CITY OF BEACON, NEW YORK
VIA VIDEOCONFERENCE

Mayor Lee Kyriacou
Councilmember Amber J. Grant, At Large
Councilmember George Mansfield, At Large
Councilmember Terry Nelson, Ward 1
Councilmember Air Rhodes, Ward 2
Councilmember Jodi M. McCredo, Ward 3
Councilmember Dan Aymar-Blair, Ward 4
City Administrator Anthony Ruggiero

January 25, 2021
7:00 PM
City Council Agenda

Roll Call

Workshop Agenda Items

1. Notice of Change in Public Meeting Location January 25, 2021
2. Police Reform Planning Committee
3. Beacon Hudson River Trail
4. Main Street Access Advisory Committee Recommendations
5. Traffic Safety Legislative Process
6. Tioronda Bridge
7. Main Street Accessibility Improvements and Pedestrian Signal Improvements
8. Proposed Wireless Local Law
9. Draft Resolution Granting a Special Use Permit for a Project at 416-420 Main Street

Executive Session Items:

1. Personnel
2. Contract / Real Estate

City of Beacon City Council Agenda
01/25/2021

Title:

Notice of Change in Public Meeting Location January 25, 2021

ATTACHMENTS

Notice of Change in Public Meeting Location January 25, 2021

NOTICE OF CHANGE IN PUBLIC MEETING LOCATION

PLEASE TAKE NOTICE, that effective immediately and based upon notices and health advisories issued by Federal, State and Local officials related to the COVID-19 virus, the City Council will not hold in-person meetings. Until further notice, all future City Council meetings (including public hearings) will be held via videoconferencing, as permitted by the NYS Open Meetings Law. Due to public health and safety concerns, the public will not be permitted to attend at the remote locations where the City Council members will be situated. The public, however, will be able to fully observe the videoconference meeting at https://us02web.zoom.us/j/84840603208?pwd=aVZIMlZHRnJVNGptVTZ2UnFBUTk0QT09

Webinar ID: 848 4060 3208 Passcode: 450933. To the extent internet access is not available, the public can attend via telephone by dialing + 1 929 205 6099 and entering Webinar ID: 848 4060 3208 Passcode: 450933. The City Council's agenda is available online in advance of meetings at http://www.cityofbeacon.org/index.php/agendas-minutes/.

PLEASE TAKE FURTHER NOTICE, that any Executive Session of the Council will be initiated with the Council first convening on the public videoconferencing site, and then adopting a motion to go into Executive Session.

PLEASE TAKE FURTHER NOTICE, that the City Council Workshop of Monday, January 25, 2021 at 7:00pm can be accessed live at https://www.youtube.com/channel/UCvPpigGwZDeR7WYmw-SuDxg

Title:

Police Reform Planning Committee

ATTACHMENTS

Title:

Beacon Hudson River Trail

ATTACHMENTS

Hudson River Trail Design Report

Trail Concept Plan Sisters Parcel

Weston & Sampson PE, LS, LA, PC
1 Winners Circle, Suite 130
Albany, NY 12205
tel: 518.463.4400

westonandsampson.com

REPORT

October 2020

CITY OF
Beacon
New York

Hudson River Trail
Preliminary Design Report



Beacon Hudson River Trail – Preliminary Design Report

Prepared for:

City of Beacon

City Council:

Lee Kyriacou, Mayor
George Mansfield, Council At-Large
Amber Grant, Council At-Large
Terry Nelson, Ward 1
Air Rhodes, Ward 2
Jodi McCredo, Ward 3
Dan Aymar-Blair, Ward 4

Parks & Recreation Department:

Mark Price – Recreation Director
23 West Center Street
Beacon, NY 12508
845-765-8440

Consultant Team:

Weston & Sampson, PE, LS, LA, PC
Daniel P. Biggs, RLA, ISA, CERP Principal-in-Charge/ Project Manager
Jack Grieshober, RLA, Project Landscape Architect
One Winners Circle, Suite 130
Albany, NY 12205
www.westonsampson.com
518-463-4400

10/30/2020 v2

Acknowledgements

The Beacon Greenway Trail Committee wishes to thank the following organizations for their support of this project:

1. Beacon City Council – For establishing the Beacon Greenway Trails Committee and for sponsoring the HVRG grant application that made this project possible.
2. Hudson River Valley Greenway – For championing the notion of a regional trail system that is free and open to the public and for providing funding that allowed the committee to hire a professional consultant to direct the planning and design process of this project.
3. Our committee members – For volunteering their time, commitment, and contributions to this project.

    Andrew Bell
    Matt Harle
    Amy Kacala
    Matt Kierstead
    James Korn - Former Chair
    Hank Osborn
    Mark Price, City of Beacon Recreation Department
    Thomas Wright - Chair

Dutchess County Planning Department – For supplying and allowing this project to use the County's extensive GIS database.
Scenic Hudson
New York State Bridge Authority
MTA Metro-North Railroad

Photo Credits and supporting graphics by Weston & Sampson, unless otherwise indicated.
GIS data provided by:
Dutchess County Planning Department
NYS GIS Clearinghouse
Cornell University Geospatial Information Repository (CUGIR)
US Fish and Wildlife Service



I - Table of Contents……iii

II - Executive Summary……...iv

1 - Introduction……1
1.1 – Project History
2 – Project Summary……3
2.1 – Project Benefits
2.2 – Existing Conditions
3 – Alternatives Analysis……7
3.1 – Design Standards
3.2 – Alternative Analysis Segments
3.2.1 – Trail Segment – Steep Slope (13+50 to 16+50)
3.2.2 – Trail Segment – Spur to Trail of Two Cities (8+39/100+00 to 115+63)
3.2.3 – Trail Segment – Rock Outcropping (33+50 to 42+14)
3.2.4 – Trail Surfacing
4 – Preferred Alternative Summary……15

5 – Conclusion……19

Appendix A – Preliminary Plans & Details
Appendix B – Geotechnical Evaluations
Appendix C – MNR – Trail Guidelines
Appendix D – NYS Bridge Authority Fence & Camera Specifications
Appendix E – Preliminary Opinion of Probable Cost Estimate
Appendix F – Project Support Letters

II - Executive Summary

The goal of the project is to fulfill the vision of the Beacon Hudson River Trail Master Plan for the planning, design, and construction of a multi-use scenic trail that provides a non-motorized link between the City of Beacon and surrounding communities by connecting the train station with the Newburgh-Beacon Bridge via the Trail of Two Cities and future trail networks within the Town of Fishkill.

This trail will improve access within the City of Beacon and become a valuable community amenity for residents and visitors. The trail will also improve the recreation and trail network, provide a non-motorized transportation connection to transit, and create an amenity with historical, cultural, and environmental education opportunities. Ultimately the trail will instill greater community investment and pride.

1 – Introduction

The Beacon-Hudson River Trail project area extends just over one mile from the Beacon Metro-North Railroad (MNR) passenger station north to the Newburgh-Beacon Bridge. The project area lies predominantly within the existing MNR right-of-way and adjacent to the railroad's maintenance road. The corridor terminates within the New York State Bridge Authority (NYSBA) Newburgh-Beacon Bridge right-of-way. In the vicinity of the bridge, the trail corridor extends east, parallel to the bridge's eastbound ramps up to the existing path (Trail of Two Cities) adjacent to the bridge service road.

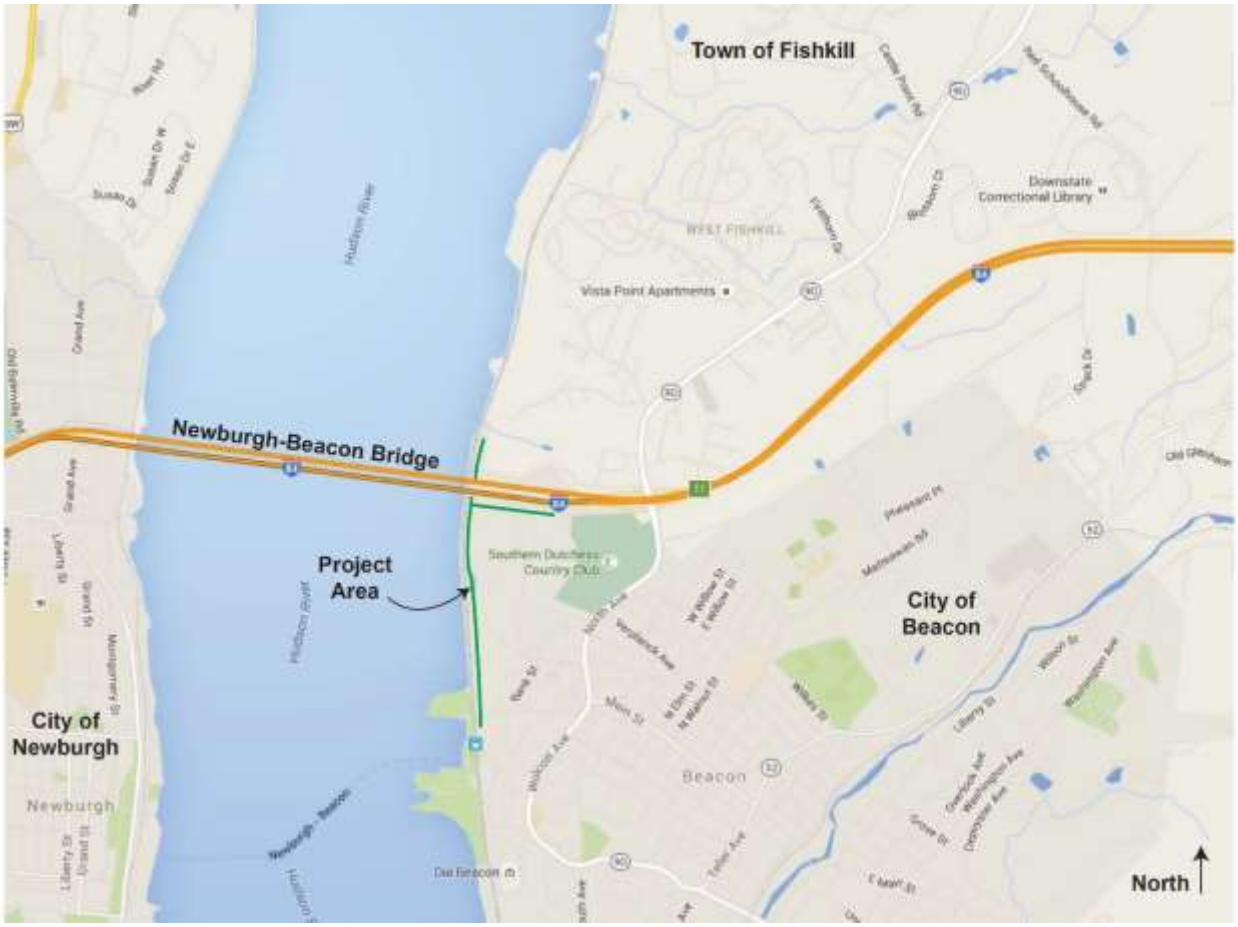


Figure 1.1: Project Area (Credit: Google)

1.1 – Project History

In 2015, the Beacon Greenway Trails Committee and the City of Beacon contracted Weston & Sampson PE, LS, LA, PC (Weston & Sampson) to develop a Master Plan for the Beacon section of the Hudson River Trail, a regional trail that seeks to connect communities and municipalities along the Hudson River for recreational and commuter use. There had been previous development and implementation of the Fishkill Creek Greenway Trail as well as the City's support of the Hudson Highlands Fjord Trail along the Hudson River waterfront and across Fishkill Creek. The Master Plan looked to address traffic challenging that the City experienced relating to the MNR passenger station, which was at full parking capacity and had waitlisted any future permit applications. By providing a bicycle/pedestrian connection to the Newburgh-Beacon Bridge, the trail would help relieve vehicle congestion while providing fitness, recreation, and economic benefits for the region.

In January 2017, Governor Cuomo announced the Empire State Trail, a new initiative placing New York State at the forefront of national efforts to enhance outdoor recreation, community vitality, and tourism development. When completed by the end of 2020, the Empire State Trail will be a continuous 750-mile route spanning the state from New York City to Canada and Buffalo to Albany, creating the longest multi-use state trail in the nation. As a result, the Beacon-Hudson River Trail would contribute to the north-south trail network along the Hudson River.

Upon completion and acceptance of the Master Plan, the City of Beacon contracted Weston & Sampson in 2018 to begin development of the Preliminary Design Documents for the project. A summary of the design process, decisions made, and work done to date is described in this report. Finally, copies of various support letters from elected officials, committee members and interested stakeholders.

2 – Project Summary

2.1 – Project Benefits

The four main benefits that the Hudson River Trail seeks to provide:

- Health – Trails and open spaces create opportunities for users of all ages and abilities to walk, run, bike, or hike within the City. As a result, by creating open space for these activities, they create opportunities for all to incorporate exercise, and healthy lifestyle habits into their daily routines.

- Transportation – Trails provide important non-motorized transportation connections within the urban network of roads, sidewalks, and transit facilities.

- Economic – One advantage of trails which is not always readily apparent are the financial benefits. Several studies indicate that trails and open spaces have a positive effect on property values. Similarly, a 2002 survey of home buyers sponsored by the National Association of Realtors and the National Association of Home Builders, noted that trails ranked as the second most important community amenity out of a list of 18 choices.

- Environmental – Trails provide multiple benefits to the environment, from improving air quality by encouraging non-motorized transportation and reducing automobile use, to cleaning up abandoned rail lines and creating green corridors within the urban fabric for protection of wildlife, aquatic and terrestrial resources.

2.2 – Existing Conditions

As part of the Master Plan, Weston & Sampson conducted a desktop review as well as a field reconnaissance on site to investigate existing resources and conditions. Resources reviewed included property ownership, topography, soils, floodplains, wetlands, streams, ponds, threatened & endangered species, and historic/ cultural resources. Below is a brief summary of specific site conditions analyzed during the Preliminary Design phase. Additional information regarding site resources may be found in the Master Plan Document.

Parcel & Right of Way:
There are currently two major landowners within this corridor, Metro-North Railroad (MNR) and New York State Bridge Authority (NYSBA). Private landowners own remaining sections of the corridor. Parcel owners are identified on the Preliminary Design plans included in Appendix A.

The majority of the areas under consideration are undeveloped, with the exception of the property immediately adjacent to the MNR tracks, parking areas, and adjacent to the Newburgh-Beacon Bridge Service Road.

Temporary construction and permanent easements will be required to allow for construction, and operations/maintenance of the trail. A 20 to 25-ft easement is proposed, with a varying width depending on adjacent land uses and constraints. The quantity and location of these easements will be dependent upon the final limits of work and construction. Ultimately a long-term maintenance agreement will needed between the City, MNR, and the NYSBA for maintenance, and operation of the trail. Adjacent to the railroad, security fencing, in compliance with MNR and NYSBA requirements, will be necessary along the railroad side of the trail denoting the limits of this easement and to protect workers and trail users from accessing the tracks.

Slopes & Sheer Rock Outcroppings:

Several areas as identified in the previous section contain steep slopes or sheer rock outcroppings along the trail alignment. A geotechnical analysis of the area was completed for the area between STA 33+50 and STA 42+14 to identify any potential concerns related to the rock outcroppings adjacent to the parking lot. Based on observations and an analysis of the Geologic Map of New York, this rock was identified as Austin Glen Formations composed of interbedded graywackes and shales. Most outcroppings consisted of blocky graywacke with complex bedding, often steeply bedded down in a south and west direction (downward in relation to the planned rock cuts). Towards the northern end of the area, the outcroppings are composed primarily of shale.

Steep slopes in the immediate project area were identified beneath the Newburgh-Beacon Bridge (±STA 3+00 to 6+00), in the forest area heading towards the Bridge Authority Access Road (±STA 105+00 to 111+00), and along the forest edge near the wetlands (STA±22+00 to STA 30+00). The forested area near the Bridge Authority Access Road is able to be graded with minimal need for retaining walls. To accommodate the other areas, retaining wall systems were developed to create an accessible pathway to the extent feasible. In addition, a ramp was constructed to allow for an ADA accessible decent from the top of the cliff in the wooded area near the Newburgh-Beacon Bridge down to grade near the wetland to the north of the railroad tracks (±STA 13+00 to 16+00).

A total of eight (8) test borings were completed throughout the project area to document subsurface conditions. The borings found that approximately 4 to 7 inches of topsoil was present at the location of the borings. The depth to bedrock ranged from 2.2 to 16.5 feet in most areas. Soil was found to be primarily composed of either silty-fine sand with a relatively loose density, compact silty sand and gravel, or glacio-lacustrine silt and clay. Bedrock cores were obtained in three locations, which found the bedrock to be composed primarily of gray shale which was generally medium hard – hard, weathered, thin bedded, and fractured to highly fractured.

A copy of the Geotechnical Report is included in Appendix B.

Stream Crossings:

Two ephemeral streams were identified along the project corridor, one at ±STA 6+50 and another at ± STA 9+00. Both flow west towards the Hudson River, discharging into a wetland to the south of the project area. In both locations, bottomless culverts are proposed to allow trail users to cross these streams and to minimize disturbance to the resources.

In addition, two unnamed wetlands were identified and mapped in the project area.
Quenzer Environmental performed a wetland delineation of the project area in July of 2018, which located the extents and limits of wetlands, streams, and waterbodies located within the project area. Resource areas were avoided or impacts were minimized to the extent feasible during the preliminary design process.

Security & Safety:
The proposed trail transverses land owned by the New York State Bridge Authority containing the bridge abutments for the Newburgh-Beacon Bridge. Due to the close proximity to an active railroad, roadway, and privately owned lands, a series of security & safety features have been developed.

Per the request of MNR and the NYSBA, 8-foot black coated chain link fencing has been designed to prevent access from the trail to the railroad and bridge authority lands and limit access to the site from an existing walkway located near the toll booths on the Beacon side of the bridge. The fencing will also prevent trail users from accessing the lands in the immediate area of the railroad tracks or the bridge abutments and will tie into existing fencing located along these properties.


Figure 2.1: Chain-link Fencing

Additional Note: The committee would like to point out that there are several local locations where there are no fences between a public trail and the MNR line. Two examples are Breakneck Ridge and the trail between the Beacon transfer station and the Dennings Point Bridge.

At the request of the NYSBA, security cameras will also be included in the area of the Newburgh-Beacon Bridge. This camera system will include a video server, four (4) thermal cameras, one (1) Axis HD PTZ Camera, a CCTV cabinet and related equipment, and associated conduit & cable required for installation.

Memoranda from the agencies and specifications for the security fencing and equipment is included in Appendix D.

3 – Alternatives Analysis

Several alternative layout options were developed and evaluated as a part of the project. A variety of trail slopes, alignments and widths were evaluated to determine the most cost-effective solution that minimized land disturbance while maintaining a comfortable and accessible trail for users of all interests. Below are descriptions and findings drawn from each layout option.

3.1 – Design Standards

For this project, the following design parameters were made to help guide the layout and alignment process.

Trail Longitudinal Slopes:

For each layout, accessibility was assumed to be held throughout the entirety of the alignment to ensure that the trail is as accessible to as many people as possible and to meet local, state, and federal accessibility requirements. Trail slope guidelines were taken from the American Association of State Highway and Transportation Officials (AASHTO). Generally, the maximum allowable slope to achieve accessibility is 5%, however slopes may exceed 5% for limited lengths and with exceptions, as described below:

- 5.1% to 8.33% - Maximum run of 200 ft.
- 8.34% to 10% - Maximum run of 30'
- 10.1% to 12.5% - Maximum run of 10 ft.
- Greater than 12.5% - Not Acceptable for ADA compliance

At the end of each maximum run, the slope must either be reduced to 5% or a level landing area must be provided before continuing the slope.

However, per the Shared Use Path Accessibility Guidelines Proposed Rule Making and Supplemental Notice of Proposed Rulemaking (Feb 2013) by the United States Access Board, grades greater than 5% will most likely be allowed if one of the following exceptions are met:

1. Compliance is not feasible due to terrain.
2. Compliance cannot be accomplished with the prevailing construction practices.
3. Compliance is precluded by the:

   ESA, NEPA, NHPA, Wilderness Act, and other laws which is to preserve threatened or endangered species; the environment; or archaeological, cultural, historical or other significant natural features.

In each scenario, no greater than 30% of the total path length can exceed 8.33%, and the maximum allowable cross slope in all instances is 2%. As a result, the alternatives evaluated looked at using 5%, 8.33%, 10%, and 12.5% as the maximum allowable slope throughout the corridor.

Trail Width:

AASHTO guidelines identify 10 feet as the minimum width, with 8 feet being acceptable in conditions where bicycle traffic is expected to be low, high pedestrian use is not expected, the trail alignment allows for safe and frequent passing opportunities, and when paths will not be subjected to regular maintenance vehicle loadings that can cause pavement edge damage. Trail widths of 8 and 10 feet were assessed as a part of the alternative analysis.

While the trail will likely not be subjected to regular maintenance vehicle loading, bicycle and pedestrian traffic is anticipated to be more frequent than recommended for the use of an 8-foot-wide path. In addition, a grading analysis was completed for both trail widths along the corridor which found that reducing the trail width to 8 feet did not result in any substantial decrease in grading impacts, heights and limits of retaining walls, or overall limits of disturbance. As a result, based on this analysis, a 10-foot-wide path was assumed for each of the design alternatives.

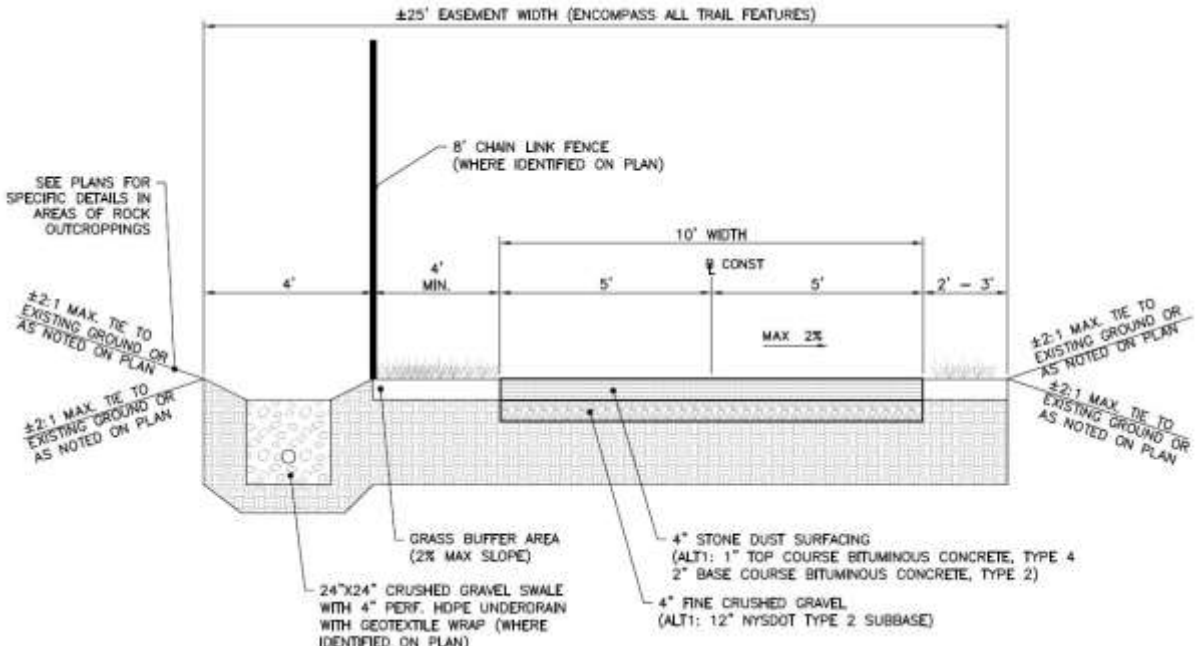


Figure 3.1: Proposed Trail Cross Section

Trail Setback:

Per MNR requirements, trail facilities are required to be set back at least 15 feet from any active railroad track, with a 25 foot setback preferred. The current trail alignment maintains a minimum of 25 feet between any proposed structure and the edge of the nearest track. In the area of the cliff descent between STA 13+00 and 16+50, minor grading will be required between the 25- and 15-foot setback area to allow for construction of a retaining wall system.

3.2 – Alternative Analysis Segments

As part of the overall alignment, several alternatives were evaluated, including:

1. Trail Segment – Steep Slope (13+50 to 16+50)
2. Trail Segment – Spur to Bridge Authority Building (8+39/100+00 to 115+63)
3. Trail Segment - Rock Outcropping (Station 33+50 to 42+14)
4. Trail Surfacing



Figure 3.2: Typical Trail Condition

3.2.1 – Trail Segment – Steep Slope (13+50 to 16+50)

A sheer cliff face is present along the trail alignment at approximately STA 13+00 to 16+50. The elevation difference between the top and bottom of bank is approximately 25 feet. This presented a challenge in how to allow trail users to navigate the cliff descent while maintain an ADA accessible facility. A combination of elevated structures supported by piers and a retaining wall system was developed to support the trail. Several slope options were explored for this system to determine which slope created the least amount of impact while maintaining user accessibility. While this was the steepest area of the trail with the most elevation difference, the slope parameters were used for the remaining areas of the main trail spur between the Bridge Authority lands and the train station parking lot.

Preferred Alternative - Alignment Option A: 8.33% Slope, 10' Width

Option A utilized a maximum trail slope of 8.33% along the main trail alignment. The main benefit of this alternative is that it allows for less extensive wall systems than Option A. Even with the necessary landings required every 200', ramp lengths are significantly shorter than those necessary in Option B. The steeper slopes allow for less extensive grading requirements beyond the trail centerline to tie back into the existing topography.

The primary challenge presented in this option is the landings and steeper ramps break up the travel flow of trail users, especially cyclists. The steep and level areas become more pronounced, and the landings make the construction process more complex than what would be needed in Option B.

Ultimately, it was determined that the reduced extents of grading, shorter ramp lengths, and less complex retaining wall systems required for this option were the most desirable of the alternatives and outweighed the constraint of having steeper slopes in some areas. For this reason, Option A was chosen as the preferred alternative that proceeded to design development.



Figure 3.3: Overall perspective of Trail Alignment

Alternatives Considered

<u>Alignment Option B: 5% Slope, 10' Width</u>
Alignment Option B utilized a maximum trail slope of 5% along the main trail alignment. The main benefit of this alternative is that it is the most accessible and easiest of the options to navigate for users of all skill levels.

The challenges presented by this option include increased lengths of ramps and the necessity of longer and taller retaining wall systems than the other alternatives. This results in increased construction costs and a less open feeling when navigating the trail. The more gradual slopes also contribute to extensive grading beyond trail centerline to tie back into the existing topography.

Due to the substantial increase in retaining wall extents and heights required, this option was ultimately not chosen as the preferred alternative for further development.

Alignment Option C: 10% Slope, 10' Width

Alignment Option C utilized a maximum trail slope of 10% along the main trail alignment. Despite having a steeper allowable slope than Option B, the maximum allowable run of 30 feet required significantly greater landing zones on any steeply sloped areas. This resulted in the areas that required the use of steep ramps to have approximately the same impact area and retaining wall extents as those required in Option B. In addition, the frequency of landing zones required at areas of substantial elevation change would lead to increased construction complexity and impact the travel flow of trail users, especially cyclists.

While there are a few areas in which utilizing a 10% slope reduced the overall grading impacts, the necessity of retaining walls of similar size and complexity as those needed in Option A did not result in any significant construction or cost savings. Such little savings in terms of cost and constructability did not offset the loss of accessibility and navigability of the trail. For this reason, Option C was not chosen as the preferred alternative for further development.

Alignment Option D: 12.5% Slope, 10' Width

Alignment Option D utilized a maximum trail slope of 12.5% along the main trail alignment. Like Option C, the reduced maximum allowable run of ramp areas (10') resulted in similar ramp lengths and retaining wall complexity as those found in Option B. In addition, the extreme frequency of landing zones required at areas of substantial elevation change would lead to increased construction complexity and dramatically impact the travel flow of trail users, especially cyclists.

Since 12.5% is the least desirable slope, and the extents of grading and retaining wall extents were not substantially different than those found in Option A, Option D was not chosen as the preferred alternative for further development.

3.2.2 - Trail Segment – Spur to Trail of Two Cities (8+39 / 100+00 to 115+63)

To allow additional prospective trail users to access the Hudson River Trail, an additional trail spur that connects to the Trail of Two Cities and the Bridge Authority Building is proposed. This spur would create an efficient spur connection for users who travel across the Newburgh-Beacon.

The topography in this area is relatively steep, with slopes averaging 12% across the 85 feet in elevation change. It is a densely forested area which will require tree removal, brush removal, clearing, and grubbing to allow for the new construction of the trail and accommodate the earthwork required to achieve accessibility. Due to this significant elevation difference between the Bridge Authority Building and the main trail alignment, it was determined that a 5% slope would be impractical from a construction and cost perspective. Multiple switchbacks with retaining walls more than 20 feet tall would be required to achieve a 5% maximum slope, making this connection cost prohibitive.

For this reason, each alternative utilized a single switchback layout option with a gradual radius that would accommodate cyclists and minimize the extents and heights of retaining walls required.

The path maintains a maximum slope of 8.33% with three landing areas to meet the AASHTO accessibility guidelines.

3.2.3 - Trail Segment - Rock Outcropping (33+50 to 42+14)

As the trail approaches the MNR Beacon Trail Station, the proposed alignment shifts to the east between the existing parking lot and a sheer rock outcropping. While most of this section is wide enough to allow for a 10' wide trail with adequate shoulder space, there are several areas where the rock outcropping extends closer to the parking lot resulting in a narrow corridor through which to align the trail.



Figure 3.4: Proposed Trail Adjacent to Rock Outcroppings and Parking Lot

A geotechnical analysis of the rock outcropping was complete by Terracon to determine the qualities of the rock faces and the most appropriate methods for removing portions of the outcroppings to allow for trail construction. The full geotechnical report is included in Appendix B.

Geotechnical Analysis

Per the NYSDOT Geotechnical Design Manual, rock cuts in the lower Hudson Valley are primarily made 3V on 2H, and all shale slopes are made 1V on 1H. These parameters were used to determine the extent of cutting & reinforced of the rock area adjacent to the parking lot.

If the amount of cut required extends further than initially planned, several stabilization techniques may be used, including scaling, rock bolts and dowels, wire mesh and cable net systems, and reinforced shotcrete. Based on evaluation of existing site conditions, scaling and rock dowels is recommended in conjunction with a catchment zone at the base of the slope.

Alternatives Considered:

Scaling - Scaling involves the removal of loose overhangs, weathered pockets, or unconnected rock from the slope. This technique is preferred because it can be done without blasting. Blasting may be used if deemed necessary due to site conditions.

Rock Dowels - Rock dowels are untensioned anchors installed to prevent movement in small blocks of rock. This technique may be used in conjunction with scaling depending upon the conditions encountered in the field.

Implementation of any rock removal or stabilization practices and techniques should be confirmed in the field prior to beginning work with a geotechnical engineer to determine specific areas where such techniques and practices are required.

3.2.4 – Trail Surfacing

Different surfaces offer various benefits and constraints including cost, accessibility, and maintenance requirements. Two surfaces were primarily investigated for use on this project: compacted stone dust and asphalt. Other surface options, such as shredded mulch and concrete, were discounted due to either maintenance/ accessibility or cost concerns.



Figure 3.5: Example of Stone Dust Surface Trail

Stone Dust:

The benefits of stone dust include lower initial material and installation costs and a more natural aesthetic than asphalt. Stone dust is considered a hard and stable surface material for accessibility, provided that it is maintained to ensure a level surface. Due to the steeper slopes located in some segments of the trail, a high level of maintenance would be needed to maintain accessibility and replenish material lost due to erosion, increasing the cost of long-term maintenance would be greater. Stone dust, while adequate for pedestrian use, is less desirable for bicycle use (particularly cyclists with road tires).

Asphalt:

Asphalt has a higher initial installation and material cost, but fewer long-term maintenance costs. A typical asphalt trail has a life span of approximately 10-15 years before needing to be resurfaced. Small cracks and settlement are able to be spot repaired as they arise and would be expected on a less frequent basis than replenishing and regrading stone dust. Asphalt is an accessible surface that required minimal maintenance to ensure accessibility, particularly in areas with steeper slopes.

Given the pros and cons, but also considering the quality of user experience, the committee has a strong preference for stone dust surface.

Alternative Scenarios:

Based on this analysis, three alternative surfacing scenario budgets were developed for the project.

The first scenario (preferred Base option) consists of a combination of stone dust and asphalt surfacing with stone dust being utilized for a majority of the alignment and asphalt being utilized in areas that exceed 5% slope.

The second scenario budget consist of stone dust for the entire length of the trail.

The third scenario budget consists of light duty asphalt surfacing adequate to support bicycle and pedestrian traffic for the entire trail.



Figure 3.6: Example of Asphalt Surface Trail

Ultimately, during the final design phase, one of the three scenarios will need to be selected to further the design.

4 – Preferred Alternative Summary

Through the Preliminary Design process, several specific site features were identified related to the implementation of the trail. These include:

- Sheer rock outcroppings and steep slopes throughout the project corridor
- Proximity to active railroad tracks
- Multiple parcel owners requiring safety precautions (fencing, etc.) to be implemented
- Proximity to wetlands
- Multiple stream crossings

Multiple concept alignments and grading schemes were developed, with Option A ultimately being selected as the preferred alternative. This option utilizes a maximum trail slope of 8.33%, and resulted in the least amount of retaining walls, grading, and earthwork while still achieving an accessible path throughout the length of the trail.

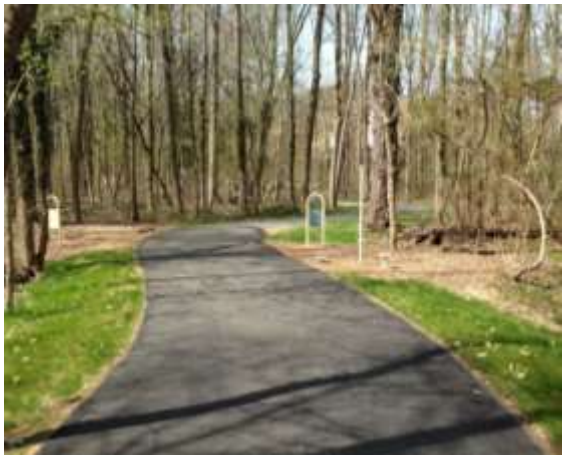


Figure 4.1: Example Trail through Woods

While this Preliminary Design Report identifies the preferred alignment and grading, specific construction elements will need to be addressed during Final Design, most notably the extent and methodology of rock removal and reinforcement at the area adjacent to the parking lot between STA 33+50 and 42+14. In addition, specific pedestrian bridge and culvert structures will also need to be designed to accommodate the surrounding grades and ephemeral streams.

Upon selection of Option A as the preferred alternative, Weston & Sampson proceeded with developing Preliminary Design Plans for the trail. The trail alignment was modified and refined to minimize grading impacts and earthwork disturbance, reduce the number of stream crossings, and optimize trail radii and elevation changes. Preliminary Design Plans are included in Appendix A of this report.

There are two proposed crossings over ephemeral streams along the trail alignment. Bottomless culverts have been proposed as part of the trail system to manage these crossings. Crossing 1A is approximately 40 feet long and located between STA 6+40 and 6+80. Crossing 2A is approximately 35 feet long and located between STA 8+75 and 9+10.

To accommodate the steep slopes and grading needed to cut the trail into the existing landscape, a retaining wall system was developed using the Redirock product. This block was chosen due to the extensive length and height of the walls, as the larger block is more cost effective and allows for the installation of guardrails along the top block. In the area adjacent to the parking lot (STA 33+50 to 42+14, the geotechnical analysis determined that the exposed sheer bedrock is suitable to use as a natural retaining wall, with some areas being cut and/or reinforced to allow the construction of the path. Additional geotechnical information is included in the following section, and a copy of the full Geotechnical Report is included in Appendix B of this report.

In the area of the sheer cliff face (±STA 13+00 to 16+25), a ramp structure will be constructed and cut into the existing rock outcropping to allow trail users to descend from the elevated forested area down to the area adjacent to the railroad tracks and wetland. The structure will be constructed of a combination of Redirock block retaining wall, retaining enough soil and subbase material to suitable support a 10-foot wide trail, and elevated superstructures supported by pier systems. Structures will be cut into the rock as necessary following guidance from the geotechnical engineer.

Trailheads and overlooks are proposed in several locations throughout the alignment, concentrated primarily in the elevated forested area and on the spur connecting to the New York State Bridge Authority building. These facilities will be constructed of concrete unit pavers, be supported by segmental block knee walls and retaining walls, and contain amenities such as benches, trash receptacles, dogi-pot stations, informative signage, and trail mapping.



Figure 4.2: Example of Trail Wayside

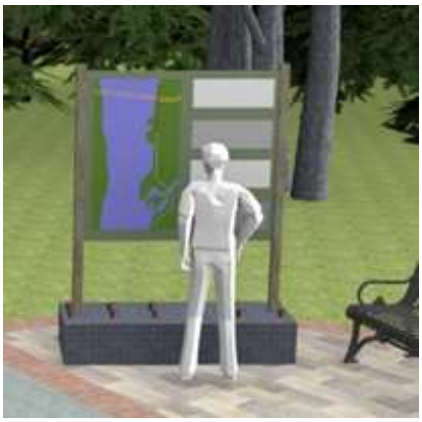


Figure 4.3: Example of Trail Information Kiosk

4.1 – Phasing Strategy

A multi-use trail requires multiple phases for development and construction. Several factors influence phasing, including but not limited to overall length of the trail project/segment, property acquisitions, level of regulatory permitting required, difficulty of construction, and most importantly the amount of available funding.

If feasible, to maximize cost and efficiency it is recommended that the project be implemented in one phase. However, in most cases, a single phase is not possible due to funding constraints or approval processes required for various sections of the project.

As a first phase, it would be beneficial to establish an informal soft surface trail alignment, set-up access agreements/easements with property owners, and therefore enabling access for interested trail users. The alignment would begin at the Newburgh-Beacon Bridge access road (STA 115+00) towards the proposed boardwalk structure at the MNR property boundary (STA 12+00). Within this first phase, the trail spur (STA 200+00 to STA 243+45) would also be established to create a viewing area overlooking the river.

5 – Conclusion

Upon approval of the Preliminary Design Documents, final Construction Documents (including contract drawings and specifications) shall be prepared for bidding. These plans shall address outstanding comments and concerns from project stakeholders. In addition, preparation of easements and agreements shall be prepared to clearly identify the limits of work and long-term responsibilities of all parties involved. A work safety plan will need to be prepared to ensure all parties involved in construction are adequately protected from the active railroad area and meet , NYSBA, MNR and OSHA guidelines for construction near active rail lines.

A Stormwater Pollution Prevention Plan (SWPPP) will be required to identify erosion and sediment control measures and potentially treat stormwater runoff generated by the new impervious area. This plan will be submitted to NYSDEC for acceptance and approval and will require the Contractor to maintain the erosion and sediment control practices throughout construction, including weekly inspection of protection devices.

A site survey should be completed in the areas of rock outcroppings which located the top and bottom of rock face, locates outcroppings along the rock faces, and maps profiles and sections of the existing rock face. This should be done to clearly establish the limits of rock removal needed and better identify which reinforcement measures are appropriate for specific areas along the trail.

At the request of the New York State Bridge Authority, security cameras should be installed in the immediate area of the Bridge Authority lands. Exact locations, models, and installation requirements should be coordinated with the Bridge Authority as part of the final design package. In addition to the security cameras, chain link security fence should be installed to enclose the trail system and separate trail users from Bride Authority and MNR lands. Exact height and locations of the fencing should be coordinated with each authority during the final design phase.

Additional subsurface utility mapping should be conducted in the area adjacent to the New York State Bridge Authority roadway and building to ensure any existing utilities are protected during construction. Subsurface utility locating should also be conducted in the area adjacent to the existing train station parking lots, and along West Main Street.

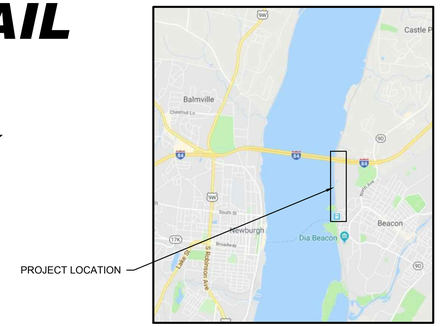
Appendix A – Preliminary Design Plans

HUDSON RIVER GREENWAY TRAIL

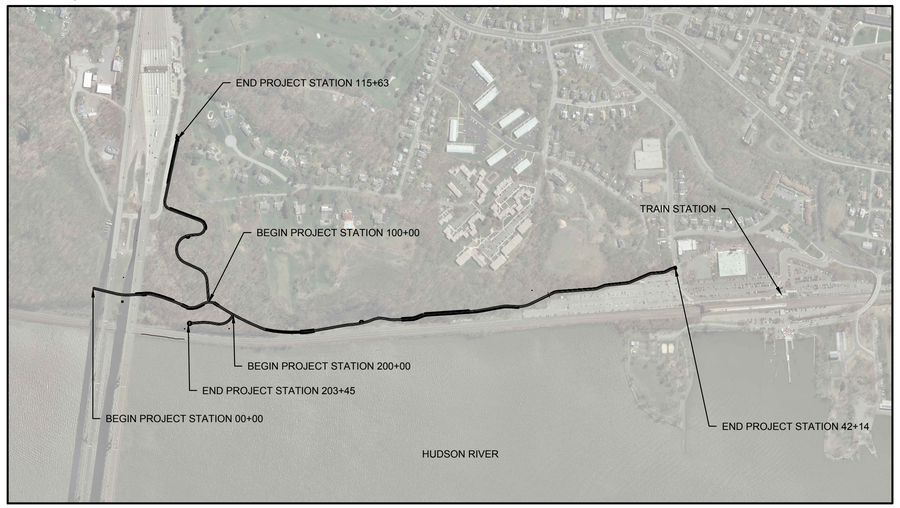
CITY OF BEACON, NEW YORK

JULY 15, 2020

Sheet List Table	
Sheet Number	Sheet Title
G001	COVER SHEET
C001	INDEX PLAN
C101	PLAN & PROFILE STA 0+00 – 9+00
C102	PLAN & PROFILE STA 9+00 – 18+00
C103	PLAN & PROFILE STA 18+00 – 27+00
C104	PLAN & PROFILE STA 27+00 – 36+00
C105	PLAN & PROFILE STA 36+00 – 42+14
C106	PLAN & PROFILE STA 100+00 – 105+00
C107	PLAN & PROFILE STA 105+00 – 112+00
C108	PLAN & PROFILE STA 112+00 – 115+63
C109	PLAN & PROFILE STA 200+00 – 203+45
C301	TRAIL CROSS SECTIONS
C302	TRAIL CROSS SECTIONS
C303	TRAIL CROSS SECTIONS
C304	TRAIL CROSS SECTIONS
C305	TRAIL CROSS SECTIONS
C501	TYPICAL DETAILS
C502	TYPICAL DETAILS
C503	TYPICAL DETAILS



LOCATION PLAN
N.T.S.



SCALE: 1" = 500'

LOCATION MAP

CLIENT

City of Beacon, New York
Recreation Department
23 West Center Street
Beacon, New York 12508
Contact: Mark Price, Director of Recreation
845.765.8440

CONSULTANT

Weston & Sampson SM

1 Winner's Circle, Suite 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com
Contact: Daniel Biggs, RLA

PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION 'ALTERED BY' FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

COPYRIGHT © 2020 BY WESTON & SAMPSON, PE, LS, LA, PC THIS DRAWING IS AN INSTRUMENT OF SERVICE AND IS THE PROPERTY OF WESTON & SAMPSON, PE, LS, LA, PC THIS DRAWING MAY NOT BE REPRODUCED IN WHOLE OR IN PART BY ANY MEANS WHATSOEVER WITHOUT THE EXPRESS WRITTEN CONSENT OF WESTON & SAMPSON PE, LS, LA, PC

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

7/8/2020 7:28:03 PM
\\wse03.local\WSE\Projects\NY\Beacon, NY\N21800028_Hudson River Trail Prelim Design\CAD\PAS\G001 COVER SHEET.dwg
PREPARED BY: JWG



1 **INDEX PLAN**
SCALE: 1" = 200'

0 200 400

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

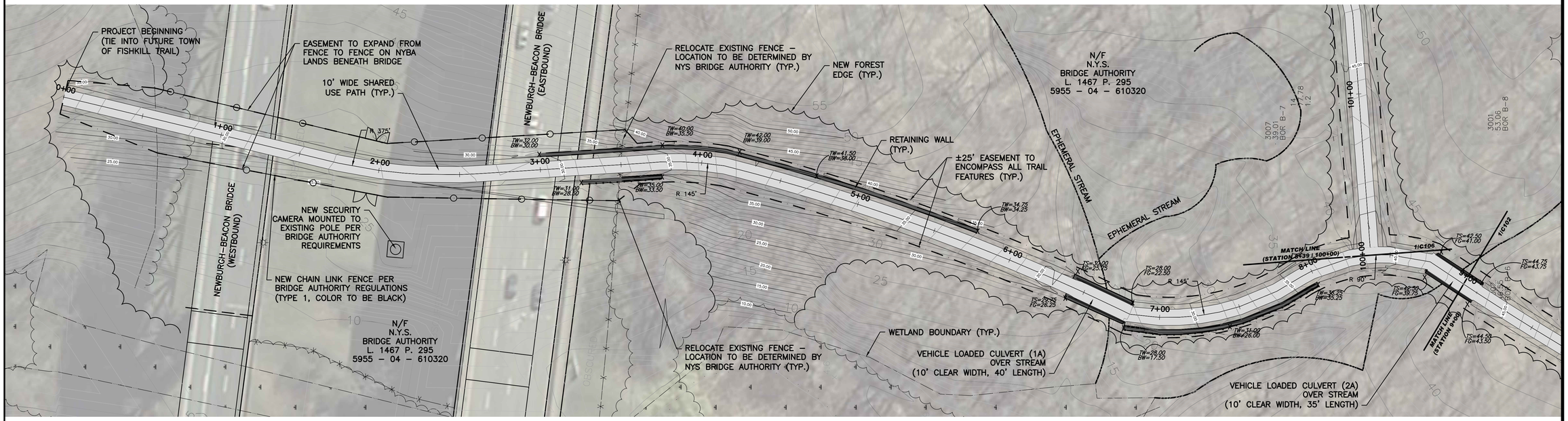
INDEX PLAN

CADD NO.	SCALE:	CONTRACT:	JOB NO.	DR.BY	DSN.BY	CHK.BY	APP.BY
	1" = 200'		N21800028	JWG	JWG	DPB	DPB

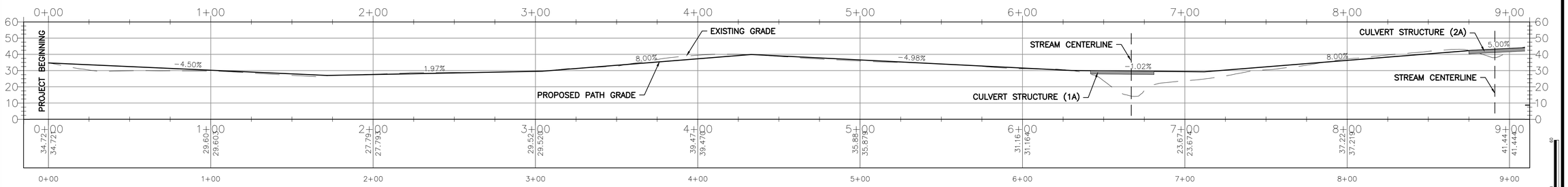
FILE NO.

C001

SHEET 2 OF 19



1 **SITE PLAN (STA 0+00 TO STA 9+00)**
SCALE:1" = 30'



□ **PROFILE VIEW (STA 0+00 TO STA 9+00)**
SCALE:HORI□: 1" □ 30' □VERT: 1" □ 30'

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

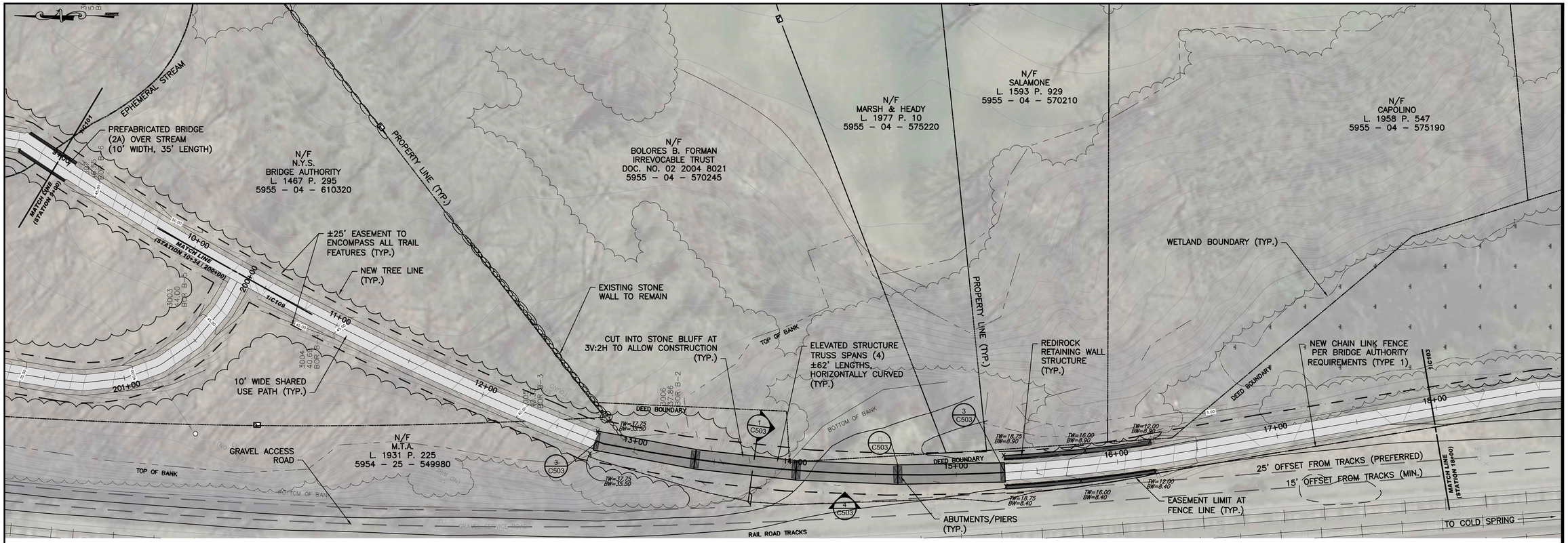
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

PLAN & PROFILE STA 0+00 – 9+00

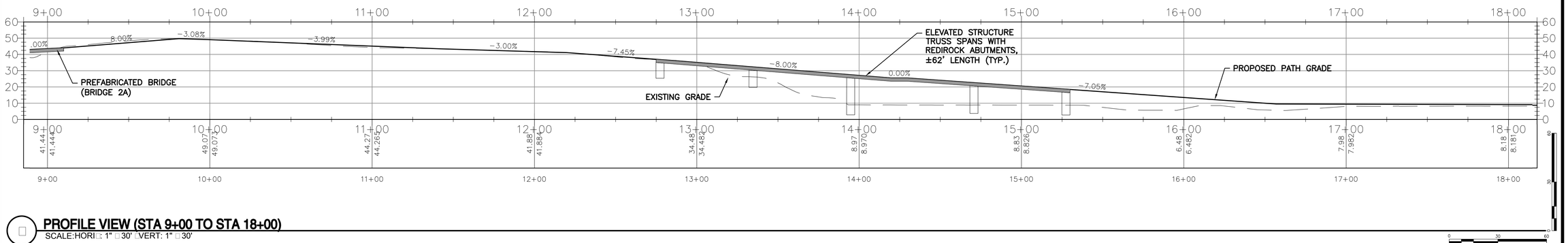
CADD NO.	SCALE:	CONTRACT:	JOB NO.	DR.BY	DSN.BY	CHK.BY	APP.BY
	BAR SCALE		N21B0028	JWG	JWG	DPB	DPB

C101
FILE NO.

SHEET 3 OF 19



1 **SITE PLAN (STA 9+00 TO STA 18+00)**
SCALE:1" = 30'



PROFILE VIEW (STA 9+00 TO STA 18+00)
SCALE:HORI. 1" = 30' VERT: 1" = 30'

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Dr.By	Ck.By	App.By	Description
					APPROVED

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

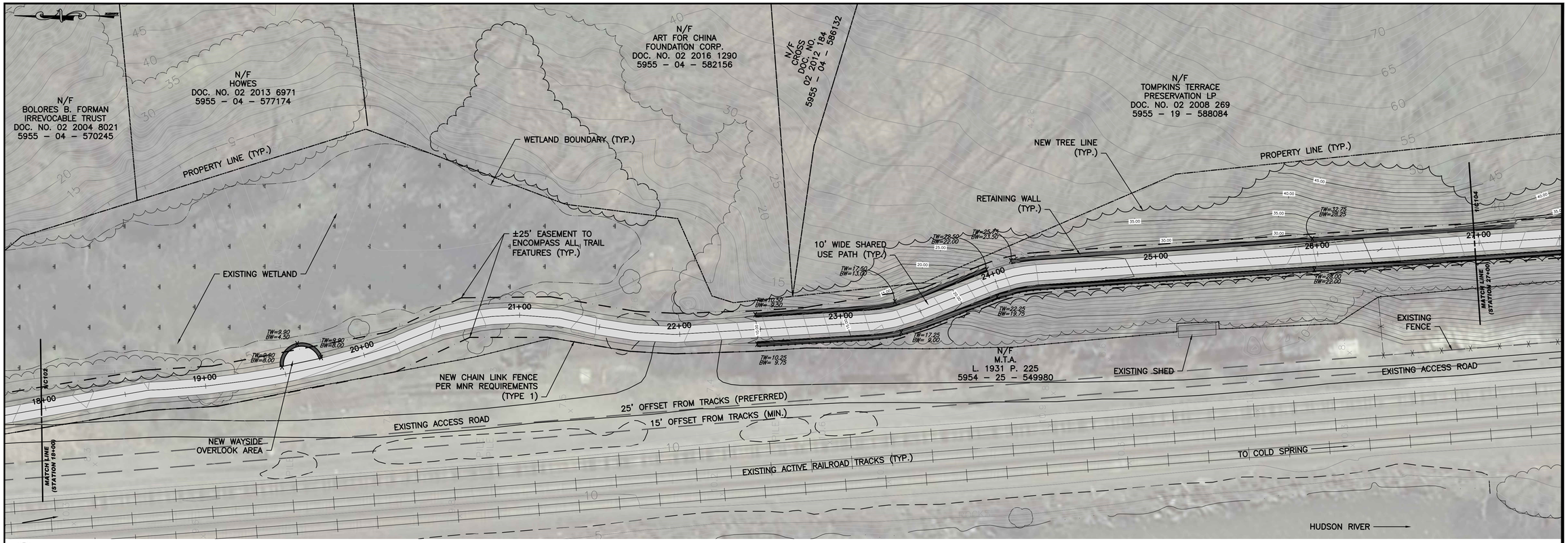
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

PLAN & PROFILE STA 9+00 – 18+00

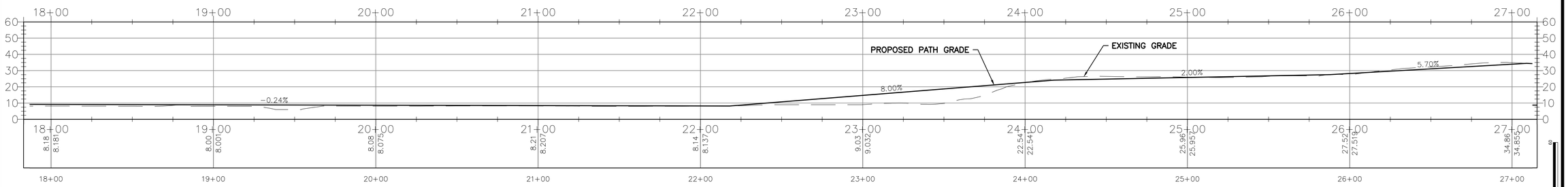
CADD NO.	SCALE:	CONTRACT:	JOB NO.	DR.BY	DSN.BY	CHK.BY	APP.BY
	BAR SCALE		N21800028	JWG	JWG	DPB	DPB

C102
FILE NO.

SHEET 4 OF 19



1 **SITE PLAN (STA 18+00 TO STA 27+00)**
SCALE:1" = 30'



PROFILE VIEW (STA 18+00 TO STA 27+00)
SCALE:HORI: 1" = 30' VERT: 1" = 30'

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Dr.By	Ck.By	App.By	Description
					APPROVED

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

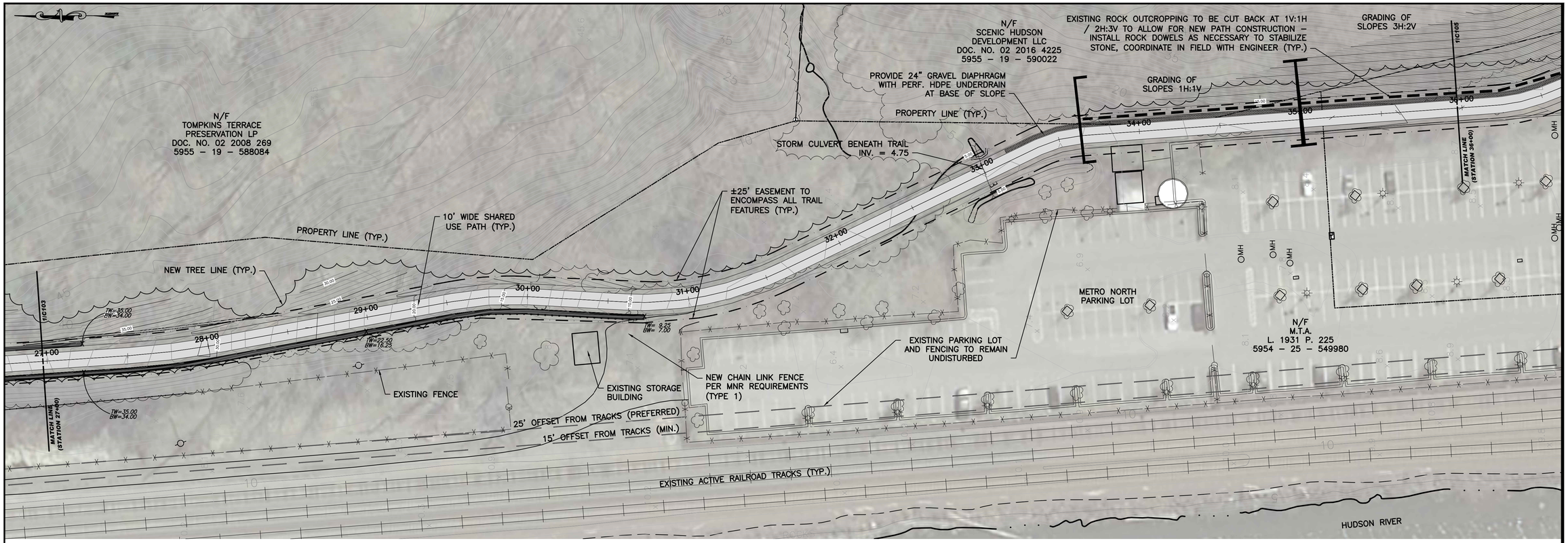
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

PLAN & PROFILE STA 18+00 – 27+00

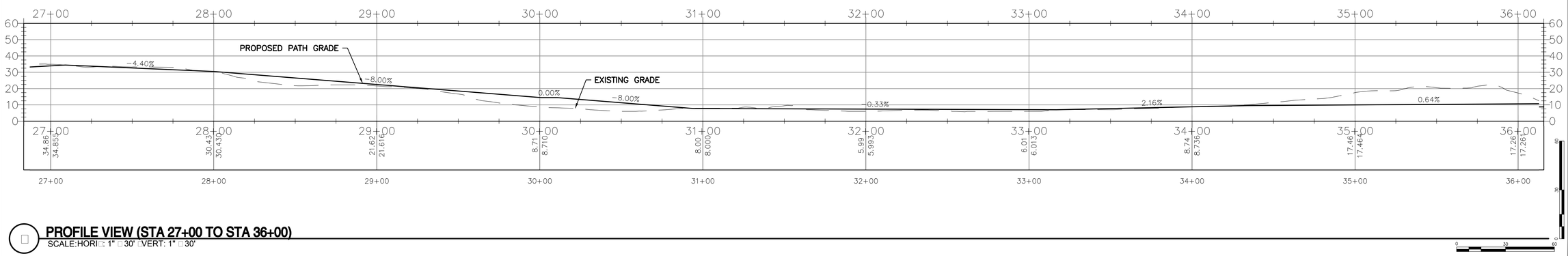
APP.BY	CHK.BY	DSN.BY	DR.BY	JOB NO.	CONTRACT:	SCALE:	CADD NO.
DPB	DPB	JWG	JWG	N21800028		BAR SCALE	

C103
FILE NO.

SHEET 5 OF 19



1 **SITE PLAN (STA 27+00 TO STA 36+00)**
SCALE:1" = 30'



PROFILE VIEW (STA 27+00 TO STA 36+00)
SCALE:HORI: 1" = 30' VERT: 1" = 30'

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

PLAN & PROFILE STA 27+00 – 36+00

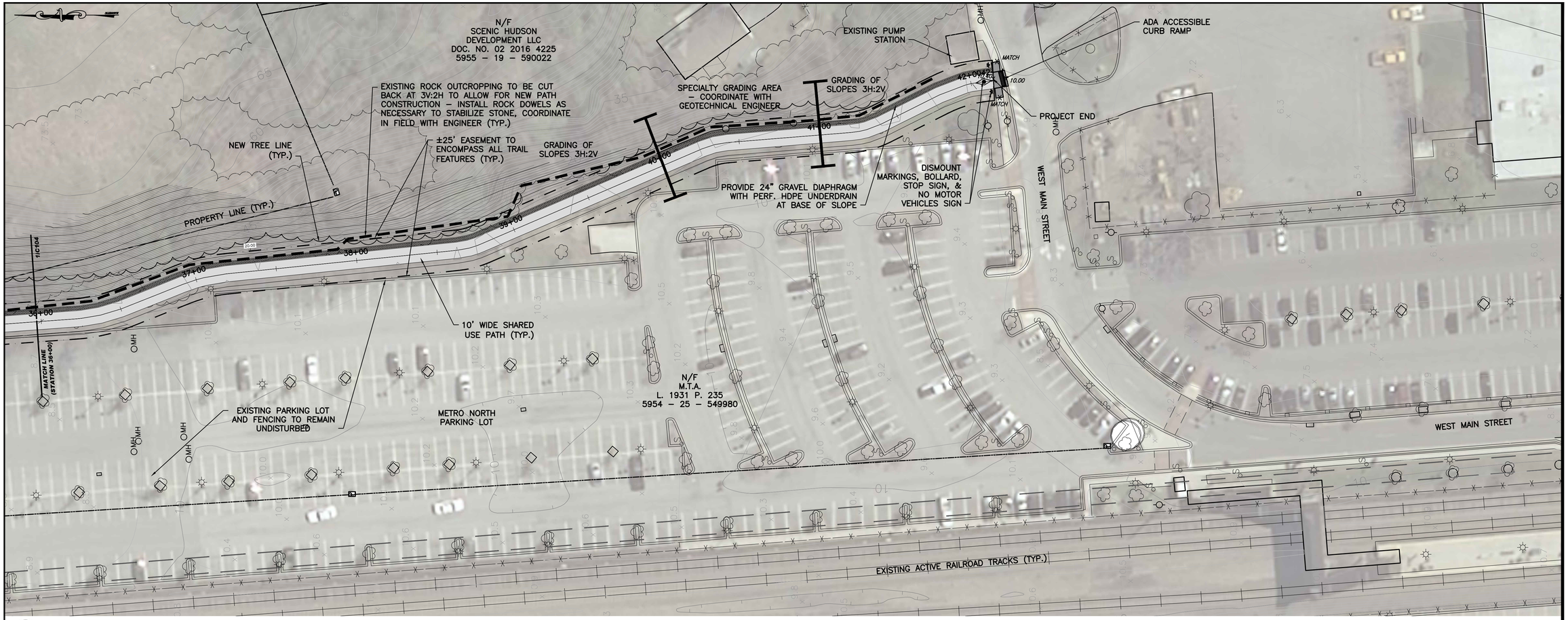
DSN.BY	DR.BY	JOB NO.	CONTRACT:	SCALE:	CADD NO.
JWG	JWG	N21B0028		BAR SCALE	

APP.BY	CHK.BY
DPB	DPB

C104

FILE NO.

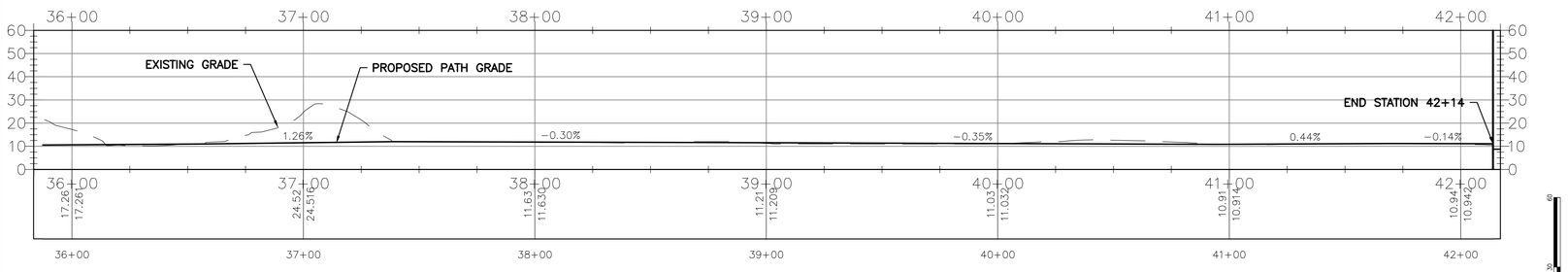
SHEET 6 OF 19



1 SITE PLAN (STA 36+00 TO STA 42+14)

SCALE: 1" = 30'

0 30 60



2 PROFILE VIEW (STA 36+00 TO STA 42+14)

SCALE: HORIZ: 1" = 30' I VERT: 1" = 30'

0 30 60

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

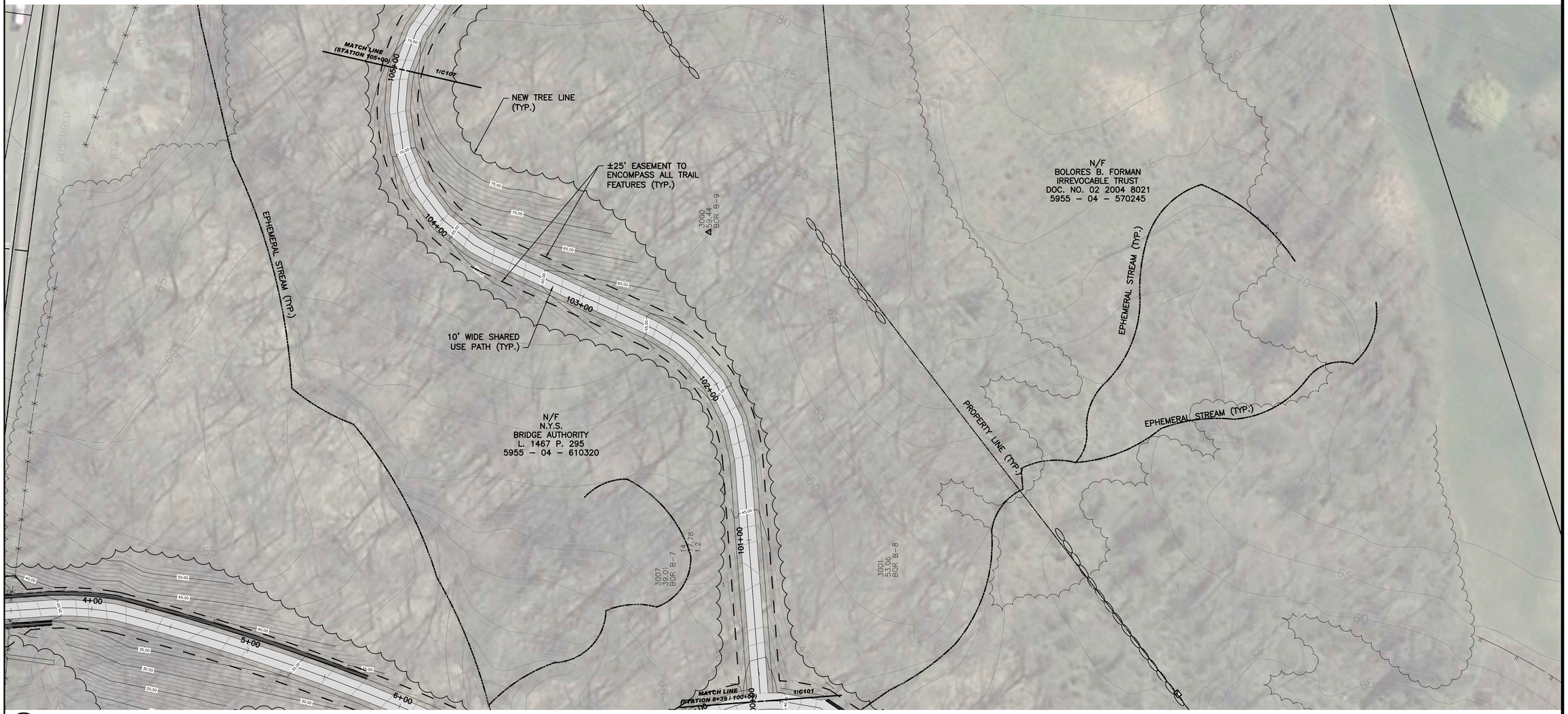
PLAN & PROFILE STA 36+00 – 42+14

CADD NO.	SCALE: BAR SCALE	CONTRACT:	JOB NO. N21800028	DR.BY JWG	DSN.BY JWG	CHK.BY DPB	APP.BY DPB

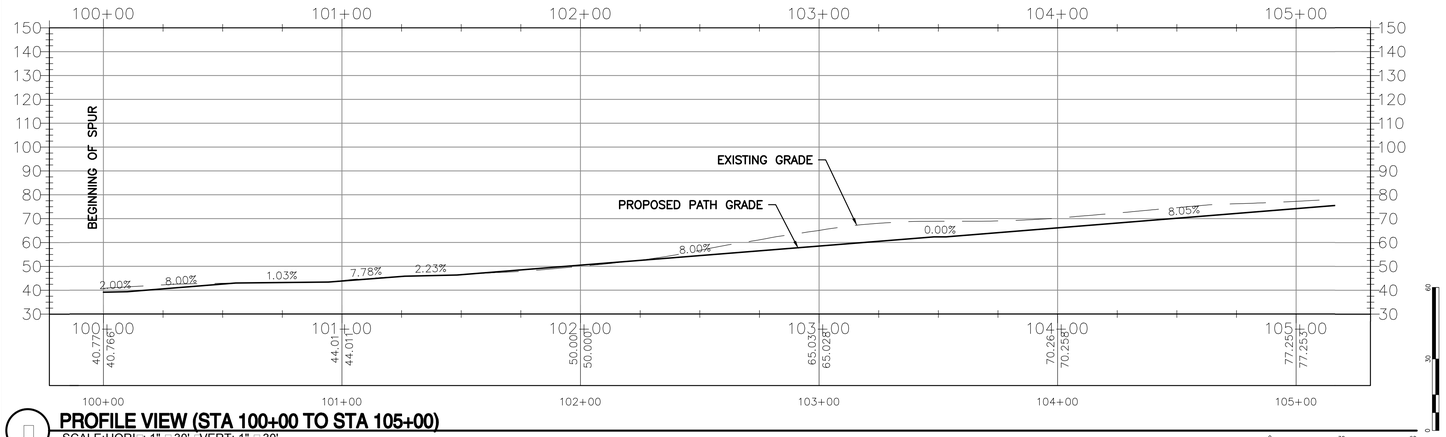
C105

FILE NO.

SHEET 7 OF 19



1 **SITE PLAN (STA 100+00 TO STA 105+00)**
SCALE: 1" = 30'



PROFILE VIEW (STA 100+00 TO STA 105+00)
SCALE: HORI.: 1" = 30' VERT: 1" = 30'

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Chk.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

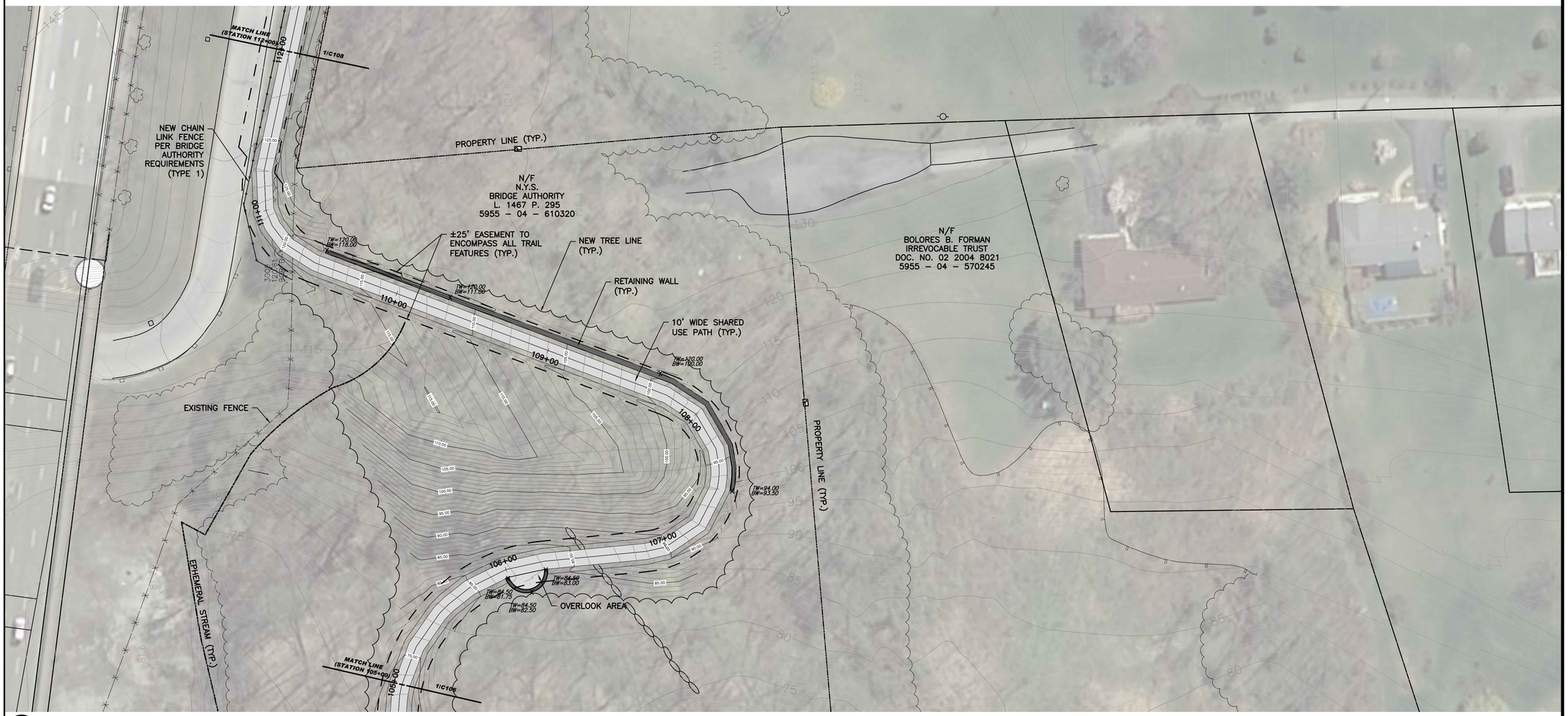
PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN
PLAN & PROFILE STA 100+00 – 105+00

CADD NO.	SCALE: BAR SCALE	CONTRACT:	JOB NO. N21800028	DR.BY JWG	DSN.BY JWG	CHK.BY DPB	APP.BY DPB

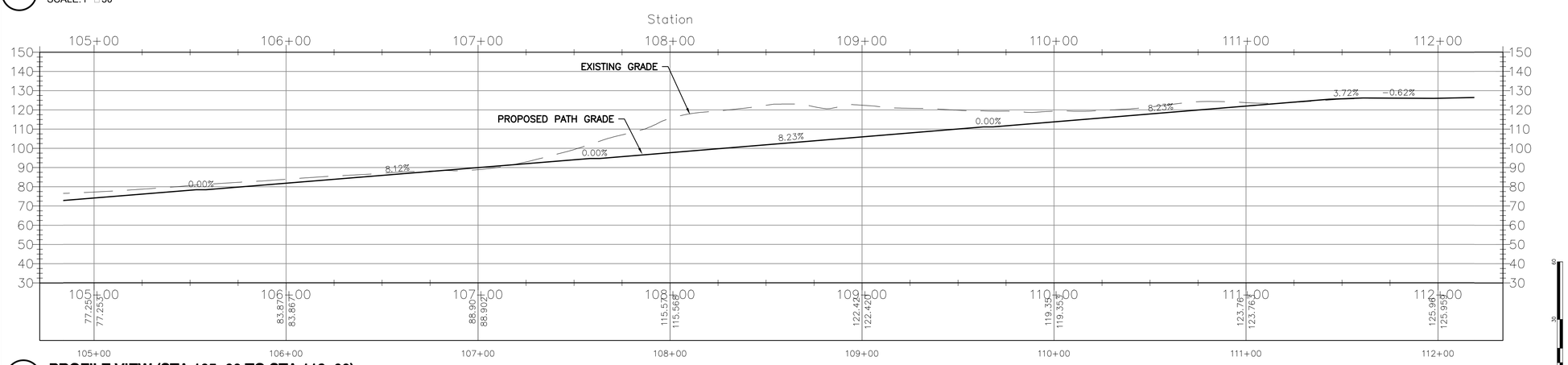
C106
FILE NO.

SHEET 8 OF 19



1 SITE PLAN (STA 105+00 TO STA 112+00)

SCALE:1" □ 30'



□ PROFILE VIEW (STA 105+00 TO STA 112+00)

SCALE:HORI□ 1" □ 30' □VERT: 1" □ 30'

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

PLAN & PROFILE STA 105+00 – 112+00

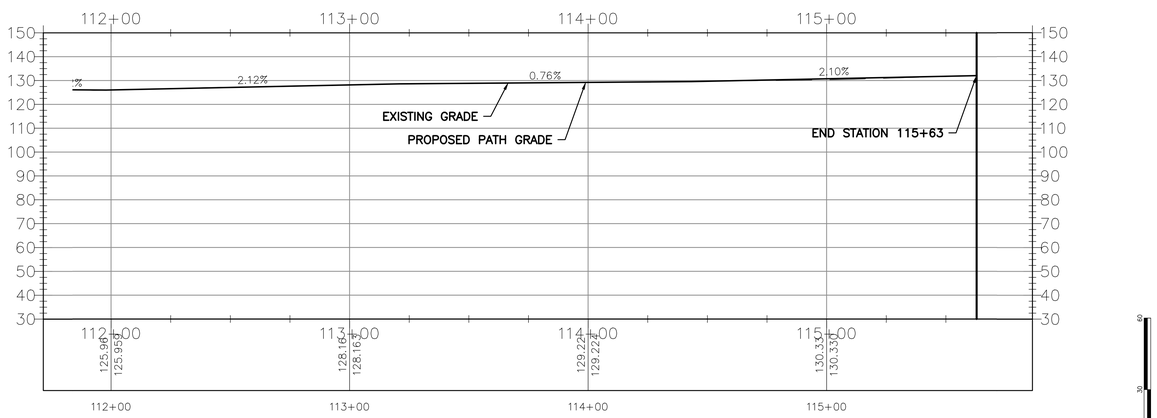
DR.BY	DSN.BY	CHK.BY	APP.BY
JWG	JWG	DPB	DPB

JOB NO. N21800028
CONTRACT:
SCALE: BAR SCALE
CADD NO.
FILE NO. C107

SHEET 9 OF 19



1 **SITE PLAN (STA 112+00 TO STA 115+63)**
SCALE:1" = 30'



□ **PROFILE VIEW (STA 112+00 TO STA 115+63**
SCALE:HORI: 1" = 30' VERT: 1" = 30'

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Dr.By	Ck.By	App.By	Description
					APPROVED

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

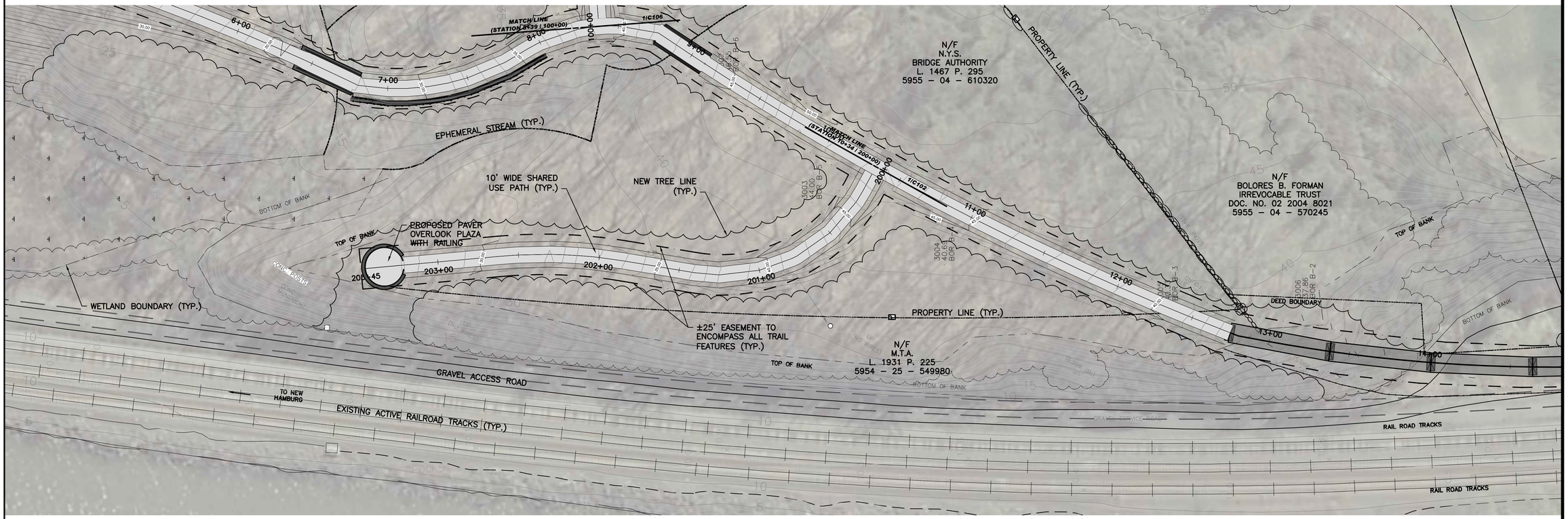
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

PLAN & PROFILE STA 112+00 – 115+63

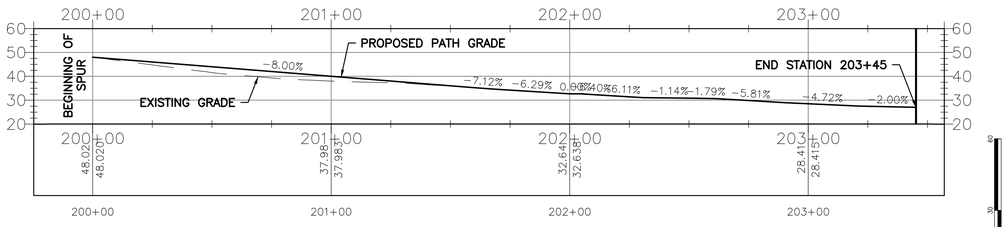
CADD NO.	SCALE: BAR SCALE	CONTRACT:	JOB NO. N21800028	DR.BY JWG	DSN.BY JWG	CHK.BY DPB	APP.BY DPB

FILE NO. C108

SHEET 10 OF 19



1 **SITE PLAN (STA 200+00 TO STA 203+45)**
SCALE: 1" = 30'



PROFILE VIEW (STA 200+00 TO STA 203+45)
SCALE: HORI: 1" = 30' VERT: 1" = 30'

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

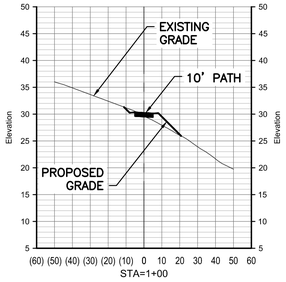
PLAN & PROFILE STA 200+00 – 203+45

CADD NO.	SCALE: BAR SCALE	CONTRACT:	JOB NO. N21B0028	DR.BY JWG	DSN.BY JWG	CHK.BY DPB	APP.BY DPB

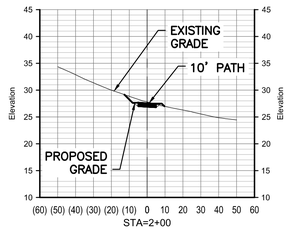
C109
FILE NO.

SHEET 11 OF 19

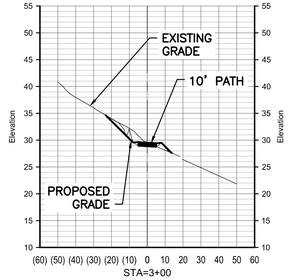
1
SCALE:
HORIZ = 40' VERT = 3'



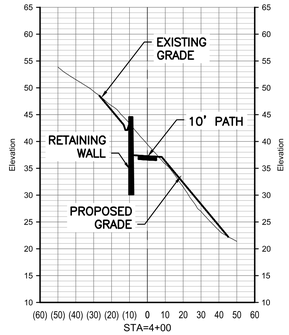
2
SCALE:
HORIZ = 40' VERT = 3'



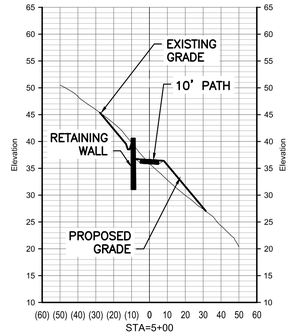
3
SCALE:
HORIZ = 40' VERT = 3'



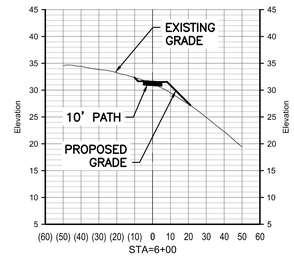
4
SCALE:
HORIZ = 40' VERT = 3'



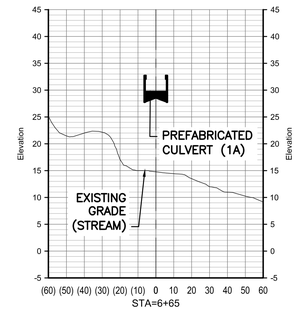
5
SCALE:
HORIZ = 40' VERT = 3'



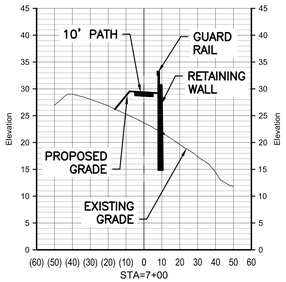
6
SCALE:
HORIZ = 40' VERT = 3'



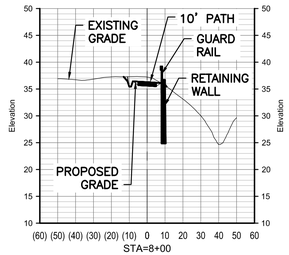
7
SCALE:
HORIZ = 40' VERT = 3'



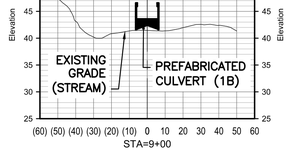
8
SCALE:
HORIZ = 40' VERT = 3'



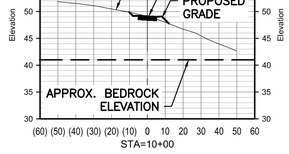
9
SCALE:
HORIZ = 40' VERT = 3'



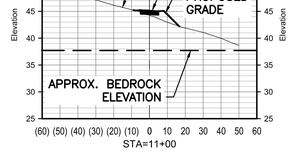
10
SCALE:
HORIZ = 40' VERT = 3'



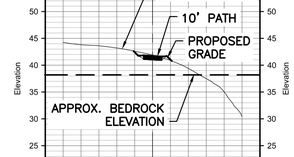
11
SCALE:
HORIZ = 40' VERT = 3'



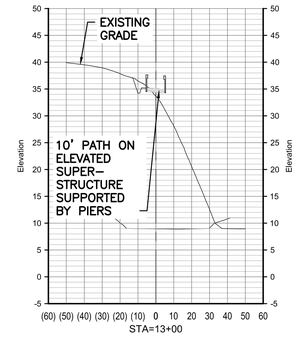
12
SCALE:
HORIZ = 40' VERT = 3'



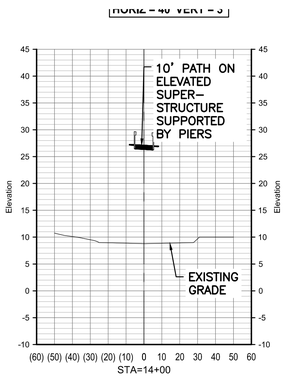
13
SCALE:
HORIZ = 40' VERT = 3'



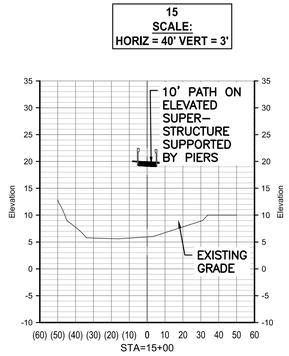
13
SCALE:
HORIZ = 40' VERT = 3'



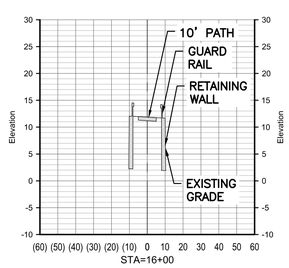
HORIZ = 40' VERT = 3'



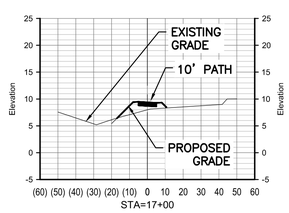
15
SCALE:
HORIZ = 40' VERT = 3'



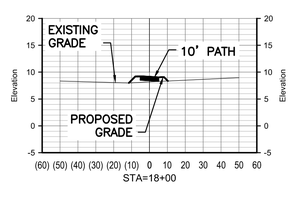
16
SCALE:
HORIZ = 40' VERT = 3'



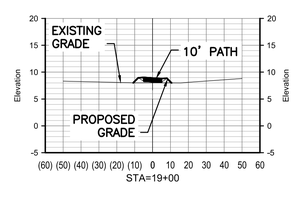
18
SCALE:
HORIZ = 40' VERT = 3'



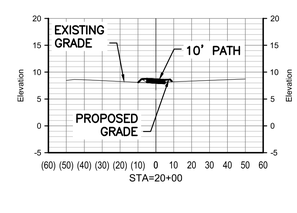
19
SCALE:
HORIZ = 40' VERT = 3'



20
SCALE:
HORIZ = 40' VERT = 3'



21
SCALE:
HORIZ = 40' VERT = 3'



Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN
TRAIL CROSS SECTIONS

APP.BY	CHK.BY	DSN.BY	DR.BY	JOB NO.	CONTRACT:	SCALE:	CADD NO.
DPB	DPB	JWG	JWG	N2180028		BAR SCALE	

C301
FILE NO.

22
SCALE:
HORIZ = 40' VERT = 3'

23
SCALE:
HORIZ = 40' VERT = 3'

24
SCALE:
HORIZ = 40' VERT = 3'

25
SCALE:
HORIZ = 40' VERT = 3'

26
SCALE:
HORIZ = 40' VERT = 3'

27
SCALE:
HORIZ = 40' VERT = 3'

28
SCALE:
HORIZ = 40' VERT = 3'

29
SCALE:
HORIZ = 40' VERT = 3'

30
SCALE:
HORIZ = 40' VERT = 3'

31
SCALE:
HORIZ = 40' VERT = 3'

32
SCALE:
HORIZ = 40' VERT = 3'

33
SCALE:
HORIZ = 40' VERT = 3'

34
SCALE:
HORIZ = 40' VERT = 3'

35
SCALE:
HORIZ = 40' VERT = 3'

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

TRAIL CROSS SECTIONS

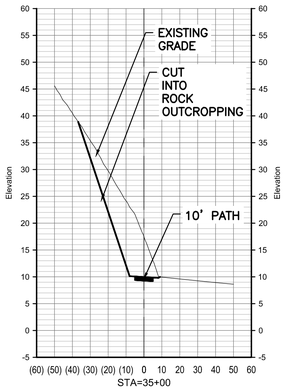
SCALE:	CONTRACT:	JOB NO.	DR.BY	DSN.BY	CHK.BY	APP.BY
BAR SCALE		N2180028	JWG	JWG	DPB	DPB

CADD NO.

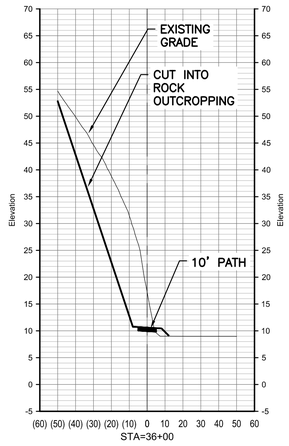
FILE NO.

C302

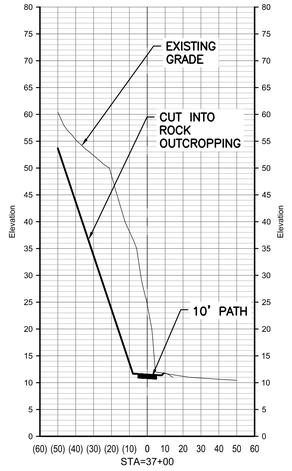
36
SCALE:
HORIZ = 40' VERT = 3'



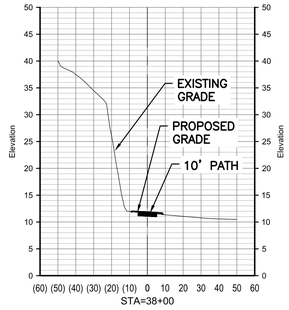
37
SCALE:
HORIZ = 40' VERT = 3'



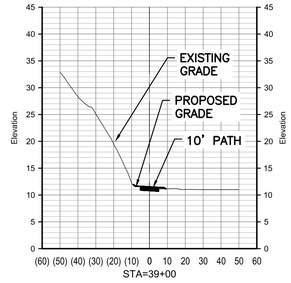
38
SCALE:
HORIZ = 40' VERT = 3'



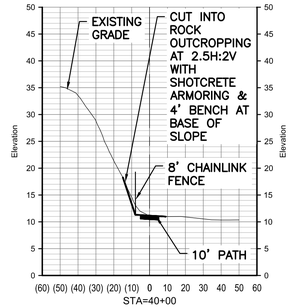
39
SCALE:
HORIZ = 40' VERT = 3'



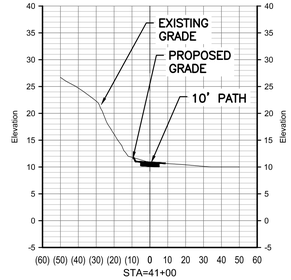
40
SCALE:
HORIZ = 40' VERT = 3'



41
SCALE:
HORIZ = 40' VERT = 3'



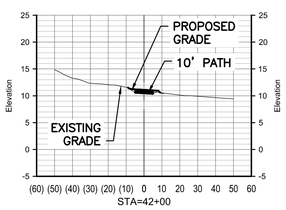
42
SCALE:
HORIZ = 40' VERT = 3'



NOTES:

1. SCALE EXISTING GRADE OF ALL LOOSE ROCK.
2. ARMOR UP TO ELEV. 20.0' WITH SHOTCRETE (WEEP BOTTOM).
3. 8' CHAIN LINK FENCE TO BE INSTALLED BETWEEN STA. 40+00 AND 41+00 – SEE PLANS.
4. DRAINAGE SWALE TO BE INSTALLED AT BASE OF SLOPE – SEE PLANS FOR LOCATION.

43
SCALE:
HORIZ = 40' VERT = 3'



Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

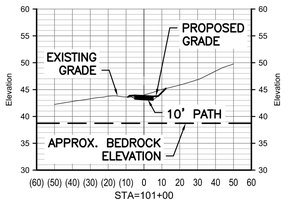
TRAIL CROSS SECTIONS

CADD NO.	SCALE: BAR SCALE	CONTRACT:	JOB NO. N21B0028	DR.BY JWG	DSN.BY JWG	CHK.BY DPB	APP.BY DPB

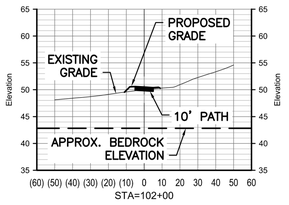
C303

FILE NO.

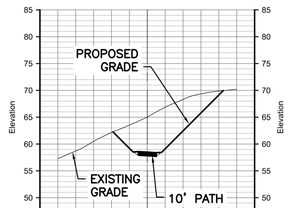
1
SCALE:
HORIZ = 40' VERT = 3'



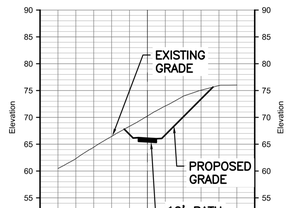
2
SCALE:
HORIZ = 40' VERT = 3'



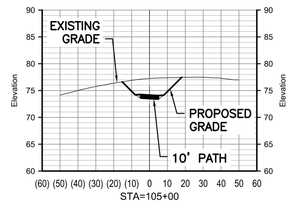
3
SCALE:
HORIZ = 40' VERT = 3'



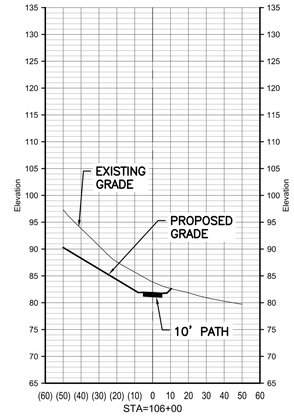
4
SCALE:
HORIZ = 40' VERT = 3'



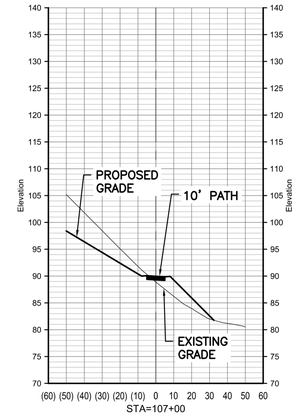
5
SCALE:
HORIZ = 40' VERT = 3'



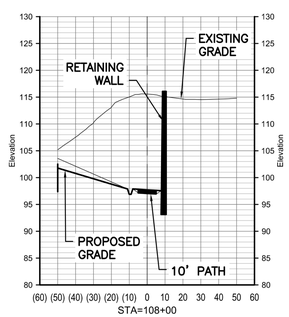
6
SCALE:
HORIZ = 40' VERT = 3'



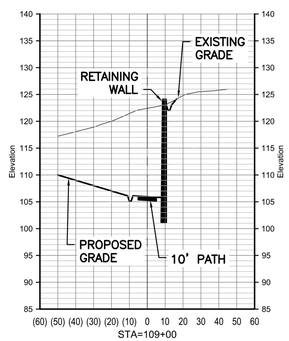
7
SCALE:
HORIZ = 40' VERT = 3'



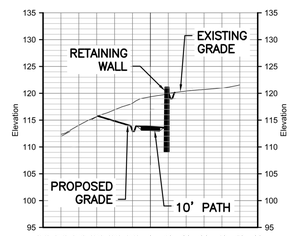
8
SCALE:
HORIZ = 40' VERT = 3'



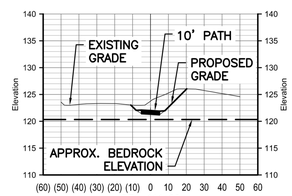
9
SCALE:
HORIZ = 40' VERT = 3'



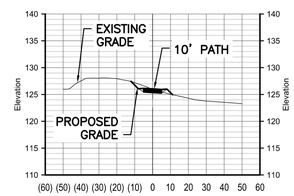
10
SCALE:
HORIZ = 40' VERT = 3'



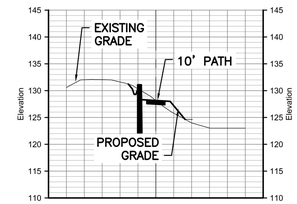
11
SCALE:
HORIZ = 40' VERT = 3'



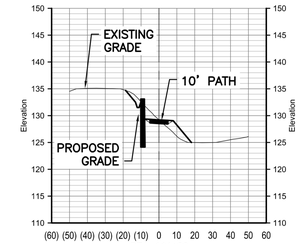
12
SCALE:
HORIZ = 40' VERT = 3'



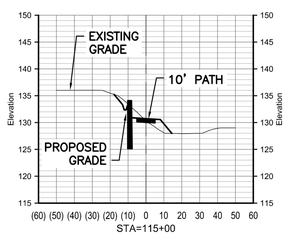
13
SCALE:
HORIZ = 40' VERT = 3'



14
SCALE:
HORIZ = 40' VERT = 3'



15
SCALE:
HORIZ = 40' VERT = 3'



Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Dr.By	Ck.By	App.By	Description
					APPROVED

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

TRAIL CROSS SECTIONS

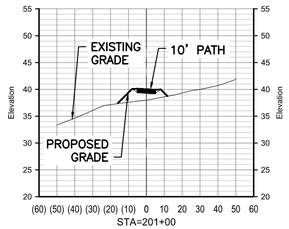
APP.BY	CHK.BY	DSN.BY	DR.BY	JOB NO.	CONTRACT:	SCALE:	CADD NO.
DPB	DPB	JWG	JWG	N21800028		BAR SCALE	

C304

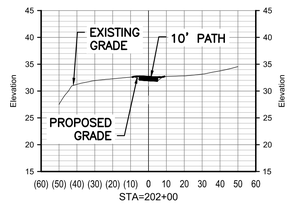
FILE NO.

SHEET 15 OF 19

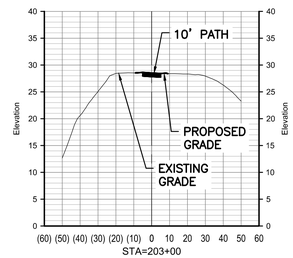
1
SCALE:
HORIZ = 40' VERT = 3'



2
SCALE:
HORIZ = 40' VERT = 3'



3
SCALE:
HORIZ = 40' VERT = 3'



Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
D	JULY 15, 2020	REVISED PROPOSED	A	P	P

DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

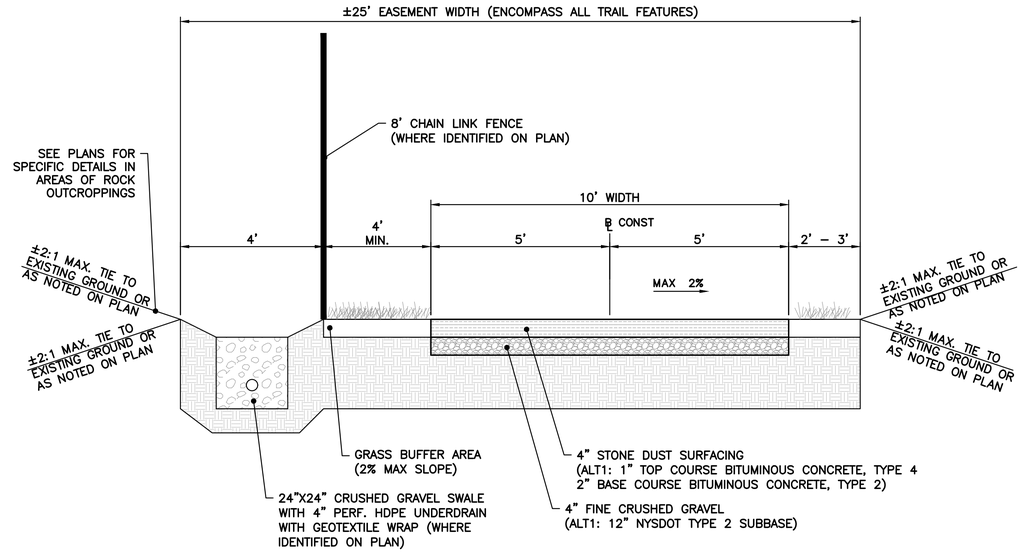
TRAIL CROSS SECTIONS

CADD NO.	SCALE: BAR SCALE	CONTRACT:	JOB NO. N21B0028	DR.BY JWG	DSN.BY JWG	CHK.BY DPB	APP.BY DPB

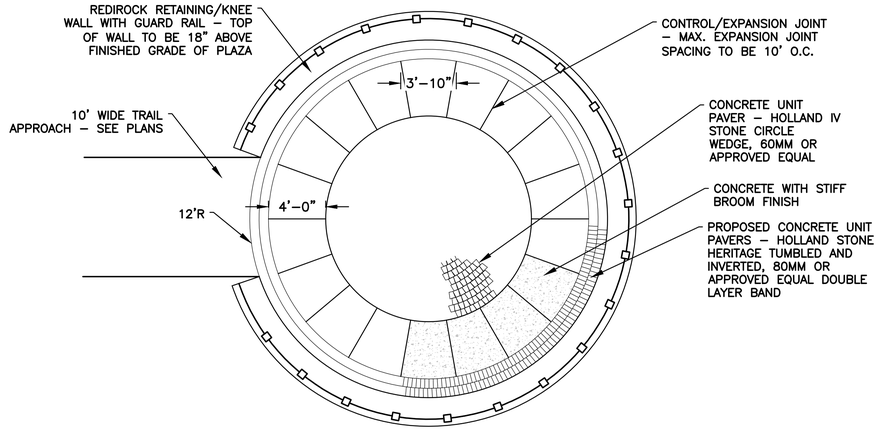
C305

FILE NO.

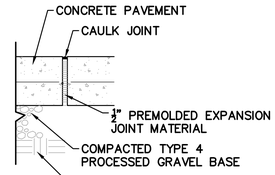
SHEET 16 OF 19



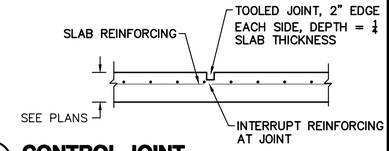
1 TYPICAL TRAIL SECTION
SCALE: N.T.S.



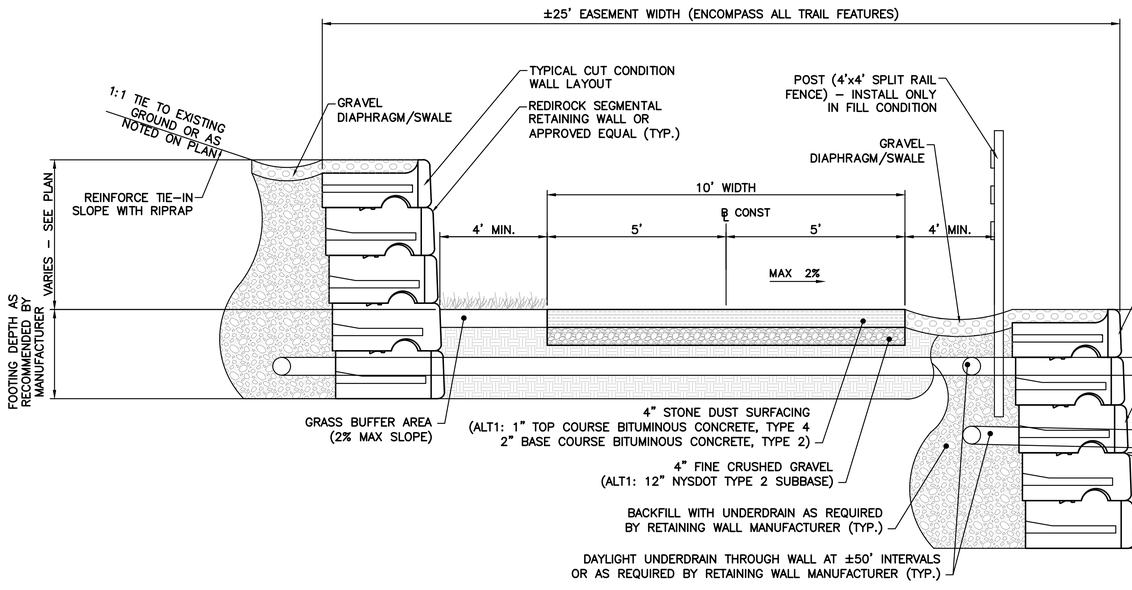
2 TYPICAL TRAILHEAD LAYOUT
SCALE: N.T.S.



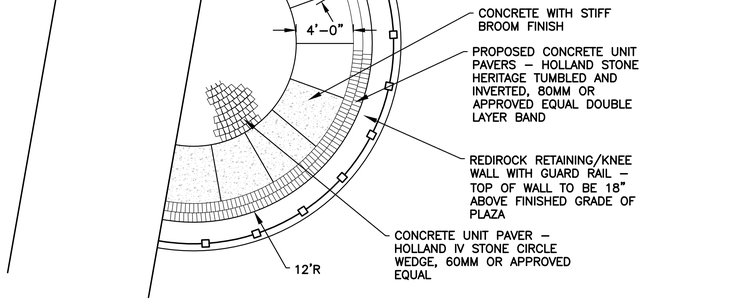
3 EXPANSION JOINT
SCALE: N.T.S.



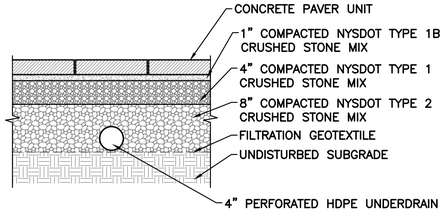
4 CONTROL JOINT
SCALE: N.T.S.



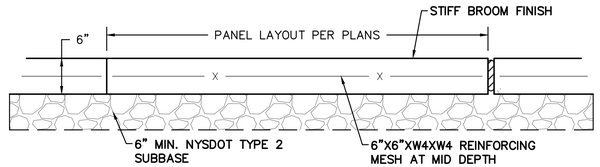
5 TYPICAL TRAIL SECTION WITH RETAINING WALLS
SCALE: N.T.S.



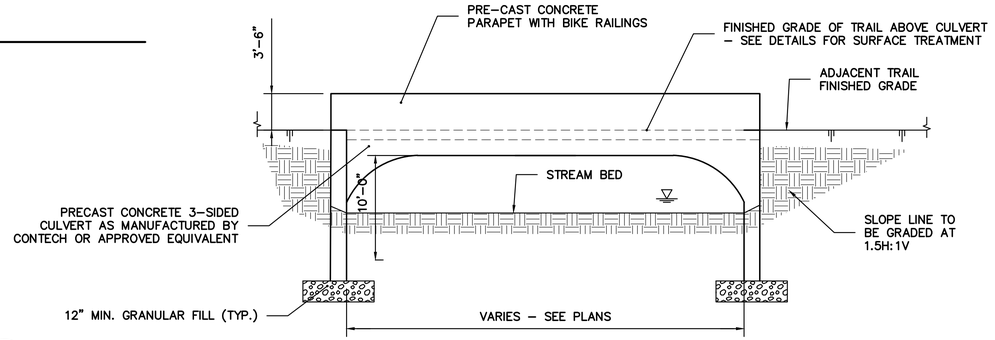
6 TYPICAL OVERLOOK LAYOUT
SCALE: N.T.S.



7 TYPICAL PAVER SECTION
SCALE: N.T.S.



8 TYPICAL CONCRETE SECTION
SCALE: N.T.S.



9 TYPICAL 3-SIDED CULVERT ELEVATION
SCALE: N.T.S.

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400
800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
A	P	P	R	O	V	E	D	JULY 15, 2020 DATE			

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK

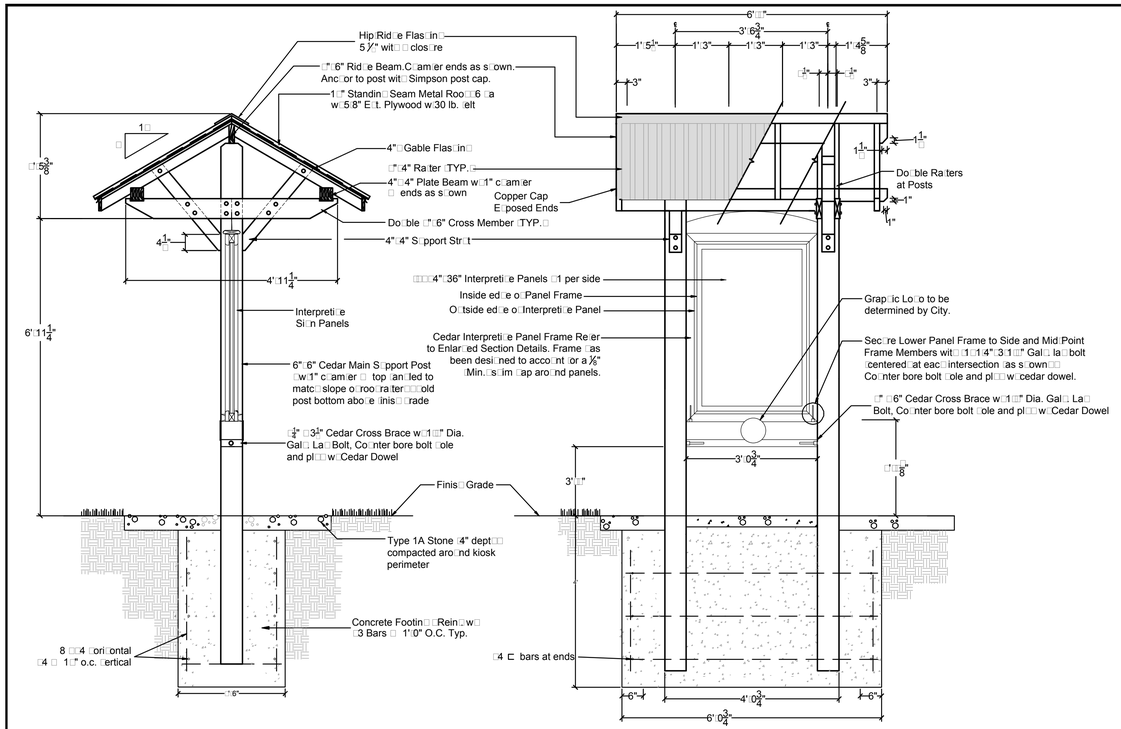
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN

TYPICAL DETAILS

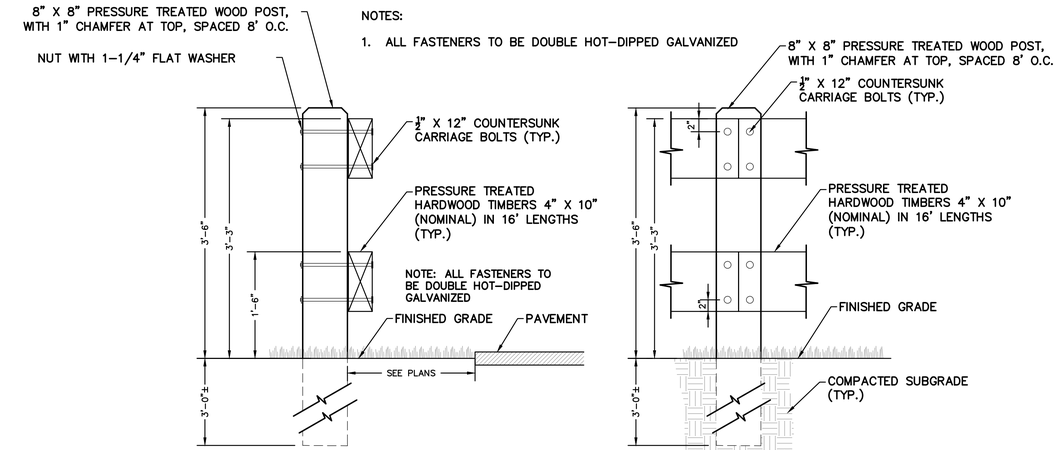
APP.BY	CHK.BY	DSN.BY	DR.BY	JOB NO.	CONTRACT:	SCALE:	CADD NO.
DPB	DPB	JWG	JWG	N21800028		N.T.S.	

C501 FILE NO.

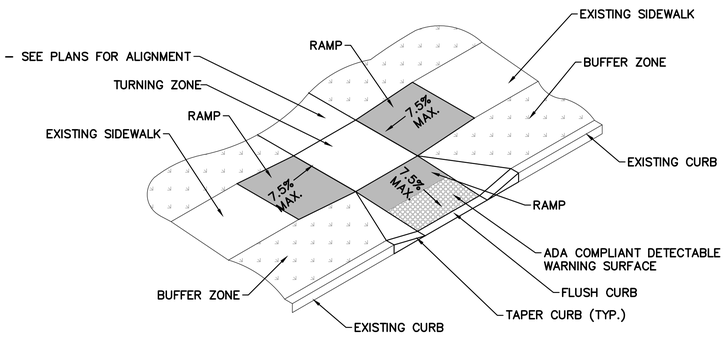
SHEET 17 OF 19



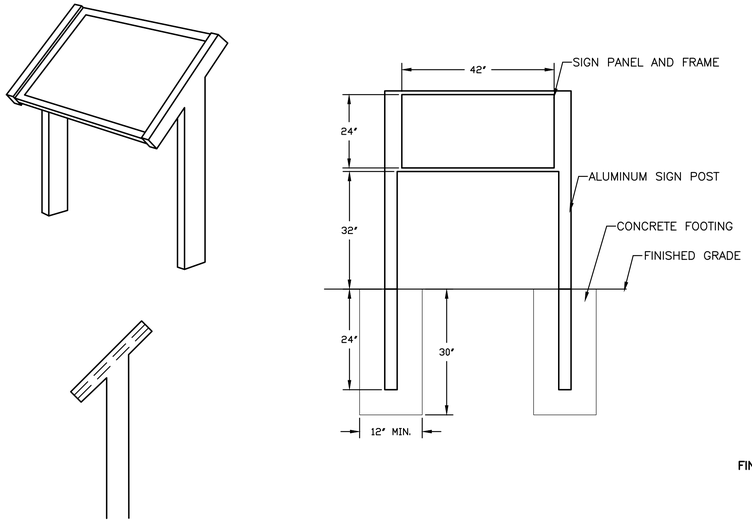
1 TYPICAL TRAILHEAD SIGN
SCALE: N.T.S.



2 SPLIT RAIL TIMBER FENCE
SCALE: N.T.S.



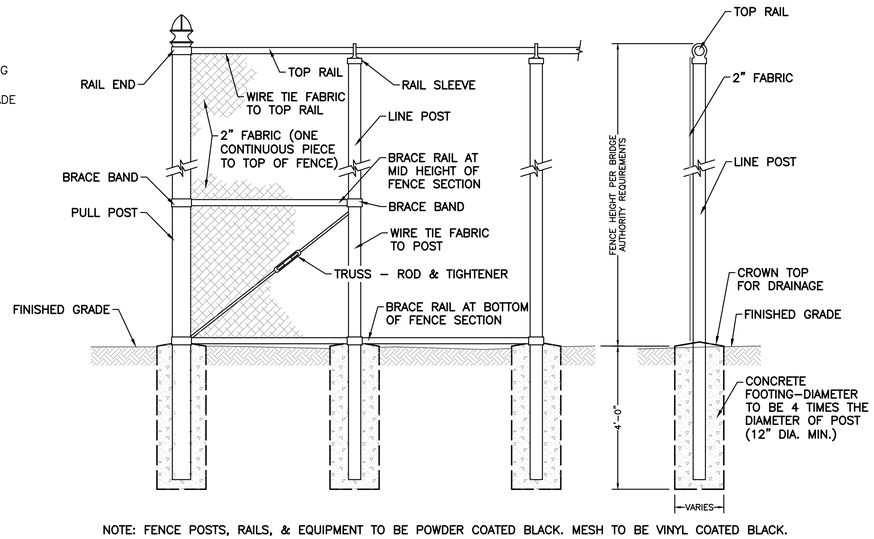
3 CURB RAMP
SCALE: N.T.S.



INFORMATIONAL SIGNAGE TYPE "B"

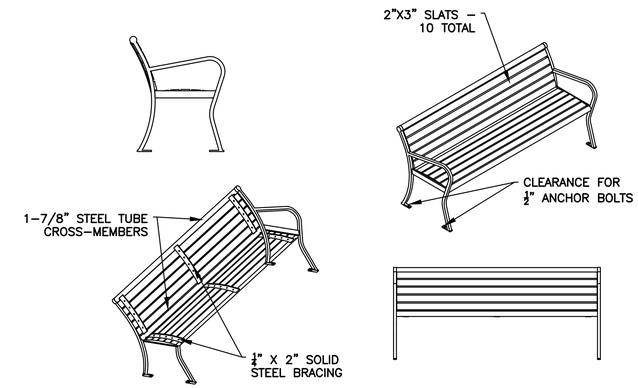
NOTES:
1. POSTS TO BE 2" X 6" RECTANGULAR ALUMINUM WITH STAINLESS STEEL HARDWARE.
2. SIGN FRAME TO ALLOW FOR A 24" BY 42" GRAPHIC PANEL.
3. POSTS TO BE INSTALLED A MINIMUM OF 24" BELOW GRADE IN CONCRETE FOOTING.
4. SIGN POST AND FRAME TO BE TEXTURE POWDER COATED "FOREST GREEN" IN COLOR.
5. SIGN FRAMES TO ALLOW FOR A PANEL THICKNESS OF .125".
6. SIGN FRAME WIDTH TO BE 3/4" AND PROVIDE A REMOVABLE TOP RAIL FOR PANEL INSTALLATION.
7. SIGNAGE TO BE AS MANUFACTURED BY VACKER INC., OR APPROVED EQUIVALENT.

4 TYPICAL INFORMATIONAL SIGN
SCALE: N.T.S.



NOTE: FENCE POSTS, RAILS, & EQUIPMENT TO BE POWDER COATED BLACK. MESH TO BE VINYL COATED BLACK.

5 CHAIN LINK FENCE
SCALE: N.T.S.



NOTES:
1. BENCH TO BE MODEL PRS-10 AS MANUFACTURED BY VICTOR STANLEY OR APPROVED EQUIVALENT.
2. FRAME TO BE POWDER COATED BLACK.
3. SLATS TO BE IPE WOOD.
4. ALL FABRICATED METAL COMPONENTS TO BE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED AND ELECTROSTATICALLY POWDER COATED.
5. BENCHES TO BE SURFACE MOUNTED PER MANUFACTURER'S RECOMMENDATIONS.

6 TYPICAL BENCH
SCALE: N.T.S.

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400
800.SAMPSON
www.westonandsampson.com

No.	Date	Description	Dr.By	Ck.By	App.By
		APPROVED			

JULY 15, 2020
DATE

REGISTERED PROFESSIONAL

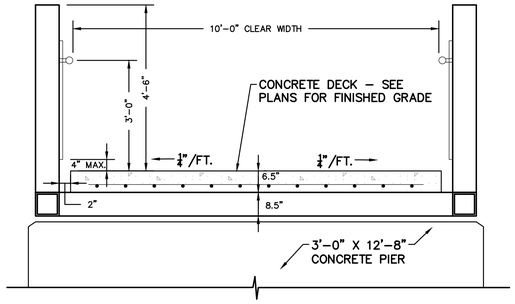
PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN
TYPICAL DETAILS

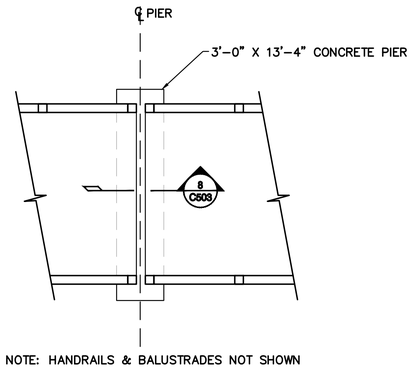
CADD NO.	SCALE:	CONTRACT:	JOB NO.	DR.BY	DSN.BY	CHK.BY	APP.BY
	N.T.S.		N21800028	JWG	JWG	DPB	DPB

FILE NO. C502

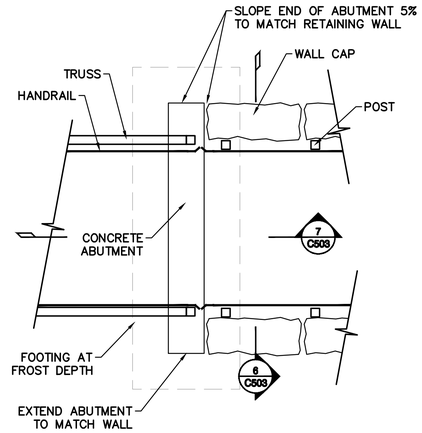
SHEET 18 OF 19



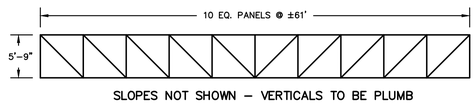
1 TYPICAL ELEVATED TRAIL SECTION
SCALE: N.T.S.



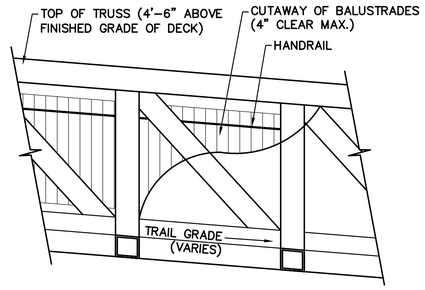
2 TYPICAL ELEVATED TRAIL PIER TRANSITION
SCALE: N.T.S.



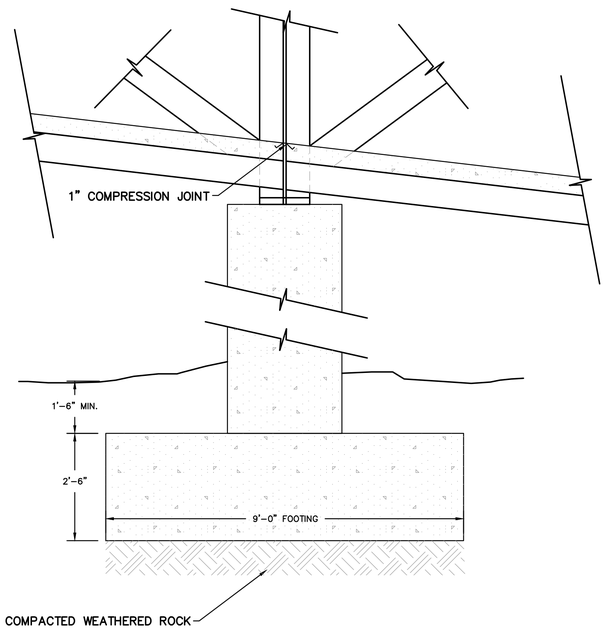
3 TYPICAL ELEVATED TRAIL ABUTMENT TRANSITION
SCALE: N.T.S.



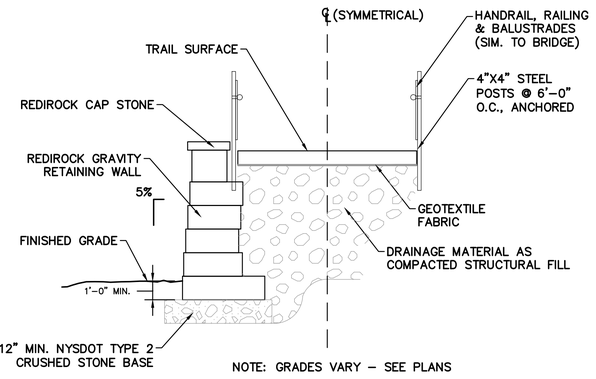
4 TYPICAL ELEVATED TRAIL ELEVATION
SCALE: N.T.S.



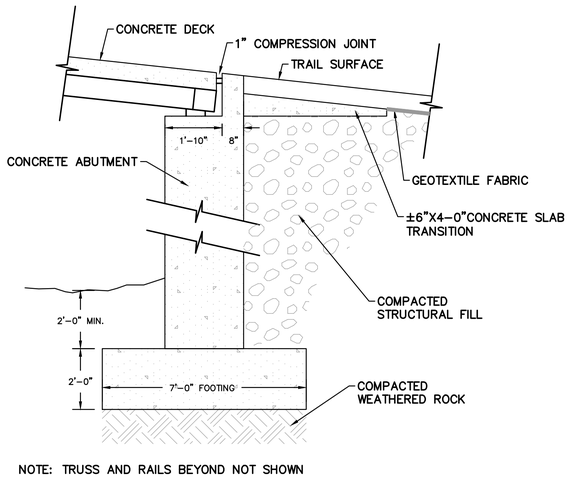
5 TYPICAL CROSS-SECTION THROUGH WALKWAY
SCALE: N.T.S.



8 TYPICAL ELEVATED TRAIL PIER SECTION
SCALE: N.T.S.



6 TYPICAL TRAIL ASCENT SECTION
SCALE: N.T.S.



7 TYPICAL ELEVATED TRAIL ABUTMENT SECTION
SCALE: N.T.S.

Weston & Sampson
1 Winner's Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description
D	JULY 15, 2020	APPROVED

Dr.By | Ck.By | App.By

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN
TYPICAL DETAILS

DR.BY	DSN.BY	CHK.BY	APP.BY
JWG	JWG	DPB	DPB

JOB NO. N2180028
CONTRACT:
SCALE: N.T.S.
CADD NO.

C503
FILE NO.

SHEET 19 OF 19

Appendix B – Geotechnical Evaluations

GEOTECHNICAL EVALUATION
HUDSON RIVER TRAIL
BEACON, NEW YORK

DENTE FILE NO. JB185059

Prepared For:

WESTON & SAMPSON
1 Winners Circle, Suite 130
Albany, NY 12205

Prepared By:

DENTE GROUP
Watervliet, New York

August 28, 2018

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

Copyright 2015 by Geoprofessional Business Association (GBA). Duplication, reproduction, or copying of this document, or its contents, in whole or in part, by any means whatsoever, is strictly prohibited, except with GBA's specific written permission. Excerpting, quoting, or otherwise extracting wording from this document is permitted only with the express written permission of GBA, and only for purposes of scholarly research or book review. Only members of GBA may use this document as a complement to or as an element of a geotechnical-engineering report. Any other firm, individual, or other entity that so uses this document without being a GBA member could be commiting negligent or intentional (fraudulent) misrepresentation.

TABLE OF CONTENTS

I. INTRODUCTION 1

II. SITE AND PROJECT DESCRIPTION 2

III. SUBSURFACE CONDITIONS 3

A. Published Information 3
B. Test Boring Investigation 3

IV. CONCLUSIONS AND RECOMMENDATIONS 5

A. General Site Evaluation 5
B. Seismic Design Considerations 5
C. Temporary Excavations and Permanent Slopes 5
D. Site Fill and Backfill 6
E. Bridge Foundations 7
F. Retaining Walls 7
G. Plan Review and Construction Monitoring 8

V. CLOSURE 8

APPENDICES

APPENDIX A Aerial and Site Photographs

APPENDIX B Dutchess County Soil Survey Information

APPENDIX C Boring Location Plans

APPENDIX D Subsurface Logs and Core Photographs

GEOTECHNICAL EVALUATION
HUDSON RIVER TRAIL
CITY OF BEACON, NEW YORK

Dente File No. JB185059

I. INTRODUCTION

This report presents the results of a geotechnical evaluation completed by the Dente Group to assist in planning for an extension of the Hudson River Trail in the City of Beacon, New York. The evaluation was completed in general accord with our proposal number PJB185400 which was approved by Weston & Sampson of Albany, New York.

In general, our scope of services for this project consisted of the following:

- Site reconnaissance by a Geotechnical Engineer,
- Layout and completion of eight test borings,
- Preparation of this report, which summarizes the results of our explorations and presents recommendations to assist in planning for the geotechnical related aspects of the project.

This report and the recommendations contained within it were developed for specific application to the site and construction planned, as we currently understand it. Corrections in our understanding, changes in the structure locations, their grades, loads, etc. should be brought to our attention so that we may evaluate their effect upon the recommendations offered in this report.

It should be understood that this report was prepared, in part, on the basis of a limited field exploration. The borings were advanced at discrete locations and the overburden soils sampled at specific depths. Conditions are only known at the locations and through the depths investigated. Conditions at other locations and depths may be different, and these differences may impact upon the conclusions reached and the

recommendations offered. For this reason, we strongly recommend that we be retained to provide site observation services during construction.

This report was prepared for informational purposes only and should not be considered part of the contract documents. It should be made available to interested parties in its entirety only. Should the data contained in this report not be adequate for the contractors' bidding purposes, the contractors may make their own investigations, tests, and analyses for use in bid preparation.

The recommendations offered in this report concerning the control of surface and subsurface waters, moisture or vapor membranes address conventional Geotechnical Engineering aspects only and are not to be construed as recommendations for controlling or providing an environment that would prohibit or control infestations of the structures or its surroundings with mold or other biological agents.

II. SITE AND PROJECT DESCRIPTION

The project will entail construction of the Beacon Segment of the Hudson River Trail from the MTA Rail Station north to the Newburgh-Beacon Bridge. The scope of this investigation and evaluation was limited to the segment of the Main Trail Alignment A, beginning at the steep slope adjacent to the Forman property and extending north to Trail Spur B which will extend to a Potential Trailhead along the Newburgh-Beacon Bridge Service Road. This general project area is shown on the aerial photograph in Appendix A.

Grading plans for the trail were not developed at the time this report was prepared. It is our understanding that the main trail will leave the level area adjoining the railroad at the base of the steep slope adjacent to the Forman property. Cuts will be made into the slope to achieve an acceptable inclination for the new trail. At the top of the slope the Main Trail will cross a small drainage course over a proposed bridge. Trail Spur B will diverge from the Main Trail on the north side of the bridge and extend up to the Service Road as shown on Sheets 3 and 4 of the Master Plan prepared by Weston & Sampson. Reduced copies of these plans are presented in Appendix C with our test boring locations marked on them.

The area of study is a sloping woodland with two drainage courses directing flow from east to west and ultimately to the Hudson River. Rock outcrops are present along the existing steep slope that the new trail will need to climb to reach the Service Road and Trailhead. Photographs of the general site conditions, including the rock outcrops are presented in Appendix A.

III. SUBSURFACE CONDITIONS

The subsurface conditions at the project site were determined through a review of published USDA Soil Survey and State geologic information along with a site specific test boring investigation as detailed below.

A. Published Information

The surficial soils at the site have been mapped by the USDA Soil Survey of Dutchess County as belonging to the Dutchess-Cardigan complex, Nassau-Cardigan complex, and Udorthents. The Dutchess and Nassau soils cover a majority of the site, with the Udorthents present only as a thin sliver of land adjacent to the Newburgh-Beacon Bridge Service Road. General information and mapping of these soils obtained from the National Cooperative Web Soil Survey is attached and summarized below.

The Dutchess, Cardigan, and Nassua soils are generally described as silt loam, channery loam, channery silt loam, and very channery silt loam. Unweathered bedrock is listed at depths more than 80 inches in the Dutchess soil, 20 inches in the Cardigan soils and 10 inches in the Nassau soils. Udorthents are generally described as gravelly loam and very gravelly loam with bedrock deeper than 80 inches.

Bedrock at the project site is mapped on the Geologic Map of New York as the Austin Glen Formations composed of greywacke and shale.

B. Test Boring Investigation

The subsurface conditions at the site were investigated by us through the completion of eight test borings at the approximate locations shown on the plans in Appendix C. Nine borings were originally planned, however, boring B-7 was deleted due to access limitations with the drill rig. The test borings were completed using a standard ATV rotary drill rig equipped with hollow stem augers. As the augers were advanced, the overburden soils were sampled and their relative density determined using split-spoon sampling techniques in general accord with ASTM D1586 procedures. In three borings, rock was cored per ASTM D2113.

The rock cores and representative portions of the recovered soil samples were transported to our office for visual classification by a Geotechnical Engineer who prepared the individual subsurface logs presented in Appendix D. The surface elevations shown in the upper right hand corner of the logs were determined by Weston & Sampson.

The subsurface logs should be reviewed for a description of the conditions encountered at the specific test locations. It should be understood that conditions are only known at the depths and locations sampled. Conditions at other depths and locations may be different.

Soil Profile

About 4 to 7 inches of topsoil was present at the test boring locations. In test boring B-1 adjacent to the Service Road, the topsoil was directly underlain by weathered bedrock. In the remaining borings, the depth to bedrock ranged between 2.2 and 16.5 feet. The approximate bedrock depths and elevations are tabulated below.

Boring	Ground Surface El.	Rock Surface Depth	Rock Surface El.
B-1	120.6	0.4	120.2
B-2	37.9	15.4	22.5
B-3	40.3	2.2	38.1
B-4	40.7	4.0	36.7
B-5	44.0	3.0	41.0
B-6	46.6	5.0	41.6
B-7	NA – Boring Deleted	-	-
B-8	53.1	15.4	37.7
B-9	59.4	16.5	42.9

Note: Depths and Elevations are in feet.

The overburden soils in borings B-2 through B-6 was composed of silty fine sand of a loose relative density. This extended to the bedrock surface in all but test boring B-2 where a layer of compact to very compact silty sand and gravel was found between the upper sequence of silty fine sand and rock surface.

In test borings B-8 and B-9, the overburden was composed of glacio-lacustrine silt and clay which extended to bedrock in test boring B-9. In test boring B-8 a thin layer of compact silty sand and gravel, similar to that found in boring B-2, was present between the silt and clay and bedrock surface.

The bedrock cores obtained in test borings B-1, B-3, and B-4 revealed gray shale which was generally medium hard to hard, weathered, thin bedded, and fractured to highly fractured. Complete and/or partial loss of drilling water was lost into fractures in the rock as the coring was performed. Photographs of the rock cores are presented with the test boring logs. In some cases, it was possible to auger several feet into the weathered rock. For example, in borings B-5 and B-6, the augers were advanced 7 and 5 feet, respectively, below the rock surface.

Groundwater Conditions

Within the depths explored, groundwater was present only in test boring B-8 at a depth of 11.5 feet after leaving the augers in place overnight, and in boring B-9 at a depth of 13.2 feet at completion of drilling. Groundwater levels will fluctuate with seasonal variations in precipitation and runoff and at times it may be found perched in the shallow overburden soils and weathered upper layers of rock.

IV. GEOTECHNICAL RECOMMENDATIONS

A. General Site Evaluation

From a geotechnical standpoint, planning for design and construction will be impacted primarily by the variable and often shallow depths to bedrock. The rock was generally weathered and fractured within the depths explored and in this condition its excavation should be possible using an adequately sized track-mounted backhoe equipped with rock teeth. A pneumatic hammer may be employed as required to remove pinnacles of sound rock. If extensive deep rock excavation is expected, based on the grading plans yet to be developed, blasting may be considered if permitted in this location. If such deep rock excavations are planned, additional rock cores can be performed to assist in developing plans and costs for its removal.

The following report sections provide detailed recommendations to assist in planning for design and construction. We should review plans and specifications prior to their release for bidding to allow us to refine our recommendations, if required, and confirm that our recommendations were properly interpreted and applied.

B. Seismic Design Considerations

For seismic design purposes, we evaluated the site conditions in accord with Section 1613 of the International Building Code (2015) adopted by New York State. On this basis, it was determined that Seismic Site Class “C – Very Dense Soil and Soft Rock Profile” is applicable to this project. Based upon the composition and relative density of the site soils, their liquefaction should not occur in response to earthquake motions.

C. Temporary Excavations and Permanent Slopes

As previously discussed, bedrock was generally weathered and fractured within the depths explored and in this condition its excavation should be possible using an adequately sized track-mounted backhoe equipped with rock teeth. A pneumatic hammer may be employed as required to remove pinnacles of sound rock. If extensive deep rock excavation is expected, based on the grading plans yet to be developed, blasting may be considered if permitted in this location. If blasting is planned it should

be performed by experienced personnel only with the peak particle velocity monitored and limited to less than two inches per second at the nearest property line and new or existing structures. Standard track-mounted backhoes should be adequate for excavation of the overburden soils at this site.

If groundwater is encountered in the site excavations, the installation of interceptor trenches and/or standard sump and pump methods of dewatering should be adequate to lower the water levels temporarily as required for the new construction. If springs or continuous flows of groundwater are encountered, permanent drainage control should be designed and implemented accordingly based upon the conditions and locations encountered.

For planning purposes, it should be assumed that temporary excavations in the silty fine sand soils and weathered rock must be inclined no steeper than 1V:1.5H as required for OSHA Type C materials. In the silt and clay soils found in borings B-8 and B-9, the temporary slopes may be steepened to the 1V:1H allowable for an OSHA Type B material. It may be possible to steepen slopes in bedrock, but this should be based upon review of the excavations by a Geotechnical Engineer subject to the orientation of bedding plans and quality of the rock.

For preliminary planning purposes it should be assumed that permanent cut slopes in bedrock must be no steeper than 1V:2H. This relatively flat slope is recommended due to the weathered condition of the rock and the steep bedding planes observed in the outcrops and cores. Similar to temporary slopes, it may be possible to steepen the permanent slopes in bedrock, but this should be based upon review of the excavations by a Geotechnical Engineer subject to the orientation of bedding plans and quality of the rock.

For preliminary planning purposes fill slopes and cut slopes in the overburden should be made no steeper than 1V:2.5H. If steeper slopes are desired, they should be reviewed by a Geotechnical Engineer on a case by case basis. All final slopes should be thickly vegetated or provided with appropriate cover to inhibit erosion.

D. Site Fill and Backfill

The silty fine sand soils found in a large portion of the site should be suitable for reuse as fill and backfill for the trail construction. Likewise, excavated bedrock may be considered for reuse provided it is broken into a well graded mix of fine to coarse size particles. The maximum particle size should be limited to 2/3 the thickness of the fill layer being placed. For example, if the fills are placed in maximum 12 -inch thick layers

the maximum particle size should be 8-inches. The silt and clay soils found in test borings B-8 and B-9 are less suitable for reuse, and for planning purposes it is recommended that they be used in landscape areas only and not directly beneath the trail or new structures.

The fills and backfills should be placed in uniform loose layers no more than about one (1) foot in thickness where heavy vibratory compaction equipment is used. Smaller lifts should be used where hand operated equipment is required for compaction. Each lift should be compacted to not less than 95 percent of the maximum dry density for the soil which is established by the Modified Proctor Compaction Test, ASTM D1557. In landscape areas, the compaction may be reduced to 90 percent of maximum dry density.

E. Bridge Foundations

The bridge foundations should be seated on weathered bedrock at a depth of at least four feet below final grade to provide frost protection. The bearing surfaces should be cleaned of loose soil and rock or, if the rock is very weathered, its surface should be thoroughly compacted with a mechanical tamper to densify the soils loosened by the excavation process. All final bearing grades should be relatively firm, stable, and free of loose soil, mud, water, and frost.

The foundations may be proportioned for a maximum net allowable bearing pressure equal to 6,000 pounds per square foot. Assuming standard care is used in preparing the bearing grades, we estimate that total foundation settlement should be less than one-half (1/2) inch. The settlements should occur quickly as construction is completed and each load increment is applied.

F. Retaining Walls

The design of site retaining walls where soils are level on both the retained and resisting sides of the walls, may proceed using the following unfactored parameters. The design parameters assume that the backfill consists of on-site silty fine sand or well graded excavated rock. Silt and clay should not be reused as wall backfill.

- Soils Angle of Internal Friction (φf) = 30 degrees
- Coefficient of At-Rest Earth Pressure = 0.50
- Coefficient of Active Earth Pressure = 0.33
- Coefficient of Passive Earth Pressure = 3.0
- Total Unit Weight of Compacted Soil = 120 pcf
- Coefficient of Sliding Friction Soil ($\tan\varphi f$) = 0.40

Foundation drains and/or weep holes should be installed as required to prevent surface infiltration and groundwater from becoming trapped in the wall backfill soils.

G. Plan Review and Construction Monitoring

The Dente Group should be retained to review plans and specifications related to site grading, foundations and earthwork prior to their release for bidding to confirm that the recommendations contained herein were properly interpreted and applied.

It should be understood that the actual subsurface conditions that exist across this site will only be known when the site is excavated. For this reason, we should be retained to monitor earthwork and bearing grade preparations. The presence of the Geotechnical Engineer during the earthwork and foundation construction phases will allow validation of the subsurface conditions assumed to exist for this study and the design recommended in this report. We believe this construction sequence observation and testing should be provided by us as a consultant to the Owner, Architect or Construction Manager. We do not believe these services should be provided through the general or earthwork contractor.

V. CLOSURE

This report was prepared for specific application to the project site and the construction planned using methods and practices common to Geotechnical Engineering in the area and at the time of its preparation. No other warranty, either expressed or implied, is made. Should questions arise or if we may be of any other service, please contact us at your convenience.

Prepared by,
Dente Group, A Terracon Company

Edward C. Gravelle, P.E.
Senior Engineer

Fred A. Dente, P.E.
Principal

APPENDIX A

AERIAL AND SITE PHOTOGRAPHS

HUDSON RIVER TRAIL
City of Beacon, New York



HUDSON RIVER TRAIL - BEACON SEGMENT
CITY OF BEACON, NEW YORK



Looking north at slope to be traversed by new trail.



General view of elevated portion of site and drainage course east of railroad tracks.



View of slope with rock outcrops near the Newburgh-Beacon Bridge Service Road.



General view of elevated portion of site and drainage course east of railroad tracks.



Steep bedding in rock outcrop on slope near Newburgh-Beacon Bridge Service Road



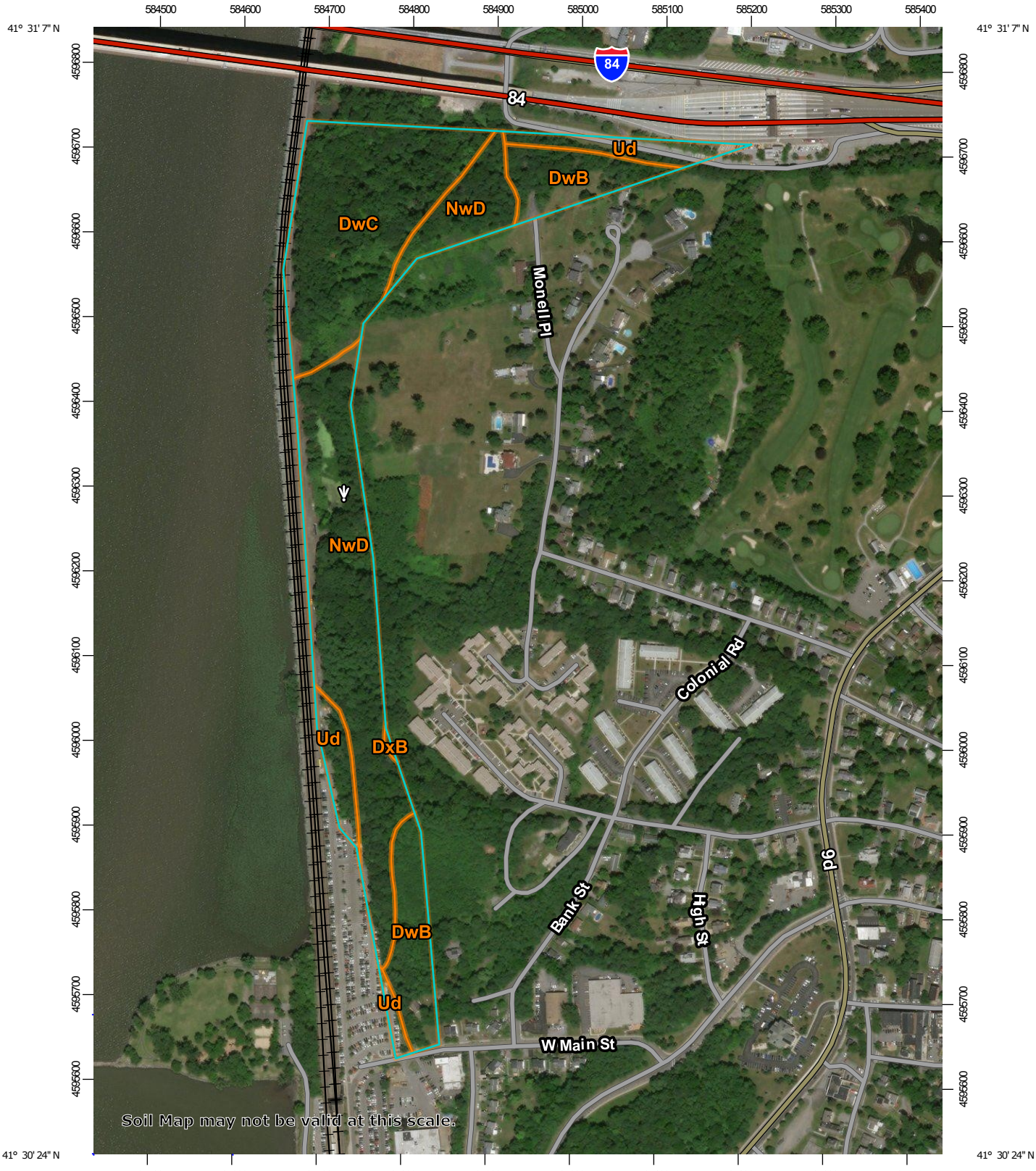
Rock outcrop on slope near Newburgh-Beacon Bridge Service Road

APPENDIX B

DUTCHESS COUNTY SOIL SURVEY INFORMATION

HUDSON RIVER TRAIL
City of Beacon, New York

Soil Map—Dutchess County, New York
(HUDSON RIVER TRAIL)



Map Scale: 1:6,480 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N 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 1:24,000.

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: Dutchess County, New York
Survey Area Data: Version 14, Oct 8, 2017

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

Date(s) aerial images were photographed: Oct 7, 2013—Feb 26, 2017

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
DwB	Dutchess-Cardigan complex, undulating, rocky	5.3	16.8%
DwC	Dutchess-Cardigan complex, rolling, rocky	10.1	31.9%
DxB	Dutchess-Cardigan-Urban land complex, undulating, rocky	0.1	0.2%
NwD	Nassau-Cardigan complex, hilly, very rocky	13.2	41.7%
Ud	Udorthents, smoothed	3.0	9.4%
Totals for Area of Interest		**31.8**	**100.0%**

Map Unit Description

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

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

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

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

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

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

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

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

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

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

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

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Dutchess County, New York

DwB—Dutchess-Cardigan complex, undulating, rocky

Map Unit Setting

National map unit symbol: 9rfn
Elevation: 50 to 1,000 feet

Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Dutchess and similar soils: 40 percent
Cardigan and similar soils: 30 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dutchess

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from phyllite, slate, schist, and shale

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 28 inches: silt loam
H3 - 28 to 86 inches: channery silt loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Cardigan

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex

Parent material: Loamy till or colluvium derived from phyllite, slate, shale, and schist

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 20 inches: channery loam
H3 - 20 to 30 inches: channery silt loam
H4 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Georgia

Percent of map unit: 10 percent
Hydric soil rating: No

Massena

Percent of map unit: 9 percent
Hydric soil rating: No

Nassau

Percent of map unit: 9 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: Unranked

Sun

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

DwC—Dutchess-Cardigan complex, rolling, rocky

Map Unit Setting

National map unit symbol: 9rfp
Elevation: 50 to 1,000 feet
Mean annual precipitation: 41 to 47 inches

Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Dutchess and similar soils: 40 percent
Cardigan and similar soils: 30 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dutchess

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from phyllite, slate, schist, and shale

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 28 inches: silt loam
H3 - 28 to 86 inches: channery silt loam

Properties and qualities

Slope: 5 to 16 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Cardigan

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till or colluvium derived from phyllite, slate, shale, and schist

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 20 inches: channery loam
H3 - 20 to 30 inches: channery silt loam
H4 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 16 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Georgia

Percent of map unit: 10 percent
Hydric soil rating: No

Massena

Percent of map unit: 9 percent
Hydric soil rating: No

Nassau

Percent of map unit: 9 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: Unranked

Sun

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

DxB—Dutchess-Cardigan-Urban land complex, undulating, rocky

Map Unit Setting

National map unit symbol: 9rfr
Elevation: 50 to 1,000 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F

Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Dutchess and similar soils: 25 percent
Cardigan and similar soils: 25 percent
Urban land: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dutchess

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from phyllite, slate, schist, and shale

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 28 inches: silt loam
H3 - 28 to 86 inches: channery silt loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Cardigan

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till or colluvium derived from phyllite, slate, shale, and schist

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 20 inches: channery loam
H3 - 20 to 30 inches: channery silt loam
H4 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Urban Land

Typical profile

H1 - 0 to 6 inches: variable

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 10 percent
Hydric soil rating: No

Georgia

Percent of map unit: 5 percent
Hydric soil rating: No

Nassau

Percent of map unit: 5 percent
Hydric soil rating: No

Massena

Percent of map unit: 4 percent
Hydric soil rating: No

Sun

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

NwD—Nassau-Cardigan complex, hilly, very rocky

Map Unit Setting

National map unit symbol: 9rhf
Elevation: 600 to 1,800 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Nassau and similar soils: 45 percent
Cardigan and similar soils: 30 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nassau

Setting

Landform: Benches, ridges, till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 5 inches: channery silt loam
H2 - 5 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Cardigan

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till or colluvium derived from phyllite, slate, shale, and schist

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 20 inches: channery loam
H3 - 20 to 30 inches: channery silt loam
H4 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Dutchess

Percent of map unit: 10 percent
Hydric soil rating: No

Sun

Percent of map unit: 10 percent
Landform: Depressions
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: Unranked

Ud—Udorthents, smoothed

Map Unit Setting

National map unit symbol: 9rj7

Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, smoothed, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Smoothed

Typical profile

H1 - 0 to 4 inches: gravelly loam
H2 - 4 to 70 inches: very gravelly loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Urban land

Percent of map unit: 10 percent
Hydric soil rating: Unranked

Udorthents, wet substratum

Percent of map unit: 10 percent
Hydric soil rating: No

Unnamed soils, undisturbed

Percent of map unit: 4 percent
Hydric soil rating: Unranked

Rock outcrop

Percent of map unit: 1 percent

Hydric soil rating: Unranked

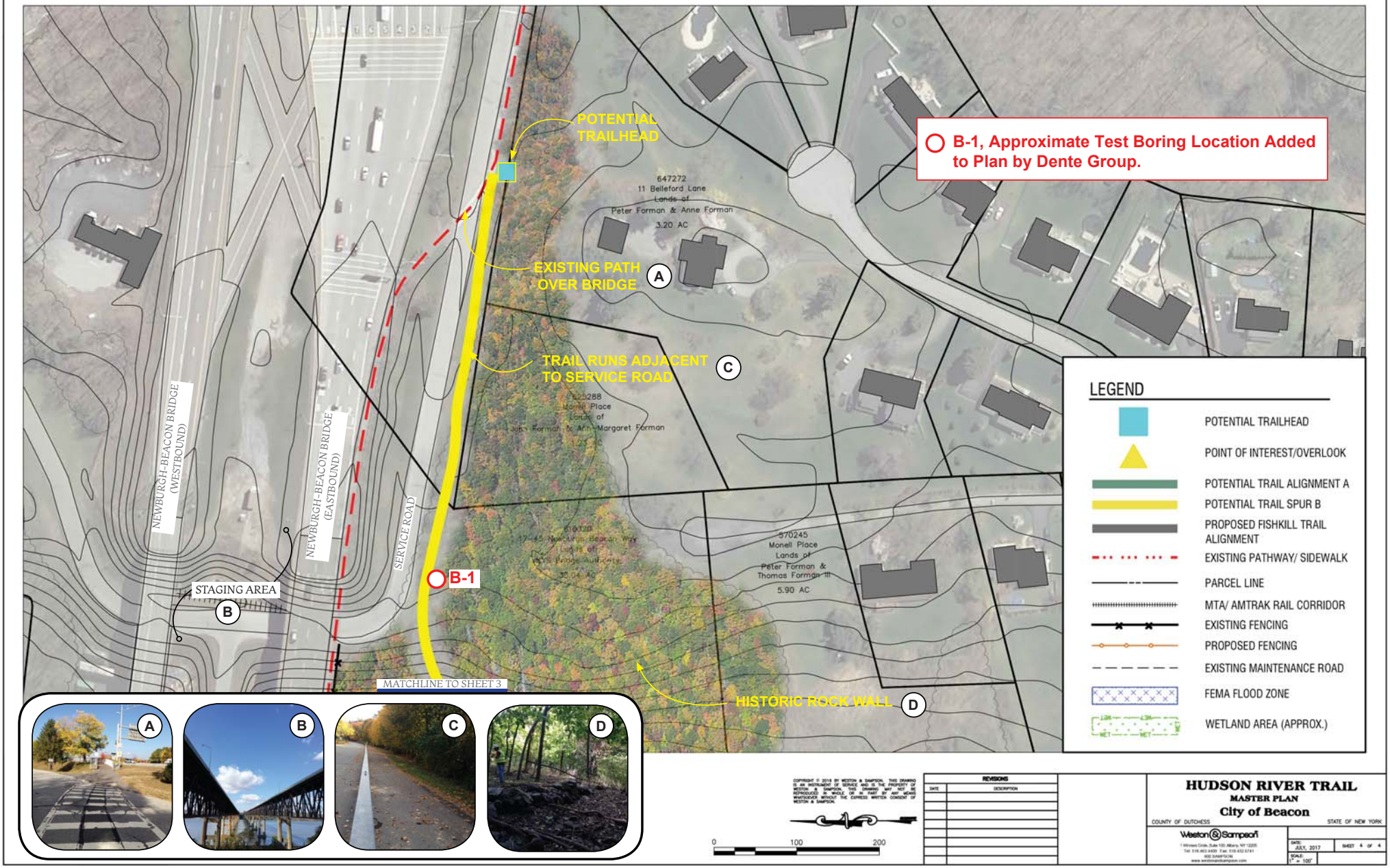
Data Source Information

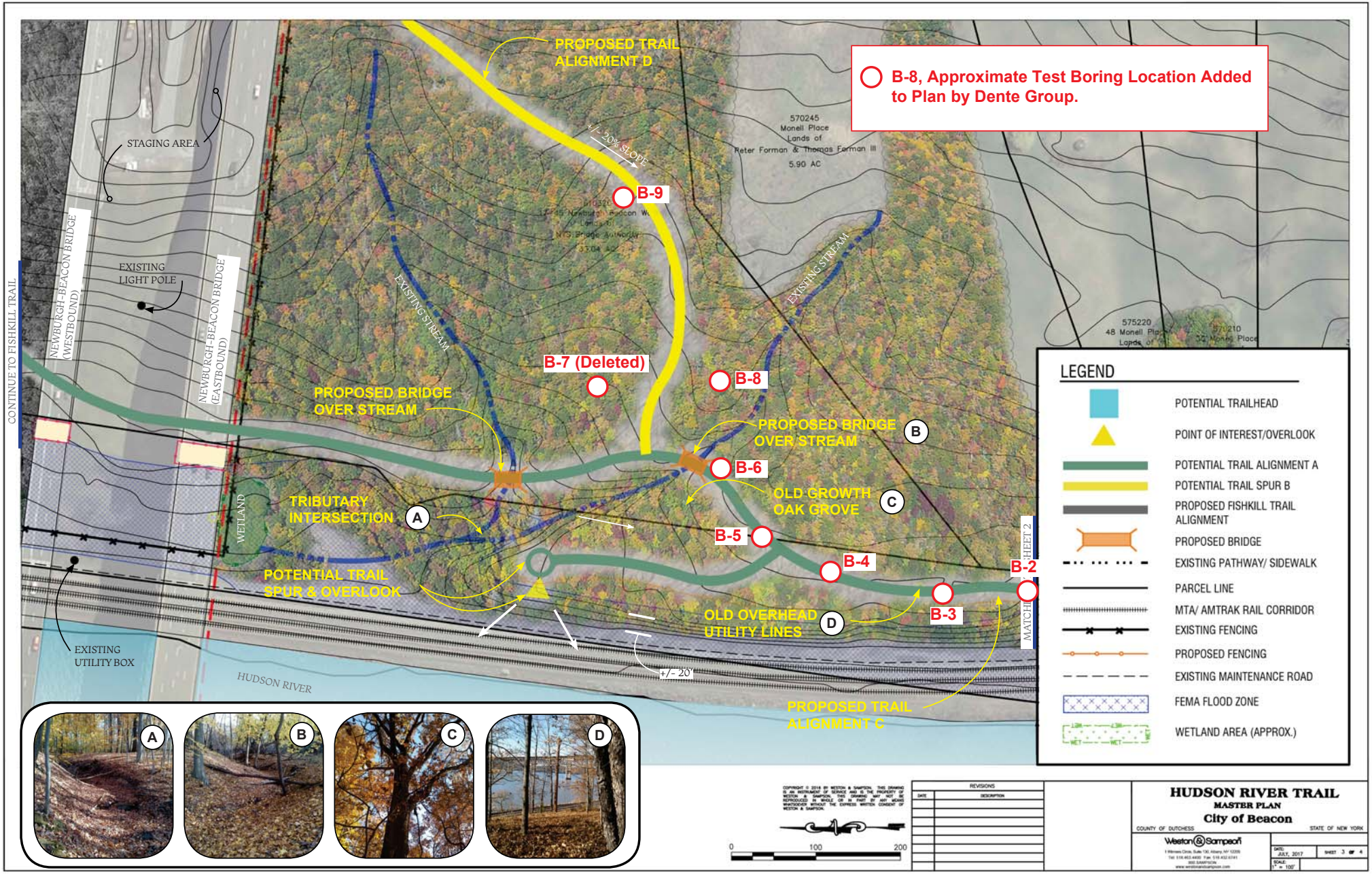
Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 14, Oct 8, 2017

APPENDIX C

BORING LOCATION PLAN

HUDSON RIVER TRAIL
City of Beacon, New York


POTENTIAL TRAILHEAD
B-1, Approximate Test Boring Location Added to Plan by Dente Group.
647272
11 Belleford Lane
Lands of
Peter Forman & Anne Forman
3.20 AC
EXISTING PATH OVER BRIDGE
A
TRAIL RUNS ADJACENT TO SERVICE ROAD
C
525288
Monell Place
Lands of
John Forman & Ann Margaret Forman
1.25 AC
570245
Monell Place
Lands of
Peter Forman &
Thomas Forman III
5.90 AC
NEWBURGH-BEACON BRIDGE (WESTBOUND)
NEWBURGH-BEACON BRIDGE (EASTBOUND)
SERVICE ROAD
STAGING AREA
B
B-1
MATCHLINE TO SHEET 3
HISTORIC ROCK WALL
D
LEGEND
POTENTIAL TRAILHEAD
POINT OF INTEREST/OVERLOOK
POTENTIAL TRAIL ALIGNMENT A
POTENTIAL TRAIL SPUR B
PROPOSED FISHKILL TRAIL ALIGNMENT
EXISTING PATHWAY/ SIDEWALK
PARCEL LINE
MTA/ AMTRAK RAIL CORRIDOR
EXISTING FENCING
PROPOSED FENCING
EXISTING MAINTENANCE ROAD
FEMA FLOOD ZONE
WETLAND AREA (APPROX.)
A
B
C
D
0
100
200
REVISIONS
DATE
DESCRIPTION
HUDSON RIVER TRAIL
MASTER PLAN
City of Beacon
COUNTY OF DUTCHESS
STATE OF NEW YORK
Weston & Sampson
JULY, 2017
SHEET 4 OF 4
SCALE 1" = 100'


B-8, Approximate Test Boring Location Added to Plan by Dente Group.
PROPOSED TRAIL ALIGNMENT D
+/- 20% SLOPE
570245
Monell Place
Lands of
Peter Forman & Thomas Forman III
5.90 AC
B-9
STAGING AREA
EXISTING LIGHT POLE
NEWBURGH-BEACON BRIDGE (WESTBOUND)
NEWBURGH-BEACON BRIDGE (EASTBOUND)
EXISTING STREAM
EXISTING STREAM
575220
48 Monell Place
570210
32 Monell Place
B-7 (Deleted)
B-8
PROPOSED BRIDGE OVER STREAM
PROPOSED BRIDGE OVER STREAM
B
B-6
OLD GROWTH OAK GROVE
C
TRIBUTARY INTERSECTION
A
WETLAND
B-5
B-4
B-2
POTENTIAL TRAIL SPUR & OVERLOOK
OLD OVERHEAD UTILITY LINES
D
B-3
MATCH SHEET 2
CONTINUE TO FISHKILL TRAIL
EXISTING UTILITY BOX
HUDSON RIVER
+/- 20'
PROPOSED TRAIL ALIGNMENT C
LEGEND
POTENTIAL TRAILHEAD
POINT OF INTEREST/OVERLOOK
POTENTIAL TRAIL ALIGNMENT A
POTENTIAL TRAIL SPUR B
PROPOSED FISHKILL TRAIL ALIGNMENT
PROPOSED BRIDGE
EXISTING PATHWAY/ SIDEWALK
PARCEL LINE
MTA/ AMTRAK RAIL CORRIDOR
EXISTING FENCING
PROPOSED FENCING
EXISTING MAINTENANCE ROAD
FEMA FLOOD ZONE
WETLAND AREA (APPROX.)
A
B
C
D
REVISIONS
DATE
DESCRIPTION
0
100
200
HUDSON RIVER TRAIL
MASTER PLAN
City of Beacon
COUNTY OF DUTCHESS
STATE OF NEW YORK
Weston & Sampson
JULY, 2017
SHEET 3 OF 4
SCALE: 1" = 100'

APPENDIX D

SUBSURFACE LOGS AND CORE PHOTOGRAPHS

HUDSON RIVER TRAIL
City of Beacon, New York

INTERPRETATION OF SUBSURFACE LOGS

The Subsurface Logs present observations and the results of tests performed in the field by the Driller, Technicians, Geologists and Geotechnical Engineers as noted. Soil/Rock Classifications are made visually, unless otherwise noted, on a portion of the materials recovered through the sampling process and may not necessarily be representative of the materials between sampling intervals or locations.

The following defines some of the terms utilized in the preparation of the Subsurface Logs.

SOIL CLASSIFICATIONS

Soil Classifications are visual descriptions on the basis of the Unified Soil Classification ASTM D-2487 and USBR, 1973 with additional comments by weight of constituents by BUHRMASTER. The soil density or consistency is based on the penetration resistance determined by ASTM METHOD D1586. Soil Moisture of the recovered materials is described as DRY, MOIST, WET or SATURATED.

SIZE DESCRIPTION		RELATIVE DENSITY/CONSISTENCY (basis ASTM D1586)			
SOIL TYPE	PARTICLE SIZE	GRANULAR SOIL		COHESIVE SOIL	
BOULDER	> 12	DENSITY	BLOWS/FT.	CONSISTENCY	BLOWS/FT.
COBBLE	3" - 12"	LOOSE	< 10	VERY SOFT	< 3
GRAVEL-COARSE	3" - 3/4"	FIRM	11 - 30	SOFT	4 - 5
GRAVEL - FINE	3/4" - #4	COMPACT	31 - 50	MEDIUM	6 - 15
SAND - COARSE	#4 - #10	VERY COMPACT	50 +	STIFF	16 - 25
SAND - MEDIUM	#10 - #40			HARD	25 +
SAND - FINE	#40 - #200				
SILT/NONPLASTIC	< #200				
CLAY/PLASTIC	< #200				

SOIL STRUCTURE		RELATIVE PROPORTION OF SOIL TYPES	
STRUCTURE	DESCRIPTION	DESCRIPTION	% OF SAMPLE BY WEIGHT
LAYER	6" THICK OR GREATER	AND	35 - 50
SEAM	6" THICK OR LESS	SOME	20 - 35
PARTING	LESS THAN 1/4" THICK	LITTLE	10 - 20
VARVED	UNIFORM HORIZONTAL PARTINGS OR SEAMS	TRACE	LESS THAN 10

Note that the classification of soils or soil like materials is subject to the limitations imposed by the size of the sampler, the size of the sample and its degree of disturbance and moisture.

ROCK CLASSIFICATIONS

Rock Classifications are visual descriptions on the basis of the Driller's, Technician's, Geologist's or Geotechnical Engineer's observations of the coring activity and the recovered samples applying the following classifications.

CLASSIFICATION TERM	DESCRIPTION
VERY HARD	NOT SCRATCHED BY KNIFE
HARD	SCRATCHED WITH DIFFICULTY
MEDIUM HARD	SCRATCHED EASILY
SOFT	SCRATCHED WITH FINGERNAIL
VERY WEATHERED	DISINTEGRATED WITH NUMEROUS SOIL SEAM
WEATHERED	SLIGHT DISINTEGRATION, STAINING, NO SEAMS
SOUND	NO EVIDENCE OF ABOVE
MASSIVE	ROCK LAYER GREATER THAN 36" THICK
THICK BEDDED	ROCK LAYER 12" - 36"
BEDDED	ROCK LAYER 4" - 12"
THIN BEDDED	ROCK LAYER 1" - 4"
LAMINATED	ROCK LAYER LESS THAN 1"
FRACTURES	NATURAL BREAKS AT SOME ANGLE TO BEDS

Core sample recovery is expressed as percent recovered of total sampled. The ROCK QUALITY DESIGNATION (RQD) is the total length of core sample pieces exceeding 4" length divided by the total core sample length for N size cored.

GENERAL

- Soil and Rock classifications are made visually on samples recovered. The presence of Gravel, Cobbles and Boulders will influence sample recovery classification density/consistency determination.
- Groundwater, if encountered, was measured and its depth recorded at the time and under the conditions as noted.
- Topsoil or pavements, if present, were measured and recorded at the time and under the conditions as noted.
- Stratification Lines are approximate boundaries between soil types. These transitions may be gradual or distinct and are approximated.

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-1**

PROJECT: Hudson River Trail	**DATE**	START: 6/20/18	FINISH: 6/20/18
LOCATION: City of Beacon, NY	**METHODS:** 2-1/4" I.D. Hollow Stem Augers		
CLIENT: Weston & Sampson	with ASTM D1586 and D2113 Sampling		
JOB NUMBER: JB185059	**SURFACE ELEVATION:** ± 120.6’		
DRILL TYPE: CME 55 ATV Mounted Rig	**CLASSIFICATION:** E. Gravelle, PE		

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	12	25				± 4” Topsoil over Brown/Gray Decomposed Bedrock
				50/.4’		REF	
		Core Run #1 – 1.7’ to 4.2’ Rec=56%, RQD=0%					Gray SHALE, Medium Hard, Weathered, Steeply Thin Bedded and Highly Fractured
5'		Core Run #2 – 4.2’ to 7.0’ Rec=100%, RQD=0%					
							Boring Ended at 7.0’
10'							Driller reports partial water loss when coring at 4.0’ depth and complete water loss in coring run #2.
15'							
20'							
25'							



ROCK CORES - BORING B-1

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-2**

PROJECT: Hudson River Trail	**DATE**	START: 6/21/18	FINISH: 6/21/18
LOCATION: City of Beacon, NY	**METHODS:** 2-1/4" I.D. Hollow Stem Augers		
CLIENT: Weston & Sampson	with ASTM D1586 Sampling		
JOB NUMBER: JB185059	**SURFACE ELEVATION:** ± 37.9’		
DRILL TYPE: CME 55 ATV Mounted Rig	**CLASSIFICATION:** E. Gravelle, PE		

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	1	2				± 5” Topsoil over Brown Fine SAND, Some Silt, Moist
				2	2	4	
5'	2	6	4				Grades Little Silt
				3	3	7	
10'	3	8	8				**(MOIST, LOOSE TO FIRM)**
				23	23	31	Brown Fine to Coarse SAND, Some Gravel, Some Silt, Moist
	4	55	34				
				20	22	54	
15'	5	30	24				Similar
				50/.4’		REF	**(MOIST, COMPACT TO VERY COMPACT)**
							Boring Ended at 15.4’ with Spoon Refusal
							No measurable groundwater in augers at completion of drilling and sampling.
20'							
25'							

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-3**

PROJECT: Hudson River Trail	**DATE**	START: 6/21/18	FINISH: 6/21/18
LOCATION: City of Beacon, NY	**METHODS:** 2-1/4" I.D. Hollow Stem Augers		
CLIENT: Weston & Sampson	with ASTM D1586 and D2113 Sampling		
JOB NUMBER: JB185059	**SURFACE ELEVATION:** ± 40.3’		
DRILL TYPE: CME 55 ATV Mounted Rig	**CLASSIFICATION:** E. Gravelle, PE		

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	1	2				± 4” Topsoil over Brown Fine SAND, Some Silt
				2	2	3	**(MOIST, LOOSE)**
	2	50/.2’				REF	
5'		Core Run #1 2.7’ to 7.7’ Recovery = 92% RQD = 8%					Gray SHALE with Calcite Veins, Medium Hard to Hard, Weathered, Thin Bedded and Highly Fractured
10'							Boring Ended at 7.7’ Driller reports complete water loss when coring at 5.5’ depth.
15'							
20'							
25'							

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-4**

PROJECT: Hudson River Trail	**DATE**	START: 6/22/18	FINISH: 6/22/18
LOCATION: City of Beacon, NY	**METHODS:** 2-1/4" I.D. Hollow Stem Augers		
CLIENT: Weston & Sampson	with ASTM D1586 and D2113 Sampling		
JOB NUMBER: JB185059	**SURFACE ELEVATION:** ± 40.7’		
DRILL TYPE: CME 55 ATV Mounted Rig	**CLASSIFICATION:** E. Gravelle, PE		

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	1	2				± 4” Topsoil over Brown Fine SAND, Some to Little Silt, Little Gravel
				2	1	4	
							(MOIST, LOOSE)
5'							Gray SHALE, Medium Hard, Weathered to Slightly Weathered, Thin Bedded to Bedded with Highly Fractured Layer at 6.0 to 9.1 feet depth.
		Core Run #1 4.7’ to 9.7’ Recovery = 100% RQD = 23%					
10'							Boring Ended at 9.7’ Driller reports complete water loss when coring at 7.5’ depth.
15'							
20'							
25'							



ROCK CORES - BORINGS B-3 AND B-4

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-5**

PROJECT: Hudson River Trail	**DATE**	START: 6/21/18	FINISH: 6/21/18

LOCATION: City of Beacon, NY	**METHODS:** 2-1/4" I.D. Hollow Stem Augers
CLIENT: Weston & Sampson	with ASTM D1586 Sampling
JOB NUMBER: JB185059	**SURFACE ELEVATION:** ± 44.0’
DRILL TYPE: CME 55 ATV Mounted Rig	**CLASSIFICATION:** E. Gravelle, PE

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	1	1				± 4” Topsoil over Brown Fine SAND, Some Silt
				2	2	3	
							(MOIST, LOOSE)
5'							
	2	50/.2’				REF	Gray Weathered SHALE
10'							
	3	50/.2’				REF	**(MOIST TO DRY, VERY COMPACT)**
							Boring Ended at 10.2’ with Spoon Refusal
							No measurable groundwater in augers at
							completion of drilling and sampling.
15'							
20'							
25'							

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-6**

PROJECT: Hudson River Trail	**DATE**	START: 6/21/18	FINISH: 6/21/18

LOCATION: City of Beacon, NY	**METHODS:** 2-1/4" I.D. Hollow Stem Augers
CLIENT: Weston & Sampson	with ASTM D1586 Sampling
JOB NUMBER: JB185059	**SURFACE ELEVATION:** ± 46.6’
DRILL TYPE: CME 55 ATV Mounted Rig	**CLASSIFICATION:** E. Gravelle, PE

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	1	1				± 4” Topsoil over Brown Fine SAND, Some Silt
				2	2	3	
5'							**(MOIST, LOOSE)**
	2	6	12				Brown/Gray Very Weathered SHALE
				50/.4’		REF	
10'							
	3	50/.2’				REF	**(MOIST TO DRY, VERY COMPACT)**
							Boring Ended at 10.2’ with Spoon Refusal
							No measurable groundwater in augers at completion of drilling and sampling.
15'							
20'							
25'							

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-8**

PROJECT: Hudson River Trail	**DATE**	START: 6/20/18	FINISH: 6/20/18

LOCATION: City of Beacon, NY	**METHODS:** 2-1/4" I.D. Hollow Stem Augers
CLIENT: Weston & Sampson	with ASTM D1586 Sampling
JOB NUMBER: JB185059	**SURFACE ELEVATION:** ± 53.1’
DRILL TYPE: CME 55 ATV Mounted Rig	**CLASSIFICATION:** E. Gravelle, PE

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	1	3				± 3” Topsoil over Br. Varved SILT and CLAY
				4	8	7	
5'	2	15	15				Similar
				14	14	29	
10'	3	8	11				Similar
				13	13	24	
							(MOIST, MEDIUM TO HARD)
	4	-	8	16			Brown SAND and GRAVEL, Some Silt, Gray
				26	16	42	Rock Fragment at 15.4’ **(MOIST, COMPACT)**
15'							Boring Ended at 15.5’
							Groundwater at 11.5’ below grade after leaving the augers in overnight at 13.5’ depth.
20'							
25'							

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-9**

PROJECT: Hudson River Trail	**DATE**	START: 6/20/18	FINISH: 6/20/18

LOCATION: City of Beacon, NY	**METHODS:** 2-1/4" I.D. Hollow Stem Augers
CLIENT: Weston & Sampson	with ASTM D1586 Sampling
JOB NUMBER: JB185059	**SURFACE ELEVATION:** ± 59.4’
DRILL TYPE: CME 55 ATV Mounted Rig	**CLASSIFICATION:** E. Gravelle, PE

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	WH	1				± 7” Topsoil over Brown SILT, Some Fine
				2	3	3	Sand, Little Clay **(MOIST, LOOSE)**
	2	4	8				Brown Varved SILT and CLAY, Moist
				10	10	18	
5'							
	3	4	8				Similar
				10	12	18	
10'							
	4	5	8				Similar
				8	12	16	
							(MOIST, STIFF)
15'							
	5	3	4				Becomes Brown and Gray **(WET)**
				15	35	19	Weathered Rock at 16.5’ **(WET)**
							Boring Ended at 17.0’
							Groundwater in augers at 13.2’ below grade at
20'							completion of drilling and sampling.
25'							

May 29, 2020

Mr. Daniel Biggs, RLA, ISA
Weston & Sampson
1 Winners Circle, Suite 130
Albany, NY 12205

Re: Rock Cut Evaluation
Hudson River Greenway Trail
Beacon, New York
Dente Group Project No. JB205091

Mr. Biggs,

In accordance with our Master Services Agreement Task Order dated April 6, 2020, the undersigned visited the Hudson River Greenway Trail project site to observe bedrock outcrops and evaluate the option for using unbraced rock cuts in cut areas versus retaining walls which are currently planned.

On April 30, 2020 we visited the site along with Jack Grieshober from your office. Our observations were focused in the area from about Station 33+50 to the project end at Station 42+14. Through this area the proposed trail is planned adjacent to the west side of the Beacon Railroad Station parking lots. Bedrock outcrops are present through this area and in some locations the outcrops extend close to the edge of the parking lot and beneath the proposed trail. As shown on the attached Plan & Profile sheets, preliminary planning calls for retaining walls with heights in the range of 4 to 35 feet in the rock cut areas.

Bedrock in the project area is identified on the Geologic Map of New York as Austin Glen Formation composed of interbedded graywackes and shales. This mapping is consistent with our observations as shown on the attached photographs. Most of the outcrops are composed of the blocky graywacke with complex bedding which is often steeply bedded down in a south and west direction, i.e., downward with respect to the planned rock cuts. At the north end of the area of concern, from about Station 35+00 to 33+75, the rock is composed of shale as shown in Photos No. 8 and 10.

In the NYSDOT Geotechnical Design Manual, Chapter 15, it is stated that most rock cuts in the lower Hudson Valley are made 3V on 2H and that all shale slopes are made 1V on 1H. These slopes can be assumed for planning purposes with the understanding the final slopes may be at risk of rockfalls due to the steep inclination and direction of the bedding planes. This risk can be reduced by flattening the slopes and adding a rockfall catchment area at the toe of the slope. This would require additional rock excavation and easements which may extend beyond those planned. Design of the catchment area would be required dependent upon the height and inclination of the cut slope and backslope.

If additional rock excavation and easements which may extend beyond those planned are not feasible, then rock slope stabilization techniques may be considered. These typically include scaling, rock bolts and dowels, wire mesh and cable net systems, and reinforced shotcrete. Of these, scaling and rock dowels would likely be the options best suited to the site conditions.

Scaling is the removal of loose overhangs, weathered pockets, or unconnected rock from the slope. This can be done with or without blasting based on the conditions encountered. Rock dowels are untensioned anchors that are installed to prevent a small block of rock from moving. The bedding of the rock at this site is highly variable and the final stabilization technique may be one or a combination of these techniques.

To summarize, unbraced cut slopes in the rock may be made subject to the following guidelines.

1. Shale slopes of 1V on 1H should be assumed from about Station 35+00 and north from that station.

2. Slopes south of Station 35+00 may be assumed as steep as 3H on 2V. Flatter slopes should be considered if space is available.

3. The rock cut slopes should include a catchment area at the toe which may require wider easements, or implementation of slope stabilization techniques such as scaling and/or rock dowels.

4. Slopes steeper than 1V on 1H and higher than 5 feet should be excavated by presplit blasting in accordance with NYSDOT Standard Specifications.

5. Slopes flatter than 1V on 1H or less than 5 feet in height may be excavated by other blasting techniques or by mechanical means.

The report was prepared to assist in preliminary planning for design and construction of the trail in areas requiring rock cuts from about Station 33+75 to the trail end at Station 42+14. Other useful information which can be referenced regarding design and construction of rock cuts can be found in Chapter 15, Rock Slope Design, in the NYSDOT Geotechnical Design Manual. This can be downloaded from the NYSDOT website.

We appreciate the opportunity to be of continuing service to you. If questions arise or if I may be of any assistance, please contact me at our Watervliet location.

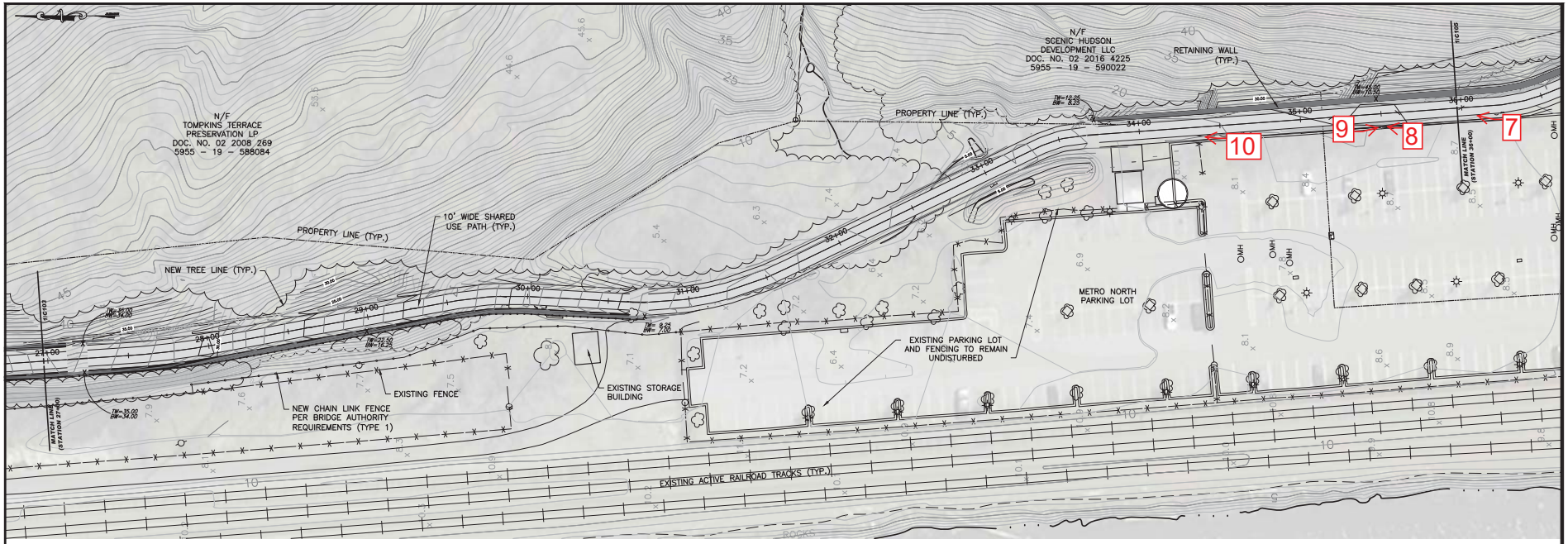
Yours truly,

Edward C. Gravelle, P.E.
Senior Engineer

Joseph Robichaud, Jr., P.E.
Sr. Associate / Office Manager

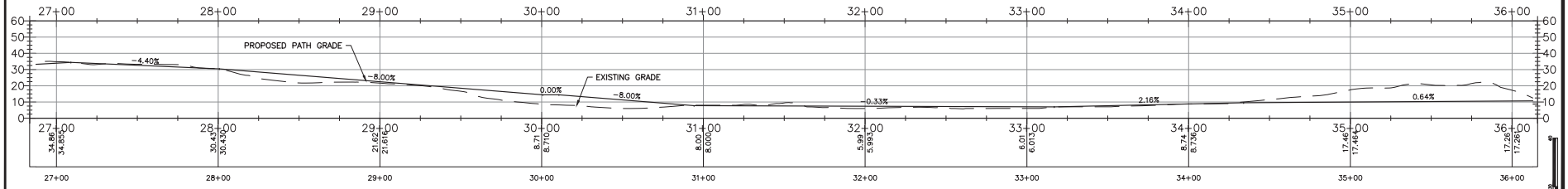
Attachments:

Photography Location Plan
Photographs



1 **SITE PLAN (STA 27+00 TO STA 36+00)**
SCALE:1" = 30'

PHOTOGRAPH LOCATION PLAN
Dente Project No. JB205091



2 **PROFILE VIEW (STA 27+00 TO STA 36+00)**
SCALE:HORIZ: 1" = 30' | VERT: 1" = 30'

Weston & Sampson
1 Winners Circle, S 130, Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description
A	DECEMBER 03, 2018	

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN
PLAN & PROFILE STA 27+00 – 36+00

SCALE	CONTRACT	JOB NO.	DR.BY	DSN.BY	CHK.BY	APP.BY
BAR SCALE		N2180028	JWG	JWG	DPB	DPB

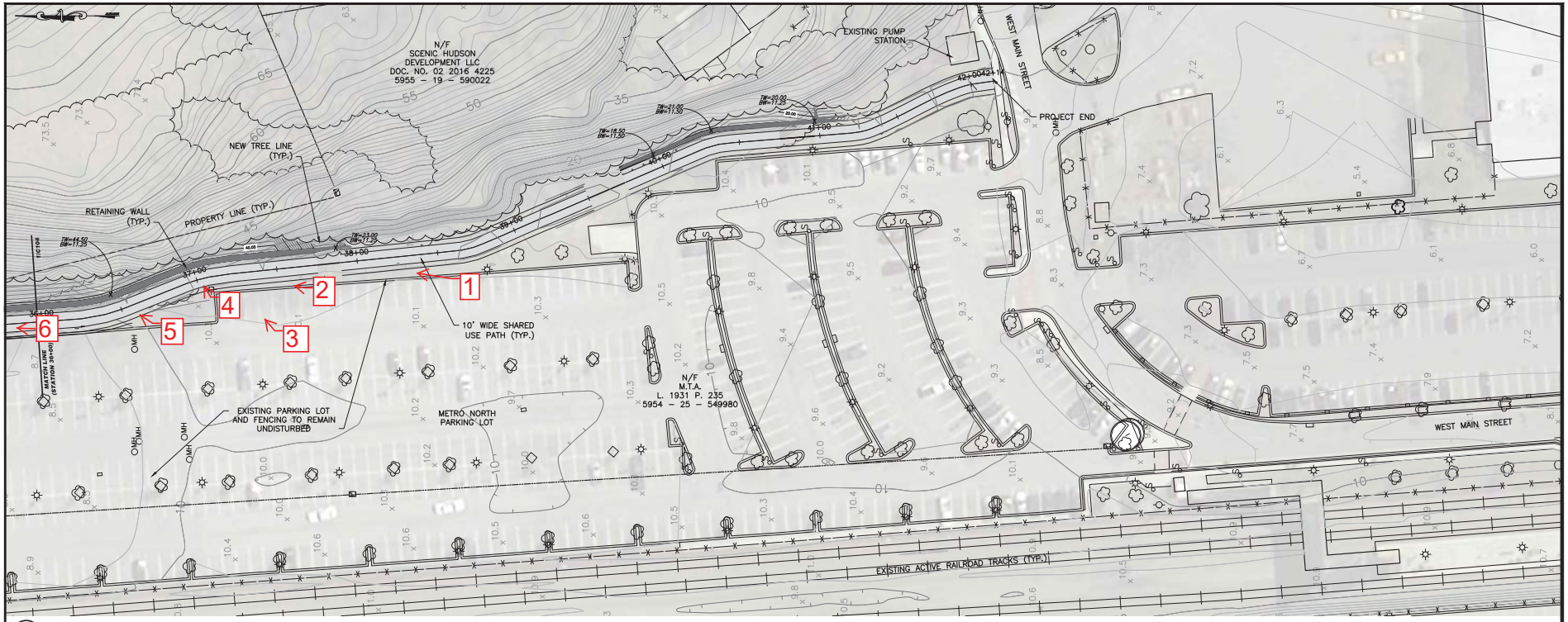
CADD NO.

C104

FILE NO.

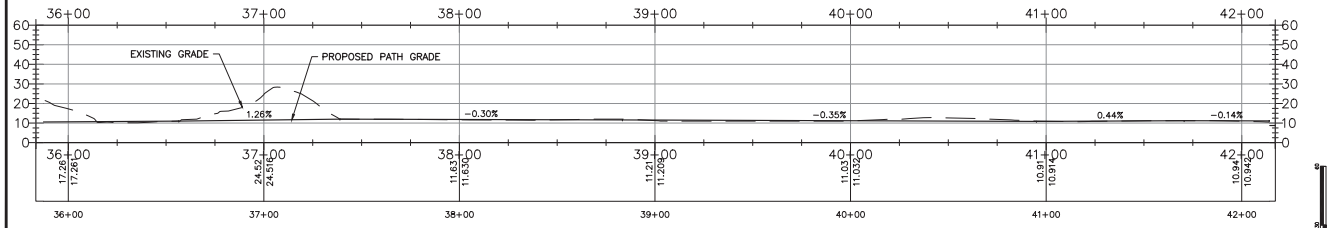
SHEET 6 OF 17

104



1 **SITE PLAN (STA 36+00 TO STA 42+14)**
SCALE: 1" = 30'

PHOTOGRAPH LOCATION PLAN
Dente Project No. JB205091



2 **PROFILE VIEW (STA 36+00 TO STA 42+14)**
SCALE: HORIZ: 1" = 30' | VERT: 1" = 30'

Weston & Sampson
1 Winners Circle, S 130 Albany, NY
518.463.4400 800.SAMPSON
www.westonandsampson.com

No.	Date	Description
A	P P R O V E D	DECEMBER 03, 2018

Dr.By | Ch.By | App.By | DATE

REGISTERED PROFESSIONAL

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

CITY OF BEACON, NEW YORK
HUDSON RIVER GREENWAY TRAIL
PRELIMINARY DESIGN
PLAN & PROFILE STA 36+00 - 42+14

CADD NO.	SCALE: BAR SCALE	CONTRACT:	JOB NO. N2180028	DR.BY: JWG	DSN.BY: JWG	CHK.BY: DPB	APP.BY: DPB

C105

FILE NO.

SHEET 7 OF 17

105

PHOTO NO. 2

PHOTO NO. 1

PHOTO NO. 4

PHOTO NO. 3

PHOTO NO. 6

PHOTO NO. 5

PHOTO NO. 8

PHOTO NO. 7

PHOTO NO. 10

PHOTO NO. 9

Appendix C – MNR – Trail Guidelines

Specification	**Measured in Feet**	**Considerations**
Separation of recreational use from centerline of track	25’	Chain link fencing is required for the entire length of the trail. Fencing must be grounded in electrified territory. Fencing location will not restrict emergency rail operations or train evacuations. Right-of-way access gates may be necessary per Metro-North guidance or by distance. Access gates shall swing outward from track and will be locked by railroad lock.
Minimum fence height	8	The fencing must be a minimum of 8-feet in height due to proximity of active tracks. Fencing materials must meet the following minimum requirements: non-scalable, black vinyl/PVC coated, chain link fence. Fencing type/material shall be reviewed and approved by the railroad. Any gates in the fencing must swing away from the track or be sliding gates.
Minimum trail width	10	Trail width requirement is based on ability to accommodate emergency response vehicles. Access locations shall be shown during design plan review and comment process.
Minimum height of overhead structures from top of rail	23-29	Overhead bridge structures require a minimum of 23' feet from the top of rail. Where the physical conditions impose clearances less than 23’, the matter must be submitted to the Chief Engineer- Maintenance of Way for any modifications, review and approvals and to the Local and State Authorities. Where Railroad conductor cables (Power and Communication/Signal) exist, clearances must be an additional 6’-0. Railroad cables shall be constructed in compliance with Railroad requirements, AREA, and NESC. Based upon requirements of the New York State Department of Transportation, structure and height guidance will be contained in basic building code including, but not limited to, the building code of: ASCE 7 American Society of Civil Engineers - Loads for Buildings and Other Structures, AISC American Institute of Steel Construction, ACI American Concrete Institute, PCI Precast Prestressed Concrete, APA Wood Construction, NDS Timber Construction, AASHTO Guide Specifications for Design of Pedestrian Bridges, Americans with Disabilities Act, IBC International Building Code, and IFC International Fire Code.

Trails will not be considered along active corridors with operation of 90 mph or greater. Consideration is based on the area terrain and topography, speed and frequency of service.

No new at-grade crossings.
MNR will retain access to all maintenance roads.
New trail wearing surfaces (top of pavement) shall be a minimum of two inches (2") below the top of railroad ties. New trails must not prevent runoff, trapping of water, or result in the introduction of any runoff into the tracks and must provide for an independent system to handle water resulting from any impervious surfaces. Existing drainage facilities crossed by the trail must be protected during construction and repaired or replaced where damaged. Existing drainage structures and culverts shall be inspected and cleaned as to ensure proper functioning.
Railroad utilities will be protected during construction and must be fully accessible at all times to MNR crews for repair and inspection.
Power required for any electric devices must be provided by the municipality.
Entrances to the trails must be restricted so only pedestrians are allowed access. Physical barriers (e.g. bollards) will be designed so they may be unlocked or removed for entrance by emergency vehicles.
Trails must accommodate emergency response vehicle (not a fire truck) access. Safety plan is required to be put into place by sponsor and must be reviewed and approved by the railroad.
New structures are subject to review by MNR. Engineering plans and details submittal must meet all Local, State and Federal building specification code and approved drawings as certified, signed and sealed by a New York State Professional Engineer.
Minimum bearing load of trail is 8,000-12,000 pounds.
Waste materials generated by trail construction activities must be disposed of by the contractor in accordance with all applicable Local, State, and Federal laws and guidelines with complete chain of custody documentation provided to Metro-North.
If a trail does not meet above standards, and there is a constriction with no other reasonable option, then standards will be reviewed for an extremely limited distance and will be approved solely at Metro-North's discretion.

DRAFT

Appendix D – NYSBA – Fencing & Camera Specifications

NEW YORK STATE OF OPPORTUNITY. | Bridge Authority

ANDREW M. CUOMO
Governor

JOSEPH RUGGIERO
Executive Director

CARL G. WHITBECK, JR., ESQ.
General Counsel

April 13, 2018

Thomas Scaglione, Chief of Staff
New York State Bridge Authority
P.O. Box 1010
Highland, NY 12528

Re: Camera System Security for Trail Under Newburgh Beacon Bridge

Dear Mr. Scaglione:

This letter is a follow-up to our telephone conversation and your request for my opinion concerning the authority of the New York State Bridge Authority ("NYSBA") to request camera coverage of a trail beneath the Newburgh Beacon Bridge ("NBB"). Incidentally, I believe we should also have a lease agreement with the towns and/or Dutchess County which will permit them to install and maintain the trail.

Please be advised that NYSBA entered into a Memorandum of Understanding with the United States Coast Guard for security grants and live video monitoring dated September 25, 2013. The grant provided Federal funds to NYSBA to install and maintain an authority-wide security camera system for the area beneath each of our five (5) bridges and the Walkway Over the Hudson. Since this new trail will pass under the NBB, it should be subjected to the same security as all other areas beneath our bridges. As you know, the security camera system connects to our Command Center in Highland, New York.

I would also make specific reference to Sections 528(15) and (16) of the Public Authorities Law of the State of New York. Section 528(10) authorizes NYSBA to enter into lease agreements which may not exceed ten (10) years.

Very truly yours,

CARL G. WHITBECK, JR.

CGW:af
Enclosure
cc: Joseph Ruggiero, Executive Director

MEMORANDUM

To: Tom Scaglione

From: Chris Kelly

Date: April 25, 2018

Subject: Proposed NBB Pedestrian Walkway Surveillance

The following is a list of items that will provide surveillance coverage from the south approach from the train station, underneath both spans and the new pathway up to the existing pathway.

- (1) Video Server: $12,000
- (4) Thermal Cameras with licenses. $5,299 + $299 x 4 = $22,392
- (1) Axis HD PTZ Camera with mounting hardware. $2,238.40
- (1) CCTV Stainless Steel cabinet and equipment. $5,700
- Miscellaneous POE cabling, connectors and conduit for camera installation locations. $10,000

Project total for the hardware: $52,330.40

ITEM- 1 thru 4: Fences and Gates

DESCRIPTION:

Under these items the contractor shall furnish and install fences and gates at the bridge facilities in accordance with the contract plans. The fence shall be designated "Optional Chain Link Fence, Type 1 in accordance with the provisions of the NYSDOT Standard Specifications section 607-1.01 Fence types.

CONSTRUCTION DETAILS:

The provisions of the NYSDOT Standard Specifications, Sections 607-3.01 General; Section 607-3.02 Chain-Link Fencing with top rail and Section 607-3.07 Fence Gates shall apply. All fences and gates shall be 6ft. high except at the Mid-Hudson Bridge where they shall be 8ft high.

Anchor bolts holes shall be drilled and bolts grouted in accordance with the grout manufacturer's written instructions.

Prior to digging, the Contractor shall call for a utility mark-out. The proposed locations shall be inspected and approved by the Engineer before the Contractor may proceed with excavation.

METHOD OF MEASUREMENT:

Payment for all work under these items and as described on the plans will be made at the Lump Sum prices bid for the completed and accepted work described in this bid item.

BASIS OF PAYMENT:

Payment will include the cost of all materials, labor, equipment, insurance, and all costs incurred to satisfactorily complete the work. The lump sum price bid shall include the cost of furnishing and installing galvanized chain link fence, gates, hardware including the post foundation and anchor bolts in accordance with this specifications and the contract plans.

Partial Payment estimates will be made monthly during the progress of the work on a percentage of work completed basis as determined and agreed to by the Engineer.

606.8704	Corrugated Beam Guide Railing Transition Assembly Concrete Parapets, or Concrete Barrier	Each
606.8801	Box Beam Guide Rail Transition to Concrete Barrier (One or Two Way Operation)	Each
606.8802	Box Beam Guide Rail Transition to Concrete Barrier (One Way-Trailing End)	Each
606.8803	Transition Between Box Beam Guide Rail and Single Slope Half Section Concrete Barrier (One or Two Way Operation)	Each
606.8804	Transition Between Single Slope Half Section Concrete Barrier and Box Beam Guide Rail (One Way - Trailing End of Barrier)	Each
606.8805	Transition Between Box Beam Median Barrier and Single Slope Concrete Median Barrier	Each
606.8901	Transition: HPBO (Mod.) Corrugated Guide Railing to Beam Box Beam Guide Railing	Each
606.8902	Transition: HPBO (Mod.) Corrugated Beam Guide Railing to Weak Post Corrugated Beam Guide Railing	Each
606.8903	Transition: HPBO (Mod.) Corrugated Beam Guide Railing to Single Slope Concrete Half Section Barrier	Each
606.8904	Transition: HPBO (Mod.) Corrugated Beam Median Barrier to Beam Box Beam Median Barrier	Each
606.8905	Transition: HPBO (Mod.) Corrugated Beam Median Barrier to Weak Post Corrugated Beam Median Barrier	Each
606.8906	Transition: HPBO (Mod.) Corrugated Beam Median Barrier to Single Slope Concrete Median Barrier	Each
606.9001	Transition between Standard (NJ) Concrete Barrier and Single-Slope Concrete Barrier	Each
606.9002	Transition between Wide and Normal Single Slope Concrete Median Barrier	Each
606.9003	Transition between Half-Section and Full-Section Single Slope Concrete Barrier (Left Pocket)	Each
606.9004	Transition between Half-Section and Full-Section Single Slope Concrete Barrier (Right Pocket)	Each
606.9401	Pier Protection (One Way)	Foot
606.9402	Pier Protection (Two Way)	Foot

SECTION 607 - FENCES

607-1 DESCRIPTION. This work shall consist of furnishing and erecting fencing and metal fence gates of the type and size, and at the locations shown on the plans or as directed by the Engineer. Construction of fencing and gates shall be done in accordance with the specifications, the standard sheets, and the plans, and in reasonable close conformity with the lines and grades shown on the plans or established by the Engineer.

607-1.01 Fence Types. The fence shall be designated as follows:

→Optional Chain Link Fence Type I
Optional Chain Link Fence Type II
Vinyl Coated Chain Link Fence on Plastic Coated Frame
Right-of-Way Fencing

The options for Type I and Type II chain link fences shall be as follows:

→ **TYPE I**

Fabric Options	**Frame Options**
Coated Steel Fence Fabric (95% Zinc 5% Aluminum- Mischmetal Alloy)	Mischmetal Alloy Coating (95% Zinc 5% Aluminum)
Galvanized Steel	Galvanized Steel
Aluminum	Combined Coating on Steel
Aluminum Coated Steel	Aluminum
	Aluminum Coated Steel

TYPE II

Fabric Options	**Frame Options**
Coated Steel Fence Fabric (95% Zinc 5% Aluminum- Mischmetal Alloy)	Mischmetal Alloy Coating (95% Zinc 5% Aluminum)
Galvanized Steel	Galvanized Steel
Vinyl Coated Steel	Combined Coating on Steel
Aluminum	Plastic on Steel
Aluminum Coated Steel	Aluminum
	Aluminum Coated Steel

Fence gates for Type I and Type II optional fences shall be consistent with the fabric and frame option selected for the contract. Fence frame and fabric selected shall be consistent throughout the contract except where intermixing is permitted by the Engineer.

607-2 MATERIALS. Materials shall conform to the requirements specified in the following subsections of Section 700 - Materials and Manufacturing:

Zinc Chromate Primer	708-04
Aluminum Fence Fabric	710-01
Galvanized Steel Fence Fabric	710-02
Vinyl Coated Steel Fence Fabric	710-03
Aluminum Coated Steel Fence Fabric	710-04
Coated Steel Fence Fabric (95% Zinc 5% Aluminum-Mischmetal Alloy)	710-05
Steel and Iron Posts, Rails, Braces and Fittings for Chain-Link Fence	710-10
Aluminum Posts, Rails, Braces and Fittings for Chain-Link Fence	710-11
Plastic Coated Posts, Rails, Braces and Fittings for Chain-Link Fence	710-12
Right-of-Way Fencing	710-30

607-2.01 Portland Cement Concrete for Bases. Portland Cement concrete used for bases shall be Class A or C conforming to the requirements of Section 501 Portland Cement Concrete--General except that requirements for automated batching shall not apply.

607-2.02 Right-of-Way Fencing. The Contractor has the option of using posts and braces fabricated from either high carbon shapes of steel or pressure treated wood meeting the requirements of §710-30 Right-of-Way Fencing.

607-2.03 Fence Gates. Fence gates for Right-of-Way Fencing shall Conform to the requirements for Right-of-Way Fence Gates of §710-30. Fence gates for Chain-Link Fence shall conform to the following:

A. Gate Frames. Frames shall be constructed of tubular members welded at all corners or assembled with corner fittings. Where corner fittings are used gates shall have 3/8 inch nominal diameter truss rods to prevent sag or twist. Gate leaves shall have vertical intermediate bracing so that no vertical members are more than 8 feet apart. Gate leaves over 10 feet long shall have a horizontal brace or a 3/8 inch nominal diameter diagonal truss rod. Gate leaves over 16 feet shall have both a horizontal brace and a 3/8 inch nominal diameter truss rod.

B. Gate Fabric. Gate fabric shall conform to the requirements of the fabric used in the fence construction.

C. Gate Hinges. Hinges shall be weldable steel, cast steel or malleable iron 180° offset industrial type. The hinges shall not twist or turn under the action of the gate. The gates shall be capable of being opened and closed easily by one person. Hinges shall be galvanized in accordance with §719-01 Type I.

D. Gate Latches. Latches, stops and keepers shall be provided for all gates. Latches shall have a plungerbar arranged to engage the center stop, except that single left gate openings with an opening of less than 10 feet may use a forked latch. Latches shall be arranged for locking and the Contractor shall provide a lock with triplicate keys for each gate. Center stops shall consist of a device arranged to be set in concrete and to engage a plunger-bar of the latch of double leaf gates. No stop is required for single leaf gates. Keepers shall consist of a mechanical device for securing the free end of the gate when in the full open position.

607-3 CONSTRUCTION DETAILS

607-3.01 General. The Contractor shall perform such clearing and grubbing as may be necessary to construct the fence to the required grade and alignment.

At locations where breaks in a run of fencing are required, or at intersections with existing fences, appropriate adjustment in post spacing shall be made to conform to the requirements for the type of closure indicated.

When the plans require that the posts, braces, or anchors be embedded in concrete, the Contractor shall install temporary guys or braces as may be required to hold the posts in proper position until such time as the concrete has set sufficiently to hold the posts. Unless otherwise permitted, no materials shall be installed on posts or strain placed on guys and bracing set in concrete until seven days have elapsed from the time of placing the concrete.

All posts shall be set vertically and to the required grade and alignment. Cutting of the tops of the posts will be allowed only with the approval of the Engineer and under the Engineer's specified conditions.

Wire or fencing of the size and type required shall be firmly attached to the posts and braces in the manner indicated. All wire shall be stretched taut and be installed to the required elevations.

At each location where an electric transmission, distribution or secondary line crosses any of the types of fences covered by these specifications, the Contractor shall furnish and install a ground conforming to the requirements of Subsection 9 of the National Electric Safety Code.

Fence shall generally follow the contour of the ground, with the bottom of fence fabric no less than 1 inchnor more than 6 inch from the ground surface. Grading shall be performed where necessary to provide a neat appearance.

Line posts shall be spaced equidistant in the fence line at the spacing shown on the plans, standard sheets or as directed by the Engineer. End, corner, and intermediate posts shall be placed at the locations

indicated on the plans, standard sheets or as directed by the Engineer, and shall be braced as shown on the plans or standard sheets. When chain link fence is on a long curve intermediate posts shall be evenly spaced so that the strain of the fence will not bend the line posts.

All end, corner, and intermediate posts shall be set plumb in concrete bases of the depth and diameter shown on the plans or standard sheets. The Contractor shall have the option of setting the line posts in concrete bases or using methods of driving and anchoring specified by the fence manufacturer and approved by the Engineer.

The concrete bases shall be rough cast in the ground around the posts. The top surfaces shall be domed to shed water and provide a neat workmanlike appearance when completed. Extensions of up 45 minutes for the allowed time for pouring the concrete will be permitted.

607-3.02 Chain-Link Fencing with Top Rail. Posts shall be set so they are equidistant with a maximum of 10 foot centers.

All top rails shall pass through the base of the post caps and shall form a continuous brace from end to end of each stretch of fence. Top rail lengths shall be joined with sleeve couplings with expansion sleeves provided at 100 foot intervals. Top rails shall be securely fastened to end posts by means of approved rail end connectors. Horizontal braces shall be provided at all intermediate posts, midway between the top rail and ground as shown on the plans or standard sheets.

Diagonal truss rods shall be installed with the horizontal braces as indicated on the plans or standard sheets.

Fence fabric shall be installed approximately 2 inch above the ground level and securely fastened along the bottom, and to all braces, top rails, line and pull posts, at the intervals indicated on the standard sheets by approved methods. The fabric shall be secured to all end, corner and gate posts with stretcher bars fastened to the posts, with stretcher bands spaced at a maximum of 14 inches and in a manner permitting adjustment of the fabric tension.

If the Contractor elects the option of using one piece roll-formed sections, the fence fabric shall be integrally woven into the fabric loops on the end, corner, pull and gate posts. The fabric shall be attached to the top braces and line posts as shown on the standard sheets.

607-3.03 Chain-Link Fencing with Top Tension Wire. The construction details specified in §607-3.02 Chain Link Fencing with Top Rail shall apply with the following modifications:

A. Top tension wire shall be installed as shown on the plans, standard sheets, or as directed by the Engineer.
B. All posts shall be spaced equidistant in the fence line on a maximum of 8 foot centers.
C. Additional pull posts shall be placed at locations indicated on the plans or standard sheets. Brace assemblies shall be installed at each intermediate post as indicated on the plans or standard sheets.

607-3.04 Vinyl Coated Chain-Link Fencing on Plastic Coated Frame. The construction details specified in §607-3.02 Chain-Link Fencing with Top Rail or §607-3.03 Chain-Link Fencing with Top Tension Wire shall apply with the following addition:

If any of the resin clad material specified under this item has the protective resin coating damaged so its effectiveness to prevent corrosion of the base material is impaired, the Contractor shall repair such parts by applying one coat of an approved compound of a color to match original material.

607-3.05 Aluminum Posts. Aluminum posts shall be set in accordance with requirements pertaining to fence posts of §607-3.01 General, and §607-3.02 Chain-Link Fencing with Top Rail or §607-3.03 Chain-Link Fencing with Top Tension Wire and with the following additional requirement: The portions of aluminum posts that will be in contact with the concrete bases shall be coated with Zinc Chromate Primer conforming to the requirements of §708-04. The primer shall be thoroughly dry before setting of the post in the concrete.

607-3.06 Right-of-Way. Fencing posts shall be set plumb and firm to the satisfaction of the Engineer in properly prepared post holes, as indicated on the plans or standard sheet. The concrete for post holes where required shall be placed in accordance with the requirements of §607-3.01 General.

All line posts of the type and size shown on the plans or standard sheets shall be placed equidistant in the fence line. Wood line posts shall be placed on a maximum of 15 foot centers and metal line posts shall be placed on a maximum of 10 foot centers.

Intermediate posts and post assemblies, end posts, corner posts, approach spans, and bracing shall be as shown on the plans or standard sheets.

The woven wire fencing shall be fastened to all steel line posts with at least 5 galvanized wire fasteners or clamps and to all steel end, intermediate and corner posts with aluminum wire not less than 5/32 inch diameter.

The woven wire fencing shall be fastened to all wood posts with either 1 1/2 inch galvanized or aluminum staples. The top and bottom wires and every other in-between wires shall be stapled, alternating the stapling of the in-between wires on successive posts.

607-3.07 Fence Gates. The Contractor shall construct metal fence gates of the type and size as indicated on the plans or standard sheets, and in the location shown or ordered by the Engineer.

607-4 METHOD OF MEASUREMENT

607-4.01 General. The quantity to be paid for all fencing exclusive of fence gates and fencing of the types listed in subsequent subsections, will be the number of linear feet of chain-link fencing measured along the top of fencing, center to center of end posts, properly furnished and installed in accordance with the plans, specifications, standard sheets and directions of the Engineer. An allowance of 10 feet will be added for each end post, corner post and pull post installed in accordance with the plans, specifications, standard sheets and directions of the Engineer.

607-4.02 Right-of-Way Fencing. Right-of-Way Fencing shall be measured as the number of feet along the top of the fencing from center to center of the end posts, properly furnished and installed in accordance with the plans, specifications, standard sheets and directions of the Engineer. An allowance of 20 feet will be added for each end post, corner post, intermediate post, and approach post installed in accordance with the plans, specifications, standard sheets and directions of the Engineer.

607-4.03 Fence Gates. Fence gates shall be measured as the number of complete gates furnished and erected in accordance with the specifications, plans, standard sheets and directions of the Engineer.

607-5 BASIS OF PAYMENT

607-5.01 General. The unit price bid per linear foot of fencing shall include the cost of furnishing all labor, materials, tools and equipment necessary to satisfactorily complete the work.

607-5.02 Fence Gates. The unit price bid for each size gate shall cover the cost of furnishing all labor, materials, tools and equipment necessary to satisfactorily complete the work and shall include all necessary clearing, grubbing, excavation and disposal, fill, concrete, gates, gate posts, lock, bracing and all other necessary materials.

Payment will be made under:

Item No.	Item	Pay Unit
607.051X	Vinyl Coated Steel Chain-Link Fencing on Plastic Coated Frame with Top Rail	Foot

607.052X	Vinyl Coated Steel Chain-Link Fencing on Plastic Coated Frame with Top Tension Wire	Foot
607.16xx	Fence Gate with Vinyl Coated Steel Chain-Link Fencing on Plastic Coated Frame	Each
607.19	Right-of Way Fencing	Foot
607.20xx	Right-of Way Fence Gates	Each
607.30xx	Optional Chain-Link Fence, Type I, with Top Rail	Foot
607.31xx	Optional Chain-Link Fence, Type I, with Top Tension Wire	Foot
607.32xx	Optional Chain-Link Fence, Type II, with Top Rail	Foot
607.33xx	Optional Chain-Link Fence, Type II with Top Tension Wire	Foot
607.40xx	Optional Fence Gates	Each

Refer to the Standard Contract Pay Item Catalog for full Item Number and full Description.

SECTION 608 - SIDEWALKS, DRIVEWAYS, BICYCLE PATHS, AND VEGETATION CONTROL STRIPS

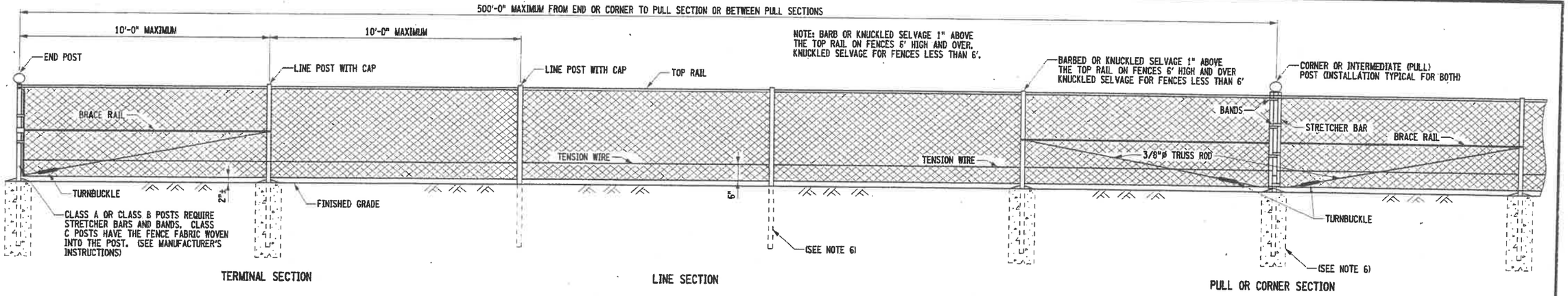
(Last Revision January, 2017)

608-1 DESCRIPTION. This work shall consist of the construction of portland cement concrete or hot mix asphalt sidewalks and driveways; hot mix asphalt bicycle paths and vegetation control strips; precast concrete paving, brick paving, grouted stone block paving, and detectable warnings on pedestrian facilities in accordance the contract documents and as directed by the Engineer.

608-2 MATERIALS. Provide materials meeting the requirements specified in the following subsections of Section 700 - *Materials and Manufacturing*:

Portland Cement	701-01
Bituminous Materials	702-00
Fine Aggregates	703-01
Coarse Aggregates	703-02
Mortar Sand	703-03
Cushion Sand	703-06
Concrete Sand	703-07
Mineral Filler	703-08
Brick Sidewalk and Driveway Pavers	704-08
Stone Blocks	704-09
Precast Concrete Driveway and Sidewalk Pavers	704-13
Caulking Compound for Structures	705-06
Premoulded Resilient Joint Filler	705-07
Masonry Mortar	705-21
Wire Fabric for Concrete Reinforcement	709-02
Fibers for Concrete Reinforcement	711-01
Membrane Curing Compound	711-05
Form Insulating Materials for Winter Concrete	711-07
Admixtures	711-08
Water	712-01
Surface-applied Detectable Warning Units	726-01
Embedded Detectable Warning Units	726-02

608-2.01 Portland Cement Concrete Sidewalks and Driveways.



TERMINAL SECTION

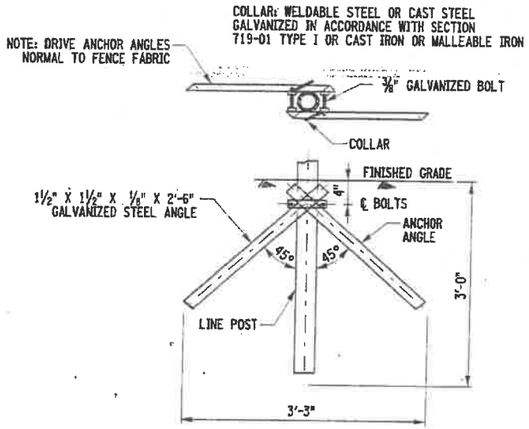
LINE SECTION

PULL OR CORNER SECTION

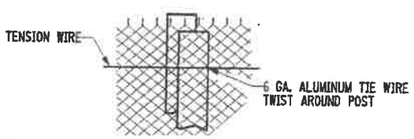
POST AND RAIL SECTION

USE	SECTION	STEEL				ALUMINUM			
		NPS DESIGNATOR	ROLLFORMED AND H POSTS	O.D.	WEIGHT LBS/FT	NPS DESIGNATOR	ROLLFORMED AND H POSTS	O.D.	WEIGHT LBS/FT
END, CORNER AND INTERMEDIATE POSTS FOR FENCES 6' AND UNDER	CLASS A SCHEDULE 40 PIPE	2		2⅜"	3.65	2		2⅜"	1.26
	CLASS B STEEL TUBING	2		2⅜"	3.12				
	CLASS C ROLLFORMED		3½" X 3½"		5.10				
END, CORNER AND INTERMEDIATE POSTS FOR FENCES OVER 6'	CLASS A SCHEDULE 40 PIPE	2½		2⅞	5.79	2½		2⅜"	2.00
	CLASS B STEEL TUBING	2½		2⅞	4.64				
	CLASS C ROLLFORMED		3½" X 3½"		5.10				
BRACE RAILS FOR FENCES UNDER 6'	CLASS A SCHEDULE 40 PIPE					1¼		1 11/16	0.79
BRACE RAILS FOR FENCES 6' AND OVER	CLASS A SCHEDULE 40 PIPE	1¼		1 11/16	2.27	1¼		1 11/16	0.79
	CLASS B STEEL TUBING	1¼		1 11/16	1.84				
	CLASS C ROLLFORMED		1⅝" X 1¼"		1.35				
TOP RAIL	CLASS A SCHEDULE 40 PIPE	1¼		1 11/16	2.27	1¼		1 11/16	0.79
	CLASS B STEEL TUBING	1¼		1 11/16	1.84				
	CLASS C ROLLFORMED		1⅝" X 1¼"		1.35				
LINE POSTS FOR FENCES 6' AND UNDER	CLASS A SCHEDULE 40 PIPE	1½		1⅞"	2.72	1½		1⅞"	0.94
	CLASS B STEEL TUBING	1½		1⅞"	2.28				
	CLASS C ROLLFORMED		1⅞" X 1⅝"		1.85				
	H POSTS		2¼" X 1¾"		3.43		1⅞" X 1⅜"		0.90
	H POSTS						2¼" X 2"		1.22
LINE POSTS FOR FENCES GREATER THAN 6' AND EQUAL TO OR LESS THAN 8'	CLASS A SCHEDULE 40 PIPE	2		2⅜"	3.65	2		2⅜"	1.26
	CLASS B STEEL TUBING	2		2⅜"	3.12				
	CLASS C ROLLFORMED		1⅞" X 1⅝"		2.40				
	H POSTS		2¼" X 1¾"		3.43		1⅞" X 1⅜"		0.90
							2¼" X 2"		1.22
LINE POSTS FOR FENCES GREATER THAN 8' AND EQUAL TO OR LESS THAN 10'	CLASS A SCHEDULE 40 PIPE	2		2⅜"	3.65	2		2⅜"	1.26
	CLASS B STEEL TUBING	2		2⅜"	3.12				
	CLASS C ROLLFORMED		2¼" X 1¾"		2.78				
	H POSTS		2¼" X 1¾"		3.43		2¼" X 2"		1.22
LINE POSTS FOR FENCES OVER 10'	CLASS A SCHEDULE 40 PIPE	2½		2⅞	5.79	2½		2⅞"	2.00
	CLASS B STEEL TUBING	2½		2⅞	4.64				
	H POSTS		2¼" X 1¾"		3.43		2¼" X 2"		1.22

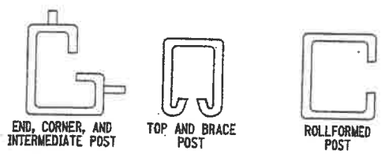
• DO NOT USE 3½" X 3½" ROLLFORMED POST ON FENCES OVER 8'



DRIVE ANCHOR



SUGGESTED METHOD OF TYING TENSION WIRE TO LINE POST



CLASS "C" ROLLFORMED SECTIONS
(SEE POST AND RAIL SCHEDULE FOR DIMENSIONS)

NOTES:

1. POSTS, INCLUDING ENCASEMENT, SHALL BE SET INSIDE THE R.O.W. LINE SO THAT FENCING PLACED ON THE R.O.W. SIDE OF POSTS WILL BE AS NEARLY ON THE R.O.W. LINE AS POSSIBLE. WHEN DIRECTED BY THE ENGINEER. THE FABRIC SHALL BE PLACED ON THE OPPOSITE SIDE OF THE POSTS SO THAT THE FABRIC CAN BE PULLED TIGHT AGAINST THE POST.
2. POSTS IN ROCK - WHERE SUBSTANTIAL ROCK IS ENCOUNTERED A HOLE 1" LARGER IN DIAMETER THAN THE POST, AND OF 12" MIN. DEPTH FOR LINE POSTS, AND 18" MIN. DEPTH FOR ALL OTHER POSTS SHALL BE MADE. AFTER INSERTING THE POSTS. THE HOLES SHALL BE BACKFILLED WITH A HANDMIXED 1:2 MORTAR CONSISTING OF ONE PART PORTLAND CEMENT TWO PARTS FINE AGGREGATE MIXED TO A PLASTIC CONSISTENCY SHOWING NO SIGNS OF FREE WATER. THE HAND MIXING AND CONSOLIDATION OF THE MORTAR SHALL BE PERFORMED IN A MANNER APPROVED BY THE ENGINEER.
3. CORNER POSTS SHALL BE USED AT SHARP BREAKS IN VERTICAL GRADE, AND CHANGES IN HORIZONTAL ALIGNMENT OF 15° AND OVER. PULL POSTS SHALL BE USED EVERY 500' ON STRAIGHT RUNS OF CHAINLINK FENCE OR AS DIRECTED BY THE ENGINEER.
4. THE CONTRACTOR SHALL SUBMIT THE DETAILS FOR THE CHAIN LINK FENCE IT PLANS TO ERECT TO THE ENGINEER. NO FENCE SHALL BE ERECTED PRIOR TO THE APPROVAL OF THE VARIOUS DETAILS.
5. STEEL PIPES AND SHAPES SHALL WEIGH AT LEAST 95% OF THE WEIGHT SPECIFIED ON THIS SHEET. THEY MAY EXCEED THE SPECIFIED WEIGHT.
6. THE CONTRACTOR SHALL HAVE THE OPTION OF SETTING THE LINE POSTS IN 10"ø BY 3' DEEP CONCRETE BASES WITH THE POSTS EMBEDDED 2'-5" OR USING METHODS OF DRIVING AND ANCHORING SPECIFIED BY THE MANUFACTURER EXCEPT THAT THE LINE POSTS WITH TRUSS RODS ATTACHED AND ALL END, CORNER AND INTERMEDIATE POSTS SHALL BE SET IN CONCRETE BASES. THE CONCRETE BASES SHALL BE A MINIMUM OF 10"ø BY 3' DEEP WITH THE POST EMBEDDED 2'-6" FOR FENCES 6' HIGH OR LESS AND 12"ø BY 3'-6" DEEP WITH THE POST EMBEDDED 3' FOR FENCES OVER 6' HIGH. FOR GATE POSTS SEE THE CURRENT STANDARD SHEET TITLED "GATES AND CHAINLINK FENCE ADJACENT TO GATES".
7. CHAINLINK FENCE WITH TOP RAIL SHALL NOT BE USED WITHIN 29'-6" OF TRAVELED WAY.

ACCESSORY	STEEL	ALUMINUM
FABRIC TIES FOR TOP AND BRACE	6 GA. ALUMINUM WIRE AT 24" C.C. MAX.	3/16" ø ALUMINUM WIRE AT 24" C.C. MAX.
FABRIC TIES FOR LINE POSTS	6 GA. ALUMINUM WIRE AT 14" C.C. MAX.	3/16" ø ALUMINUM WIRE AT 14" MAX. OR ½" X .06" CLIPS AT 14" MAX.
FABRIC TIES FOR TENSION WIRE	11 GA. ALUMINUM WIRE AT 12" O.C.	3/16" ø ALUMINUM WIRE AT 12"
BOTTOM TENSION WIRE	7 GA. GALVANIZED STEEL	3/16" ø ALUMINUM WIRE

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

CHAINLINK FENCE WITH TOP RAIL

ERRATA 1 EFF. 01/09/2014
ISSUED WITH EB 13-042

EFFECTIVE DATE: 01/08/09

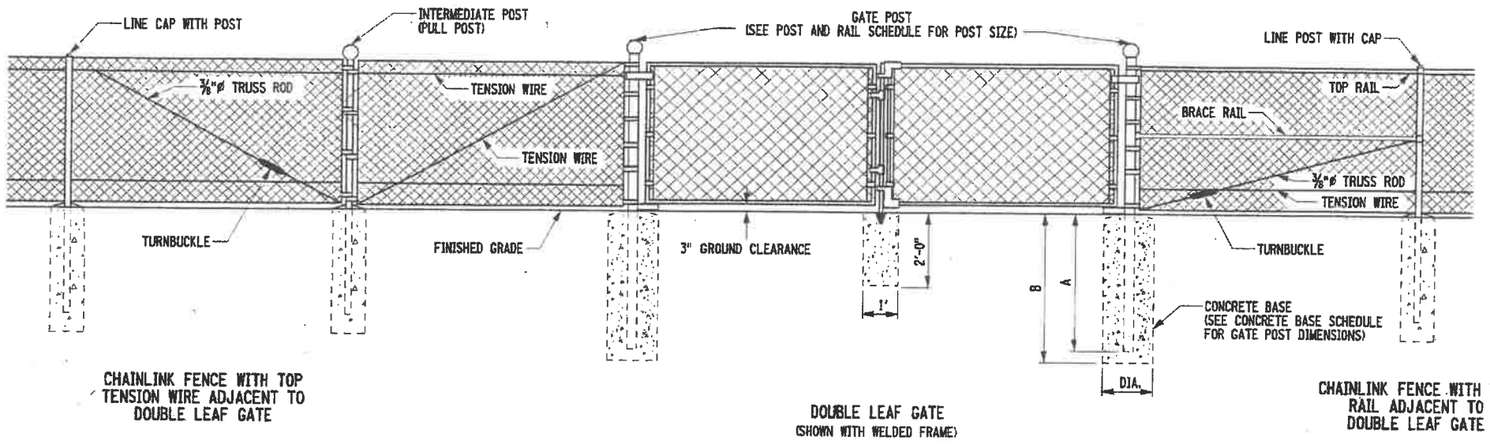
APPROVED: NOVEMBER 4, 2013

/S/ RICHARD W. LEE, P.E.
DEPUTY CHIEF ENGINEER, DESIGN (ACTING)

ISSUED UNDER EB 08-036

607-04

FILE NAME = 607-04_0108079a1.dgn
DATE/TIME = 14-NOV-2013 09:01
USER = rlohse



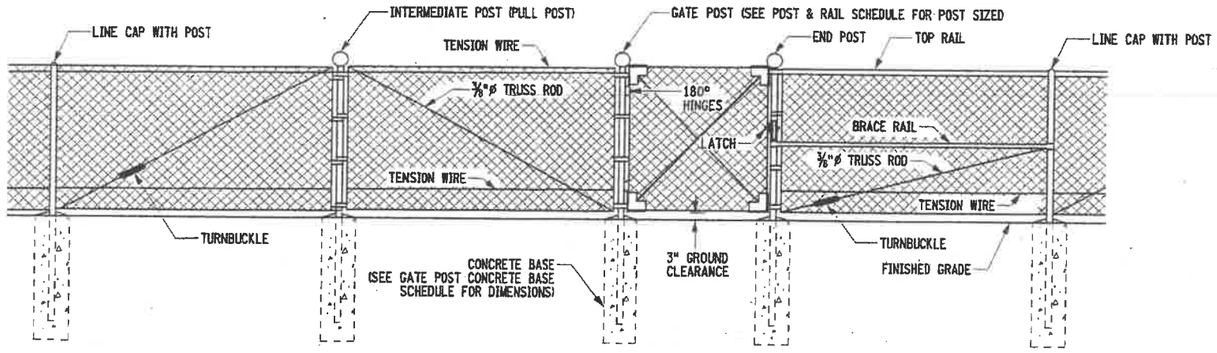
CHAINLINK FENCE WITH TOP TENSION WIRE ADJACENT TO DOUBLE LEAF GATE

DOUBLE LEAF GATE
(SHOWN WITH WELDED FRAME)

CHAINLINK FENCE WITH TOP RAIL ADJACENT TO DOUBLE LEAF GATE

NOTES:

1. GATES POSTS IN ROCK. WHERE SUBSTANTIAL ROCK IS ENCOUNTERED A HOLE 1" LARGER THAN THE GATE POST AND A MINIMUM DEPTH OF 1'-6" FOR SINGLE LEAF GATES UP TO 12' SPAN AND DOUBLE LEAF GATES UP TO 36' SPAN, AND 2' IN DEPTH FOR DOUBLE LEAF GATES 40' SPAN TO 44' SPAN SHALL BE MADE. AFTER INSERTING THE POSTS, THE HOLES SHALL BE BACKFILLED WITH A HANDMIXED 1:2 MORTAR CONSISTING OF ONE PART PORTLAND CEMENT AND TWO PARTS FINE AGGREGATE MIXED TO A PLASTIC CONSISTENCY SHOWING NO SIGN OF FREE WATER. THE HANDMIXING AND CONSOLIDATION OF THE MORTAR SHALL BE PREFORMED IN A MANNER APPROVED BY THE ENGINEER.
2. THE CONTRACTOR SHALL SUBMIT THE DETAILS FOR GATES AND CHAINLINK FENCE ADJACENT TO THEM TO THE ENGINEER. NO FENCE OR GATES SHALL BE ERECTED PRIOR TO THE APPROVAL OF THE VARIOUS DETAILS.
3. STEEL PIPES AND SHAPES SHALL WEIGH AT LEAST 95% OF THE WEIGHT SPECIFIED ON THIS SHEET. THEY MAY EXCEED THE SPECIFIED WEIGHT.



CHAINLINK FENCE WITH TOP TENSION WIRE ADJACENT TO SINGLE LEAF GATE

SINGLE LEAF GATE
(SHOWN WITH CORNER FITTINGS)

CHAINLINK FENCE WITH TOP RAIL ADJACENT TO SINGLE LEAF GATE

POST AND RAIL SCHEDULE								
		STEEL				ALUMINUM		
USE	SECTION	NPS DESIGNATOR	ROLLFORMED	O.D. SIZE	WEIGHT LBS/FT	NPS DESIGNATOR	O.D. NOM.	WEIGHT LBS/FT
GATE POSTS FOR SINGLE LEAF GATES LESS THAN 6' SPAN	SCHEDULE 40 PIPE	2½		2⅞"	5.79			
	CLASS B, STEEL	2½		2⅞"	4.64	3½	4"	3.15
	ROLLFORMED		3½ X 3½		5.10			
GATE POSTS FOR SINGLE LEAF GATES LESS THAN 6' - 12' SPAN	SCHEDULE 40 PIPE	3½		4"	9.11	3½	4"	3.15
	ROLLFORMED		3½ X 3½		5.10			
GATE POSTS FOR DOUBLE LEAF GATES, 10' - 24' SPAN	SCHEDULE 40 PIPE	3½		4"	9.11	3½	4"	3.15
	ROLLFORMED		3½ X 3½		5.10			
GATES POSTS FOR DOUBLE LEAF GATES, 28' - 36' SPAN	SCHEDULE 40 PIPE	6		6⅝"	18.97	6	6⅝"	6.56
GATE POSTS FOR DOUBLE LEAF GATES, 40' - 44' SPAN	SCHEDULE 40 PIPE	8		8⅝"	28.55	8	8⅝"	9.88
GATE FRAME FOR GATES 8' IN WIDTH OR LESS	SCHEDULE 40 PIPE	1½		1⅞"	2.72	1½	1⅞"	0.94
GATE FRAME FOR GATES GREATER THAN 8' IN WIDTH	SCHEDULE 40 PIPE	2		2⅜"	3.65	2	2⅜"	1.264

GATE POST CONCRETE BASE SCHEDULE			
USE	DIA.	A	B
GATE POST FOR SINGLE LEAF GATES UP TO 12' SPAN	14"	3'-0"	3'-6"
GATE POST FOR DOUBLE LEAF GATES UP TO 24' SPAN	14"	3'-0"	3'-6"
GATE POST FOR DOUBLE LEAF GATES 28' - 36' SPAN	24"	3'-0"	3'-6"
GATES POSTS FOR DOUBLE LEAF GATES 40'- 44'	24"	3'-6"	3'-8"

(SEE NOTE 1)

*FROM ANSI - H35.2(M)

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

GATES AND CHAINLINK FENCE ADJACENT TO GATES

APPROVED SEPTEMBER 19, 2008
/S/ DANIEL D'ANGELO, P.E.
DEPUTY CHIEF ENGINEER (DESIGN)

ISSUED UNDER EB 08-036

607-06

EFFECTIVE DATE: 01/08/09

FILE NAME = JP_PWP:#0109553\607-06.dgn
DATE/TIME = 05-NOV-2008 15:03
USER = jturley

Appendix E – Preliminary Opinion of Probable Cost Estimate

City of Beacon
Preliminary Opinion of Probable Cost
Hudson River Trail - Preliminary Design Report

BASE (Combination Asphalt & Stone Dust Trail Surface) [6,125 lf]

Item No.	Item	Quantity	Units	Unit Cost	Total Cost
	E&S - Silt Fence	6000	LF	$ 3.50	$21,000
	E&S - Tree Protection	1	LS	$ 20,000.00	$20,000
	Demo - Clearing & Grubbing	9750	CY	$ 15.00	$146,250
	Demo - Tree Removal	1	LS	$ 100,000.00	$100,000
	Demo - Rock Removal/ Stabilization	1	LS	$ 100,000.00	$100,000
	Demo - Excavate / Backfill	900	CY	$ 25.00	$22,500
	Site - Grading & Earthwork	263500	SF	$ 2.00	$527,000
	Site - Concrete Pavers	820	SF	$ 15.00	$12,300
	Site - Redirock Retaining Wall (19,000 sf)	1	LS	$ 720,000.00	$720,000
	Site - Asphalt Pavement	2750	SY	$ 35.00	$96,250
	Site - Stone Dust	300	CY	$ 25.00	$7,500
	Site - Concrete Pavement	700	SF	$ 10.00	$7,000
	Site - Compacted Sub-Base (NYSDOT Type 2)	1400	CY	$ 40.00	$56,000
	Site - Structural Fill	300	CY	$ 50.00	$15,000
	Site - Seeding & Mulching	25000	SY	$ 1.00	$25,000
	Site - Timber Fencing	2500	LF	$ 45.00	$112,500
	Site - Chain Link Fencing (NYSBA Type 1) - 8ft ht	3000	LF	$ 75.00	$225,000
	Site - Miscellaneous (Pavement Markings)	1	LS	$ 50,000.00	$50,000
	Utility - Storm Drain (6" HDPE)	50	LF	$ 55.00	$2,750
	Utility - Storm Drain (4" Perf. HDPE)	3400	LF	$ 55.00	$187,000
	Utility - Cameras/Security Equipment (NYSBA)	1	LS	$ 80,000.00	$80,000
	Site Furnishing - Trail Kiosk	1	EA	$ 15,000.00	$15,000
	Site Furnishing - Information Signage	5	EA	$ 1,500.00	$7,500
	Site Furnishing - Bench	6	EA	$ 2,500.00	$15,000
	Site Furnishing - Bollards	2	EA	$ 1,500.00	$3,000
	Structural - Pre-Engineered Culvert Crossing	2	EA	$ 208,400.00	$416,800
	Structural - Elevated Trail Structure	4	EA	$ 130,000.00	$520,000
				Subtotal Cost	$3,510,350

CONTINGENCIES

	General Conditions & Mobilization (12%)		$421,242
	E&S and Misc. Drainage (Moderate - 5%)		$175,518
	Maintenance & Safety of Traffic Contingency [Rail] (High - 6%)	*Flagger = $1,500/day*	$210,621
	Utility Modifications (Low - 2%)		$70,207
	Project Permitting, Design & Inspection Services (15%)		$526,553
	Construction Contingency (20%)		$702,070
		Total Preliminary Cost	**$5,700,000**

Trail Surface Alternate 1 - STONE DUST PATH ENTIRE LENGTH

DEDUCT FROM BASE	-$120,000

Trail Surface Alternate 2 - ASPHALT PATH ENTIRE LENGTH

ADD TO BASE	$120,000

Appendix F – Project Support Letters

Randy Casale, Mayor
City of Beacon
One Municipal Plaza
Beacon, New York 12508
845-838-5010 - Office
845-838-5012 - Fax

www.cityofbeacon.org

September 4, 2014

Ms. Sara Griffen, Acting Chair
Greenway Conservancy for the Hudson River Valley
625 Broadway, 4th Floor
Albany, New York 12207

RE: 2014 Conservancy Trail Grant Program—Hudson Trail Master Plan in Beacon

Dear Ms. Griffen:

The City of Beacon is pleased to submit an application to the Greenway Conservancy requesting $5,000 in funding to develop a Master Plan for the Hudson Trail through the 2014 Conservancy Trail Grant Program. The Hudson Trail will become an important segment of the Greenway Trail system that will provide public access along the Hudson River from the Beacon Metro North Railroad train station north to the Newburgh-Beacon Bridge and slightly beyond to the Fishkill Town line where it will connect with an envisioned trail along the Hudson River in Fishkill.

The Hudson Trail Master Plan will plan and design a more direct and natural route to the Hudson River away from busy Route 9D. The proposed Trail will complement ongoing efforts to promote public access to the Hudson River by enhancing plans already underway for the Hudson Fjord Hike/ Bike Trail (Beacon train station south to Cold Spring along the Hudson River) and the Fishkill Creek Greenway and Heritage Trail (Beacon train station first south along the Hudson River then north along the Fishkill Creek and Fishkill Town line). The Hudson Trail will also connect with the Beacon Loop Trail, which runs east through Beacon's vibrant and historic downtown and the Trail of Two Cities, which connects west with the City of Newburgh.

Beacon is a major anchor for economic development, tourism, arts and culture, recreational and natural resource initiatives in the Mid-Hudson Region; and the City's trails and bridges are the spokes to its central business district and waterfront development. I respectfully request your support for the Hudson Trail Master Plan, because it fills a gap in various local and regional trail plans. I urge you to support the City's continued efforts to revitalize its waterfront, develop its extensive Greenway Trail system and promote public access to the Hudson River through this project.

Sincerely,

Randy Casale

Mayor Randy Casale
City of Beacon

Robert P. LaColla
Supervisor
E-mail: supervisor@fishkill-ny.gov
(845) 831-7800 Ext. 3309
(845) 831-6040 Fax



Fishkill Town Hall
807 Route 52
Fishkill, NY 12524-3110
website: www.fishkill-ny.gov

September 4, 2014

Ms. Sara Griffen, Acting Chair
Greenway Conservancy for the Hudson River Valley
625 Broadway, 4th Floor
Albany, New York 12207

RE: 2014 Conservancy Trail Grant Program—Hudson Trail Master Plan in Beacon

Dear Ms. Griffen:

I am writing to express the support of the Town Board of Fishkill for the City of Beacon's application to the Greenway Conservancy to develop a Master Plan for the Hudson Trail through the 2014 Conservancy Trail Grant Program. The Hudson Trail will become an important segment of the Greenway Trail system that will provide public access along the Hudson River from the Beacon train station to the Newburgh-Beacon Bridge and further north to the Fishkill Town line. The proposed Trail will complement current efforts to connect the Beacon Loop Trail, the Trail of Two Cities (with Newburgh), the Fishkill Creek Greenway and Heritage Trail (FCGHT), and the Hudson Fjord Hike/ Bike Trail. The Hudson Trail Master Plan will plan and design a more direct and natural route to the Beacon waterfront from areas north, south and east of the city and away from busy Route 9D.

The City of Beacon is a major anchor for economic development, tourism, arts and culture, recreational and natural resource initiatives in the Mid-Hudson Region. The City's trails and bridges are the spokes to its central business district and waterfront development. The new Hudson Trail will enhance current plans to develop the Hudson Fjord Trail along the Hudson River from Cold Spring to Fishkill, the Town of Fishkill's own River Trail initiative and beyond. The Master Plan will complement ongoing plans that provide direct public access to the different habitats and diversity of wildlife species along the Hudson River.

I respectfully request the Greenway Conservancy's positive consideration of this grant application to fund this much-needed project, which fills a gap in various local and regional development plans. I urge you to support the City's continued efforts to revitalize its waterfront, develop its extensive Greenway Trail system and promote public access to the Hudson River.

Sincerely,

Robert P. LaColla
Supervisor

19 S. Brett Street
Beacon, NY 12508
September 3, 2014

Ms. Sara Griffen, Acting Chair
Greenway Conservancy for the Hudson River Valley
625 Broadway, 4th Floor
Albany, New York 12207

RE: 2014 Conservancy Trail Grant Program—Hudson Trail Master Plan in Beacon

Dear Ms. Griffen:

I am writing to voice my support for the City of Beacon's application to the Greenway Conservancy to develop a Master Plan for the Hudson Trail through the 2014 Conservancy Trail Grant Program.

The Hudson Trail will become an important segment of the Greenway Trail system that will provide public access along the Hudson River from the Beacon Metro North Railroad station north to the Newburgh-Beacon Bridge and slightly beyond to City of Beacon / Fishkill Town line where it will connect with an envisioned trail along the Hudson River in Fishkill. The Hudson Trail Master Plan will plan and design a more direct and natural route away from busy Route 9D.

The Master Plan will complement ongoing efforts that provide direct public access to the different habitats and diversity of wildlife species enhancing plans already underway for the Fishkill Creek Greenway and Heritage Trail (Beacon Metro North Railroad Station first south along the Hudson River then north along Fishkill Creek to the Fishkill Town line) and the Hudson Highlands Fjord Trail (Beacon Metro North Railroad Station south to Cold Spring along the Hudson River). The Hudson Trail will also connect with the Beacon Loop Trail which runs east through Beacon's vibrant and historic downtown and Trail of Two Cities which connects west with Newburgh.

I respectfully request the Greenway Conservancy's positive consideration of this grant application to fund this much needed project, which fills a gap in various local and regional development plans. I urge you to support the City's continued efforts to revitalize its waterfront, develop its extensive Greenway Trail system and promote public access to the Hudson River.

Sincerely,

James Korn
Chariman
Beacon Greenway Trails Committee

Scenic Hudson, Inc.
One Civic Center Plaza, Suite 200
Poughkeepsie, NY 12601-3157
Tel: 845 473 4440
Fax: 845 473 2648
email: info@scenichudson.org
www.scenichudson.org

SCENIC HUDSON

August 28, 2014

Ms. Sara Griffen, Acting Chair
Greenway Conservancy for the Hudson River Valley
625 Broadway, 4th Floor
Albany, New York 12207

RE: 2014 Conservancy Trail Grant Program—Hudson Trail Master Plan in Beacon

Dear Ms. Griffen:

Scenic Hudson is writing to voice its support for the City of Beacon's application to the Greenway Conservancy to develop a Master Plan for the Hudson Trail through the 2014 Conservancy Trail Grant Program. The Hudson Trail will become an important segment of the Greenway Trail system that will provide public access along the Hudson River from the Beacon train station to the Newburgh-Beacon Bridge and further north to the Fishkill Town line. The proposed Trail will complement current efforts to connect the Beacon Loop Trail, the Trail of Two Cities (with Newburgh), the Fishkill Creek Greenway and Heritage Trail (FCGHT), and the Hudson Highlands Fjord Trail. The Hudson Trail Master Plan will plan and design a more direct and natural route to the Beacon waterfront from areas north, south and east of the city and away from busy Route 9D.

The City of Beacon is a major anchor for economic development, tourism, arts and culture, recreational and natural resource initiatives in the Mid-Hudson Region. The City's trails and bridges are the spokes to its central business district and waterfront development. The new Hudson Trail will enhance current plans to develop the Hudson Highlands Fjord Trail along the Hudson River from Cold Spring to Fishkill and beyond. The Master Plan will complement ongoing plans that provide direct public access to the different habitats and diversity of wildlife species along the Hudson River.

I respectfully request the Greenway Conservancy's positive consideration of this grant application to fund this much needed project, which fills a gap in various local and regional development plans. I urge you to support the City's continued efforts to revitalize its waterfront, develop its extensive Greenway Trail system and promote public access to the Hudson River.

Thank you for your consideration.

Sincerely,

Andy Bicking
Director of Public Policy

MARCUS J. MOLINARO
COUNTY EXECUTIVE

EOIN WRAFTER, AICP
ACTING COMMISSIONER

COUNTY OF DUTCHESS
DEPARTMENT OF PLANNING AND DEVELOPMENT

September 3, 2014

Ms. Sara Griffen, Acting Chair
Greenway Conservancy for the Hudson River Valley
625 Broadway, 4th Floor
Albany, New York 12207

RE: 2014 Conservancy Trail Grant Program—Hudson Trail Master Plan in Beacon

Dear Ms. Griffen:

The Dutchess County Department of Planning and Development supports the City of Beacon's application to the Greenway Conservancy to develop a Master Plan for the Hudson Trail through the 2014 Conservancy Trail Grant Program. The Hudson Trail will become an important segment of the Greenway Trail system that will provide public access along the Hudson River from the Beacon train station to the Newburgh-Beacon Bridge and further north to the Fishkill Town line. The proposed Trail will complement current efforts to connect the Beacon Loop Trail, the Trail of Two Cities (with Newburgh), the Fishkill Creek Greenway and Heritage Trail (FCGHT), and the Hudson Fjord Hike/Bike Trail. The Hudson Trail Master Plan will plan and design a more direct and natural route to the Beacon waterfront from areas north, south and east of the city and away from busy Route 9D.

The Hudson Trail concept is a recommendation of *Walk Bike Dutchess*, the current Pedestrian & Bicycle Plan for Dutchess County, which was adopted in March 2014. The Plan focuses on access to centers and key destinations, which include the Beacon train station, waterfront, and the Newburgh-Beacon Bridge. The Plan notes that there is no pedestrian access to the Hudson River in Beacon or Fishkill north of Beacon's Riverfront Park. To address this, it recommends a shared-use Greenway Trail along the waterfront from the Beacon train station to the Newburgh-Beacon Bridge access road, if feasible, eventually continuing north into the Town of Fishkill (see Chapter 5.1, page 140).
http://www.co.dutchess.ny.us/CountyGov/Departments/TransportationCouncil/bppchapterfiveone.pdf)

We offer our enthusiastic support and encourage the Greenway Conservancy to consider the request for funds favorably, the Hudson Trail will fill a gap in various local and regional development plans.

Sincerely,

Eoin Wrafter
Acting Commissioner

c: Marcus J. Molinaro, County Executive

27 High Street, Poughkeepsie, New York 12601 • (845) 486-3600 • Fax (845) 486-3610
www.dutchessny.gov

FRANK K. SKARTADOS
Assemblyman 104th District

Dutchess, Orange, and
Ulster Counties

THE ASSEMBLY
STATE OF NEW YORK

COMMITTEES
Agriculture
Economic Development, Job Creation, Commerce and Industry
Local Governments
Small Business
Tourism, Parks, Arts & Sports Development
Transportation
SUB COMMITTEES
Chair – Subcommittee on Agriculture Economic Development and Farmland Protection

September 3, 2014

Ms. Sara Griffen, Acting Chair
Greenway Conservancy for the Hudson River Valley
625 Broadway, 4th Floor
Albany, New York 12207

RE: 2014 Conservancy Trail Grant Program—Hudson Trail Master Plan in Beacon

Dear Ms. Griffen:

I am writing to voice my support for the City of Beacon's application to the Greenway Conservancy to develop a Master Plan for the Hudson Trail through the 2014 Conservancy Trail Grant Program. The Hudson Trail will become an important segment of the Greenway Trail system that will provide public access along the Hudson River from the Beacon train station to the Newburgh-Beacon Bridge and further north to the Fishkill Town line. The proposed Trail will complement current efforts to connect the Beacon Loop Trail, the Trail of Two Cities (with Newburgh), the Fishkill Creek Greenway and Heritage Trail (FCGHT), and the Hudson Fjord Hike/ Bike Trail. The Hudson Trail Master Plan will plan and design a more direct and natural route to the Beacon waterfront from areas north, south and east of the city and away from busy Route 9D.

The City of Beacon is a major anchor for economic development, tourism, arts and culture, recreational and natural resource initiatives in the Mid-Hudson Region. The City's trails and bridges are the spokes to its central business district and waterfront development. The new Hudson Trail will enhance current plans to develop the Hudson Fjord Trail along the Hudson River from Cold Spring to Fishkill and beyond. The Master Plan will complement ongoing plans that provide direct public access to the different habitats and diversity of wildlife species along the Hudson River.

I respectfully request the Greenway Conservancy's positive consideration of this grant application to fund this much needed project, which fills a gap in various local and regional development plans. I urge you to support the City's continued efforts to revitalize its waterfront, develop its extensive Greenway Trail system and promote public access to the Hudson River.

Sincerely,

Frank Skartados

DISTRICT OFFICE: 154 North Plank Road, Suite #2, Newburgh, New York 12550 • 845-562-0888, FAX: 845-561-5218
ALBANY OFFICE: Room 435, Legislative Office Building, Albany, New York 12448 • 518-455-5762, FAX: 518-455-5593
EMAIL: Skartadosf@assembly.state.ny.us

RANKING MINORITY MEMBER
AGRICULTURE
LOCAL GOVERNMENT

COMMITTEES
BANKS
CONSUMER PROTECTION
CULTURAL AFFAIRS, TOURISM, PARKS & RECREATION
TRANSPORTATION
VETERANS, HOMELAND SECURITY & MILITARY AFFAIRS

THE SENATE
STATE OF NEW YORK

TERRY GIPSON
SENATOR, 41ST DISTRICT

ALBANY OFFICE:
ROOM 617, LOB
ALBANY, NEW YORK 12247
(518) 455-2303
FAX: (518) 426-6914

DISTRICT OFFICE:
3 NEPTUNE RD., SUITE A19B
POUGHKEEPSIE, NEW YORK 12601
(845) 463-0840
FAX: (845) 463-3438

GIPSON@NYSENATE.GOV
WWW.GIPSON.NYSENATE.GOV

September 5, 2014

Ms. Sara Griffen, Acting Chair
Greenway Conservancy for the Hudson River Valley
625 Broadway, 4th Floor
Albany, New York 12207

RE: 2014 Conservancy Trail Grant Program—Hudson Trail Master Plan in Beacon

Dear Ms. Griffen:

I am writing to voice my support for the City of Beacon's application to the Greenway Conservancy to develop a Master Plan for the Hudson Trail through the 2014 Conservancy Trail Grant Program. The Hudson Trail will become an important segment of the Greenway Trail system that will provide public access along the Hudson River from the Beacon train station to the Newburgh-Beacon Bridge and further north to the Fishkill Town line. The proposed Trail will complement current efforts to connect the Beacon Loop Trail, the Trail of Two Cities (with Newburgh), the Fishkill Creek Greenway and Heritage Trail (FCGHT), and the Hudson Fjord Hike/ Bike Trail. The Hudson Trail Master Plan will plan and design a more direct and natural route to the Beacon waterfront from areas north, south and east of the city and away from busy Route 9D.

The City of Beacon is a major anchor for economic development, tourism, arts and culture, recreational and natural resource initiatives in the Mid-Hudson Region. The City's trails and bridges are the spokes to its central business district and waterfront development. The new Hudson Trail will enhance current plans to develop the Hudson Fjord Trail along the Hudson River from Cold Spring to Fishkill and beyond. The Master Plan will complement ongoing plans that provide direct public access to the different habitats and diversity of wildlife species along the Hudson River.

Improving the outdoor recreation opportunities for Hudson Valley residents has been among my major priorities in the Senate, whether through my work with the Regional Economic Development Council, on the Senate's Cultural Affairs, Tourism, Parks and Recreation Committee, or in securing funding for park repairs and enhancements in the 2014-15 state budget. This application fits well with this ongoing work, as it seeks to fill a gap in various local and regional development plans. Accordingly, I urge you to support the City's continued efforts to revitalize its waterfront, develop its extensive Greenway Trail system and promote public access to the Hudson River.

Sincerely,

Terry Gipson
Senator, 41st District

347 Madison Avenue
New York, NY 10017-3739
www.mta.info

Joseph J. Giulietti
President

Metro-North Railroad

September 3, 2014

Ms. Sara Griffen, Acting Chair
Greenway Conservancy for the Hudson River Valley
625 Broadway, 4th Floor
Albany, New York 12207

RE: 2014 Conservancy Trail Grant Program—Hudson Trail Master Plan in Beacon

Dear Ms. Griffen:

I am writing to voice my support for the City of Beacon's application to the Greenway Conservancy to develop a Master Plan for the Hudson Trail through the 2014 Conservancy Trail Grant Program. Metro-North Railroad is interested in working with Beacon to explore the feasibility of developing the Hudson Trail provided there is no impact on access to and the current and future operations of the railroad that supports intercity passenger, regional passenger and freight operations.

The Hudson Trail would become an important segment of the Greenway Trail system that would provide public access along the Hudson River from the Beacon train station to the Newburgh-Beacon Bridge and further north to the Fishkill Town line. The proposed Trail will complement current efforts to connect the Beacon Loop Trail, the Trail of Two Cities (with Newburgh), the Fishkill Creek Greenway and Heritage Trail (FCGHT), and the Hudson Fjord Hike/ Bike Trail. The Hudson Trail Master Plan would plan and design a more direct and natural route to the Beacon waterfront from areas north, south and east of the city and away from busy Route 9D.

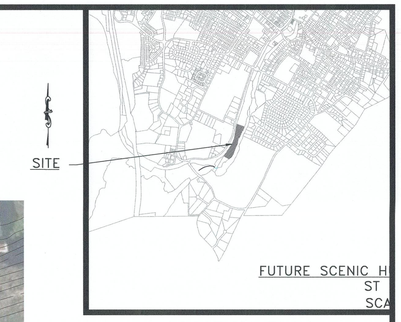
The City of Beacon is a major anchor for economic development, tourism, arts and culture, recreational and natural resource initiatives in the Mid-Hudson Region. The City's trails and bridges are the spokes to its central business district and waterfront development. The new Hudson Trail will enhance current plans to develop the Hudson Fjord Trail along the Hudson River from Cold Spring to Fishkill and beyond. The Master Plan will complement ongoing plans that provide direct public access to the different habitats and diversity of wildlife species along the Hudson River.

I respectfully request the Greenway Conservancy's positive consideration of this grant application, which fills a gap in various local and regional development plans. I urge you to support the City's continued efforts to revitalize its waterfront, develop its extensive Greenway Trail system and promote public access to the Hudson River.

Sincerely,

Mark Mannix
Senior Director
Corporate & Public Affairs





LOCATION PLAN

1 INCH = 2000 FEET

NOTES:

1. .5 FT NATURAL COLOR AERIAL IMAGERY IS FROM SPRING 2016, OBTAINED FROM THE NY STATE CLEARINGHOUSE WEBSITE.
2. THE 2-FT DUTCHESS COUNTY CONTOURS WERE CREATED USING THE USGS 3 COUNTY 2014 LIDAR COLLECTION. THESE CONTOURS WERE GENERATED USING GLOBAL MAPPER GENERATE CONTOURS TOOL AND RUNNING AGAINST THE BARE EARTH DIGITAL ELEVATION MODEL, OBTAINED FROM THE NY STATE CLEARINGHOUSE WEBSITE.

NOTE:

PLAN IS CONCEPTUAL ONLY. ACTUAL DESIGN AND LOCATION OF TRAIL WOULD NEED TO BE BASED UPON ACTUAL TOPOGRAPHIC SURVEY OF SITE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

COPYRIGHT 2020, LANC & TULLY, P.C.

COPIES FROM THE ORIGINAL OF THIS DOCUMENT NOT MARKED WITH AN ORIGINAL OF THE PROFESSIONAL ENGINEER'S AND/OR LAND SURVEYOR'S STAMP OR EMBOSSED SEAL SHALL NOT BE CONSIDERED VALID, TRUE COPIES.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209-2 OF THE NEW YORK STATE EDUCATION LAW.

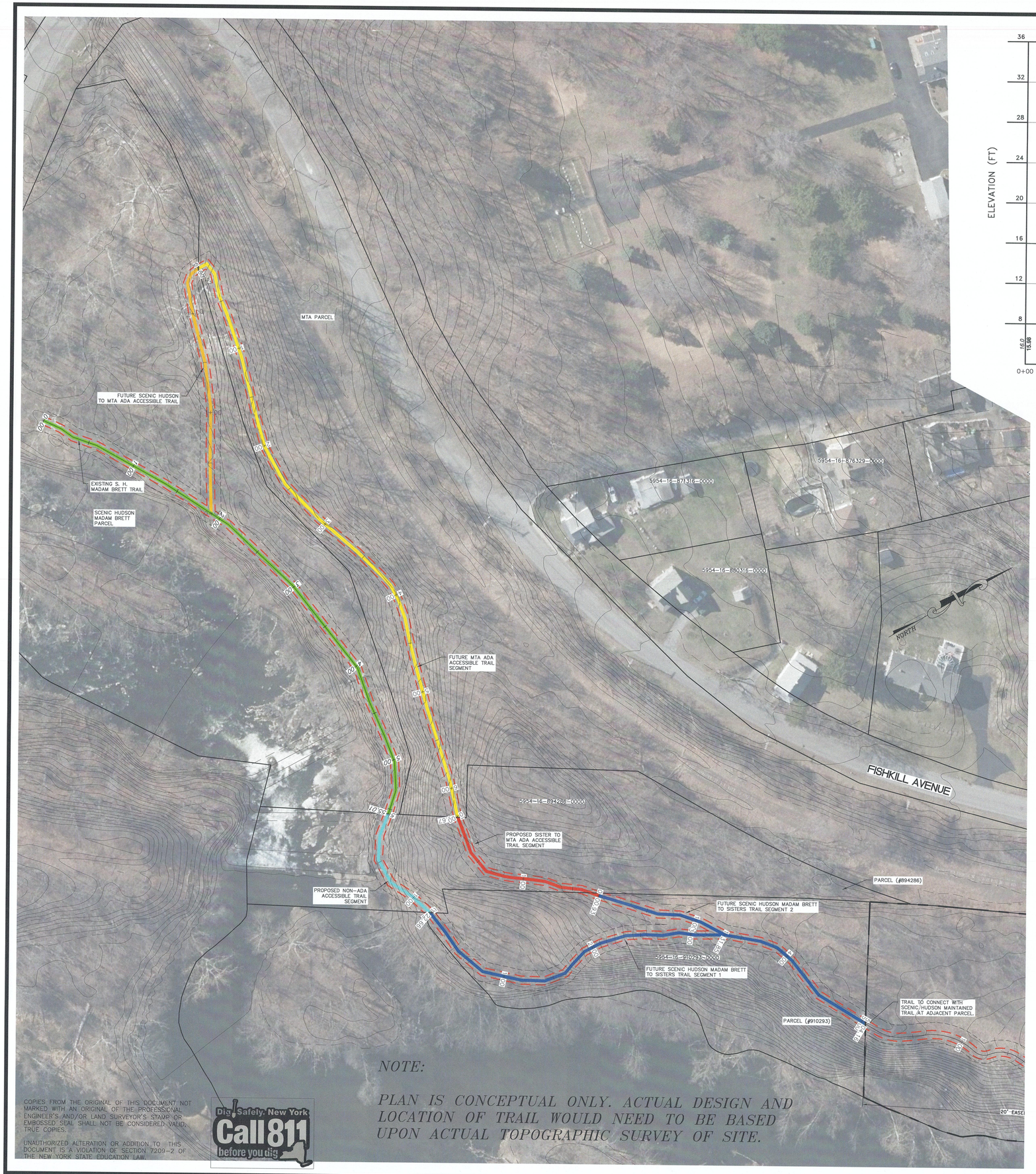
Dig. Safely. New York. Call 811 before you dig

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

CONCEPT PLAN PREPARED FOR

GREENWAY TRAIL COMMITTEE
SISTERS NORTH PARCEL
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

Date:	Revisions:	CAD File:	Layout:	Sheet No.:	Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
AUGUST 3, 2020	SEPTEMBER 15, 2020 OCTOBER 29, 2020	205877-BASE-SISTERS	SISTERS-NORTH	1 OF 7	TH		1" = 40'	5954-16-951357	C3D A - 20 - 5877 - 01



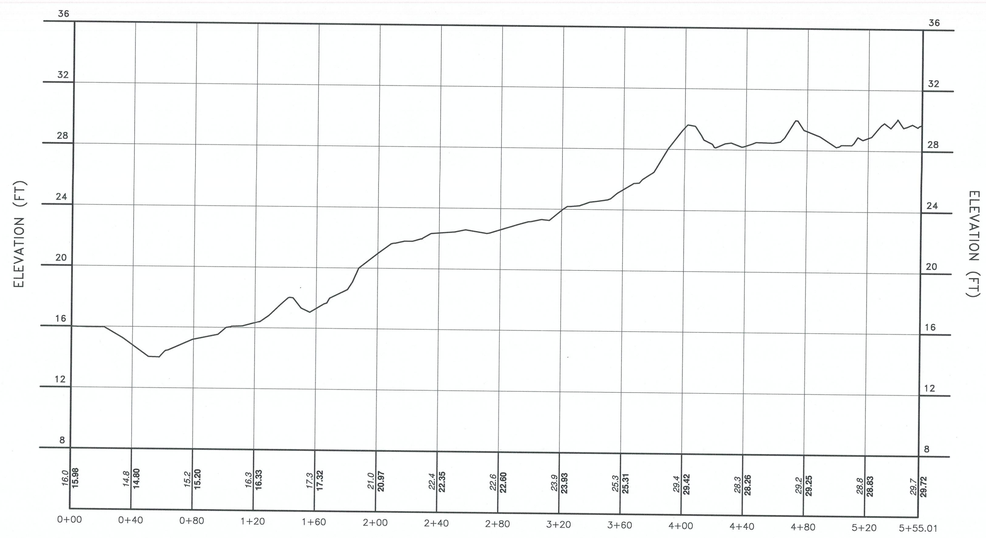
NOTE:

PLAN IS CONCEPTUAL ONLY. ACTUAL DESIGN AND LOCATION OF TRAIL WOULD NEED TO BE BASED UPON ACTUAL TOPOGRAPHIC SURVEY OF SITE.

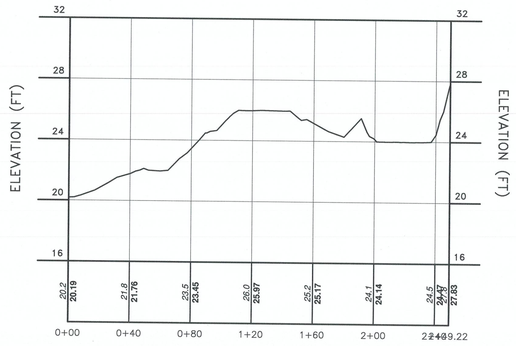
COPIES FROM THE ORIGINAL OF THIS DOCUMENT NOT MARKED WITH AN ORIGINAL OF THE PROFESSIONAL ENGINEER'S AND/OR LAND SURVEYOR'S STAMP OR EMBOSSED SEAL SHALL NOT BE CONSIDERED VALID TRUE COPIES.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209-2 OF THE NEW YORK STATE EDUCATION LAW.

Dig Safely. New York Call 811 before you dig



EXISTING S.H. MADAM BRETT TRAIL
ST 0+00 THRU ST 5+55.01
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'



FUTURE SCENIC HUDSON TO MTA ADA ACCESSIBLE TRAIL
ST 0+00 THRU ST 2+49.22
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'

- PROPOSED SISTERS TO MTA ADA ACCESSIBLE TRAIL SEGMENT
- PROPOSED SISTERS TO SCENIC HUDSON NON-ADA ACCESSIBLE TRAIL SEGMENT
- FUTURE MTA ADA ACCESSIBLE TRAIL SEGMENT
- EXISTING SCENIC HUDSON MADAM BRETT TRAIL SEGMENT
- FUTURE SCENIC HUDSON MADAM BRETT TO SISTERS TRAIL SEGMENT
- FUTURE SCENIC HUDSON TO MTA ADA ACCESSIBLE TRAIL SEGMENT

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

COPYRIGHT 2020, LANC & TULLY, P.C.

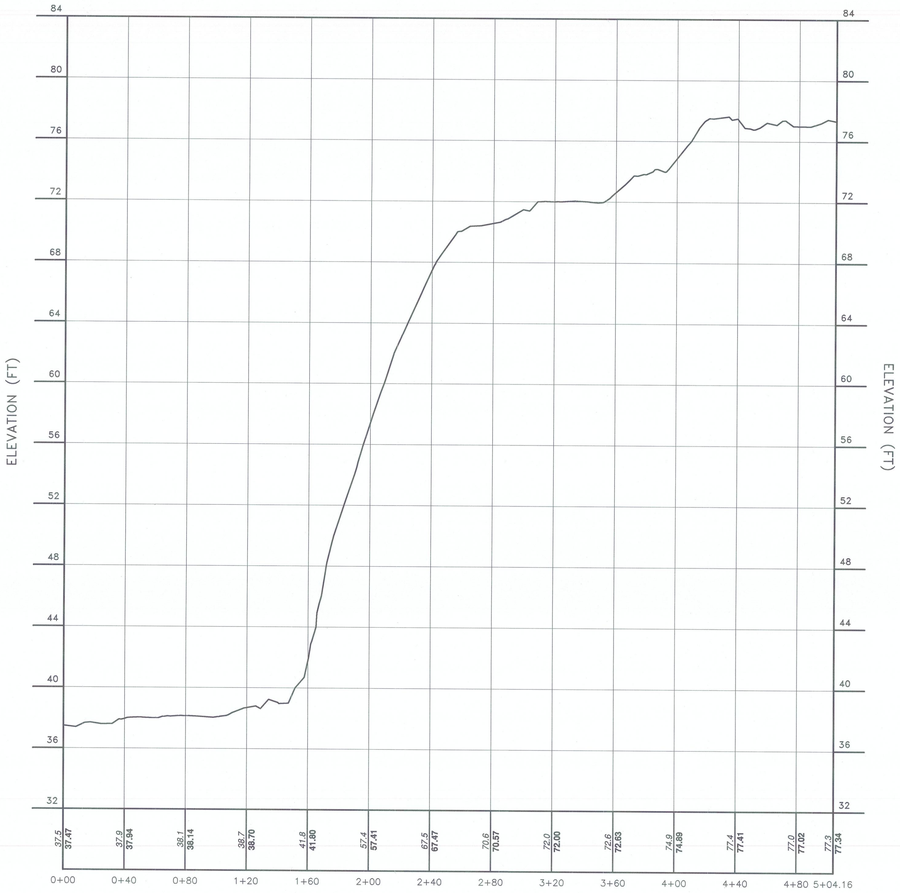
LANC & TULLY
ENGINEERING AND SURVEYING, P.C.
P.O. Box 887, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

CONCEPT PLAN PREPARED FOR

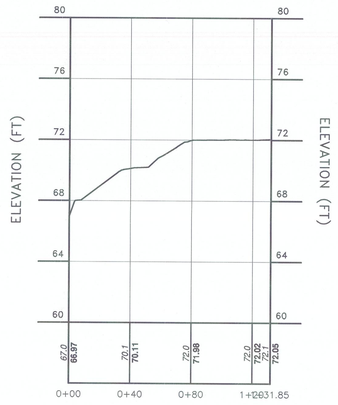
GREENWAY TRAIL COMMITTEE
SISTERS SOUTH PARCEL

CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

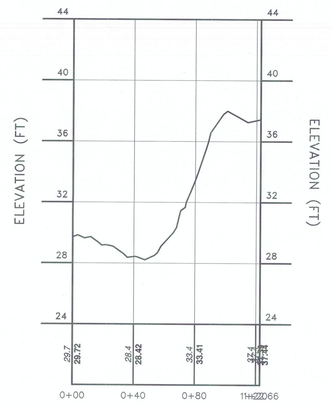
Date:	OCTOBER 29, 2020
Revisions:	DECEMBER 1, 2020
CAD File:	2058/7-BASE-SISTERS
Layout:	SISTERS-SOUTH 1
Sheet No.:	2 OF 7
Drawn By:	TH
Checked By:	
Scale:	1" = 40'
Tax Map No.:	5954-16-951357
Drawing No.:	C3D
	A - 20 - 5877 - 02



FUTURE SCENIC HUDSON MADAM BRETT TO SISTERS SEGMENT 1
ST 0+00 THRU ST 5+04.16
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'



FUTURE SCENIC HUDSON MADAM BRETT TO SISTERS SEGMENT 2
ST 0+00 THRU ST 1+31.85
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'



PROPOSED NON-ADA ACCESSIBLE TRAIL SEGMENT
ST 0+00 THRU ST 1+22.66
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'

NOTE:

PLAN IS CONCEPTUAL ONLY. ACTUAL DESIGN AND LOCATION OF TRAIL WOULD NEED TO BE BASED UPON ACTUAL TOPOGRAPHIC SURVEY OF SITE.

GRAPHIC SCALE



(IN FEET)
1 inch = 40 ft.

COPYRIGHT 2020, LANC & TULLY, P.C.

COPIES FROM THE ORIGINAL OF THIS DOCUMENT NOT MARKED WITH AN ORIGINAL OF THE PROFESSIONAL ENGINEER'S AND/OR LAND SURVEYOR'S STAMP OR EMBOSSED SEAL SHALL NOT BE CONSIDERED VALID, TRUE COPIES.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209-2 OF THE NEW YORK STATE EDUCATION LAW.

Dig Safely. New York. Call 811 before you dig

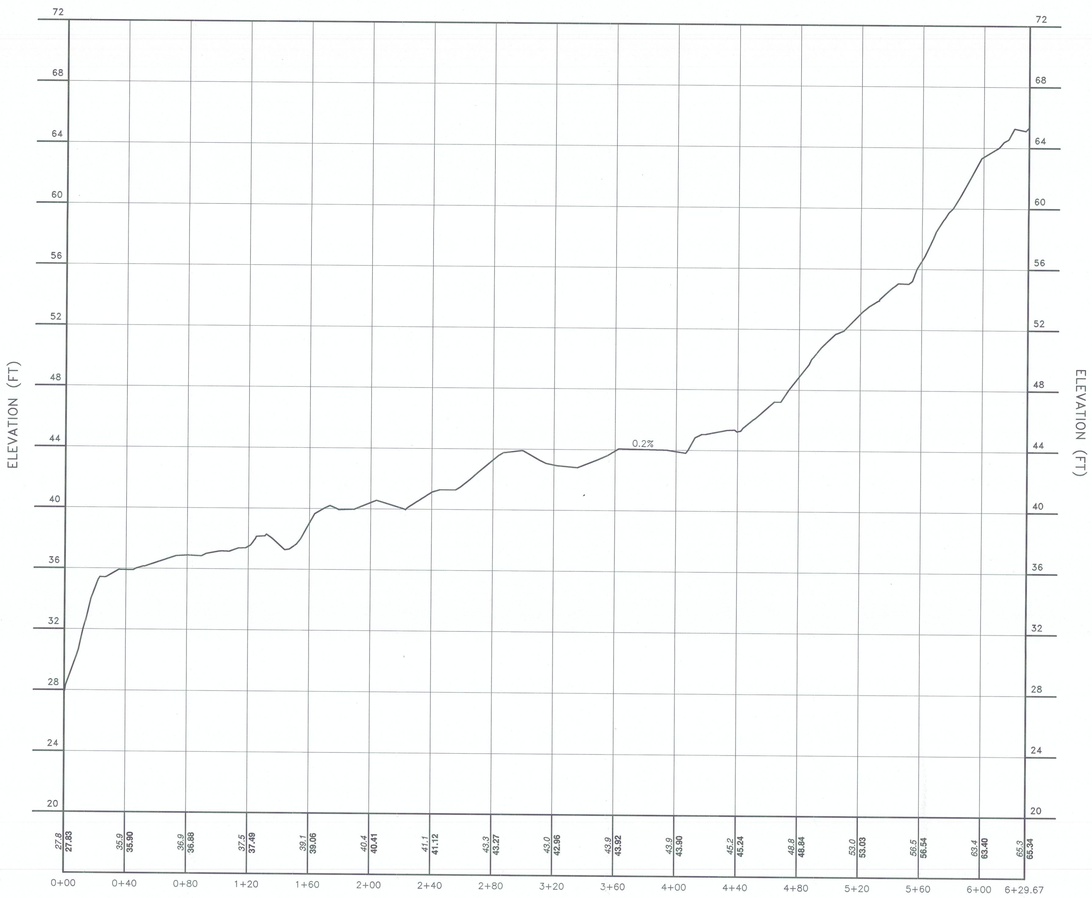
L&T LANC & TULLY
ENGINEERING AND SURVEYING, P.C.
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

CONCEPT PLAN PREPARED FOR

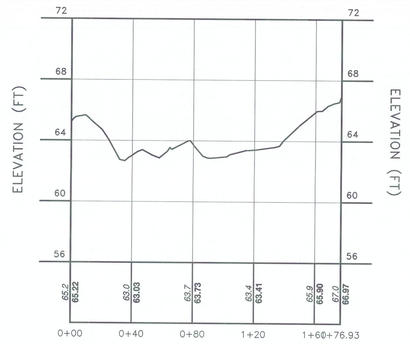
GREENWAY TRAIL COMMITTEE
SISTERS SOUTH PARCEL
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

Date: OCTOBER 29, 2020
Revisions: DECEMBER 1, 2020
CAD File: 205877-BASE-SISTERS
Layout: SISTERS-SOUTH 2
Sheet No.: 3 OF 7
Drawing No.: C3D
A - 20 - 5877 - 03

Drawn By:	Checked By:	Scale:	Tax Map No.:
TH		1" = 40'	5954-16-951357



FUTURE MTA ADA ACCESSIBLE TRAIL SEGMENT
ST 0+00 THRU ST 6+29.67
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'



PROPOSED SISTER TO MTA ADA ACCESSIBLE TRAIL SEGMENT
ST 0+00 THRU ST 1+76.93
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'

NOTE:

PLAN IS CONCEPTUAL ONLY. ACTUAL DESIGN AND LOCATION OF TRAIL WOULD NEED TO BE BASED UPON ACTUAL TOPOGRAPHIC SURVEY OF SITE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

COPYRIGHT 2020, LANC & TULLY, P.C.

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

CONCEPT PLAN PREPARED FOR

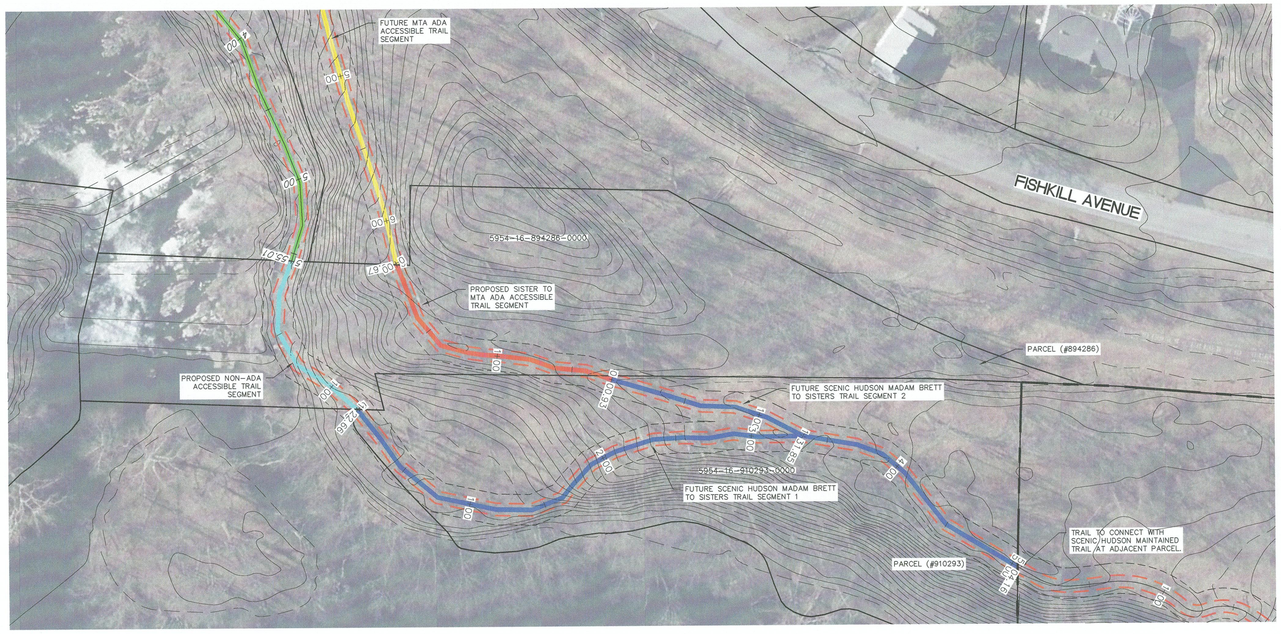
GREENWAY TRAIL COMMITTEE
SISTERS SOUTH PARCEL
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

Date:	OCTOBER 29, 2020
Revisions:	DECEMBER 1, 2020
CAD File:	20877-BASE-SISTERS
Layout:	SISTERS-SOUTH 3
Sheet No.:	4 OF 7
Drawing No.:	C30
Drawn By:	TH
Checked By:	
Scale:	1" = 40'
Tax Map No.:	5954-16-951357
	A - 20 - 5877 - 04

COPIES FROM THE ORIGINAL OF THIS DOCUMENT NOT MARKED WITH AN ORIGINAL OF THE PROFESSIONAL ENGINEER'S AND/OR LAND SURVEYOR'S STAMP OR EMBOSSED SEAL SHALL NOT BE CONSIDERED VALID, TRUE COPIES.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209-2 OF THE NEW YORK STATE EDUCATION LAW.

Dig Safely. New York
Call 811
before you dig



NOTE:

PLAN IS CONCEPTUAL ONLY. ACTUAL DESIGN AND LOCATION OF TRAIL WOULD NEED TO BE BASED UPON ACTUAL TOPOGRAPHIC SURVEY OF SITE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

COPYRIGHT 2020, LANC & TULLY, P.C.

LANC & TULLY
ENGINEEERING AND SURVEYING, P.C.
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

CONCEPT PLAN PREPARED FOR

GREENWAY TRAIL COMMITTEE
PARCEL #894286
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

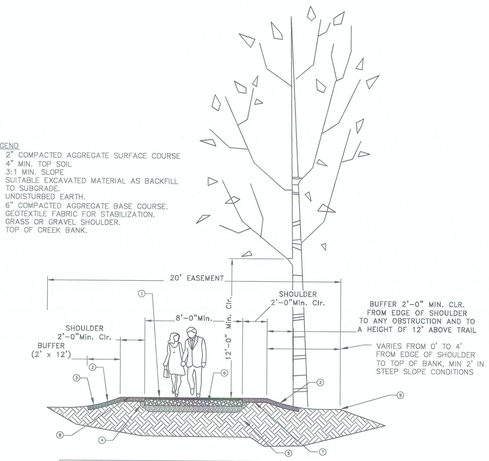
Date:	SEPTEMBER 15, 2020
Revisions:	DECEMBER 1, 2020
CAD File:	205877-BASE-SISTERS
Layout:	894286
Sheet No.:	5 OF 7
Drawn By:	TH
Checked By:	
Scale:	1" = 40'
Tax Map No.:	5954-16-951357
Drawing No.:	C30 A - 20 - 5877 - 05

COPIES FROM THE ORIGINAL OF THIS DOCUMENT NOT MARKED WITH AN ORIGINAL OF THE PROFESSIONAL ENGINEER'S AND/OR LAND SURVEYOR'S STAMP OR EMBOSSED SEAL SHALL NOT BE CONSIDERED VALID, TRUE COPIES.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209-2 OF THE NEW YORK STATE EDUCATION LAW.

Dig Safely. New York Call 811 before you dig

LEGEND
1. 2" COMPACTED AGGREGATE SURFACE COURSE
2. 4" MIN. TOP SOIL
3. 3:1 MIN. SLOPE
4. SUITABLE EXCAVATED MATERIAL AS BACKFILL TO SUBGRADE.
5. UNDISTURBED EARTH.
6. 6" COMPACTED AGGREGATE BASE COURSE.
7. GEOTEXTILE FABRIC FOR STABILIZATION.
8. GRASS OR GRAVEL SHOULDER.
9. TOP OF CREEK BANK.



EASEMENT NOTE:
8' WIDE TRAIL + TWO 2' SHOULDERS + TWO 2' BUFFERS CREATE A 16' WIDE TRAIL "ASSEMBLY" THAT FLOATS WITHIN A 20' WIDE EASEMENT

TYPICAL TRAIL CROSS SECTION
NOT TO SCALE

NOTE:

PLAN IS CONCEPTUAL ONLY. ACTUAL DESIGN AND LOCATION OF TRAIL WOULD NEED TO BE BASED UPON ACTUAL TOPOGRAPHIC SURVEY OF SITE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

COPYRIGHT 2020, LANC & TULLY, P.C.

COPIES FROM THE ORIGINAL OF THIS DOCUMENT NOT MARKED WITH AN ORIGINAL OF THE PROFESSIONAL ENGINEER'S AND/OR LAND SURVEYOR'S STAMP OR EMBOSSED SEAL SHALL NOT BE CONSIDERED VALID, TRUE COPIES.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209-2 OF THE NEW YORK STATE EDUCATION LAW.

Dig Safely. New York. Call 811 before you dig

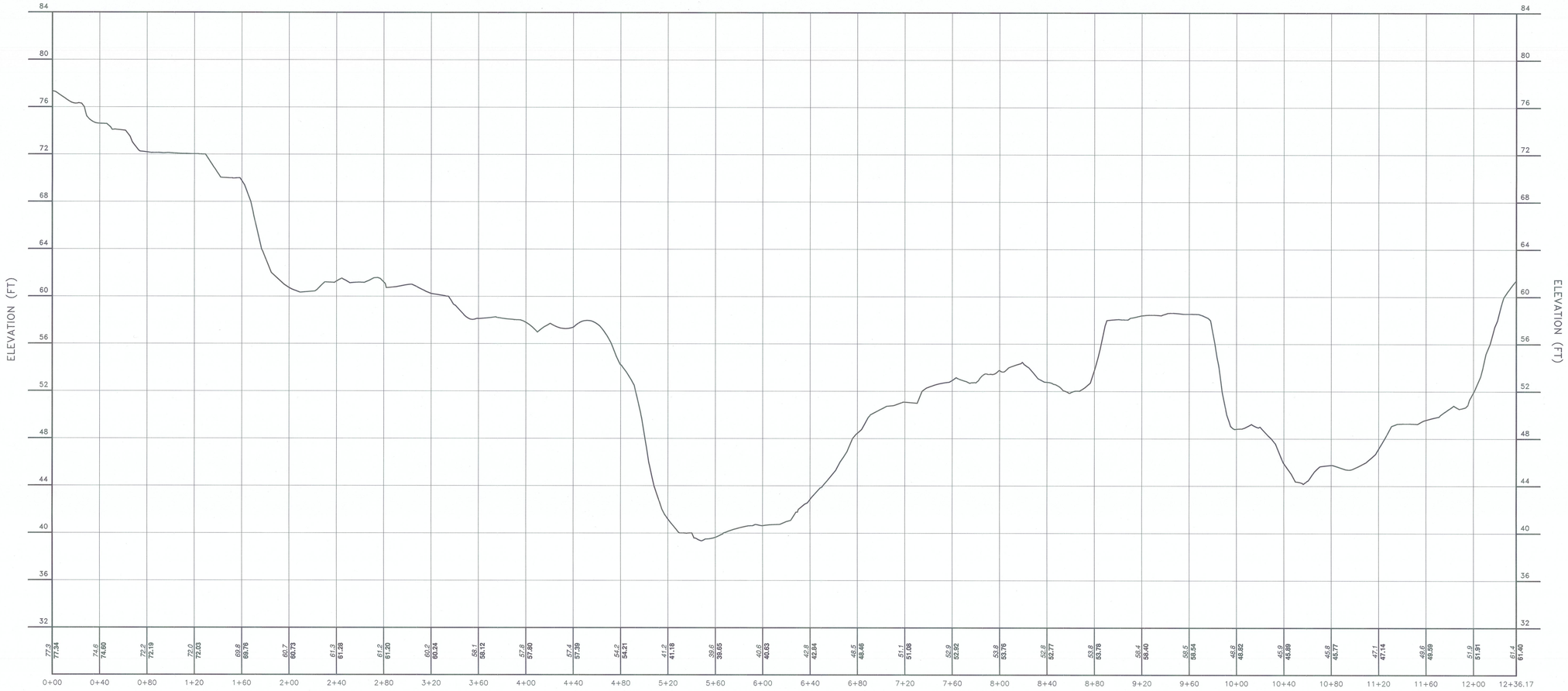
LANC & TULLY
ENGINEERING AND SURVEYING, P.C.
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

DETAILS PREPARED FOR

GREENWAY TRAIL COMMITTEE
SISTERS NORTH PARCEL
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

Date:	AUGUST 3, 2020
Revisions:	OCTOBER 29 2020 DECEMBER 1 2020
CAD File:	205877-BASE-SISTERS
Layout:	PROFILE-SPN
Sheet No.:	6 OF 7
Drawing No.:	C30 A - 20 - 5877 - 06

Drawn By:	Checked By:	Scale:	Tax Map No.:
TH		1" = 40'	



TRAIL–SISTERS (NORTH)
ST 0+00 THRU ST 12+36.17
SCALE: HORIZONTAL 1"=40'
VERTICAL 1"=4'

NOTE:

PLAN IS CONCEPTUAL ONLY. ACTUAL DESIGN AND LOCATION OF TRAIL WOULD NEED TO BE BASED UPON ACTUAL TOPOGRAPHIC SURVEY OF SITE.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

COPYRIGHT 2020, LANC & TULLY, P.C.

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

PROFILE & DETAILS PREPARED FOR

GREENWAY TRAIL COMMITTEE
SISTERS SOUTH PARCEL
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

Date: OCTOBER 29, 2020
Revisions:
CAD File: 205877-BASE-SISTERS
Layout: PROFILE-SPS
Sheet No.: 7 OF 7
Drawn By: TH
Checked By:
Scale: 1" = 40'
Tax Map No.:
Drawing No.: C3D
A – 20 – 5877 – 07

COPIES FROM THE ORIGINAL OF THIS DOCUMENT NOT MARKED WITH AN ORIGINAL OF THE PROFESSIONAL ENGINEER'S AND/OR LAND SURVEYOR'S STAMP OR EMBOSSED SEAL SHALL NOT BE CONSIDERED VALID, TRUE COPIES.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209-2 OF THE NEW YORK STATE EDUCATION LAW.

Dig Safely. New York
Call 811
before you dig

City of Beacon City Council Agenda
01/25/2021

Title:

Main Street Access Advisory Committee Recommendations

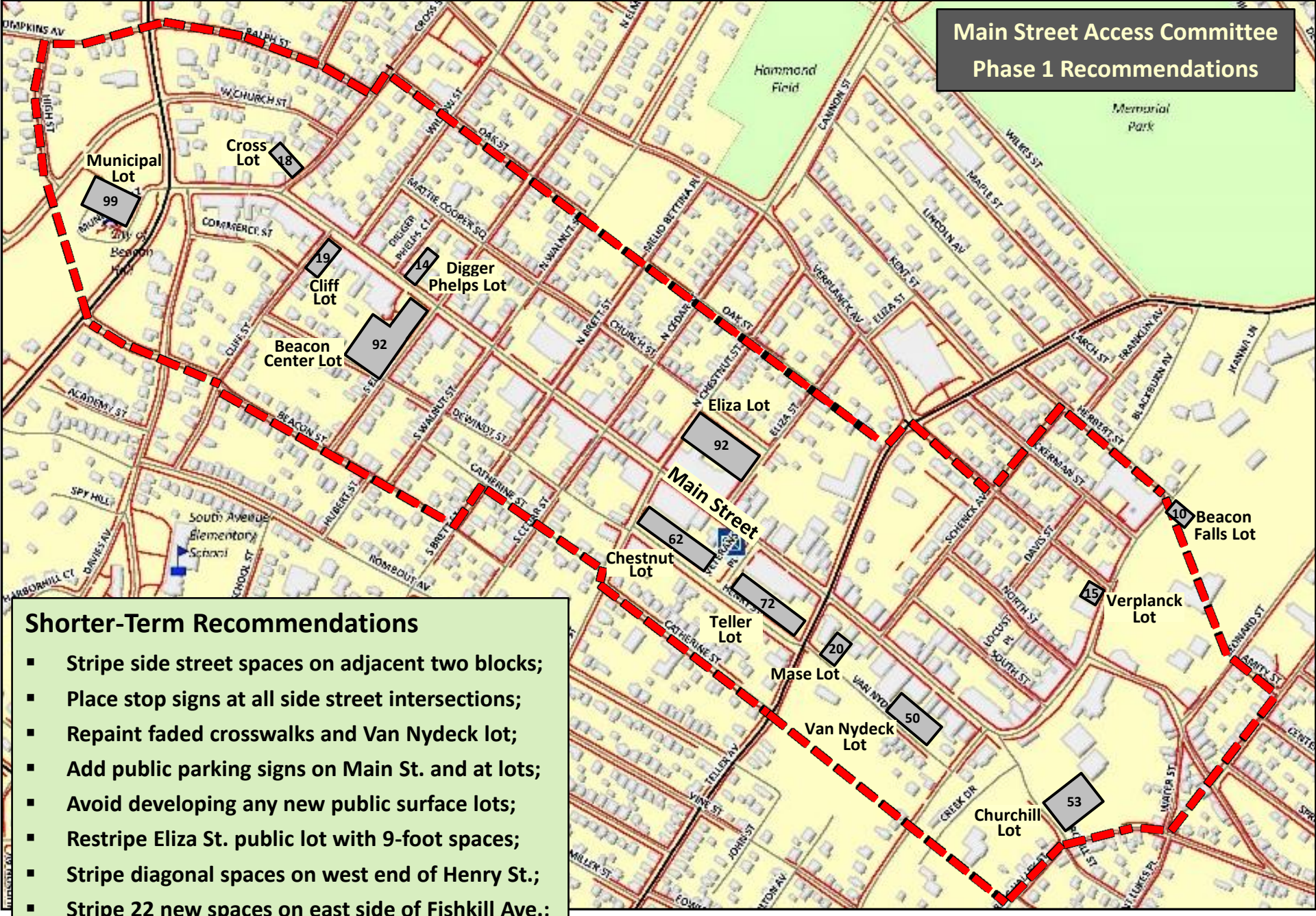
ATTACHMENTS

Main Street Access Committee Presentation

Main Street Access Committee Omnibus Memorandum to the City

Parking Signs I

Parking Signs II


Main Street Access Committee
Phase 1 Recommendations
Municipal Lot
99
Cross Lot
18
Cliff Lot
19
Digger Phelps Lot
14
Beacon Center Lot
92
Eliza Lot
92
Main Street
Chestnut Lot
62
Teller Lot
72
Mase Lot
20
Van Nydeck Lot
50
Churchill Lot
53
Verplanck Lot
15
Beacon Falls Lot
10
Hammond Field
Memorial Park
South Avenue Elementary School
Shorter-Term Recommendations
Stripe side street spaces on adjacent two blocks;
Place stop signs at all side street intersections;
Repaint faded crosswalks and Van Nydeck lot;
Add public parking signs on Main St. and at lots;
Avoid developing any new public surface lots;
Restripe Eliza St. public lot with 9-foot spaces;
Stripe diagonal spaces on west end of Henry St.;
Stripe 22 new spaces on east side of Fishkill Ave.;
Reconfigure Beacon Center lot to add 37 spaces.
Study Area (within Two Blocks of Main Stre
Public Parking Lots with Number of Spaces



Wayfinding Signs at Intersections Along Main Street



Informational Signs Located at Entrances to Public Parking Lots



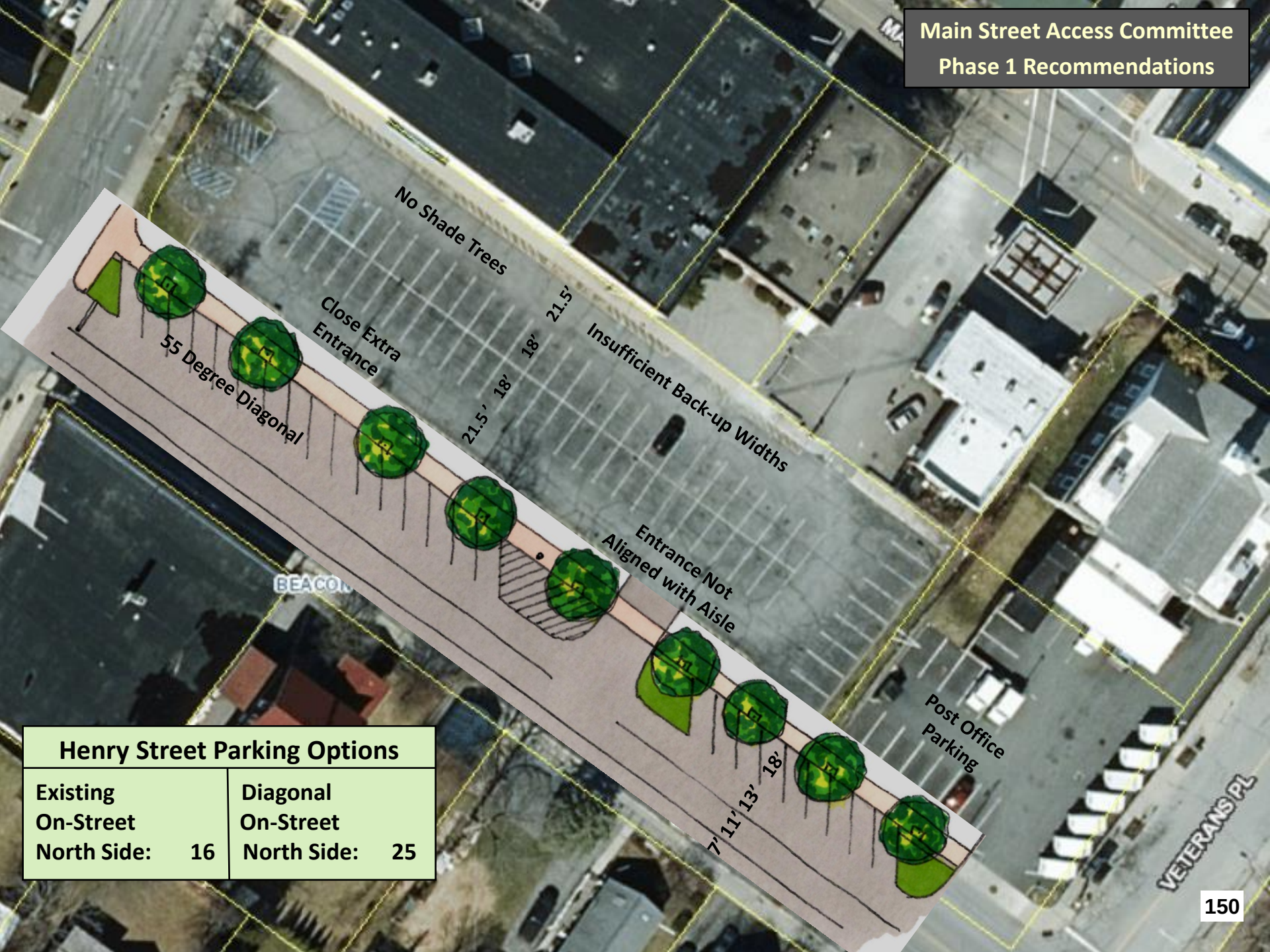
Sample Text Lot Specific TBD by City/Hwy. Dept.



Name All Public Lots, Generally by Intersecting Street with Main Street

lot names*

Main Street Access Committee
Phase 1 Recommendations



Henry Street Parking Options

Existing On-Street North Side: 16	Diagonal On-Street North Side: 25

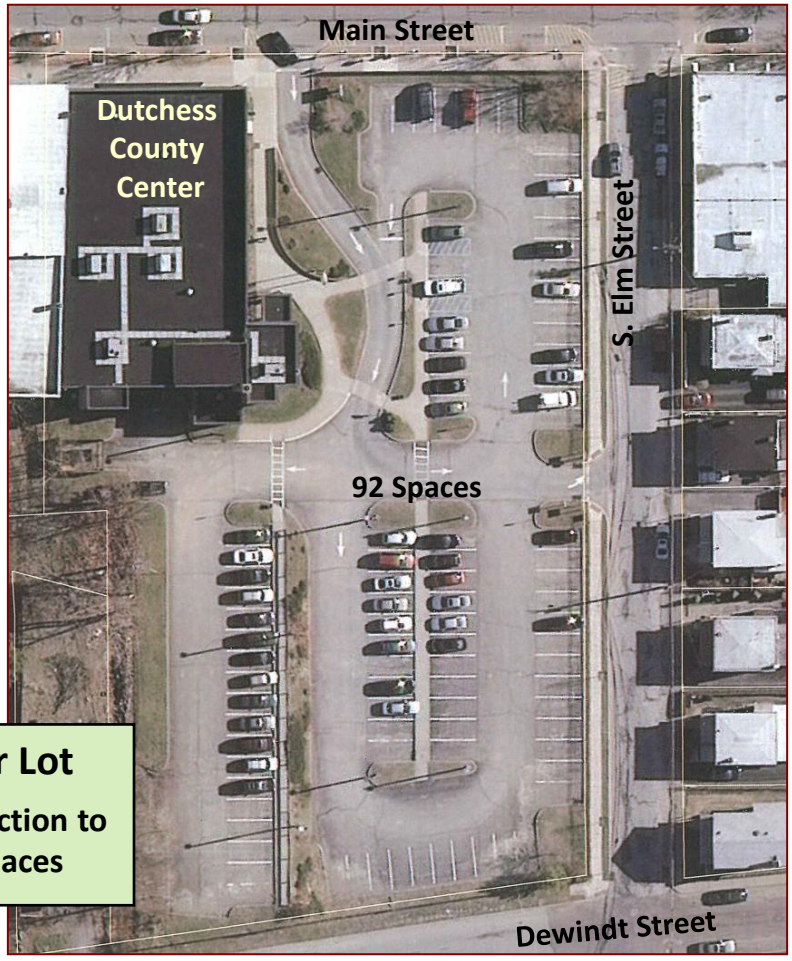
Main Street Access Committee
Phase 1 Recommendations

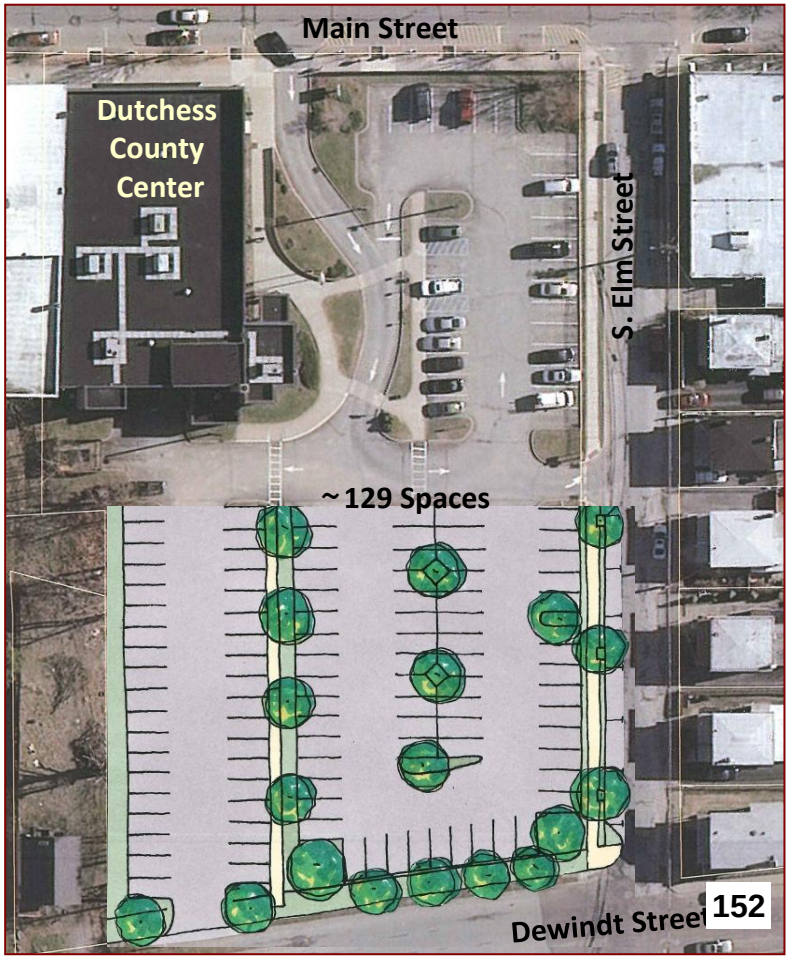


Henry Street Parking Options

Existing On-Street		Diagonal On-Street	
North Side:	16	North Side:	25
Existing Lot	62	Proposed Lot	65
Total Spaces	78	Total Spaces	90



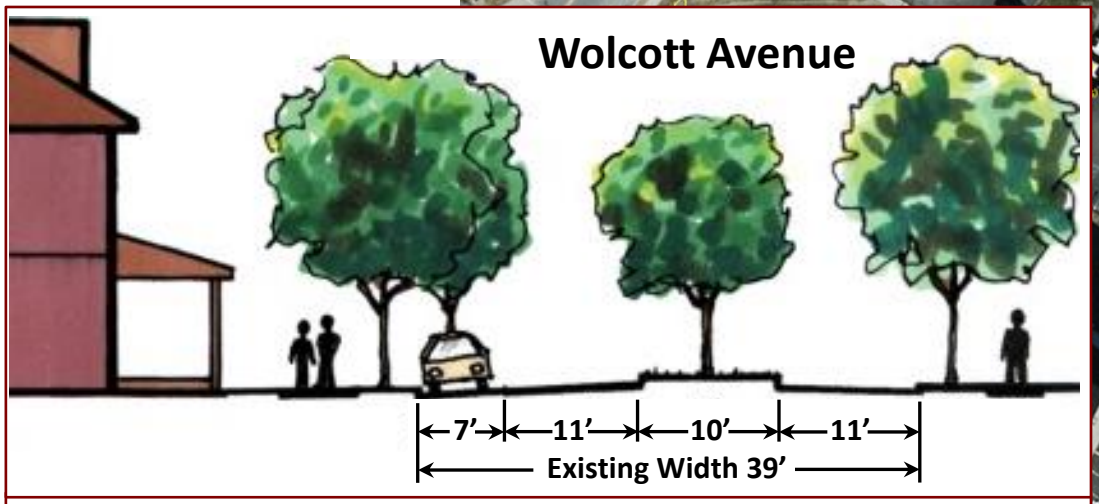




Beacon Center Lot

Redesign Rear Section to Add About 37 Spaces

Main Street Access Committee
Phase 2 Recommendations



From Beacon Comprehensive Plan, 2007 Appendix

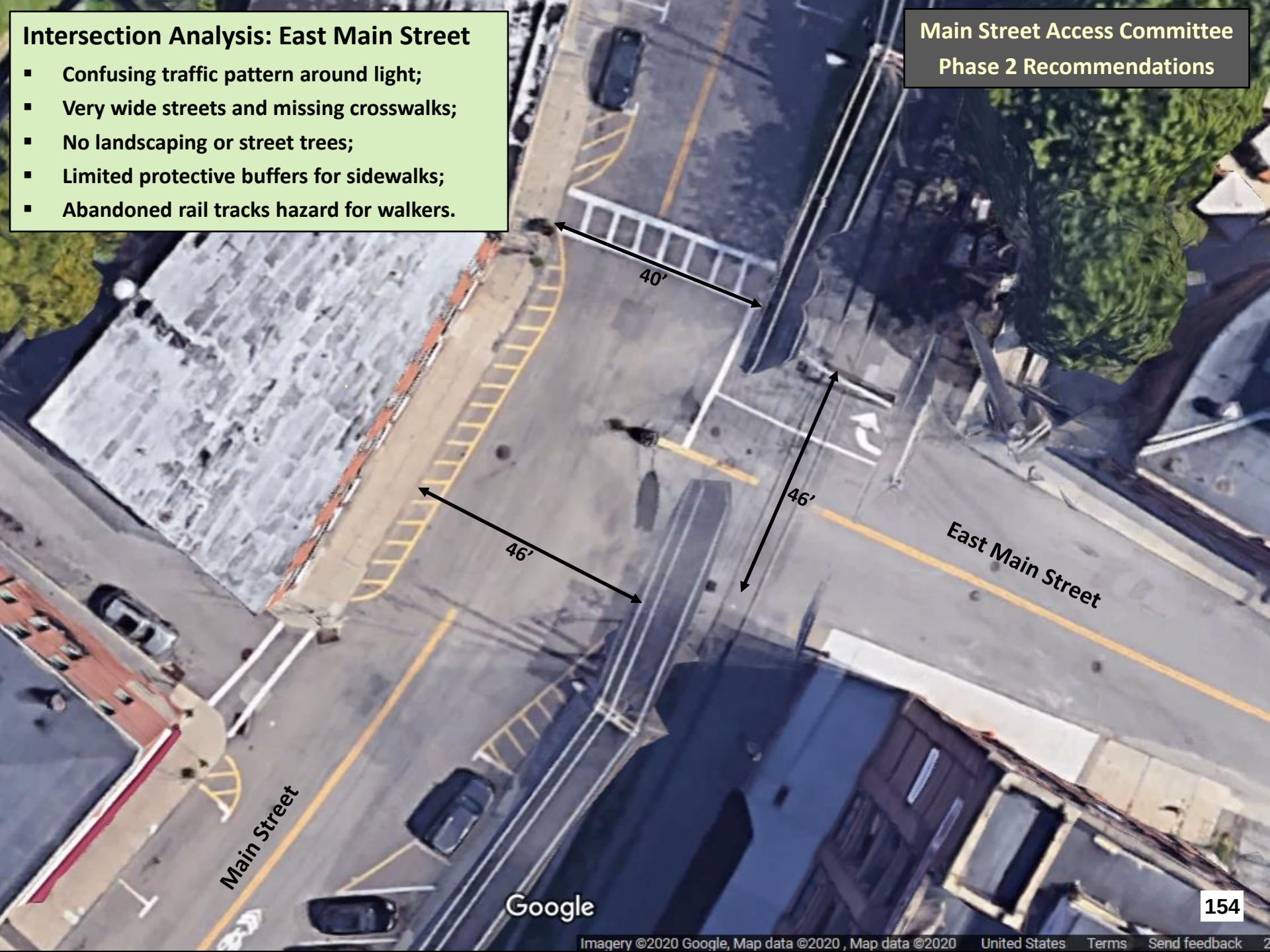
Wolcott Avenue Parking Options

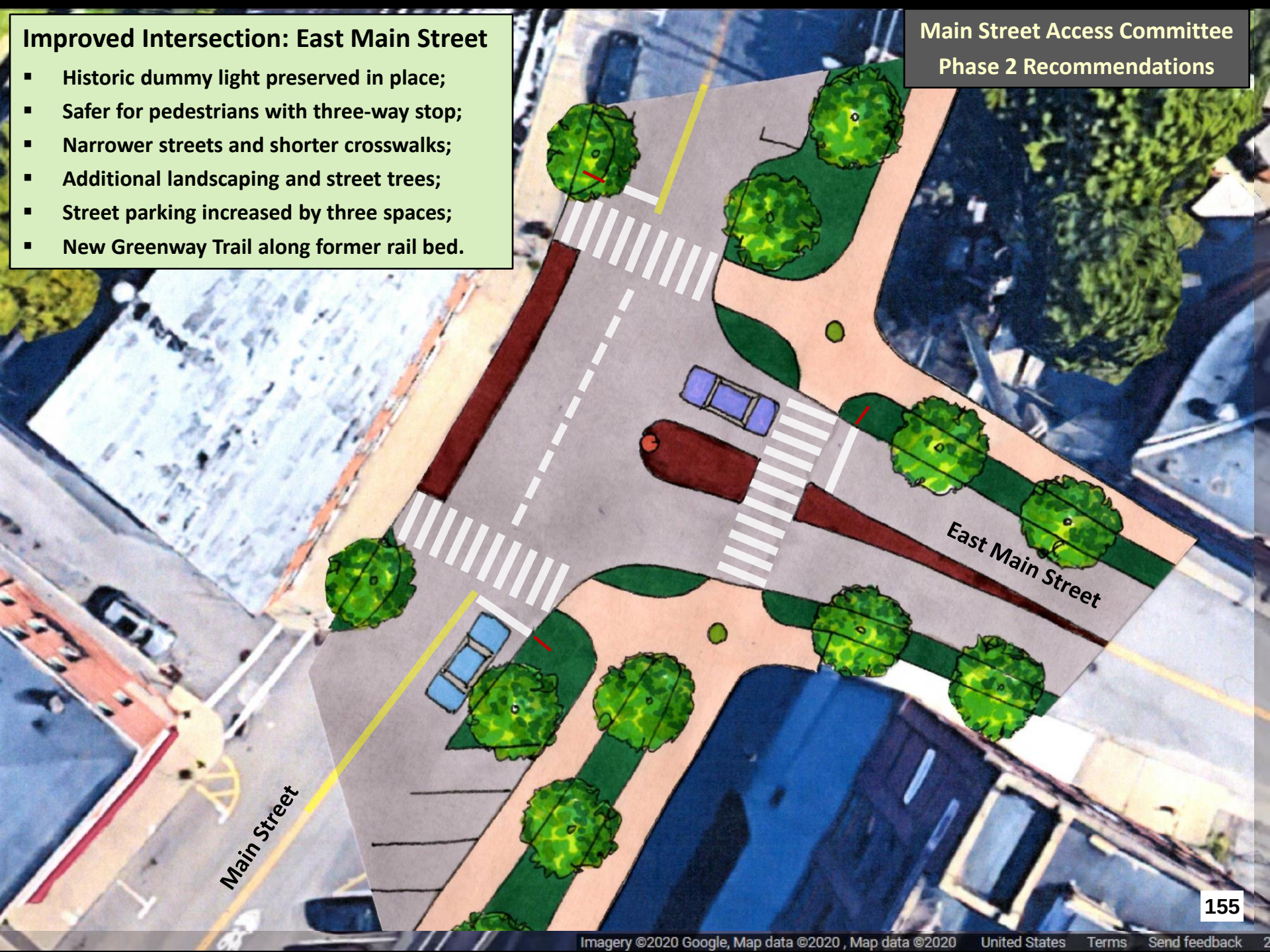
- Narrow overly wide lanes on Route 9D;
- Add 25+ on-street spaces along west side;
- Plant street trees in central median; and
- Stripe Fire House lot for about 70 spaces.

Intersection Analysis: East Main Street

- Confusing traffic pattern around light;
- Very wide streets and missing crosswalks;
- No landscaping or street trees;
- Limited protective buffers for sidewalks;
- Abandoned rail tracks hazard for walkers.

Main Street Access Committee
Phase 2 Recommendations




Improved Intersection: East Main Street
Historic dummy light preserved in place;
Safer for pedestrians with three-way stop;
Narrower streets and shorter crosswalks;
Additional landscaping and street trees;
Street parking increased by three spaces;
New Greenway Trail along former rail bed.
Main Street Access Committee
Phase 2 Recommendations
East Main Street
Main Street
155
Imagery ©2020 Google, Map data ©2020 , Map data ©2020
United States
Terms
Send feedback

Main Street Access Committee
Phase 2 Recommendations

Main Street

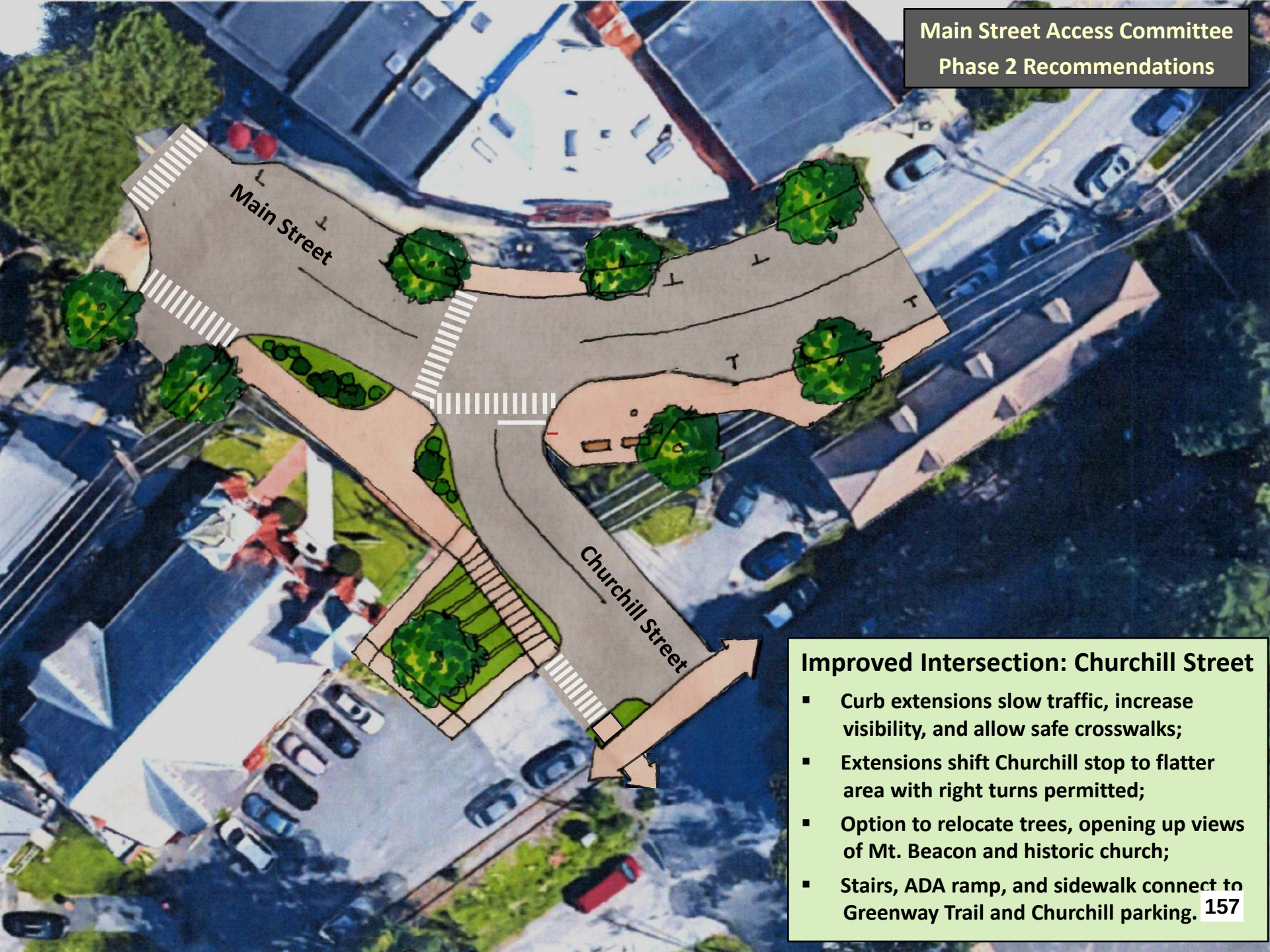
Churchill Street

2020



Intersection Analysis: Churchill Street

- Curving street with on-street parking limits sight distance for safe crosswalks;
- Churchill Street is steep at the crosswalk stopping point and right turns prohibited;
- Tree locations block important views of Mt. Beacon and landmark church;
- No ADA-compliant sidewalk to Greenway Trail and Churchill Street public parking.


Main Street Access Committee
Phase 2 Recommendations
Main Street
Churchill Street
Improved Intersection: Churchill Street
Curb extensions slow traffic, increase visibility, and allow safe crosswalks;
Extensions shift Churchill stop to flatter area with right turns permitted;
Option to relocate trees, opening up views of Mt. Beacon and historic church;
Stairs, ADA ramp, and sidewalk connect to Greenway Trail and Churchill parking.


Main Street Access Committee
Phase 2 Recommendations
Potential Bike Routes
or Bicycle Boulevards
9D
158



Temporary street closure to through car traffic to test bicycle boulevard



Permanent diversion of through traffic, while allowing free flow for bicycles





Landscaped intersection circle slows down vehicle speeds, but allows through traffic



Landscaped islands divert through car traffic along bicycle boulevard



If Phase 1 and 2 recommendations do not meet parking needs, consider paid parking strategies to help manage demand and raise necessary revenue for future Phase 3 parking structures.

Main Street Access Committee
Phase 3 Recommendations



Ramp

3-Story Public Parking Structure
Approximately 350 Spaces

1st Floor Retail
8 Apartments
Solar Canopies
on Top Level

Potential New Mixed-Use Buildings along Main Street

Upper Main Street
Historic District

Bus Stop

Historic
Post Office

Green

Towne
Crier Cafe

Two-level Arcade
for Market Stalls
and Outdoor Dining

Mixed-Use
Infill Building
with Rooftop
Garden Park

Medical Offices
and Urgent Care
with Parking Below

Mixed-Use Buildings
Affordable Housing
with Parking Below

Henry Street

Historic Madam
Brett Homestead

Potential Parking Structure

Three Existing Public Parking Lots Reimagined around Central Park and Bus Stop at Veterans Place



Existing 92-Space Lot

Potential Parking Structure

Beacon Center Parking Lot Reimagined with Public Park, Bus Stop, and Corner Building

Main Street Access Committee
Phase 3 Recommendations

Main Street

Bus Stop

Dutchess County Center

Green

Café Tables

3 St.

Mixed-Use Building

2 St.

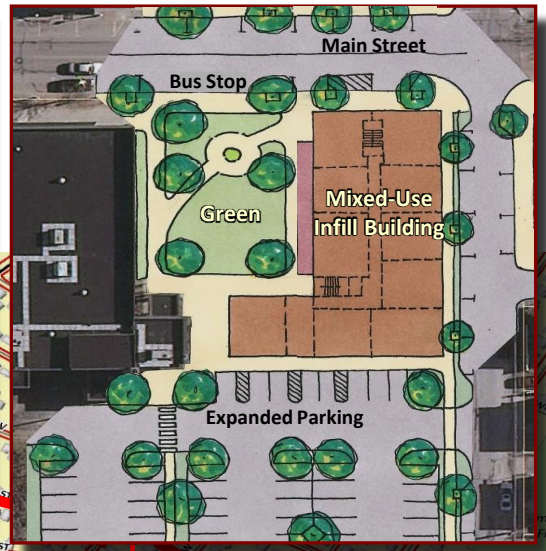
S. Elm Street

1- or 2-Story Public Parking Structure with up to 290 Spaces

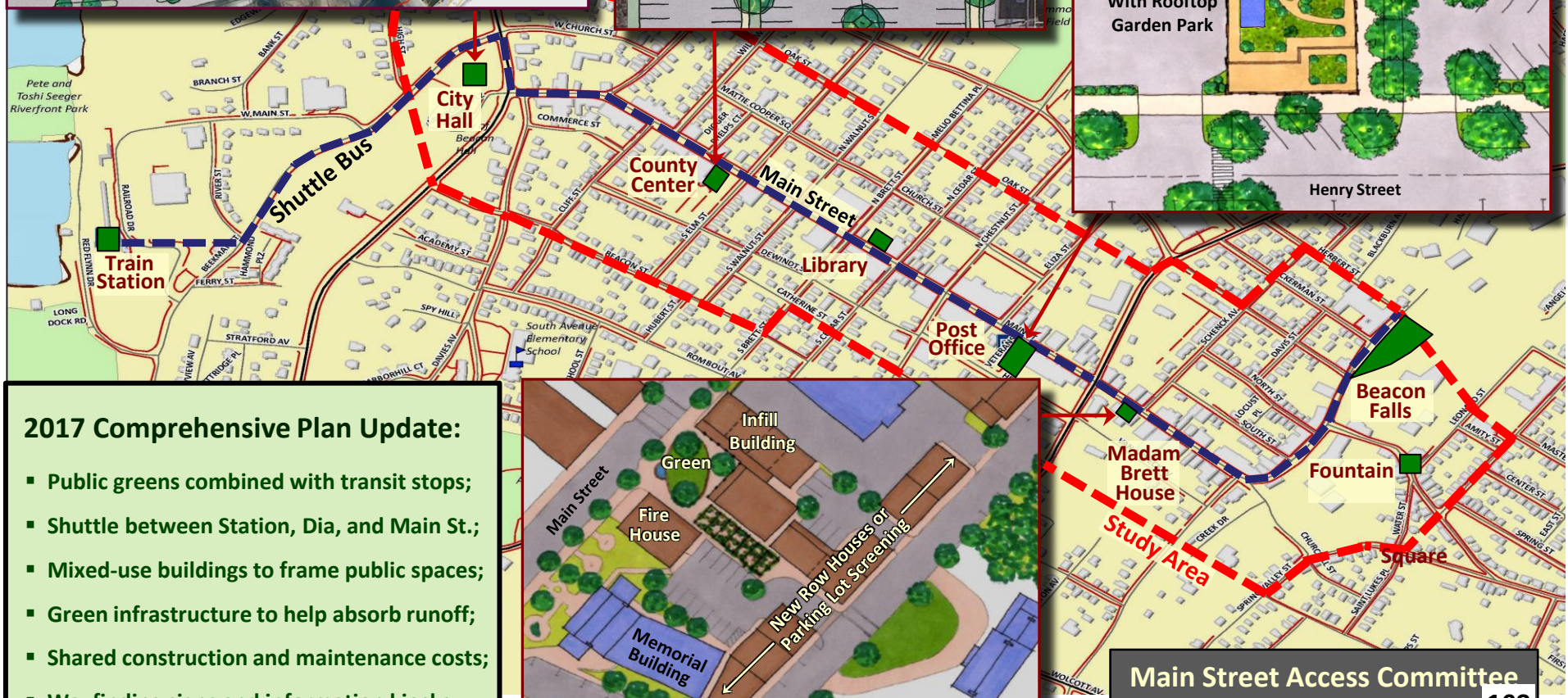
Green Façade and Solar Canopies on Top Level

Ramp







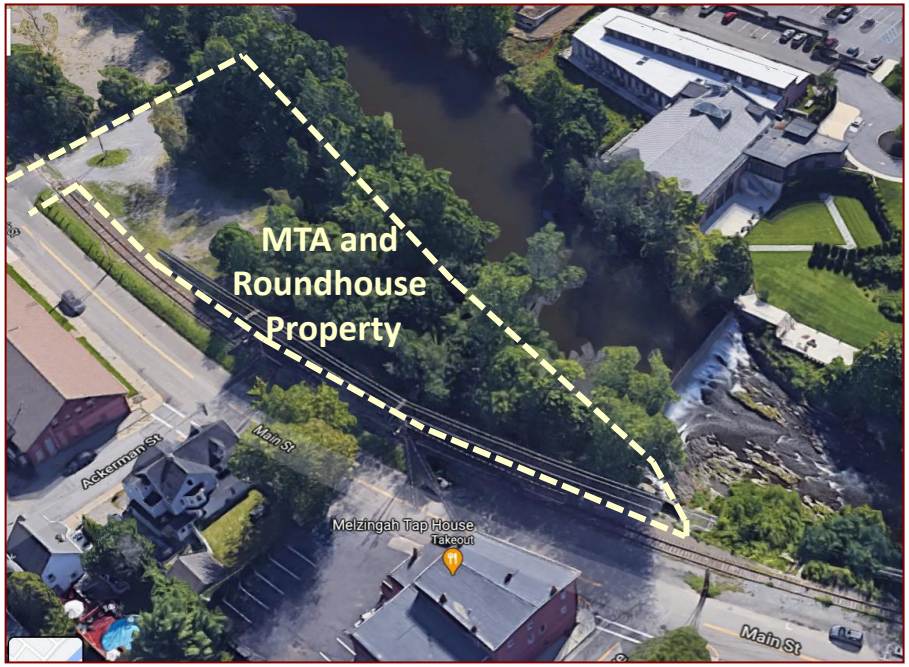




2017 Comprehensive Plan Update:

- Public greens combined with transit stops;
- Shuttle between Station, Dia, and Main St.;
- Mixed-use buildings to frame public spaces;
- Green infrastructure to help absorb runoff;
- Shared construction and maintenance costs;
- Wayfinding signs and information kiosks.

Main Street Access Committee
Phase 3 Recommendations





Potential Main Street Park Overlooking Fishkill Creek and Beacon Falls







City Street Transformed into a Rain Garden Amphitheater with Arcade and Rooftop Park

- Main Street central green space with historic FDR-era Post Office as an attractive backdrop.
- Rain garden green with stone terraces and wetland pond to absorb surrounding rainwater.
- New tree planters for greenery, shade, and to soak up stormwater from streets and lots.
- Rear building to frame and activate front park space, block views of parking lots, and help pay for park construction and maintenance.
- Transit stop with shelter and visitor information regarding bus connections and local attractions.

Main Street

Bus Shuttle Stop

Post Office

Towne Crier Cafe

Rain Garden

Green

Two-level Arcade for Market Stalls and Outdoor Dining

Elevator Tower

3 St.

Public Parking and Loading

Rooftop Garden Park with Elevated Views of Hudson Highlands Ridgeline

Henry Street

CITY OF BEACON – MAIN STREET ACCESS COMMITTEE
MEMORANDUM TO THE CITY

Date: January 15, 2021

To: The City of Beacon:
Lee Kyriacou, Mayor

cc: John Clarke, Planner, City of Beacon
Collin Milone, Assistant to the Mayor, City of Beacon
Chris White, City Administrator, City of Beacon

From: Main Street Access Committee:
Stowe Boyd and Sara Pasti, Co-Chairs

Attached please find five memoranda that contain recommendations from the Main Street Access Committee between July 2020 and January 2021. In addition, we have attached an Addendum to the December 14th memorandum regarding parking that specifically addresses parking on Tioranda Avenue. The Addendum is submitted here for the first time, as is the memorandum related to municipal parking lot signage.

The memoranda address the following topics:

- July 14, 2020: Quick Fixes to improve traffic and parking along and adjacent to Main Street
- September 21, 2020: Recommendations to improve intersections at the East End of Main Street at Churchill and East Main Streets
- November 13, 2020: Recommendation regarding “bicycle boulevards” in Beacon
- December 14, 2020: Recommendation regarding parking in the Main Street Access Area
- January 15, 2021: Addendum to the December 14th memo regarding parking
- January 15, 2021: Recommendations related to municipal parking lot signage

We look forward to meeting with you to review these memoranda and discuss additional issues to be addressed in the future regarding Main Street transportation and parking improvements.

CITY OF BEACON – MAIN STREET ACCESS COMMITTEE
MEMORANDUM TO THE CITY

Date: July 14, 2020

To: The City of Beacon:
Lee Kyriacou, Mayor
Anthony Ruggiero, City Administrator
Members of the Beacon City Council

cc: John Clarke, Planner, City of Beacon
Collin Milone, Assistant to the Mayor, City of Beacon

From: Main Street Access Committee:
Stowe Boyd and Sara Pasti, Co-Chairs

On February 24, 2020, Mayor Lee Kyriacou sent a memorandum to the Main Street Access Committee (MSAC) charging the Committee with helping the City tackle and plan for issues involved in getting to and from Main Street. Among the tasks the MSAC was given was to create an action plan for sustainable Main Street parking, traffic, public transit, pedestrian, and non-vehicular use.

The Committee has been meeting bi-weekly, as has its three Subcommittees: Parking & Traffic, Pedestrian & Bicycle/Alternate Transportation, and Main Street Improvement. At its last meeting held on Monday, June 24th, the MSAC approved the following "quick fixes" that we believe will address some of the more serious parking and safety issues that currently exist in Beacon's Main Street area.

Quick Fixes

The MSAC recommends to the City Council the following improvements that can be made quickly and without huge expense. These improvements are:

- Repainting of all faded and missing crosswalk lines at all intersections, and without waiting for the future construction of new "bump-outs", especially in light of current higher-than-usual pedestrian traffic during the COVID crisis.
- Placement of stop signs at all intersections within two blocks of Main Street, and where side streets feed into Main Street, to slow traffic for purposes of pedestrian and other safety.
- Installation of fluorescent yellow double-sided crosswalk signs on both sides of the street at the Main and Tioronda crosswalk near the Howland Center and other locations where there is significant pedestrian activity, including Main and East Main and Main and Willow Streets.

- Repainting of parking space lines that outline parking spaces in the Van Nydeck parking lot and in the lot located on Main, between Digger Phelps across from the DMV lot (Pleasant Ridge lot).
- Creation of informational signage for all municipal parking lots.
- Striping of new, angled parking spaces on Henry Street (between South Chestnut and Veterans Place) and DeWindt Street (near Cliff) where it is possible to accommodate two through lanes, diagonal parking on one side, and parallel parking on the other. Re-center and repaint yellow center line on Henry Street when new angled parking spaces have been created.
- Striping of parking spaces on the first two blocks of side streets that feed into Main Street (first determining whether streets are wide enough to accommodate parking on one or both sides and whether handicapped and/or loading zones should be created in the first spaces on side streets that intersect Main Street).
- Where there is sufficient room, move center line on Fishkill Avenue where it approaches Main Street to create new parking spaces on the east side of the street, per John Clarke's proposed design.
- During the short-term when people are biking and walking more than usual on Main Street, install electronic signs near "Welcome to Beacon" signs on Routes 52 and 9D to remind people to drive carefully in this bicycle and pedestrian friendly city. (In the long term, consider installing standard signage at these locations.)

In addition, while not among the "quick fixes," the MSAC would like to advocate for the City's consideration of two improvements to the East End intersections of Churchill and Main and East Main and Main that were proposed to the Committee by John Clarke. The entire MSAC believes that these two intersections have become increasingly dangerous to pedestrians and warrant the City's prompt attention.

The MSAC would also like to recommend to the City that it schedule crosswalk repainting of pavement markings, including center lines, stop lines, crosswalks, and parking spaces, in the spring rather than the fall each year so that striping is in good condition in the summer, when Beacon has the most visitors.

Last, these are that first recommendations coming from the MSAC, but we expect there will be more to come. Our Subcommittees are now hard at work on both short- and longer-term tasks related to signage, bicycle access to Main Street, loading zones, pocket parks and green spaces, as well as other improvements. We will forward additional recommendations from time to time once they have been approved by the MSAC.

CITY OF BEACON – MAIN STREET ACCESS COMMITTEE
MEMORANDUM TO THE CITY

Date: September 21, 2020

To: The City of Beacon:
Lee Kyriacou, Mayor
Anthony Ruggiero, City Administrator
Members of the Beacon City Council

cc: John Clarke, Planner, City of Beacon
Collin Milone, Assistant to the Mayor, City of Beacon

From: Main Street Access Committee:
Stowe Boyd and Sara Pasti, Co-Chairs

As a follow-up to our recommendations for "quick fixes" that were submitted to the City Council on July 14, 2020, the Main Street Access Committee submits the attached drawings of proposed intersection improvements to address some of the serious parking and safety issues that exist along Beacon's Main Street.

As indicated in our first memorandum, the MSAC strongly advocates for the City's consideration of improvements to the East End intersections of Churchill and Main and East Main and Main. The MSAC believes these two intersections have become increasingly dangerous to pedestrians and warrant the City's prompt attention.

After considerable discussion about the location of crosswalks and landscaping and changes made by John Clarke to his original drawings based on this discussion, we are pleased to submit the attached two drawings for the City Council's consideration, with the following Addendum pertaining to the City Council Workshop's viewsheds discussion on September 14, 2020:

The attached drawings for the intersection of Main and Churchill show the absence of the street trees in front of the church that John Clarke discussed in the viewshed presentation at the City Council Workshop of September 14, 2020. However, this viewshed and tree removal has also been much discussed within the committee. After a site visit meeting on August 24, 2020 to this and other locations along the east end of Main Street, the committee had conflicting opinions on whether the removal of the trees may be in the best interest of the streetscape, so we do not recommend that action at this time.

As this viewshed discussion is just getting underway at the City Council, it should be more fully stated that several committee members are in favor of keeping the trees for the pedestrian experience, and as a streetscape that is often photographed and presented on social media as a

beauty spot in Beacon. Therefore, we believe tree removal at this location merits fuller discussion by the City Council, the Tree Advisory Committee, and possibly a public hearing. All other changes at this intersection are fully supported by this committee.

Thank you in advance for your consideration of this proposal regarding the intersections at the East End of Main Street. Please let us know if you have any questions.

CITY OF BEACON – MAIN STREET ACCESS COMMITTEE
MEMORANDUM TO THE CITY

Date: November 13, 2020

To: The City of Beacon:
Lee Kyriacou, Mayor
Anthony Ruggiero, City Administrator
Members of the Beacon City Council

cc: John Clarke, Planner, City of Beacon
Collin Milone, Assistant to the Mayor, City of Beacon

From: Main Street Access Committee:
Stowe Boyd and Sara Pasti, Co-Chairs

Re: Bicycle Access To and Around Main Street Beacon

This memo is the third in a series of recommendations submitted to the City Council. It follows an initial recommendation for "quick fixes" submitted in July and a second recommendation for improvements to be made to the East End intersections of Main and Churchill and Main and East Main that were submitted to the City Council in September.

The attached drawing developed for our Committee by John Clarke represents the result of our discussions relative to "bicycle boulevards" that provide what we believe to be the safest possible routes for bicycle access to and around Main Street. We have focused our discussions on bicycle access to Main Street to and from the train station, across Main Street going north and south, and access to the East End of Main Street.

We make this recommendation with the understanding that this is not a depiction of what the bicycle boulevards in Beacon 'should be,' but with the hope that this drawing will serve as a useful starting point for future discussions involving the City's Traffic & Safety Committee, the City Council, and other citizen committees that are exploring green initiatives for Beacon. We also hope that the attached drawing can also be a useful beginning for a professional consultant or consultant team hired by the City to develop a final plan for safe bicycle travel in and around Beacon.

Thank you in advance for your consideration of this recommendation. Please let us know if you have any questions.

Memo | Main Street Access Area Parking

Date: December 14, 2020
To: Mayor Lee Kyriacou and Members of the City Council
Cc: John Clarke
From: Sara Pasti and Stowe Boyd, co-chairs, Main Street Access Committee

In recent months, the Main Street Access Committee has approached a number of major issues. Parking in the Main Street Access Area (the two blocks on either side of Main Street) has been perhaps the most central of our concerns, one that is almost inextricable from related topics, like pedestrian and bicycle access and safety, green spaces, transit options, and the general improvement of Main Street.

This memo is an attempt to distill the emerging thinking from the group regarding parking in the Main Street Access Area (MSAA).

Our starting point is the understanding that increased parking in the MSAA is a public good, but one that has to be balanced with other public interests. As a result, we start out with the recommendation that Beacon should not add additional parking lots of the sort behind the Rite Aid on Church St, along Henry, or at the County Building. If anything, we believe that these parcels should be repurposed, replacing lifeless asphalts lots with active commercial and other revenue-producing uses, while still providing more overall parking spaces than they now do.

For several reasons, it may be best to approach the various suggestions in a step-by-step timeline. The operating premise is that the city would move from one phase to the other only when parking becomes problematic under the current approach.

Phase 1

We have already recommended a number of ways to create additional parking at low cost in discussions with the City's traffic working group. Ideas include:

- Moving to diagonal parking on Henry Street behind the Health Center. Also, as part of that suggestion, closing one of the Henry lot entrances on Henry Street, and moving the second. This will lead to 12 more spaces, and better access for large vehicles like fire trucks (see attached sketch).
- Providing new on-street spaces along the east side of Fishkill Ave. between Main and Verplanck, to add approximately 22 spaces.
- Reconfiguring the County Center lot to increase the parking count by about 35 spaces.
- Restriping the Church Street lot with all 9-foot stalls to gain 7 spaces.
- Striping parallel parking spaces on a number of streets in the MSAA on the first block from Main: north side of Herbert (would also slow dangerous traffic), Ackerman, North and South Cedar, Willow, Schenck, and Tioronda[1].

[1] Each of these has particular issues based on the lay of the land and how the streets are used. Tioronda is a heavily trafficked street, for example, and so when the width of the street drops below a critical width, parking is only suitable on one side, which should be the side with sidewalks (the western side). Aside from the first block from Main, the other side should become no parking. This may actually decrease parking, but the situation on Tioronda is problematic, if not dangerous.

We originally recommended a larger expanse of striping on side streets but pared back the recommendations in the interests of getting the most critical striping done. (Note also that these recommendations also were accompanied by suggestions for additional stop signs, and an assessment of existing loading zones and where additional loading zones might be located. That is out of scope in this memo.)

Regarding parking on Main Street itself, we have looked over the plans for the bump outs along Main and determined that it might be best to see what the situation is after that construction has happened, and where crosswalks and fire hydrants are located post construction. We have recommended better parking lot signage and are in discussions with the City's DPW on that topic.

Phase 2

Main Street is one of Beacon's greatest assets. As a result, the parking on Main Street is of great value and in high demand. And it is a resource that can't be increased.

If the near-term actions to create additional parking become inadequate, the next phase may be to institute paid parking on and near Main Street. Paid parking is a proven method to manage parking demand and make parking more efficient, without adding any heat-inducing asphalt lots to the Main Street corridor at a time when global warming is an increasing environmental crisis, especially in cities.

We have noted that visitors to Beacon do not underwrite the costs of maintaining Beacon's roads, traffic lights, street lights, traffic markings, or related costs, except through the highly indirect mechanism of sales taxes paid to Main Street businesses. The costs are borne by Beacon residents and businesses.

In the case of moving to paid parking, we suggest considering a hybrid model of paid parking. In such a model, visitors would pay an hourly fee for parking, and this could be variable, so that weekend parking could be more expensive. Residents would pay a reduced fee, such as a free first hour, and a lower fee than visitors thereafter.

We are aware that modern solutions exist so that we would not have to have meters at every parking space, and that payments can be made by credit and debit cards, or through smartphones. We defer the details to some dedicated group to research. However, we believe that the fees could underwrite not only the expenses of the parking system but could generate considerable revenue for the city. There would be additional costs, too, such as policing to catch those not paying the fees, but that could be accounted for when the fees are set.

Parking fees on Main Street, if instituted, would lead to more people parking farther from Main St, and opting to walk a block or two. Many people do that already, since Main St parking is often completely swamped. The difference will be that the City will make revenue from that demand, and that parking on Main St will turn over at a higher rate, which makes for a more productive pattern of use.

Another potential source of parking revenue would be the establishment of in lieu parking fees for new development. Instead of giving away parking variances and waivers, a per-space in lieu fee billed on a quarterly or annual basis would generate funds for future parking improvements.

We understand that these proposals would have to be discussed with the community, and the perspectives of residents and business owners would have to be balanced. But managing the access to this resource is a critical issue and will only become more problematic as Beacon's population and popularity continue to rise.

Phase 3

Prior to the pandemic, Beacon had started to experience a parking crunch. More developments have gone up -- or are in process -- on Main Street that for lot size reasons cannot provide on-site parking. Independent of new development, additional residents and visitors want to park near Main St.

If the Phase 2 paid parking model becomes ineffective for the Main St area, the city could undertake the development of new parking structures (see attached renderings). This would certainly have to involve community discussion and would have to be underwritten by new sources of revenue, such as parking fees, municipal bonds, and grants.

Church St Parking Structure

A multistory garage could be constructed at the parking lot on Church between Eliza and Chestnut. This would provide up to 350 parking spaces in a three-story structure, which is an increase of 258 spaces from the existing lot.

That number of spaces could make it possible to reduce or eliminate other parking lots in the area. It is part of a multistep plan to subsequently be able to convert the parking lots on Henry into commercial or mixed-use buildings (with under-building parking) that the city could lease for additional revenue. Note that this would be subsequent to the building of a new parking structure.

County Building Parking Structure

The second possible parking structure would be a one- or two-story deck built behind the County Building on Main St. This would support an additional 100-200 parking spaces, and still allow room for a commercial or mixed-use building on the corner of South Elm and Main with a central pocket park, as recommended in the 2017 Comprehensive Plan Update.

This would be a considerable undertaking and involve a great deal of coordination of resources. But in the long run, considering the likelihood of continued population growth and the trend toward additional tourism in the City, some actions of this sort may become necessary.

Conclusions

Main Street Access Area parking is a major issue in Beacon. We have penciled out a step-by-step approach the City can take to balance the needs of residents, business owners, and visitors and to keep pace with growing demand for parking. We hope to discuss these proposals with you as soon as it is convenient.

Addendum to Memo | Main Street Access Area Parking – Tioronda Avenue Parking and Parking Space Fees Paid by Developers

Date: January 15, 2020
To: Mayor Lee Kyriacou and Members of the City Council
Cc: John Clarke
From: Stowe Boyd, Chair, Main Street Access Committee

Tioranda Avenue Parking

As a follow-up to discussions regarding parking on Tioranda Avenue, the Main Street Access Committee we offer the following observations:

1. Need 'No Parking to Corner' before the cutouts near Main, where it gets too tight to have parking on either side.
2. Tioronda is 31.5 feet wide at Vine and at the Laurel Mountain Florist shop.
3. Tioronda narrows to 27.5 feet at 29 Tioronda
4. Tioronda widens to 33 feet at Vine.
5. Heading west past Vine Tioronda drops to 22 feet at 67 Tioronda (not shown on the map). We should have 'No Parking' signs west of Vine.
6. We should have a Public Parking sign at the Van Nydeck intersection directing motorists to the Van Nydeck lot.

We believe Tioronda is too narrow to have two-way traffic and parking on both sides west of Van Nydeck, even though that will eliminate some parking spots. The road is not used as a typical residential street. It is more of a thoroughfare. Currently, of course, we have people parking on both sides.

Developer Parking Lot Fees

At the MSAC meeting held on December 2, the Committee discussed the payments made by developers to offset the number of required off-street parking spaces that are not available on site. Currently developers are required to pay an up-front, per space fee to the City, which can pose a deterrent to development. The Committee recommends that this up-front fee be changed to a regular, ongoing monthly fee paid on a per space basis, and that this money be placed in a parking benefit fund to be used for parking improvements and/or the future construction of a parking structure.

Memo | Main Street Parking Lots Signage

From: Sara Pasti and Stowe Boyd, co-chairs Main Street Access Committee

Date: 2021-01-20

Background

The Main Street Access Committee (MSAC) proposed that the city adopt a standard set of signs related to public parking.

Two Kinds of Signs

There are two sorts of signs associated with parking lots.

1. There are informational signs in the parking lots, explaining the regulations for use of the parking lots.
2. There are wayfinding signs, intended to direct drivers to public parking lots at their entrance, and for those lots that are situated away from Main Street an additional sign to indicate where to turn to get to the parking lot.

We recommend the city consider Highway Gothic, a font especially designed for visibility and currently used across the country. As shown here, we recommend wayfinding signs use mixed-case lettering, with a dark blue background and white lettering.



We will have to get signs with arrows in both directions, so that, for example, a wayfinding sign on the corner of Churchill and Main St pointing to the lot near the Hudson Vallery Brewery would have arrows pointing down the hill from both sides. The dimensions of the signs we leave to the discretion of the Highway Department to bring into alignment with existing city and state regulations that may exist.

In addition, we suggest that the city add an Antigraffiti Overlaminate coating over any new signage for easy removal of graffiti from paint, markers and stickers, etc.

The informational signs should be standardized as well, including days and hours of use and any restrictions. Suggestions for such language is included with this memo.

The Lots and Signs

Beacon has twelve downtown parking lots. There are photos of many of the existing signs in the appendix.

Our basic recommendations are to (1) place wayfinding signs to indicate lots off of Main Street, (2) update entrance signs, and (3) update informational signs. The informational signs may be adequate as is.

- Beacon Center Lot -- Actually managed by the County, and most of the parking is limited to after 6pm or before 9am. We assume the City needs to coordinate with the County to make any changes, but we recommend better wayfinding signs for the lot, at the least. A possible back entry/exit on Dewindt might be helpful, as would widening the entry/exit on South Elm.
- Beacon Falls Lot -- This lot needs wayfinding and informational signs. If the lot is to remain unpaved, we could add curb stops to indicate parking spaces.
- Mase Firehouse -- This lot requires wayfaring and information signs.
- Churchill Lot -- a wayfinding sign on the corner of Churchill and Main St pointing to the lot at the bottom of the hill. Would benefit from a wayfaring public parking sign on East Main entrance.
- Cliff Lot -- Currently a wayfinding sign on the opposite side of Main, and an entrance sign on the Cliff side of Main. Need to be updated to new format.
- Cross St -- We propose a wayfinding sign on the corner of Cross and Main, and entry and information signs.
- Chestnut and Teller Lots -- Needs wayfinding signs on Chestnut and Main intersection, and Henry and Teller intersection. Information signs should match other lots.
- Municipal Plaza -- This lot is currently not in use for public parking. But we believe there should be weekend and evening parking here, with corresponding wayfinding and informational signs. There also seems to be space for more parking along Beekman.
- Elm (Sunoco) Lot -- Update entrance sign.
- Van Nydeck Lot -- Place a wayfinding sign at the intersection of Tioronda and Van Nydeck, pointing up the hill to the lot. Replace existing ‘municipal parking’ signs with entrance signs.
- Verplanck Lot -- Needs an entrance sign on Main. Existing informational sign could include mention of the Residents Only parking area behind the building next to the lot.

Other Considerations

It might be sensible to adopt the same style of signage as other signs are placed, like the loading zones recommendations we’ve made, parking signs, and even the replacement of intersection signs.


ublic Parking
Churchill Lot


Public
Parking
Churchill Lot
24 Hour Parking Limit
All City Owned Parking Lots
Unless Otherwise Marked
Section 211-19.5 of City Ordinance / Ticket & Towing enforced 845-831-xxxx


24 Hour Parking Limit
All City Owned Parking Lots
Unless Otherwise Marked
Section 211-19.5 of City Ordinance / Ticket & Towing enforced 845-831-xxxx
24 Hour Parking Limit
No Overnight of Commercial
and Recreational Vehicles
Section 211-19.5 of City Ordinance / Ticket & Towing enforced 845-831-xxxx
NO Parking Sundays
April thru Nov 6am - 4 pm
Beacon Farmers Market
Section 211-19.5 of City Ordinance / Ticket & Towing enforced 845-831-xxxx
M - F 6pm to 6am
+
ALL DAY Sat & Sun
Section 211-19.5 of City Ordinance / Ticket & Towing enforced 845-831-xxxx


ublic Parking
Beacon Center Lot
ublic Parking
Churchill Lot
ublic Parking
Chestnut Lot
ublic Parking
Cliff Lot
ublic Parking
Cross Lot
ublic Parking
Digger Phelps Lot
ublic Parking
Elisa Lot
ublic Parking
Mase Lot
ublic Parking
Municipal Lot
ublic Parking
Teller Lot
ublic Parking
Van Nydeck Lot
ublic Parking
Verplanck Lot



wayfinding



informational



verbage*



lot names*

* this is sample verbage - lot specific TBD by COB and the Highway Dept.

City of Beacon City Council Agenda
01/25/2021

Title:

Traffic Safety Legislative Process

ATTACHMENTS

City Code Regarding the Traffic and Parking Safety Committee

§ 65-1. Creation.

There is created a Traffic and Safety Planning Committee for the City of Beacon.

§ 65-2. Composition. [Amended 2-3-2003 by L.L. No. 1-2003]

The Traffic and Safety Planning Committee shall consist of five members, as follows: two members to be appointed by the Mayor subject to City Council approval, one ex officio member to be the Chief of Police; one ex officio member to be the Superintendent of Streets; and one member to be a representative of the Planning Board of the City, such member to be designated by the Planning Board, who shall serve at the pleasure of the Planning Board.

§ 65-3. Powers and duties.

The Committee is authorized to:

A. Promote and encourage street and highway traffic safety.

B. Formulate City-wide highway safety programs and coordinate efforts of interested parties and agencies engaged in traffic safety education.

C. Cooperate with local officials within the City in the formulation and execution of traffic safety programs and activities.

D. Study traffic conditions on streets and highways within the City, study and analyze reports of accidents and causes thereof and recommend to the appropriate legislative bodies, departments or commissions such changes in rules, orders, regulations and existing law as the Committee may deem advisable.

E. Conduct meetings within the City whenever and wherever the Committee shall deem it advisable and to invite to such meetings parties and agencies, public and private, interested in traffic regulation, control and safety education.

F. Promote safety education for drivers and pedestrians.

G. Obtain and assemble motor vehicle accident data and to analyze, study and consolidate such data for educational and informational purposes.

H. Coordinate and direct all local activities related to the implementation of the state highway safety program, as approved by the Mayor or his designee.

Title:

Tioronda Bridge

ATTACHMENTS

Tioronda Bridge Amendments

11/13/2020

Mr. Anthony J. Ruggiero, M.P.A
City of Beacon
One Municipal Plaza, Suite One
Beacon, New York 12508

RE: South Avenue Bridge – P.O. 20161208
AMENDMENTS TO ORIGINAL AGREEMENT

Dear Mr. Ruggiero:

As you know, on September 12, 2016 Modjeski and Masters entered into an agreement with the City of Beacon to provide engineering services for the design of a new bridge across Fishkill Creek on South Avenue. That agreement was to provide those services for the not to exceed fee of $236,904.37. Subsequent to the execution of that agreement a P.O. #20161208 was issued by the city for this amount. Two amendments to the original agreement have increased the current not to exceed fee and purchase order to $307,437.12.

Several schematic design iterations have been prepared and presented to the Council over the past three plus years including additional preliminary bridge types and cost studies as well as photo based simulations of the proposed bridge. An Amendment 1 was provided to the city in the amount of $24,169.67 to reflect the first change in scope. Shortly after beginning the work added under Amendment 1, a City Council Workshop was held in January of 2017 resulting in yet more changes to the configuration of the bridge. As a result, work was stopped on some of the additional work items included in Amendment 1 and Amendment 2 was submitted. The scope of Amendment 2 resulted in estimated additional design costs of $69,125.08. Since most of the work anticipated in Amendment 1 was deleted, Amendment 2 was reduced by $22,732, resulting in Amendment 2 being $46,393.08. Therefore, the total amended not to exceed amount for the contract is currently $236,904.37 + $24,169.67 + $46,363.08 = $307,437.12.

In April of 2020, the City Council requested that Modjeski and Masters proceed with a three span pedestrian bridge capable of supporting emergency vehicles with restoration and replication of the original box string arch trusses. Attached to this letter is a proposed revision to the original scope of services as well as an amended cost proposal to complete final design for the selected bridge alternative as well as too assist the City of Beacon with bid letting, Construction Support and Construction Inspection tasks. As of May 1, 2020 Modjeski and Masters had received payment for services totaling $158,672.53, with $148,764.59 remaining in the Purchase Order. The attached amended cost proposal requests an additional $144,626.79 to complete all design tasks, $49,281.48 for Construction Support Services and $318,893.12 proposed to perform Construction Inspection services. The total maximum design fee will increase to $307,437.12 + $144,626.79 = $452,053.91

MODJESKI and MASTERS

We therefore request that at this time our agreement and Purchase Order be amended to reflect the new not to exceed amount of $452,053.91. The additional $368,174.60 for Construction Support and Construction Inspection services will be added by supplement once construction funding has been identified and a project letting date is set.

Due to the significant change in the scope of this project and the additional design and environmental studies that have resulted, we further request that the date for completion shown in paragraph 3 of our agreement as of September 15, 2017 be changed to December 31, 2021.

Please acknowledge your acceptance of these changes to the contract amount and the completion date by signing and dating below.

Should you have any questions or wish to discuss this matter further, please do not hesitate to give me a call.

Very truly yours,

Thomas A. Cole, P.E.
Associate

TAC:tac
Attachments (Revised SOS and Amendment 3)

Approval of Requested Agreement Changes

_____ _____

Mr. Anthony J. Ruggiero, M.P.A Date

South Avenue Pedestrian Bridge – Revised Scope of Services

Modjeski and Masters will provide professional engineering services to convert the existing bridge across Fishkill Creek on South Avenue at the Madam Brett Park and Trail which was constructed in 2013 and only supports utilities, to a pedestrian bridge with a minimum of 12 feet wide that is primarily a mixed-use pedestrian path that can be used by both vehicles and pedestrians during an emergency situation (the "Project"). As set forth in greater detail in the Scope of Services below and the Cost Proposal attached to this scope, Modjeski and Masters will provide environmental assessments, conceptual and final designs, attending a public meeting to present the conceptual design; determining and obtaining the necessary permits and approvals; preparing construction documents; prepare survey and right-of-way easements.

Task 0: Review of existing materials and project administration

Assume 19 reporting periods from June 2020 through December 2021.

Task 1: Design Summary Memorandum

Modjeski and Masters will prepare a design summary memorandum for signature by the City. The purpose of this memorandum is to record the steps taken and alternatives considered during the preliminary design process and serve as the Record of Decision document.

Assume:

The Project Manager will attend a remote City Council meeting to discuss this summary memo @ 2 hrs

Task 2: Geotechnical Investigation

A geotechnical investigation will be performed to determine the foundation requirements for the proposed piers.

It is assumed that a geotechnical engineering subconsultant and subsurface investigation sub-contractor will be engaged to perform this work as a direct expense to the project.

Task 3: Environmental Review

Environmental permit requirements will be determined and permit applications prepared.

See Shumaker Engineering Proposal for additional information.

Task 4: Preliminary Design

Preliminary concept level plans, order of magnitude construction cost estimate and special specifications will be prepared for review by the City. The preliminary design will include a photorealistic rendering of the proposed structure from three views (section, elevation and isometric).

A Preliminary Design submission will submitted for review by the City.

Assume:

The preliminary conceptual submission will consist of 6 drawings

The Project Manager and Project Engineer will attend a remote City Council meeting to discuss comments on the preliminary submission

Task 5: Existing Truss Rehabilitation and Replica Truss Fabrication

To expedite the construction process and allow for smaller construction contact values a separate set of contract plans, specifications and cost estimate will be prepared to rehabilitate the existing bowstring arch truss and fabricate 5 replica trusses. The contract will include acquiring the existing truss and other pieces from the City's maintenance yard, rehabilitation of the truss to restore one truss for installation as a visual element on the new pedestrian bridge, fabrication of 5 replica trusses and delivery of the 6 trusses to the project location.

A Truss Rehabilitation Final Design package will be submitted to the City for review prior to advertising the project for construction. Modjeski and Masters will prepare the construction advertisement, the contract documents and administer the bid letting. The City will provide the contract boiler plate documents for incorporation into the contract documents.

Task 6: Final Design

Final design will continue during review of the preliminary design and all comments provided in a timely manner by the City will be incorporated. A Final Design package will be submitted to the City for review prior to advertising the project for construction. Modjeski and Masters will prepare the construction advertisement, the contract documents and administer the bid letting. The City will provide the contract boiler plate documents for incorporation into the contract documents.

Task 7: Construction Support

Modjeski and Masters will provide Construction Support services during construction, answering Contractor questions, requests for information and reviewing engineering submissions and shop drawings. Due to the complexity and specialized nature of the arch truss restoration, fabrication of replica arches as well as demolition and construction of stone faced piers in the stream a conservative assumption was made for the number of submissions and questions from the field to cover unknown field conditions discovered during construction.

Assume:

12 Requests for Information (RFIs) @ 2 hrs. EA. for a Project Engineer & 2 hrs. EA. for a Project Manager = 48 hrs.

10 Shop Drawing Submittals (12 Dwg/Submittal) @ 20 hrs EA for an Engineer In Training and 8 hrs EA for a Project Engineer = 200 hrs for an Engineer In Training and 80 hrs for a Project Engineer.

2 Engineering Submittals @ 20 hrs EA for an Engineer In Training and 8 hrs EA for a Project Engineer = 40 hrs for an Engineer In Training and 16 hrs for a Project Engineer.

24 hrs. for a Project Manager to oversee the effort above.

Task 8: Construction Inspection

Modjeski and Masters and a D/M/WBE subconsultant will provide a Resident Engineer and Construction Inspector/Office Engineer to supervise construction of the new pedestrian bridge including all field and laboratory testing.

Assume:

A construction start on April 1, 2021 and completion September 30, 2021

The Project Manager and Project Engineer will attend the Construction Kick-off Meeting @ 4 hrs EA including travel time.

No overtime charges for the Resident Engineer and Construction Inspector.

No construction management software will be required for this project.

There are not NYSDOT EBO requirements for this project.

November 13, 2020

MODJESKI & MASTERS

CONSTRUCTION OF A PEDESTRIAN SHARED USE PATH BRIDGE OVER FISHKILL CREEK AT SOUTH AVENUE

DESIGN SERVICES

JOB TITLE	ASCE (A) OR NICET (N) GRADE	AVERAGE HOURLY RATE PRESENT 01/01/20	AVERAGE HOURLY RATE PROJECTED 01/01/21	MAXIMUM HOURLY RATES 2020	PROJECTED MAXIMUM HOURLY RATES 2021	OVERTIME* CATEGORY
PRINCIPAL	IX (A)	$293.55	$293.55	$293.55	$293.55	A
SENIOR ASSOCIATE	VII (A)	$214.53	$214.53	$214.53	$214.53	B
ASSOCIATE	VI (A)	$164.76	$164.76	$164.76	$164.76	B
SENIOR ENGINEER	V (A)	$146.02	$146.02	$146.02	$146.02	B
ENGINEER	IV (A)	$131.79	$131.79	$131.79	$131.79	B
ASST. ENGINEER	III (A)	$105.81	$105.81	$105.81	$105.81	B
ENGINEER-IN-TRAINING	II/I (A)	$101.55	$101.55	$101.55	$101.55	B
ENGINEERING TECH. III	IV (N)	$126.03	$126.03	$126.03	$126.03	C
ENGINEERING TECH. II	III (N)	$88.68	$88.68	$88.68	$88.68	C
ENGINEERING TECH. I	II (N)	$88.68	$88.68	$88.68	$88.68	C
RESIDENT ENGINEER	III (N)	$150.00	$150.00	$150.00	$150.00	C
NICET III INSPECTOR	III (N)	$130.00	$130.00	$130.00	$130.00	C

*OVERTIME POLICY

Category A - no overtime compensation.
Category B - overtime compensated at straight time.
Category C - overtime compensated at time and one half rate

Overtime applies to hours worked in excess of the normal working hours of 8 hours per day.

November 13, 2020

MODJESKI & MASTERS

CONSTRUCTION OF A PEDESTRIAN SHARED USE PATH BRIDGE OVER FISHKILL CREEK AT SOUTH AVENUE

DESIGN SERVICES

TITLE	ASCE (A) OR NICET (N) GRADE EQUIV.	REVIEW OF EXISTING MATERIALS AND PROJECT ADMINISTRATION 0.00	DESIGN SUMMARY MEMORANDUM 1.00	GEOTECHNICAL INVESTIGATION 2.00	ENVIRONMENTAL REVIEW 3.00	PRELIMINARY DESIGN 4.00	EXISTING TRUSS REHABILITATION AND REPLICA TRUSS FABRICATION 5.00	FINAL DESIGN 6.00	TOTAL HOURS	HOURLY RATE	AMOUNT
PRINCIPAL	IX (A)	1	1		2	1	1	4	10	$293.55	$2,935.50
SENIOR ASSOCIATE	VII (A)									$214.53	$0.00
ASSOCIATE	VI (A)	27	8	6	16	16	48	64	185	$164.76	$30,480.60
SENIOR ENGINEER	V (A)	5				24	20	16	65	$146.02	$9,491.30
ENGINEER	IV (A)		12	4	16	48	108	144	332	$131.79	$43,754.28
ASST. ENGINEER	III (A)									$105.81	$0.00
ENGINEER-IN-TRAINING	II/I (A)	4		4	8	80	264	320	680	$101.55	$69,054.00
ENGINEERING TECH. III	IV (N)	4	4		4	120	16	80	228	$126.03	$28,734.84
ENGINEERING TECH. II	III (N)					120	220	380	720	$88.68	$63,849.60
ENGINEERING TECH. I	II (N)									$88.68	$0.00
RESIDENT ENGINEER	III (N)									$150.00	$0.00
NICET III INSPECTOR	III (N)									$130.00	$0.00
		41	25	14	46	409	677	1008	2220	Design -	$248,300.12

Exhibit A, Page 3
Staffing Table

November 13, 2020

MODJESKI & MASTERS

CONSTRUCTION OF A PEDESTRIAN SHARED USE PATH BRIDGE OVER FISHKILL CREEK AT SOUTH AVENUE

CONSTRUCTION SUPPORT AND INSPECTION SERVICES

TITLE	ASCE (A) OR NICET (N) GRADE	CONSTRUCTION SUPPORT 7.00	CONSTRUCTION INSPECTION - APRIL '21 8.00	CONSTRUCTION INSPECTION - MAY '21 8.00	CONSTRUCTION INSPECTION - JUNE '21 8.00	CONSTRUCTION INSPECTION - JULY '21 8.00	CONSTRUCTION INSPECTION - AUGUST '21 8.00	CONSTRUCTION INSPECTION - SEPT. '21 8.00			TOTAL HOURS	HOURLY RATE	AMOUNT
PRINCIPAL	IX (A)											$293.55	$0.00
SENIOR ASSOCIATE	VII (A)											$214.53	$0.00
ASSOCIATE	VI (A)	48	4								52	$164.76	$8,567.52
SENIOR ENGINEER	V (A)											$146.02	$0.00
ENGINEER	IV (A)	120	4								124	$131.79	$16,341.96
ASST. ENGINEER	III (A)											$105.81	$0.00
ENGINEER-IN-TRAINING	II/I (A)	240									240	$101.55	$24,372.00
ENGINEERING TECH. III	IV (N)											$126.03	$0.00
ENGINEERING TECH. II	III (N)											$88.68	$0.00
ENGINEERING TECH. I	II (N)											$88.68	$0.00
RESIDENT ENGINEER	III (N)		176	168	176	176	176	176			1048	$150.00	$157,200.00
NICET III INSPECTOR	III (N)		176	168	176	176	176	176			1048	$130.00	$136,240.00
		408	360	336	352	352	352	352			2512	Cons. Sp. Cons. Ins.	$49,281.48 $293,440.00

Exhibit B, Page 1
Direct Non-Salary Costs

November 13, 2020

MODJESKI & MASTERS

CONSTRUCTION OF A PEDESTRIAN SHARED USE PATH BRIDGE OVER FISHKILL CREEK AT SOUTH AVENUE

DESIGN SERVICES

1. Vehicle Mileage

a. To and from project site & City Offices (DESIGN STAGE)

Car	4	trips	x	36	miles / trip	x	$0.580	/ mile	=	$83.52

TOTAL VEHICLE MILEAGE = $83.52

2. Field Photographs — 30 digital photos with prints @ $0.50 each = $15.00

3. Mail including: postage, overnight deliveries, bulk mail (estimated) = $101.00

4. Long Distance Telephone Calls (estimated)

8 months x $20.00 /month = $160.00

5. Printing and Reproduction Costs (estimated)

Plans (assume 5 sets)	0	prints	x	$1.00	/ print	= $0.00
Plans (Record Plans)	0	Films	x	$6.00	/ print	= $0.00
11" x 17" Prints	1,000	prints	x	$0.40	/ print	= $400.00
8.5" X 11" Prints	4,000	sheets	x	$0.10	/ sheet	= $400.00
Vellums (cross-sections)	0	vellums	x	$4.00	/ vellum	= $0.00

TOTAL PRINTING AND REPRODUCTION COST = $800.00

6. Field Inspection Equipment Costs (estimated)

Cell Phone	0	months	x	$30.00	/ month	= $0.00
Computer	0	months	x	$30.00	/ month	= $0.00
Broadband Internet Service	0	months	x	$70.00	/ month	= $0.00

TOTAL FIELD INSPECTION EQUIPMENT COST PER INSPECTOR = $0.00

7. Protective Liability Insurance =

8. Expendable Supplies (estimated) = $180.00

TOTAL DIRECT NON-SALARY COSTS = Design - **$1,339.52**

November 13, 2020

MODJESKI & MASTERS

CONSTRUCTION OF A PEDESTRIAN SHARED USE PATH BRIDGE OVER FISHKILL CREEK AT SOUTH AVENUE

CONSTRUCTION SUPPORT AND INSPECTION SERVICES

1. Vehicle Mileage

a. To and from project site & City Offices (CONSTRUCTION STAGE)

Car	4	trips	x	36	miles / trip	x	$0.580	/ mile	= $83.52

b. Construction Inspector Personal Mileage

Car	26	weeks	x	120	miles / week	x	$0.580	/ mile	= $1,809.60

TOTAL VEHICLE MILEAGE = $1,893.12

2. Field Photographs — 0 digital photos with prints @ $0.50 each = $0.00

3. Mail including: postage, overnight deliveries, bulk mail (estimated) = $0.00

4. Long Distance Telephone Calls (estimated)

0 months x $20.00 /month = $0.00

5. Printing and Reproduction Costs (estimated)

Plans (assume 5 sets)	0	prints	x	$1.00	/ print	= $0.00
Plans (Record Plans)	0	Films	x	$6.00	/ print	= $0.00
11" x 17" Prints	400	prints	x	$0.40	/ print	= $160.00
8.5" X 11" Prints	200	sheets	x	$0.10	/ sheet	= $20.00
Vellums (cross-sections)	0	vellums	x	$4.00	/ vellum	= $0.00

TOTAL PRINTING AND REPRODUCTION COST = $180.00

6. Field Inspection Equipment Costs (estimated)

Cell Phone	6	months	x	$30.00	/ month	= $180.00
Computer	6	months	x	$30.00	/ month	= $180.00
Broadband Internet Service	6	months	x	$70.00	/ month	= $420.00

TOTAL FIELD INSPECTION EQUIPMENT COST PER INSPECTOR = $1,560.00

7. Protective Liability Insurance =

8. Expendable Supplies (estimated) = $180.00

10. Material Testing, including fiedl bolt tests (Advance Testing) = $12,000.00

11. Shop Inspection during Fabrication (KTA-Tator) = $10,000.00

TOTAL DIRECT NON-SALARY COSTS = Cons. Insp. - **$25,813.12**

MODJESKI & MASTERS

CONSTRUCTION OF A PEDESTRIAN SHARED USE PATH BRIDGE OVER FISHKILL CREEK AT SOUTH AVENUE

DESIGN SERVICES

	November 13, 2020
Modjeski and Masters Fee (Original + Supp. #1 +Supp. #2)	$ 307,437.12
Previous Payments to Modjeski and Masters (Prior to 5/1/20)	$ 158,672.53
Remaining Contract Fee	$ 148,764.59
Direct Non-Salary Costs - Original (Estimated Subject to Audit)	$ 2,478.41
Direct Non-Salary Costs - Expended (Estimated Subject to Audit)	$ 194.51
Direct Non-Salary Costs - Remaining (Estimated Subject to Audit)	$ 2,283.90
Sub-Consultant Original Cost	
Prudent Engineering and Land Survey (Survey)	$ 37,800.00
Shumaker (Environmental)	$ 24,106.64
GeoDesign (Geotechnical, subsurface investigation)	$ 14,840.00
MHC (Historical Research)	$ 5,000.00
Sub-Consultant Payments	
Prudent Engineering and Land Survey (Survey)	$ 38,780.00
Shumaker (Environmental)	$ 4,246.70
GeoDesign (Geotechnical, subsurface investigation)	$ -
MHC (Historical Research)	$ -
Sub-Consultant Remaining Funds	
Prudent Engineering and Land Survey (Survey)	$ (980.00)
Shumaker (Environmental)	$ 19,859.94
GeoDesign (Geotechnical, subsurface investigation)	$ 14,840.00
MHC (Historical Research)	$ 5,000.00
TOTAL REMAINING LABOR - MODJESKI AND MASTERS (as of 5/1/20)	$ 107,760.75

MODJESKI & MASTERS
CONSTRUCTION OF A PEDESTRIAN SHARED USE PATH BRIDGE OVER FISHKILL CREEK AT SOUTH AVENUE

DESIGN SERVICES

		November 13, 2020
Modjeski and Masters Labor - Proposed	Design -	$ 248,300.12
Modjeski and Masters Labor - Remaining (as of 5/1/20)	Design -	$ 107,760.75
Modjeski and Masters Labor - Additional	Design -	**$ 140,539.37**
Direct Non-Salary Costs - Proposed (Estimated Subject to Audit)	Design -	$ 1,339.52
Direct Non-Salary Costs - Remaining (Estimated Subject to Audit)	Design -	$ 2,283.90
Direct Non-Salary Costs - Additional (Estimated Subject to Audit)	Design -	**$ -**
Sub-Consultant Cost - Proposed		
Prudent Engineering and Land Survey (Survey)		$ -
Shumaker (Environmental)		$ 23,947.33
GeoDesign (Geotechnical, subsurface investigation)		$ 14,840.00
MHC (Historical Research)		$ -
Sub-Consultant Cost - Remaining		
Prudent Engineering and Land Survey (Survey)		$ (980.00)
Shumaker (Environmental)		$ 19,859.94
GeoDesign (Geotechnical, subsurface investigation)		$ 14,840.00
MHC (Historical Research)		$ 5,000.00
Sub-Consultant Cost - Additional		
Prudent Engineering and Land Survey (Survey)		**$ -**
Shumaker (Environmental)		**$ 4,087.39**
GeoDesign (Geotechnical, subsurface investigation)		**$ -**
MHC (Historical Research)		**$ -**
TOTAL ESTIMATED ADDITIONAL COST	**Design -**	**$ 144,626.76**

MODJESKI & MASTERS

CONSTRUCTION OF A PEDESTRIAN SHARED USE PATH BRIDGE OVER FISHKILL CREEK AT SOUTH AVENUE

CONSTRUCTION SUPPORT AND INSPECTION SERVICES

November 13, 2020

Modjeski and Masters Labor - Proposed	Construction Support -	$	49,281.48
	Construction Inspection -	$	293,440.00
Modjeski and Masters Labor - Remaining (as of 5/1/20)	Construction -	$	-
Modjeski and Masters Labor - Additional	Construction -	**$**	**293,440.00**
Direct Non-Salary Costs - Proposed (Estimated Subject to Audit)	Construction -	$	25,813.12
Direct Non-Salary Costs - Remaining (Estimated Subject to Audit)	Construction -	$	-
Direct Non-Salary Costs - Additional (Estimated Subject to Audit)	Construction -	**$**	**25,813.12**
Sub-Consultant Cost - Proposed			
Prudent Engineering and Land Survey (Survey)		$	-
Shumaker (Environmental)		$	-
GeoDesign (Geotechnical, subsurface investigation)		$	-
MHC (Historical Research)		$	-
Sub-Consultant Cost - Remaining			
Prudent Engineering and Land Survey (Survey)		$	-
Shumaker (Environmental)		$	-
GeoDesign (Geotechnical, subsurface investigation)		$	-
MHC (Historical Research)		$	-
Sub-Consultant Cost - Additional			
Prudent Engineering and Land Survey (Survey)		**$**	**-**
Shumaker (Environmental)		**$**	**-**
GeoDesign (Geotechnical, subsurface investigation)		**$**	**-**
MHC (Historical Research)		**$**	**-**
TOTAL ESTIMATED ADDITIONAL COST	Construction Support -	**$**	**49,281.48**
	Construction Inspection -	**$**	**319,253.12**

GEO DESIGN

August 13, 2020
File No. 3937-008.00

Thomas Cole, PE
Modjeski & Masters
301 Manchester Road, Suite 102
Poughkeepsie, NY 12603

Email: TACole@modjeski.com

Re: Proposal for Geotechnical Engineering Services
South Avenue Bridge over Fishkill Creek Improvements
Beacon, NY

Dear Tom:

GEODesign, Inc., P.C. (GEODesign) is providing this proposal for geophysical exploration and geotechnical engineering services related to proposed improvements of the South Avenue bridge over Fishkill Creek in Beacon, New York.

PROJECT UNDERSTANDING

The original South Avenue bridge was a three-span bowstring arch bridge constructed circa 1860s and was supported by two stone abutments and two piers. In 2013, a single span, three girder utility bridge referred to as the Tioronda Utility Bridge was constructed at the location of the original bridge. The tops of the existing piers were cut-off below the new bridge. New concrete abutments were constructed behind the existing stone abutments. One of the abutments bears directly on bedrock and the other is supported by a single row of six HP12X84 H-piles socketed roughly 10 feet into bedrock, with the bedrock surface roughly 10 feet below the bottom of the abutment.

We understand that the city is proposing to convert the existing utility bridge into a three-span pedestrian bridge. M&M has said the intent will be to demolish the two existing piers and construct new piers in their place. We also understand that given the relatively shallow bedrock present in the vicinity of the bridge, it is expected that foundation for the new piers will be spread footings bearing on bedrock. However, top of bedrock elevation data is currently unavailable at the pier locations. We have reviewed potentially drilling borings with rock cores at the abutments with a drilling contractor, but it appears that the associated mobilization costs would be relatively high due to the required access and will likely exceed the city's available budget for subsurface characterization.

We have agreed with M&M to subcontract NDT Corp. (NDT), a geophysical testing firm, to perform a seismic refraction survey at the site to evaluate approximate top of bedrock profiles near

the pier locations. There is currently available information regarding the character (type, RQD, etc.) of the bedrock at the abutment locations from rock cores obtained from previous borings performed at the site.

Our objective will be to provide results of the seismic refraction survey, interpret the geophysical and existing rock core data (from abutments), and provide geotechnical recommendations for your use in designing the new pier foundations. We understand that geotechnical input will not be required for the existing abutments.

While not included in this phase as requested, we recommend we be retained to observe pier foundation subgrades during construction to confirm our design interpretations and assumptions.

SCOPE OF SERVICES

The following Scope of Services is proposed:

1. Preliminary Engineering/Coordination/Project Management

   We will review existing background information provided by Modjeski & Masters and geological mapping. We have assumed that there are no utilities in the riverbed requiring "Digsafely" notification or clearance related to NDT's proposed use of a seisgun and ask that M&M confirms this. We will coordinate the geophysical work with M&M and NDT and will also perform project management and participate in up to three conference calls throughout the design phase.

2. Seismic Refraction Survey

   We will subcontract NDT to perform a seismic refraction survey as described in their attached proposal.

3. Inspection

   We will have a GEODesign engineer observe and oversee the work in the field. It is anticipated the work will be completed in one day per NDT's proposal.

4. Analysis and Geotechnical Report

   We will analyze the data and provide bearing pressure and sliding coefficient recommendations for M&M's design of the pier foundations. We will provide a geotechnical engineering report summarizing the seismic refraction survey findings (with NDT report attached) and foundation design recommendations for the piers. We have assumed the piers foundations will be spread footings bearing on bedrock.

5. Construction Document Review

   We will review progress contract documents (plans and specs related to pier foundations) prepared by M&M for consistency with our recommendations.

BUDGET ESTIMATE

We will perform these services on a time and expense basis in accordance with our attached standard fee schedule and an estimated budget of **$14,840** broken down as follows:

1.	Preliminary Engineering/Coordination/Project Management	$ 2,000
2.	Seismic Refraction Survey and Coordination	$ 6,840
3.	Inspection (including preparation, travel, and senior oversight)	$ 1,500
4.	Analysis and Recommendations Memo	$ 3,500
5.	Contract Document Review	$ 1,000
	TOTAL ESTIMATE	**$14,840**

SCHEDULE

NDT is scheduling project 2 to 3 weeks after receiving a notice to proceed (NTP) and currently has commitments through August 2020. Upon receiving NTP, we will coordinate the field work and schedule with M&M and NDT. **Having low flow conditions (2-3 days with no precipitation) are critical prior to NDT mobilizing to the site**. We understand that NDT will provide their report approximately one week after completing the seismic refraction survey. We will provide our geotechnical design memo within approximately two to three weeks of receiving NDT's report.

TERMS AND CONDITIONS

Our work will be subject to the attached Terms and Conditions.

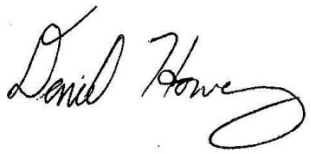
ACCEPTANCE

This proposal may be accepted by signing in the appropriate spaces below and returning the original to us.

We appreciate the opportunity to provide this proposal. If you have any questions, please call.

Sincerely,

Geo**Design,** Inc.





Daniel Howey, P.E.
Senior Project Engineer

Theodore von Rosenvinge, P.E., D.GE
Senior Principal

Attachments: Terms and Conditions
Standard Fee Schedule
Standard Terms and Conditions

This Proposal for Services is hereby accepted and executed by a duly authorized signatory, who by execution hereof, warrants that he/she has full authority to act for, in the name, and on behalf of the Client.

MODJESKI & MASTERS

Name: _____

Title: _____

Date: _____

m:\cl\3937 modjeski and masters\008 so ave bridge\proposal\2020-0813 so. ave bridge proposal 3937-008.docx

STANDARD FEE SCHEDULE

(Per Hour)

Senior Principal	$ 290
Principal	$ 260
Senior Associate	$ 195
Associate	$ 170
Sr. Project Engineer / Sr. Project Scientist	$ 150
Project Engineer / Project Scientist	$ 130
Engineer II / Scientist II	$ 120
Engineer I / Scientist I	$ 100
CADD	$ 105
Technical Support	$ 68

Reimbursable Expenses: Non-salary direct expenses (job-chargeable) will be billed at our cost plus fifteen percent unless stated in proposal to be included in quoted unit prices. These expenses include automobile expenses at the current IRS rate per mile, subcontractors (e.g., drilling, and lab), shipping charges, reproduction costs, and long distance telephone calls.

Legal Proceedings: Expert Witness/Forensic Analysis, Preparation, Deposition & Testimony will be billed at Staff rate x 1.25.

Rates are subject to annual adjustment.

January 2020

NDT CORPORATION
Concrete & Geophysical Testing

NDT CORPORATION
153 Clinton Road, Sterling, MA 01564
Main: 978-563-1327 | Fax: 978-563-1340
eMail: Info@NDTCorporation.com

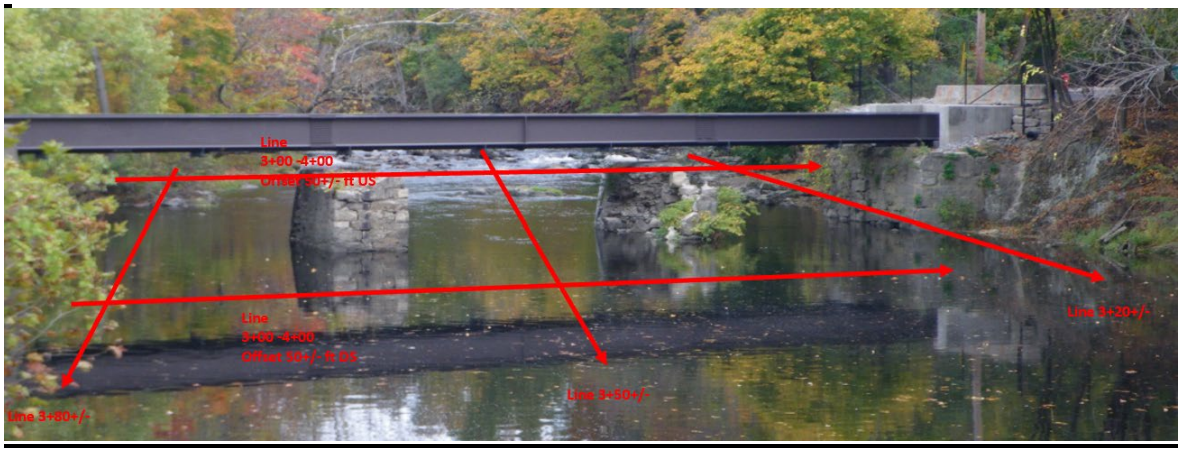
August 12, 2020

Dan Howey PE.
Senior Project Engineer
GeoDesign, Inc
PO Box 699
Windsor, VT 05089

Subject: NDT Corporation proposal, Non-destructive testing,
South Avenue Bridge over Fishkill Creek in Beacon, NY

Dear Mr. Howey:

NDT Corporation (NDT) is pleased to provide this proposal to GeoDesign Inc, to conduct a seismic refraction survey to determine the bedrock profiles along this bridge crossing. The results of this testing will assist GeoDesign with their assessment of this bridge. Testing is expected to be conducted in the streambed during low flow conditions collecting 5 lines of data as shown on the figure below. The bridge superstructure is a single span which currently supports a utility crossing the Fishkill Creek.



Downstream face of South Avenue across Fishkill Creek

Testing Method and Scope of Work:

Seismic Refraction: Seismic refraction is an efficient method routinely used for civil engineering projects to profile bedrock, assess the condition and excavation methods of bedrock, and determine the thickness and types of overlying soil layers, and presence and depth to water table. Seismic exploration methods utilize the natural energy transmitting properties of the soils and rocks and are based on the principle that the velocity at which

seismic waves travel through the earth is a function of the physical properties (elastic moduli and Poisson's ratio) of the materials. Interpretations are based on the time required for a seismic wave to travel form a source to a series of geophones/hydrophones located at specific intervals along the ground surface. The resultant seismic velocities are used for material identification, and preparation of top of bedrock profile. Seismic refraction results determine an average top of bedrock surface. The accuracy of seismic refraction to profile top of bedrock in a shallow (less than 10 feet environment) is expected to be +/- 3 feet because of localized bedrock knobs and valleys. The seismic compressional wave velocity values measured by this technique can be used to distinguish between weathered, fractured zones and weathered zones of bedrock.

Interpretations are made from the time required for compressional seismic waves to travel from the energy generation point to each of a group of vibration (geophones) sensitive devices. Geophones are positioned in line, at known intervals along the ground surface. Seismic energy is generated using a hammer blow to a plate or a seis-gun energy source (small blank black powder charge). Attached is a **seismic appendix** that discusses the seismic refraction survey method.

Work Plan

NDT proposes to collect data along five (5) 100-foot long seismic lines (shown in red on the Figure below) to construct bedrock profiles along the streambed in the vicinity of the abutments and piers. The 100-foot seismic line is capable of detecting rock up to approximately 30 feet. Based on information provide by Geodesign including the CHA boring logs it is believed that the 100-foot line length will be sufficient. The figure shows the estimated location of the proposed coverage based on the satellite image provided. Actual line locations may vary due to obstructions, utilities etc. field measurements to the north and south portals, offsets from edge of road and other landmarks will be used during the fieldwork to locate the lines.

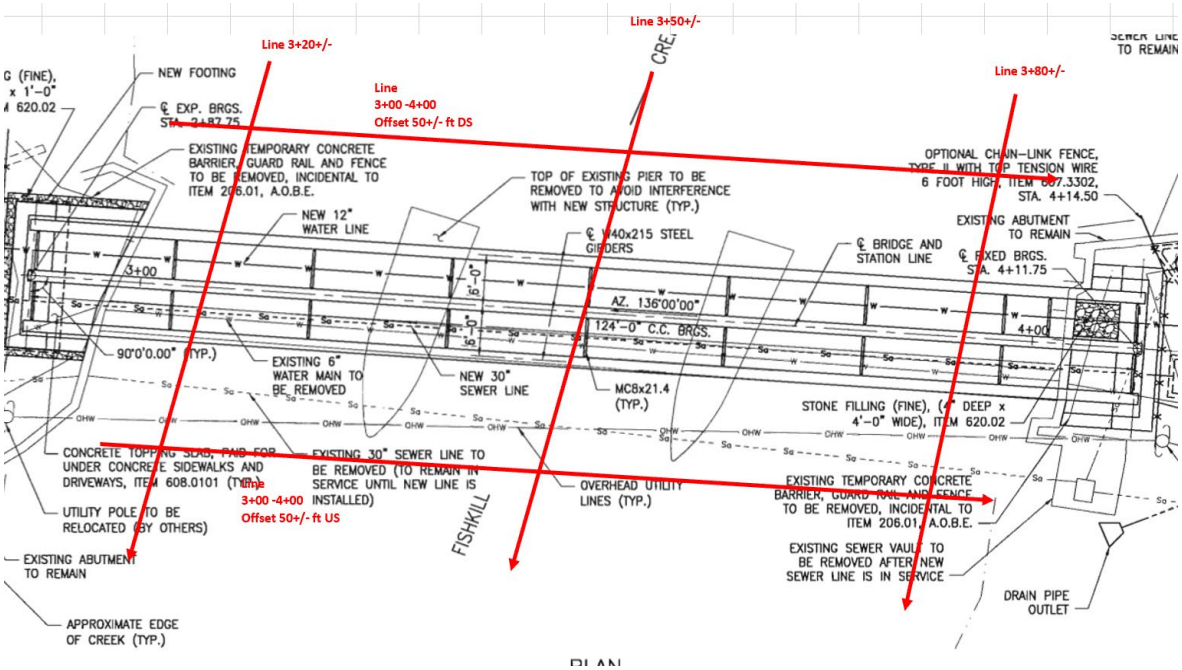


Figure 1 showing the Seismic refraction survey lines to be completed by NDT

NDT proposes to mobilize a 2-person crew to this site the day of the field testing and it is assumed this investigation can be completed in 1 day. The energy source for this investigation will be a seisgun which detonates a 400 grain black powder shotgun shell (no shot). The tip of the gun is buried roughly 1-2' deep in the ground/riverbed. The location of these shots (spaced every 50') must be 4-5 feet away from any utilities in all directions. For this investigation **it is assumed that there are no known utilities in the riverbed.** NDT is requesting verification of this assumption. Otherwise the Call-Before-You-Dig or equivalent Dig-Safe utility location service should be utilized and mark out all utility locations prior to the seismic refraction survey. It is assumed that GeoDesign can lead this utility field location process **if needed** and that the utilities will be located prior to NDT arriving on site.

Deliverables:

The results of this investigation will be reported within 4-8 business days of the completion of field work. The report will have a description of the testing methods, rock elevation findings and results presented on profile sketches. Sketches provided by GeoDesign will be annotated showing the location of the seismic lines and relative rock elevations.

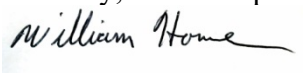
Costing:

The total lump sum estimated NDT cost for seismic testing at this bridge crossing is $5,950. This cost include mobilization, 1 day of testing, all equipment, data analysis and a written report reviewed and submitted to GeoDesign.

Schedule:

Generally, NDT is scheduling projects 2-3 weeks after receiving a notice to proceed. Currently NDT has commitments through August 2020. NDT recognizes the importance of this project and will work closely with GeoDesign to prioritize this field investigation. Work will be done in accordance with the attached standard terms and conditions. If you have any questions or need additional information, contact me at (978) 563-1327.

Sincerely, NDT Corporation



William Horne

APPENDIX: SEISMIC REFRACTION

OVERVIEW

Seismic exploration methods utilize the natural energy transmitting properties of the soils and rocks and are based on the principle that the velocity at which seismic waves travel through the earth is a function of the physical properties (elastic moduli and Poisson's ratio) of the materials. Energy is generated at the ends and at the center of the seismic spread. The geophone/hydrophone is in direct contact with the earth/water and converts the earth's motion resulting from the energy generation into electric signals with a voltage proportional to the particle velocity of the ground motion. The field operator can amplify and filter the seismic signals to minimize background noise. Data are recorded on magnetic disk and can be printed in the field. Interpretations are based on the time required for a seismic wave to travel form a source to a series of geophones/hydrophones located at specific intervals along the ground surface. The resultant seismic velocities are used for:

* Material identification.
* Stratigraphic correlation.
* Depth determinations.
* Calculation of elastic moduli values and Poison's ratio.

A variety of seismic wave types, differing in resultant particle motion, are generated by a near surface seismic energy source. The two types of seismic waves for seismic exploration are the compressional (P) wave and the shear (S) wave. Particle motion resulting from a (P-wave) is an oscillation, consisting of alternating compression and dilatation, orientated parallel to the direction of propagation. An S-wave causes particle motion transverse to the direction of propagation. The P-wave travels with a higher velocity of the two waves and is of greater importance for seismic surveying. The following discussions are concerned principally with P-waves.

Possible seismic wave paths include a direct wave path, a reflected wave path or a refracted wave path. These wave paths are illustrated in FIGURE A1. The different paths result in different travel times, so that the recorded seismic waveform will theoretically show three distinct wave arrivals. The direct and refracted wave paths are important to seismic refraction exploration while the reflected wave path is important for seismic reflection studies.

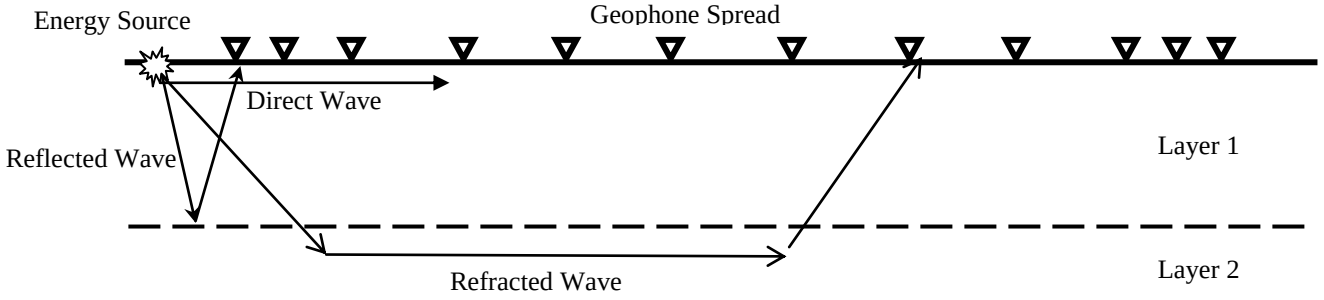


FIGURE A1:
SEISMIC WAVE PATHS FOR DIRECT WAVE, REFLECTED WAVE AND REFRACTED WAVE ILLUSTRATING EFFECTS OF A BOUNDARY BETWEEN MATERIALS WITH DIFFERENT ELASTIC PROPERTIES

Seismic waves incident on the interface between materials of different elastic properties at what is termed the critical angle are refracted and travel along the top of the lower layer. The critical angle is a function of the seismic velocities of the two materials. These same waves are then refracted back to the surface at the same angle. The recorded arrival times of these refracted waves, because they depend on the properties and geometry of the subsurface, can be analyzed to produce a vertical profile of the subsurface. Information such as the number, thickness and depths of stratigraphic layers, as well as clues to the composition of these units can be ascertained.

The first arrivals at the geophones/hydrophones located near the energy source are direct waves that travel through the near surface. At greater distances, the first arrival is a refracted wave. Lower layers typically are higher velocity materials, therefore the refracted wave will overtake both the direct wave and the reflected wave, because of the time gained travelling through the higher velocity material compensates for the longer wave path. Depth computations are based on the ratio of the layer velocities and the distance from the energy source to the point where refracted wave arrivals over take direct arrivals.

Although not the usual case, a constraint on refraction theory is that material velocities ideally should increase with depth. If a velocity inversion exists, i.e. where a higher velocity layer overlies a low velocity layer, depths and seismic velocities can be calculated but the uncertainty in calculations is increased unless borehole data are available.

APPLICATIONS

Seismic refraction technique is an accurate and effective method for determining the thickness of subsurface geologic layers. Applications for engineering design, assessment, and remediation as well as ground water and hydrogeologic studies include:

* Continuous profiling of subsurface layers including the bedrock surface
* Water-table depth determinations
* Mapping and general identification of significant stratigraphic layers
* Detection of sinkholes and cavities
* Detection of bedrock fracture zones
* Detection of filled-in areas
* Elastic moduli and Poisson's ratio values for subsurface layers

Seismic refraction investigations are particularly useful because seismic velocities can be used for material identification. FIGURE A2 presents a guide to material identification based on P-wave seismic velocities. In rocks and compacted overburden material, the seismic waves travel from grain to grain so that the measured seismic velocity value is a direct function of the solid material. In porous or fractured rock and most overburden materials the seismic waves travel partly or wholly though the fluid between the grains.

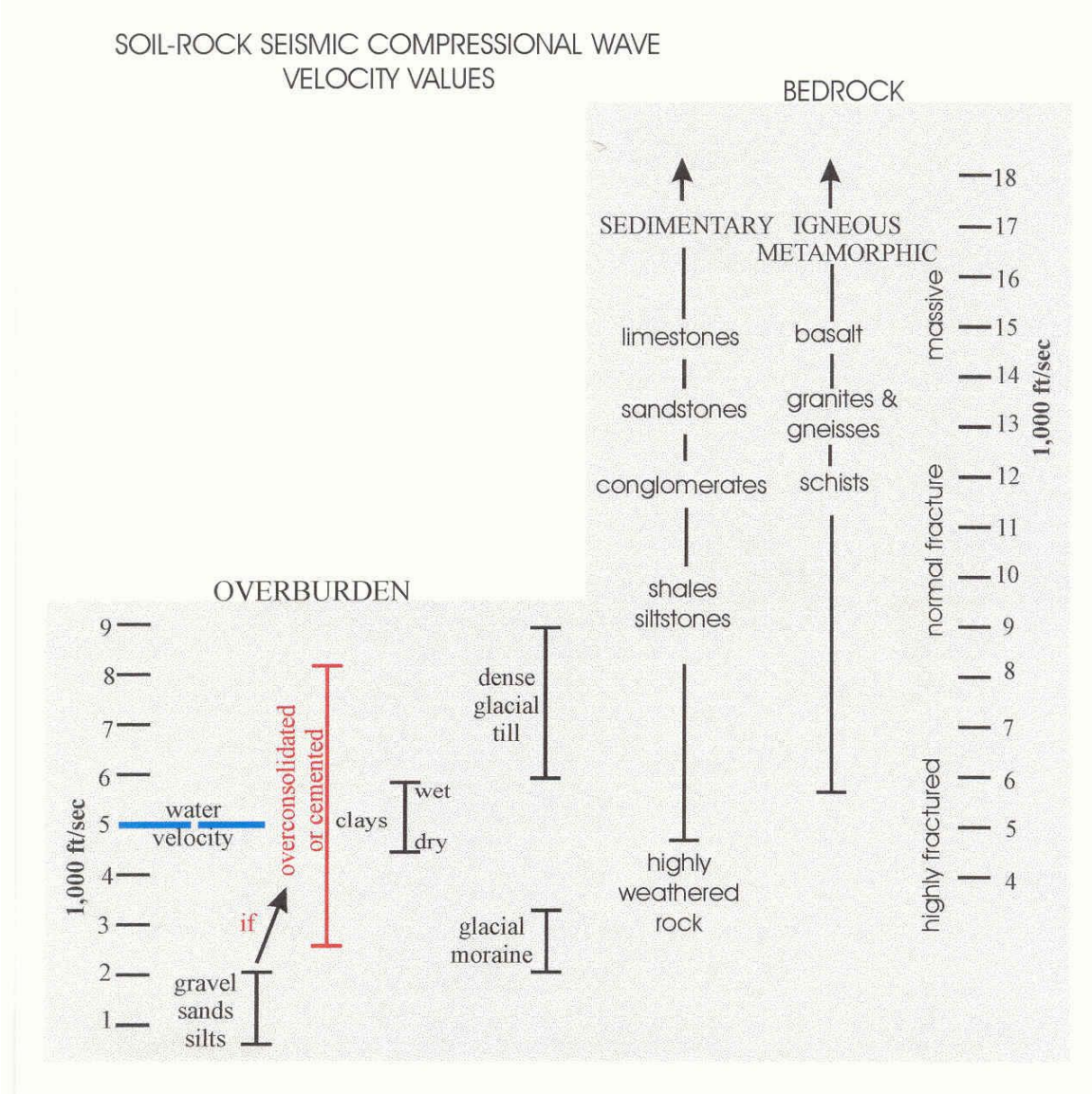


FIGURE A2:
GUIDE TO MATERIAL IDENTIFICATION BY P-WAVE VELOCITY

Seismic compressional wave velocities in unconsolidated deposits are significantly affected by water saturation. The seismic velocity values of unsaturated overburden materials such gravels, sands and silts generally fall in the range of 1,000 to 2,000 ft/sec. When these materials are water saturated, that is when the space between individual grains are 100% filled with water, the seismic velocities range from 4,800 to 5,100 ft/sec, equivalent to the compressional P-wave velocity of sound in water. This is because the seismic wave assumes the velocity of the faster medium, that of water. Even a small decrease in the saturation level will substantially lower the measured P-wave velocity of

the material. Because of this velocity contrast between saturated and unsaturated materials, the water table acts as a strong refractor.

Seismic investigations over unconsolidated deposits are used to map stratigraphic discontinuities and to unravel the gross stratigraphy of the subsurface. These can be vertically as in the case of a dense till layer beneath a layer of saturated material or horizontally as in the case of the boundaries of a fill material. Often these boundaries represent significant hydrologic boundaries, such as those between aquifers and aquicludes.

A common use of seismic refraction is the determination of the thickness of a saturated layer in unconsolidated sediments and the depth to relatively impermeable bedrock or dense glacial till. Continuous subsurface profiles and even contour maps of the top of a particular horizon or layer of interest can be developed from a suite of seismic refraction data.

Bedrock velocities FIGURE A2 vary over a broad range depending on variables, which include:

* Rock type
* Density
* Degree of jointing/fracturing
* Degree of weathering

Fracturing and weathering generally reduce seismic velocity values in bedrock. Low velocity zones in seismic data must be evaluated carefully to determine if they are due to overburden conditions or fractured/weathered or perhaps even faulted bedrock.

EQUIPMENT:

The basic equipment necessary to conduct a seismic refraction investigation consists of:

* Energy source
* Seismometers (Geophones/Hydrophones)
* Seismic cables
* Seismograph

Energy sources used for seismic surveys are categorized as either non-explosive or explosive. The energy for a non-explosive seismic signal can be provided by one of the following:

* Sledge Hammer (very shallow penetration)
* Weight Drop
* Seisgun
* Airgun
* Sparker
* Vibrators (for reflection surveys)

Explosive sources can be categorized as:

* Dynamite
* Primers
* Blasting Agents

Choice of energy source is dependent on site conditions, depth of investigation, and seismic technique chosen as well as local restrictions. Explosive sources may be prohibited in urban areas where non-explosive sources can be routinely used. Deeper investigations usually require a larger energy source: therefore, explosives may be required for sufficient penetration.

Geophones/Hydrophones are sensitive vibration detectors, which convert ground motion to an electric voltage for recording the seismic wave arrivals. Seismic cables, which link the geophones/hydrophones and seismograph are generally fabricated with pre-measured locations for the geophones/hydrophones and shot point definitions.

The seismograph can be single channel or multi-channel, although, multi-channel seismographs (12 to 24 channels) are preferred and necessary for all but the simplest of very shallow surveys. The seismograph, amplifies (increases the voltage output of the geophones), conditions/filters the data, and produces analog and digital archives of the data. The analog archive is in the form of a thermal print of the data, which can be printed directly after acquisition in the field. The digital archive is stored on magnetic disk and can be used for subsequent computer processing and enable more extensive and detailed interpretation of seismic data.

ACQUISITION CONSIDERATIONS:

Several concerns arise before data collection, which must be addressed before of any seismic survey:

* Geophone spacing and Spread length
* Energy Source (discussed above)
* On-site utilities and cultural features (buildings, high tension lines, buried utilities, etc.)
* Vibration generating activities
* Geology
* Topography

To acquire seismic refraction data, a specific number of geophones are spaced at regular intervals along a straight line on the ground surface; this line is commonly referred to as a seismic spread. The length of spread determines the depth of penetration; a longer spread is required for a greater depth of penetration. Spread length should be approximately three to five times the required depth of penetration. Required resolution will control the number of geophones in each spread and the distance between each geophone. Closer spacings and more geophones usually result in more detail and greater resolution.

Cultural effects such as vibration generating activities, on-site utilities, and building affect where data can be acquired, and where lines/spreads are located. High volume traffic areas may require nighttime acquisition. If the survey is to be conducted near a

building where vibration-sensitive manufacturing is conducted, data acquisition may be constrained to particular time intervals and appropriate energy sources must be used. Over head and buried utilities must be located an avoided, for both safety and induced electrical noise concerns. Since the seismic method measures ground vibration, it is inherently sensitive to noise from a variety of sources such as traffic, wind, rain etc. Signal Enhancement, such as record stacking, accomplished by adding a number of seismic signals from a repeated source, causes the seismic signal to "grow" out of the noise level, permitting operation in noisier environments and at greater source to phone spacings.

Knowledge of site geology can be used to determine the energy source. Some geologic materials, such as loose, unsaturated alluvium, do not transmit seismic energy as well and a powerful energy source may be required. Geologic conditions also dictate whether or not drilled shotholes are required. Site geology can also dictate the positioning of seismic lines/spreads. Where a bedrock depression of a feature is suspected, seismic lines should be orientated perpendicular to the suspected trend of the feature. Seismic cross profiles may be necessary to confirm depths to a particular refracting horizon.

The topography of a site dictates whether or not surveyed elevations are required. If possible, refraction profile lines should be positioned along level topography. For highly variable topography, a continuous elevation profile may be required to ensure sufficiently accurate cross-sections and to permit the use of time corrections in the interpretation of the refraction data.

DATA PRESENTATION AND INTERPETATION:

Interpretation of seismic refraction data involves solving a number of mathematical equations with the refraction data as it is presented on a travel-time versus distance chart. Seismic refraction data FIGURE A3 can be processed by plotting the "First Arrival" travel times at each geophone location. The preferred format of data presentation is a graph (Travel Time Plot) illustrated in FIGURE A4, in which travel time in milliseconds is plotted against source-receiver distance. From such a chart, the velocities of each layer can be obtained directly from the increase slope of each straight-line segment. Using the velocities the critical angle of refraction for each boundary can be calculated using Snell's Law. Then, utilizing these velocities, and angles and the recorded distances to crossover points (where line segments cross); the depths and thickness of each layer can be calculated using simple geometric relationships.

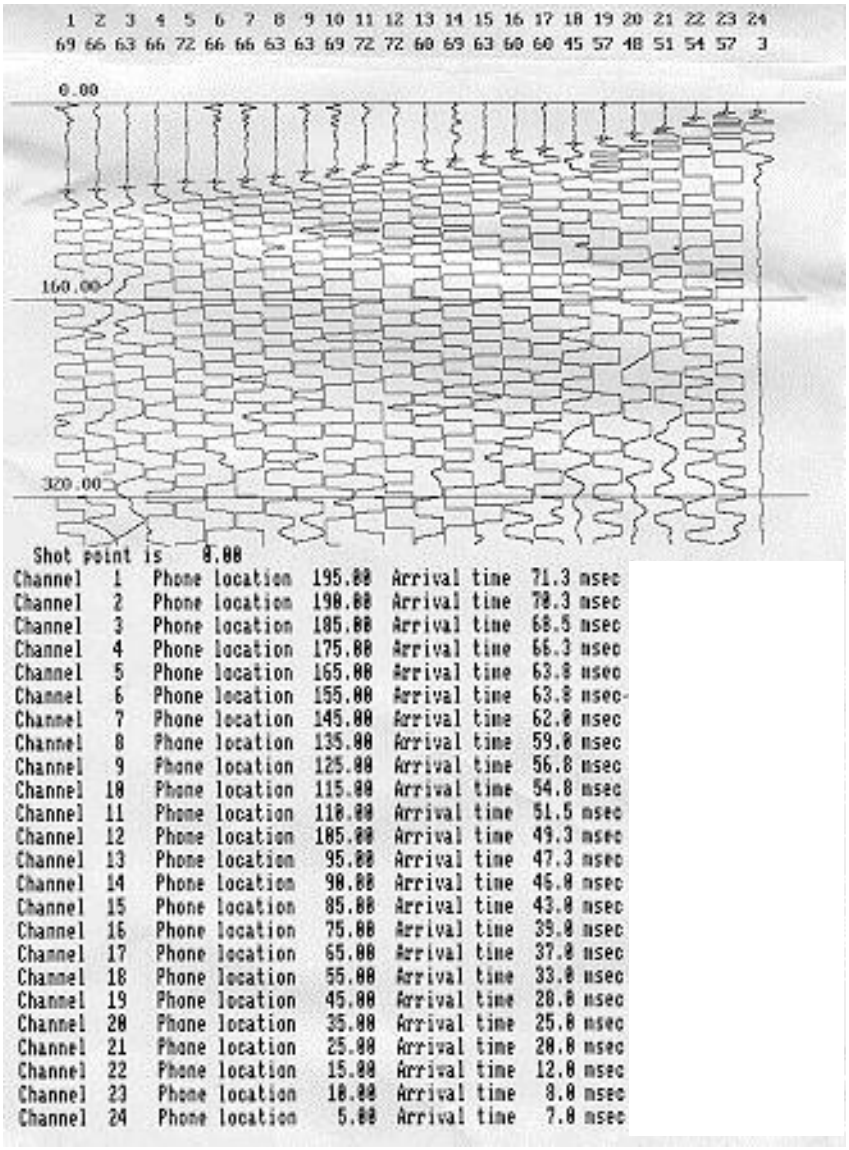


FIGURE A3:
TYPICAL 24 CHANNEL ANALOG SEISMIC REFRACTION RECORD, WITH FIRST ARRIVAL TIMES

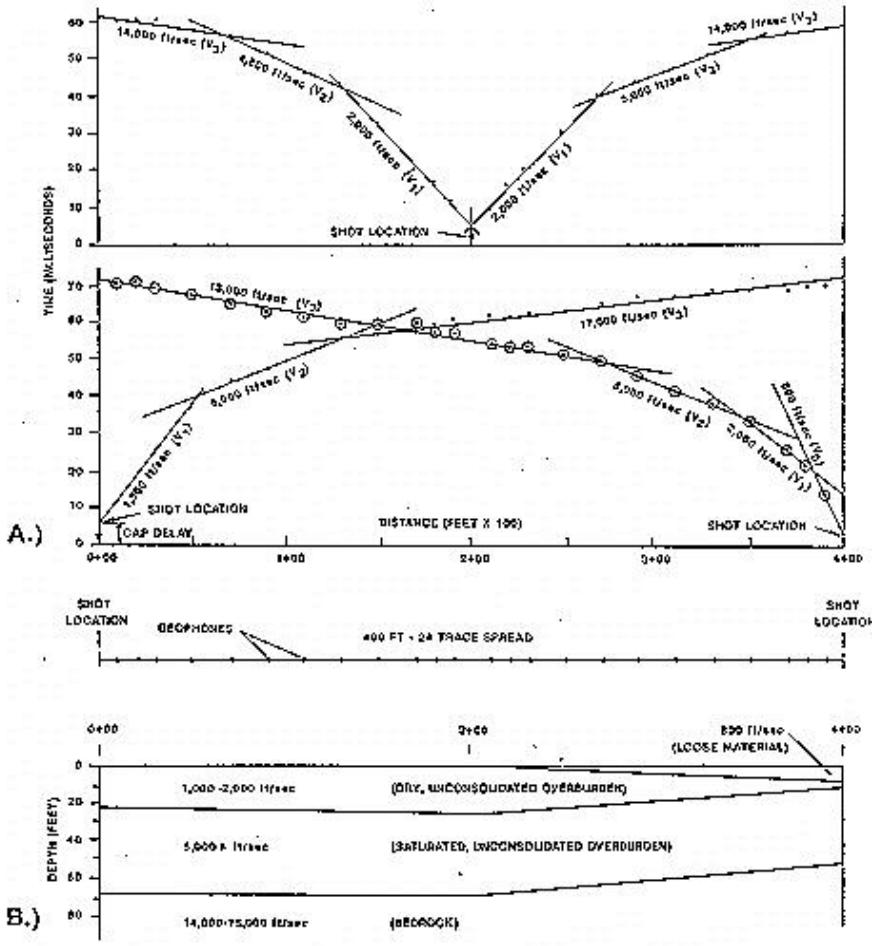


FIGURE A4:
A: TRAVEL-TIME PLOTS; UPPER PLOT IS A CENTER SHOT, LOWER PLOT IS TWO END SHOTS
B: RESULTING PROFILE OF SUBSURFACE MATERIALS SHOWING INTERFACE BETWEEN DIFFERENT SEISMIC VELOCITY LAYERS

The results of any seismic survey, refraction or reflection are usually presented in profile form showing elevations of seismic horizons/layers. Data acquired on a grid basis can be contoured and used to construct isopach maps. Seismic velocities and therefore, generalized material identifications should be presented on refraction profiles along with any test borings used for correlation to establish confidence in the overall subsurface data, both seismic and borings.

Where profiles indicate dipping boundaries, calculation of dips, true depths and true velocities involve more complicated equations. Further more, corrections for differing elevations and varying thicknesses of weathered zones must often be made. Fracturing and weathering generally reduce seismic velocity values in bedrock. Consequently, travel-time plots with late arrivals must be evaluated carefully to determine if the late arrival times (slower velocities) are due to overburden conditions or fractured/weathered bedrock.

Very thin layers or low velocity zones often complicate the travel-time chart as well. Although not the usual case, one constraint on refraction theory is that material velocities ideally should increase with depth. If a velocity inversion exists, i.e. where a higher velocity layer overlies a low velocity layer, depths and seismic velocities can be calculated but the uncertainty in calculations is increased unless borehole velocity data are available.

ADVANTAGES AND LIMITATIONS:

The seismic refraction technique, when properly employed, is the most accurate of the geophysical methods for determining subsurface layering and materials. It is extremely effective in that as much as 2,000 linear feet or more of profiling can be acquired in a field day. The resulting profiles can be used to minimize drilling and place drilling at locations where borehole information will be maximized resulting in cost-effective exploration. A standard drilling program runs the risk of missing key locations due to drillhole spacing. This risk is substantially reduced when refraction is used.

In summary, the advantages and limitations of the seismic techniques are:

Advantages:

* Material identification
* Subsurface data over broader areas at less cost than drilling
* Relatively accurate depth determination
* Correlation between drillholes
* Preliminary results available almost immediately
* Rapid data processing

Limitations:

* As depth of interest and geophone spacing increases, resolution decreases
* Thin layers may be undetected
* Velocity inversions may add uncertainty to calculations
* Susceptible to noise interference in urban areas, which require use of grounded cables and equipment, signal enhancement and alternative energy sources.

SHUMAKER
Consulting Engineering & Land Surveying, D.P.C.

June 8, 2020

Mr. Thomas Cole, PE
Modjeski & Masters, Inc.
301 Manchester Rd., Suite 102
Poughkeepsie, NY 12603

Re: Meetings, Environmental Quality Review, Permitting
Multi-Use Bridge across Fishkill Creek on South Avenue
City of Beacon, Ulster County

Dear Mr. Cole,

Shumaker Consulting Engineering & Land Surveying, D.P.C. (SCE) is pleased to submit this proposal to perform supplemental services in support of the referenced project. The proposed work is beyond the scope and fee of our original contract.

I. PROJECT UNDERSTANDING

The existing utility bridge located at the site of the proposed bridge was originally designed to be able to accommodate a pedestrian and bike path within the existing right-of-way. Impacts associated with this alternative would generally be limited to construction of a new central pier in the Creek. Instead of this original concept, the city has decided to use a wider structure that can accommodate pedestrians/bicyclists and emergency vehicular traffic. This alternative will require a bridge width that is roughly double the existing and work at both approaches, as well as a pier. Due to the nature of this alternative, on-site resources, and public opposition to earlier proposals, this alternative would be progressed as a SEQR Type 1 project, pursuant to 6 NYCRR Part 617. The Scope of Services proposed for SEQR-support and permitting is provided below.

The scope of services proposed to support this project is detailed below.

II. SCOPE OF SERVICES

A. Tasks 2 and 9

For estimating purposes, it is assumed that SCE will attend an initial Kick off meeting, one meeting associated with Schematic Design (Task 2) and the Public Information Meeting (Task 3) for a total of no more than 3 meetings.

B. **Task 5 Environmental Quality Review -SEQR Support**

SEQR Full Environmental Assessment Form & Environmental Screenings/Studies

SCE will complete Parts 1, 2 and 3 of the Full Environmental Assessment Form (EAF). Information obtained under subsequent tasks will be incorporated into the SEQR documents. It is assumed that Modjeski and Masters will provide preliminary design plans and digital files needed to support this effort.

Prior to the field investigation, SCE will review the New York State Department of Environmental Conservation (NYSDEC) Environmental Resource Mapper (ERM), the National Wetland Inventory (NWI) Map published by the United States Fish and Wildlife Service (USFWS), the Dutchess County Soil Survey Map, the appropriate USGS Quadrangle map, and aerial photography. This task will be performed to support the preliminary assessment of the three alternatives.

SCE will coordinate with the NYSDEC Natural Heritage Program regarding the potential for state-protected threatened/endangered species. A review request letter and corresponding location map will be prepared and submitted electronically.

SCE will also coordinate with the USFWS using their online Information Planning and Conservation (IPaC) with respect to federally-protected endangered and threatened species.

SCE will perform a site investigation to document existing conditions, screen the site for wetlands, and ecological considerations, and take photographs to support the anticipated permit effort.

It is assumed that no more than one wetland will require delineation. The delineation will be performed in accordance with the 1987 United States Army Corps of Engineers (USACE) Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0). A wetland summary letter will be prepared to support the field effort; a formal wetland delineation report will not be prepared. Data sheets for upland and wetland test sites will be attached to the summary letter.

Since the existing utility bridge was recently constructed, an asbestos screening/assessment is not anticipated. SCE will review publicly available database information regarding spills and contaminated sites as needed to complete the SEQR form. Costs associated with obtaining and reviewing a full data base search report is not included. Further, a Phase I Environmental Site Assessment is not included in this scope of services.

It is assumed that others will handle the historic and cultural resource coordination effort, and findings/agency letters will be provided to support the SEQR effort.

It is assumed that others will handle traffic and safety studies as warranted to support potential use of the bridge by vehicular traffic. This information will need to be provided to SCE to support the SEQR effort.

Lead Agency Designation
SCE will prepare a Lead Agency Designation Letter on behalf of the City of Beacon and generate a list of involved agencies. A copy of the Lead Agency Designation Letter and completed Part 1 of the EAF will be mailed to the Involved Agencies. It is assumed that the city will print and mail the letters.

Negative Declaration
SCE will prepare a Negative Declaration which will include a summary of findings to support the declaration. If the review results in a Positive Declaration and need for an Environmental Impact Statement (EIS), it would be prepared under a Supplemental Agreement. A copy of the Negative Declaration will need to be forwarded to the involved agencies to close the loop on the SEQR coordinated review. A letter and list of agencies will be provided to the city. It is assumed that the city will print and mail the materials. A copy of the Negative Declaration will be submitted to the New York State Department of Environmental Conservation (NYSDEC) Environmental Notice Bulletin.

C. Task 8 Permitting

For the vehicular bridge option, SCE will work with the design engineer to evaluate opportunities to limit disturbance below one acre. For purposes of this submission, it is assumed disturbance can be limited to less than one acre; and a Stormwater Pollution Prevention Plan (SWPPP) and State Pollutant Discharge Elimination System (SPDES) permit will not be required. If disturbance is determined to exceed one acre a SWPPP will be prepared under a supplemental agreement.

Design alternatives are expected to require construction of a new pier, and removal of the existing piers. Disturbance to Fishkill Creek will be limited to the extent possible and management practices will be incorporated to avoid impacts to the coastal fish and wildlife habitat. Existing documentation indicates that Fishkill Creek is an important spawning area for migratory fishes, designated as a warm water fishery, and a major crossing for raptors (Osprey) migrating through the Hudson Valley. Resident and migratory bald eagles use the creek and vicinity for foraging throughout the year. Activities that degrade water quality, increase turbidity and sedimentation, alter flows or change depths would adversely affect the significant habitat. Particular attention will be given to this issue and in-stream work restriction periods associated with nesting and spawning.

For estimating purposes, it is anticipated that a USACE Nationwide Permit (NWP) #3 may be sufficient to authorize the pier required for pedestrian/bicyclist use of the bridge. However, NWP #3 states that the structure or fill is not to be put to uses differing from those specified or contemplated for in in the original permit or most recent modification, and only minor deviations in the structure's configuration or filled area are authorized. The design will have to be reviewed as the project progresses, and a discussion with the USACE may be required to confirm suitability of the NWP. It is further assumed that the blanket Water Quality Certification (WQC) included with the NWP will be sufficient and an Individual 401 WQC will not be required. If it is determined that the work does not meet the conditions of a

Nationwide Permit and an Individual Section 404 permit is required, additional costs would be covered under a supplemental agreement.

If a widened structure and larger pier are constructed to accommodate vehicular traffic, it is assumed coverage under an Individual Section 404 Permit would be required. The specific applicability of permits will be further evaluated during the design phase of the project. The cost associated with the vehicular bridge assumes scope and fee associated with an Individual Permit.

It is assumed that Modjeski and Masters will provide SCE will design plans, details, sections and notes needed for the permit application package. It is further assumed that volumes of impact below Ordinary High Water for pier removal and abutment work will be provided by material type. Fishkill Creek is a Class C Standard C water body; therefore, a NYSDEC Article 15 Protection of Waters Permit will not be required to authorize the project.

It is assumed that an H&H study would be performed by others, if warranted to support the design and demonstrate consistency with state floodplain regulations. It is further assumed this study would show the project would have no effect on the baseflood elevations. For estimating purposes, it is assumed that a local Floodplain Development Permit would be required for this effort. SCE will use design plans (provided by Modjeski and Masters) and the H&H study as performed by others to prepare the floodplain development permit application. It is assumed that since this is a city project it would be exempt from any fees associated with the application.

III. COMPENSATION FOR SERVICES AND METHOD OF PAYMENT

The compensation for the Scope of Services is estimated not to exceed $14,644.00.

Additional services, beyond the above Scope of Services, will be considered extra work and will necessitate additional compensation. Payments for the work will be due monthly on the basis of statements submitted by the engineer for the work performed during the period.

The Scope of Services, as described in Section II.A of this proposal, will be conducted within a mutually accepted time period.

If this proposal is acceptable to you, please include the scope and fee as an approved extra under our Sub Consultant Agreement. This proposal will remain valid through December 31, 2020.

Very truly yours,

SHUMAKER CONSULTING ENGINEERING
& LAND SURVEYING, D.P.C.



Markku McGlynn
Environmental Scientist IV

MEM/file

SHUMAKER
Consulting Engineering & Land Surveying, D.P.C.

June 8, 2020

Mr. Thomas Cole, PE
Modjeski & Masters, Inc.
301 Manchester Rd., Suite 102
Poughkeepsie, NY 12603

Re: Section 6(f) Evaluation
Multi-Use Bridge across Fishkill Creek on South Avenue
City of Beacon, Ulster County

Dear Mr. Martin,

Shumaker Consulting Engineering & Land Surveying, D.P.C. (SCE) is pleased to submit this proposal to perform supplemental services in support of the referenced project. The proposed work is beyond the scope and fee of our original contract.

I. PROJECT UNDERSTANDING

It is our understanding the project may require impacts to the Madam Brett Park, which is situated northeast of the bridge. The impacts would be associated with the proposed sidewalk component of the bridge project. The park is owned by the Scenic Hudson Land Trust, and because of the funding sources used to develop the park, notably New York State Office of Parks Recreation and Historic Preservation (OPRHP) Recreational Trails Grant Program (RTP), which is authorized by the Land and Water Conservation Fund (LWCF) Act, use of the small area of parkland adjacent to the project is anticipated to be subject to a Section 6(f) Evaluation. The evaluation is proposed to satisfy the requirements of the LWCF Act (commonly referred to as Section 6(f)), which established the LWCF State Assistance Program, a nationwide program for funding the acquisition and development of public outdoor recreation resources. As set forth in the statute and its implementing regulations, property that is acquired or developed with LWCF assistance must be retained and used for public outdoor recreation. Any property acquired or developed with LWCF assistance cannot be wholly or partly converted to other than public outdoor recreation uses without the approval of National Park Service pursuant to Section 6(f) of the LWCF Act and its implementing regulations.

The scope of services proposed to support this project is detailed below.

II. SCOPE OF SERVICES

A. Section 6(f) Evaluation

SCE shall research the listing to identify specific LWCF projects that apply, and shall obtain a copy of the original application submitted to the State Liaison Officer (at National Park Service (NPS)) describing the limits of the involved property. Further, SCE will coordinate with the NPS regarding the format and specific needs associated with this evaluation.

SCE shall evaluate the impact of each design alternative and the null alternative on the Section 6(f) property. This effort is assumed to be limited to a total of three alternatives.

For each design alternative SCE will discuss avoidance measures to establish that the Section 6(f) impact is unavoidable. **It is assumed that Modjeski and Masters will provide the information regarding avoidance measures and why the impact is unavoidable.**

A proposed replacement property (fee taking or permanent easement) is typically required to mitigate for impacts. For estimating purposes, it is assumed a replacement property **will not be** required. If additional scope is required for this task (i.e. appraisal, etc) it will be performed by others.

SCE shall document the above analysis and process in a Section 6(f) Evaluation. Since there is no federal funding a 4(f) Evaluation is not required.

The 6(f) document will include:

- Introduction
- Overview of the Regulatory Framework
- Discussion of Applicability of Section 6(f) to the Project
- List of LWCF Grants Associated with the Park
- Need for the Conversion of Section 6(f) Property
- Impact Acreages (acquisitions, easements, and permanent versus temporary)
- Detailed Discussion of Conversion Areas
- Alternatives to Conversion of 6(f)-Protected Land
- Viability of Remaining Park Area
- Viability During Construction

The following figures will be prepared and included in the Evaluation:

- Figure showing the park boundaries with the bridge location depicted, as well as City ROW.
- Alternative drawings – **it is assumed Modjeski and Masters will provide plans for alternatives sufficient for the 6(f) documentation.**

- Conversion Drawings – shading to depict locations of temporary/permanent acquisitions and easements. It is assumed Modjeski and Masters will provide work files for SCE to develop the conversion drawings.

SCE shall submit a draft of the Section 6(f) Evaluation to the OPRHP for preliminary review.

SCE shall revise the Section 6(f) Evaluation per comments received and resubmit it to the City for distribution to the OPRHP and ultimately the State Liaison Officer for NPS approval.

This proposal does not include costs associated with historic resources, replacement properties, or NEPA Environmental Assessment/Impact Statement.

III. COMPENSATION FOR SERVICES AND METHOD OF PAYMENT

The compensation for the Scope of Services is estimated not to exceed $9,303.00.

Additional services, beyond the above Scope of Services, will be considered extra work and will necessitate additional compensation. Payments for the work will be due monthly on the basis of statements submitted by the engineer for the work performed during the period.

The Scope of Services, as described in Section II.A of this proposal, will be conducted within a mutually accepted time period.

If this proposal is acceptable to you, please include the scope and fee as an approved extra under our Sub Consultant Agreement. This proposal will remain valid through December 31, 2020.

Very truly yours,

SHUMAKER CONSULTING ENGINEERING
& LAND SURVEYING, D.P.C.

Markku McGlynn
Environmental Scientist IV

MEM/file

City of Beacon City Council Agenda
01/25/2021

Title:

Main Street Accessibility Improvements and Pedestrian Signal Improvements

ATTACHMENTS

Bid Analysis Review

Scope Reduction Letter from City Administrator

Letter from the NYS DOT Regarding Scope Reduction

Reevaluation Form Main Street Accessibility Improvements

Reevaluation Form Pedestrian Signal Improvements

January 4, 2021

VIA EMAIL ONLY

Mr. Anthony J. Ruggiero, MPA
Beacon City Administrator
One Municipal Plaza, Suite One
Beacon, NY 12508

RE: PIN 8761.25 BEACON MAIN ST. ACCESSIBILITY IMPROVEMENTS AND
PIN 8761.45 BEACON PEDESTRIAN SIGNAL IMPROVEMENTS
CITY OF BEACON, DUTCHESS COUNTY
BID ANALYSIS - 12/28/2020

Dear Mr. Ruggiero:

The Local Projects Unit reviewed the Bid Analysis, received December 28, 2020 for the above referenced projects, pertaining to the letting of January 23, 2020. Two bids were received, with both bids being well above the Engineer's Estimate (EE) (the low bid being 41% above the EE).

The Bid Analysis reviewed all major items that were 25% over the EE. The analysis identified that many of the items were estimated too low, primarily due to the intricate nature of work required by this project.

The City has the following options:

- Reject all bids, reduce the scope of work, revise the contract documents to reflect the scope reduction, and re-advertise the project. The Bid Analysis concludes that a majority of the item unit costs were estimated too low, therefore a rejection of all bids can be supported by the bid analysis.
- Award the project to the low bidder with a scope reduction implemented by Change Orders after the award. Given that this was the second letting for these projects it is reasonable to conclude that rejecting all bids and re-letting the project may not result in lower bids.

We have reviewed the conceptual scope reduction which consists primarily of the eliminating the curb bump outs and curb ramp replacements at side roads but keeps them along Main Street. The conceptual scope reduction meets the project objectives of shortening the distance for pedestrian crossing and enhancing pedestrian visibility and does not result in a change to the order of bidders. Please be aware that any changes made after award are to be made within the original scope of the contract

including deleting work. In order to delete work Change Orders would need to be issued to modify the contract. Any changes cannot compromise the project's original objectives, cannot jeopardize compliance with State and Federal standards such as ADA (POWAG) and Safety (MUTCD), and cannot result in a reorder of the bids.

If the City chooses to award the project to the low bidder with a scope reduction then the language from Section 103-06, Article 5, Alterations and Omissions, of NYSDOT's Standard Specifications will need to be included in the contract between the City and the contractor.

Please let us know how the City will be proceeding with subject project.

Sincerely,

Stephen J. MacAvery

Stephen J. MacAvery, RLA
Design & Environmental Advisor
Local Projects Unit, Region 8

Ecc: J. Gorton, HVEA
L. Bach, HVEA

CITY OF BEACON
New York

ANTHONY RUGGIERO OFFICE OF THE CITY ADMINISTRATOR 845-838-5009

January 11, 2021

VIA EMAIL ONLY

Stephen J. MacAvery, RLA, CPESC
Local Projects Unit, Design and Environmental Advisor
Regional ADA Coordinator and ADA Specialist
New York State Department of Transportation, Hudson Valley
4 Burnett Boulevard, Poughkeepsie, NY 12603

Re:

PIN 8761.25 BEACON MAIN ST. ACCESSIBILITY IMPROVEMENTS AND PIN 8761.45 BEACON PEDESTRIAN SIGNAL IMPROVEMENTS CITY OF BEACON, DUTCHESS COUNTY BID ANALYSIS - 12/28/2020

Dear Mr. MacAvery:

Please accept this correspondence in response to your letter dated January 4, 2021. In your correspondence you provide the following two options for the City regarding the two above projects:

1. Reject all bids, reduce the scope of work, revise the contract documents to reflect the scope reduction, and re-advertise the project. The Bid Analysis concludes that a majority of the item unit costs were estimated too low, therefore a rejection of all bids can be supported by the bid analysis.
2. Award the project to the low bidder with a scope reduction implemented by Change Orders after the award. Given that this was the second letting for these projects it is reasonable to conclude that rejecting all bids and re-letting the project may not result in lower bids.

At this time the City of Beacon is choosing to proceed with Option 2, Award the project to the low bidder with a scope reduction implemented by Change Orders after the award for both PIN 8761.25 and PIN 8761.45.

Please provide all the necessary certifications and approvals. Thank you for your attention.

Very truly yours,

Anthony Ruggiero, M.P.A
City Administrator

Enclosure
ecc: Mayor Lee Kyriacou
Nicholas M. Ward-Willis, Esq.
Michael Manzi, Superintendent of Streets
J. Gorton, HVEA
L. Bach, HVEA

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

ANDREW M. CUOMO
Governor

MARIE THERESE DOMINGUEZ
Commissioner

LANCE MacMILLAN, P.E.
Regional Director

January 13, 2021

VIA EMAIL ONLY

Mr. Anthony J. Ruggiero, MPA
Beacon City Administrator
One Municipal Plaza, Suite One
Beacon, NY 12508

RE: PIN 8761.25 BEACON MAIN ST. ACCESSIBILITY IMPROVEMENTS AND
PIN 8761.45 BEACON PEDESTRIAN SIGNAL IMPROVEMENTS
CITY OF BEACON, DUTCHESS COUNTY
BID ANALYSIS - 12/28/2020

Dear Mr. Ruggiero:

The Local Projects Unit has received your January 11, 2021 letter recommending that the subject project be awarded to the low bidder as of the January 23, 2020 letting with project scope reductions issued through change orders. As outlined in our January 4, 2021 letter to you we have also reviewed the Bid Analysis and the conceptual scope reduction.

The conceptual scope reduction meets the project objectives of shortening the distance for pedestrian crossing and enhancing pedestrian visibility and does not result in a change to the order of bidders. Based on the bid analysis and our review conceptual scope reduction we concur with the City's recommendation that it is in the best public interest to award the project to the low bidder as of the January 23, 2020 letting.

Please be reminded that language from Section 103-06, Article 5, Alterations and Omissions, of NYSDOT's Standard Specifications will need to be included in the contract between the City and the contractor. Any changes to the project cannot compromise the project's original objectives, cannot jeopardize compliance with State and Federal standards such as ADA (POWAG) and Safety (MUTCD), and cannot result in a reorder of the bids.

Contract award is considered a major approval that requires a NEPA reevaluation, which is required prior to the award. The tools to conduct a NEPA reevaluation are enclosed. All the requirements in the July 1, 2019 Authorization to Proceed to Construction letter are still applicable.

Award package review comments will be forthcoming under separate cover.

Sincerely,

Stephen J. MacAvery

Stephen J. MacAvery, RLA
Design & Environmental Advisor, Local Projects Unit, Region 8

Ecc: J. Gorton, HVEA
L. Bach, HVEA

NEW YORK STATE OF OPPORTUNITY | Department of Transportation

REEVALUATION FORM

PIN	8761.25	Project Name:	Main Street Accesibitlity Improvements				
D#							
Approved Environmental Determination Document:	NEPA	DA Document	Environmental Determination by:	Responsible Local	Date:	12/17/2018	
	SEQRA	DA Document	Environmental Determination by:	Responsible Local	Date:	2/15/2018	
Design Approval Grantor	Responsible Local Official		Design Approval Document:	FDR	DA Date:	2/15/2018	
Next major approval:	Contract Award		Date of Last Major Approval:	12/16/2019	Reevaluation #	1	

This reevaluation examines whether there are any project changes and provides an analysis of project changes to determine whether the project's NEPA/SEQRA environmental determination document(s) (including environmental commitments) remain valid. It also determines the need to prepare supplemental information or a new or supplemental environmental document.

Step 1 - Assessment

Projects with one or more checks below require the initiation of consultation. Provide detailed explanation of project changes in Step 4.

Step 1A	Procedural Criteria (federally funded projects)	Applicable?
1	More than three years have passed from the date of circulation of a federally funded DEIS (or subsequent SEIS) with no submission of the FEIS to FHWA.	☐
2	More than three years have passed from the approval of a federally funded FEIS (or subsequent SEIS) and the project has not advanced to the next major step.	☐
3	Project is ready to advance to next major approval (all federally funded projects)	☑
Step 1B	**Project Changes (all projects regardless of funding)**	**Applicable?**
1	A change to the project's scope	☐
2	A horizontal or vertical change to the project's design envelope[1]	☐
3	A change in roadway operational characteristics within the project study area	☐
4	A change to the extent of project limits	☐
5	A change in right of way acquisitions	☐
6	A change to the extent, location or materials/composition of proposed environmental commitments (mitigation measures) that affect agreements at the time of design approval.	☐
7	A change in the social, economic, environmental or other conditions or circumstances within the project study area	☐

[1] A design envelope is the horizontal and vertical extent in which an alternative's potential effects have been analyzed.

8	A change in the federal or state statutory environmental standards or other regulatory changes that affect the project	☐
9	Discovery of new information not considered in the original process	☐
10	A change in funding from 100% State to use of federal funding.	☐

Step 2 - Consultation

If the project DA Grantor was the RD and there are no Project Changes in Step 1B, bypass Step 2 and complete Steps 3 and 5. Other projects complete Step 2

Consultation with DQAB-PDS/RLPL initiated on:			☐
Consultation with DQAB-PDS/RLPL and FHWA initiated on:			☐
Consultation has determined/verified:	☐	Step 1A Procedural Criteria are met but consultation has verified the level of reevaluation needed based on no Step 1B changes identified.	Complete Steps 3 and 5.
	☐	Consultation has determined/verified the level of reevaluation needed based on project changes identified in Step 1B.	Complete Step 3, 4 and 5. Complete Step 4 to the extent discussed in the Consultation. Attach other supporting information as needed. Attach a Reevaluation Social, Economic and Environmental Considerations Checklist for complex reevaluations as determined by Consultation.

Provide other information/details resulting from Consultation as applicable below:

Step 3 Conclusion

This reevaluation is in accordance with the NYSDOT Project Development Manual Appendix 11, 23 CFR 771.129 (Reevaluations) and the NYSDOT SEQRA regulations at 17 NYCRR Part 15 .The approved NEPA and SEQRA environmental determinations and commitments remain valid. No further documentation is required.

Step 4 - Documentation

This Step is applicable for projects that have identified changes in Step 1b.

Step 5 – Certification and Approval

I certify that the information provided above is true and accurate and recommend the reevaluation be processed as described in Step 3.

Project Manager/Designer or Responsible Local Official	Ludwig M Bach	Date: 1/11/2021
Print name and title:	Ludwig Bach, P.E., HVEA Engineers	
Regional Environmental Unit Supervisor	KWolfanger	Date: 1/14/2021
Print name and title:	Kathleen Wolfanger, REUS	
Regional Local Project Liaison	OTrocard	Date: 1/14/2021
Print name and title:	Orietta Trocard, RLPL	

The reevaluation has been completed consistent with regulation and NYSDOT Policy.

Responsible Local Official Approval:	Anthony Ruggiero, City Administrator	Date: 1-11-21
Print name and title:	, Responsible Local Official	
FHWA Approval:		Date:
Print name and title:	, Insert	

Supporting Information

In accordance with the NYSDOT Project Development Manual Appendix 11, no supporting documentation necessary.

cc: DCED
DQAB-PDS
MOPL
RD
RDE
Design Manager
Construction Manager

NEW YORK STATE OF OPPORTUNITY | Department of Transportation

REEVALUATION FORM

PIN	8761.45	Project Name:	Pedestrian Signal Improvements				
D#							
Approved Environmental Determination Document:	NEPA	DA Document	Environmental Determination by:	Responsible Local	Date:	8/10/2017	
	SEQRA	DA Document	Environmental Determination by:	Responsible Local	Date:	1/16/2019	
Design Approval Grantor	Responsible Local Official		Design Approval Document:	FDR	DA Date:	1/16/2019	
Next major approval:	Contract Award		Date of Last Major Approval:	12/16/2019	Reevaluation #	1	

This reevaluation examines whether there are any project changes and provides an analysis of project changes to determine whether the project's NEPA/SEQRA environmental determination document(s) (including environmental commitments) remain valid. It also determines the need to prepare supplemental information or a new or supplemental environmental document.

Step 1 - Assessment

Projects with one or more checks below require the initiation of consultation. Provide detailed explanation of project changes in Step 4.

Step 1A	Procedural Criteria (federally funded projects)	Applicable?
1	More than three years have passed from the date of circulation of a federally funded DEIS (or subsequent SEIS) with no submission of the FEIS to FHWA.	☐
2	More than three years have passed from the approval of a federally funded FEIS (or subsequent SEIS) and the project has not advanced to the next major step.	☐
3	Project is ready to advance to next major approval (all federally funded projects)	☑
Step 1B	**Project Changes (all projects regardless of funding)**	**Applicable?**
1	A change to the project's scope	☐
2	A horizontal or vertical change to the project's design envelope[1]	☐
3	A change in roadway operational characteristics within the project study area	☐
4	A change to the extent of project limits	☐
5	A change in right of way acquisitions	☐
6	A change to the extent, location or materials/composition of proposed environmental commitments (mitigation measures) that affect agreements at the time of design approval.	☐
7	A change in the social, economic, environmental or other conditions or circumstances within the project study area	☐

[1] A design envelope is the horizontal and vertical extent in which an alternative's potential effects have been analyzed.

8	A change in the federal or state statutory environmental standards or other regulatory changes that affect the project	☐
9	Discovery of new information not considered in the original process	☐
10	A change in funding from 100% State to use of federal funding.	☐

Step 2 - Consultation

If the project DA Grantor was the RD and there are no Project Changes in Step 1B, bypass Step 2 and complete Steps 3 and 5. Other projects complete Step 2

Consultation with DQAB-PDS/RLPL initiated on:			☐
Consultation with DQAB-PDS/RLPL and FHWA initiated on:			☐
Consultation has determined/verified:	☐	Step 1A Procedural Criteria are met but consultation has verified the level of reevaluation needed based on no Step 1B changes identified.	Complete Steps 3 and 5.
	☐	Consultation has determined/verified the level of reevaluation needed based on project changes identified in Step 1B.	Complete Step 3, 4 and 5. Complete Step 4 to the extent discussed in the Consultation. Attach other supporting information as needed. Attach a Reevaluation Social, Economic and Environmental Considerations Checklist for complex reevaluations as determined by Consultation.

Provide other information/details resulting from Consultation as applicable below:

Step 3 Conclusion

This reevaluation is in accordance with the NYSDOT Project Development Manual Appendix 11, 23 CFR 771.129 (Reevaluations) and the NYSDOT SEQRA regulations at 17 NYCRR Part 15 .The approved NEPA and SEQRA environmental determinations and commitments remain valid. No further documentation is required.

Step 4 - Documentation

This Step is applicable for projects that have identified changes in Step 1b.

Step 5 – Certification and Approval

I certify that the information provided above is true and accurate and recommend the reevaluation be processed as described in Step 3.

Project Manager/Designer or Responsible Local Official	Ludwig M Bach	Date: 1/11/2021
Print name and title:	Ludwig Bach, P.E., HVEA Engineers	
Regional Environmental Unit Supervisor	KWolfanger	Date: 1/14/2021
Print name and title:	Kathleen Wolfanger, REUS	
Regional Local Project Liaison	[signature]	Date: 1/14/2021
Print name and title:	Orietta Trocard, RLPL	

The reevaluation has been completed consistent with regulation and NYSDOT Policy.

Responsible Local Official Approval:	Anthony Russo, City Administrator	Date: 1-11-21
Print name and title:	, Responsible Local Official	
FHWA Approval:		Date:
Print name and title:	, Insert	

Supporting Information

In accordance with the NYSDOT Project Development Manual Appendix 11, no supporting documentation necessary.

cc: DCED
DQAB-PDS
MOPL
Add any applicable MOFU
RD

RDE
Design Manager
Construction Manager

City of Beacon City Council Agenda
01/25/2021

Title:

Proposed Wireless Local Law

ATTACHMENTS

Local Law Updated Wireless telecommunication Services Facilities

Revised Schedule of Uses Wireless Local Law

1/22/2021

DRAFT LOCAL LAW NO. ____ OF 2021

CITY COUNCIL
CITY OF BEACON

PROPOSED LOCAL LAW TO AMEND CHAPTER 223, SECTIONS 24.5, 26.4, 25, 41.4, 41.18 AND 41.21 THE CODE OF THE CITY OF BEACON

A LOCAL LAW to amend Chapter 223, SECTIONS 24.5, 26.4, 25, 41.4, 41.18 and 41.21 of the Code of the City of Beacon concerning wireless telecommunications service facilities.

BE IT ENACTED by the City Council of the City of Beacon as follows:

Section 1. Chapter 223, Section 24.5 of the Code of the City of Beacon entitled "Wireless Telecommunication Services Facilities" is hereby repealed in its entirety.

Section 2. Chapter 223, Section 26.4 of the Code of the City of Beacon entitled "Small Cell Wireless Telecommunications Facilities" is hereby repealed in its entirety.

Section 3. Chapter 223, Section 26.4 of the Code of the City of Beacon entitled "Wireless Telecommunications Services Facilities" is hereby created as follows.

§ 223-26.4 **Wireless telecommunications service facilities.**

A. Statement of intent and objectives.

(1) The City Council has determined that the establishment of zoning provisions to institute minimum standards for wireless telecommunications service facilities shall be among the legislative purposes of the Zoning Law of the City of Beacon and is in accordance with the goals, objectives and policies of the City's Development

Plan.

(2) The purpose of these special regulations is to reasonably control the location, construction and maintenance of wireless telecommunications service facilities in order to protect, to the maximum extent practicable, aesthetic impacts, the open space character of portions of the City of Beacon, the property values of the community, and the health and safety of citizens, while not unreasonably limiting competition among telecommunications providers.

B. Except as provided hereinafter, no wireless telecommunications service facility shall be located, constructed or maintained on any lot, building, structure or land area in the City of Beacon without first filing a wireless telecommunications service facility application with the Planning Board and obtaining approval from the Planning Board. All wireless telecommunications service facilities shall also require site development plan review and approval from the Planning Board in accordance with the provisions of § 223-25.

C. Exemptions. The provisions of this section shall not apply to:

(1) Unlicensed wireless telecommunications service facilities installed wholly within a principal or accessory building, such as but not limited to baby monitors, heart monitors, garage door openers and burglar alarm transmitters, and serving only that building.

(2) Notwithstanding anything to the contrary in this chapter, an eligible facilities request for modification of an eligible support structure that does not substantially change the physical dimensions of such structure shall not require review under this section. A building permit must be obtained prior to any modification of an eligible support structure pursuant to an eligible facilities request.

D. An application for approval of a wireless telecommunications service facility shall be jointly filed by the operator of the wireless telecommunication service facility and the owner of the property on which such facility is proposed to be located and shall contain the following.

(1) A site development plan meeting the requirements of § 223-25.B(1).

(2) An engineering plan illustrating the design and specifications of the proposed structure and equipment, including location of radios, antenna facilities, transmitters, equipment shelters, cables, conduits, point of demarcation,

DRAFT

transport solution, electrical distribution panel, electric meter, and electrical conduit and cabling. Where applicable the design documents should include specifications on design, pole modifications and ADA compliance;

(3) Where applicable, a load bearing study to determine whether the structure requires reinforcement in order to accommodate the attachment of the proposed wireless telecommunication facility. If pole reinforcement is warranted, the design documents should include the proposed pole modification.

(4) The location, size, and height of all existing and proposed structures on the property which is the subject of the application;

(5) The applicant's name, address, telephone number, and e-mail address;

(6) The names, addresses, telephone numbers, and e-mail addresses of all consultants, if any, acting on behalf of the applicant;

(7) A descriptive statement of the objective(s) for the new facility or modification including and expanding on a need such as coverage and/or capacity requirements;

(8) The location of the nearest residential structure;

(9) Identify all existing and proposed wireless telecommunications service facilities which impact upon the service area covering the City of Beacon, including but not limited to topographic maps of the City with service coverage and service gap grids and all proposed as well as other functionally acceptable locations for such facility(ies);

(10) A visual impact assessment of the proposed wireless telecommunications service facility based upon appropriate modeling, photographic simulation and other pertinent analytical techniques as required by the Planning Board;

(11) Where the owner of the property on which a wireless telecommunication service facility is proposed contemplates that such property may be used for the installation of two or more such facilities, the property owner shall submit a conceptual master plan identifying the total number and location of such facilities; and

(12) In the case of an application for approval of a wireless telecommunications

DRAFT

service facility to be located on lands owned by a party other than the applicant or the City, a copy of the lease agreement with the property owner, absent the financial terms of such agreement, together with any subsequent modifications thereof, shall be provided to the Planning Board and a copy shall be filed with the City Clerk and the Building Inspector.

(13) For applications concerning small cell facilities, the Planning Board may waive any of the above application submission requirements that it believes to be unnecessary.

E. Approval procedures for small wireless facilities.

(1) A public hearing may be held by the Planning Board on each application concerning a small wireless facility. Public notice of said hearing shall be provided by the applicant in accordance with § 223-61.3 of this chapter. Notwithstanding anything to the contrary, where appropriate, the Planning Board may, at its discretion, waive the public hearing requirement.

(2) Time frames for approval.

(a) Within 60 calendar days of receipt of a complete application for the collocation of a small wireless facility on a preexisting utility pole, monopole or other existing support structure, the Planning Board shall make a final decision on whether to approval the application and shall notify the application in writing of such decision.

(b) Within 90 calendar days of receipt of a complete application for a small wireless facility on a new utility pole, monopole or other new support structure, the Planning Board shall make a final decision on whether to approve the application and shall notify the applicant in writing of such decision.

(c) Within 10 calendar days of receipt of an incomplete application for a small wireless facility, the City shall notify the applicant in writing of any supplemental information required to complete the application. Upon receipt of an applicant's supplemental information in response to the initial notification of incompleteness by the City, the applicable shot clock will reset to zero, and the City shall have the full 60 calendar days or 90 calendar days permitted by law to act on the completed application.

DRAFT

(d) For any subsequent determinations of incompleteness beyond the initial, the City notify the applicant of any required supplemental information within 10 days of receipt of the supplemental submission, and such notice shall toll the applicable shot clock until the applicant submits the required supplemental information.

F. Approval procedures for non-small wireless facilities.

(1) A public hearing shall be held by the Planning Board on each application concerning a non-small wireless facility. Public notice of said hearing shall be provided by the applicant in accordance with § 223-61.3 of this chapter.

(2) Time frames for approval.

(a) Within 90 calendar days of receipt of a complete application for the collocation of a non-small wireless facility on a preexisting utility pole, monopole or other existing support structure, the Planning Board shall make a final decision on whether to approve the application and shall notify the applicant, in writing, of such decision.

(b) Within 150 days of receipt of a complete application for a new non-small wireless facility with accompanying support structure, including such technical information from the applicant as may be required by the City, the Planning Board shall make a final decision on whether to approve the application and shall notify the applicant, in writing, of such decision.

(c) Within 30 calendar days of receipt of any application for a non-small wireless facility, the City shall notify the applicant, in writing, of any supplemental information required to complete the application. Such notification shall stop the applicable shot clock until the applicant submits the required supplemental information. Upon receipt of an applicant's supplemental submission and adequate response to the initial notification of incompleteness by the City, the applicable shot clock will reset to zero, and the City shall have the full 90 calendar days or 150 calendar days permitted by law to act on the completed application.

(d) For any subsequent determinations of incompleteness beyond the initial submission, the City shall notify the applicant of any required supplemental information within 10 days of receipt of the supplemental submission, and

DRAFT

such notice shall stop the applicable shot clock until the applicant submits the required supplemental information.

G. The applicant and all future owners of the premises and the wireless telecommunications service facility shall at all times keep on file in the office of the City Clerk the name, address, and telephone number of the owner and operator of such facility and of at least one individual who shall have authority to arrange for the maintenance of the premises and facility and who shall be authorized to accept service of notices and legal process on behalf of the owner and operator(s) of the premises and facility and to bind the owner to any settlement, fine, judgment, or other disposition (other than incarceration) which may result from any civil or criminal action or proceeding instituted by the City against such owner and/or operator(s).

H. Application fees. At the time an applicant submits an application for a wireless telecommunications service facility, such applicant shall pay a nonrefundable application fee in an amount as determined by the City Council and set forth in the City of Beacon fee schedule, in addition to any other fee required by law.

I. Reimbursement for the use of the public right-of-way. In addition to permit application fees, every wireless telecommunication service facility located in the public right-of-way is subject to the City's right to fix annually a fair and reasonable fee to be paid for use and occupancy of the public right-of-way. The annual fee for use of the public right-of-way shall be set forth in the City of Beacon fee schedule.

J. Setbacks. Wireless telecommunications service facilities, except for small cell wireless facilities and those structurally mounted to an existing building or structure, shall be located not less than two times the otherwise applicable setback requirements for principal structures for the district in which the property is located, or not less than the height of the facility to the property line, whichever shall be greater. Except within the public right-of way, all proposed poles, pole equipment and enclosures installed in connection with a small cell facility shall comply with the minimum setback requirements of the zoning district in which it is located. Wireless telecommunications service facilities structurally mounted to the roof of an existing building or structure shall be set back at least 15 feet from the edge of the roof along any street frontage, unless the Planning Board makes a written determination that such designs are not necessary or feasible.

Deleted: except

Deleted:

Deleted: plus the otherwise applicable setback requirements for principal structures for the zoning district in which the property is located, whichever shall be greater.

K. Height limitations. Within the height limitations set forth below, a wireless telecommunications service facility shall not exceed the minimum height reasonably necessary to accomplish the purpose it is proposed to serve. Coverage requirements,

safety, visual impacts, and proximity to occupied buildings are all factors that can be considered in determining the appropriate height.

(1) The height of any antennas, or other associated antenna equipment, structurally mounted as part of a wireless telecommunications service facility shall not be placed more than 10 feet above the highest point of the existing structure on which such antennas or antenna equipment is affixed or ten percent taller than the highest point of the adjacent structures if the adjacent structures are taller than the structure to which the antennas and equipment are proposed to be affixed, unless the Planning Board determines that a requested height is required to provide the necessary service and/or capacity (i.e. network densification). Antennas shall be mounted so that the bottom of the antenna is at least 20 feet above the grade at the base of the pole.

(2) The height of any monopole or tower utilized in a wireless telecommunications service facility shall not exceed 150 feet in height measured from the highest point of such facility to the finished grade elevation of the ground immediately adjacent to the structure.

(3) Applicants must submit documentation justifying the total height.

L. Visual mitigation.

(1) All wireless telecommunications service facilities shall be sited so as to have the least adverse visual effect on the environment and its character, on existing vegetation and on any adjacent residential uses in the area of the wireless telecommunications service facility.

Deleted: the residents in the area

(2) Landscaping and/or other screening and mitigation, including but not limited to architectural treatment, stealth design, use of neutral or compatible coloring and materials, or alternative construction and transmission technologies, shall be required to minimize the visual impact of such facility from public thoroughfares, important viewsheds designated by the City Council or listed in the City's Comprehensive Plan, and surrounding properties to the extent practicable, as determined by the Planning Board.

(3) No signs shall be erected on any wireless telecommunications service facility except as may be required by the FCC or other governmental agency with jurisdiction over such facilities.

DRAFT

(4) All equipment enclosures and storage buildings associated with the wireless telecommunications service facilities shall be consistent or compatible with adjacent buildings in terms of design, materials and colors and shall be appropriately landscaped. All accessory equipment shall maximize use of building materials, colors and textures designed to blend with the structure to which it may be affixed and/or to harmonize with the natural surroundings.

(5) No wireless telecommunications service facility shall be located in the Historic District and Landmark Overlay Zone, unless the applicant demonstrates to the satisfaction of the Planning Board that the selected site is necessary to provide wireless services, including but not limited to, filling a gap in coverage, densifying a wireless network, introducing a new service or otherwise improving service capabilities.

Deleted: <#>All wireless telecommunication service facilities shall be sited to have the least adverse visual effect on the environment and its character, on existing vegetation and on the residences in the area of the wireless telecommunication service facilities.¶

(6) The Planning Board may consider alternative locations for equipment.

(7) The Planning Board shall consider all impacts to sight lines and aesthetic views.

(8) No wireless telecommunications service facility shall obstruct pedestrian or vehicular traffic in any way.

(9) Wherever possible, new wireless telecommunications service facilities shall be in the form of antennas attached to an existing building or structure and/or shall be in the form of stealth structures. Towers shall be the structures of last resort.

(10) All applications for a small wireless facility permit shall comply with the Small Wireless Facility Design and Review Guideline Policy, to the maximum extent feasible, and the applicable provisions of this section. However, notwithstanding anything to the contrary, where appropriate, the Planning Board shall have the authority to waive any requirements set forth in the Small Wireless Facility Design and Review Guideline Policy and this subsection relating to an application for, or approval of, a small wireless facility permit. The Wireless Facility Design and Review Guideline Policy shall be created by the Building Inspector, upon consultation with the City Planner, and shall be approved by the Planning Board.

M. Materials. A wireless telecommunications service facility shall be of galvanized finish or painted gray or another neutral or compatible color determined to be appropriate for the proposed location of such facility in the reasonable judgment of the Planning Board. The mountings of wireless telecommunications antennas shall be nonreflective and of the

DRAFT

appropriate color to blend with their background.

N. Lighting. The wireless telecommunications service facility shall not be artificially lighted unless otherwise required by the Federal Aviation Administration or other federal, state or local authority.

O. Operational characteristics. Unless otherwise superseded by the Federal Communications Commission (FCC), the design and use of the proposed wireless telecommunications service facility, including its cumulative impact with other existing and approved facilities, shall be certified to conform to the maximum NIER exposure standards promulgated by the FCC, as amended. Said certification shall include a report by a licensed professional electrical engineer with expertise in radio communication facilities and/or health physicist acceptable to the Planning Board. A copy of such certification report shall be submitted to the Planning Board prior to commencing operation of such facility and a copy shall be filed with the Building Inspector. The Planning Board may require annual certification of conformance with the applicable emission standards. Additionally, copies of certification reports shall be submitted to the Planning Board whenever they are required to be submitted to the FCC. The Planning Board may hire a qualified professional of its choosing to review and confirm such initial and subsequent certification report(s), the cost of which shall be reimbursed by the applicant in accordance with the escrow account procedures established by the City for the reimbursement of professional review fees for subdivision, site plan and special use permit applications. Any violation of the emissions standards shall require immediate discontinuation and correction of the use responsible for the violation.

P. Utility service. Electrical and land-based telephone lines extended to serve the wireless telecommunications service facility sites shall be installed underground. If the wireless telecommunications service facility is attached to a building, and if determined practical and economically feasible by the Planning Board, all wires from the ground to said facility shall be located within the building. If permitted to be located outside said building, the wires shall be enclosed in a conduit whose materials and colors are consistent or compatible with the building.

Q. Safety provisions. A wireless telecommunications service facility shall be designed and erected so that in the event of structural failure it will fall within the required setback area and, to the maximum extent possible, away from adjacent development.

R. Security provisions. A wireless telecommunications service facility shall be designed to prevent unauthorized access and may include the incorporation of physical features such

DRAFT

as fencing, anti-climbing devices or elevating ladders on monopoles and towers, and/or monitoring either by staff or electronic devices to prevent unauthorized access and vandalism.

S. Structural/safety inspection and report.

(1) A monopole or tower over 50 feet in height shall be inspected at least every five years from a structural and safety perspective at the expense of the service provider by a licensed professional engineer, or at any other time upon a determination by the Building Inspector that the monopole or tower may have sustained structural damage, and a copy of the inspection report shall be submitted to the Building Inspector.

(2) The City of Beacon reserves the right to inspect any wireless telecommunications service facility to ensure compliance with the provisions of this section and any other provisions found within the Federal Communications Commission (FCC) regulations and City of Beacon Code, state or federal law. The City of Beacon and/or its agents shall have the authority to enter the property upon which a wireless telecommunications service facility is located at any time, upon reasonable notice to the operator, to ensure such compliance.

T. Interference. In the event that the wireless telecommunications service facility causes interference with the radio or television reception within the City of Beacon, the applicant, at the applicant's sole expense, shall thereafter ensure that any interference problems are promptly corrected.

U. The Secretary of the Planning Board shall forward a copy of the Planning Board decision to the City Tax Assessor to allow the City to better assess the utility infrastructure for wireless telephone facilities.

V. Duration. Construction must be commenced within 12 months of issuance of the Planning Board's approval and diligently pursued thereafter, or such approval shall expire.

W. Removal, relocation or modification of wireless telecommunications service facilities in the public right-of-way.

(1) Notice. Within 90 days following written notice from the City, the wireless provider shall, at its own expense, protect, support, temporarily or permanently

DRAFT

disconnect, remove, relocate, change or alter the position of any wireless telecommunications service facility within the public right-of-way whenever the City has determined that such removal, relocation, change or alteration is necessary for the construction, repair, maintenance, or installation of any City improvement in or upon, or the operations of the City in or upon, the public right-of-way.

(2) Abandonment of facilities. Upon abandonment of a wireless telecommunications service facility within a public right-of-way of the City, the wireless provider shall notify the City within 90 days. Following receipt of such notice the City may direct the wireless provider to remove all or any portion of the small cell facility if the City, or any of its departments, determines that such removal will be in the best interest of the public health, safety and welfare.

(3) A wireless telecommunications provider is authorized, after 30 days written notice to the City Building Inspector, to remove its facility at any time from the rights-of-way and cease paying the City the administrative fee.

Section 4. Subsection A of Chapter 223, Section 25 of the Code of the City of Beacon entitled "Site development plan approval" is hereby amended as follows:

A. Approval required. No building permit shall be issued, other than for interior alterations, and no change in type of use, as categorized in § 223-26F hereof, shall be permitted, other than one-family dwellings ~~or small cell wireless telecommunications services facilities~~, except in conformity with an approved site development plan, and no certificate of occupancy for such structure or use shall be issued until all the requirements for such approval and any conditions attached thereto have been met. The continued validity of any certificate of occupancy shall be subject to continued conformance with such approved plan and conditions. Revisions of such plans shall be subject to the same approval procedure.

Section 5. Subsection B of Chapter 223, Section 41.4 of the Code of the City of Beacon entitled "Waterfront Development (WD) Zone" is hereby amended as follows:

B. Permitted principal uses. Permitted principal uses shall be as follows, subject to a requirement that a minimum of 25% of the total development's floor area within 400 feet of the train station shall be permitted nonresidential uses, not including artist live/work spaces, which must be built out before or concurrently with any residential development of the site:

DRAFT

(1) Any principal use permitted in the WP Zone.

(2) Residential multifamily dwelling unit.

(3) Convenience retail and personal service shop designed to serve the needs of area residents and commuters.

(4) Restaurant, bar or brew pub.

(5) Inn, hotel, fitness center, spa or day care centers.

(6) Art, craft or fine arts gallery.

(7) Office. The Planning Board may limit the extent of office uses on the first floor, depending on the building location within the overall development.

(8) Professional, small business and service facilities in the lower floors of multistory residential buildings.

(9) Artist live/work spaces.

(10) Public square, plaza, promenade or pocket park.

(11) Public or semipublic use; live theater, concert hall, museum or meeting room suitable for social, civic, cultural or education activity.

(12) Conference space or conference center.

(13) Microbrewery or microdistillery.

(14) Other use similar to the above uses as determined by resolution of the City Council.

(15) Wireless telecommunications services~~s~~ facilities, subject to § 223-26.4.

Section 6. Subsection C of Chapter 223, Section 41.4 of the Code of the City of Beacon entitled "Waterfront Development (WD) Zone" is hereby amended as follows:

C. Special permit uses. The following may require a special permit:

Section 7. Subsection A of Chapter 223, Section 41.18 of the Code of the City of Beacon entitled "Regulations" is hereby amended as follows:

Deleted: (1) Wireless telecommunication services facility, subject to § 223-24.5.¶
(2) Small cell wireless telecommunications facility, subject to § 223-26.4.¶

DRAFT

§ 223-41.18 Regulations.

A. Uses by right. The uses listed below are permitted by right in the CMS District, in the manner and under the conditions specified below. Unless otherwise indicated in this § 223-41.18, all such uses require site plan review and approval. Site plan review shall not be required for a change of use in an existing building where the new use is allowed by right, the building will not be expanded, and the minimum number of off-street parking spaces required for the new use in § 223-41.18G(2) is not more than 25% greater than the requirement for the existing use in § 223-26F herein.

(1) Apartments, provided that for parcels fronting on Main Street or East Main Street they shall only be located on upper stories or at least 50 feet behind the facade in the rear portion of a ground floor.

(2) Multifamily dwellings, provided that for parcels fronting on Main Street or East Main Street such uses are not permitted on the ground floor in the first 50 feet from the facade.

(3) Hotel, subject to § 223-14.1, or inn.

(4) Office of any kind, including professional, medical, business, bank or other financial institution.

(5) Artist studio.

(6) Art gallery or exhibit space.

(7) Restaurant, coffee house, brew pub, bar or other establishment that serves food with or without alcoholic beverages.

(8) Retail or personal services.

(9) School, public or not-for-profit educational institution, college or university, trade or vocational school, job placement or training program, continuing education program or instructional school such as karate school, dance school or studio, language school or vehicular driving school, but not an elementary or nursery school.

(10) Indoor commercial recreation.

(11) Park, plaza, green, preserve or community garden.

(12) Artist live/work space subject to § 223-24.3, provided that they may only be located on upper stories or at least 50 feet behind the facade, in the rear portion

DRAFT

of a ground floor, along Main Street or East Main Street, unless the space in the 50 feet behind the facade is used for the retail sale of the artist's wares.

(13) Theater, museum, library, concert hall and other music venues, and other similar kinds of cultural facilities.

(14) (Reserved)

(15) Government facilities, including buildings, structures and uses owned or operated by the City of Beacon or any department or agency thereof.

(16) Spa, health club, gym, yoga and pilates studio, and similar kinds of fitness centers.

(17) Microbrewery or microdistillery which has a retail or tasting room component of at least 200 square feet of floor area.

(18) Workshop.

(19) Club, civic or fraternal, subject to § 223-24.2, provided that for parcels fronting on Main Street or East Main Street such uses are not permitted on the ground floor in the first 50 feet from the façade.

(20) Wireless telecommunications services facilities, subject to § 223-26.4.

Section 8. Subsection B(1) of Chapter 223, Section 41.18 of the Code of the City of Beacon entitled "Regulations" is hereby amended as follows:

B. Uses by special permit.

(1) The following uses are allowed by special permit from the City Council or Planning Board as indicated in §223-17, upon a finding that the proposed use is consistent with the City of Beacon Comprehensive Plan Update, will enhance the architectural character of the street and will benefit the urban, pedestrian-friendly qualities of Main Street and East Main Street, and that the conditions and standards in § 223-18B(1)(a) through (f) have been met:

(a) Food preparation business.

(b) Off-street parking lot or parking structure as principal uses, in accordance with § 223-41.18G.

(c) Historic District or Landmark Overlay use, subject to § 223-24.7.

Deleted: <#>Wireless telecommunications facility, subject to §§ 223-24.5 and 223-26.4, provided that, if mounted on a building, it does not increase its height by more than 15 feet above applicable height limits.¶

Section 9. Subsection A of Chapter 223, Section 41.21 of the Code of the City of Beacon entitled "Regulations" is hereby amended as follows:

A. Uses by right. Uses listed below in this Subsection A are permitted by right subject to site plan review, except as otherwise noted in this § 223-41.21. Site plan review shall not be required for a change of use in an existing building where the new use is allowed by right, the building will not be expanded, and the minimum number of off-street parking spaces required for the new use in § 223-41.21F(2) is not more than 25% greater than the requirement for the existing use in § 223-26F herein. The following uses are allowed by right subject to a requirement that for any new construction of a principal building, an apartment use or attached, semidetached, or multifamily dwelling unit shall only be located on the upper stories or at least 50 feet behind the façade in the rear portion of the ground floor, if the building faces the north side of Beekman Street between Route 9D and West Main Street, faces the north side of West Main Street, or if the parcel is within 400 feet to the Route 9D–Beekman Street intersection, as identified on the Zoning Map:

(1) Multifamily dwelling.

(2) Attached or semidetached dwelling units.

(3) Apartment building.

(4) Inn.

(5) Bed-and-breakfast establishment.

(6) Artist studio, art gallery or exhibit space.

(7) Hotel.

(8) Park, plaza, green, preserve or community garden.

(9) Retail, personal services business, bank, or restaurant, coffee house, bar, brew pub or other establishment that serves food, with or without alcoholic beverages, provided that:

(a) The floor area of each such establishment is not greater than 5,000 square feet;

(b) The parcel is within 400 feet of the Route 9D-Beekman Street intersection, located along the north side of Beekman Street between Route 9D and West Main Street, or located along the north side of West Main Street, as identified on the Zoning Map.

(10) Office, trade school, training program, microbrewery or microdistillery, provided that:

(a) The total floor area of each such establishment is no greater than 25,000 square feet;

DRAFT

(b) The parcel is within 400 feet of the Route 9D-Beekman Street intersection, located along the north side of Beekman Street between Route 9D and West Main Street, or located along the north side of West Main Street, as identified on the Zoning Map.

(11) Government facility, including uildings, structures and uses owned or operated by the City of Beacon or any department or agency thereof.

(12) Day-care center.

(13) Museum, theater, concert or conference space.

(14) College, university, private school, or nursery school.

(15) Workshop.

(16) Artist live/work space, provided that, if the use faces the north side of Beekman Street between Route 9D and West Main Street, faces the north side of West Main Street, or if the parcel is within 400 feet to the Route 9D–Beekman Street intersection, the residential space shall only be located on the upper stories or at least 50 feet behind the façade in the rear portion of the ground floor, unless the first 50 feet behind the façade is used for the retail sale of the artist's wares.

(17) Spa, fitness center, or exercise studio.

(18) Wireless telecommunications services facilities, subject to § 223-26.4.

Section 10. Subsection B(1) of Chapter 223, Section 41.21 of the Code of the City of Beacon entitled "Regulations" is hereby amended as follows:

B. Uses by special permit.

(1) The following uses are allowed in existing buildings as permitted uses. For newly constructed buildings, the following uses are allowed by special permit from the Planning Board, upon a finding that the proposed use is consistent with the City of Beacon Comprehensive Plan, will enhance the architectural character of the street, and will contribute to creating a more urban, pedestrian-friendly quality in the L District, and that the conditions and standards in § 223-18 B(1)(a) through (f) have been met:

(a) Manufacturing use or food preparation business that may also sell goods made on the site for consumption off the premises, provided that::

[1] The total manufacturing or food preparation business floor area of the building is no greater than 25,000 square feet;

[2] The parcel is within 400 feet of the Route 9D-Beekman Street intersection, located along the north side of Beekman Street between Route 9D and West Main Street, or located along the north side of West Main Street, as identified on the Zoning Map; and

[3] The Planning Board finds that there are no substantial detrimental effects on parking, traffic or on the character of surrounding neighborhoods or the community.

(b) Historic District and Landmark Overlay use, subject to § 23-24.7.

Deleted: <#>Wireless telecommunications services facility, subject to §§ 223-24.5 and 223-26.4, provided that, if mounted on a building, it does not increase the height by more than 15 feet above applicable height limits.¶

Section 11. Chapter 223 Attachment 2:2 of the Code of the City of Beacon, entitled "Section 223-17, City of Beacon Schedule of Use Regulations" shall be amended to designate wireless telecommunication facilities as permitted uses in all zoning districts.

SEE ATTACHED CHART

Section 12. Ratification, Readoption and Confirmation

Except as specifically modified by the amendments contained herein, Chapter 223 of the Code of the City of Beacon is otherwise to remain in full force and effect and is otherwise ratified, readopted and confirmed.

Section 13. Numbering for Codification

It is the intention of the City of Beacon and it is hereby enacted that the provisions of this Local Law shall be included in the Code of the City of Beacon; that the sections and subsections of this Local Law may be re-numbered or re-lettered by the Codifier to accomplish such intention; that the Codifier shall make no substantive changes to this Local Law; that the word "Local Law" shall be changed to "Chapter," "Section" or other appropriate word as required for codification; and that any such rearranging of the numbering and editing shall not affect the validity of this Local Law or the provisions of the Code affected thereby.

Section 14. Severability.

The provisions of this Local Law are separable and if any provision, clause, sentence, subsection, word or part thereof is held illegal, invalid or unconstitutional, or inapplicable to any person or circumstance, such illegality, invalidity or unconstitutionality, or inapplicability shall not affect or impair any of the remaining provisions, clauses, sentences, subsections, words or parts of this Local Law or their petition to other persons or circumstances. It is hereby declared to be the legislative intent that this Local law would have been adopted if such illegal, invalid or unconstitutional provision, clause, sentence, subsection, word or part had not been included therein, and if such person or circumstance to which the Local Law

DRAFT

or part hereof is held inapplicable had been specifically exempt there from.

Section 15. Effective Date

This local law shall take effect immediately filing with the Office of the Secretary of State.

DRAFT

Permitted Uses by District	Reference Notes	All R1	All RD	T	GB	CMS	L	WD	WP	FCD	LI	HI
Government facility		P	P	P	P	P	P	P	P	P	P	P
Golf course		SP*	SP*	X	X	X	X	X	X	X	X	X
Health Care												
Hospital or nursing home	Subject to 223-21.1/22	SP*	SP*	X	X	X	X	X	X	P	P	P
Animal care facility		SP	SP	X	SP	X	X	X	X	X	SP	X
Educational												
College or university		SP*	SP*	X	P	P	P	X	X	P	P	P
Trade school or training program		X	X	X	P	P	P	X	X	P	P	P
Private school or nursery school		SP	SP	SP	P	X	P	X	X	P	SP	X
Parking/Auto-Oriented												
Off-street parking or parking structure	Subject to § 223-26	X	X	SP	SP	SP	X	X	X	X	X	X
Vehicle sales or rental lot		X	X	X	SP	X	X	X	X	X	SP	X
Gas filling station and/or car wash	Subject to Ch. 210/§ 223-21	X	X	X	SP	X	X	X	X	X	SP	X
Auto body or repair shop	Subject to Chapter 210	X	X	X	SP	X	X	X	X	X	SP	X
Ambulance service		SP	SP	SP	P	X	X	X	X	X	P	X
Industrial or Assembly												
Wholesale or storage business		X	X	X	P	X	X	X	X	X	P	P
Workshop		X	X	SP	P	P	P	X	X	P	P	P
Industrial or manufacturing use		X	X	X	X	X	SP	X	X	P	P	P
Other												
Wireless communication facility	Subject to § 223-26.4	P	P	P	P	P	P	P	P	P	P	P
Small cell wireless facility	Subject to § 223-26.4	P	P	P	P	P	P	P	P	P	P	P
Farm		P	X	X	X	X	X	X	X	X	X	X
Horticultural nursery		P	P	X	P	X	X	X	X	X	P	X
Historic District Overlay Use	Subject to § 223-24.7	SP*	SP*	SP*	SP*	SP*	SP*	SP*	SP*	SP*	SP*	SP*
Permitted Accessory Uses (includes uses/structures customarily incidental to a permitted principal use, but not an activity for commercial gain in a residential district)												
Accessory apartment	Subject to § 223-24.1	SP	SP	SP	X	X	X	X	X	X	X	X
Private tennis court or pool	Subject to § 223-13	P	P	P	X	X	X	X	X	X	X	X
Home occupation or artist studio	Subject to § 223-17.1	P	P	P	X	X	X	X	X	X	X	X
Parking structure		X	X	SP	X	P	P	P	X	P	X	X
Garden, roof garden, or greenhouse		P	P	P	P	P	P	P	P	P	P	P
Solar collectors	Subject to Article X	P	P	P	P	P	P	P	P	P	P	P
X = Use Not Permitted P = Permitted Use SP = Special Permit Use by Planning Board SP* = Special Permit Use by City Council	For specific standards see -->					Article IVD	Article IVE	Article IVA	Article IVA	Article IVC		

City of Beacon City Council Agenda
01/25/2021

Title:

Draft Resolution Granting a Special Use Permit for a Project at 416-420 Main Street

ATTACHMENTS

Draft Resolution Granting a Special Use Permit for 416-420 Main Street

CITY OF BEACON
CITY COUNCIL

Resolution No. _____ of 2021

RESOLUTION

GRANTING A SPECIAL PERMIT FOR
416-420 MAIN STREET

PARCEL ID NOS: 6054-29-056780 & 6054-29-056774

WHEREAS, 416 Main Street Beacon, LLC & 420 Main Street, LLC (the "Applicant") submitted an application for a Special Permit to construct a fourth story on an 11,715 square foot mixed-use building fronting on Main Street, comprised of a 4,295 square foot ground-floor retail space, as well as 6,220 square feet of commercial office space on the second and third floors and 1,200 square feet of residential space containing one (1) apartment unit on the stepped back fourth floor (the "Proposed Action") on property located at 416-420 Main Street, on parcels known and designated on the tax map as 6054-29-056780 and 6054-29-056774 (the "Property"); and

WHEREAS, the proposed 11,715 square foot mixed-use building is proposed for the area of the Property located in the Central Main Street (CMS) District and the Historic District and Landmark Overlay Zone (HDLO); and

WHEREAS, the Applicant submitted the Special Permit application in connection with its application to the Planning Board for Subdivision approval (to remove the existing lot line and merge the two lots), Site Plan approval, and Certificate of Appropriateness approval to construct the proposed 11,715 square foot mixed-use building, as well as a 1,440 square foot artist live-work space in the rear of the Property fronting on South Street and located in the Transition District and HDLO Zone; and

WHEREAS, any proposed fourth story on a CMS parcel in the HDLO Zone shall require a special permit from the City Council pursuant to the City of Beacon Code § 223-41.18.E(7); and

WHEREAS, the Site Plan is shown on drawings, entitled "Site Plan Application-416-420 Main Street," prepared by Aryeh Siegel, Architect, dated September 9, 2020, and last revised January 6, 2021; and

WHEREAS, the Proposed Action is an Unlisted Action, pursuant to the New York State Environmental Quality Review Act; and

WHEREAS, on August 11, 2020, the Planning Board, as Lead Agency, opened a public hearing to consider comments regarding any environmental impacts associated with the Proposed Action and continued the hearing to September 9, 2020, and October 14, 2020, at which time the (SEQRA) public hearing was closed; and

WHEREAS, after taking a "hard look" at each of the relevant areas of environmental concern through review of the Environmental Assessment Form and all associated materials prepared in connection with the Proposed Action, the Planning Board adopted a Negative Declaration on October 14, 2020; and

WHEREAS, the Planning Board issued a report to the City Council dated October 15, 2020, in support of the Special Permit; and

WHEREAS, on December 21, 2020, the City Council opened a public hearing on the Special Permit application, at which time all interested persons were given the opportunity to be heard, and

WHEREAS, the City Council continued the public hearing to January 19, 2021, at which time the public hearing was closed; and

WHEREAS, due to public health and safety concerns related to the current COVID-19 pandemic, the December 21, 2020 and January 19, 2021 public hearings were held via videoconference in accordance with the requirements of the Governor's Executive Orders which suspend the "in-person" requirements of the NYS Open Meetings Law and provide alternative means by which to conduct public hearings; and

WHEREAS, the City Council has reviewed the application for a Special Permit against the standards set forth in the City of Beacon Code §§ 223-18.B and 223-41.18.E(7) and the design standards set forth in the City of Beacon Code § 134-7, and finds that the proposal complies with these sections of the City of Beacon Code, as set forth below.

NOW, THEREFORE, BE IT RESOLVED, that the City Council hereby makes the following findings pursuant to the City of Beacon Code §§ 223-18.B, 223-41.18.E(7) and 134-7:

- The location and size of the mixed-use building, the nature, hours and intensity of the retail, business office, and residential uses involved in or conducted in connection with the proposed building, the size of the site in relation to the structure and the location of the site with respect to streets giving access to it are such that it will not conflict with the appropriate and orderly development of the site and the existing permitted uses on adjacent blocks.

- The location, nature, and height of the building and the nature and extent of the landscaping on the site are such that the use will not conflict with the existing permitted uses on adjacent blocks and will not hinder or discourage the appropriate

development use of adjacent land and buildings. The height of the proposed building is approximately the same height as the neighboring building to the east.

- Operations in connection with the fourth story special use will not be more objectionable to nearby properties by reason of noise, fumes, vibration or any other characteristic than the operations connected to a three-story building, not requiring a special permit.

- The Applicant will provide three (3) off-street parking spaces required for the residential component of the Proposed Action. The Applicant will request a waiver from the Planning Board of the off-street parking requirements for commercial uses. Twenty parking spaces are required for the proposed commercial uses. There are public parking lots available within 800 feet of the property. The off-street parking spaces will be properly located. The proposed uses will not cause unreasonable traffic congestion or create a traffic hazard.

- The building will be accessible for emergency services and appropriately located for water, sewer, and other infrastructure requirements.

- The use complies with other applicable regulations in the City Code and will be compatible with the recommendations in the City's Comprehensive Plan. The CMS District is designed to increase the vitality, attractiveness, and marketability of Main Street. The proposed mixed-use building will create retail, business office, and residential opportunities.

- The Proposed Action has been designed to be consistent with the character of the surrounding neighborhood, including the Beacon Hotel and the properties located in the HDLO. The Proposed Action will not have an adverse impact on aesthetic resources. The new building will be compatible with the historic character of adjacent buildings.

- The proposed mixed-use building is designed to ensure there are no substantial detrimental effects from shadows, parking, or traffic.

- The Applicant is providing a public green space of 4,231 square feet on the Property. The green space is designed to serve residents of and visitors to the City of Beacon. The green space includes a lawn area planted with eco-grass, trash and recycling receptacles for public use, sculpture seating, trees, and two access points along Schenck Avenue.

- The office space on the second and third floors is needed in the City of Beacon and will provide a specific public benefit requirement.

BE IT FURTHER RESOLVED, that the City Council hereby grants a Special Permit to 416 Main Street Beacon, LLC & 420 Main Street, LLC to construct a stepped back fourth story on an 11,715 square foot mixed-use building fronting on Main Street, on property located at 416-420 Main Street in the Central Main Street District and District District and Landmark Overlay Zone as set forth and detailed on drawings, entitled "Site Plan Application-416-420 Main Street," prepared by Aryeh Siegel, Architect, dated April 28, 2020, and last revised January 6, 2021, upon the following conditions:

1. Prior to the issuance of a Building Permit, the Applicant shall obtain Final Site Plan Approval, Subdivision approval, and Certificate of Appropriateness approval from the City of Beacon Planning Board.

2. No permits shall be issued until the Applicant has paid to the City all applicable fees and professional review fees incurred in connection with the review of this Application.

3. A copy of this Resolution shall be attached to the Certificate of Occupancy.

4. As used herein, the term "Applicant" shall include its heirs, successors, and assigns.

5. In accordance with the City of Beacon Code § 223-18.F(1), this Special Permit Approval authorizes only the particular use specified in the permit and shall expire if:

    a. A bona fide application for a Building Permit is not filed within one (1) year of the issuances of this Special Permit Approval; or

    b. If all required improvements are not made within two (2) years from the date of issuance of the Building Permit; or

    c. If said use ceases for more than six (6) months for any reason.

6. Any change to the layout or reduction in size of the public green space area, shall require approval from the City Council; if such approval is not obtained, the Special Permit shall be deemed void. The Applicant shall also obtain approval from the City Council if the Planning Board adopts any rule or condition effecting the public green space areas; if such approval is not obtained, the Special Permit shall be deemed void.

7. Any change to the square footage or location of the fourth story shall require approval from the City Council; if such approval is not obtained, the Special Permit shall be deemed void.

8. Any change to the proposed building to reduce or eliminate the proposed commercial office space on the second and third floors shall require approval

from the City Council; if such approval is not obtained, the Special Permit shall be deemed void.

9. Any proposed revision to this Special Permit approval shall be submitted to the City Council. In its discretion, the City Council shall determine the appropriate procedures for consideration of the proposed revision, and whether such revision is material enough to require further environmental analysis, further project review and/or a public hearing, as it may deem appropriate.

10. The public green space shall be used only for public purposes. No portion of the green space shall be used exclusively by the tenants.

11. The Applicant shall install signs to indicate the location of the public park. The signs shall be installed on Main Street and Schenck Avenue. At least one sign shall be installed on the proposed building facing Main Street. The Planning Board shall approve the final location and design of the signs.

12. The City's use of the public space shall not be limited by any building tenant.

13. The City in its sole discretion shall determine the hours and use of the public park and may adopt any other regulations for the public green space it deems appropriate.

14. If any of the conditions enumerated in this resolution upon which this approval is granted are found to be invalid or unenforceable, then the integrity of this resolution and the remaining conditions shall remain valid and intact.

15. The approvals granted by this resolution do not supersede the authority of any other entity.

16. The Building Inspector may revoke this Special Permit approval where it is found that the use of the premises does not conform to the limitations and conditions contained in the Special Permit approval.

BE IT FURTHER RESOLVED, the City Council shall require the Applicant to post a weatherproofed copy of the site plan and architectural renderings of the project on a sign to be maintained at the property from the time of commencement of construction until substantial completion of the structure.

Title:

Personnel

ATTACHMENTS

Title:

Contract / Real Estate

ATTACHMENTS