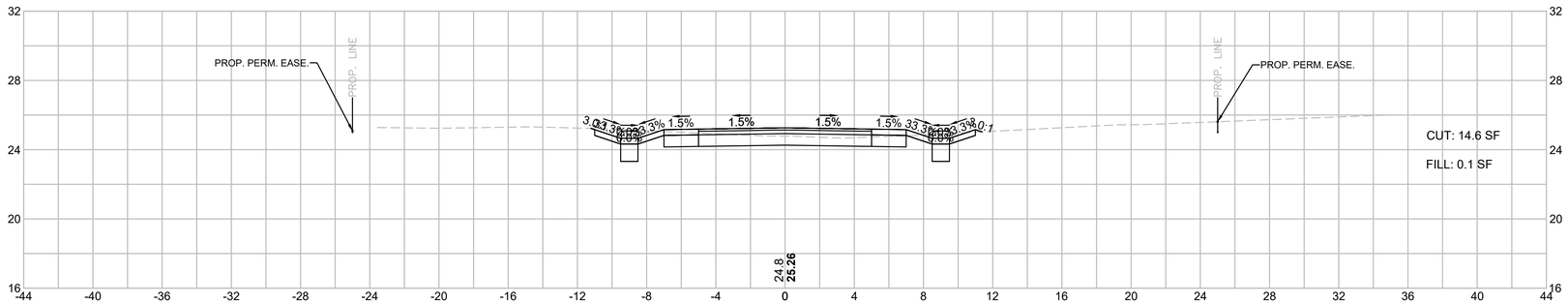
CROSS SECTIONS
SHEET 102 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

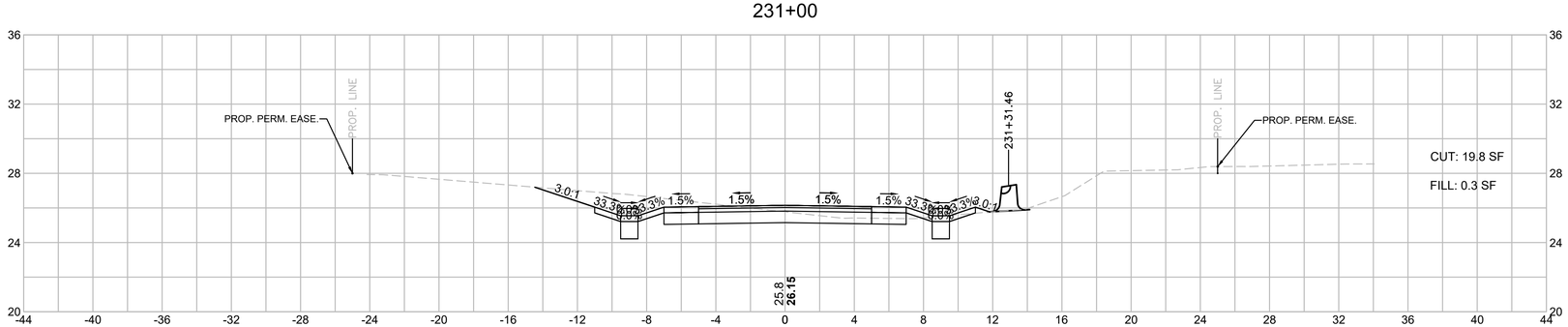
232+00



231+50



231+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

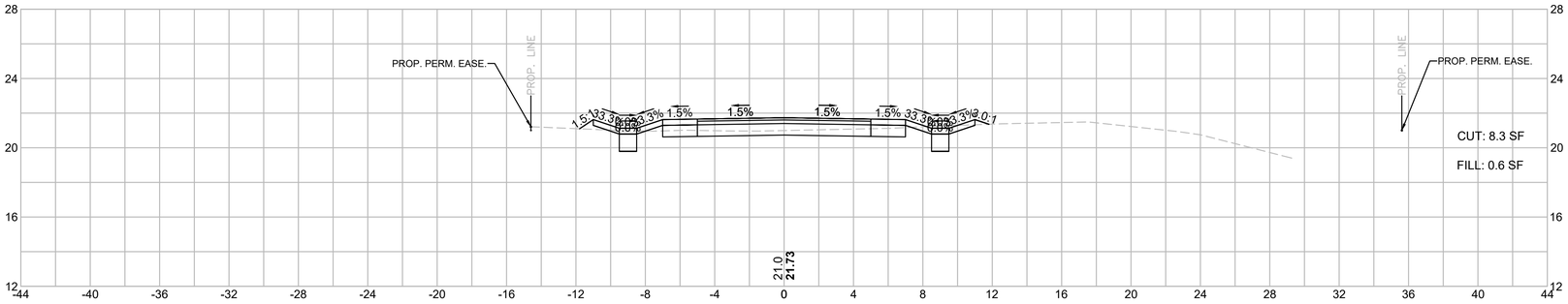
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	226	274
PROJECT FILE NO.	607979		

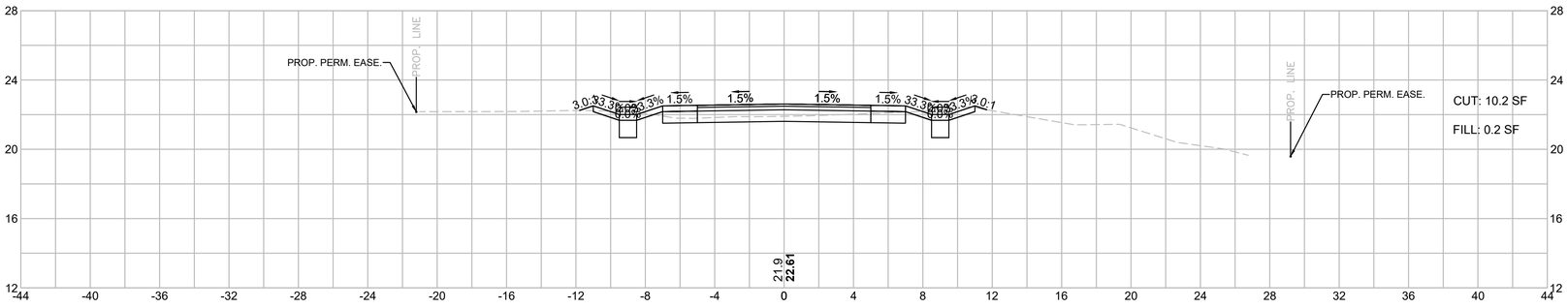
CROSS SECTIONS
SHEET 103 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

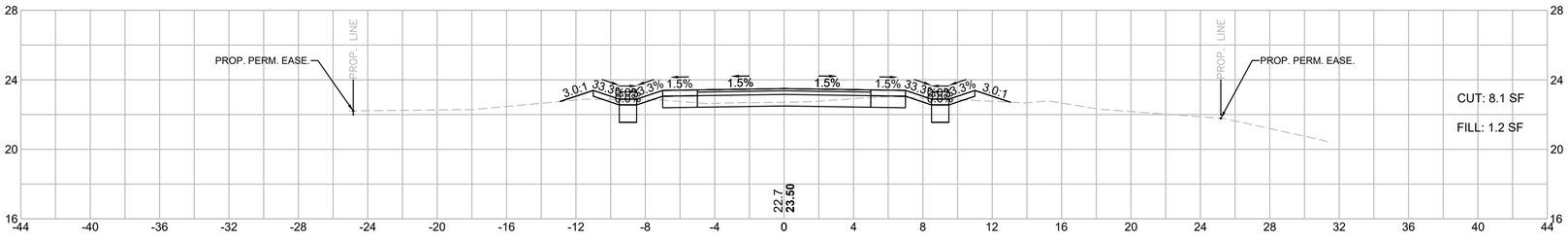
233+50



233+00



232+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

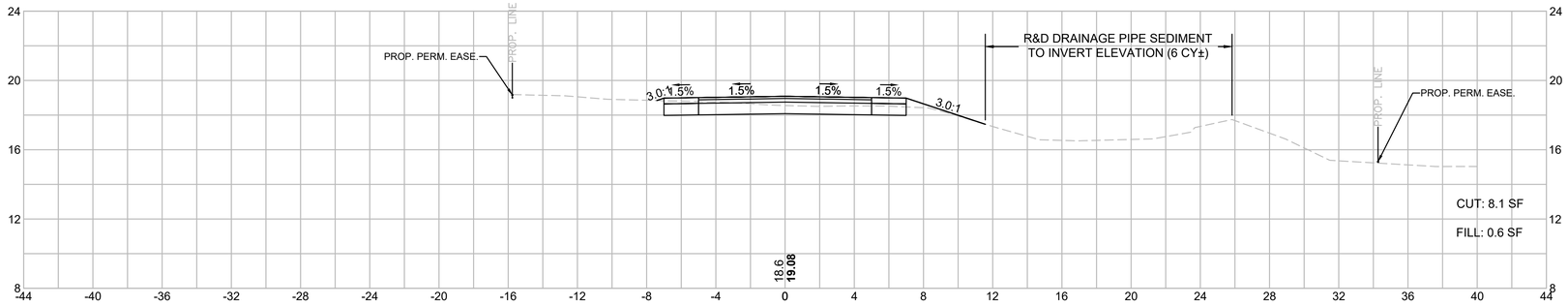
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	227	274
PROJECT FILE NO.	607979		

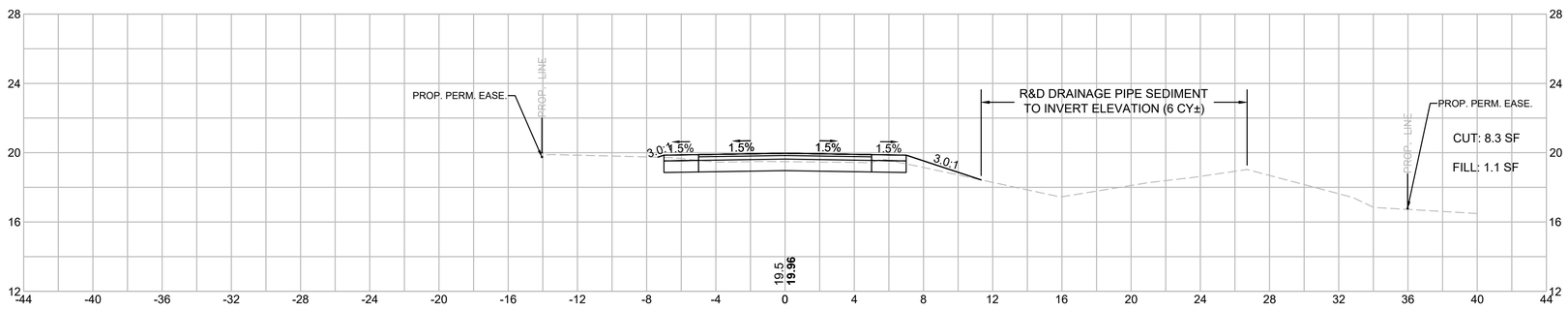
CROSS SECTIONS
SHEET 104 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

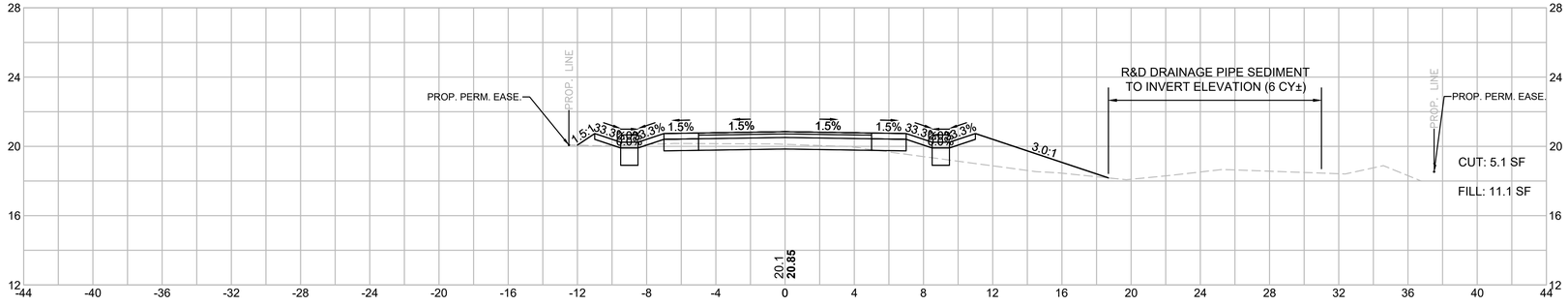
235+00



234+50



234+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

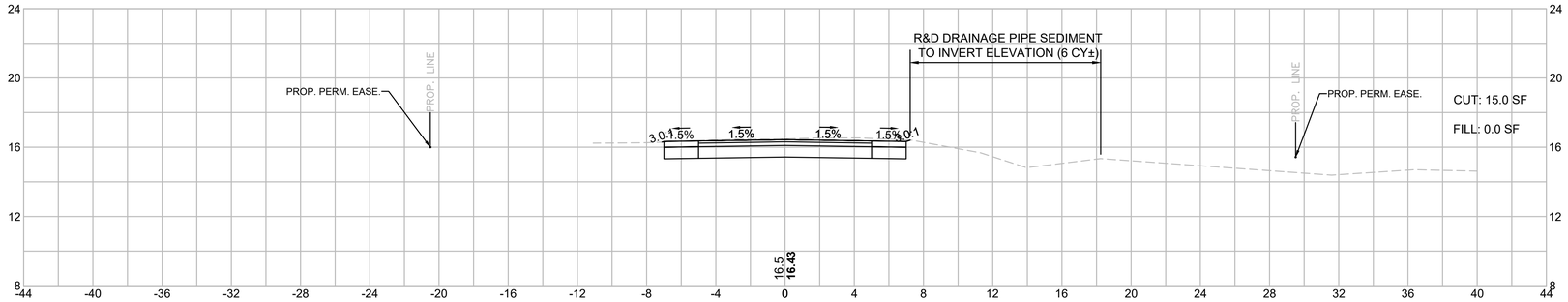
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	228	274
PROJECT FILE NO.	607979		

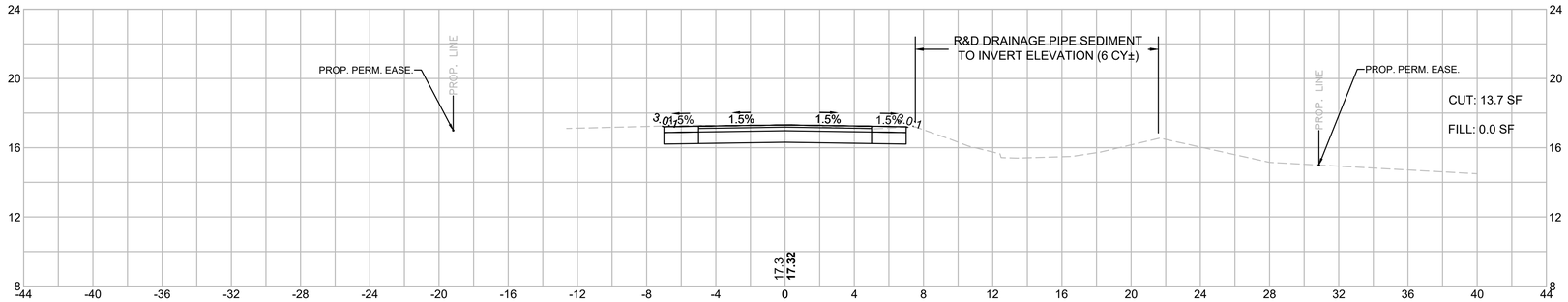
CROSS SECTIONS
SHEET 105 OF 151

Plotted on 28-Sep-2017 3:43 PM
607979_XSECT.DWG

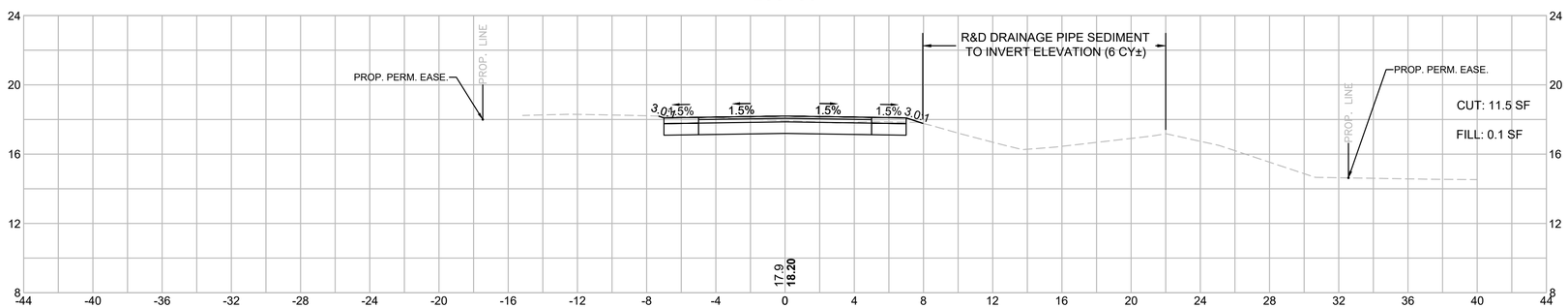
236+50



236+00



235+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

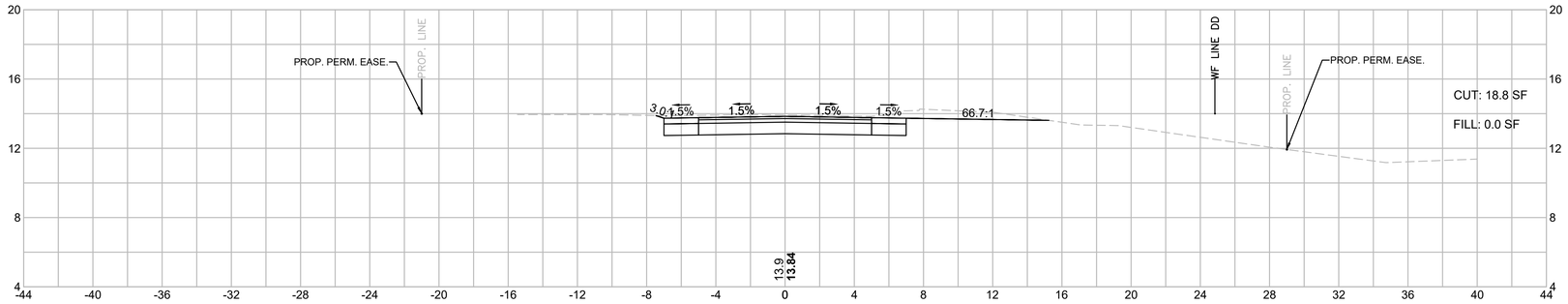
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	229	274
PROJECT FILE NO.	607979		

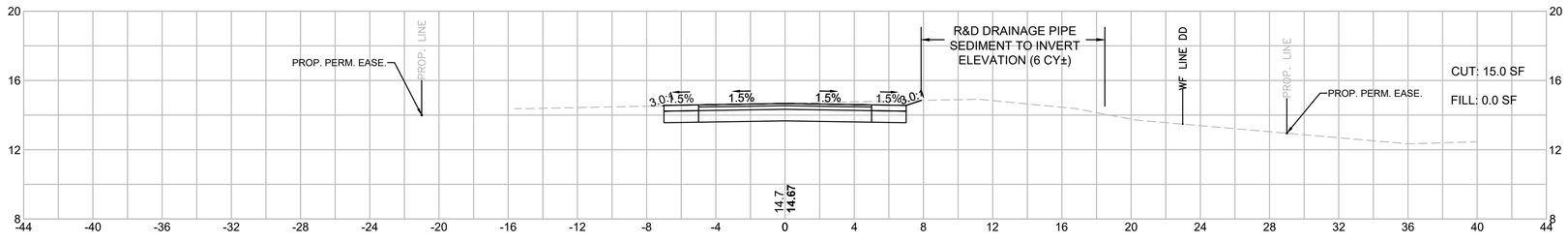
CROSS SECTIONS
SHEET 106 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

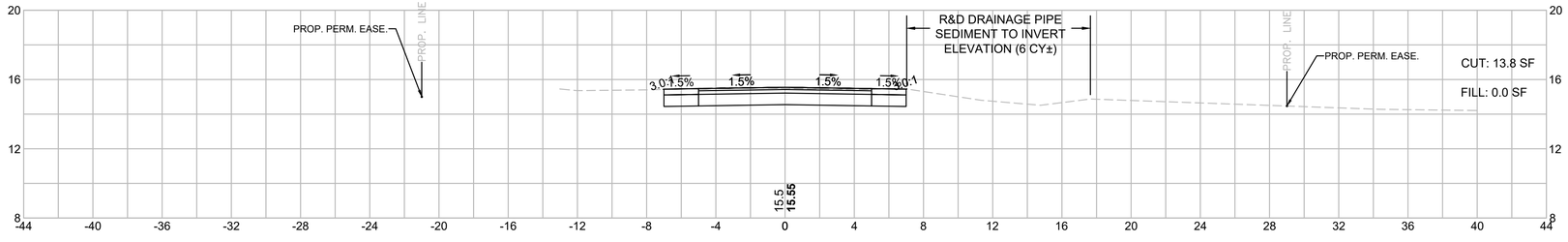
238+00



237+50



237+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

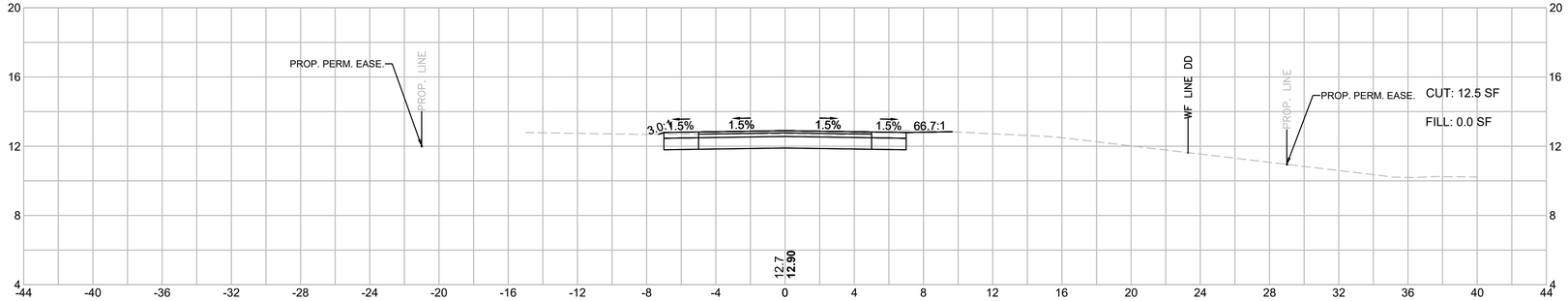
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	230	274
PROJECT FILE NO.	607979		

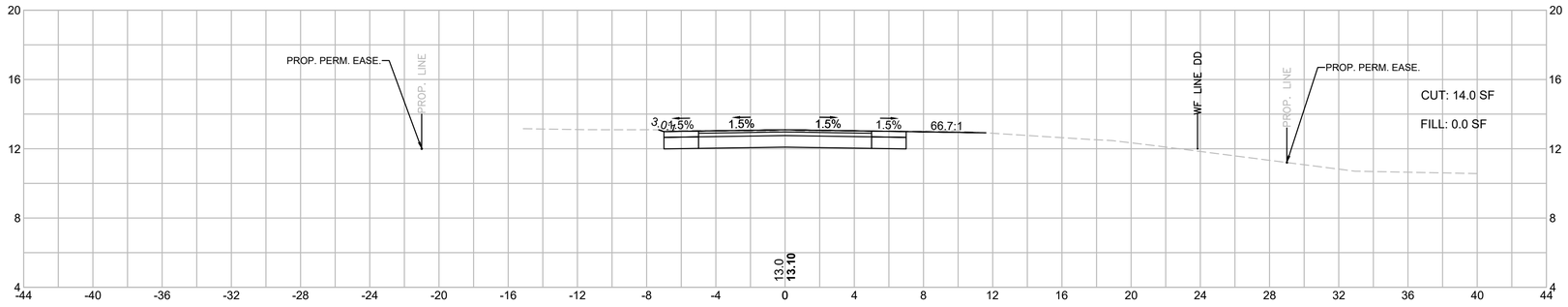
CROSS SECTIONS
SHEET 107 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

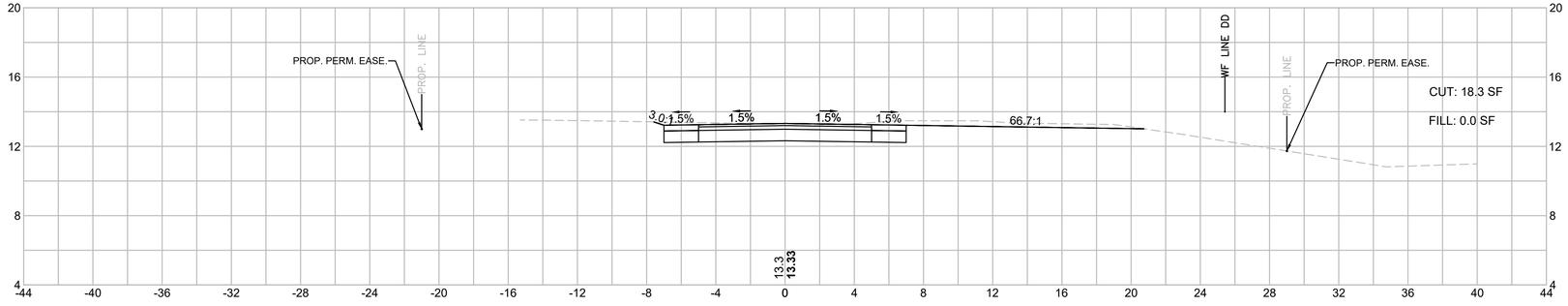
239+50



239+00



238+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

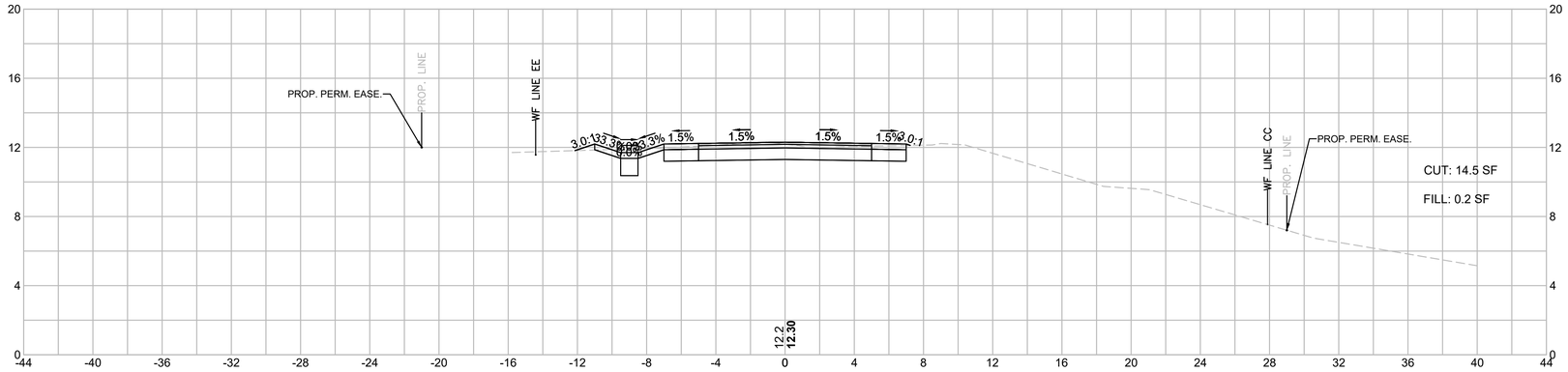
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	231	274
PROJECT FILE NO.	607979		

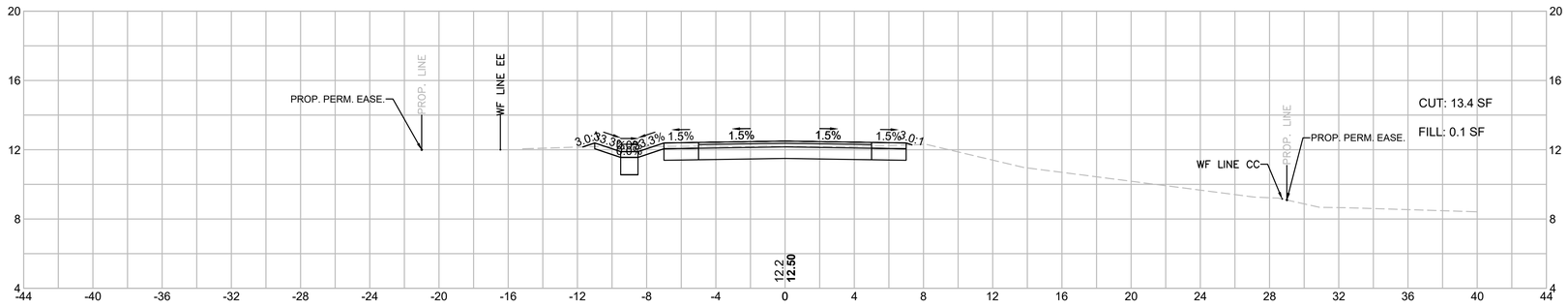
CROSS SECTIONS
SHEET 108 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

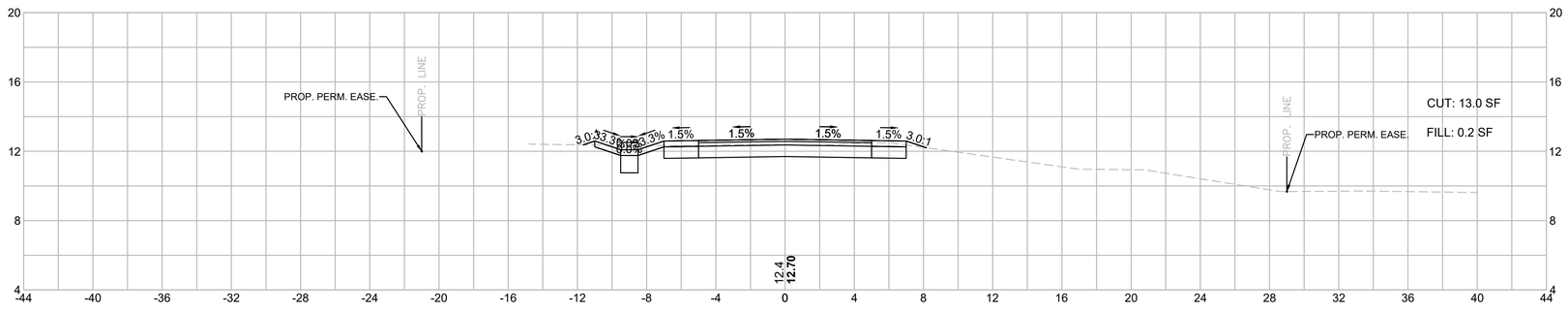
241+00



240+50



240+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

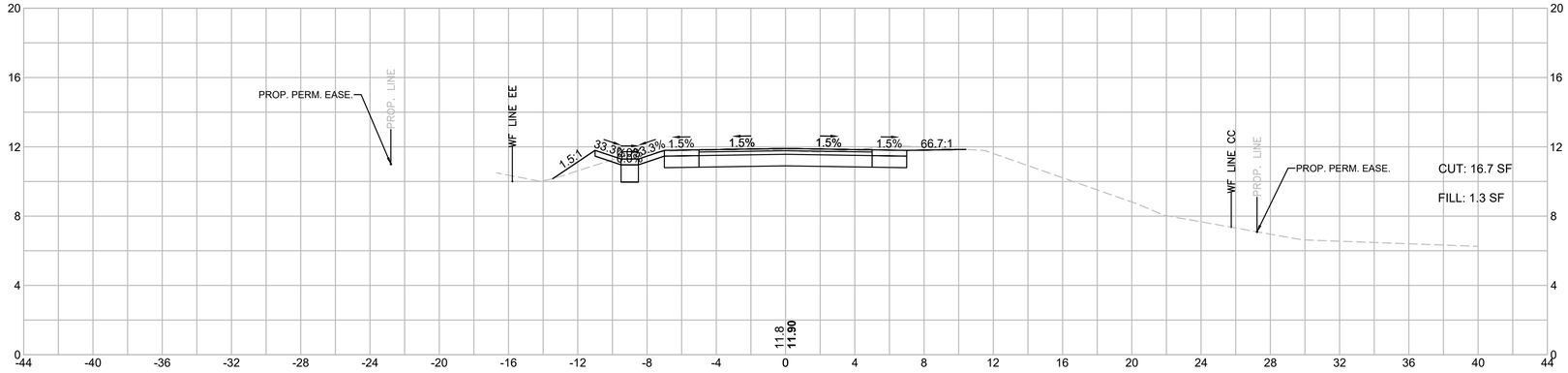
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	232	274
PROJECT FILE NO.	607979		

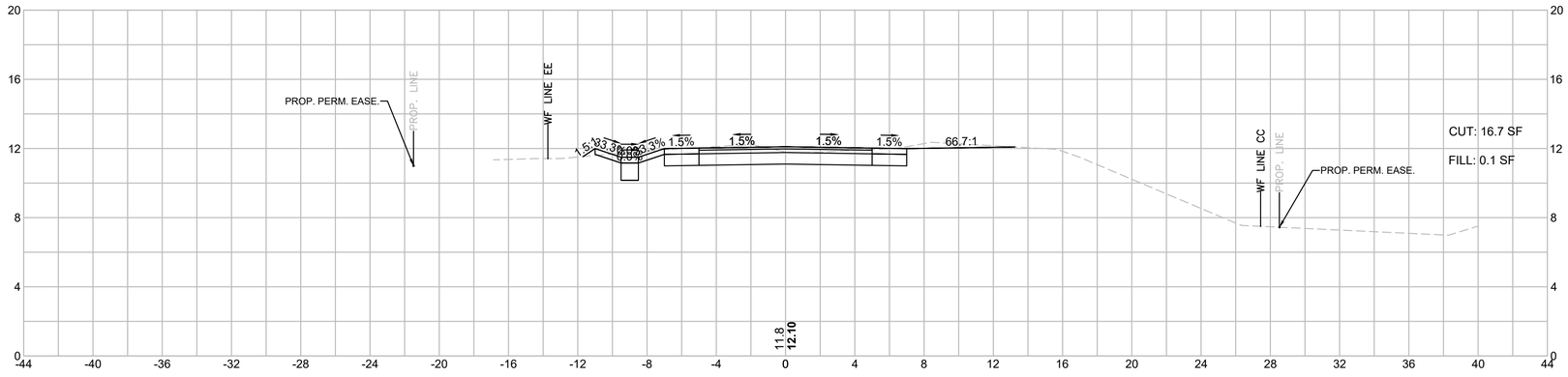
CROSS SECTIONS
SHEET 109 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

242+00



241+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

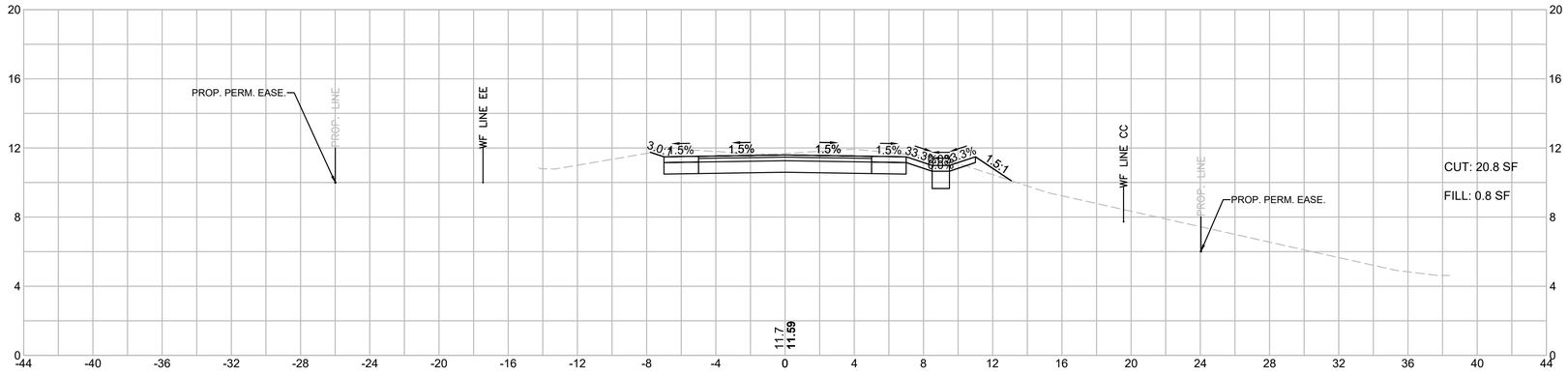
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	233	274
PROJECT FILE NO.	607979		

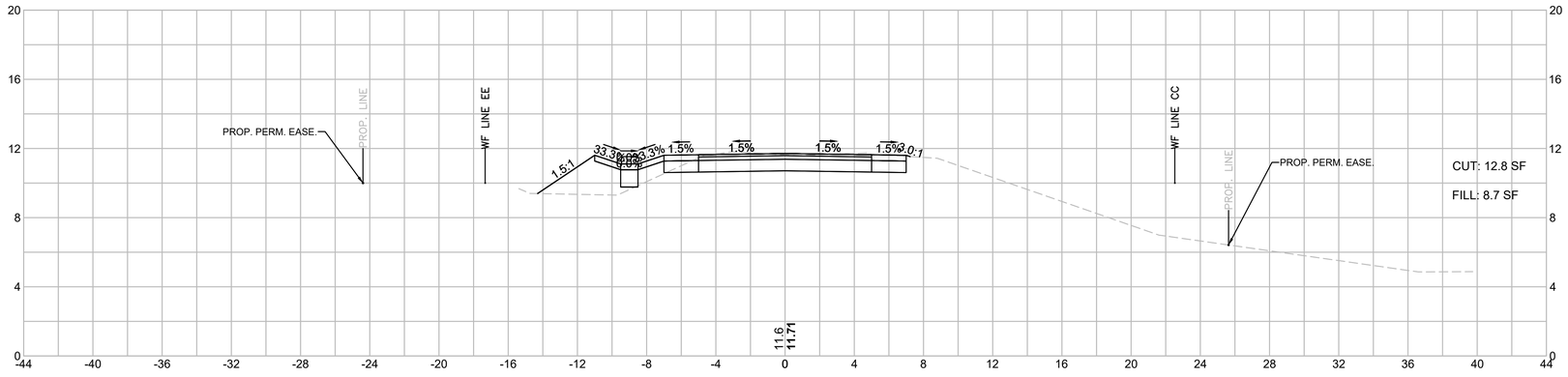
CROSS SECTIONS
SHEET 110 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

243+00



242+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

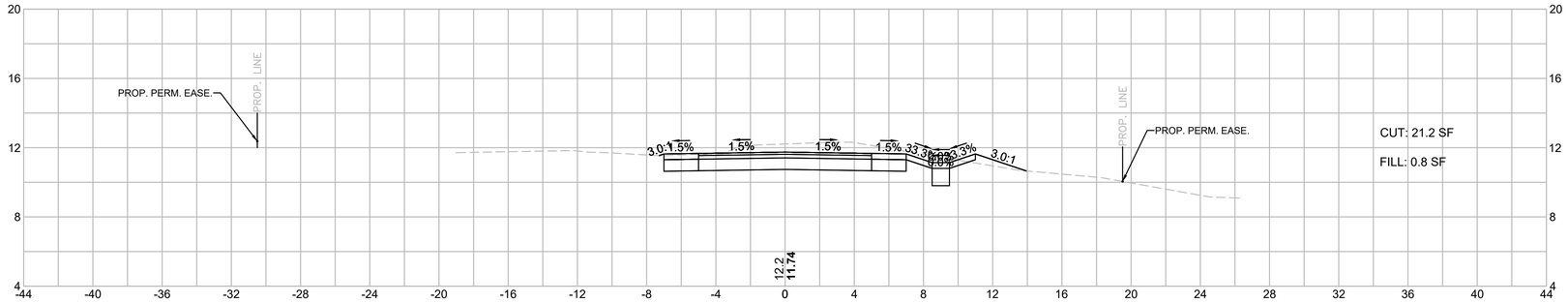
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	234	274
PROJECT FILE NO.	607979		

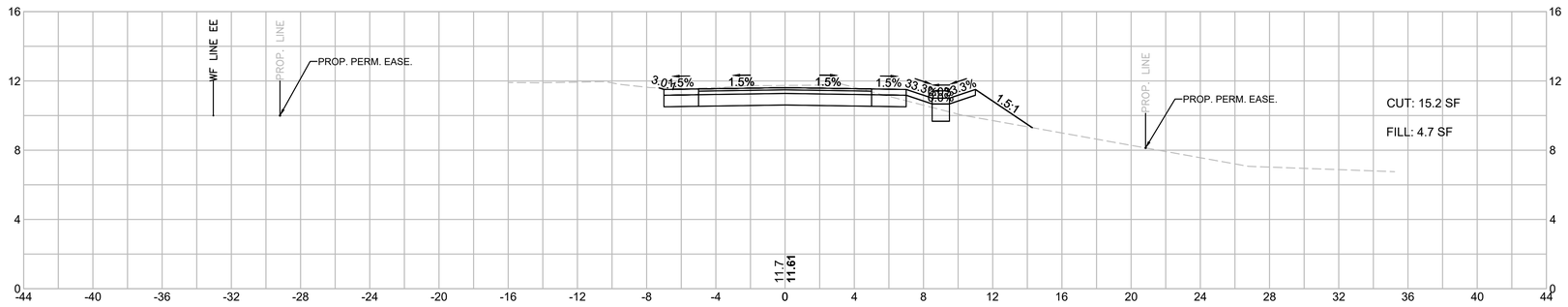
CROSS SECTIONS
SHEET 111 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

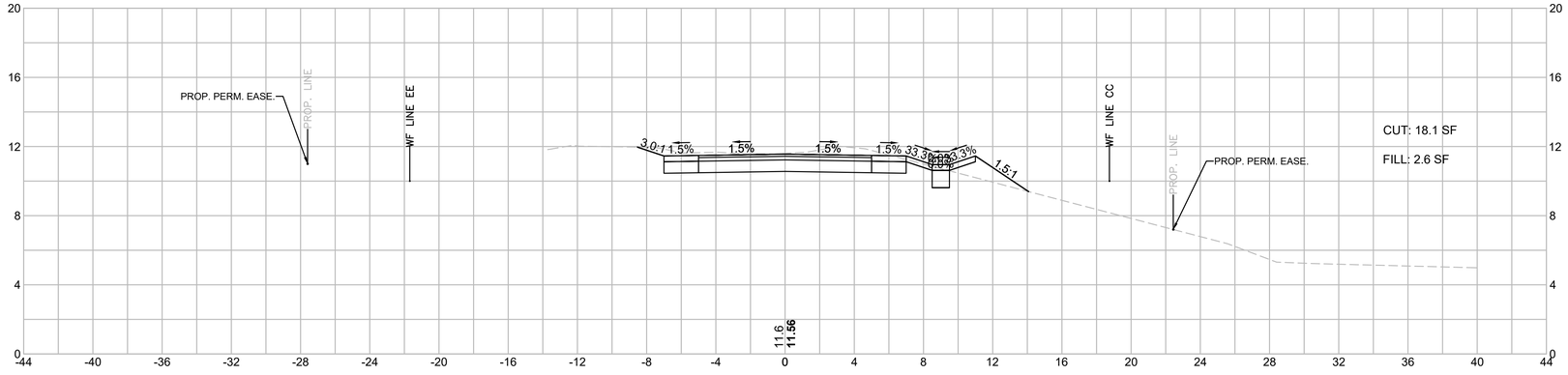
244+50



244+00



243+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

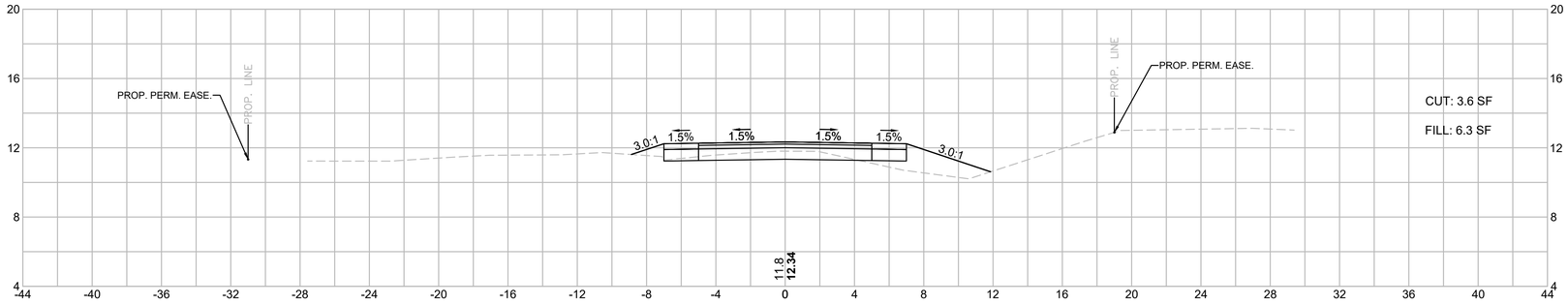
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	235	274
PROJECT FILE NO.	607979		

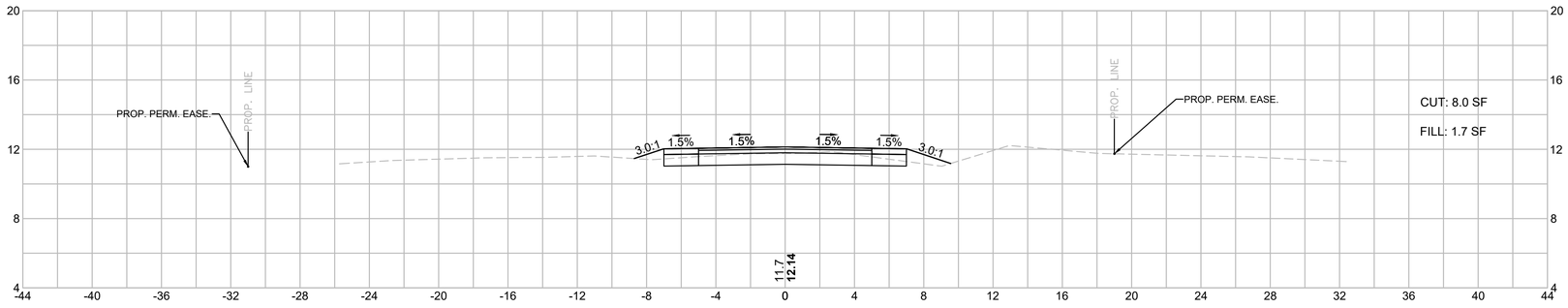
CROSS SECTIONS
SHEET 112 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

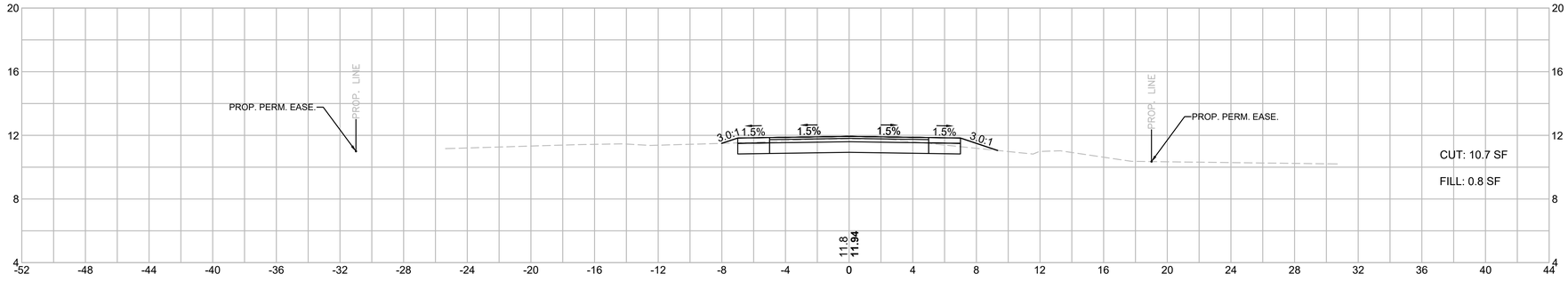
246+00



245+50



245+00



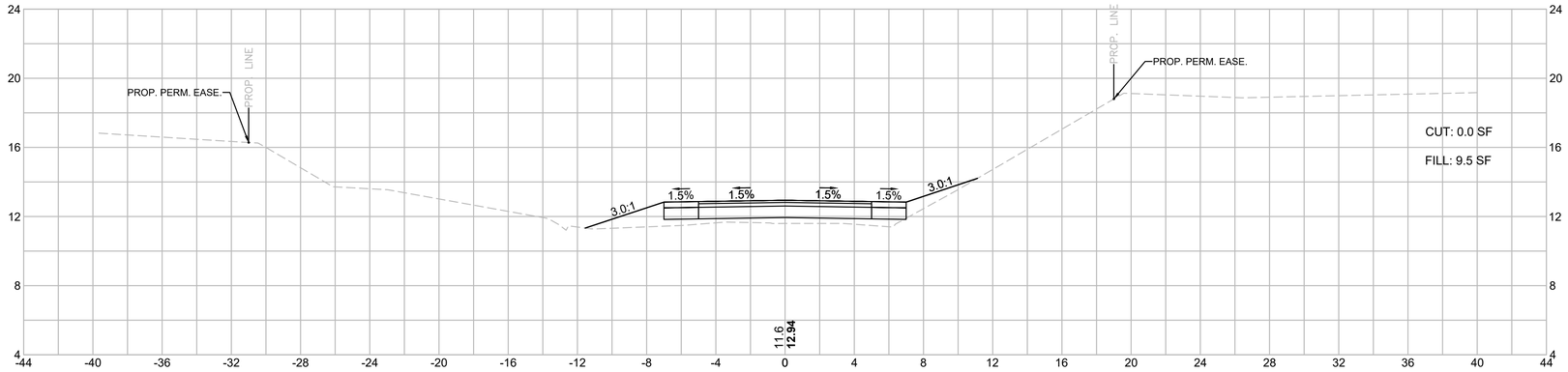
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

TOWN OF MARION
SHARED-USE PATH - PHASE 1

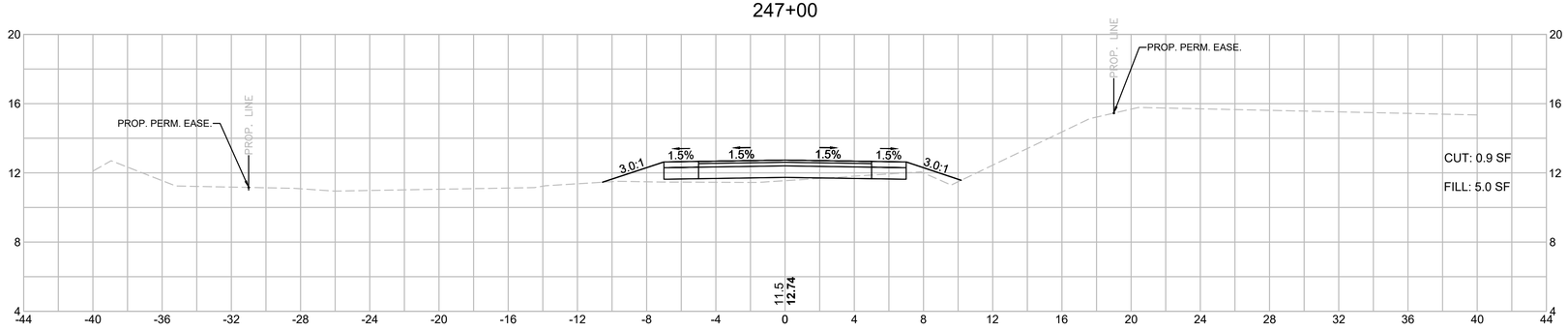
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	236	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 113 OF 151

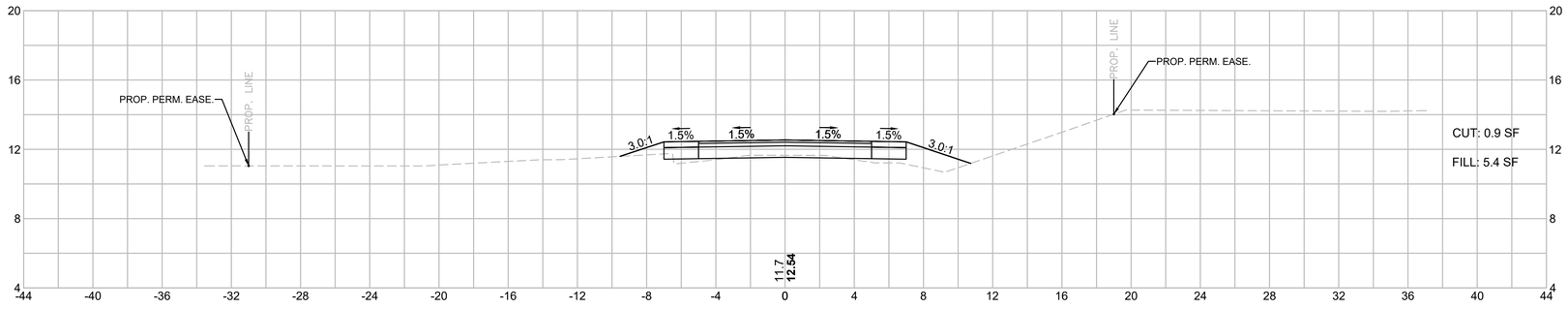
247+50



247+00



246+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

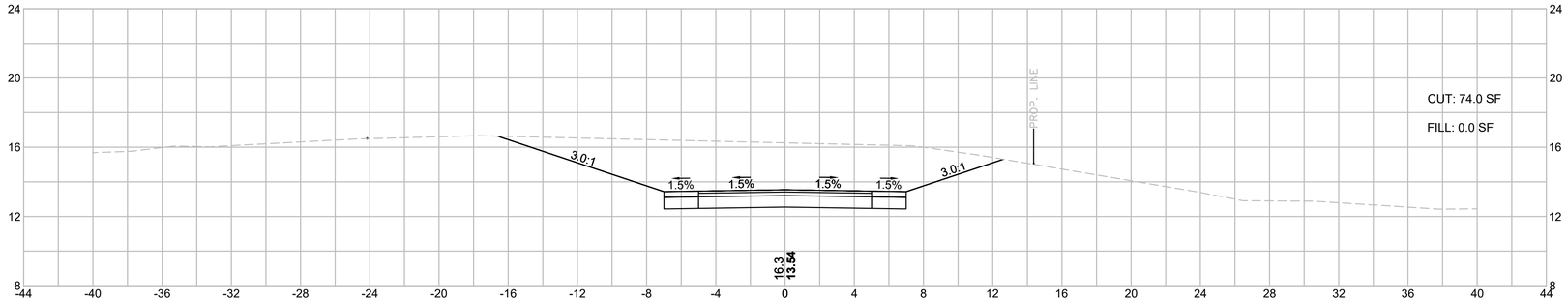
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	237	274
PROJECT FILE NO.	607979		

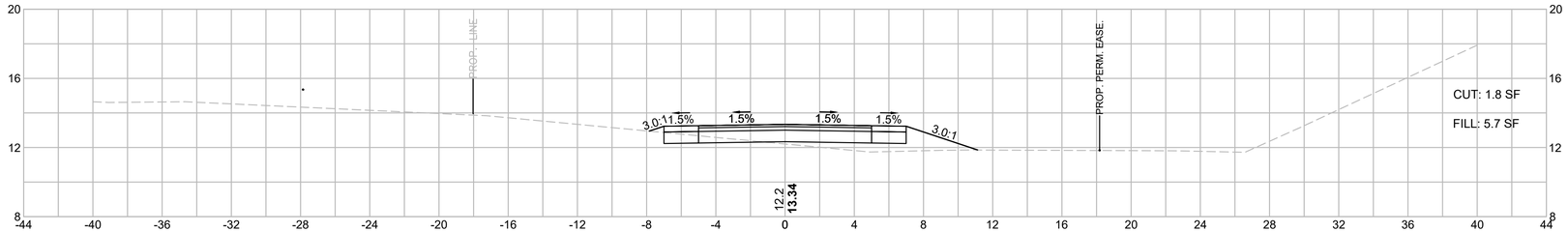
CROSS SECTIONS
SHEET 114 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

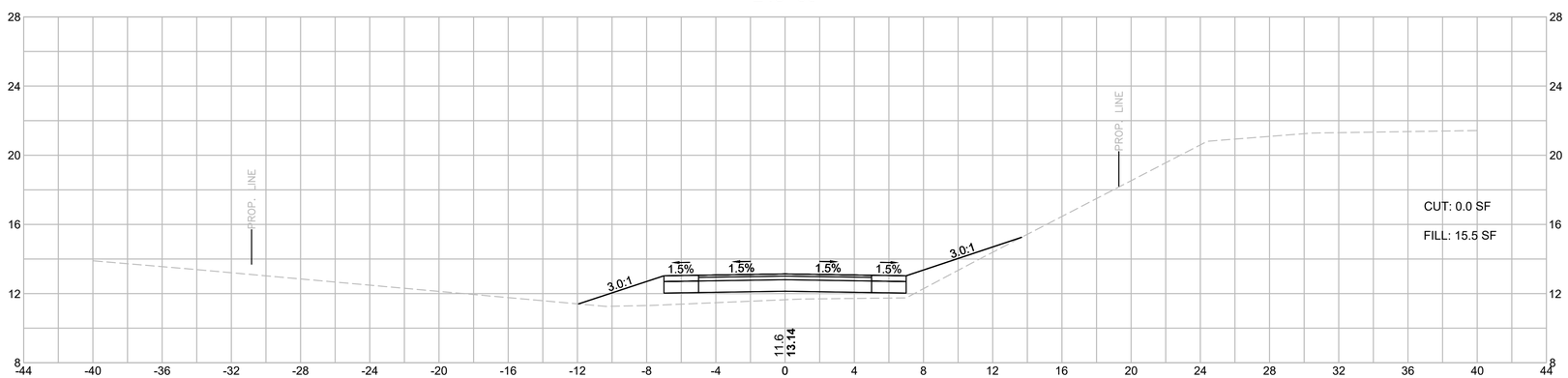
249+00



248+50



248+00



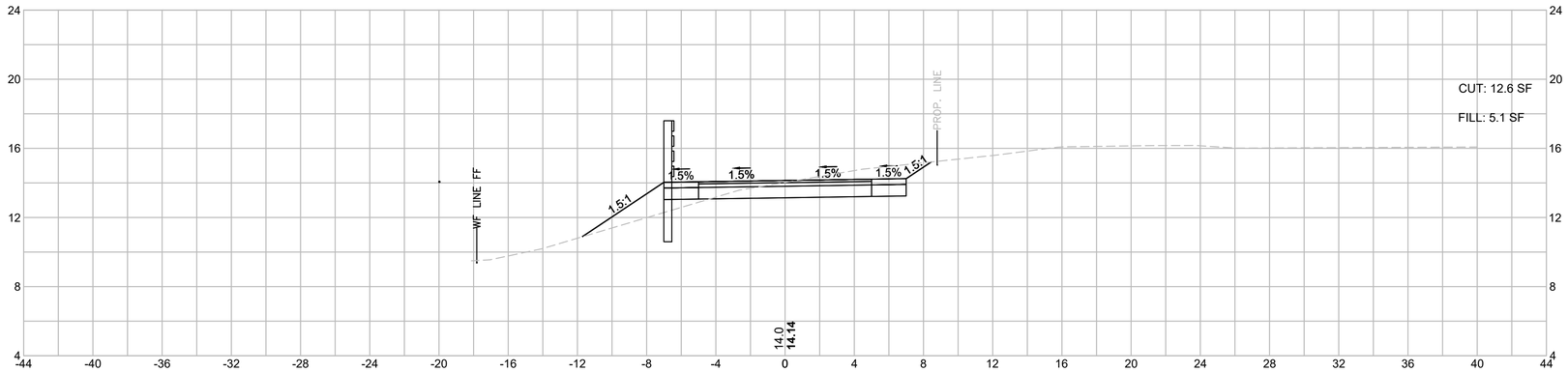
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

TOWN OF MARION
SHARED-USE PATH - PHASE 1

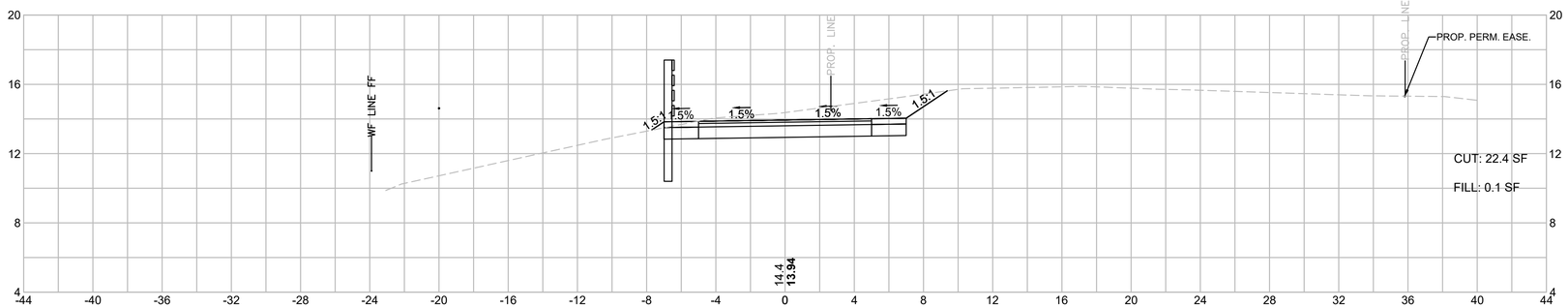
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	238	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 115 OF 151

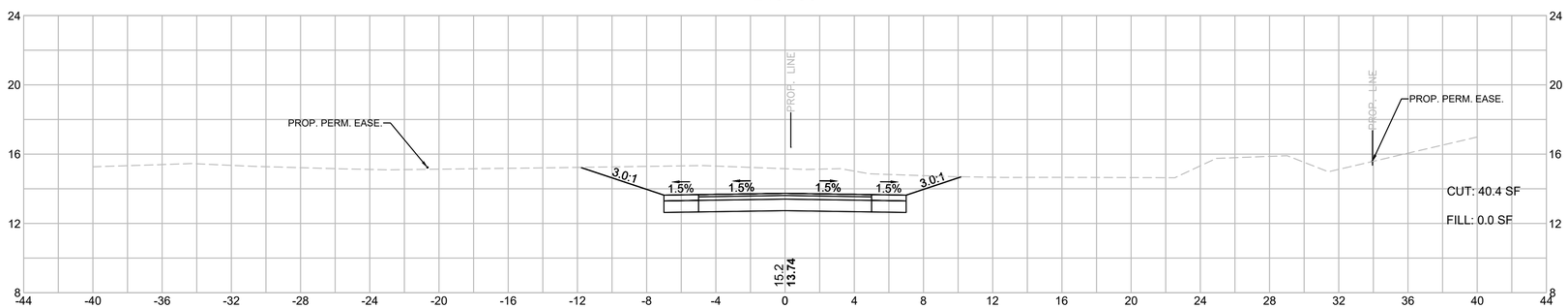
250+50



250+00



249+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

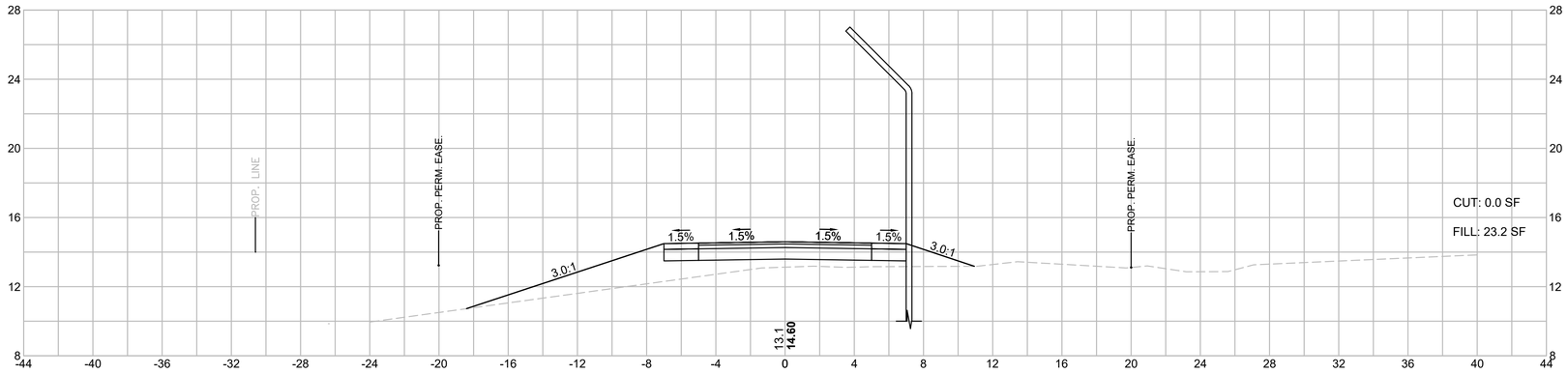
607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

TOWN OF MARION
SHARED-USE PATH - PHASE 1

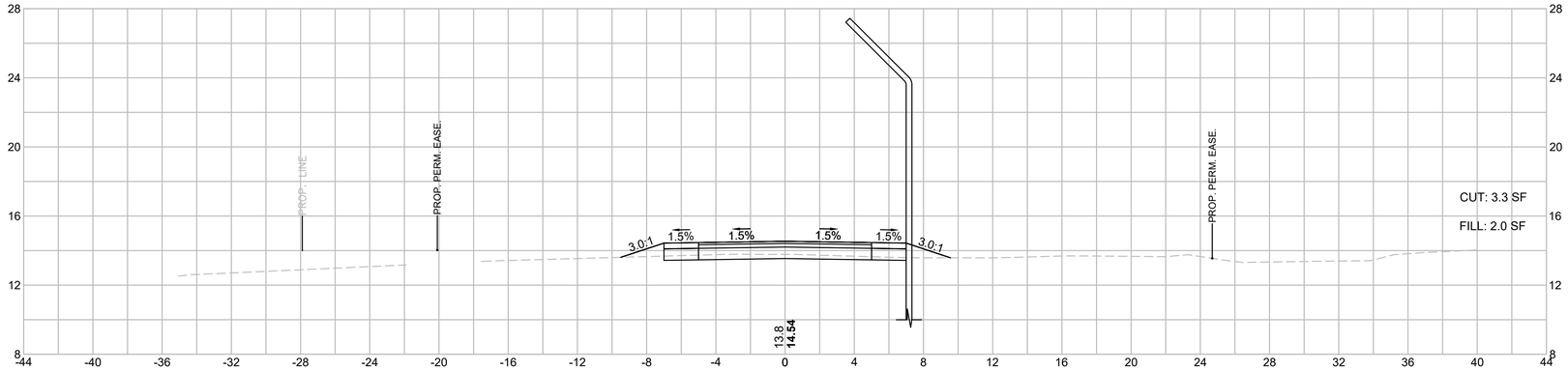
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	239	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 116 OF 151

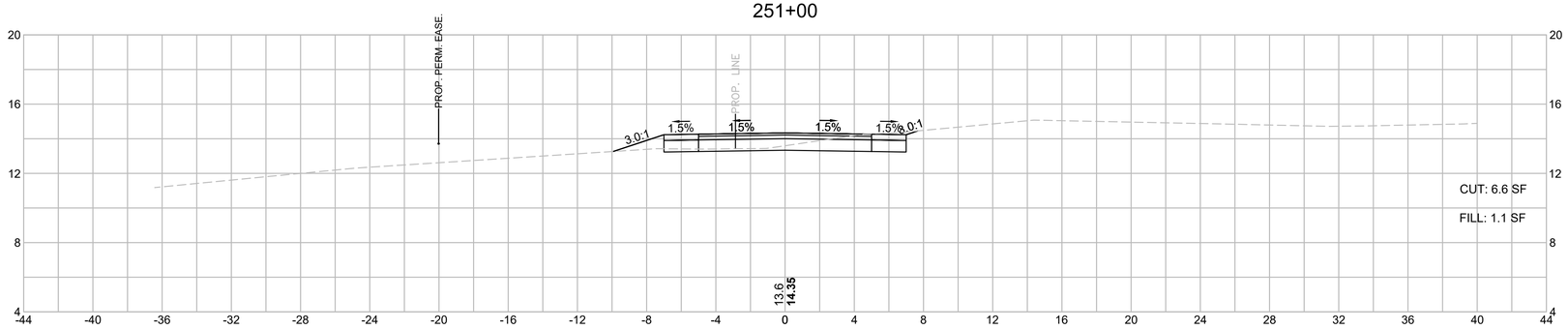
252+00



251+50



251+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

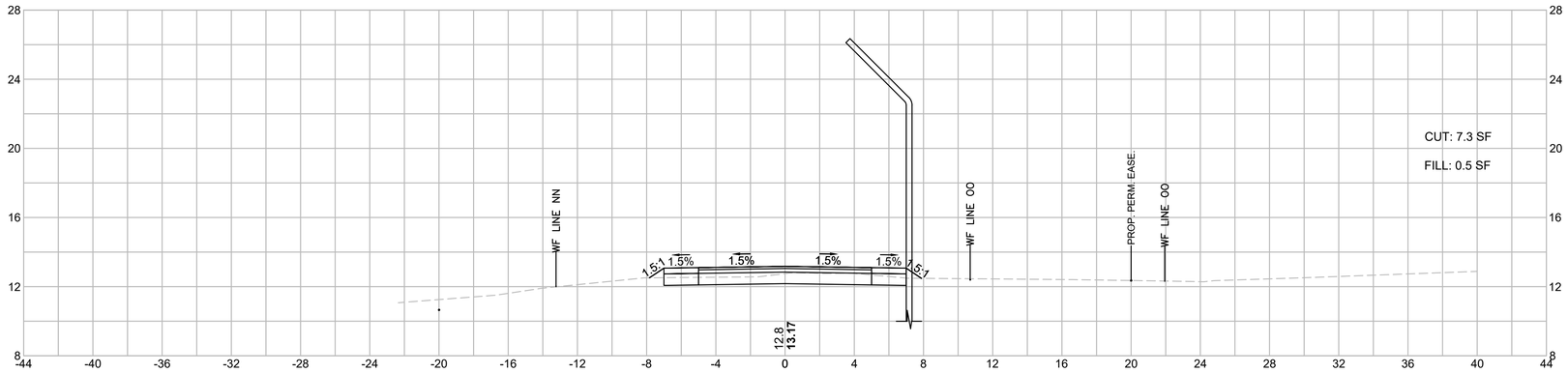
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	240	274
PROJECT FILE NO.	607979		

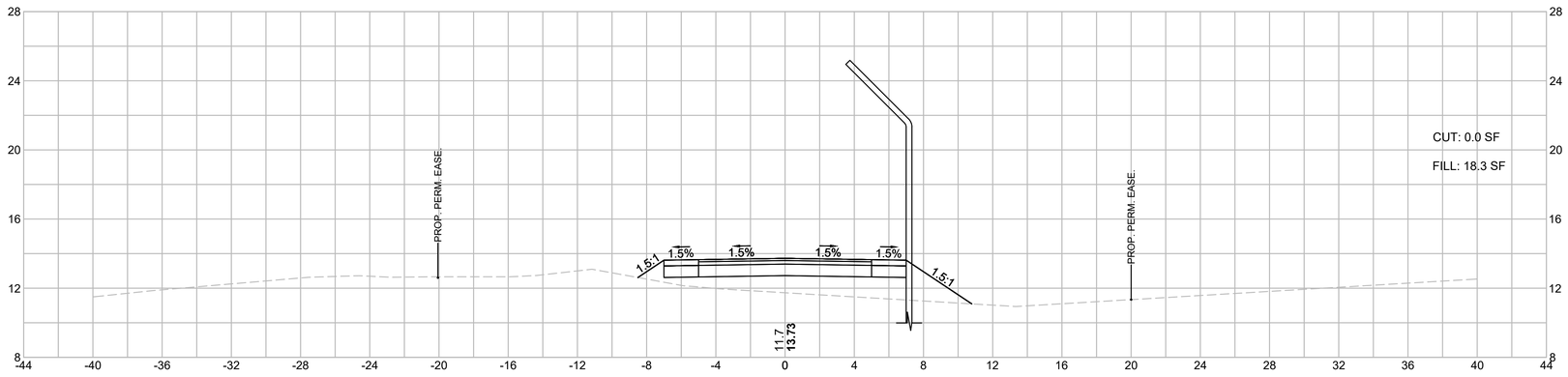
CROSS SECTIONS
SHEET 117 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

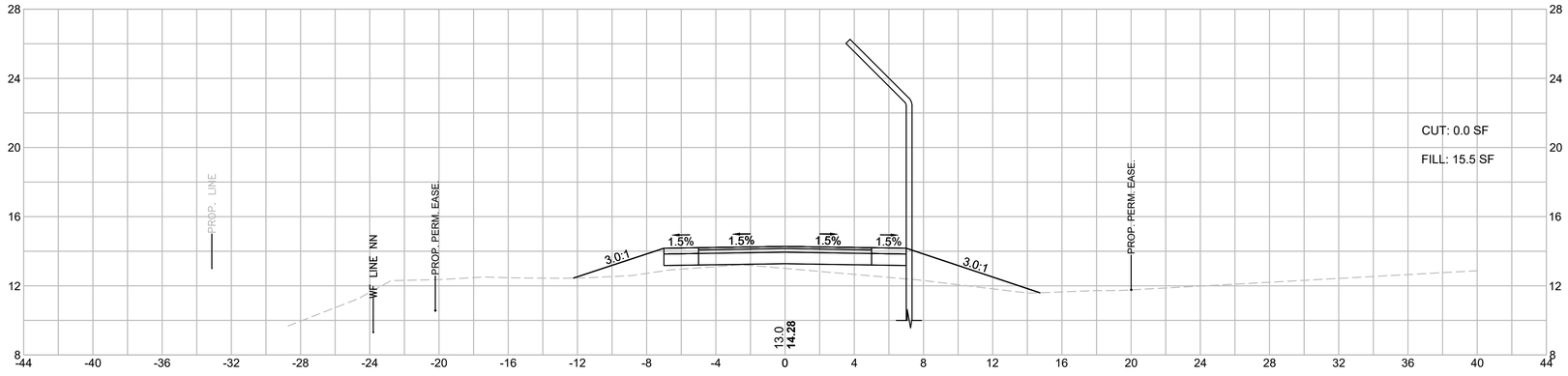
253+50



253+00



252+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

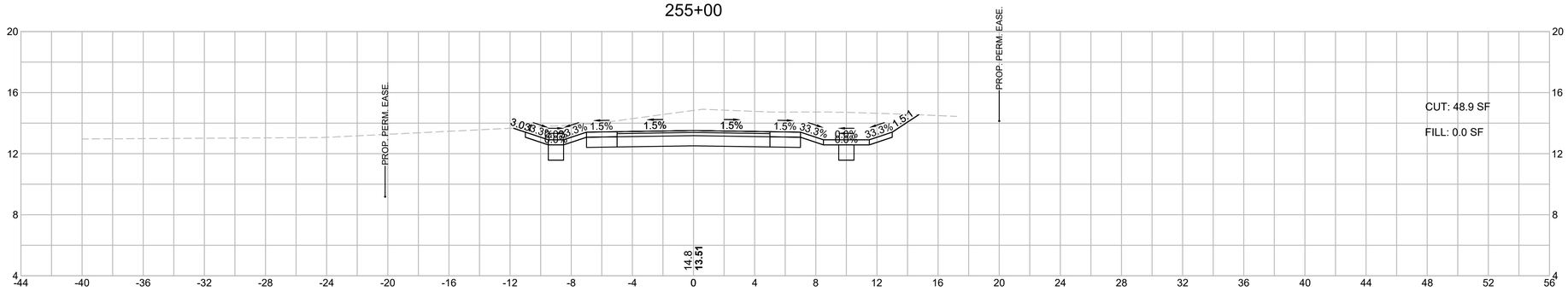
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	241	274
PROJECT FILE NO.	607979		

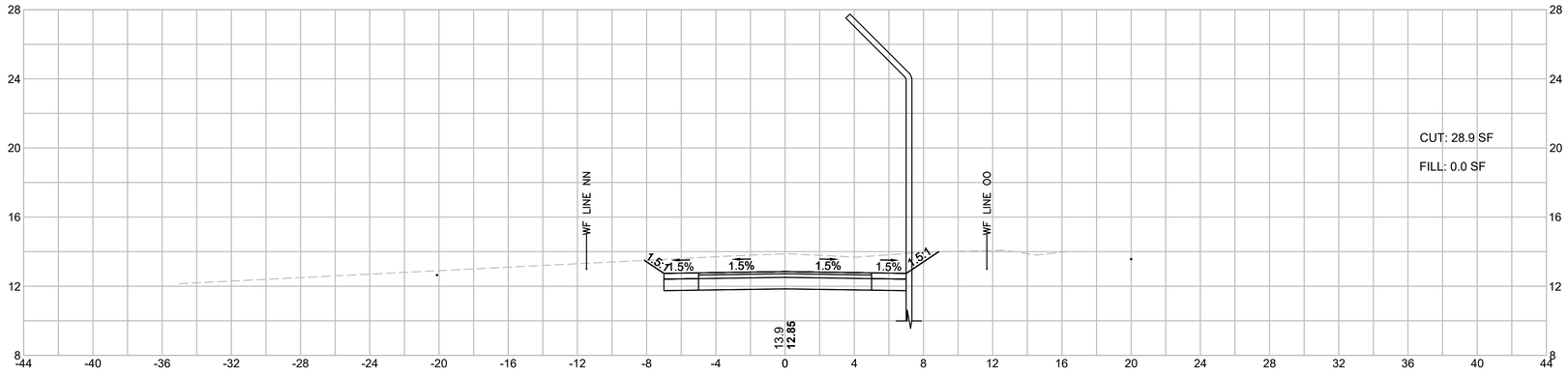
CROSS SECTIONS
SHEET 118 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

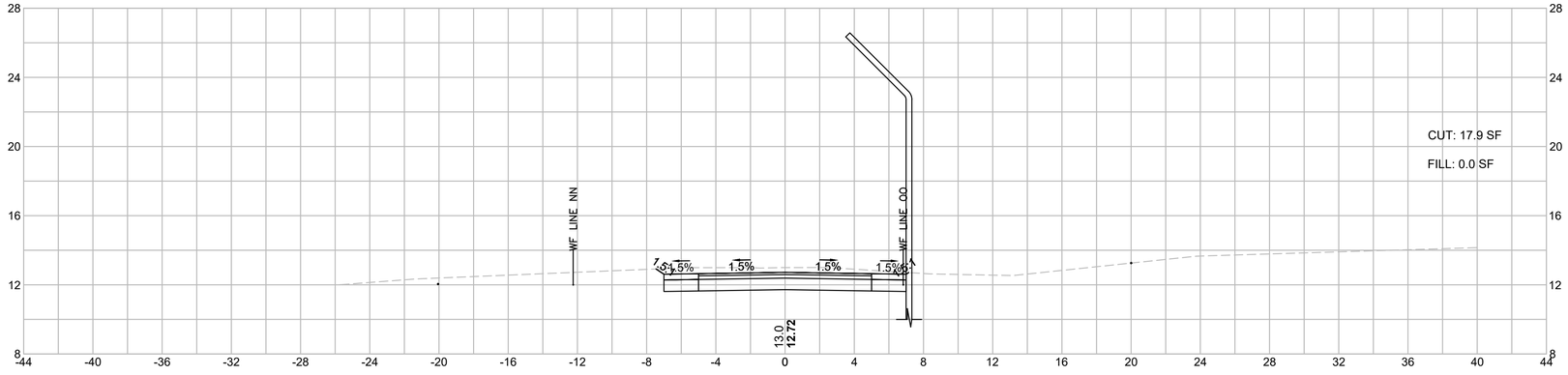
255+00



254+50



254+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

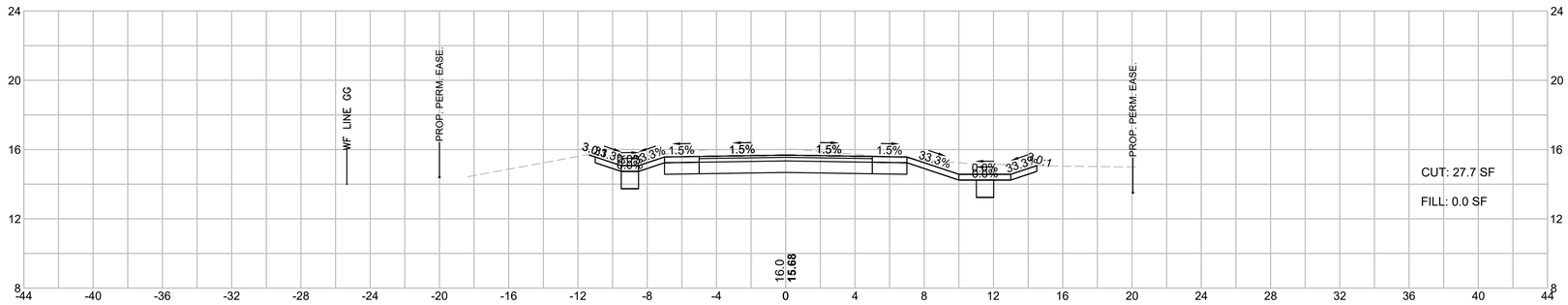
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	242	274
PROJECT FILE NO.	607979		

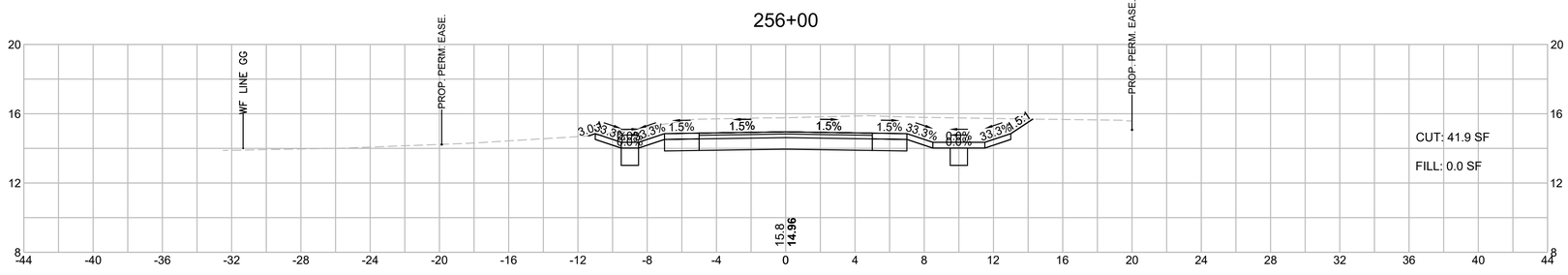
CROSS SECTIONS
SHEET 119 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

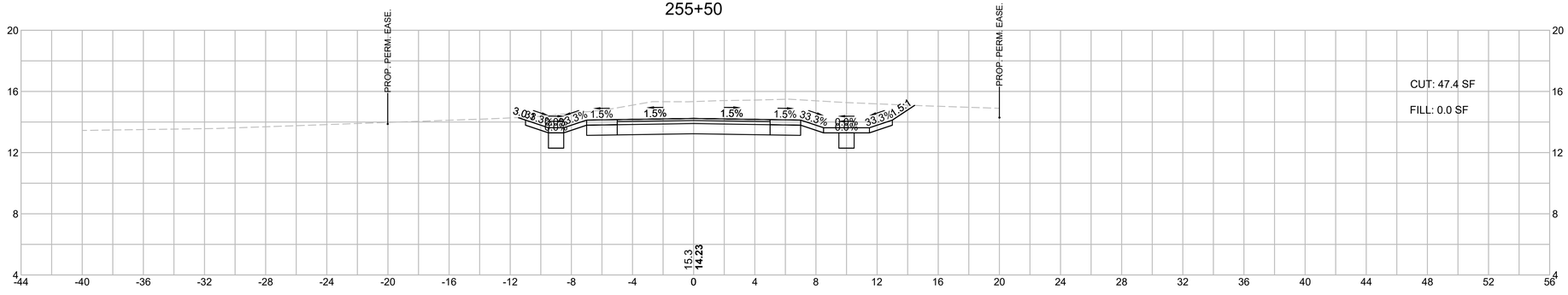
256+50



256+00



255+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

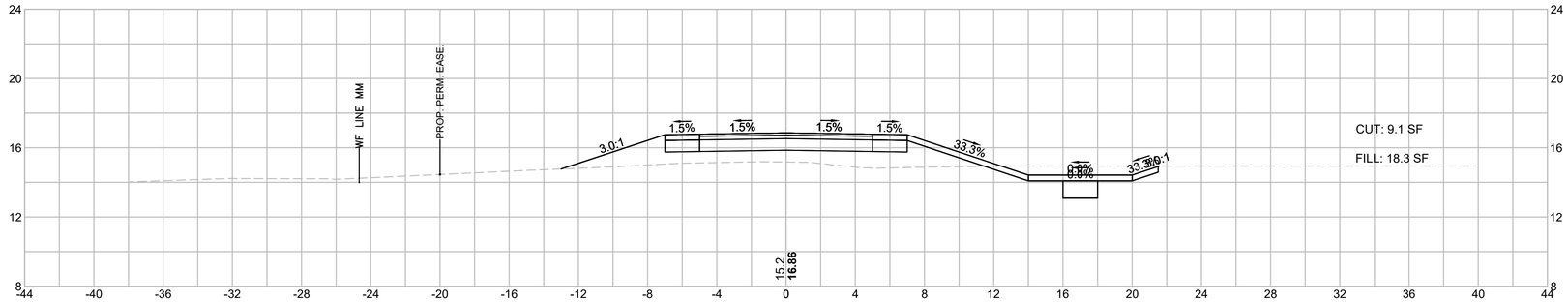
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	243	274
PROJECT FILE NO.	607979		

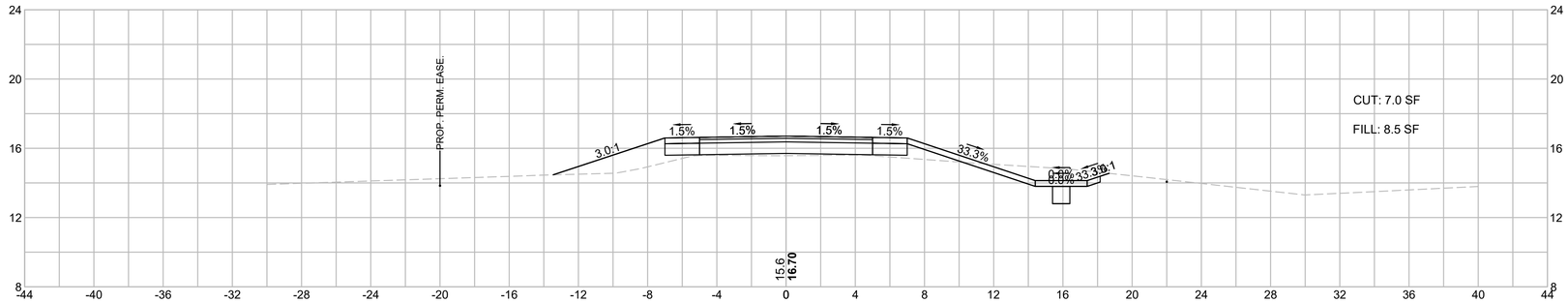
CROSS SECTIONS
SHEET 120 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

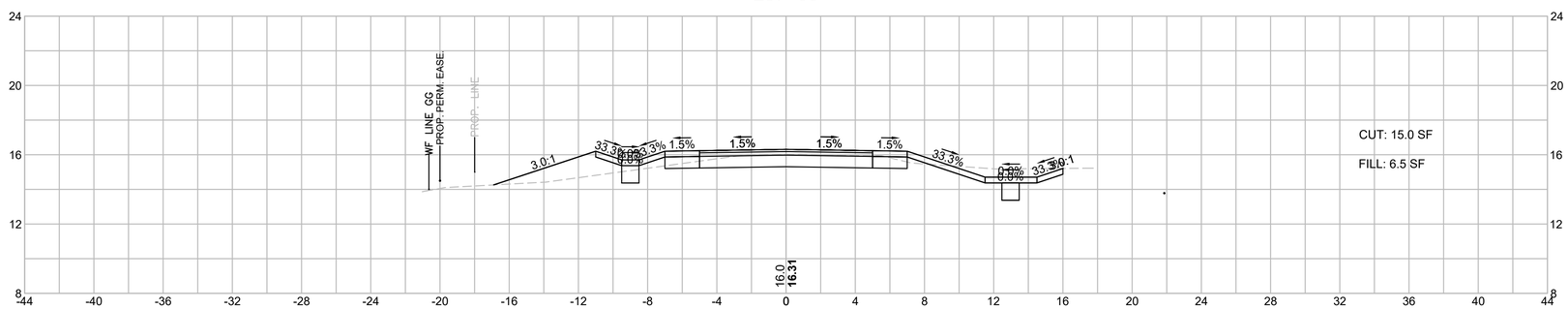
258+00



257+50



257+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

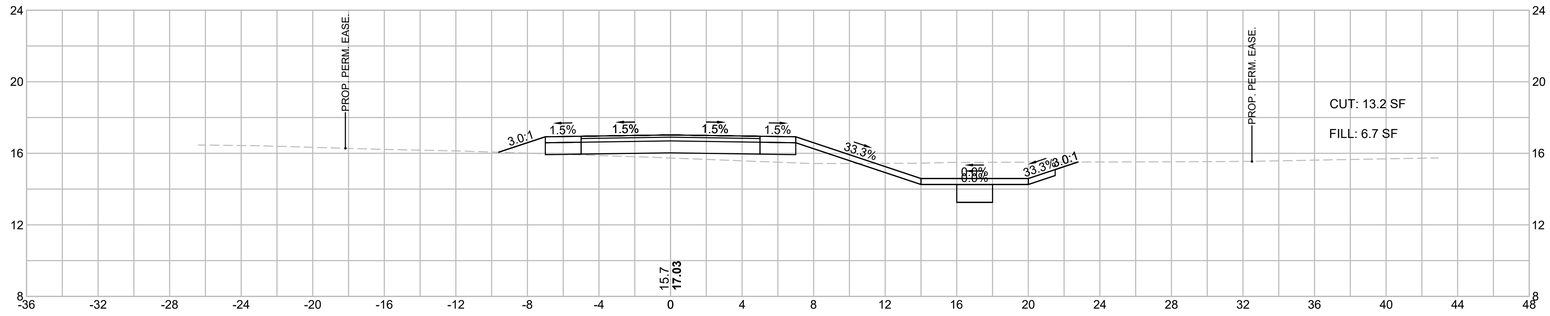
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	244	274
PROJECT FILE NO.	607979		

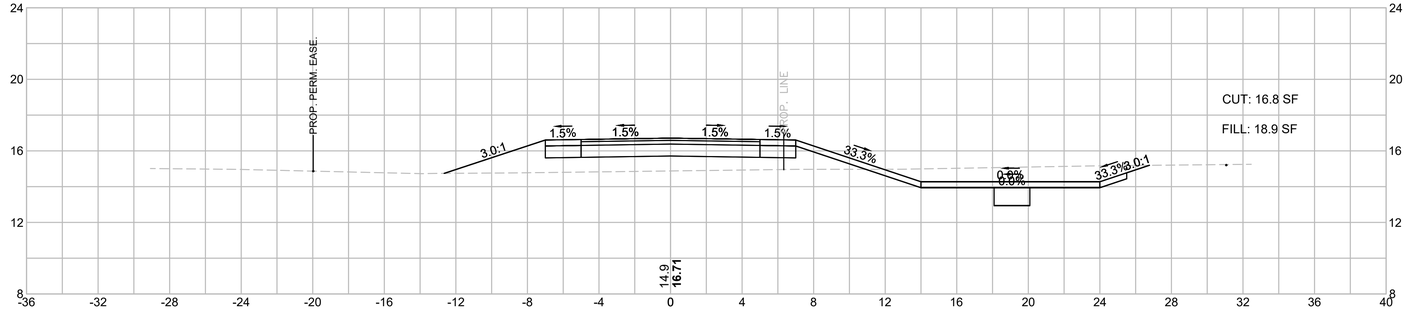
CROSS SECTIONS
SHEET 121 OF 151

1+50

1+00



0+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

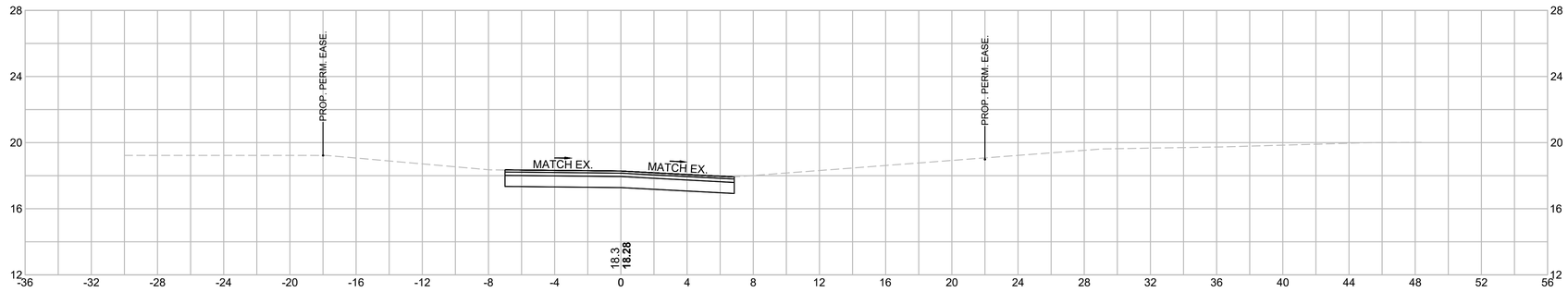
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	245	274
PROJECT FILE NO.	607979		

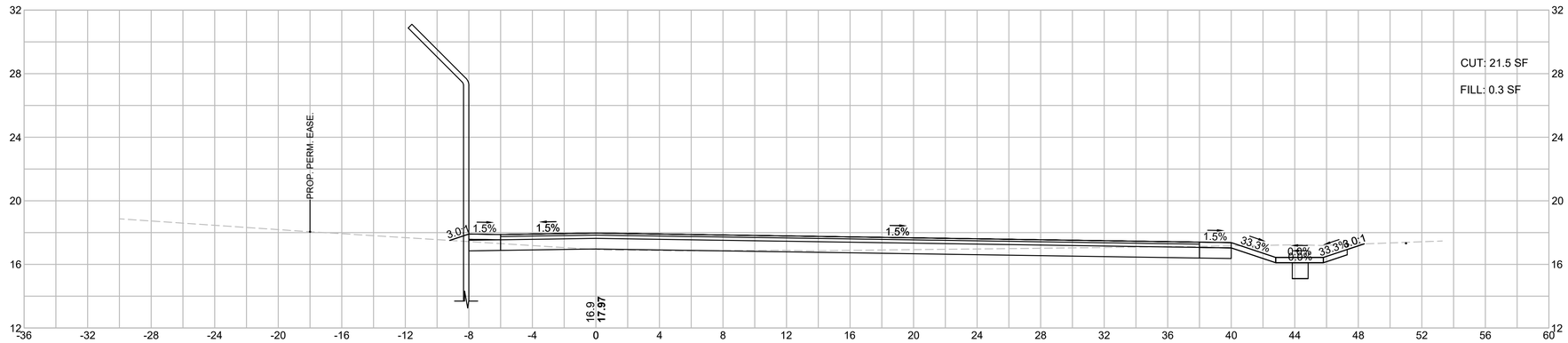
CROSS SECTIONS
SHEET 122 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

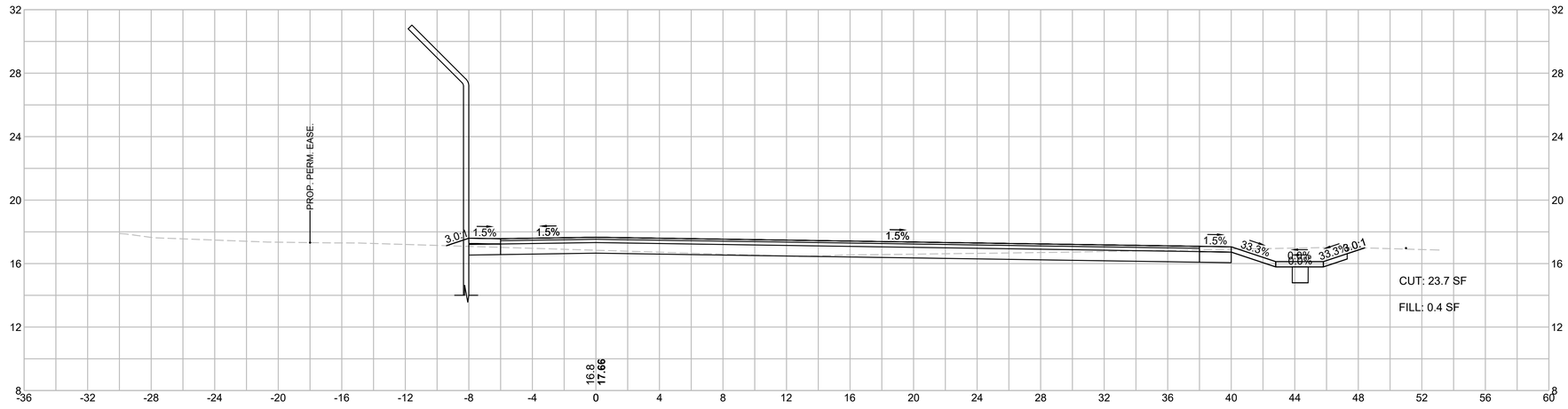
2+99.03



2+50



2+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

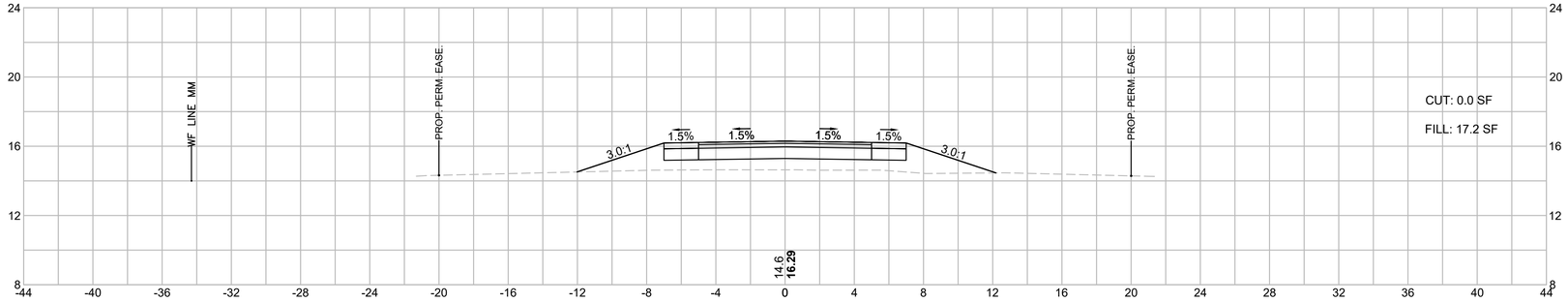
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	246	274
PROJECT FILE NO.	607979		

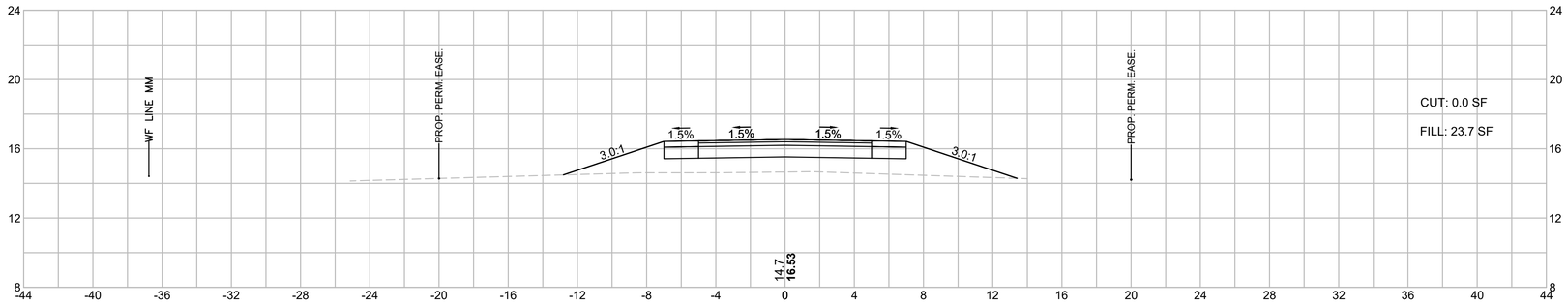
CROSS SECTIONS
SHEET 123 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

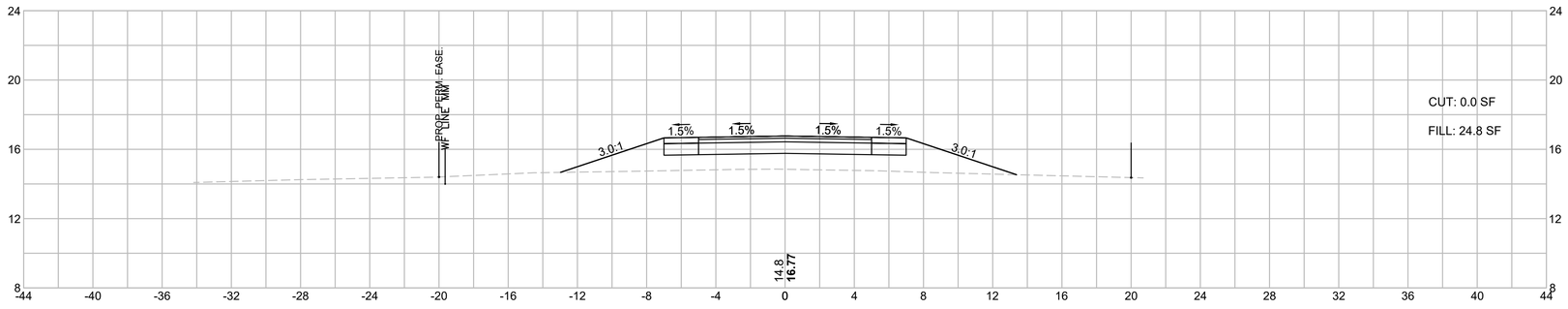
259+50



259+00



258+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

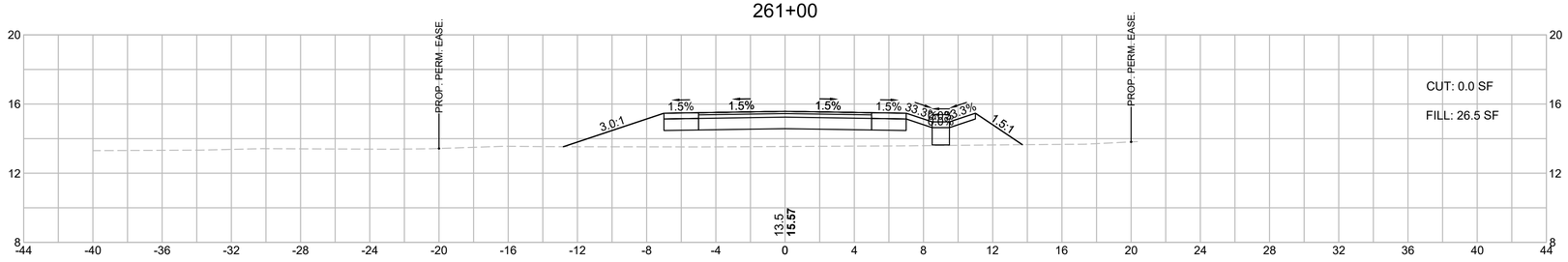
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	247	274
PROJECT FILE NO.	607979		

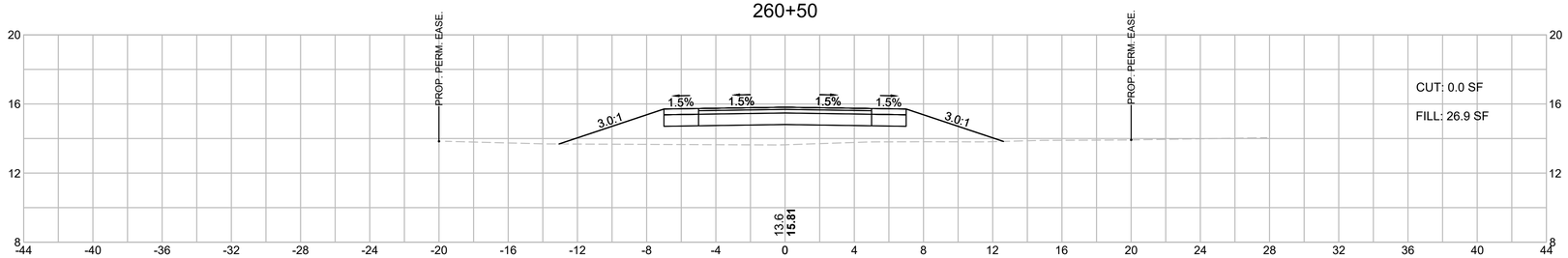
CROSS SECTIONS
SHEET 124 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

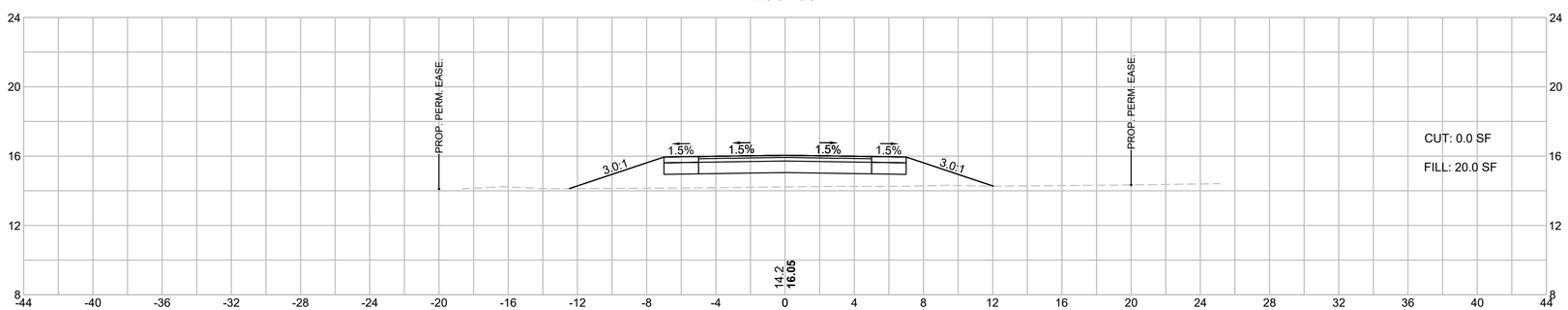
261+00



260+50



260+00



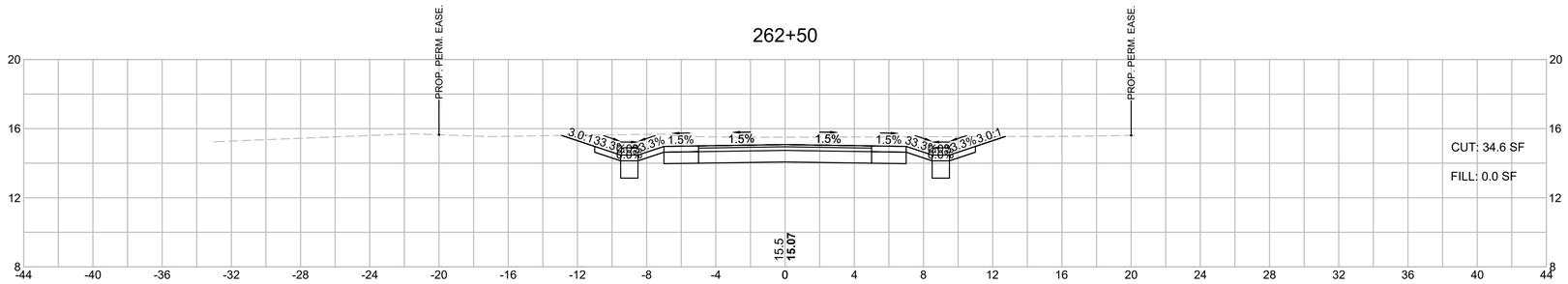
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

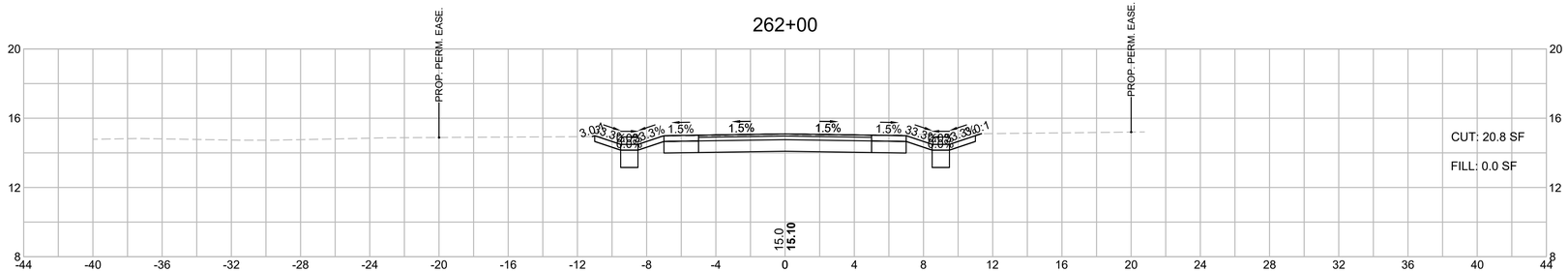
TOWN OF MARION
SHARED-USE PATH - PHASE 1

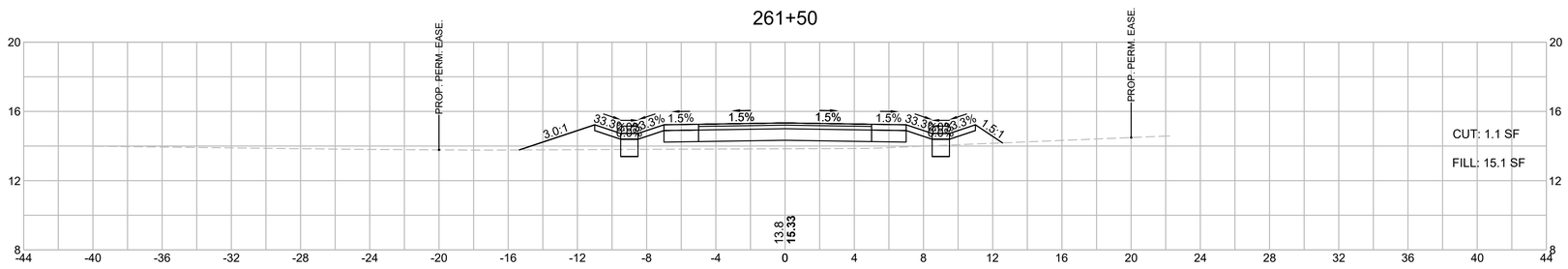
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	248	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 125 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM







HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

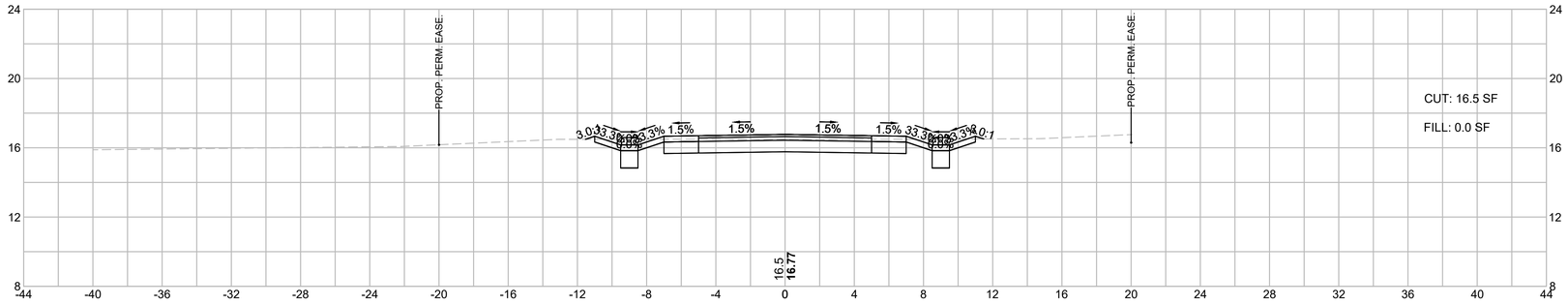
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	249	274
PROJECT FILE NO.	607979		

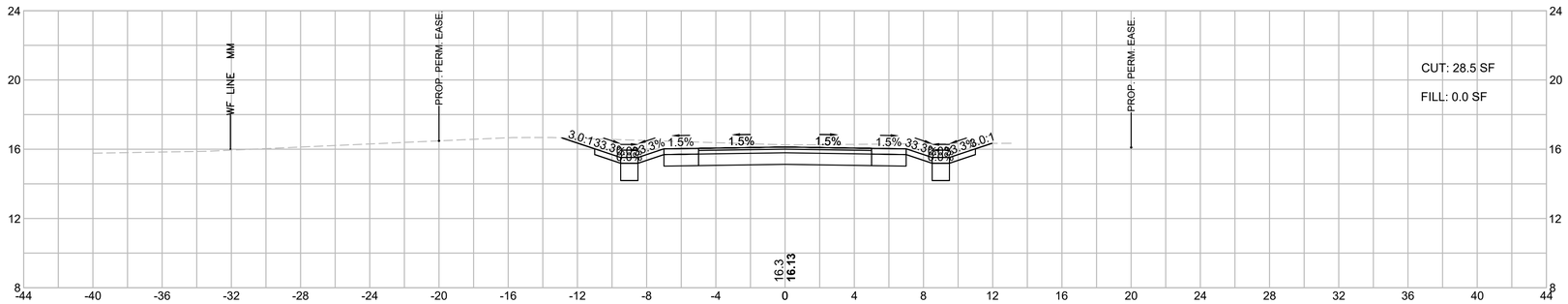
CROSS SECTIONS
SHEET 126 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

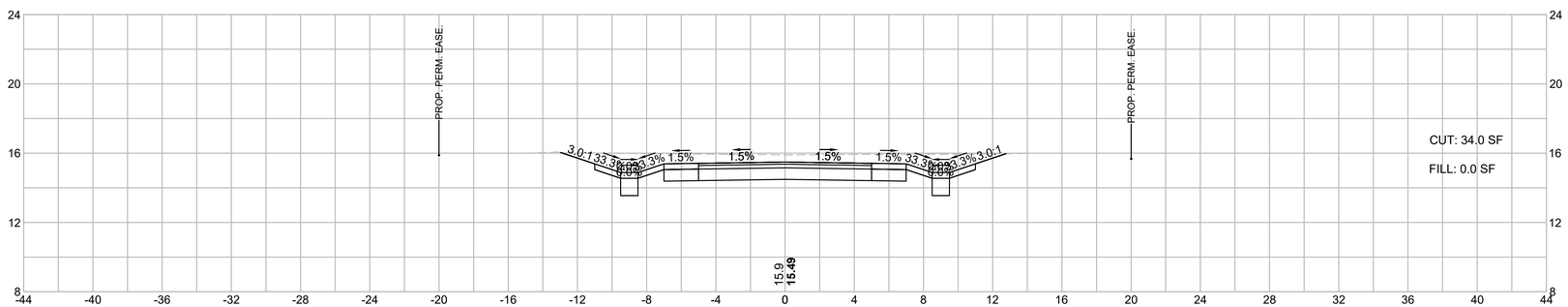
264+00



263+50



263+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

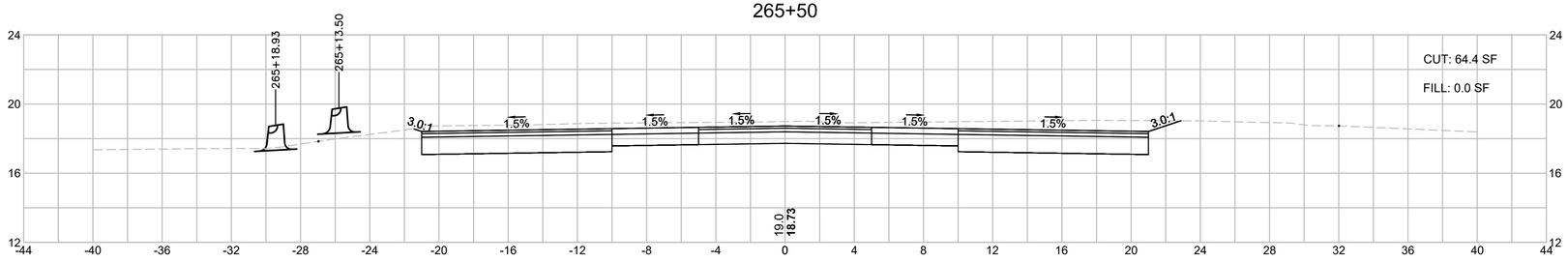
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	250	274
PROJECT FILE NO.	607979		

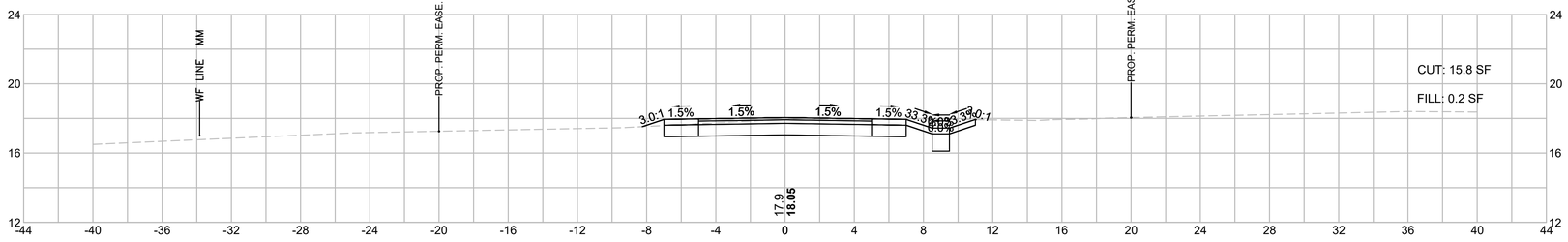
CROSS SECTIONS
SHEET 127 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

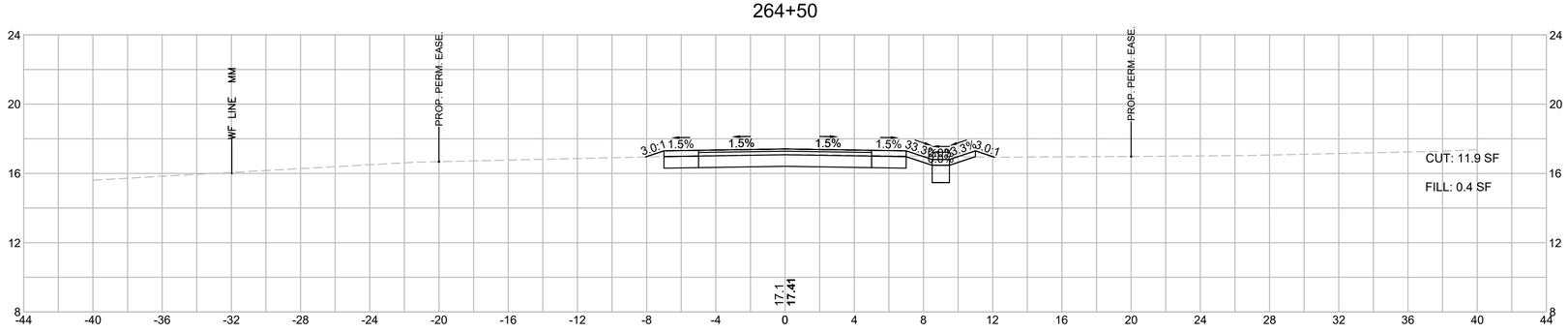
265+50



265+00



264+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

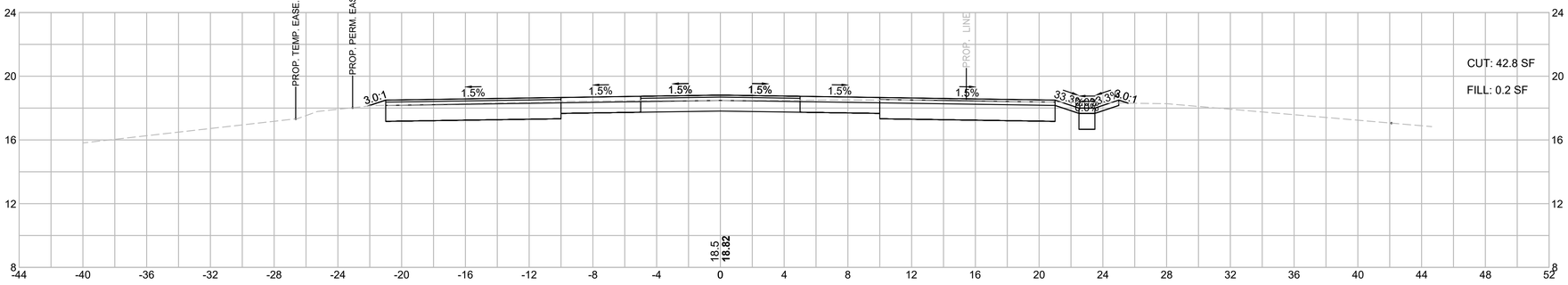
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	251	274
PROJECT FILE NO.	607979		

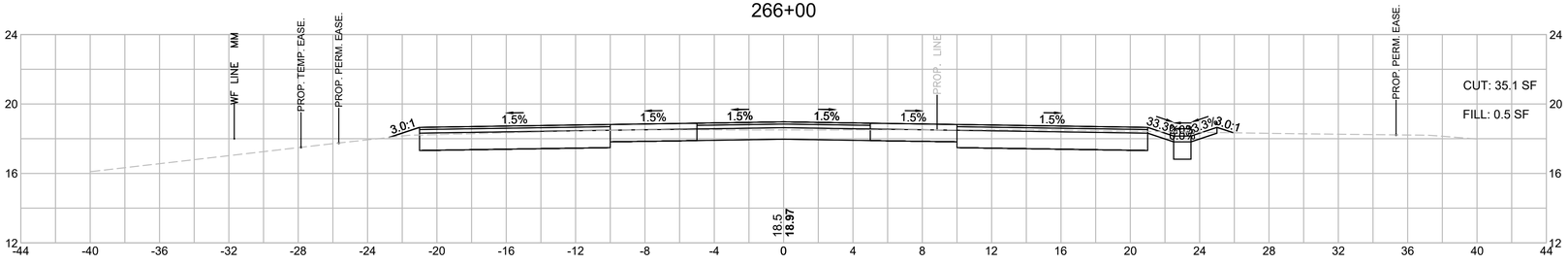
CROSS SECTIONS
SHEET 128 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

266+50



266+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

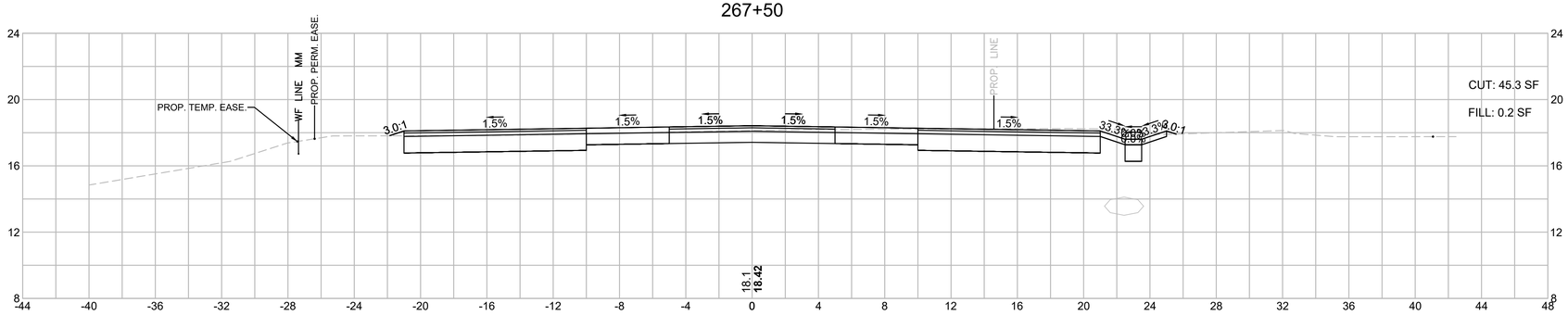
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	252	274
PROJECT FILE NO.	607979		

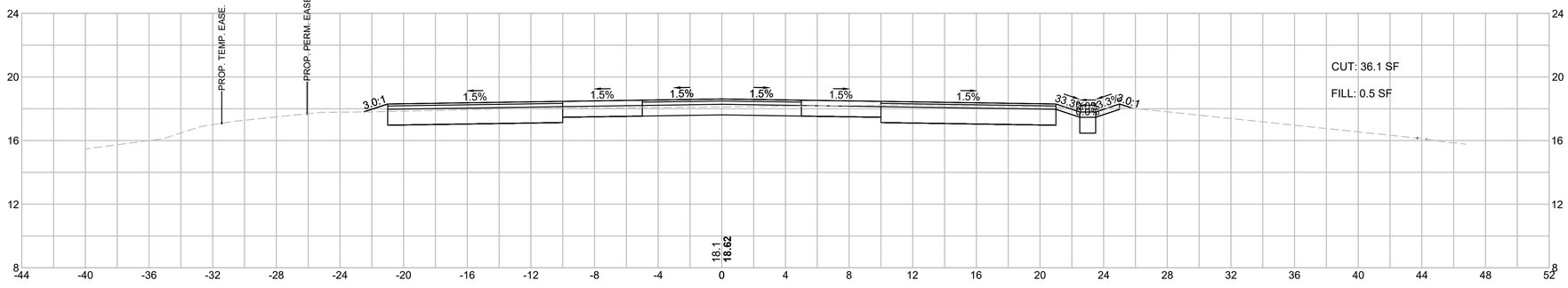
CROSS SECTIONS
SHEET 129 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

267+50



267+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

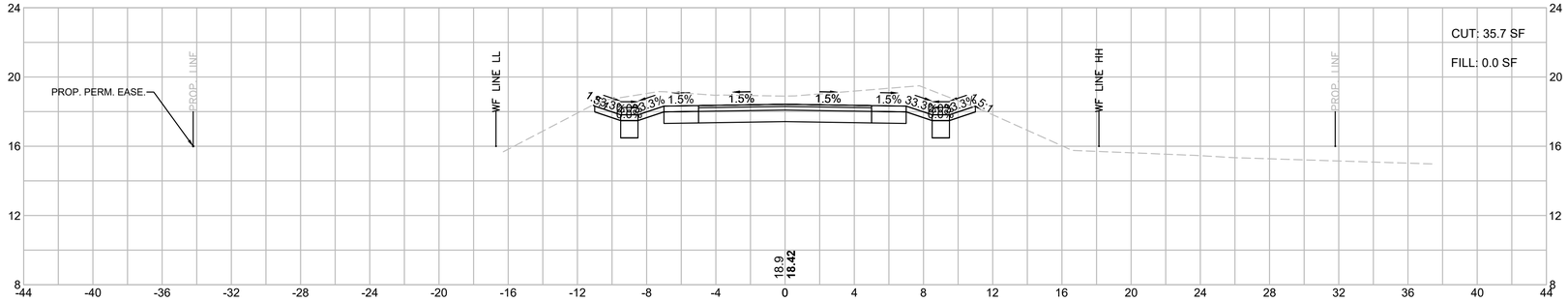
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	253	274
PROJECT FILE NO.	607979		

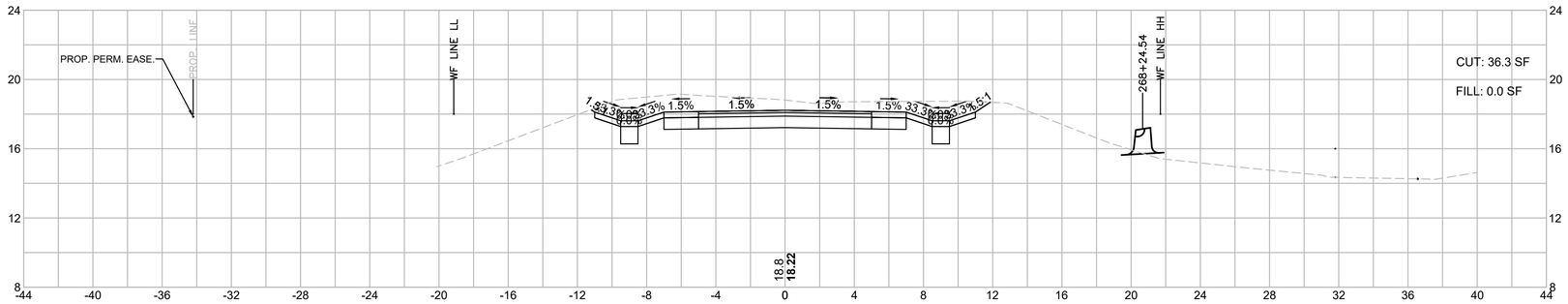
CROSS SECTIONS
SHEET 130 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

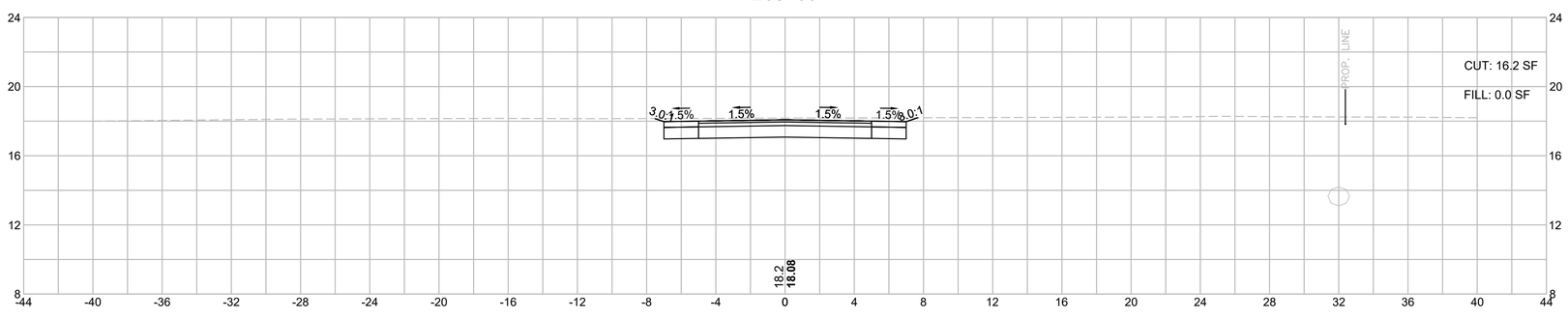
269+00



268+50



268+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

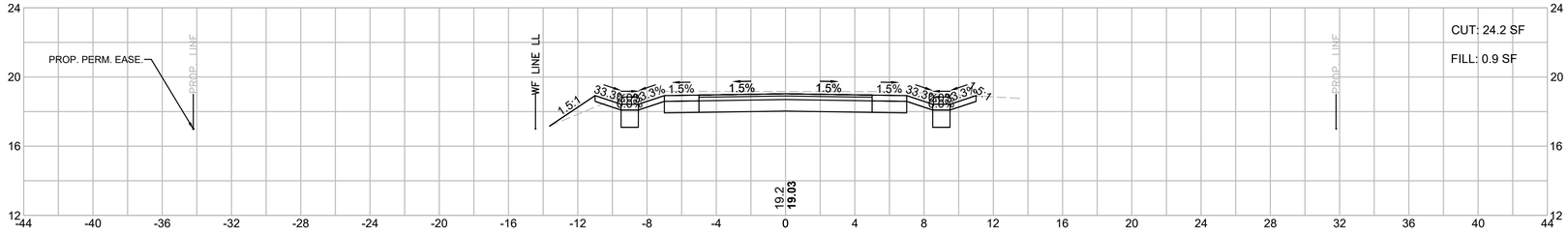
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	254	274
PROJECT FILE NO.	607979		

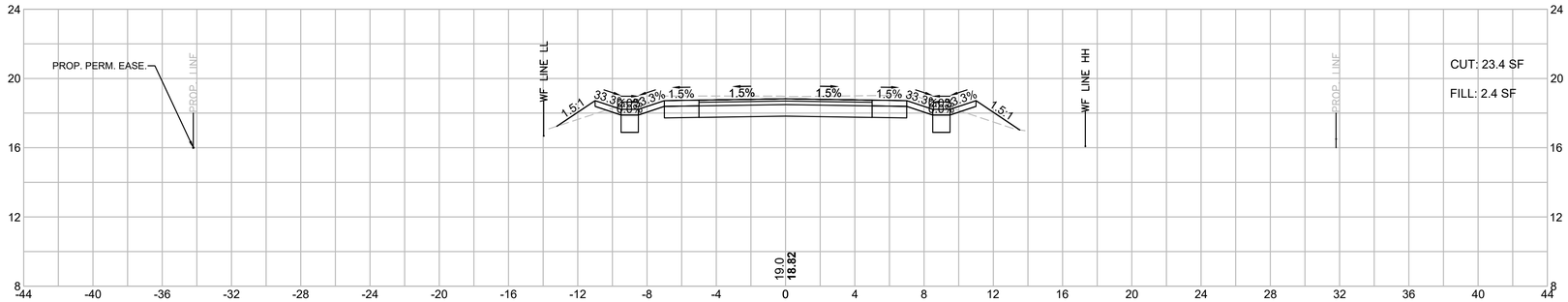
CROSS SECTIONS
SHEET 131 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

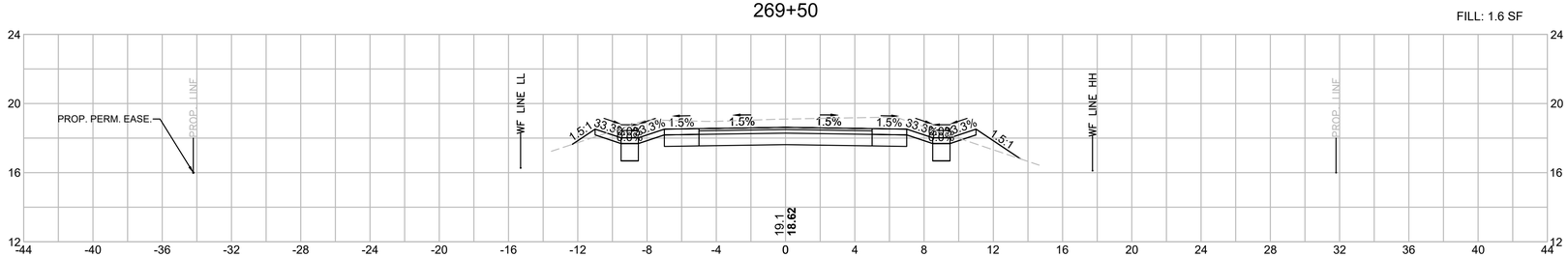
270+50



270+00



269+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

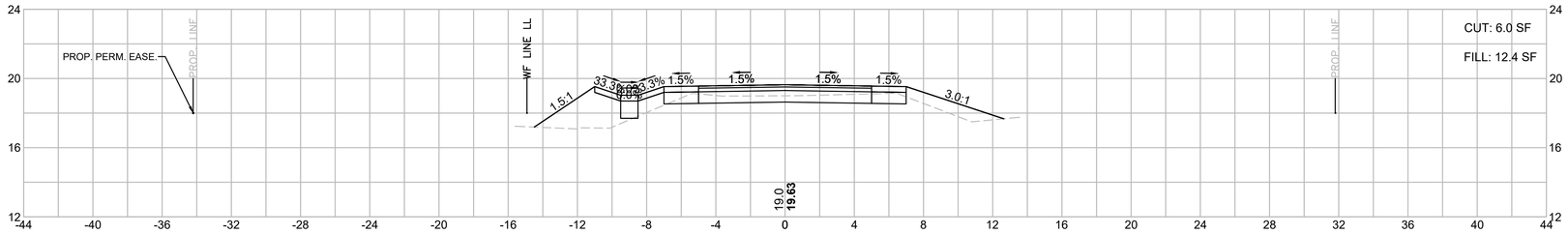
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	255	274
PROJECT FILE NO.	607979		

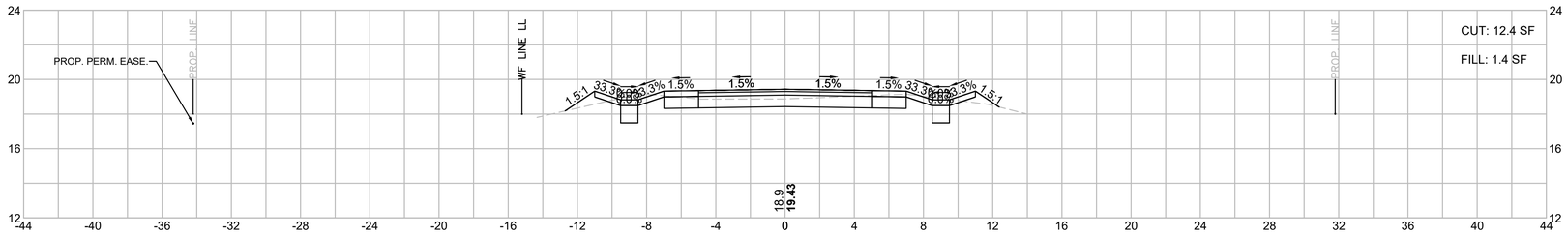
CROSS SECTIONS
SHEET 132 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

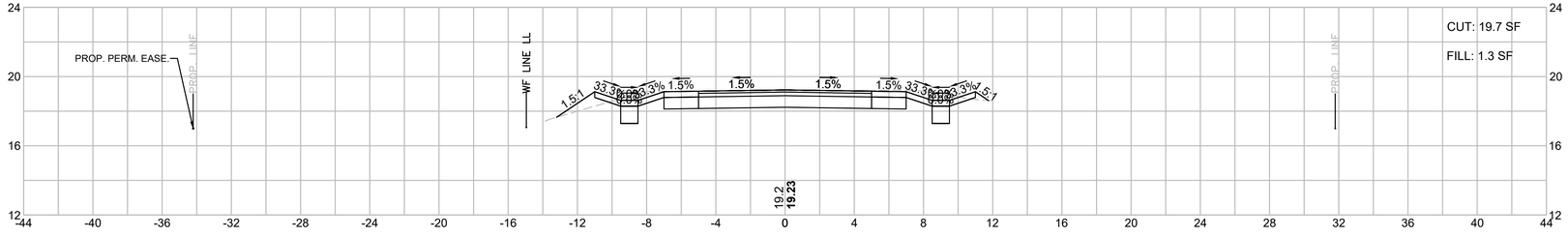
272+00



271+50



271+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

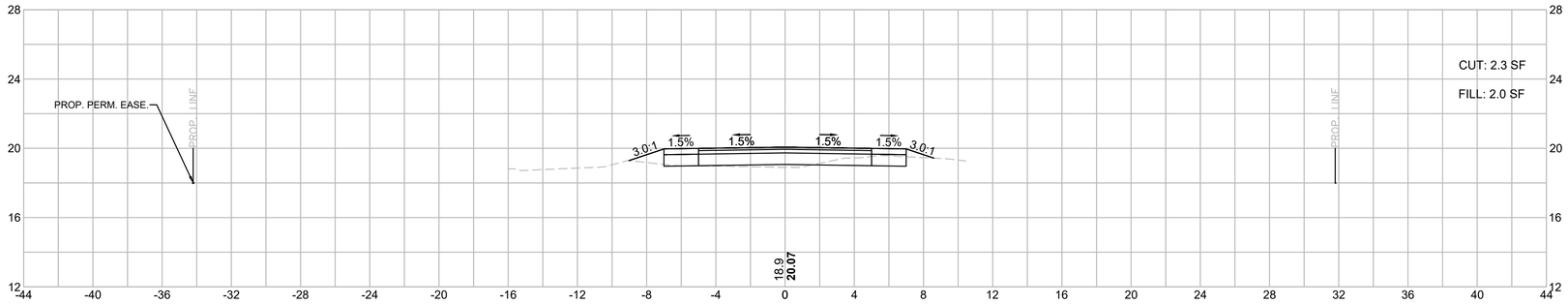
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	256	274
PROJECT FILE NO.	607979		

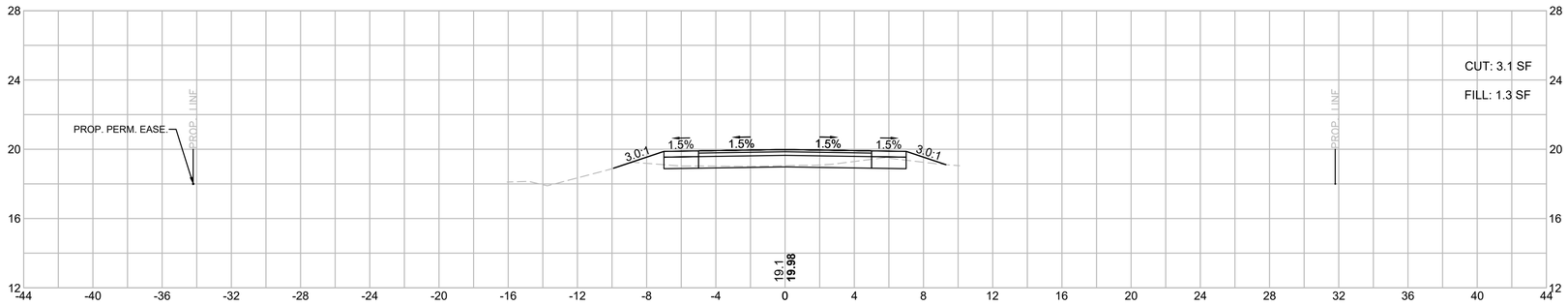
CROSS SECTIONS
SHEET 133 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

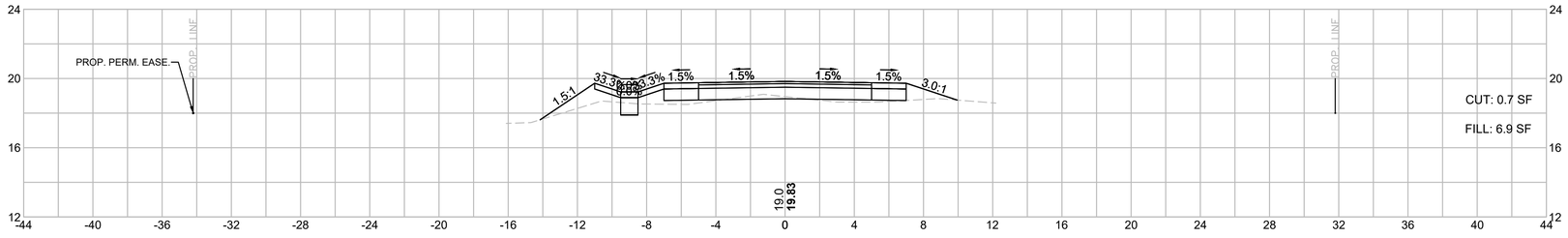
273+50



273+00



272+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

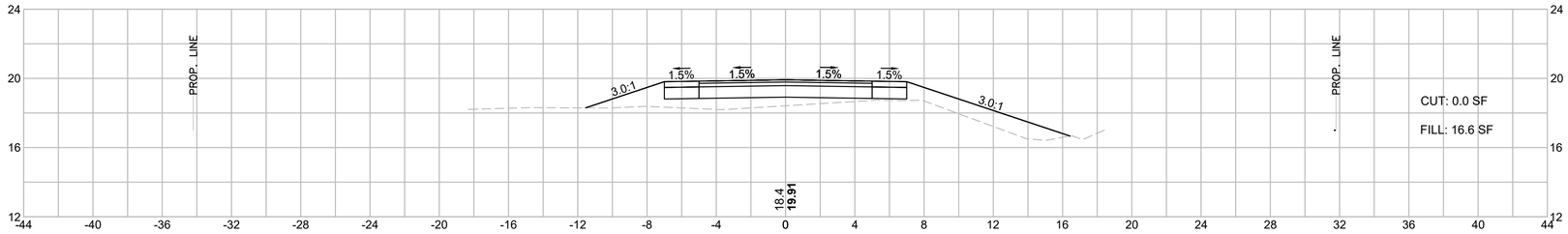
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	257	274
PROJECT FILE NO.	607979		

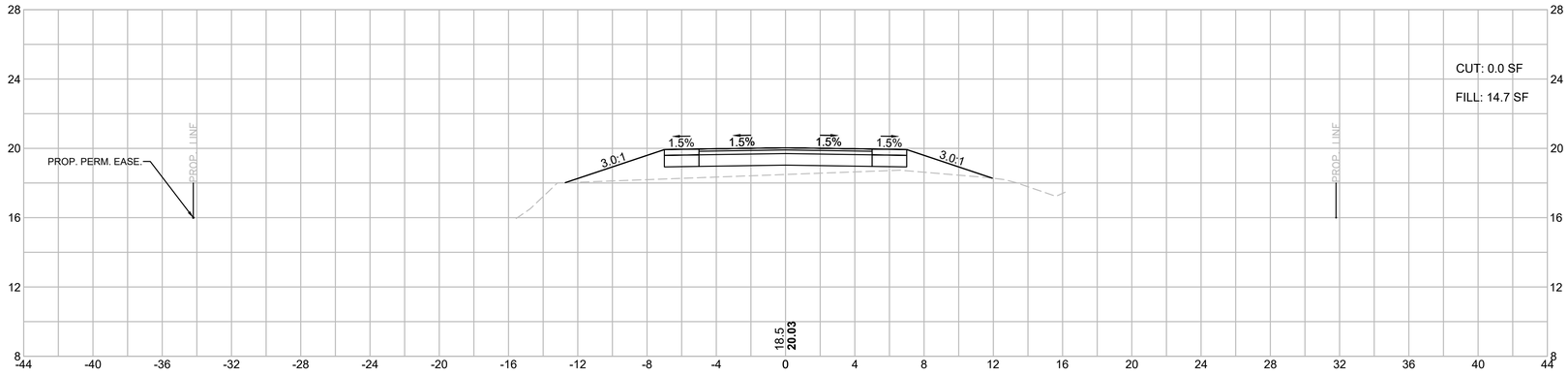
CROSS SECTIONS
SHEET 134 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

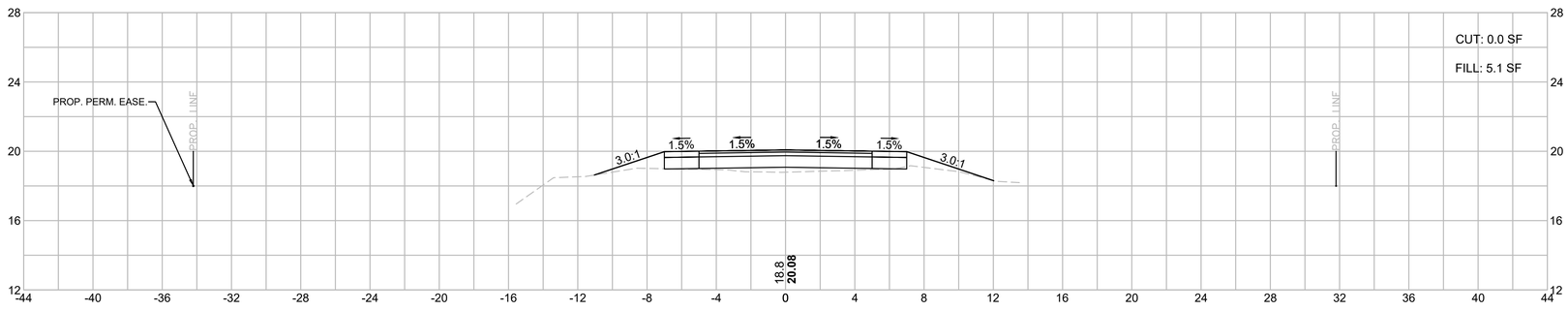
275+00



274+50



274+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

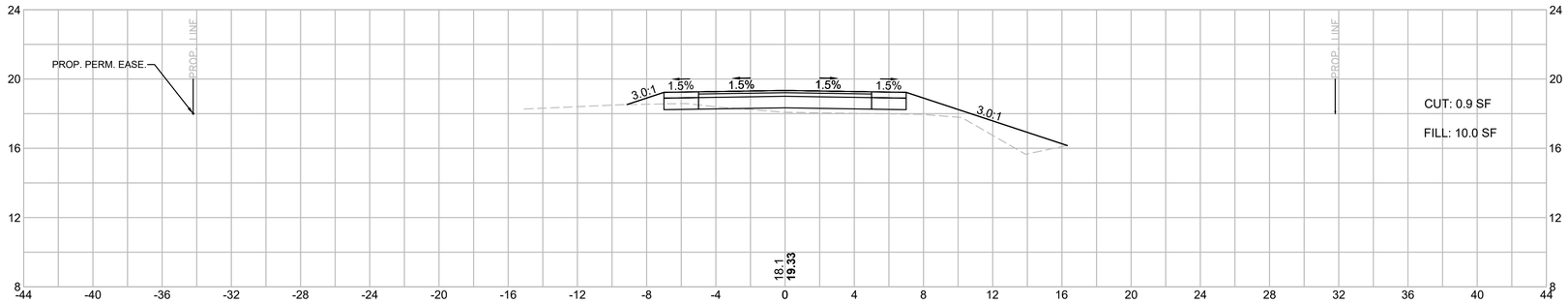
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	258	274
PROJECT FILE NO.	607979		

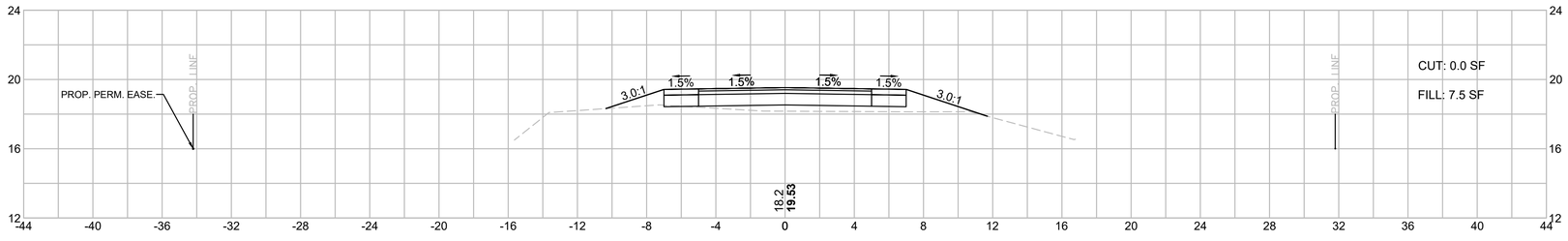
CROSS SECTIONS
SHEET 135 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

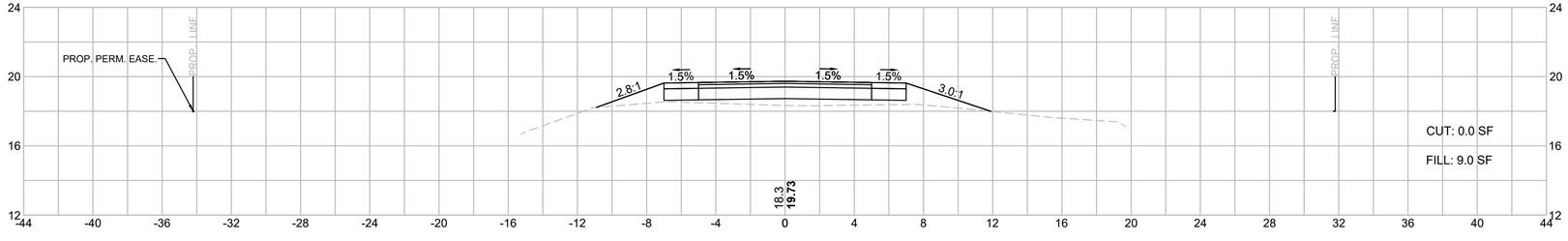
276+50



276+00



275+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

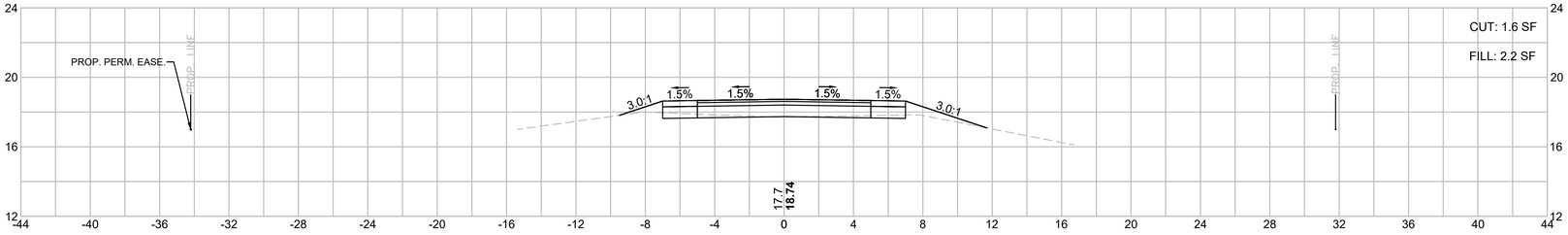
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	259	278
PROJECT FILE NO.	607979		

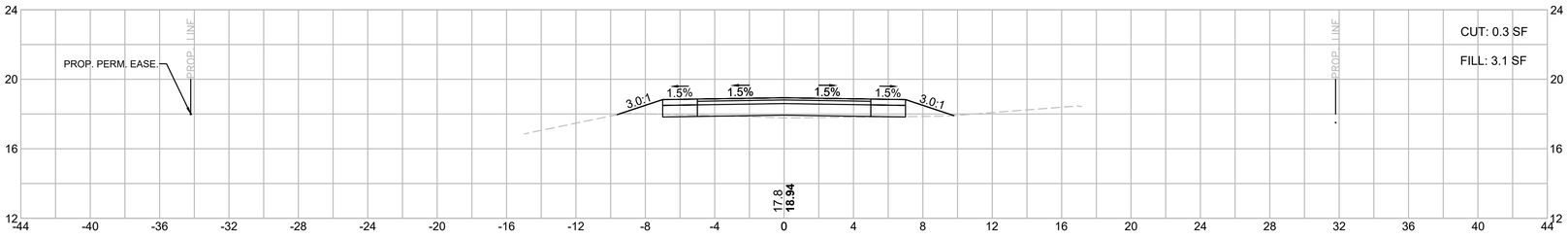
CROSS SECTIONS
SHEET 136 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

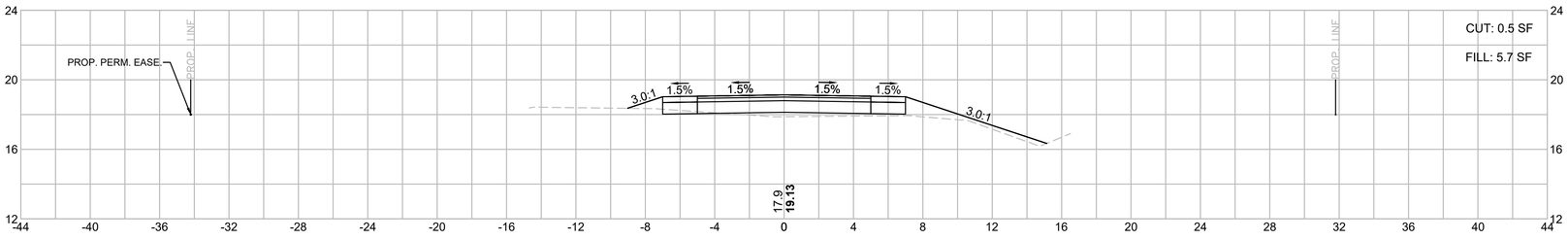
278+00



277+50



277+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

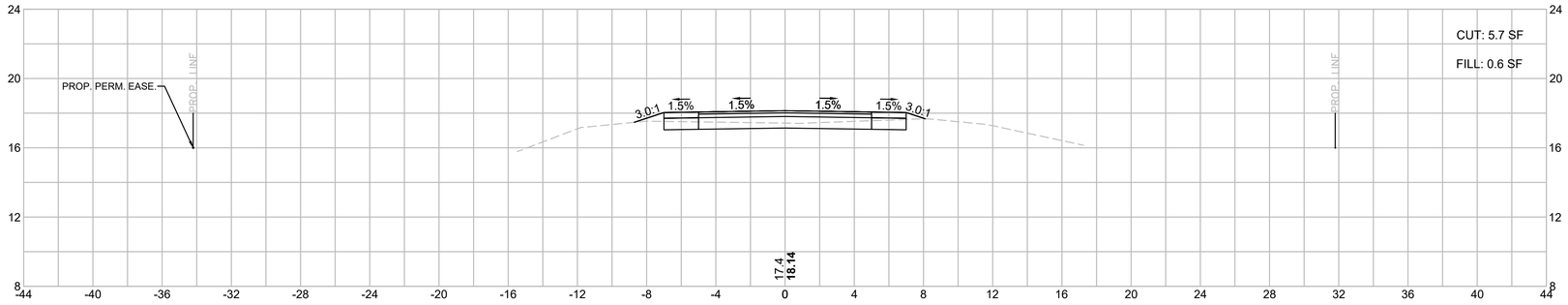
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	260	274
PROJECT FILE NO.	607979		

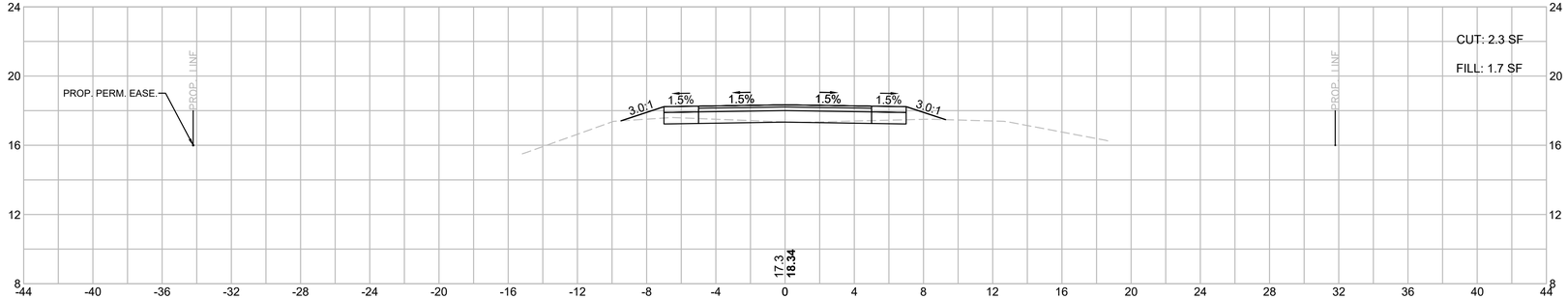
CROSS SECTIONS
SHEET 137 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

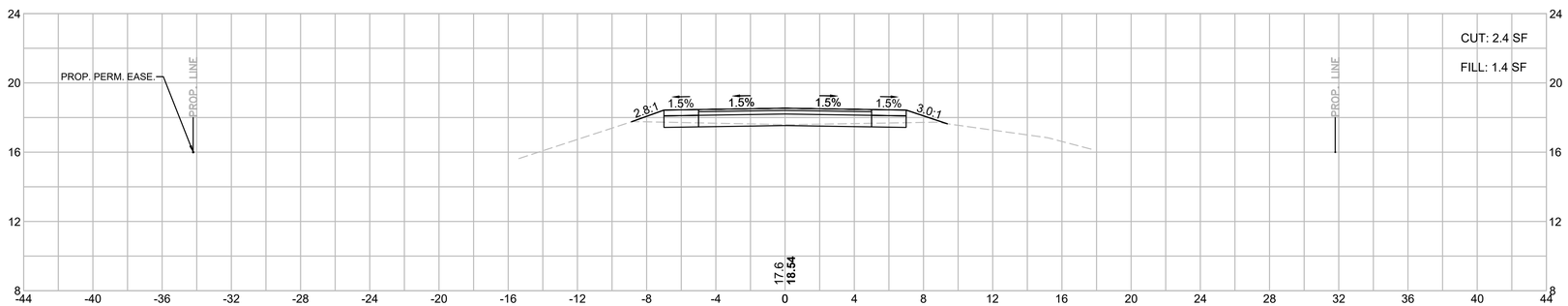
279+50



279+00



278+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

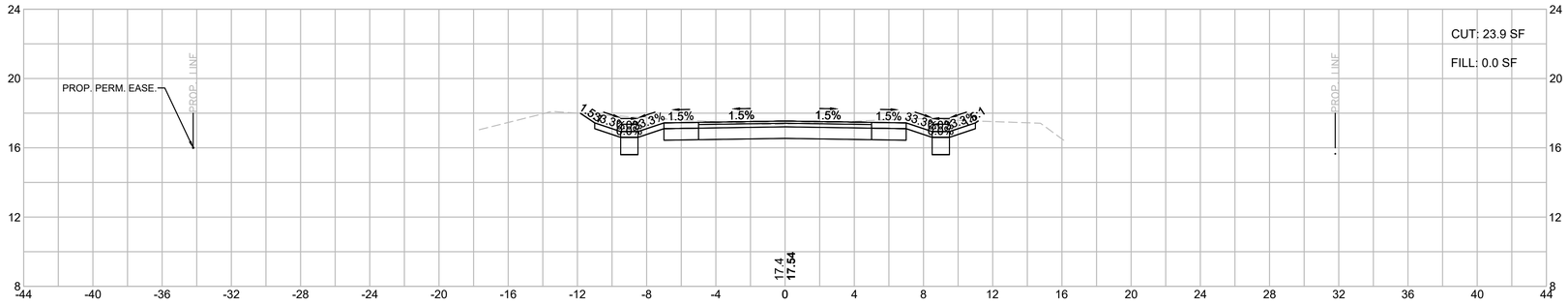
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	261	274
PROJECT FILE NO.	607979		

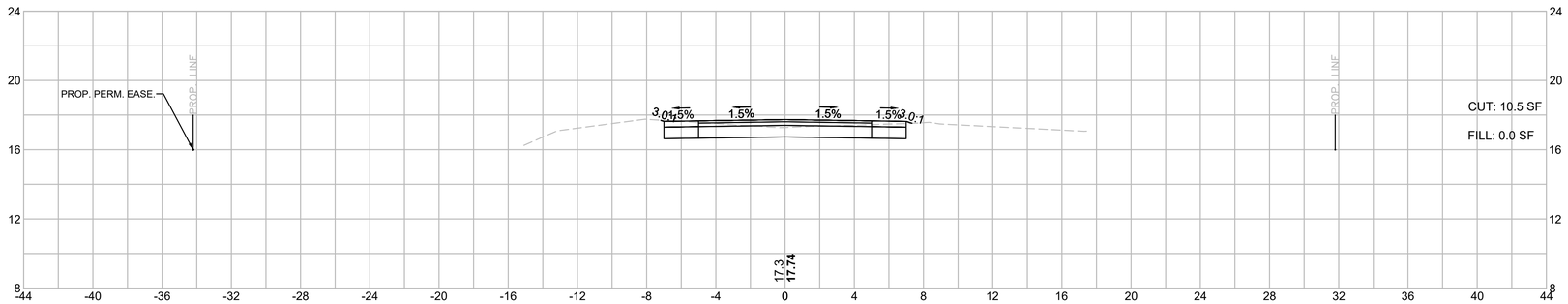
CROSS SECTIONS
SHEET 138 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

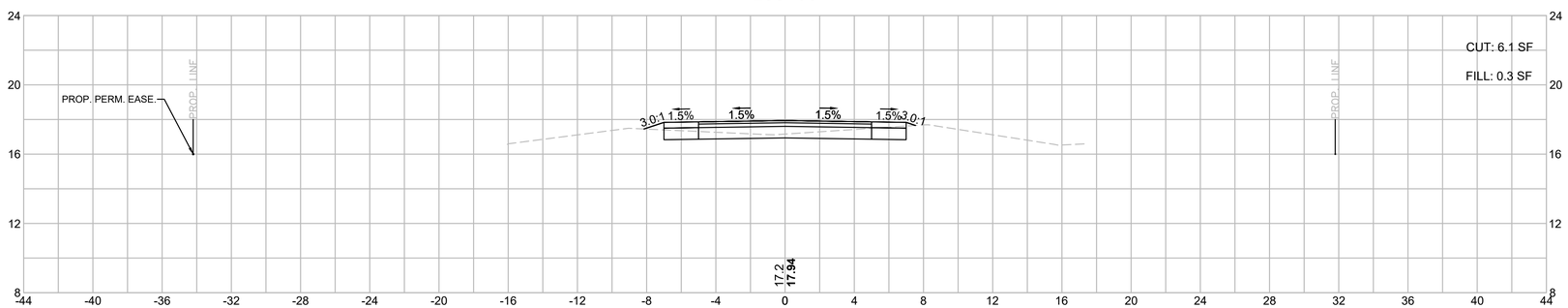
281+00



280+50



280+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

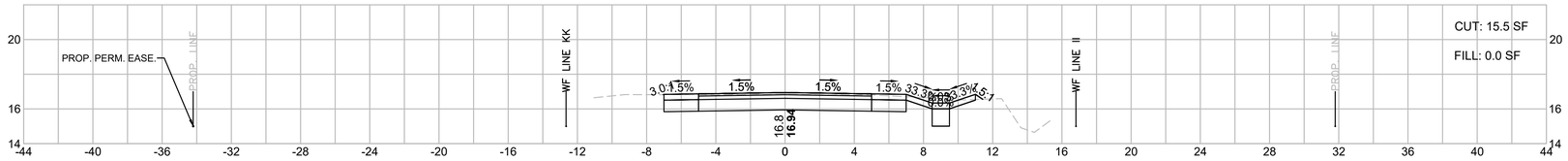
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	262	274
PROJECT FILE NO.	607979		

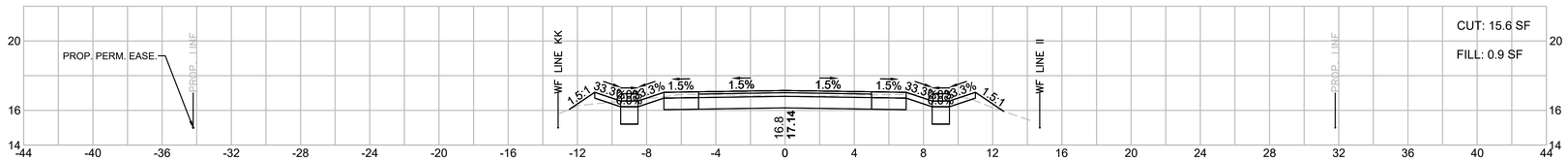
CROSS SECTIONS
SHEET 139 OF 151

Plotted on 28-Sep-2017 3:43 PM
607979_XSECT.DWG

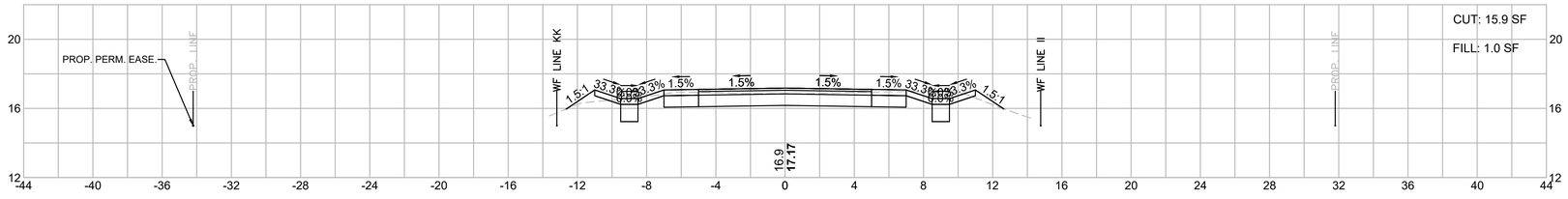
282+50



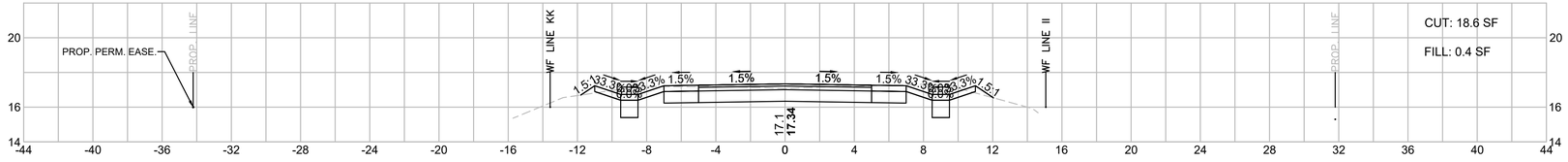
282+00



281+92



281+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

TOWN OF MARION
SHARED-USE PATH - PHASE 1

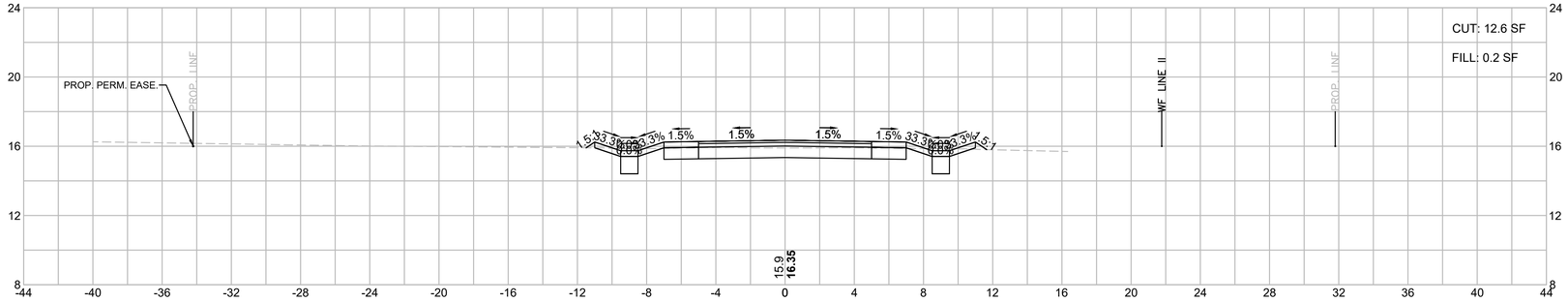
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	263	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 140 OF 151

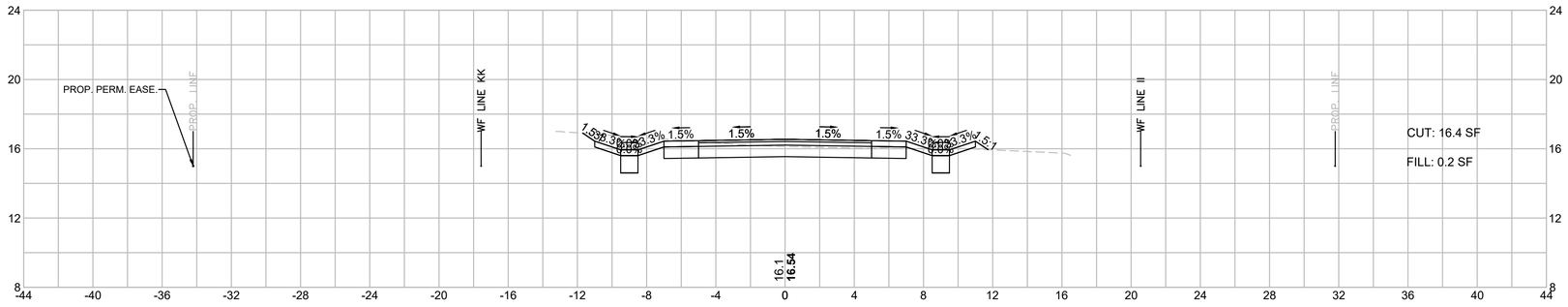
Plotted on 28-Sep-2017 3:43 PM

607979_XSECT.DWG

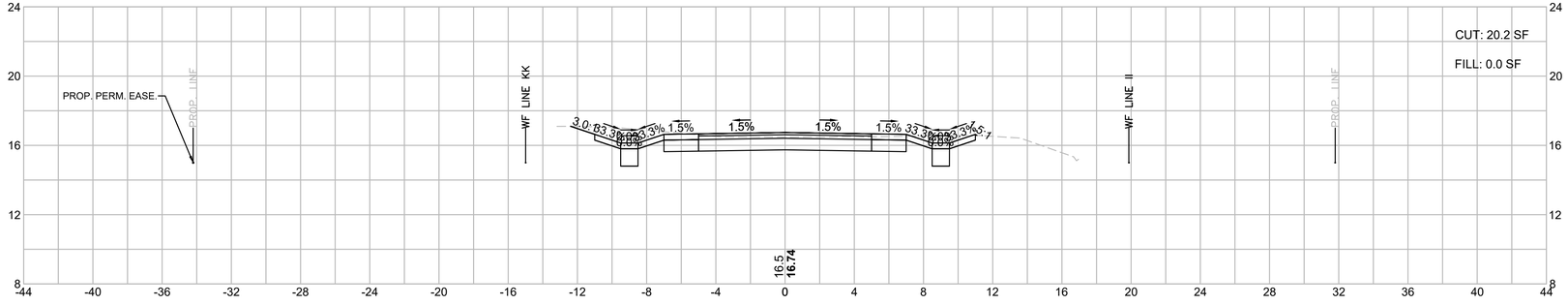
284+00



283+50



283+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

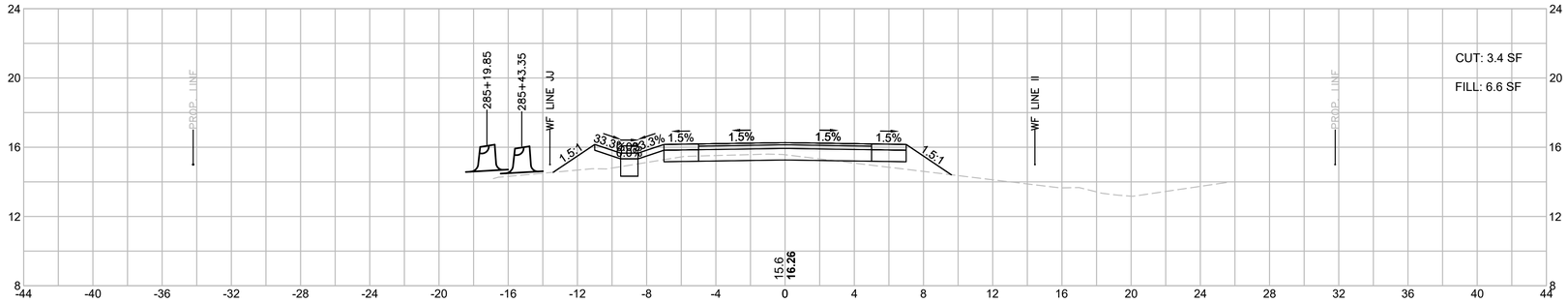
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	264	274
PROJECT FILE NO.	607979		

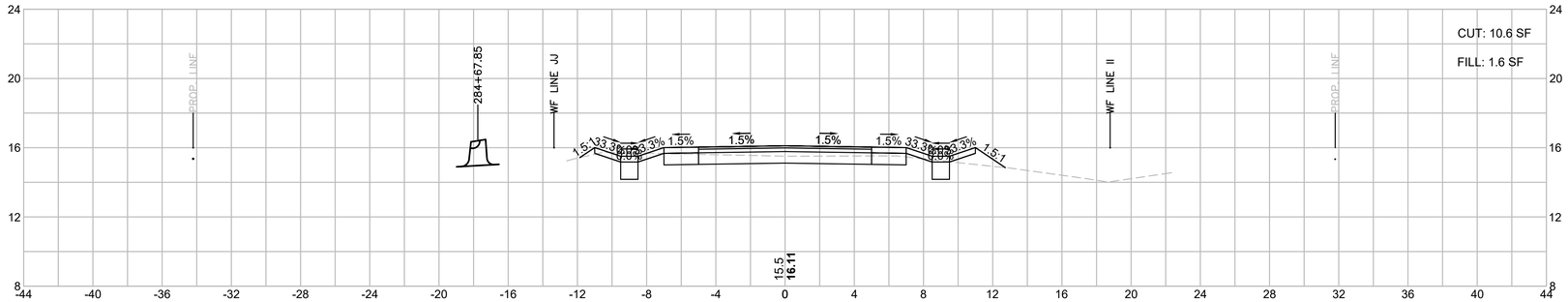
CROSS SECTIONS
SHEET 141 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

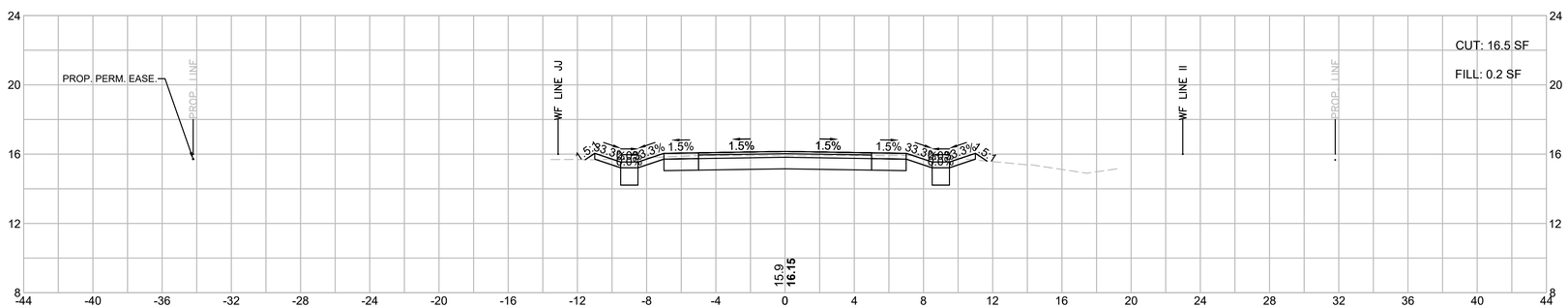
285+50



285+00



284+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

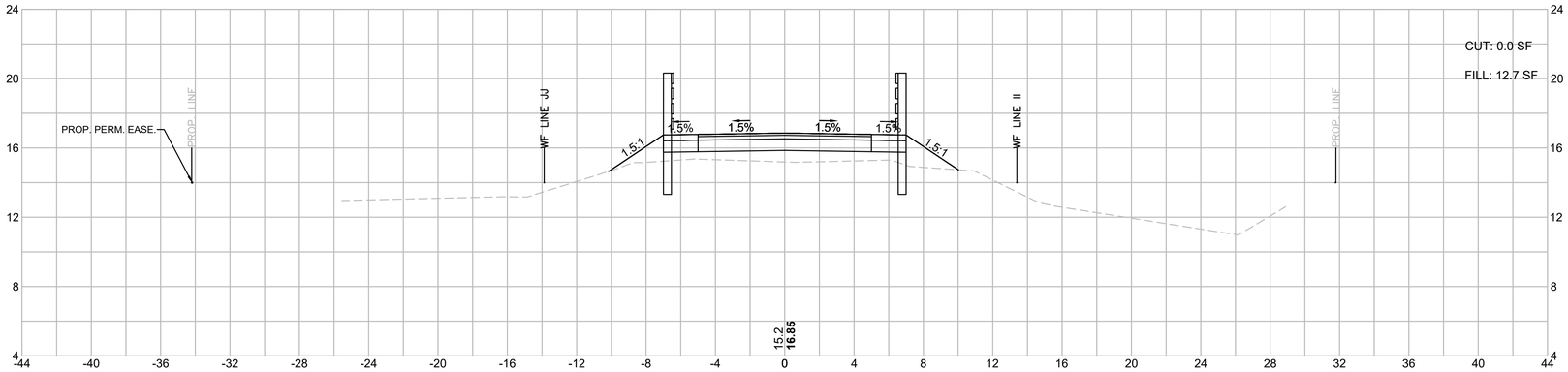
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	265	274
PROJECT FILE NO.	607979		

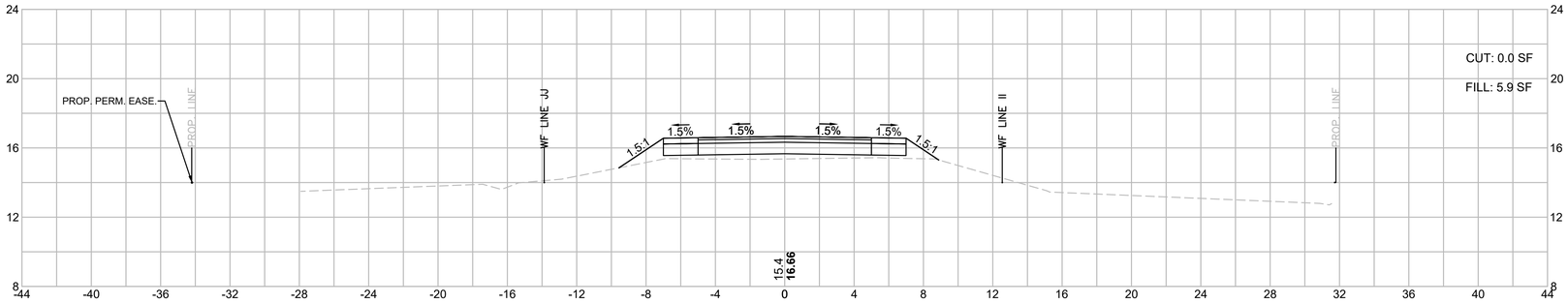
CROSS SECTIONS
SHEET 142 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

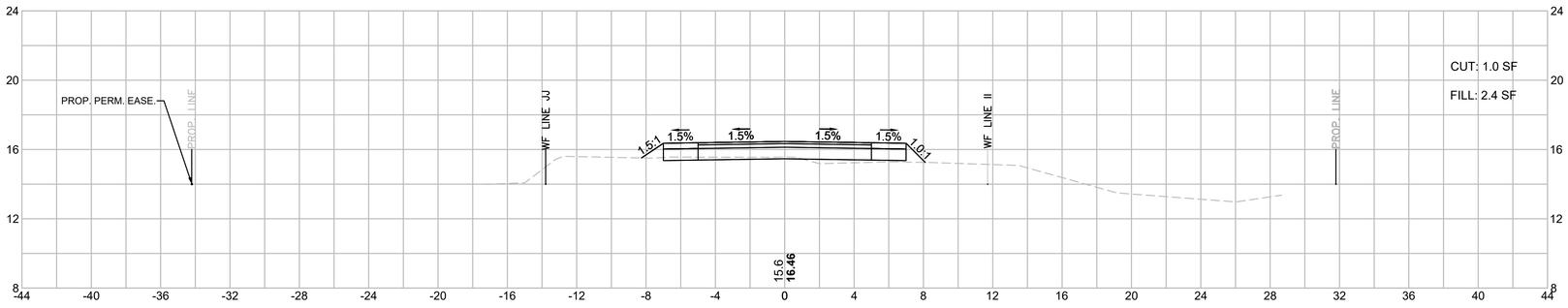
287+00



286+50



286+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

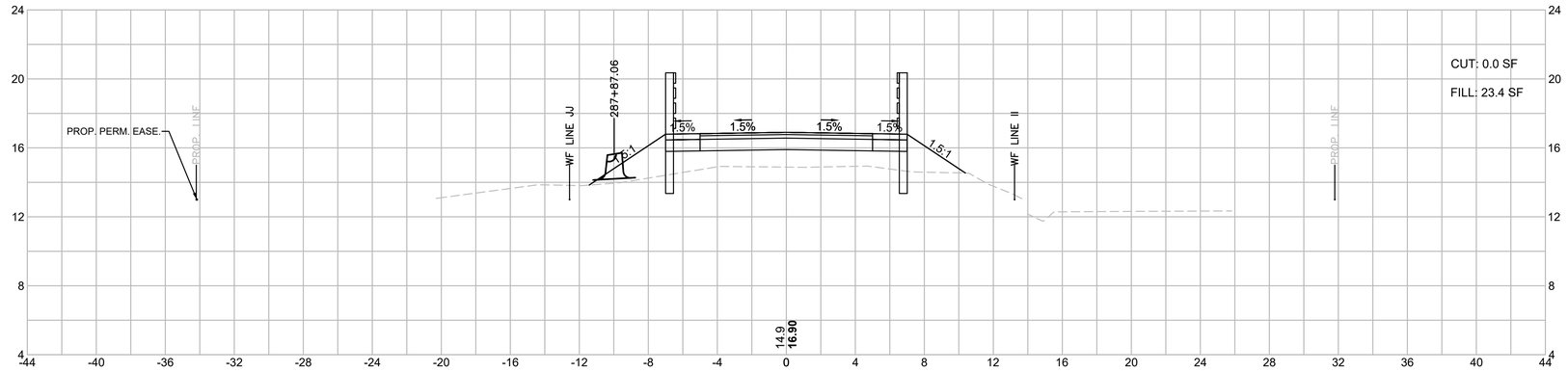
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	266	274
PROJECT FILE NO.	607979		

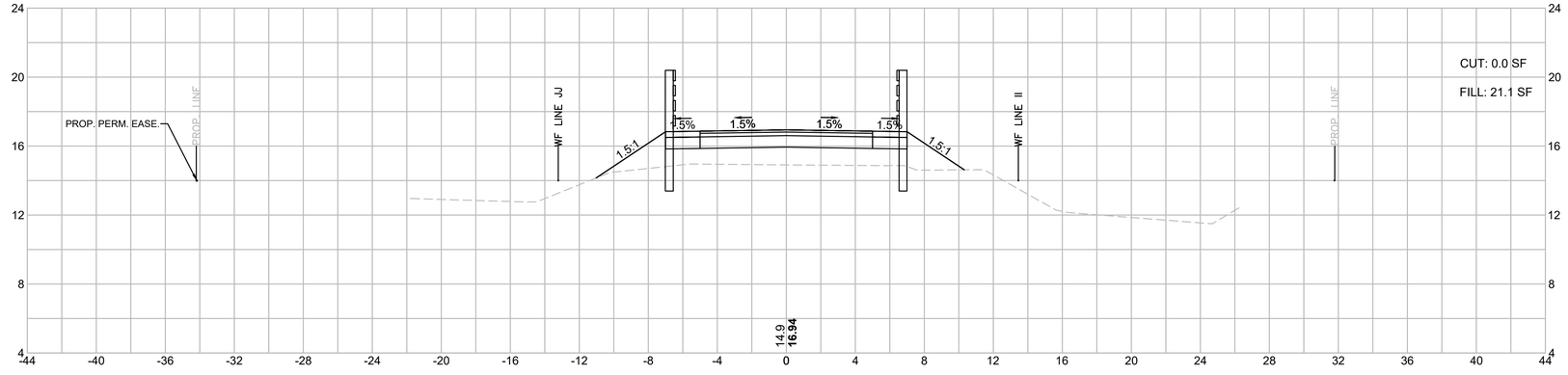
CROSS SECTIONS
SHEET 143 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

288+00



287+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

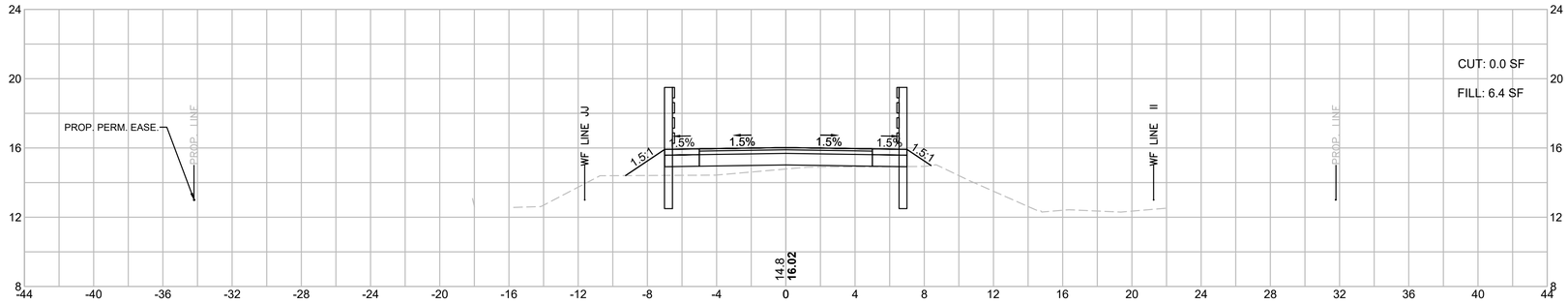
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	267	274
PROJECT FILE NO.	607979		

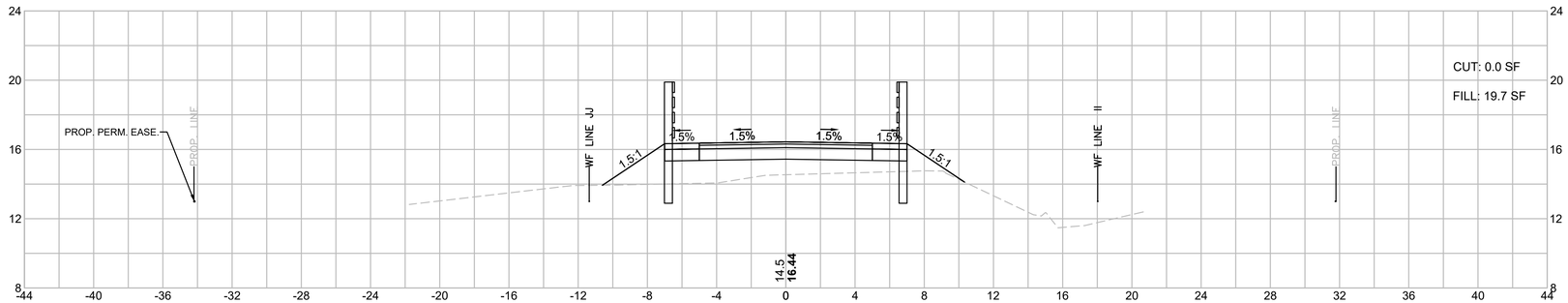
CROSS SECTIONS
SHEET 144 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

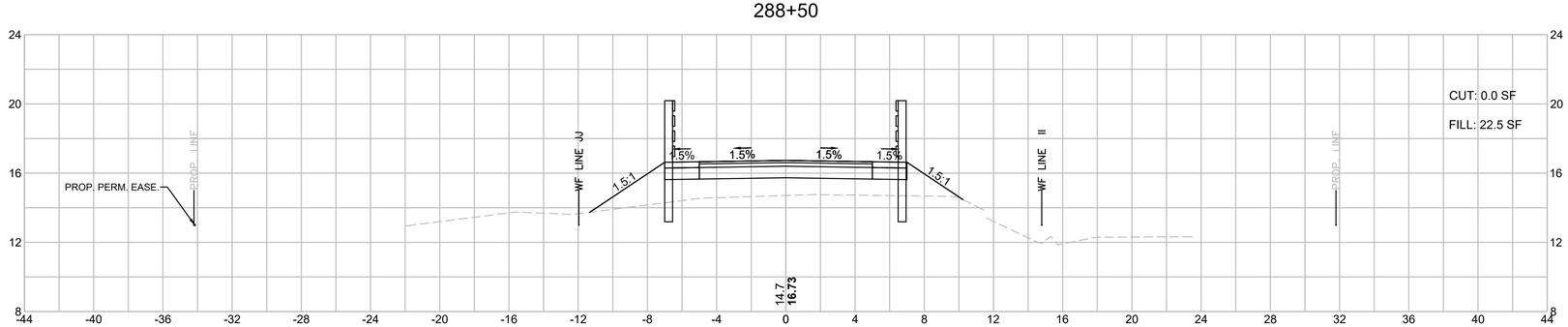
289+50



289+00



288+50



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

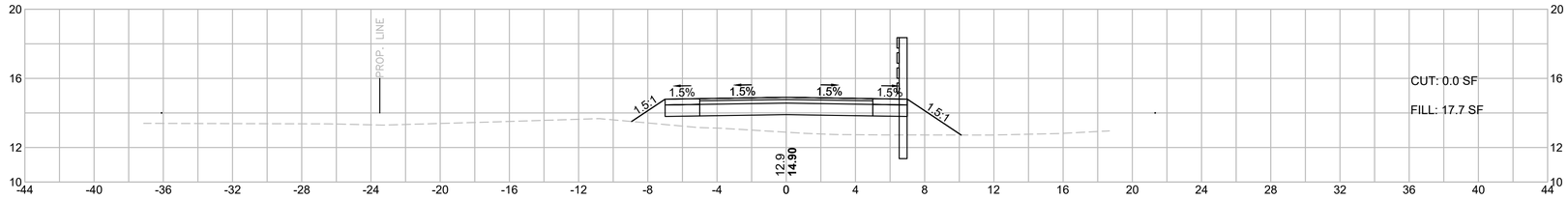
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	268	274
PROJECT FILE NO.	607979		

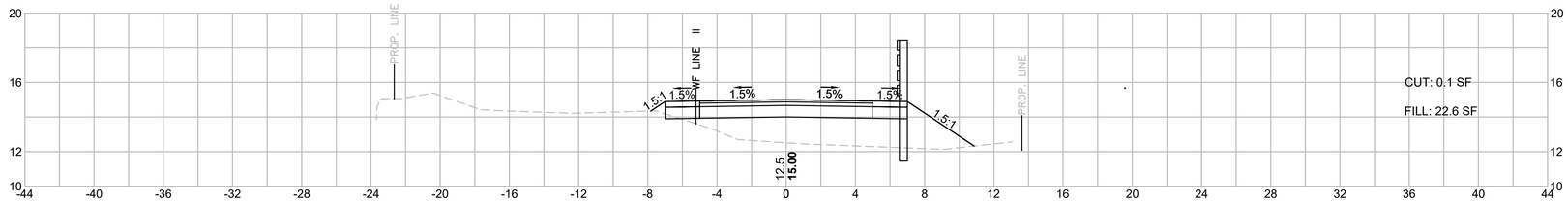
CROSS SECTIONS
SHEET 145 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

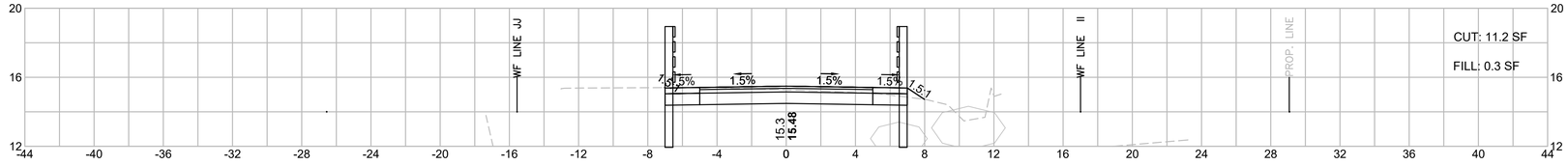
291+00



290+50



290+00



HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

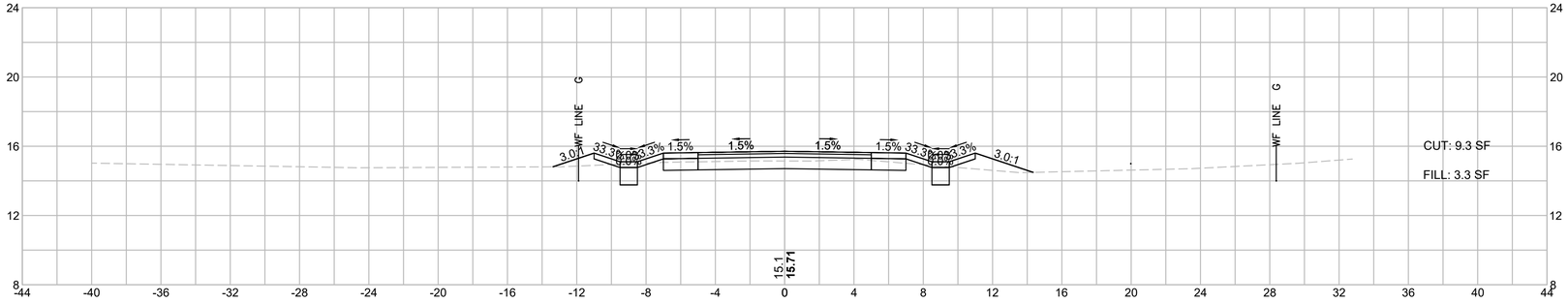
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	269	274
PROJECT FILE NO.	607979		

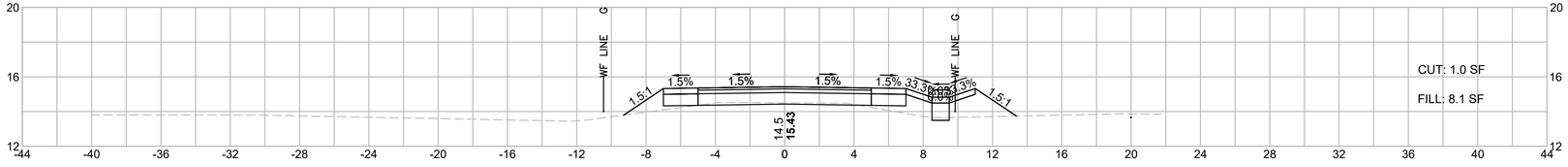
CROSS SECTIONS
SHEET 146 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

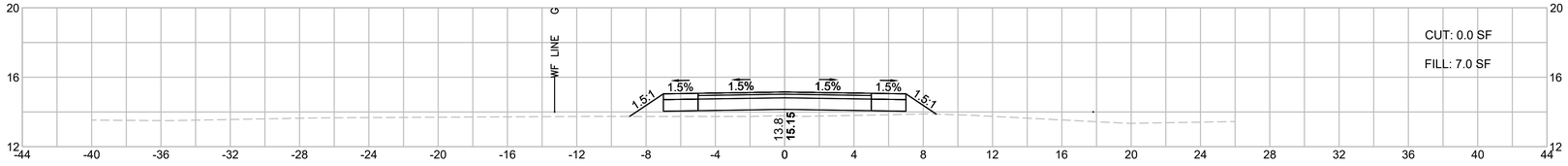
292+50



292+00



291+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

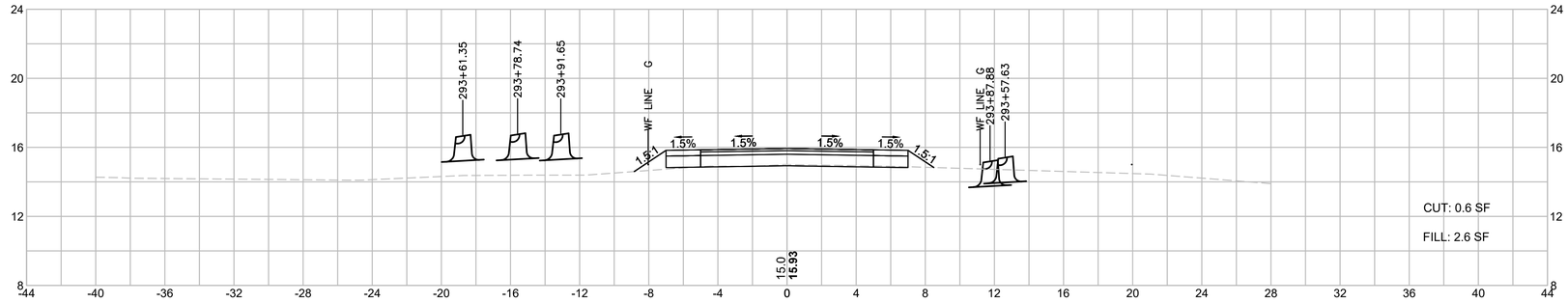
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	270	274
PROJECT FILE NO.	607979		

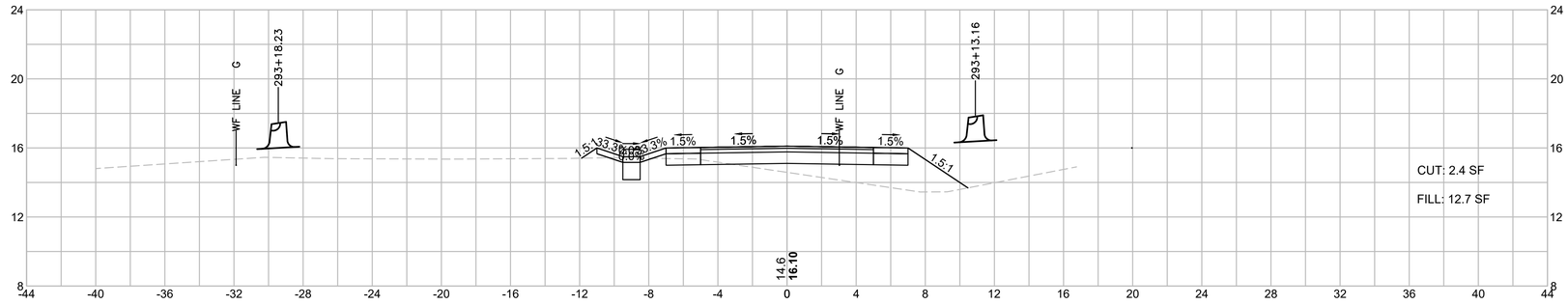
CROSS SECTIONS
SHEET 147 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

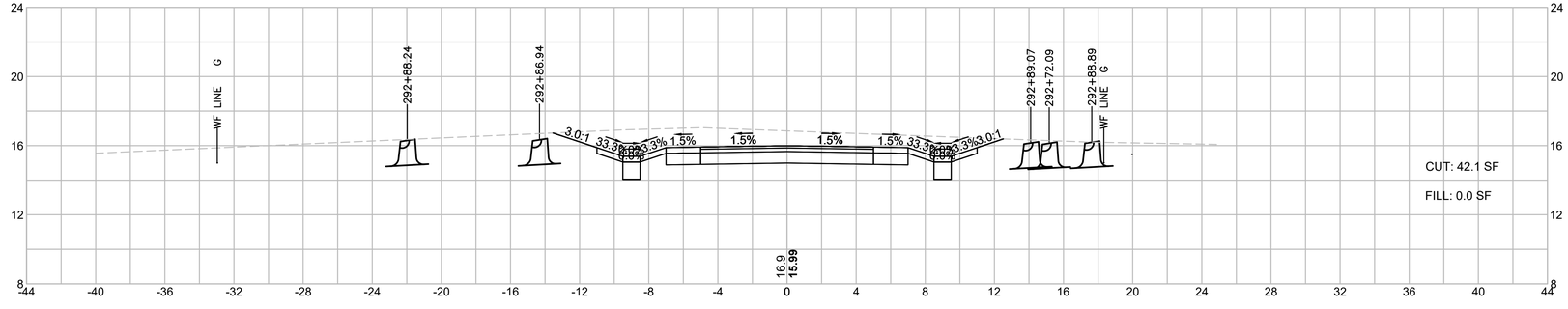
294+00



293+50



293+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

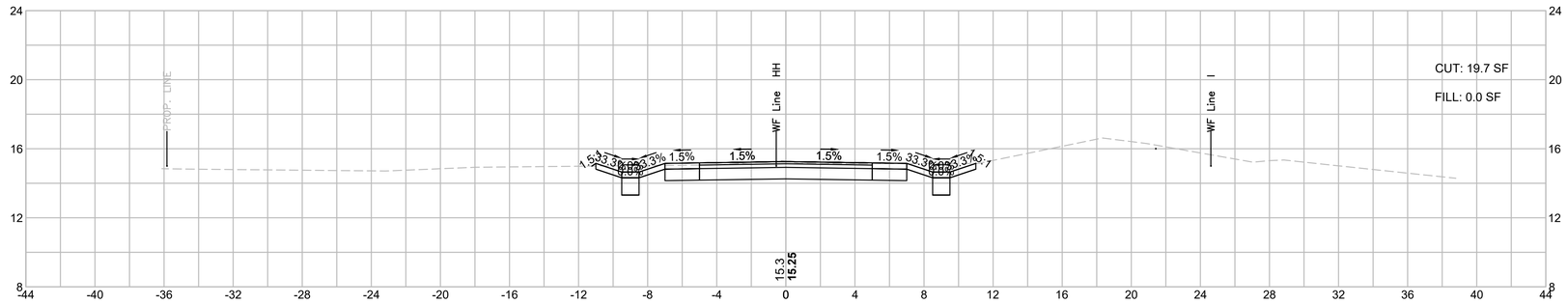
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	271	274
PROJECT FILE NO.	607979		

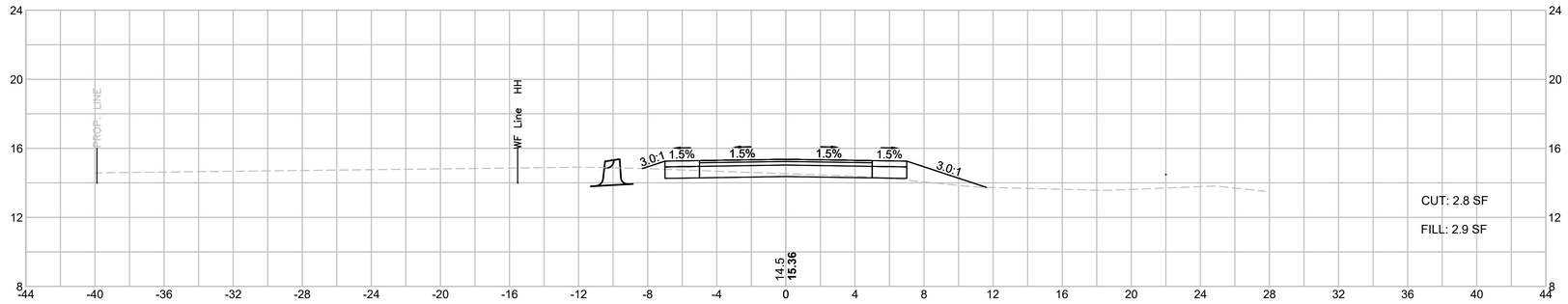
CROSS SECTIONS
SHEET 148 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

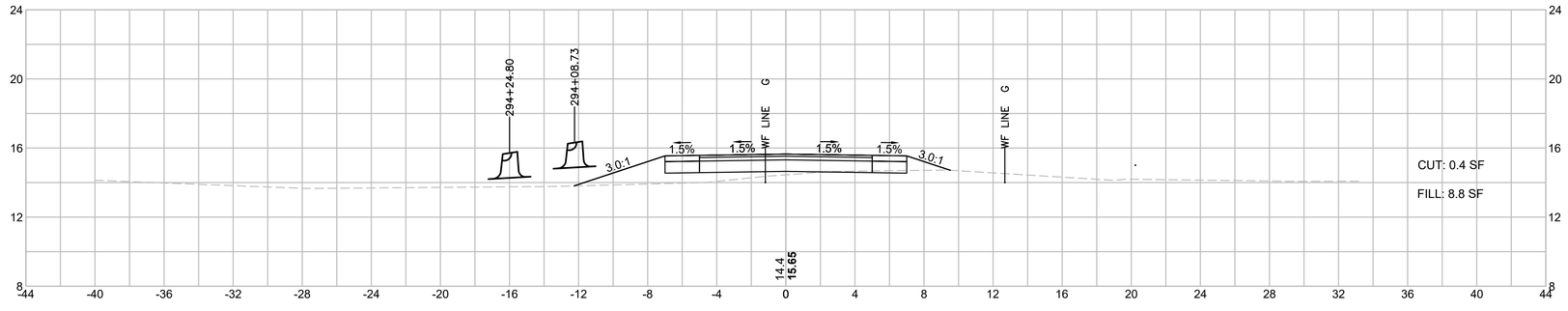
295+50



295+00



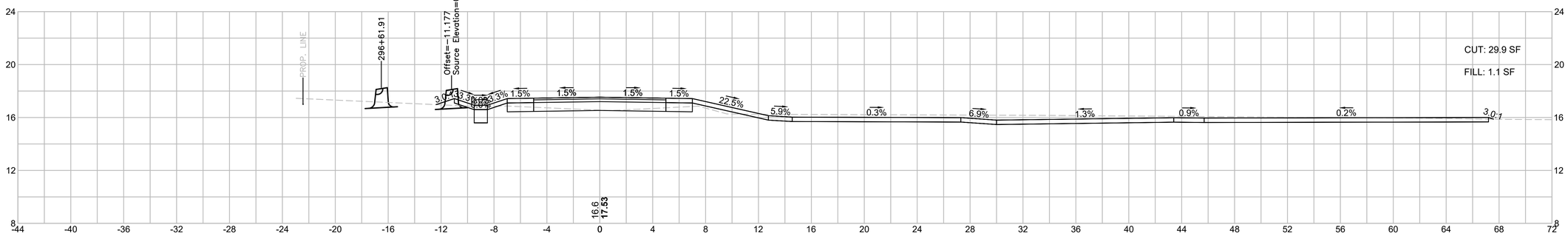
294+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

297+00

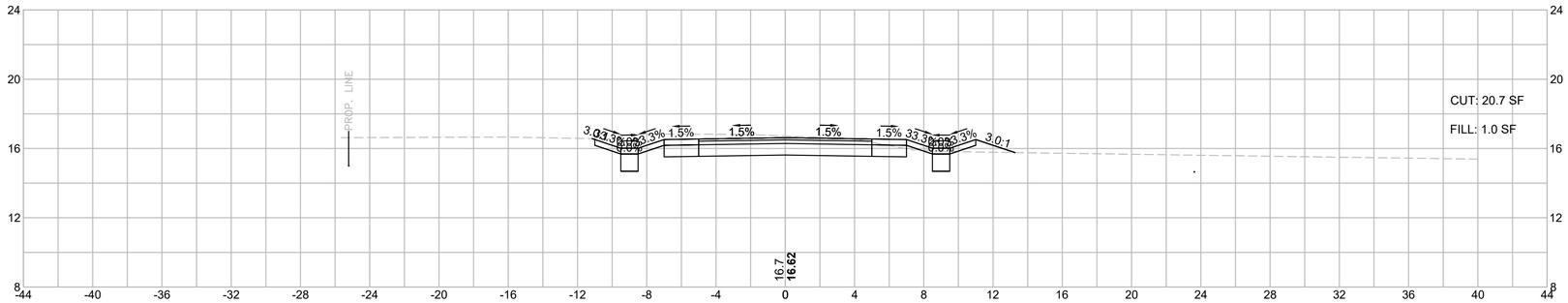


TOWN OF MARION
SHARED-USE PATH - PHASE 1

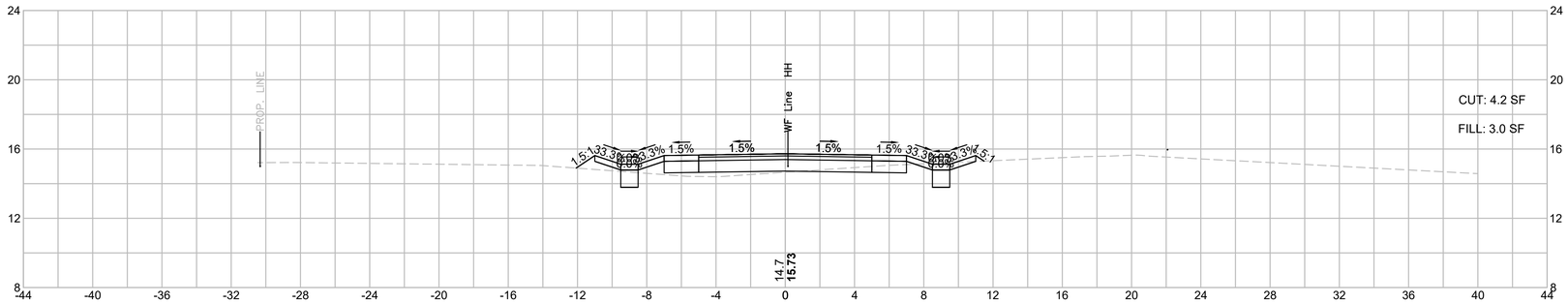
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	272	274
PROJECT FILE NO.	607979		

CROSS SECTIONS
SHEET 149 OF 151

296+50



296+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

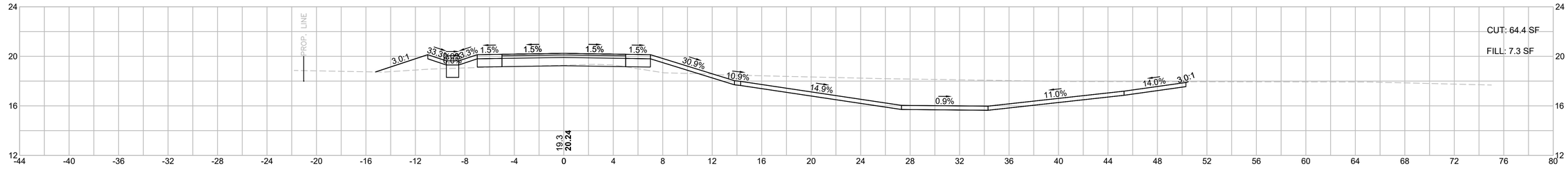
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	273	274
PROJECT FILE NO.	607979		

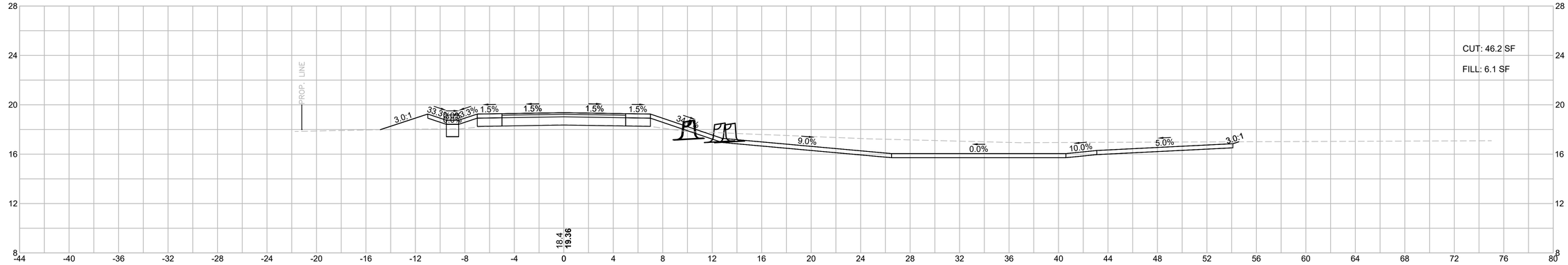
CROSS SECTIONS
SHEET 150 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

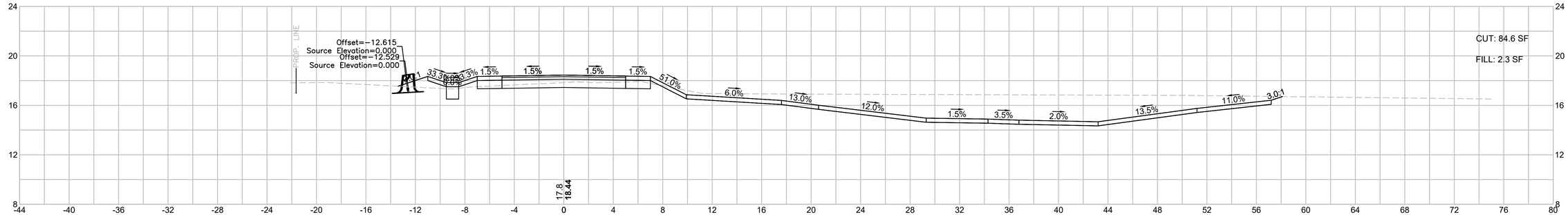
298+50



298+00



297+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

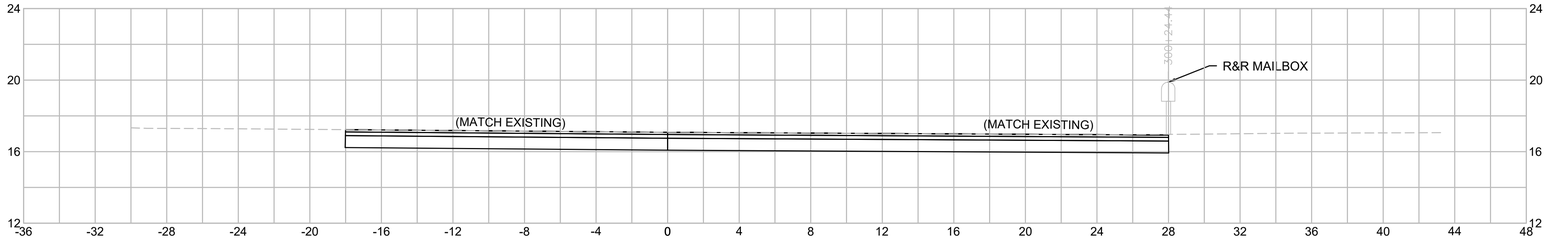
TOWN OF MARION
SHARED-USE PATH - PHASE 1

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	274	274
PROJECT FILE NO.	607979		

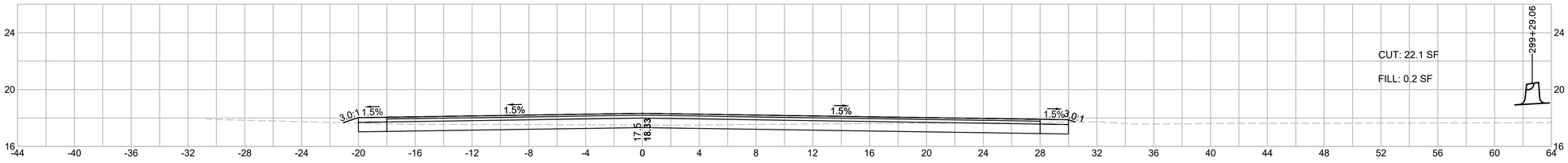
CROSS SECTIONS
SHEET 151 OF 151

607979_XSECT.DWG Plotted on 28-Sep-2017 3:43 PM

299+77.28



299+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

299+00