October 29, 2026

Ms. Megan Kuzcka
Project Manager
New York State Department of Environmental Conservation – Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

RE: Cherry Farm Site – Shore Stabilization Project
Final Remedial Action Work Plan Submission and Response to Comments
CHA Project 093558.000

Dear Ms. Kuzcka:

CHA Consulting, Inc. (CHA) understands that the Joint Application for Permit for the Cherry Farm Site shoreline construction has been reviewed by the Department, and based on recent correspondence, the Permit is currently under final NYSDEC supervisor review. As a result, we do not anticipate any additional comments from NYSDEC or design revisions. Therefore, this letter transmits the Final Remedial Action Work Plam (RAWP), as well as responses to the Department's remaining comments for final approval. Specific responses to your comments transmitted in your June 9, 2026 email are provided below:

***Comment 1*:** Please have a NYS Licensed PE sign and stamp the RAWP once finalized.

***Comment 1 Response**: The final, PE signed and stamped RAWP is attached with this letter.*

Comment 2: Drawing C-305 shows the timber mats on top of RW-4. Is this timber matting right over the vault?

***Comment 2 Response**: The vault for RW-4 will be protected in the field and the timber mats will be placed just north of the well.*

Comment 3: Are the staff gauges along the River going to be impacted by construction? If yes, please indicate that they will be re-surveyed after construction.

***Comment 3 Response**: It is not anticipated that the staff gauges will be impacted by the construction. However, if they are impacted, they will be re-surveyed following construction.*

Comment 4: The landfill waste is approximately 24 inches below the surface. Please make sure the silt fence and wetland barrier stakes do not penetrate the waste or go past the demarcation layer.

***Comment Response 4:** This comment is acknowledged and CHA will ensure that the silt fence and wetland barrier stakes will not penetrate the demarcation layer.*

If you have any questions, please do not hesitate to contact me at (518) 453-2899 or kcowan@chasolutions.com. We look forward to receiving the final approval for the RAWP.

Sincerely,



Keith Cowan, P.G.
Vice President/Project Manager

cc: Julia Ispentchian, National Grid
Sasa Jazic, Honeywell Aerospace US LLC

REMEDIAL DESIGN WORK PLAN

Cherry Farms Shoreline Stabilization Project
Niagara Mohawk – Cherry Farm
Tonawanda, New York 14510

NYSDEC Site No. 915063
CHA Project Number: 093558.000

February 2026
Revised May 2026

National Grid
300 Erie Blvd West
Syracuse, New York 13208

Honeywell
115 Tabor Road
Morris Plains, New Jersey 079502

Prepared by:
CHA Consulting, Inc.
3 Winners Circle
Albany, New York 12205

CERTIFICATION

I, Samantha J. Miller, P.E., certify that I am currently a New York State registered professional engineer and that this Remedial Design Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with DER Technical Guidance for Site Investigation and Remediation (DER-10).

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, the undersigned, of CHA Consulting, Inc. have been designated by the Site owner to sign this certification for the Site.

For CHA Consulting, Inc.:



Samantha J. Miller P.E.
Printed Name of Certifying Engineer

Samantha J. Miller
Signature of Certifying Engineer

Senior Engineer
Title

May 29, 2026
Date of Certification

103303
NYS Professional Engineer Registration Number

New York State
Registration State

August 31, 2028
Registration Expiration Date

CHA Consulting, Inc.
Company

0021745
Company Certificate of Authorization No.

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LIST OF ACRONYMS AND ABBREVIATIONS

CCR	Construction Completion Report
CFR	Code of Federal Regulations
CHA	CHA Consulting, Inc.
DER-10	Division of Environmental Remediation Technical Guidance for Site Investigation and Remediation
EAF	Environmental Assessment Form
GES	Groundwater and Environmental Services, Inc.
HASP	Health and Safety Plan
JPA	Joint Permit Application
NYSDEC	New York State Department of Environmental Conservation
NYSDOS	New York State Department of State
NYSOGS	New York State Office of General Services
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
Parsons	Parsons Engineering Science, Inc
PE	Professional Engineer
PG	Professional Geologist
PRP	Potentially Responsible Party
PRR	Periodic Review Report
PWS	Professional Wetland Scientist
RDWP	Remedial Design Work Plan
RLA	Registered Landscape Architect
ROD	Record of Decision
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineer

%	Percentage
ft/s	Feet per Second
lbs	Pounds

1.0 INTRODUCTION

The Niagara Mohawk – Cherry Farm site is an approximately 56-acre site located off River Road in the Town of Tonawanda, Erie County, New York, henceforth referred to as the "Site". The Site is registered as Site No. 915063, a Class 4 Inactive Hazardous Waste Site under the jurisdiction of the New York State Department of Environmental Conservation (NYSDEC). Generally, the Site is located in a mixed industrial/commercial area within the waterfront industrial district on the eastern shoreline of the Niagara River. The Site is bounded by a Class 4 Inactive Hazardous Waste Site under the name River Road Site (Site No. 915031) to the south, River Road to the east, the Niagara River to the west, and a trucking company to the north. The location of the site is illustrated on Figure 1. The Niagara Mohawk – Cherry Farm Site (Site No. 915063) and the River Road Site (Site No. 915031) were part of a larger property owned by Wickwire-Spencer Steel Company. Due to the common ownership history and similar remedial programs, the NYSDEC and Potential Responsible Party (PRP) group, which includes National Grid and Honeywell, agreed to combine remedial efforts for these two sites.

This Remedial Design Work Plan (RDWP) has been prepared for the shoreline stabilization project required to protect critical infrastructure defined as the landfill cap and groundwater collection system. The critical infrastructure is designed to contain waste material and prevent contaminated groundwater from entering the adjacent Niagara River and eliminate the direct exposure pathway to humans and the environment. At the time of evaluation and design, observed degradation of four segments of gabion baskets had not impacted the critical infrastructure and imminent failure was not believed to be a concern. Regardless, rehabilitation of the shoreline is necessary to ensure continued successful operation of the critical infrastructure.

CHA Consulting, Inc. (CHA) prepared a report entitled the Cherry Farm Site Shoreline Stabilization Evaluation, dated April 2025, to evaluate alternatives for maintenance. The selected alternative, approved by the NYSDEC, included hard armoring/buttressing the river side of the gabion baskets with stone fill material.

1.1 Site History

Based on the amended Record of Decision, dated October 1993, information provided to the NYSDEC revealed that dust and slag from a blast and open-hearth furnace operations were disposed of at the Site between 1945 and 1963. Starting in 1963, foundry sand and sandcast from a nearby manufacturing facility were disposed of at the Site. Niagara Mohawk Power Corporation, which was acquired by National Grid in 2000, purchased the Site in 1970.

Based on the final Record of Decision (ROD) for the River Road Site, dated March 24, 1994, a comprehensive remedial design was developed for the Niagara Mohawk – Cherry Farm Site (Site No. 915063) and the River Road Site (Site No. 915031) due to common site history, former common ownership, similar waste and a similar remedial program. The remediation work was completed in 1999 and included the following elements:

- Consolidation of wastes;
- Removal of contaminated sediments from the Niagara River adjacent to the site and consolidation of those sediments in the waste mass prior to installing a cover;
- Installation of impermeable barriers over the consolidated wastes;
- Installation of a soil cover to support vegetation;
- Installation of shoreline protection to minimize damage to the cover system;
- Groundwater/leachate collection and treatment; and

- Enactment of deed restrictions affecting future use of the property.

As previously noted, the Site remedy was completed in August 1999 with regular Operations and Monitoring (O&M) being performed since.

1.2 Existing Gabion Wall Conditions

According to the original design, the shoreline protection system consists of four non-contiguous sections of gabion basket wall alternating with barrier islands along sections of shoreline. The gabion basket wall is only present on the Niagara Mohawk - Cherry Farm portion of the Site and is not present on the River Road portion of the site. Figure 2 provides a Site layout with the barrier islands and gabion basket wall sections identified.

The original gabion basket wall was constructed with the lowermost level consisting of two gabion baskets embedded in the subsurface soils and above the lowermost level are stacked gabion baskets, with the top-most basket extending above the mean high-water level. A light rip-rap toe extending approximately two feet high and reaching three feet into the Niagara River was used to buttress the middle level (second tier) of gabion baskets.

In 2024, the existing gabion basket wall was observed to show signs of deterioration. During regular landfill inspections performed by Groundwater & Environmental Services, Inc. (GES), it was noted that corrosion of the metal gabion basket mesh was causing deterioration at one or more locations along the shoreline.

To further evaluate the observed failures and determine the potential factors that were causing the failures, GES completed an inspection of the gabion baskets from the Niagara River by boat on September 16, 2024. The inspection identified the following conditions:

- In some locations, the metal mesh is deteriorating at and below the water line and rocks from the bottom of the uppermost gabion basket appear to be falling out into the river and undermining the top of the basket, which has only recently started to be visible from the top during ground-based inspections.

- Based on visual inspection of sections of deteriorating gabion basket metal mesh, it appears that the galvanized coating on the metal mesh has corroded over time due to sediment scouring followed by oxidation of the exposed steel.

- During the inspection there did not appear to be any large dents or depressions in the visible gabion baskets; therefore, it does not appear that ice flowing in the Niagara River has been a major contributor to the gabion basket deterioration.

- The existing barrier islands that parallel the Site shoreline over a portion of the Site appear to be in good condition and do not have any visual damage from ice flow in the Niagara River and are substantially vegetated.

Based on CHA's review of the photographic documentation provided by GES, and in coordination with the NYSDEC, it was agreed that the failure is limited to the waterline area and below.

1.3 Existing Niagara River Conditions

It is important to understand the existing velocities of the Niagara River when evaluating potential

repair solutions. Based on information collected by GES, the United States Army Corps of Engineers (USACE) reported in 1995 that the river velocities near the site range from 5 to 7 feet per second (ft/sec). The river velocities were also measured on June 27, 1996, by Parsons Engineering Science, Inc. (Parsons) and reported in the Phase II Sediment Investigation and Remedial Alternatives Scoping Report for the Site. The data was collected by Parsons along three transects perpendicular to the shoreline. The river velocity ranged from 0.3 to 2.6 ft/sec and increased with distance from shore.

The International Niagara Working Committee reported in 2021 (INWC, May 2021) that the Tonawanda Channel velocity ranges from 2 to 3 ft/sec. In addition, CHA received average velocity data from a New York State Thruway Authority Bridge Scour Evaluation Report prepared for the South Grand Island Bridges, located approximately 1,800 feet to the north and downstream of the Site. This information is in general agreement with the USACE Report and indicates average velocities ranging from 3-5 ft/sec for the 100-year (1% Annual Exceedance Probability) flood event.

Given the variation in velocity data available for the Tonawanda Channel of the Niagara River and accounting for the potential impacts of climate change, CHA utilized 7 ft/sec as the design velocity.

2.0 PERMITTING

The proposed project requires authorization from multiple state and federal agencies. A Joint Permit Application (JPA) has been prepared and submitted to facilitate coordinated regulatory review by the NYSDEC, USACE, New York State Office of General Services (NYSOGS), and New York State Department of State (NYSDOS).

The JPA addresses applicable state and federal regulatory requirements, including authorization under Article 24 of the New York State Environmental Conservation Law (Freshwater Wetlands Act), Section 401 Water Quality Certification, and Section 404 of the Clean Water Act. The project is expected to qualify for coverage under NYSDEC's Blanket Water Quality Certification associated with Nationwide Permit No. 3 – Maintenance, which authorizes repair, rehabilitation, or replacement of previously authorized, serviceable structures or fills. The JPA has been submitted to the USACE to document eligibility and obtain confirmation of authorization under the Nationwide Permit program.

Where applicable, the JPA also serves as notification to NYSOGS for review of activities involving state-owned submerged lands. In addition, because the project is located within New York State's Coastal Zone, a Federal Coastal Zone Consistency Determination has been submitted to NYSDOS in accordance with the Coastal Zone Management Act. NYSDOS concurrence will be obtained prior to initiation of federal activities.

Upon request from NYSDEC, CHA also prepared and submitted a Short Form Environmental Assessment Form (EAF) to satisfy the requirements of the State Environmental Quality Review.

The USACE Nationwide Permit authorizing certain activities under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899 expires in March 2026. Given the upcoming expiration, the USACE advised CHA and the PRPs that review of this project will be paused until the new permit is in place.

3.0 PROJECT ORGANIZATION

3.1 Site Contacts

The personnel involved in the project implementation include:

Name	Organization	Role	Contact Information
Brian Stearns	National Grid	PRP National Grid Representative	brian.stearns@nationalgrid.com
Sasa Jazic	Honeywell	PRP Honeywell Representative	sasa.jazic@honeywell.com
Keith Cowan, PG	CHA	CHA Project Manager	(518) 453-2899 kcowan@chasolutions.com
Chris Burns, PG Ph.D.	CHA	Technical Lead	(804) 412-8841 cburns@chasolutions.com
Chris Einstein, PWS	CHA	Ecology/Permitting Lead	(518) 453-4505 ceinstein@chasolutions.com
Nick Schwartz, RLA	CHA	Design Lead	(518) 453-2868 nschwartz@chasolutions.com

3.2 Project Construction Team

It is currently anticipated that GES will take the lead in advertising the project for construction and will hold the construction contract for National Grid. They will also likely perform periodic oversight for health and safety. The construction administration and construction observation will be performed by CHA, and a construction completion report (CCR) will be stamped by a licensed New York State professional engineer employed by CHA.

3.3 Advanced Notification

Prior to initiating work at the Site, a 15-day public notice period is required for the NYSDEC Protection of Waters and Freshwater Wetlands permits.

Additionally, the following persons will be notified of the construction start date prior to the start of work.

Name	Organization	Contact Information
Megan Kuczka	NYSDEC	(716) 851-7220 megan.kuczka@dec.ny.gov
Matthew Maraglio	NYSDOS	Matthew.Maraglio@dos.ny.gov
Joseph Rowley	USACE	Joseph.M.Rowley@usace.army.mil

4.0 FINAL DESIGN SCOPE

4.1 Description of Selected Alternative

The selected alternative consists of adding riverside rip rap/heavy stone armoring immediately adjacent to the existing gabion baskets. The intent is to stabilize the existing gabion baskets with armoring/buttressing to the top of the existing baskets. To armor/buttress the entire length of the gabion basket walls (+/- 1,100 linear feet), approximately 2,700 cubic yards of extra heavy rip rap

and light stone fill will be placed along the shoreline of the Niagara River. The 60% Design Drawings and Specifications for the proposed scope of work are included in Appendix A and Appendix B, respectively.

Under this alternative, future degradation of the gabion baskets would be mitigated to protect the integrity of the landfill cap and groundwater collection trench. A schematic illustration of this option is illustrated by Design Drawing C-601, Detail 1.

This alternative is preferred because it:

- allows the existing gabion wall to remain in place;
- is consistent with the original design which included a stone toe buttress;
- allows some of the existing vegetation to remain in place on the bank and potentially no disturbance to the upland vegetation;
- provides the longest-term solution;
- provides for climate adaptation and resiliency with increasing flows and velocities; and,
- allows for the greatest flexibility in construction.

4.2 Health and Safety

The selected contractor will prepare a site-specific Health and Safety Plan (HASP) for the work activities associated with this project. Care should be taken to properly evaluate working near or on the water, operating heavy equipment, transferring extra heavy rip rap from trucks to final placement, and general construction hazards. It is anticipated Level D personal protective equipment with use of a personal flotation device during on or above-water work will be required. The contractor is responsible for complying with Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910 General Industry and 1926 Safety and Health Regulations for Construction. Given the work described in this RDWP involves aboveground work or in-water work only, and no ground intrusive activities that may expose hazardous waste are proposed, compliance with CFR 1910.120, Hazardous Waste Operations and Emergency Response, is not required.

4.3 Site Access

Truck transport routes will be determined by taking into account the following: (a) limiting transport through residential areas and past sensitive sites; (b) use of city-mapped truck routes; (c) limiting total distance to major highways; (d) promoting safety in access to highways; and (e) overall safety in transport. The selected contractor will mobilize to the Site from River Road and utilize the existing asphalt paved or gravel road around the Niagara Mohawk - Cherry Farm landfill to access the various work locations, as presented on Figure 3. Timber mats will be placed to provide temporary access across the vegetated land as indicated on the Design Drawings. The mats will distribute load from the equipment and minimize soil disturbance.

Placement of in-water erosion and sediment controls will be completed from the Niagara River. A small outboard motorboat may be launched by hand from a reasonably accessible point to the south of the work area. Should a larger boat be required for installation of the erosion and sediment controls, Collin's Marine boat launch is located approximately 0.3 miles to the north of the project area.

Multiple groundwater monitoring wells and sump pump stations associated with the groundwater extraction system are within or near the proposed work area. Permanent structures will be

protected by placing six-foot concrete ballast blocks around the infrastructure in accordance with the Design Drawings.

4.4 Erosion and Sediment Control

Due to the disturbance along the Niagara River shoreline and the total area of disturbance, a Stormwater Pollution Prevent Plan (SWPPP) was developed for this work. Erosion control measures will be installed prior to any clearing, cutting, or placement of stone at the Site. Turbidity curtains shall be installed along the limits of in-water work, as shown on the Erosion and Sediment Control Design Drawings (C-302 through C-307) and described in the specifications, to prevent suspended sediment from migrating into the Niagara River. The installation area will be inspected beforehand to remove debris or obstacles that could damage the curtain. The curtain should be anchored using temporary driven H-piles beyond the lateral limits of the work area, with a height of about 20% greater than the water depth to allow for fluctuations. In shallow areas, staking may be used to secure the toe, and additional anchors may be added as needed to resist wave or boat action. The turbidity curtain will be inspected daily and repaired or replaced as necessary.

Floating debris booms shall be deployed in conjunction with the turbidity curtain to capture and contain floating debris generated during construction activities. The boom shall be securely anchored and inspected daily to ensure proper function and containment. Accumulated debris shall be removed as necessary to maintain effectiveness and prevent material from entering adjacent waterbodies. The turbidity curtain will remain in place until the engineer approves removal.

Silt fence with 30 pound per inch tensile strength will be installed in accordance with the Design Drawings. Placement of the silt fence is typically along the timber mat access paths. In locations where the limits of disturbance are within the jurisdictional wetland area, wetland protection barrier with four-foot tall steel fence posts, diamond mesh fencing (or equal), and warning signs indicating “Protected Area Keep Out” will be installed. See details on Design Drawing C-501 for additional information.

In accordance with the Design Drawings, in-water erosion and sediment controls will not be placed in existing sediment caps located south of the southernmost gabion basket wall section. The sediment caps will not be disturbed.

Upon project completion, all timber mats, silt fence, turbidity curtains, and debris booms will be removed from the Site and disposed of properly.

4.5 Cutting and Clearing

To access the shoreline, significant cutting and clearing is necessary. Cutting will be conducted in a manner which will prevent root removal and soil disturbance. Trees and shrubs will be removed above the root stock and vegetation will be cut down to the root. Soil will not be significantly exposed during this process.

4.6 Dust Control

Soil disturbance is not anticipated to be a major component of this work. The primary source of dust will be from cutting and clearing operations and the movement of stone materials during placement along the shoreline. If needed, the primary dust control technique will be the application of fine water spray.

A community air monitoring plan and dust monitoring stations will not be utilized during this work because no intrusive work in the waste is proposed.

4.7 Gabion Wall Stabilization

In accordance with the selected alternative, the gabion basket walls will be hardened by buttressing with heavy stone fill installed to match the top of the existing gabion basket wall. The extra heavy rip rap will be placed such that it grades to match the existing toe of stone, as presented on the Design Drawings, for each section of the shoreline. NYSDOT extra heavy rip rap meeting the gradation requirements outlined in the project specifications will be placed at a maximum one-to-one slope from the top of the existing gabion basket wall to meet the grade requirements and fill approximately three feet below the ordinary high water level.

Stone will be placed such that the largest stones are placed on the bottom of the slope and the layers are installed such that the weight of the stone is carried by the underlying material rather than adjacent rip rap.

Deterioration of the gabion baskets was identified along the water line and the stone at the top of the basket is bridged, therefore limiting the need to fill in the gabion baskets above the water line. However, if void space in the gabion baskets is noted during construction, the void space will be backfilled with light stone fill to supplement the existing gabion baskets.

As noted, sediment caps are located to the south of the project area and will not be disturbed during construction.

4.8 Imported Fill Requirements

Extra heavy rip rap shall conform with the following requirements:

Criteria	Percentage of Total by Weight
Heavier than 5,000 pounds (lbs)	80 percent (%)
1,500 to 5,000 lbs	20%

Light stone fill conforming to the following requirements will be placed to fill in gaps between the Extra Heavy Rip Rap:

Criteria	Percentage of Total by Weight
Less than 100 lbs	90-100%
Greater than 6 inches	50-100%
Less than ½ inch	0-10%

In accordance with DER-10, Section 5.4(5), the stone will consist of virgin material from a permitted mine or quarry. The stone fill will contain less than 10% by weight of material that would pass through a size 80 sieve and therefore no chemical testing is required. Once a contractor is retained for the construction, the contractor will complete a “Request to Import/Reuse Fill or Soil” form.

The design drawings and specifications include provisions for site restoration, as discussed in Section 4.9, and the import of topsoil as needed. However, the site access controls, including use of timber mats for all heavy equipment, will limit the need to restore significant areas of the Site.

If topsoil is imported to the Site, analytical testing in accordance with DER-10, Section 5.4(10) is required.

4.9 Restoration

On-land disturbance is anticipated to be minor based on cutting and clearing vegetation to minimize soil disturbance and use of timber mats for all construction vehicles. Upon completion of the work, the area of disturbance on-land will be restored with topsoil and seed to meet the stabilization requirements of the SWPPP. The vegetation cut to ground level without removing or damaging the root stock will produce root sprouts and restore the vegetated shoreline.

5.0 REMEDIAL ACTION IMPLEMENTATION

5.1 Contractor Procurement

Contractor procurement will commence after permits are received from the various agencies. During this process, request for proposals will be submitted to pre-qualified contractors. Standard bidding procedures such as a site walk and question-and-answer period will be initiated prior to bid submissions. Contractors will be pre-qualified based on technical merit, previous performance, safety qualifications and their ability to complete the scope of work within the project schedule.

5.2 Construction Activities

As noted previously, GES will hold the contract for construction. CHA will perform construction administration and construction observation. Construction administration includes review of contractor submittals, approval of payment applications, and related tasks. Construction observation includes preparation of daily logs to document work completed, documentation via photographs, communication of field conditions and potential design changes, and conflict resolution with the contractor. A CCR will be prepared by CHA and will be signed by a New York Licensed Professional Engineer. The CCR will include As-Builts prepared by the Contractor.

5.3 Post-Construction Monitoring

Following rehabilitation of the gabion basket wall, monitoring of the condition of the wall will continue as outlined in the approved Operations and Maintenance Plan for the Site. Inspections of the gabion basket wall, as well as inspections of the landfill infrastructure will continue to be conducted on a quarterly basis and reported in the annual Periodic Review Report (PRR).

6.0 SCHEDULE

The following is a preliminary scheduled for the work described herein assuming permits are obtained in July 2026.

Action Item	Target Date
DER Approval of 100% Plans/Specifications/Work Plan	End of June
Bid Project	July 1 – July 30, 2026
Mussel Survey	June 1 – June 12, 2026
Mussel Survey Report	June 30, 2026
NOCA, 15 Day Public Notice	July 13 – July 18, 2026

Obtain Necessary Permits	July 31, 2026
Contractor Mobilization	July 20 – August 14, 2026
Begin Construction	August 17, 2026

As part of providing the project status update, representatives from National Grid, Honeywell, and CHA met with the Department on January 29, 2026, to discuss the likelihood that required permits would be issued by mid-July 2026 to allow for construction in 2026. One of the factors that could delay permit issuance is whether imperiled mussels are identified and would require relocation. As the mussel survey cannot commence before May 15th and also when water temperature is at minimum of 55°F, this survey information will not be available until late June.

To address this uncertainty, CHA presented an alternate schedule for the project that is presented below. The Department, National Grid, Honeywell, and CHA are working collaboratively on understanding timing for permit issuance.

Action Item	Alternative Target Date
DER Approval of 100% Plans/Specifications/Work Plan	End of June 2026
Mussel Survey	June 1 to June 12, 2026
Mussel Survey Report	June 30, 2026
Obtain Necessary Permits	September 30, 2026
Perform Additional Inspection of Wall	Fall 2026
Bid Project	November 30, 2026
Award Project	January 31, 2027
Contractor Mobilization	July 1* - July 30, 2027
Begin Construction	August 4, 2027

** Target start date is immediately after the close of warm water fishery on June 30, 2027.*

7.0 REFERENCES

CHA Consulting, Inc. Cherry Farm Site Shoreline Stabilization Evaluation Report. Dated April 2025.

CHA Consulting, Inc. Stormwater Pollution Prevention Plan. Dated November 10, 2025.

CHA Consulting, Inc. Joint Permit Application: Cherry Farm Shoreline Stabilization Project. Submitted November 2025.

CHA Consulting, Inc. 60% Design Drawings and Specifications. Submitted December 2025.

International Niagara Working Committee. 2020-2021 Operation of the Lake Erie – Niagara River Ice Boom Report. Dated May 2021.

Parsons Engineering Science, Inc. Niagara River Phase II Sediment Investigation and Remedial Alternatives Scoping Report. Cherry Farm Site and River Road Site. Dated November 1996.

Record of Decision Site No. 915031 River Road. New York State Department of Environmental Conservation. Dated March 1994.

Record of Decision Site No. 915063 Cherry Farm Site. New York State Department of Environmental Conservation. Dated October 1993.

FIGURES



Niagara Mohawk - Cherry Farm

Site Location Map

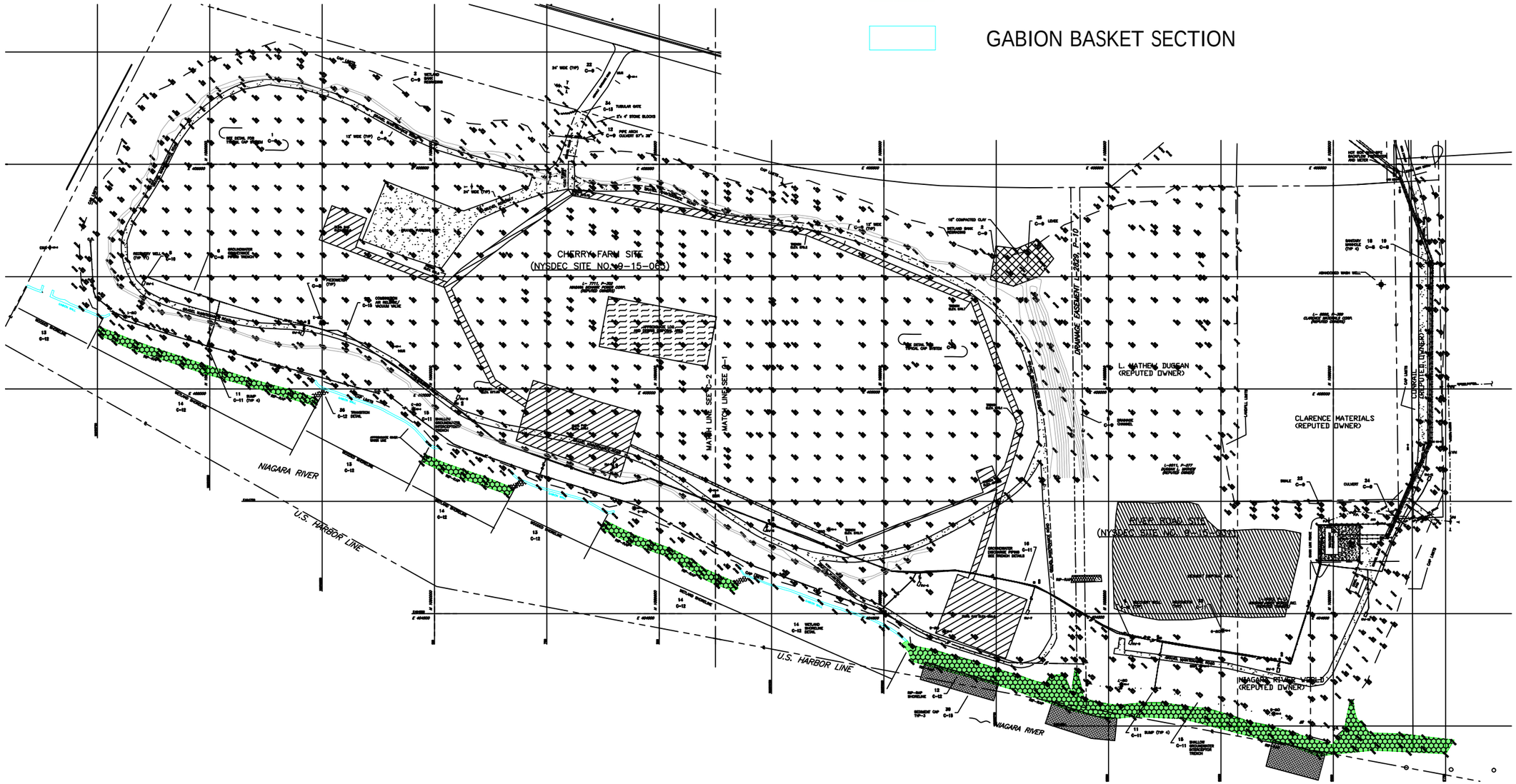
TONAWANDA, NEW YORK

FEBRUARY 2026

N

BARRIER ISLAND SECTION

GABION BASKET SECTION



0 120 240
Scale in feet

Drawing Copyright © 2026

111 Winners Circle, PO Box 5269
Albany, NY 12205-0269
518-453-4500 • www.chasenet.com

NATIONAL GRID
300 ERIE BOULEVARD WEST
SYRACUSE, NEW YORK 13202

SHORELINE STABILIZATION
SITE LAYOUT PLAN
NIAGARA MOHAWK - CHERRY FARM
TONAWANDA, NEW YORK
NYSDEC SITE NO. 915063

No.	Submittal / Revision	Apv	By	Date

SITE LAYOUT PLAN

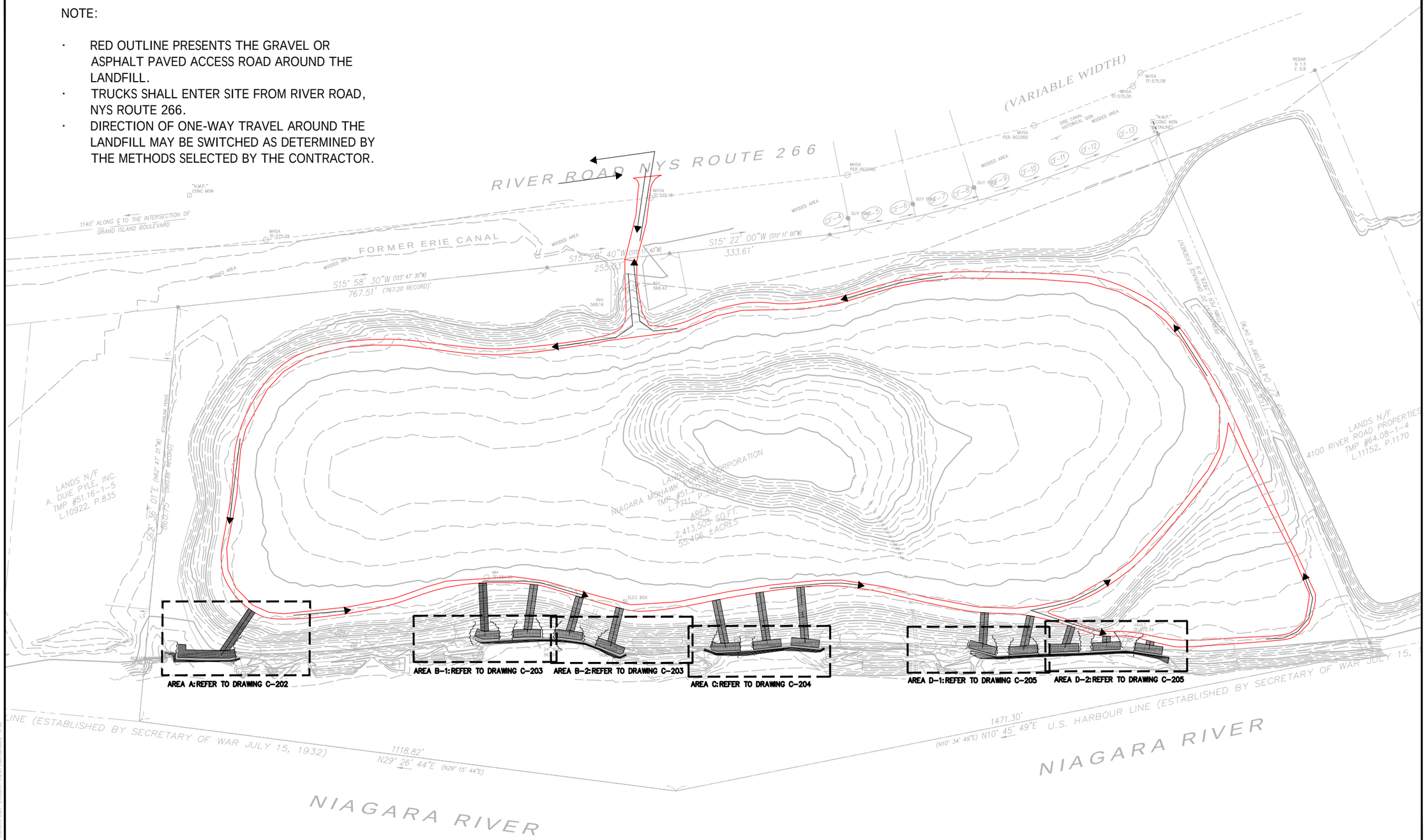
Designed By:	Drawn By:	Checked By:
OTHERS	OTHERS	KME
Issue Date:	Project No.:	Scale:
3/1/2026	093558	AS SHOWN

FIGURE 2

File: V:\PROJECTS\ANY\K7\093558.00009_DESIGN\DRAWINGS\ENV\CHERRYFARM-F_GABIONBASKET_BARRIERIS.AND.DWG
Saved: 2/5/2026 2:41:34 PM Plotted: 3/1/2026 3:08:12 PM Current User: Ehmann, Karyn LastSavedBy: 5768

NOTE:

- RED OUTLINE PRESENTS THE GRAVEL OR ASPHALT PAVED ACCESS ROAD AROUND THE LANDFILL.
- TRUCKS SHALL ENTER SITE FROM RIVER ROAD, NYS ROUTE 266.
- DIRECTION OF ONE-WAY TRAVEL AROUND THE LANDFILL MAY BE SWITCHED AS DETERMINED BY THE METHODS SELECTED BY THE CONTRACTOR.



TRUCK ROUTING PLAN
1"=80'

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CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision	Apv	By	Date
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

TRUCK ROUTING PLAN

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/01/2026	093558	AS SHOWN

Drawing No.:

Figure 3

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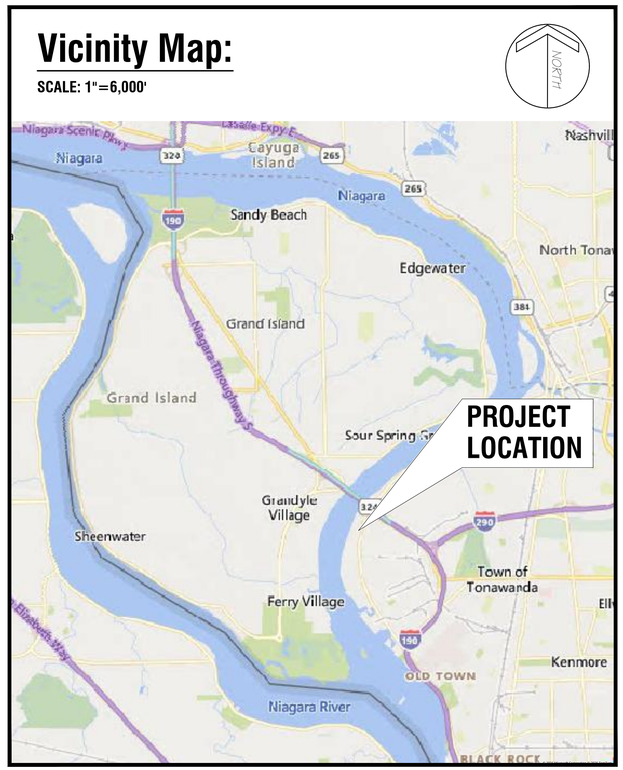
APPENDIX A

100% Design Drawings

CHERRY FARM
SHORELINE STABILIZATION PROJECT
TONAWANDA, NY 14510

Vicinity Map:

SCALE: 1"=6,000'



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C-002	EXISTING CONDITIONS PLAN AREA A
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1. SURVEY INFORMATION PRESENTED IN THIS PLAN SET IS BASED ON MAPPING PROVIDED BY GPI GEOSPATIAL.

GPI

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CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision			
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

TITLE SHEET

Designed By:	Drawn By:	Checked By:
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Issue Date:	Project No.:	Scale:
11/21/25	093558	AS SHOWN

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G-001

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GENERAL NOTES:

1. THE PLANS SHOW SUBSURFACE STRUCTURES, ABOVE GROUND STRUCTURES AND/OR UTILITIES FROM FIELD LOCATION AND RECORD MAPPING, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE DIFFERENT FROM THAT SHOWN OR MAY NOT BE SHOWN, AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL, OR BLAST, CALL U.F.P.O. 1-(800)-962-7962 TOLL FREE.
2. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.
3. THE CONTRACTOR SHALL RESTORE DAMAGED AREAS TO AT LEAST AS GOOD A CONDITION AS BEFORE BEING DISTURBED AS DETERMINED BY THE ENGINEER. ANY DAMAGED TREES, SHRUBS, AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC. AND SHALL COMPLY WITH ALL REQUIRED PERMITS.
5. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS.
6. THE ENGINEER RESERVES THE RIGHT TO EXAMINE ANY WORK DONE ON THIS PROJECT AT ANY TIME TO DETERMINE THE CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS OF THIS PROJECT, AS INTENDED AND INTERPRETED BY THE ENGINEER.
7. MISCELLANEOUS WORK NOT SPECIFICALLY SHOWN ON THE CONTRACT DRAWINGS SUCH AS PATCHING, BLOCKING, TRIMMING, ETC., SHALL BE PERFORMED AS REQUIRED TO MAKE THE WORK COMPLETE.
8. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND COORDINATE WORK WITH ANY OTHER CONTRACTS FOR THE SITE.
10. THE CONTRACTOR SHALL:
    - A. VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
    - B. EXAMINE THE SITE AND INCLUDE IN HIS WORK THE EFFECT OF ALL EXISTING CONDITIONS ON THE WORK.
    - C. PROVIDE AND INSTALL ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH RECOGNIZED GOOD STANDARD PRACTICE.
    - D. HOLD THE OWNER HARMLESS AGAINST ANY AND ALL CLAIMS ARISING FROM WORK DONE BY THE CONTRACTOR ON THE SITE.
11. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC IN ALL AREAS IN ACCORDANCE WITH THE NYSDOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
12. ALL EXCAVATIONS SHALL BE BACKFILLED TO EXISTING GRADE AT THE END OF EACH WORK DAY.
13. CONTRACTOR SHALL TAKE CARE TO PREVENT DAMAGE TO EXISTING UTILITIES. DAMAGED UTILITIES SHALL BE IMMEDIATELY REPAIRED BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
14. THE CONTRACTOR SHALL NOT STOCKPILE WORK RELATED MATERIALS AND/OR EQUIPMENT WITHIN EASEMENTS. CONTRACTOR SHALL NOT TRESPASS ON PRIVATE PROPERTY, UNLESS WRITTEN APPROVAL IS GRANTED BY THE PROPERTY OWNER.
15. CONTRACTOR SHALL CONFINE CONSTRUCTION EQUIPMENT, STORAGE OF MATERIALS, AND OPERATION OF WORKS TO THE SITE AND LAND AREAS IDENTIFIED IN AND PERMITTED BY THE CONTRACT DOCUMENTS AND OTHER LAND AREAS PERMITTED BY LAWS AND REGULATIONS, RIGHTS-OF-WAY, PERMITS, AND EASEMENTS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL STAKEOUT AND SURVEY OF PROPERTY LINES TO ENSURE THEY DO NOT TRESPASS ON PRIVATE PROPERTY OR UNREASONABLY ENCUMBER THE PREMISES WITH CONSTRUCTION EQUIPMENT OR OTHER MATERIALS AND EQUIPMENT. CONTRACTOR TO ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO ANY LAND OR AREA, OR TO THE OWNER OR OCCUPANT THEREOF OR OF ANY ADJACENT LAND OR AREAS RESULTING FROM THE PERFORMANCE OF THE WORK.
16. THE CONTRACTOR SHALL TAKE CARE TO PREVENT DAMAGE TO EXISTING UTILITIES. IN THE EVENT OF DAMAGE TO EXISTING UTILITIES, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY, TAKE NECESSARY PRECAUTIONS TO PREVENT INJURY OR FURTHER DAMAGE, AND NOTIFY PROPER AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING/REPAIRING ALL EXISTING STRUCTURES, CONDUITS, OR OTHER UTILITIES DAMAGED BY CONTRACTOR OPERATIONS AT NO COST TO THE OWNER.
17. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY 72 HOURS PRIOR TO WORKING IN CLOSE PROXIMITY TO EXISTING UTILITY POLES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY AND THE CONTRACTOR IS RESPONSIBLE FOR ALL ADDITIONAL SUPPORT REQUIRED TO MAINTAIN THE INTEGRITY OF THE UTILITY POLES DURING CONSTRUCTION.
18. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CLIENT AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
19. DAILY CLEAN UP OPERATIONS SHALL BE PERFORMED AND BE TO THE SATISFACTION OF THE OWNER.
20. ALL VEGETATION CLEARING SHALL BE LIMITED TO FLUSH CUT, ABOVE-GRADE REMOVAL ONLY. TREES AND SHRUBS SHALL NOT BE GRUBBED. ROOT MASSES AND STUMPS SHALL REMAIN IN PLACE TO SUPPORT BANK STABILIZATION AND ALLOW FOR NATURAL REGENERATION THROUGH STUMP SPROUTING.
21. TREE LIMBS AND BRUSH SHALL BE CHIPPED, REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATIONS.
22. TREE LOG LENGTHS SHALL BE PLACED IN A LOG LANDING AREA APPROVED AND LOCATED BY THE OWNER AND REMOVED FROM THE SITE. MOVEMENT OF TREE FELLING AND LOG HANDLING EQUIPMENT SHALL ONLY BE ON EXISTING SITE ROADWAYS OR ON TIMBER MATTING AS NOTED ON THE PLANS. IN NO INSTANCE SHALL THE CONTRACTOR MOVE LOGS OR EQUIPMENT ANYWHERE ON SITE EXCEPT AS NOTED ABOVE.

SURVEY NOTES:

1. BASE MAPPING WAS PREPARED BY GPI GEOSPATIAL FROM A MAY 2012 FIELD SURVEY (ROCH. FB.138, P.66). SUPPLEMENTED WITH AERIAL MAPPING PREPARED FROM AERIAL PHOTOGRAPHY TAKEN ON MARCH 21, 2012.
2. NORTH ORIENTATION AND CONTOURS ARE BASED ON GPS ESTABLISHED AT THE TIME OF THE SURVEY. REFERENCED TO NAD 83(CORS96), NYS-WEST (US FEET) AND NAVD 88 (US FEET) USING NYSDOT RTN SYSTEM.
3. UNDERGROUND UTILITIES ARE SHOWN FROM FIELD LOCATION IF POSSIBLE, OTHERS ARE SHOWN FROM RECORD DATA. THEIR EXACT LOCATION MAY DIFFER FROM THAT AS SHOWN AND OTHERS MAY EXIST.
4. THE SURVEY WAS MADE WITHOUT THE BENEFIT OF AN UPDATED ABSTRACT.
5. SUBJECT TO ANY RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS OF RECORD.
6. RECORD BEARINGS SHOWN IN PARENTHESIS PER REFERENCE No. 1.
7. NO BUILDINGS EXIST ON THE SURVEYED PROPERTY.
8. INTENDING TO SURVEY PROPERTY NOW OR FORMERLY NIAGARA POWER CORPORATION. ADDITIONAL TOPOGRAPHIC MAPPING SHOWN ON ADJOINING PARCELS FOR REFERENCE ONLY.
9. VEGETATION TRANSPOSED FROM AERIAL IMAGERY ON 8/18/2025.
10. WETLAND BOUNDARY PROVIDED BY CHA CONSULTING FROM SITE VISIT ON 5/20/2025. WETLAND BOUNDARY SHOWN IS BASED ON FIELD DELINEATION CONDUCTED WITHIN PROPERTY LIMITS ONLY.
11. THE POSITION OF THE GRAVEL ACCESS ROAD SHOWN ON THESE PLANS WAS LOCATED PER THE AS BUILTS BY PARSONS ENGINEERING SCIENCE, INC. (DATED 01/26/96). EXACT LOCATION IS NOT KNOWN AND SHOULD BE FIELD VERIFIED PRIOR TO ANY CONSTRUCTION.
12. SUPPLEMENTAL CONTOUR LINES EXTRACTED FROM LIDAR DATA BY CHA CONSULTING WERE ADDED ON 08/26/2025.

EROSION AND SEDIMENT CONTROL NOTES

1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED FROM GOVERNING AUTHORITIES.
2. THE GENERAL SUBCONTRACTOR SHALL STRICTLY ADHERE TO THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION OPERATIONS.
3. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED. (SILT SOCKS AND STABILIZED CONSTRUCTION ENTRANCE.)
4. ALL EXPOSED AREAS SHALL BE SEEDED AND MULCHED AS SPECIFIED WITHIN 7 DAYS OF FINAL GRADING.
5. INACTIVE PORTIONS OF THE SITE ARE TO BE SEEDED AND MULCHED AS SPECIFIED WITHIN 7 DAYS.
6. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) DAYS OR MORE FREQUENTLY IF REQUIRED. ALL MAINTENANCE REQUIRED BY INSPECTION SHALL COMMENCE WITHIN 24 HOURS AND BE COMPLETED WITHIN 48 HOURS OF REPORT.
7. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL SUBCONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
8. GENERAL SUBCONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
9. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
10. SEDIMENT SHALL BE REMOVED FROM THE TEMPORARY SEDIMENT BASIN/TRAPS BEFORE IT IS 33% FULL AND FROM SILT SOCKS BEFORE IT IS 33% FULL.
11. SUBCONTRACTOR TO INSTALL AND MAINTAIN TEMPORARY TIMBER MATTING AS REQUIRED.
12. AT THE END OF EACH WORK DAY DISTURBED SOILS ARE TO BE REGRADED TO DRAIN INTO THE TEMPORARY DIVERSION SWALES AND DISCHARGES FROM DEWATERING ACTIVITES ARE TO BE DIRECTED INTO SWALES.
13. THE SUBCONTRACTOR WILL BE RESPONSIBLE FOR INSPECTING TRUCK TIRES AND BRUSHING/CLEANING AS NEEDED TO PREVENT TRACKING OF SOIL/SEDIMENT OFFSITE.

LEGEND

DESCRIPTION	EXISTING	PROPOSED
SIGN	OR	OR
5' OR 10' CONTOUR LINE	250	250
1' OR 2' CONTOUR LINE	202	202
SPOT ELEVATION	120.5 OR x120.5	120.5 OR x120.5
TELEPHONE CABLE		TELE
EASEMENT LINE		
ADJOINERS PROPERTY LINE		
PROPERTY LINE		
MONITORING WELL	MW/RW	
OBSERVATION WELL	OW	
TRENCH SUMP		
SANITARY MANHOLE	MH SAN	
WATER VALVE		
LIGHT POLE		
POWER POLE		
GUY POLE		
FENCE POST		
IRON PIPE		
REBAR		
EDGE OF WOODS		
LIMIT OF DISTURBANCE		LOD
WETLAND BOUNDARY		
TREES, SHRUBS, BUSHES		
DETAIL CALLOUT	X = DETAIL IDENTIFICATION NO.; X-X = SHEET NO. WHERE DETAIL IS SHOWN	
DETAIL IDENTIFICATION NO.	X DETAIL TITLE	

NOTE: SOME FEATURES IN THE LEGEND MAY NOT HAVE BEEN USED

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CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

NOTES & LEGEND

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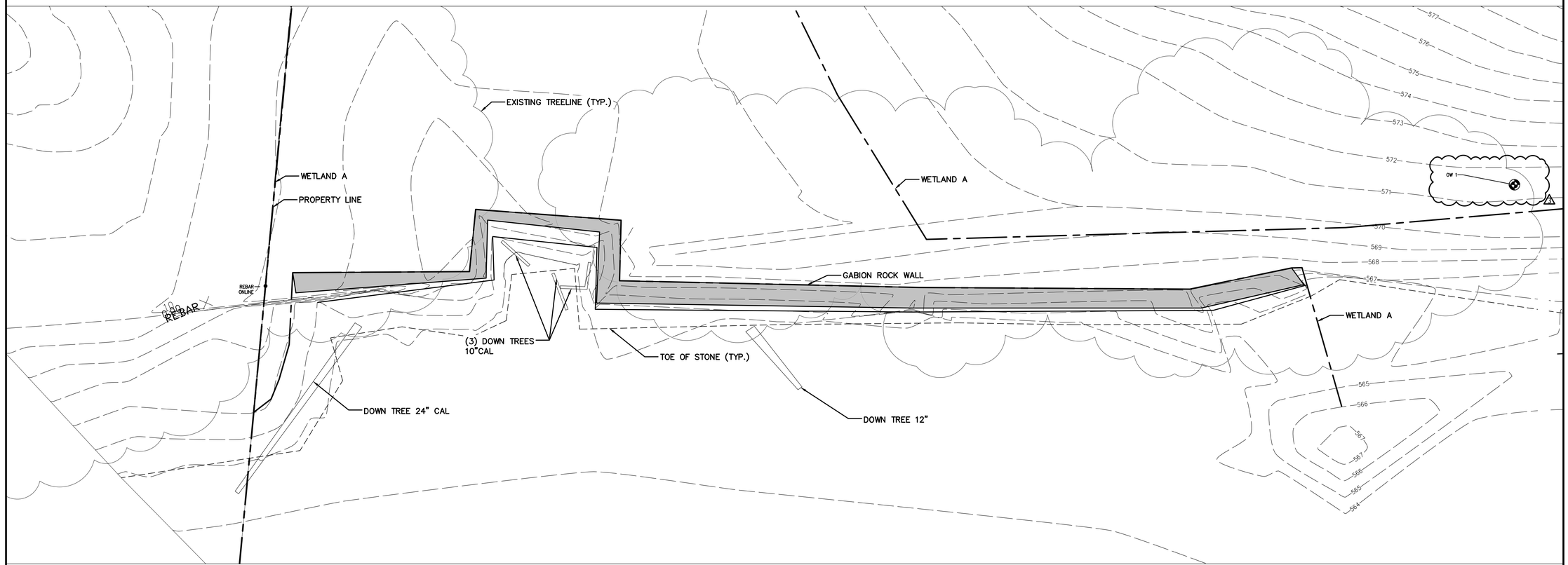
OVERALL EXISTING CONDITIONS PLAN

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03/12/2026	093558	AS SHOWN

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Scale in feet

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EXISTING CONDITIONS PLAN AREA A
1"=10'

0 10 20
Scale in feet

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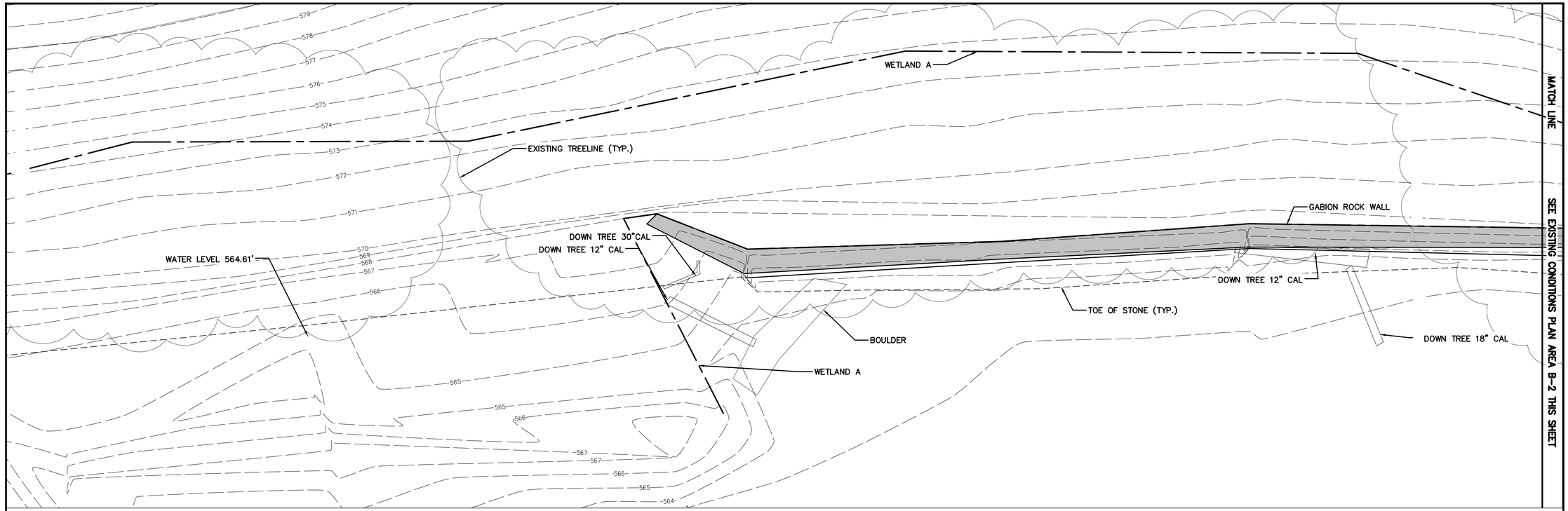
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1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

EXISTING CONDITIONS PLAN AREA A

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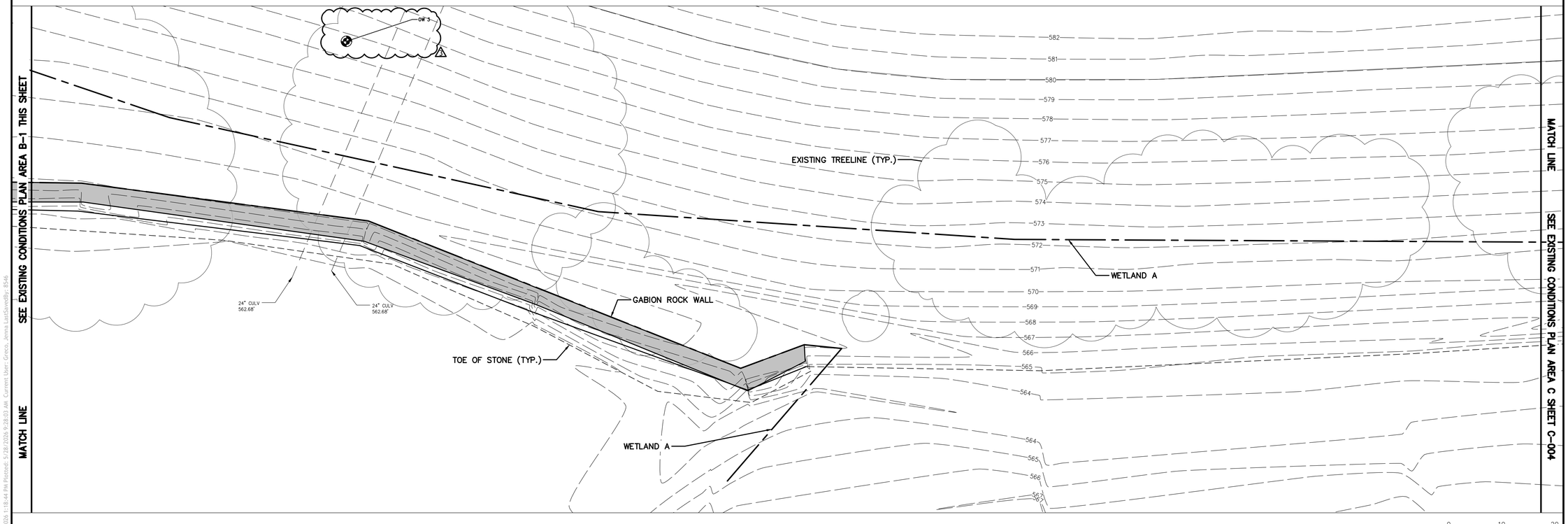
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EXISTING CONDITIONS PLAN AREA B-1
1"=10'

0 10 20
Scale in feet



EXISTING CONDITIONS PLAN AREA B-2
1"=10'

0 10 20
Scale in feet

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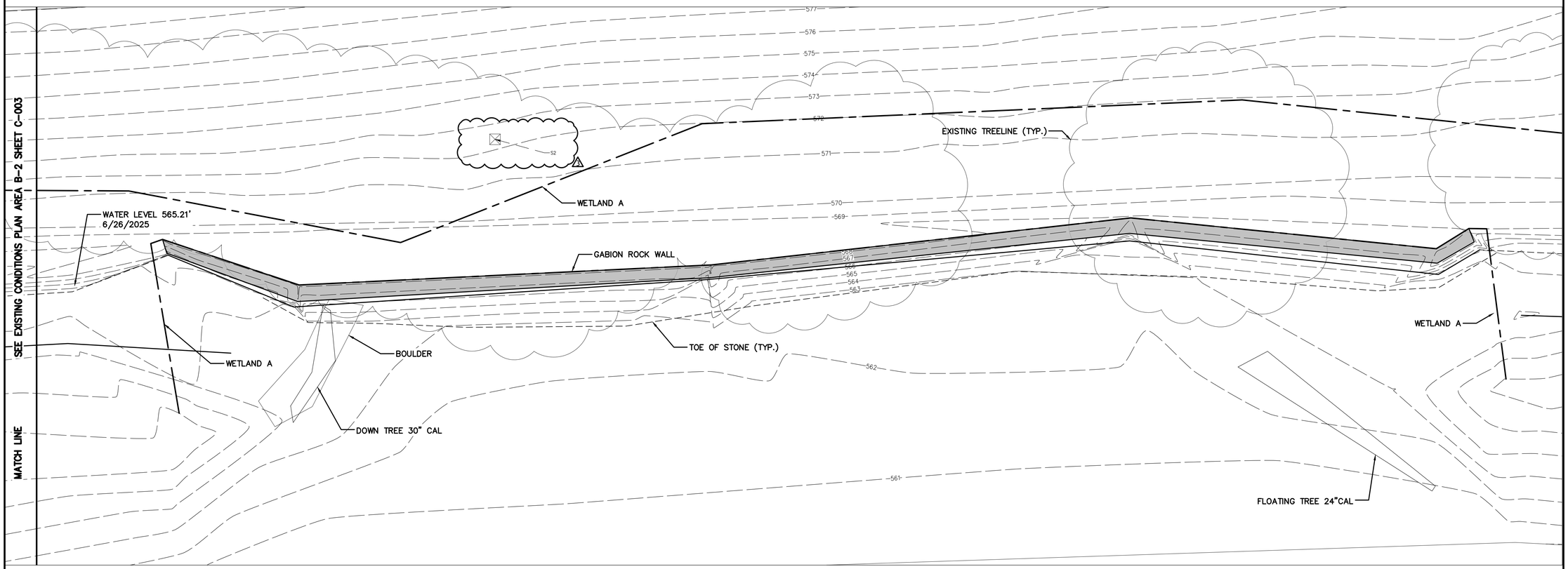
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2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

EXISTING CONDITIONS PLAN AREA B

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C-003

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EXISTING CONDITIONS PLAN AREA C
1"=10'

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CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

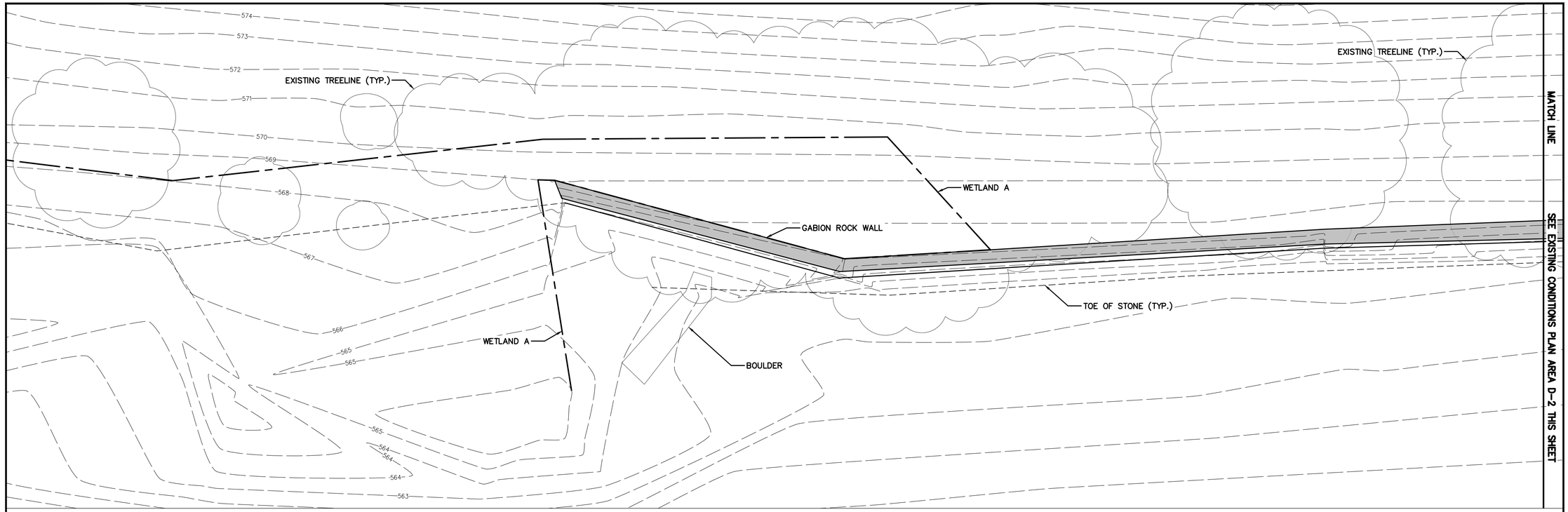
No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

EXISTING CONDITIONS PLAN AREA C

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

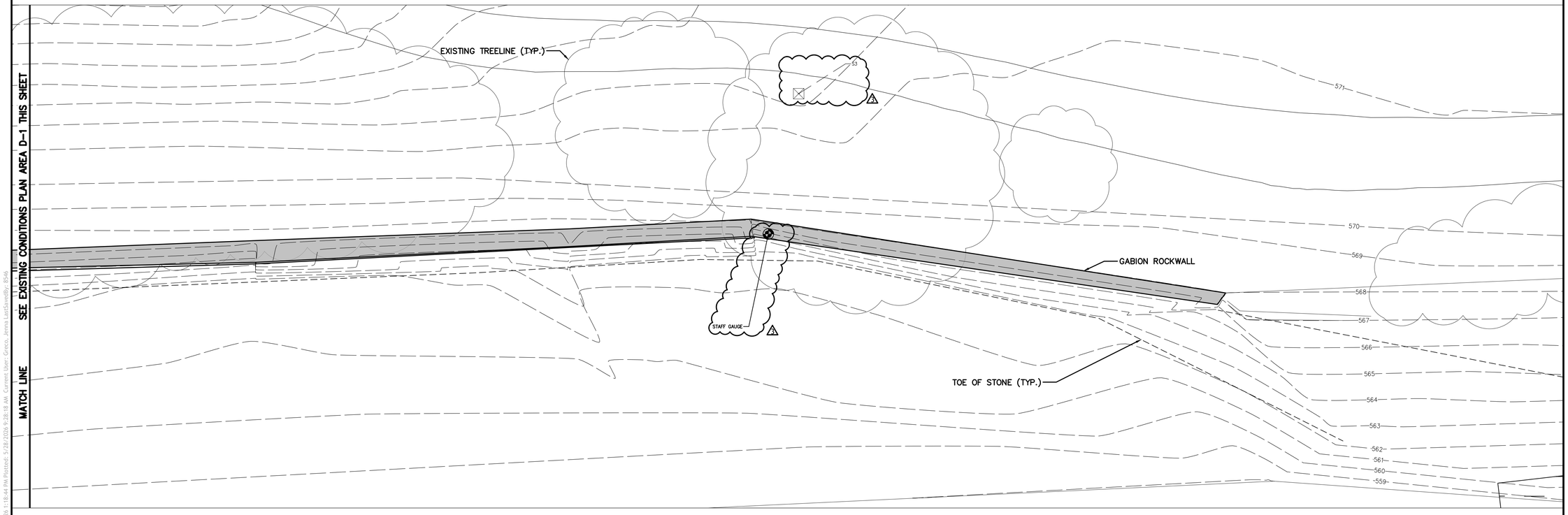
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EXISTING CONDITIONS PLAN AREA D-1
1"=10'

0 10 20
Scale in feet



EXISTING CONDITIONS PLAN AREA D-2
1"=10'

0 10 20
Scale in feet

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CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

EXISTING CONDITIONS PLAN AREA D

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-005

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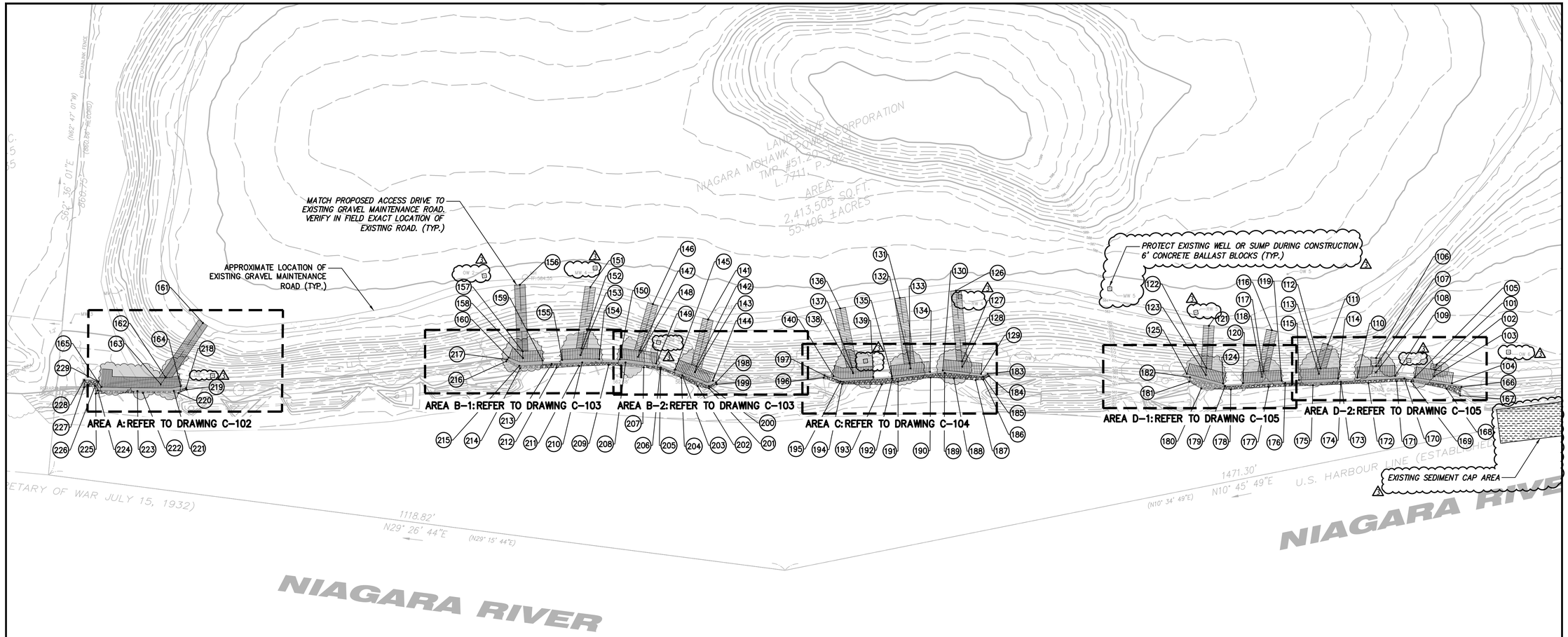
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POINT TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
101	1089007.96	1052840.88	TM
102	1089012.31	1052834.34	TM
103	1089017.84	1052826.04	CC
104	1088996.68	1052806.33	TM
105	1089045.22	1052835.39	TM
106	1089088.18	1052884.68	TM
107	1089093.02	1052873.15	TM
108	1089096.65	1052864.48	CC
109	1089071.92	1052848.84	TM
110	1089125.71	1052867.80	TM
111	1089148.07	1052930.53	TM
112	1089171.94	1052901.33	TM
113	1089177.21	1052894.90	CC
114	1089152.80	1052877.45	TM
115	1089208.40	1052897.44	TM
116	1089218.16	1052982.37	TM
117	1089253.40	1052929.91	TM
118	1089258.35	1052922.53	CC
119	1089233.16	1052906.25	TM
120	1089288.27	1052924.73	TM

POINT TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
121	1089303.47	1053024.19	TM
122	1089331.03	1052966.53	TM
123	1089335.52	1052957.13	CC
124	1089316.40	1052935.57	TM
125	1089361.44	1052969.55	TM
126	1089636.82	1053216.35	TM
127	1089668.30	1053114.18	TM
128	1089670.66	1053106.53	CC
129	1089648.92	1053085.85	TM
130	1089700.21	1053112.23	TM
131	1089719.30	1053237.85	TM
132	1089742.81	1053140.79	TM
133	1089744.55	1053133.58	CC
134	1089718.88	1053117.46	TM
135	1089774.55	1053133.07	TM
136	1089808.43	1053256.94	TM
137	1089825.25	1053167.80	TM
138	1089826.86	1053159.28	CC
139	1089801.01	1053142.37	TM
140	1089856.04	1053166.24	TM

POINT TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
141	1089999.08	1053316.37	TM
142	1090042.12	1053257.13	TM
143	1090047.20	1053250.06	CC
144	1090026.87	1053228.01	TM
145	1090073.34	1053264.79	TM
146	1090067.36	1053369.17	TM
147	1090112.10	1053311.42	TM
148	1090118.06	1053303.73	CC
149	1090096.48	1053284.17	TM
150	1090145.10	1053310.59	TM
151	1090145.18	1053428.16	TM
152	1090191.98	1053347.67	TM
153	1090197.23	1053338.64	CC
154	1090173.48	1053322.57	TM
155	1090225.71	1053342.45	TM
156	1090242.33	1053471.29	TM
157	1090276.02	1053376.86	TM
158	1090279.46	1053367.22	CC
159	1090253.54	1053352.12	TM
160	1090298.98	1053375.74	TM

POINT TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
161	1090706.23	1053597.32	TM
162	1090789.29	1053542.49	TM
163	1090799.90	1053535.48	CC
164	1090773.29	1053521.63	TM
165	1090884.29	1053565.35	TM
166	1088985.64	1052795.77	SS
167	1088992.23	1052784.48	SS
168	1089007.36	1052801.73	SS
169	1089052.58	1052831.76	SS
170	1089060.42	1052840.05	SS
171	1089072.94	1052840.31	SS
172	1089113.26	1052853.94	SS
173	1089150.86	1052871.33	SS
174	1089152.60	1052868.01	SS
175	1089191.93	1052882.09	SS
176	1089229.33	1052901.05	SS
177	1089254.78	1052904.83	SS
178	1089308.90	1052922.83	SS
179	1089315.00	1052930.81	SS
180	1089349.72	1052940.96	SS

POINT TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
181	1089362.57	1052957.10	SS
182	1089359.15	1052962.87	SS
183	1089639.62	1053082.06	SS
184	1089638.96	1053078.21	SS
185	1089647.58	1053080.97	SS
186	1089648.96	1053076.61	SS
187	1089659.90	1053080.35	SS
188	1089689.35	1053095.09	SS
189	1089699.07	1053107.89	SS
190	1089721.45	1053109.30	SS
191	1089769.18	1053121.68	SS
192	1089775.19	1053129.76	SS
193	1089793.35	1053127.28	SS
194	1089848.47	1053150.36	SS
195	1089849.30	1053154.78	SS
196	1089870.68	1053169.51	SS
197	1089868.19	1053172.43	SS
198	1090023.61	1053223.87	SS
199	1090023.67	1053220.85	SS
200	1090035.65	1053222.92	SS

POINT TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
201	1090036.83	1053219.64	SS
202	1090051.54	1053229.09	SS
203	1090066.69	1053253.01	SS
204	1090069.41	1053249.92	SS
205	1090092.26	1053276.14	SS
206	1090093.98	1053273.79	SS
207	1090116.09	1053285.79	SS
208	1090138.67	1053302.92	SS
209	1090163.73	1053309.03	SS
210	1090199.10	1053327.50	SS
211	1090205.27	1053324.10	SS
212	1090238.04	1053334.84	SS
213	1090242.68	1053342.75	SS
214	1090289.22	1053354.44	SS
215	1090288.71	1053358.45	SS
216	1090304.48	1053372.09	SS
217	1090302.15	1053373.99	SS
218	1090766.60	1053515.88	SS
219	1090766.75	1053513.28	SS
220	1090780.28	1053513.32	SS

POINT TABLE			
POINT NO.	NORTHING	EASTING	DESCRIPTION
221	1090785.37	1053518.92	SS
222	1090829.57	1053533.56	SS
223	1090836.31	1053539.22	SS
224	1090891.20	1053562.56	SS
225	1090896.01	1053559.21	SS
226	1090892.58	1053570.16	SS
227	1090908.68	1053574.71	SS
228	1090904.32	1053584.73	SS
229	1090885.64	1053574.74	SS

DESCRIPTION KEY:

TM: TIMBER MAT
CC: CENTER OF CLEARING
SS: STONE STABILIZATION

CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

OVERALL LAYOUT PLAN

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-101

OVERALL LAYOUT PLAN
1"=80'

0 80 160
Scale in feet

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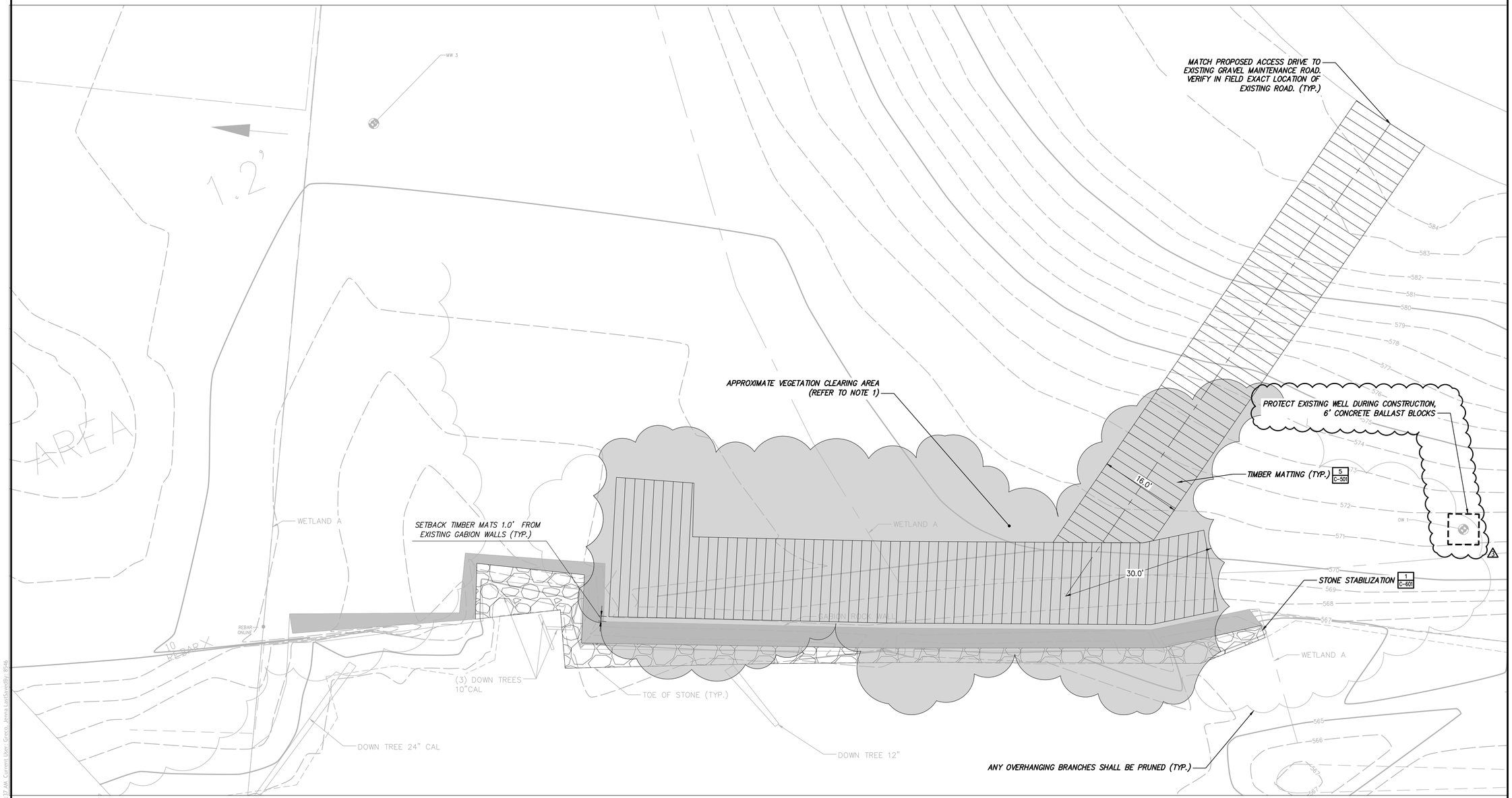
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LAYOUT PLAN AREA A
1"=10'

0 10 20
Scale in feet

NOTES:

1. ALL VEGETATION CLEARING SHALL BE LIMITED TO ABOVE-GROUND REMOVAL ONLY. TREES AND SHRUBS SHALL NOT BE UPROOTED. ROOT MASSES AND STUMPS SHALL REMAIN IN PLACE TO SUPPORT BANK STABILIZATION AND ALLOW FOR NATURAL REGENERATION THROUGH STUMP SPROUTING.
2. ANY PORTIONS OF THE EXISTING GRAVEL MAINTENANCE ROAD THAT ARE DAMAGED OR DISTURBED DURING CONSTRUCTION SHALL BE RESTORED. REFER TO DETAIL 2 SHEET C-601.

CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

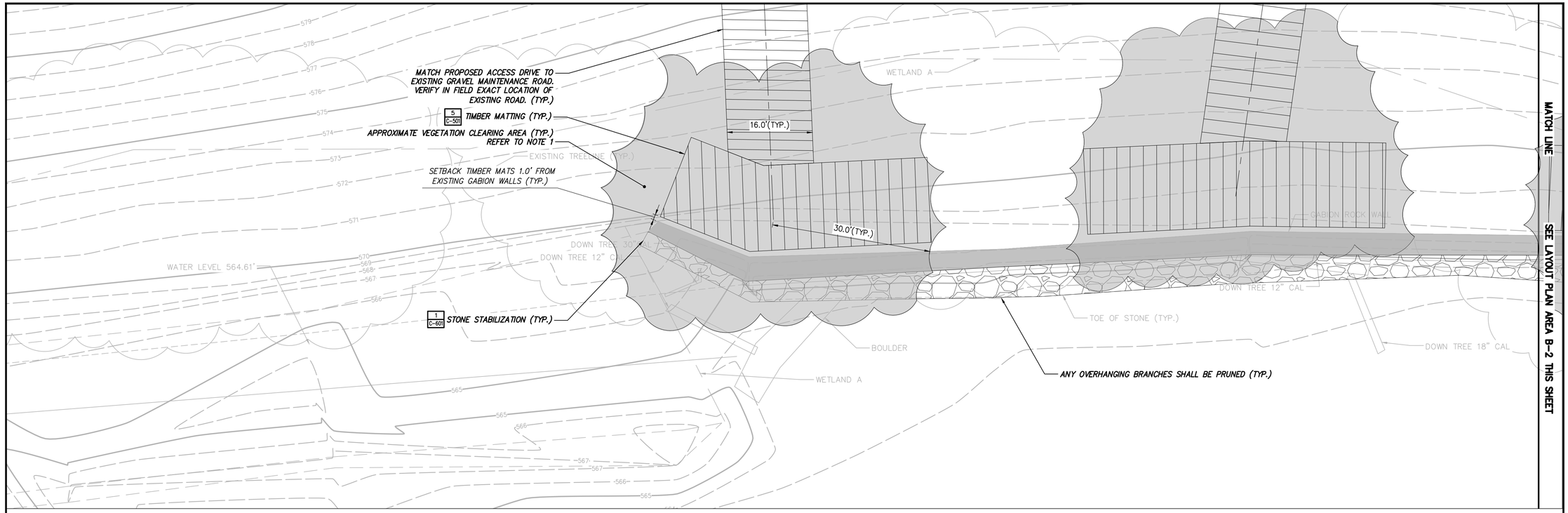
No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

LAYOUT PLAN AREA A

Designed By:	Drawn By:	Checked By:
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Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

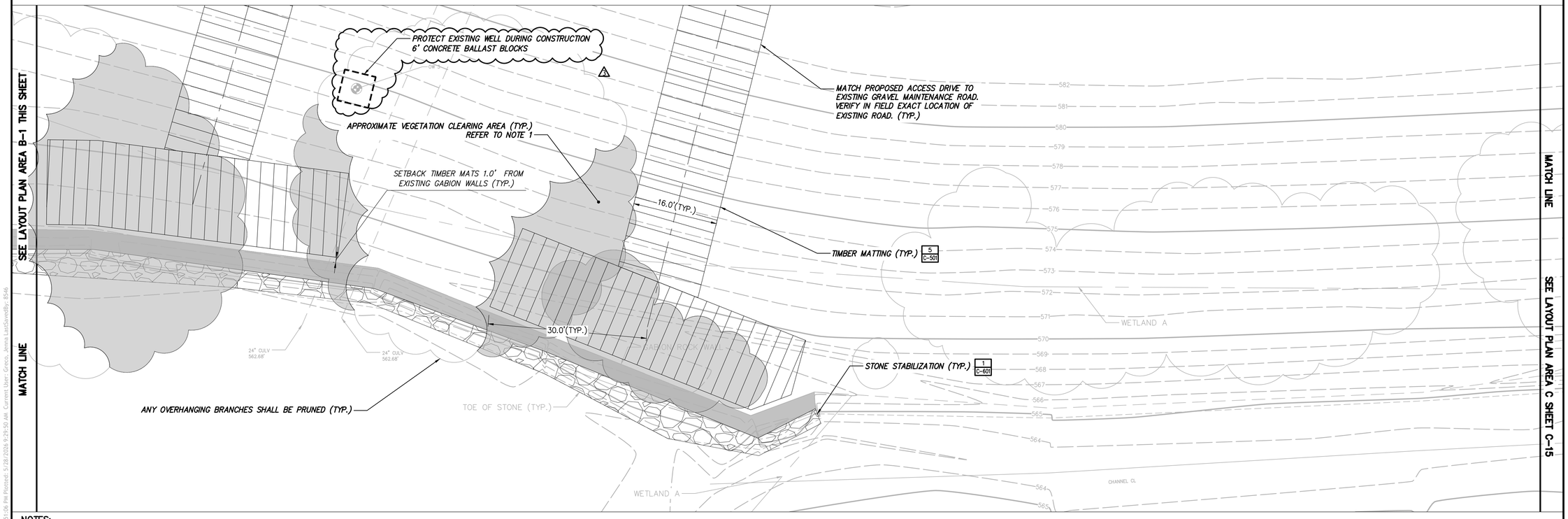
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LAYOUT PLAN AREA B–1
1"=10'

0 10 20
Scale in feet



NOTES:

1. ALL VEGETATION CLEARING SHALL BE LIMITED TO ABOVE–GROUND REMOVAL ONLY. TREES AND SHRUBS SHALL NOT BE UPROOTED. ROOT MASSES AND STUMPS SHALL REMAIN IN PLACE TO SUPPORT BANK STABILIZATION AND ALLOW FOR NATURAL REGENERATION THROUGH STUMP SPROUTING.
2. ANY PORTIONS OF THE EXISTING GRAVEL MAINTENANCE ROAD THAT ARE DAMAGED OR DISTURBED DURING CONSTRUCTION SHALL BE RESTORED. REFER TO DETAIL 2 SHEET C–601.

LAYOUT PLAN AREA B–2
1"=10'

0 10 20
Scale in feet

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CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

LAYOUT PLAN
AREA B

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-103

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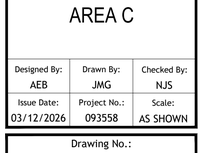
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NOTES:

1. ALL VEGETATION CLEARING SHALL BE LIMITED TO ABOVE-GROUND REMOVAL ONLY. TREES AND SHRUBS SHALL NOT BE UPROOTED. ROOT MASSES AND STUMPS SHALL REMAIN IN PLACE TO SUPPORT BANK STABILIZATION AND ALLOW FOR NATURAL REGENERATION THROUGH STUMP SPROUTING.
2. ANY PORTIONS OF THE EXISTING GRAVEL MAINTENANCE ROAD THAT ARE DAMAGED OR DISTURBED DURING CONSTRUCTION SHALL BE RESTORED. REFER TO DETAIL 2 SHEET C-601.

LAYOUT PLAN AREA C
1"=10'

0 10 20
Scale in feet

CHERRY FARMS SHORELINE STABILIZATION PROJECT

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NYSDEC SITE NO. 915063

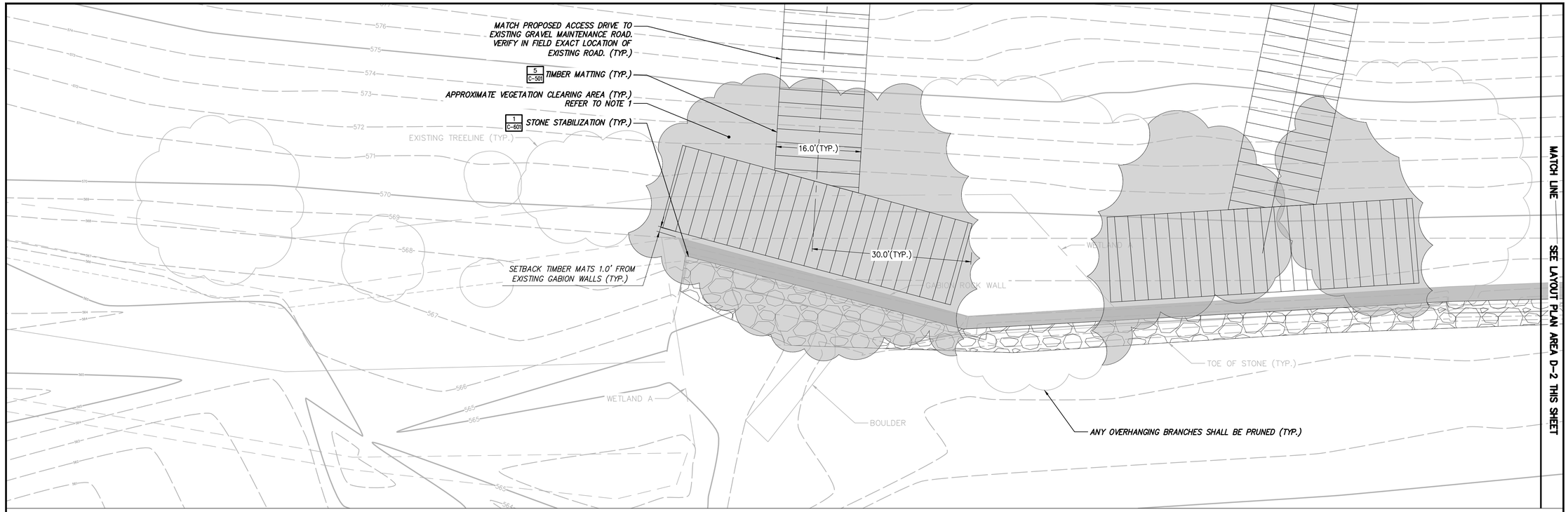
No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

LAYOUT PLAN AREA C

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-104

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LAYOUT PLAN AREA D–1
1"=10'

0 10 20
Scale in feet



LAYOUT PLAN AREA D–2
1"=10'

0 10 20
Scale in feet

NOTES:

1. ALL VEGETATION CLEARING SHALL BE LIMITED TO ABOVE–GROUND REMOVAL ONLY. TREES AND SHRUBS SHALL NOT BE UPROOTED. ROOT MASSES AND STUMPS SHALL REMAIN IN PLACE TO SUPPORT BANK STABILIZATION AND ALLOW FOR NATURAL REGENERATION THROUGH STUMP SPROUTING.
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TONAWANDA,
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NYSDEC SITE NO. 915063

No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

LAYOUT PLAN AREA D

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-105

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CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

OVERALL GRADING PLAN

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-201

OVERALL GRADING PLAN
1"=80'

0 80 160
Scale in feet

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CHERRY FARMS SHORELINE STABILIZATION PROJECT

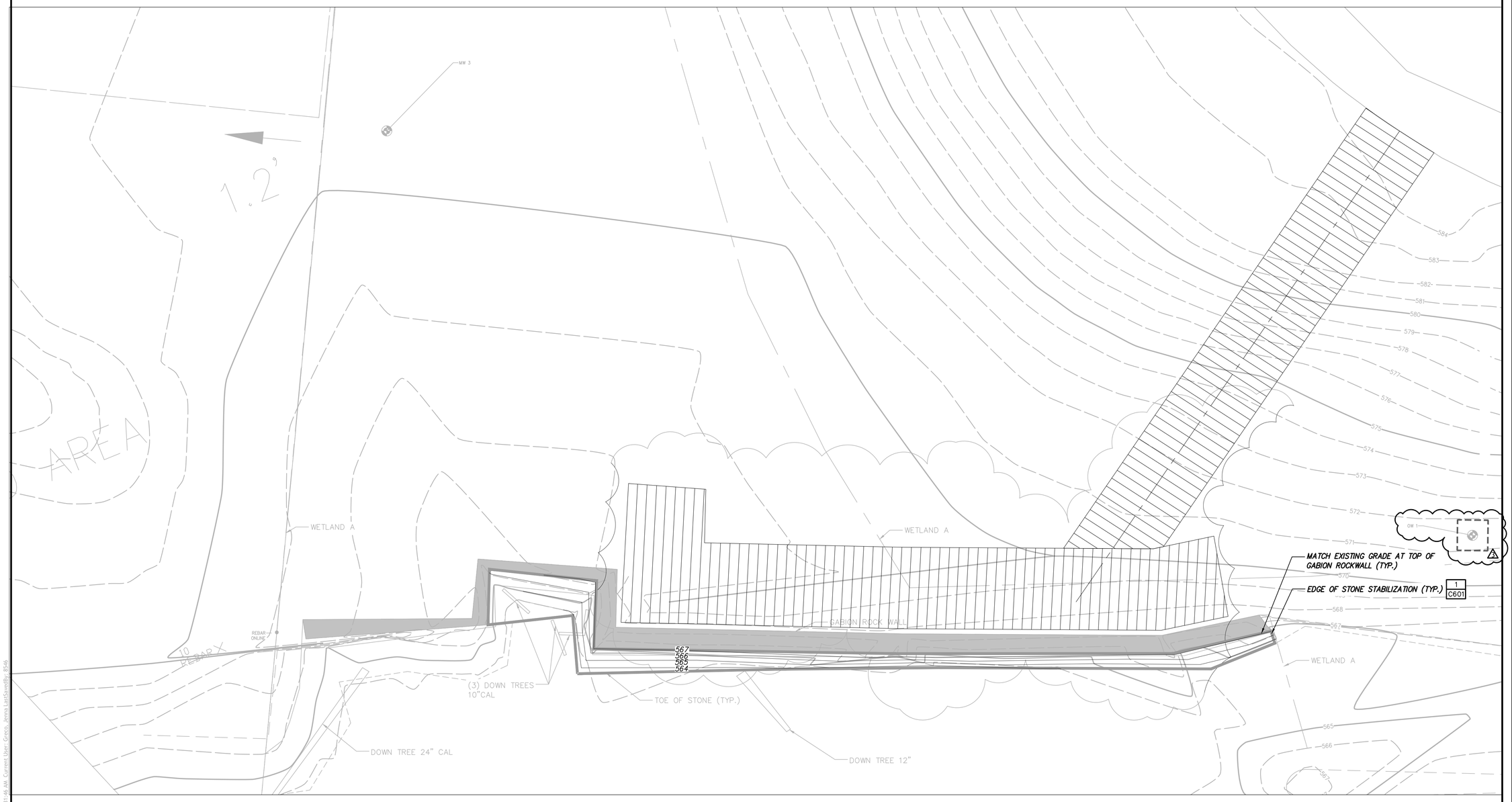
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No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

GRADING PLAN
AREA A

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AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-202



GRADING PLAN AREA A
1"=10'

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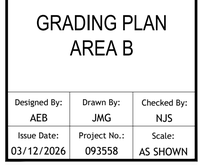
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CHERRY FARMS SHORELINE STABILIZATION PROJECT

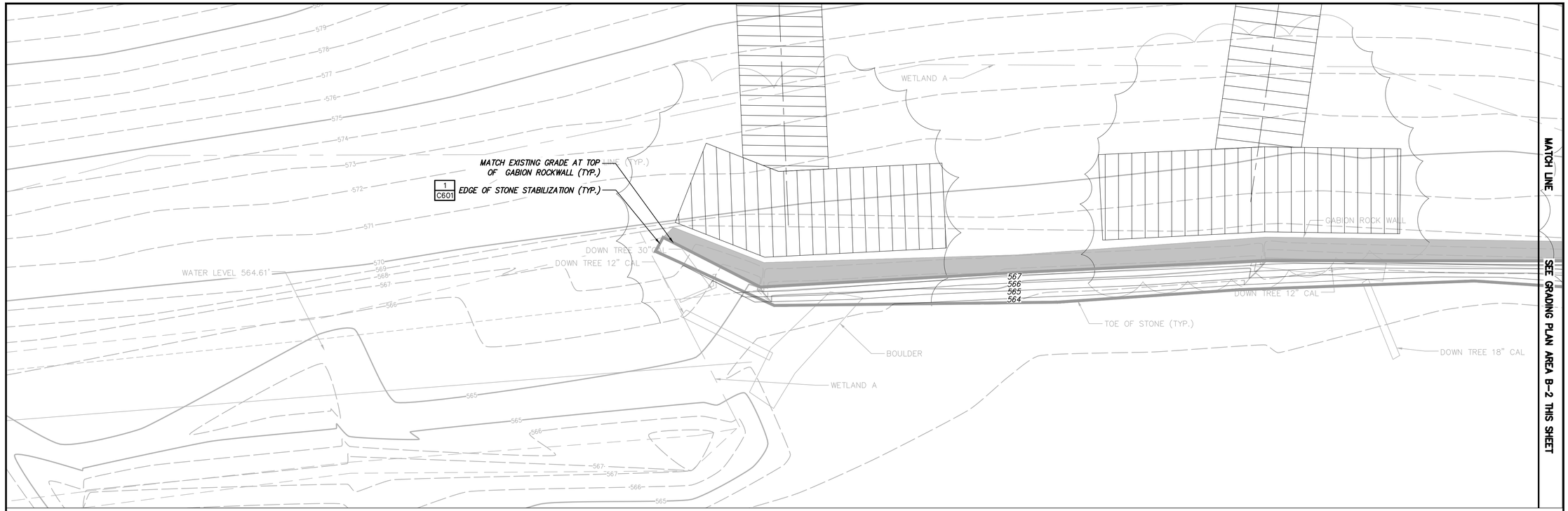
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No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

GRADING PLAN
AREA B

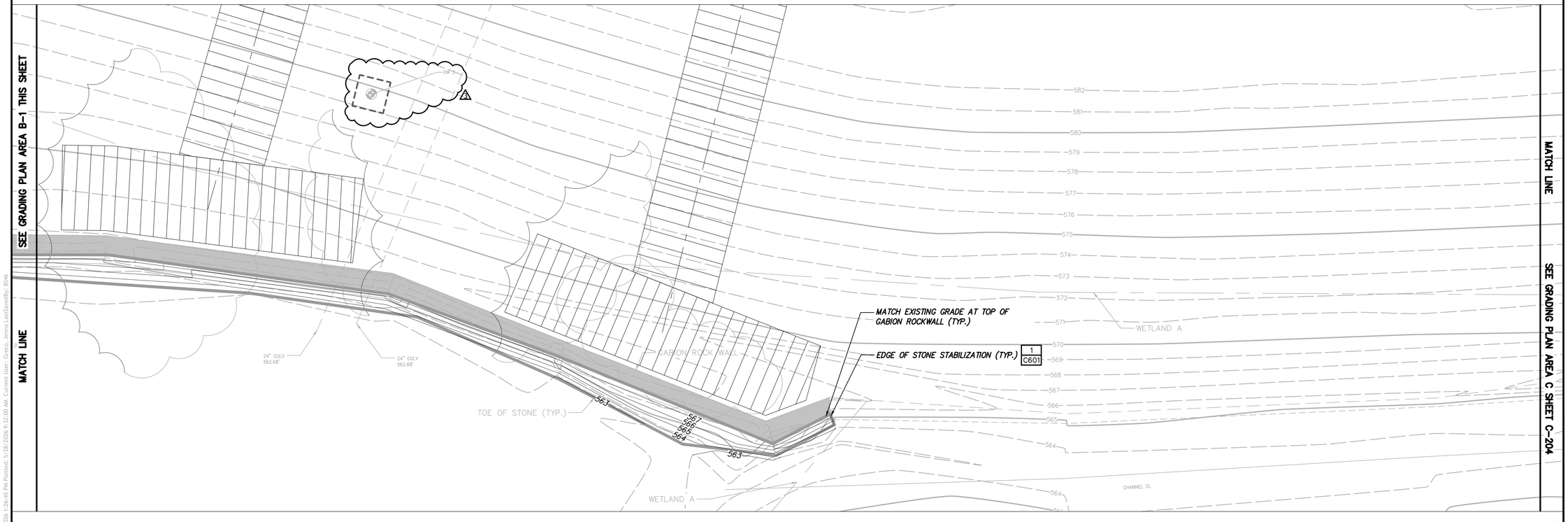
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Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-203



GRADING PLAN AREA B-1
1"=10'

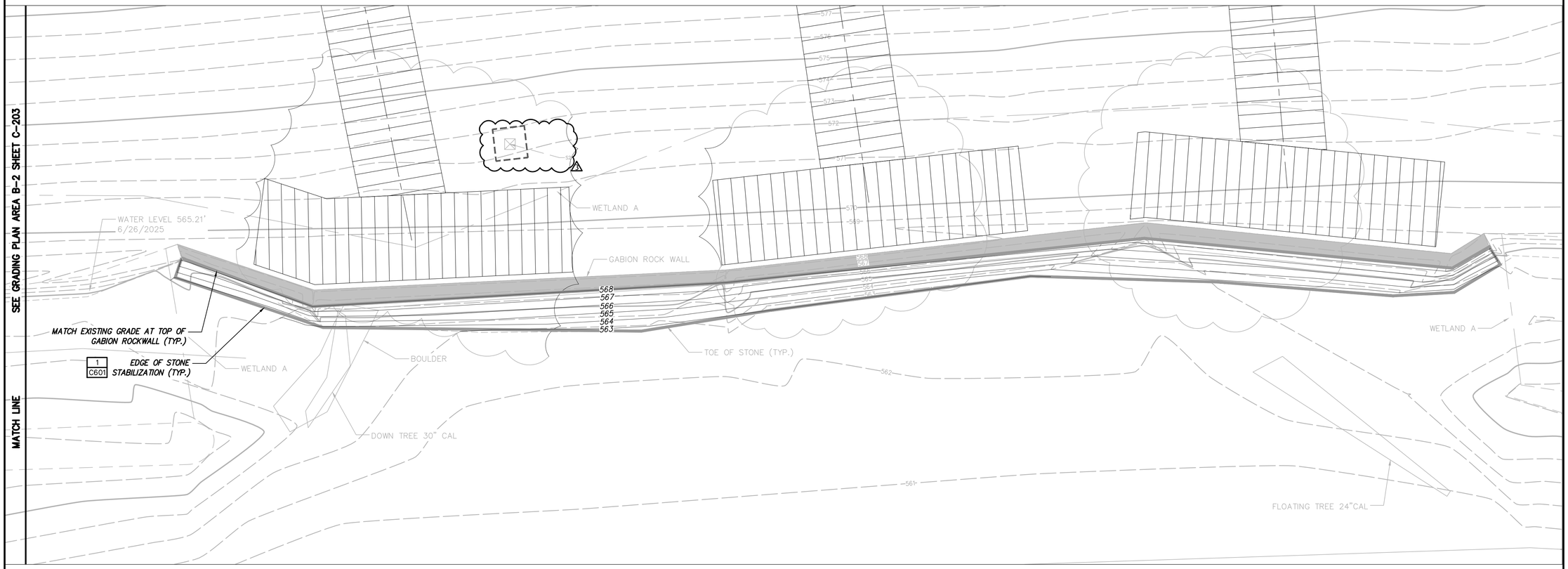
0 10 20
Scale in feet



GRADING PLAN AREA B-2
1"=10'

0 10 20
Scale in feet

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GRADING PLAN AREA C
1"=10'

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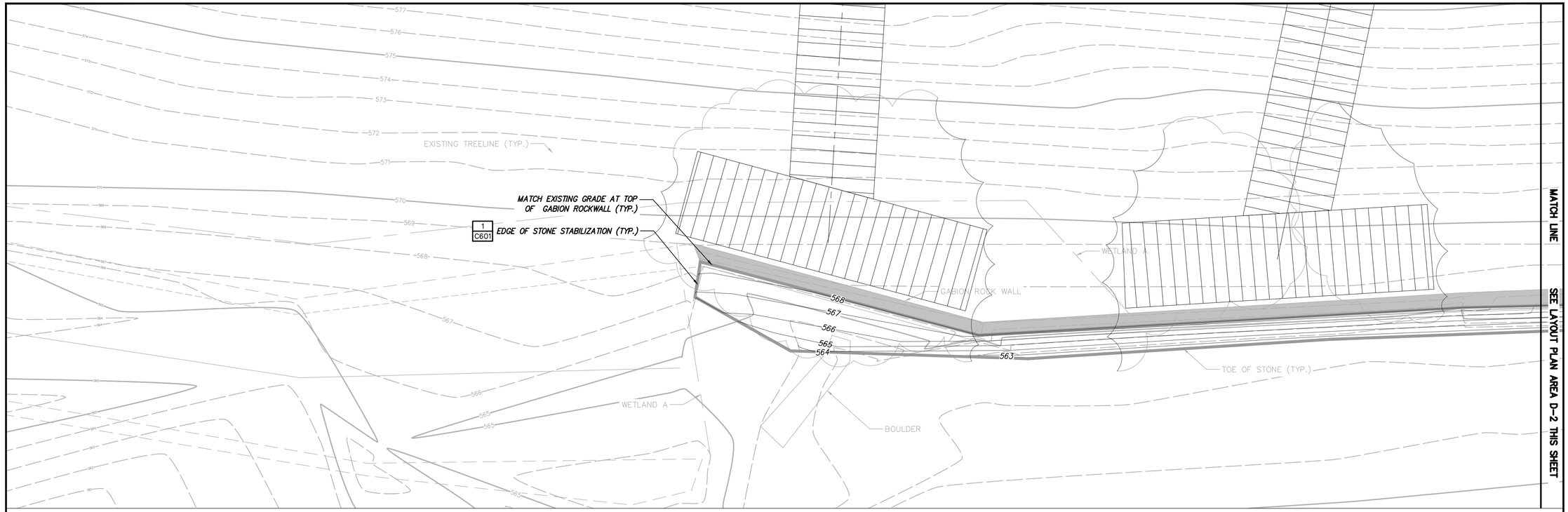
No.	Submittal / Revision			
1	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

GRADING PLAN AREA C

Designed By:	Drawn By:	Checked By:
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Issue Date:	Project No.:	Scale:
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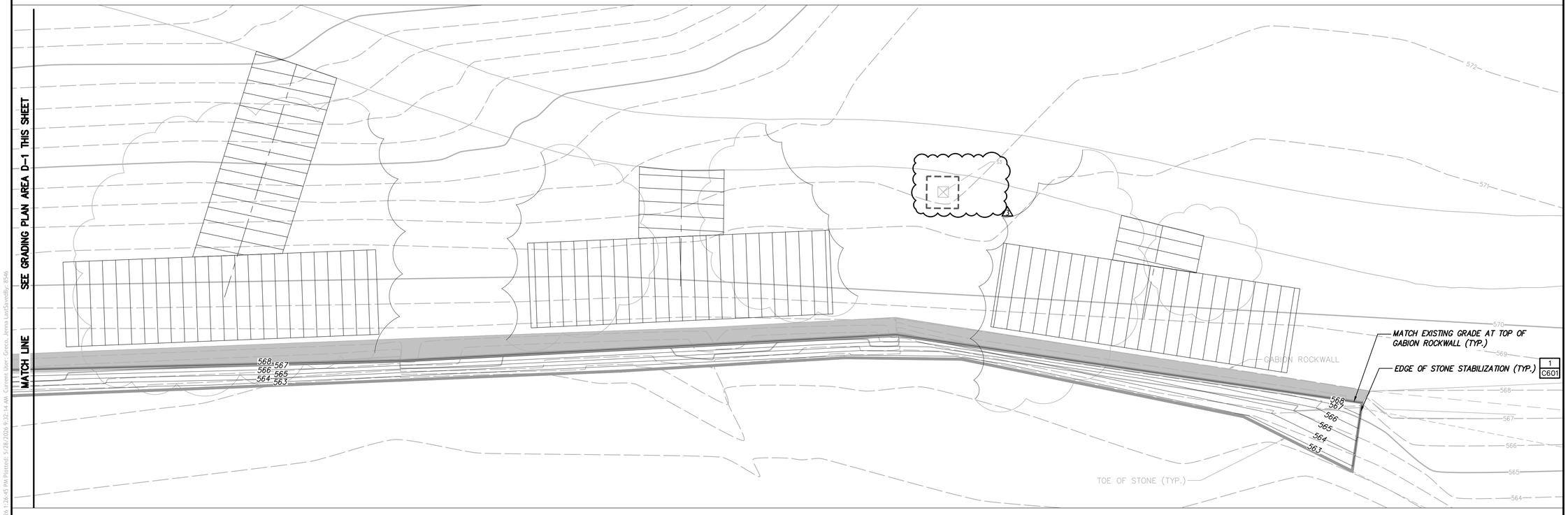
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C-204

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GRADING PLAN AREA D-1
1"=10'

0 10 20
Scale in feet



GRADING PLAN AREA D-2
1"=10'

0 10 20
Scale in feet

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GRADING PLAN
AREA D

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Drawing No.:
C-205

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1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

OVERALL EROSION AND SEDIMENT CONTROL PLAN

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-301

LEGEND:
- JURISDICTIONAL WETLAND
- 100' WETLAND ADJACENT AREA
- STABILIZED CONSTRUCTION ACCESS 1 / C-501
- WP WETLAND PROTECTION FENCE 6 / C-501
- SF SILT FENCE 4 / C-501
- TURBIDITY CURTAIN 2 / C-501
- FLOATING DEBRIS BOOM 3 / C-501
- LOD LIMIT OF DISTURBANCE

RIVER ROAD NYS ROUTE 266
FORMER ERIE CANAL
STABILIZED CONSTRUCTION ACCESS 1 / C-501
100 FT ADJACENT AREA BOUNDARY (TYP.)
JURISDICTIONAL WETLAND BOUNDARY (TYP.)
EXISTING SEDIMENT CAP AREA
AREA A: REFER TO DRAWING C-302
AREA B-1: REFER TO DRAWING C-303
AREA B-2: REFER TO DRAWING C-304
AREA C: REFER TO DRAWING C-305
AREA D-1: REFER TO DRAWING C-306
AREA D-2: REFER TO DRAWING C-307
LANDS OF NIAGARA MOHAWK POWER CORP. TMP #51.20-1-1 L.7411 P.302
AREA: 2,413,505 SQ.FT. 55.406 ±ACRES
NIAGARA RIVER

0 80 160
Scale in feet

OVERALL EROSION AND SEDIMENT CONTROL PLAN
1"=80'

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LEGEND:

- JURISDICTIONAL WETLAND
- 100' WETLAND ADJACENT AREA
- WP — WETLAND PROTECTION FENCE 6/C-501
- SF — SILT FENCE 4/C-501
- TURBIDITY CURTAIN 2/C-501
- FLOATING DEBRIS BOOM 3/C-501
- LOD — LIMIT OF DISTURBANCE

100 FT ADJACENT AREA BOUNDARY (TYP.)
100 FT ADJACENT AREA (TYP.)
LIMIT OF DISTURBANCE (TYP.)
4/C501 SILT FENCE (TYP.)
3.0' (TYP.)
JURISDICTIONAL WETLAND BOUNDARY (TYP.)
JURISDICTIONAL WETLAND AREA (TYP.)
PROPERTY BOUNDARY
5/C501 TIMBER MATTING (TYP.)
6/C501 WETLAND PROTECTION FENCE (TYP.)
WETLAND A
GABION ROCK WALL
567
566
565
564
12.0'
TREES
10" CAL
TOE OF STONE (TYP.)
DOWN TREE 24" CAL
DOWN TREE 12"
2/C501 TURBIDITY CURTAIN
3/C501 FLOATING DEBRIS BOOM
TEMPORARY VERTICAL ANCHORING POST LOCATED BETWEEN THE TURBIDITY CURTAIN AND FLOATING DEBRIS BOOM. INSTALL APPROXIMATELY EVERY 30LF AND AT THE CENTER OF THE ARC WHERE THE TWO PRACTICES CURVE.(TYP.) 3/C501

EROSION AND SEDIMENT CONTROL PLAN AREA A
1"=10'

0 10 20
Scale in feet

CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
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NYSDEC SITE NO. 915063

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2	REVISION 2	NJS	JMG	03/12/26
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EROSION AND SEDIMENT CONTROL PLAN AREA A

Designed By:	Drawn By:	Checked By:
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Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-302

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LEGEND:

- JURISDICTIONAL WETLAND
- 100' WETLAND ADJACENT AREA
- WP — WETLAND PROTECTION FENCE — 6 / C-501
- SF — SILT FENCE — 4 / C-501
- TURBIDITY CURTAIN — 2 / C-501
- FLOATING DEBRIS BOOM — 3 / C-501
- LOD — LIMIT OF DISTURBANCE

100 FT ADJACENT AREA BOUNDARY (TYP.)
100 FT ADJACENT AREA (TYP.)
LIMIT OF DISTURBANCE (TYP.)
4 / C501 SILT FENCE (TYP.)
3.0' (TYP.)
5 / C501 TIMBER MATTING (TYP.)
JURISDICTIONAL WETLAND BOUNDARY (TYP.)
JURISDICTIONAL WETLAND AREA (TYP.)
6 / C501 WETLAND PROTECTION FENCE (TYP.)
EXISTING TREELINE (TYP.)
WATER LEVEL 564.61'
DOWN TREE 36" CAL
DOWN TREE 12" CAL
WETLAND A
GABION ROCK WALL
TOE OF STONE (TYP.)
12.0'
DOWN TREE 18" CAL
2 / C501 TURBIDITY CURTAIN
3 / C501 FLOATING DEBRIS BOOM
TEMPORARY VERTICAL ANCHORING POST LOCATED BETWEEN THE TURBIDITY CURTAIN AND FLOATING DEBRIS BOOM. INSTALL APPROXIMATELY EVERY 30LF AND AT THE CENTER OF THE ARC WHERE THE TWO PRACTICES CURVE.(TYP.)
3 / C501

MATCH LINE SEE EROSION AND SEDIMENT CONTROL PLAN AREA C SHEET C-304

EROSION AND SEDIMENT CONTROL PLAN AREA B-1
1"=10'

0 10 20
Scale in feet

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EROSION AND SEDIMENT CONTROL PLAN AREA B-1

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SEE EROSION AND SEDIMENT CONTROL PLAN AREA B SHEET C-302

MATCH LINE

SEE EROSION AND SEDIMENT CONTROL PLAN AREA D SHEET C-305

LEGEND:

- JURISDICTIONAL WETLAND
- 100' WETLAND ADJACENT AREA
- WP — WETLAND PROTECTION FENCE 6 / C-501
- SF — SILT FENCE 4 / C-501
- TURBIDITY CURTAIN 2 / C-501
- FLOATING DEBRIS BOOM 3 / C-501
- LOD — LIMIT OF DISTURBANCE

100 FT ADJACENT AREA BOUNDARY (TYP.)
100 FT ADJACENT AREA (TYP.)
LIMIT OF DISTURBANCE (TYP.)
SILT FENCE (TYP.) 4 / C501
5 / C501 TIMBER MATTING (TYP.)
WETLAND PROTECTION FENCE (TYP.) 6 / C501
JURISDICTIONAL WETLAND BOUNDARY (TYP.)
JURISDICTIONAL WETLAND AREA (TYP.)
GABION ROCK WALL
WETLAND
CHANNEL CL
BARRIER ISLAND
12.0'
3 / C501 TEMPORARY VERTICAL ANCHORING POST LOCATED BETWEEN THE TURBIDITY CURTAIN AND FLOATING DEBRIS BOOM. INSTALL APPROXIMATELY EVERY 30LF AND AT THE CENTER OF THE ARC WHERE THE TWO PRACTICES CURVE.(TYP.)
2 / C501 TURBIDITY CURTAIN
3 / C501 FLOATING DEBRIS BOOM

EROSION AND SEDIMENT CONTROL PLAN AREA B-2
1"=10'

0 10 20
Scale in feet

CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
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EROSION AND SEDIMENT CONTROL PLAN AREA B-2

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Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

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2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

EROSION AND SEDIMENT CONTROL PLAN AREA C

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-305

SEE EROSION AND SEDIMENT CONTROL PLAN AREA C SHEET C-304

MATCH LINE

LEGEND:
- JURISDICTIONAL WETLAND
- 100' WETLAND ADJACENT AREA
- WP — WETLAND PROTECTION FENCE — 6 / C-501
- SF — SILT FENCE — 4 / C-501
- TURBIDITY CURTAIN — 2 / C-501
- FLOATING DEBRIS BOOM — 3 / C-501
- LOD — LIMIT OF DISTURBANCE

100 FT ADJACENT AREA BOUNDARY (TYP.)
100 FT ADJACENT AREA (TYP.)
LIMIT OF DISTURBANCE (TYP.)
SILT FENCE (TYP.) 4 / C501
3.0'(TYP.)
5 / C501 TIMBER MATTING (TYP.)
6 / C501 WETLAND PROTECTION FENCE (TYP.)
JURISDICTIONAL WETLAND BOUNDARY (TYP.)
JURISDICTIONAL WETLAND AREA (TYP.)
TURBIDITY CURTAIN 2 / C501
FLOATING DEBRIS BOOM 3 / C501
TEMPORARY VERTICAL ANCHORING POST LOCATED BETWEEN THE TURBIDITY CURTAIN AND FLOATING DEBRIS BOOM. INSTALL APPROXIMATELY EVERY 30LF AND AT THE CENTER OF THE ARC WHERE THE TWO PRACTICES CURVE.(TYP.) 3 / C501
12.0'
WETLAND A
GABION ROCK WALL
BOULDER
DOWN TREE 30" CAL
FLOATING TREE 24"CAL
WATER LEVEL 565.21'
/26/2025
568
567
566
565
564
563
562
561

EROSION AND SEDIMENT CONTROL PLAN AREA C
1"=10'

0 10 20
Scale in feet

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STATE OF NEW YORK
JOSEPH P. ROMANO
LICENSED PROFESSIONAL ENGINEER
081993

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LEGEND:

- JURISDICTIONAL WETLAND
- 100' WETLAND ADJACENT AREA
- WP — WETLAND PROTECTION FENCE — 6 / C-501
- SF — SILT FENCE — 4 / C-501
- TURBIDITY CURTAIN — 2 / C-501
- FLOATING DEBRIS BOOM — 3 / C-501
- LOD — LIMIT OF DISTURBANCE

100 FT ADJACENT AREA BOUNDARY (TYP.)
100 FT ADJACENT AREA (TYP.)
4 / C501 SILT FENCE (TYP.)
3.0'(TYP.)
LIMIT OF DISTURBANCE (TYP.)
5 / C501 TIMBER MATTING (TYP.)
6 / C501 WETLAND PROTECTION FENCE (TYP.)
JURISDICTIONAL WETLAND BOUNDARY (TYP.)
JURISDICTIONAL WETLAND AREA (TYP.)
EXISTING TREELINE (TYP.)
WETLAND A
GABION RETAINING WALL
TOE OF STONE (TYP.)
BOULDER
12.0'
TURBIDITY CURTAIN 2 / C501
FLOATING DEBRIS BOOM 3 / C501
TEMPORARY VERTICAL ANCHORING POST LOCATED BETWEEN THE TURBIDITY CURTAIN AND FLOATING DEBRIS BOOM. INSTALL APPROXIMATELY EVERY 30LF AND AT THE CENTER OF THE ARC WHERE THE TWO PRACTICES CURVE.(TYP.) 3 / C501
MATCH LINE
SEE EROSION AND SEDIMENT CONTROL PLAN AREA F SHEET C-307

EROSION AND SEDIMENT CONTROL PLAN AREA D-1
1"=10'

0 10 20
Scale in feet

CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

EROSION AND SEDIMENT CONTROL PLAN AREA D-1

Designed By:	Drawn By:	Checked By:
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Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-306

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CHERRY FARMS SHORELINE STABILIZATION PROJECT

NIAGARA MOHAWK - CHERRY FARM
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NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision			
2	REVISION 2	NJS	JMG	03/12/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

EROSION AND SEDIMENT CONTROL PLAN AREA D-2

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
03/12/2026	093558	AS SHOWN

Drawing No.:
C-307

LEGEND:

- 100' WETLAND ADJACENT AREA
- WP — WETLAND PROTECTION FENCE [6 / C-501]
- SF — SILT FENCE [4 / C-501]
- TURBIDITY CURTAIN [2 / C-501]
- FLOATING DEBRIS BOOM [3 / C-501]
- LOD — LIMIT OF DISTURBANCE

SEE EROSION AND SEDIMENT CONTROL PLAN AREA E SHEET C-306

MATCH LINE

100 FT ADJACENT AREA BOUNDARY (TYP.)

LIMIT OF DISTURBANCE (TYP.)

SILT FENCE (TYP.) [4 / C501]

3.0'(TYP.)

5 / C501 TIMBER MATTING (TYP.)

12.0'

12.0'

GABION ROCKWALL

STAFF GAUGE

TOE OF STONE (TYP.)

TURBIDITY CURTAIN [2 / C501]

FLOATING DEBRIS BOOM [3 / C501]

TEMPORARY VERTICAL ANCHORING POST LOCATED BETWEEN THE TURBIDITY CURTAIN AND FLOATING DEBRIS BOOM. INSTALL APPROXIMATELY EVERY 30LF AND AT THE CENTER OF THE ARC WHERE THE TWO PRACTICES CURVE.(TYP.)

EXISTING SEDIMENT CAP AREA

583 582 581 580 579 578 577 576 575 574 573 572 571 570 569 568 567 566 565 564 563 562 561 560 559

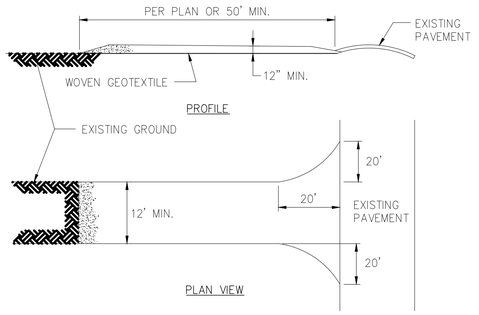
568 567 566 565 564 563

EROSION AND SEDIMENT CONTROL PLAN AREA D-2

1"=10'

0 10 20
Scale in feet

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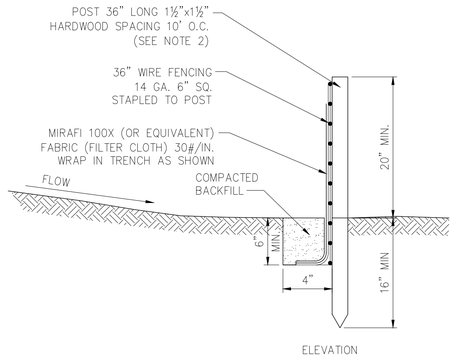


NOTES:

1. STONE SIZE–USE AASHTO M43 SIZE 3 COARSE AGGREGATE, OR CERTIFIED CLEAN MATERIAL.
2. LENGTH – NOT LESS THAN 50 FEET.
3. THICKNESS – NOT LESS THAN 12".
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY–FOUR (24) FOOT IF SINGLE ACCESS TO SITE.
5. WOVEN GEOTEXTILE FABRIC WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. EXISTING ROAD SIDE DRAINAGE SHALL BE MAINTAINED.
7. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
8. MAINTENANCE–THE ACCESS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT OR STONE SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
9. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
10. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

1 STABILIZED CONSTRUCTION ACCESS

SCALE: N.T.S.



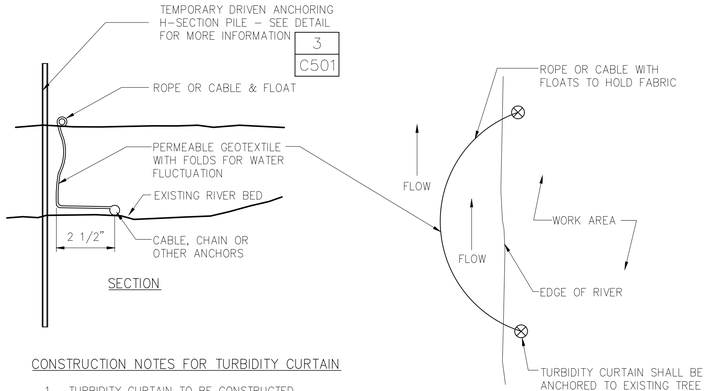
ELEVATION

NOTES:

1. TIE FABRIC TO WIRE FENCE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
2. IF EXTRA STRENGTH FABRIC (GREATER THAN 50#/INCH) IS USED, WIRE CAN BE DELETED IF POST SPACING IS REDUCED TO 6' O.C.
3. AT THE ENDS OF THE FENCING THE FIRST 20' SHALL BE TURNED UP THE SLOPE 2'.
4. POSTS SHOULD BE INCLINED TOWARD THE DIRECTION FLOW CAME FROM.
5. OVERLAP FABRIC A MINIMUM OF 6" AND FOLDED AT JOINTS. ATTACH FILTER FABRIS TO STAKES ALLOWING EXTENSION INTO TRENCH AS SHOWN; SECURE TO STAKES AS NOTED.
6. THE MAXIMUM AREA OF RUNOFF PER 100LF. OF FENCE SHALL NOT EXCEED 0.25 ACRES.
7. MAINTENANCE SHALL BE PERFORMED AS NECESSARY. THE FENCING SHALL BE CHECKED AFTER EVERY STORM TO ENSURE THEIR PROPER FUNCTIONING.
8. WHEN FENCE IS NO LONGER NEEDED, THE ACCUMULATED SILT, THE POSTS AND FABRIC SHALL BE REMOVED AND TRENCH BACK FILLED WITH TOPSOIL AND SEEDED.
9. FENCING SHOULD BE PLACED AS SHOWN ON THE DRAWING OR IF NOT SHOWN, 10' BEYOND THE TOE OF THE OF THE SLOPE.
10. EXCAVATE TRENCH AS PER DETAIL AND SET POSTS AT 10' O.C.
11. BACKFILL WITH COMPACTED, EXCAVATED SOIL FROM TRENCH.

4 SILT FENCE

SCALE: N.T.S.

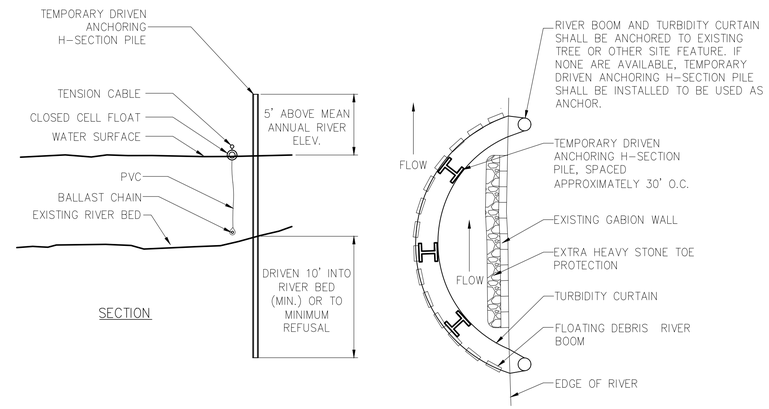


CONSTRUCTION NOTES FOR TURBIDITY CURTAIN

1. TURBIDITY CURTAIN TO BE CONSTRUCTED USING AMOCO PERMEABLE GEOTEXTILE FABRIC CEF 1199, CEF 4557 OR APPROVED EQUAL.
2. TURBITY CURTAIN TO REMAIN IN PLACE UNTIL ENGINEER APPROVES REMOVAL.

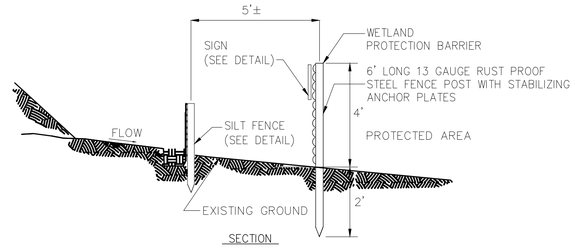
2 TURBIDITY CURTAIN DETAIL

SCALE: N.T.S.

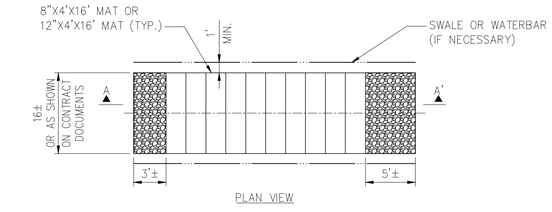


3 FLOATING DEBRIS BOOM AND STEEL H–SECTION PILE DETAIL

SCALE: N.T.S.





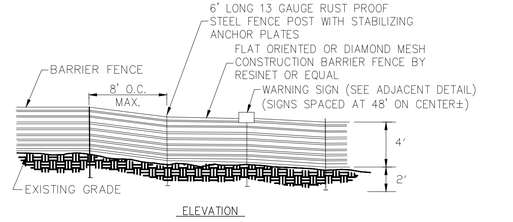


NOTES:

1. TIMBER SHALL BE SELECT STRUCTURAL MIXED OAK WITH A MINIMUM BENDING STRESS OF 1250 PSI OR BETTER.
2. TIMBER MAT SURFACE SHOULD BE LEVEL HORIZONTALLY TO PREVENT EQUIPMENT AND VEHICLES FROM SLIDING OFF DURING MUDDY OR ICING CONDITIONS, AND PREVENT TIMBERS FROM BREAKING.
3. SEDIMENT TRACKED ONTO TIMBER MATTING SHOULD BE REMOVED AS NECESSARY TO PREVENT SEDIMENT FROM ENTERING WETLAND DURING RAIN EVENTS. SEDIMENT SHOULD BE REMOVED TO A STABILIZED SOIL STOCKPILE OR OTHER APPROVED LOCATION.
4. PERIMETER EROSION AND SEDIMENT CONTROLS ARE REQUIRED TO BE INSTALLED PRIOR TO PLACING TIMBER MATTING.
5. UPON REMOVAL OF TIMBER MATTING ALL SPLINTERED WOOD SHOULD BE REMOVED. IF EXPOSED SOILS ARE PRESENT STRAW MULCH SHOULD BE APPLIED.
6. ALL EQUIPMENTS SHOULD MAINTAIN A MINIMUM OF 2 FT SETBACK FROM EDGE OF THE MATS WHILE CROSSING.
7. SINGLE OR MULTIPLE LAYERS OF MATS SHALL BE PLACED BASED ON EXISTING SOIL CONDITIONS.

5 TIMBER MATTING

SCALE: N.T.S.



1. WETLAND PROTECTION BARRIER SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS PRIOR TO BEGINNING ANY WORK ADJACENT TO THESE AREAS.
2. INSTALL SILT FENCE ADJACENT TO WETLAND PROTECTION BARRIER AS SHOWN ON PLANS.
3. THE CONTRACTOR SHALL INSTALL AT THE BEGINNING OF THE CONTRACT, AND MAINTAIN THROUGHOUT ITS DURATION, THE WETLAND PROTECTION BARRIER AROUND THE EXISTING WETLAND AREAS AS SHOWN ON PLAN. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING WETLAND AREAS/STREAM COURSE AREAS WITHIN THE FENCED AREAS.
4. SET BOTTOM OF PROTECTION FENCE FLUSH WITH EXISTING GRADE.
5. BARRIER FENCE SHALL HAVE A MINIMUM TENSILE STRENGTH OF 2000 PSI.

6 WETLAND PROTECTION BARRIER

SCALE: N.T.S.

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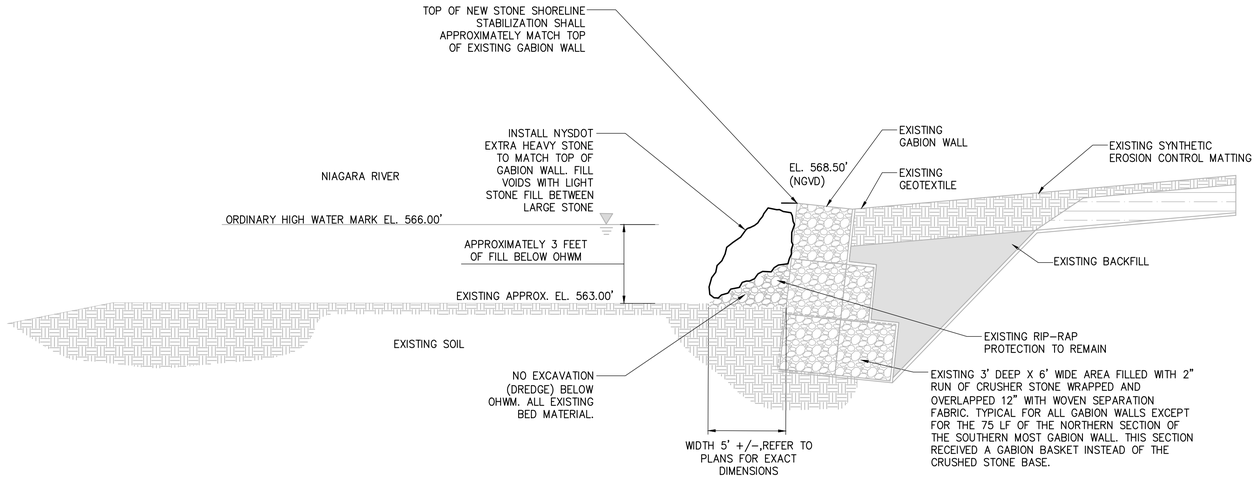
EROSION AND SEDIMENT CONTROL DETAILS

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AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
11/21/25	093558	AS SHOWN

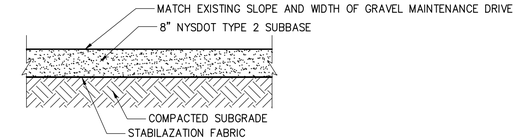
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C-501

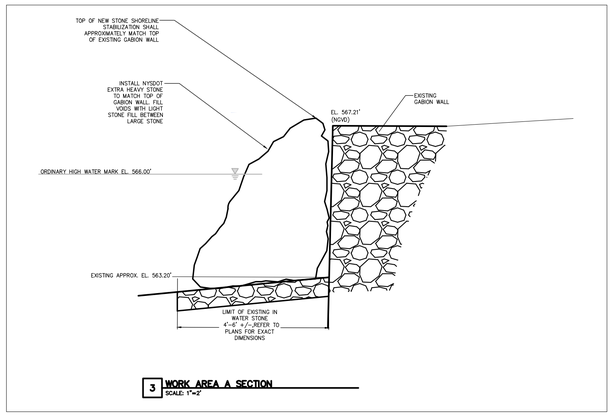
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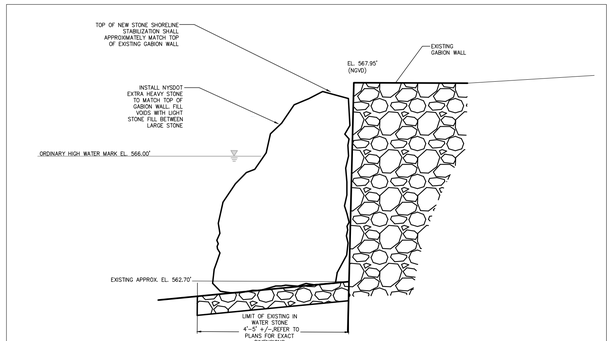
1 SHORELINE STABLIZATION DETAIL
SCALE: 1/4" = 1'-0"



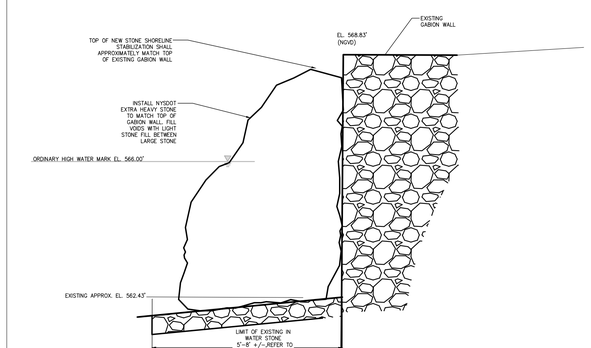
2 PAVEMENT RESTORATION DETAIL
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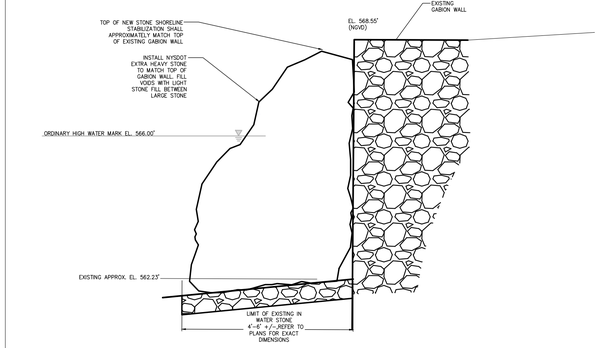
3 WORK AREA A SECTION
SCALE: 1"=2'



4 WORK AREA B1/B2 SECTION
SCALE: 1"=2'



5 WORK AREA C SECTION
SCALE: 1"=2'



6 WORK AREA D1/D2 SECTION
SCALE: 1"=2'

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NIAGARA MOHAWK - CHERRY FARM
TONAWANDA,
NEW YORK 14510
NYSDEC SITE NO. 915063

No.	Submittal / Revision			
3	NYSDEC RESPONSE	NJS	JMG	03/26/26
2	REVISION 1	NJS	JMG	01/22/26
1	ISSUE FOR PERMIT	NJS	JMG	11/21/25

SITE DETAILS

Designed By:	Drawn By:	Checked By:
AEB	JMG	NJS
Issue Date:	Project No.:	Scale:
11/21/25	093558	AS SHOWN

Drawing No.:
C-601

APPENDIX B

100% Design Specifications

TABLE OF CONTENTS

Division 31 – Earthwork

310519.13 Geotextiles
311000 Site Clearing
312000 Earth Moving
312500 Erosion and Sediment Control
313710 Stone Fill
316213 Driven Piles

Division 32 – Exterior Improvements

329119.19 Landfill Topsoil
329219.20 Landfill Seeding

SECTION 310519.13 – GEOTEXTILES

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes the installation of separation/stabilization fabric as shown on the Drawings and as specified herein.

1.2 QUALITY ASSURANCE

A. The latest edition of the following standards, as referenced herein, shall be applicable.
   1. American Society for Testing and Materials (ASTM).

1.3 SUBMITTALS

A. Product Data:
   1. Submit Manufacturer's material specifications, product literature and installation instructions.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Delivery:
   1. Deliver sufficient materials to the site to prevent interruption of the work.
   2. All materials shall be inspected by Contractor upon delivery. Contractor shall notify Engineer of any damage. Products received at the site torn, with holes, deteriorated, or otherwise damaged will not be approved and shall be returned and replaced at no expense to the Owner.

B. Storage:
   1. All material shall be stored in strict accordance with the manufacturer's recommendations and as approved by the Engineer.
   2. Do not store products directly on ground. Ship and store geotextile with suitable wrapping for protection against moisture and ultraviolet exposure. Store geotextile in way that protects it from elements, if stored outdoors, elevate, and protect geotextile with waterproof cover.

C. Handling:
   1. All material shall be handled in strict accordance with the manufacturer's recommendations and as approved by the Engineer.

PART 2 – PRODUCTS

2.1 WOVEN GEOTEXTILE

A. Stabilization Fabric: To be used beneath roadways and walks.

B. Composed of polymeric yarn interlaced to form a planar structure with uniform weave pattern.

C. Calendared or finished so yarns will retain their relative position with respect to each other.

D. Polymeric Yarn: Long-chain synthetic polymers (polyester or polypropylene) with stabilizer or inhibitors added to make filament resistant to deterioration due to heat and ultraviolet light exposure.

E. Sheet Edges: Selvaged or finished to prevent outer material from separating from sheet.

F. Unseamed Sheet Width: Minimum 12 feet.

G. Physical Properties: Conform to requirements noted below:

PROPERTY	DESIGN VALUE	TEST METHOD
Tensile Strength	315 pounds	ASTM D4632
Elongation	12 percent	ASTM D4632
Trapezoidal Tear	113 pounds	ASTM D4533
CBR Puncture Strength	900 pounds	ASTM D6241
A.O.S.	40 (US Sieve)	ASTM D4751
Permittivity	.05 sec^{-1}	ASTM D4491

PART 3 – EXECUTION

3.1 GENERAL

A. The Contractor shall be responsible for the installation, and seaming of geotextile fabric in accordance with the specifications and the manufacturer's recommendations, as approved by the Engineer.

3.2 SUBGRADE PREPARATION

A. Surfaces to be covered with geotextile fabric shall be smooth and free of rocks, sticks, roots, sharp objects, and all debris that may damage the fabric. The surface to be covered shall be firm and unyielding, with no sudden changes or breaks in grade. There shall be no standing water or excessive moisture on the surface when the fabric is placed.

B. The compacted subgrade shall be maintained in a smooth, uniform, and compacted condition during installation of the fabric.

3.3 GEOTEXTILE INSTALLATION

A. The fabric shall be cleaned of all debris or other materials that may negatively affect the fabric's performance.

B. Mechanical equipment shall not be permitted to operate directly on the fabric unless authorized to do so by the manufacturer and approved by the Engineer.

C. Geotextile Placement:

1. Fabric shall be placed as recommended by the manufacturer and approved by the Engineer on surfaces which have been prepared to conform with these Specifications and found acceptable for fabric installation.
2. The fabric shall be placed as smooth and wrinkle-free as possible.
3. When installing geotextile in trenches, swales, ditches, etc., overlap geotextile in the direction of flow.
4. All areas of fabric damaged during installation as determined by the Engineer shall be repaired or replaced by the Contractor as specified at no additional cost to the Owner. Should the fabric be damaged during any step of the installation, the damaged section shall be repaired by covering it with a piece of fabric which extends at least 24 inches in all directions beyond the damaged area. The fabric shall be secured by sewing or bonding as approved by the Engineer.

5. At time of installation, fabric will be rejected if it has defects, ribs, holes, flaws, deterioration, or damage incurred during manufacture, transportation, handling, or storage. Damaged materials shall be removed and replaced at no additional cost to the Owner.
6. Fabric shall be placed with long dimension down slope.
7. Fabric shall be protected at all times during construction from contamination by surface run-off and any fabric so contaminated shall be removed and replaced with uncontaminated fabric.

D. Seams and Overlaps of Geotextile:
1. All overlaps shall be a minimum of 18 inches (450 mm).

3.4 COVER MATERIALS OVER GEOTEXTILES

A. Granular materials shall be placed on geotextiles as shown on the Drawings. During backdumping and spreading, a minimum depth of 6 inches of granular material shall be maintained at all times between the fabric and wheels of trucks or spreading equipment. All equipment used in spreading or traveling on the cover layer for any reason shall exert low ground pressures and shall be approved by the manufacturer and Engineer. Dozer blades, etc., shall not make direct contact with the fabric; however, if tears occur in the fabric during the spreading operation, the granular material shall be cleared from the fabric and the damaged area repaired as previously described.

B. The granular material shall be spread in the direction of fabric overlap. Large fabric wrinkles which may develop during the spreading operations shall be folded and flattened in the direction of the spreading. Occasionally, large folds may reduce the fabric overlap width. Special care shall be given to maintain proper overlap and fabric continuity.

C. All equipment spreading cover material or traveling on the cover layer shall avoid making sharp turns, quick stops, or quick starts.

D. Fabric shall be covered as soon as possible after placement to minimize exposure to sunlight. Fabric shall not be exposed for more than 5 days.

3.5 DISPOSAL OF SCRAP MATERIALS

A. On completion of installation, the Contractor shall legally dispose of all trash and scrap material off-site or in a location approved by the Owner and Engineer, remove equipment used in connection with the work herein, and shall leave the premises in a neat acceptable manner.

END OF SECTION

SECTION 311000 – SITE CLEARING

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Protecting existing trees, shrubs, groundcovers, plants, and grass to remain.
   2. Removing existing trees, shrubs, groundcovers, plants, and grass.
   3. Clearing .

1.2 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

A. Method of Measurement:
   1. By Lump Sum (LS): Site clearing payment will be made on a lump sum basis for work satisfactorily completed. Payments will be proportion on the amount of work complete as determined by the Owner's Representative.

B. Basis of Payment:
   1. The site clearing unit price per LS shall include the cost of furnishing all labor, equipment, and materials necessary to complete the work.

1.3 DEFINITIONS

A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches (50 mm) in diameter; and free of subsoil and weeds, roots, toxic materials, or other non-soil materials.

B. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

C. Grubbing: Removal of vegetation and other organic matter including stumps, buried logs, and roots.

1.4 MATERIAL OWNERSHIP

A. Except for excess stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

B. Record drawings, according to Section "Project Record Documents," identifying and accurately locating capped utilities and other subsurface structural, electrical, and mechanical conditions.

C. Certification: Submit written certification by qualified arborist that trees indicated to remain have been protected during the course of construction in accordance with recognized standards and that

where damage did occur, trees were promptly and properly treated. Indicate which damaged trees (if any) are incapable of retaining full growth potential and are recommended to be replaced.

1.6 QUALITY ASSURANCE

A. Stake limits of clearing, grubbing, and stripping, prior to commencing of work.

B. Arborist Qualifications: Engage a qualified arborist who has successfully completed tree protection and trimming, to perform the following work:
   1. Remove branches from trees that are to remain, if required.
   2. Recommend procedures to compensate for loss of roots and perform initial pruning of branches and stimulation of root growth where removed to accommodate new construction.
   3. Recommend procedures for excavation and grading work juxtaposed to established plants.
   4. Perform tree repair work for damage incurred by new construction.

1.7 PROJECT CONDITIONS

A. Protect areas outside limits of disturbance from encroachment by construction personnel or equipment, regardless of property Ownership. Access shall be by specific, written permission or easement only

B. Utility Locator Service: Properly notify utility locator service for area where Project is located before site clearing in accordance with local protocol.

C. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

D. Contractor shall verify existing grades prior to performing work under this section. If existing grades are at variance with the drawings, notify the Owner and receive instructions prior to proceeding. No additional compensation will be considered resulting from grade variances once site clearing has commenced.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Locate and clearly flag, fence and protect trees and vegetation to remain or to be relocated.

C. Remove branches from trees that are to remain, if required to clear new construction and only if specifically approved by Owner's Representative.
   1. Where directed by Owners Representative, extend pruning operation to restore natural shape of entire tree.
   2. Cut branches and roots, if required, with sharp pruning instruments; do not break or chop.

D. Protect existing site improvements to remain from damage during construction.
   1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TREE PROTECTION

A. Erect and maintain temporary fencing around tree drip line before starting site clearing. Remove fence when construction is complete.
   1. Do not store construction materials, debris, or excavated material within fenced area.
   2. Do not permit vehicles, equipment, or foot traffic within fenced area.
   3. Maintain fenced area free of weeds and trash.

B. Do not machine excavate within tree drip line.

C. Do not allow exposed roots to dry out before permanent backfill is placed; provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in moist condition and temporarily support and protect from damage until permanently relocated and covered with earth.
   1. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
   2. Coat cut faces of roots more than 1-1/2 inches (38 mm) in diameter with an emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
   3. Backfill with soil as soon as possible.
   4. Where trenching for utilities is required within drip line, tunnel under or around roots by hand digging. Do not cut main lateral roots or tap roots; cut only smaller roots that interfere with installation of new work. Cut roots with sharp pruning instruments; do not break or chop.

D. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Engineer and acceptable to the Owner.
   1. Employ an arborist, licensed in jurisdiction where Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.
   2. Replace trees that cannot be repaired and restored to full-growth status, as determined by Engineer and acceptable.

3.3 UTILITIES

A. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.
   1. Verify that utilities have been disconnected and capped before proceeding with site clearing.

B. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
   1. Arrange with utility companies to shut off indicated utilities.
   2. Owner will arrange to shut off indicated utilities when requested by Contractor.

C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
   1. Notify Owner’s Representative and owner not less than two days in advance of proposed utility interruptions.
   2. Do not proceed with utility interruptions without Owner’s Representative written permission.

D. Excavate for and remove underground utilities indicated to be removed.

3.4 MERCHANTABLE TIMBER

A. Trees classified as merchantable timber will be marked by Engineer.

B. Exercise care in cutting and felling to prevent damage to saleable logs. Cut, trim, and handle logs in such manner that will ensure best sale value.

C. Cut logs in increments of 2 feet between minimum length of 8 feet and maximum length of 24 feet plus 8 inches for trim. Cut limbs off flush with trunks. Saleable logs shall each have a minimum top diameter of 8inches, and minimum of 50 board feet.

D. Stockpile saleable logs in neat, orderly piles adjacent to access road.

3.5 CLEARING

A. Completely remove obstructions, trees, shrubs, roots, grass, and other vegetation to permit installation of temporary timber matting.
   1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
   2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
   3. Chip removed tree branches and dispose of off-site.

B. Fill depressions caused by clearing operations in accordance with Section "Earth Moving" unless further excavation or earthwork is indicated.
   1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.6 DISPOSAL

A. Burning of debris onsite is not permitted.

B. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
   1. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.
   2. Debris may be buried in designated onsite disposal areas to minimum depth of 3 feet below final grade. Only the following materials are suitable for on-site disposal:

C. Dispose of all diseased Elmwood within 4 days after cutting by methods approved by the Department of Environmental Conservation.

END OF SECTION

SECTION 312000 – EARTH MOVING

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes the preparation of the site, protection, excavation, embankment, drainage, dewatering, for site grading, as shown on the Drawings, and as herein specified.

B. The Contractor shall accept the site in the condition in which it exists at the time of the award of the Contract.

C. The Engineer shall determine the suitability of materials that are to be used in the work and should any materials encountered be unsatisfactory for the purpose intended, they shall be removed from the site at the Contractor's expense.

1.2 QUALITY ASSURANCE

A. Reference Standards:
   1. The latest edition of the following standards, as referenced herein, shall be applicable.
      a. "Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering."
      b. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."

B. The Contractor shall comply with the requirements for soil erosion and sedimentation control, and other requirements of governmental authorities having jurisdiction, including the State of New York.

C. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of soils and aggregate with the specifications in accordance with Section "Quality Requirements."

1.3 SUBMITTALS

A. Samples:
   1. The Contractor shall furnish earth materials to the testing laboratory for analysis and report, as directed by the Engineer, or as outlined in the specifications.

B. Test Results:
   1. The testing laboratory shall submit written reports of all tests, investigations, and recommendations to the Contractor and the Engineer.

1.4 PROJECT REQUIREMENTS

A. Notify the Engineer of any unexpected subsurface condition.

B. Protection of Existing Utilities:
   1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate support and protection during earthwork operations, comply with OSHA requirements.
   2. Coordinate interruption and/or termination of utilities with the utility companies and the Owner.

3. Provide a minimum of 48 hours' notice to the Owner and receive written notice to proceed before interrupting any utility.
4. Demolish and completely remove from the site any existing underground utilities designated to be removed as shown on the Drawings or as specified in Section "Site Clearing."
5. Repair any damaged utilities as acceptable to the Engineer, at no additional cost to the Owner.

C. Protection of Persons and Property:
1. Barricade open excavations occurring as part of this work, and post with warning lights.
2. Operate warning lights as recommended by authorities having jurisdiction.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
4. Perform excavation within drip-line of large trees to remain by hand and protect the root system from damage or dryout to the greatest extent possible. Maintain moist conditions for root system and cover exposed roots with burlap. Paint root cuts of 1-inch diameter and larger with emulsified asphalt tree paint.

PART 2 – PRODUCTS

2.1 PRECONSTRUCTION MATERIAL QUALIFICATION TESTING

A. A 100-pound minimum representative sample shall be obtained from each potential borrow source. If different material gradations are known to exist in the pit, samples shall be obtained for each material. Each sample shall be mixed thoroughly and reduced to test specimen size, in accordance with AASHTO T87. The test shall be performed in the order shown. Failure to pass any test is grounds for disqualification and shall lead to cessation of the test program for that material.
1. Particle Size Analysis:
a. Method: ASTM D422.
b. Number of Tests: One (1) per potential source.
c. Acceptance Criteria: Gradation within specified limits.
2. Maximum Density Determination:
a. Method: ASTM D1557, Modified Proctor.
b. Number of Tests: One (1) per potential source.
3. Re-establish gradation and maximum density of fill material if source is changed during construction.

2.2 MATERIALS

A. Select Granular Material: Sound, durable, sand, gravel, stone or blends with these materials, free from organic, frozen, or other deleterious materials, conforming to the requirements of NYSDOT Section 304 and meeting the following gradation requirements (NYSDOT Type 4):

SIEVE	PERCENT PASSING
2"	100
1/4"	30 - 65
No. 40	5 - 40
No. 200	0 - 10

B. Selected Fill: Sound, durable, sand, gravel, stone, or blends of these materials, free from organic, frozen or other deleterious materials.

SIEVE	PERCENT PASSING
4"	100
No. 40	0 - 70
No. 200	0 - 10

1. Fines passing No. 200 shall be non-plastic.
2. Particle size analysis shall show no gap grading.

PART 3 – EXECUTION

3.1 PREPARATION

A. Establish required lines, levels, contours, and datum.

B. Maintain benchmarks and other elevation control points. Re-establish, if disturbed or destroyed, at no additional cost to the Owner.

C. Establish location and extent of utilities before commencement of grading operations.

3.2 EXCAVATION

A. Excavation shall consist, in general, of the excavation of whatever substance is encountered to the lines, grades, and sections shown on the Drawings including excavation as necessary for grading and other similar features.

B. All suitable materials removed in excavation shall be used in the construction of embankments, subgrade, shoulders, slopes, and at such other places as directed. The Engineer shall be the sole judge of what constitutes suitable material.

C. During construction, the grading operations shall be executed in such a manner that the excavation will be well drained at all times. All grading shall be finished on neat, regular lines conforming to the sections and contours shown on the Plans.

D. Removal of materials beyond the indicated subgrade elevations, without authorization by the Engineer, shall be classified as unauthorized excavation and shall be performed at no additional cost to the Owner.

E. Excavation shall be performed in proper sequence with all other associated operations.

F. Maintain the slopes of excavation in a safe condition until completion of the grading operation.

G. All excavation work shall be inspected and approved by the Engineer before proceeding with construction.

H. Any excess excavation shall be removed from the site to disposal areas at the Contractor's expense.

3.3 FILL

A. All site fill shall be “selected fill” unless otherwise shown on the Drawings or directed by the Engineer. “Select granular fill” shall be placed in lieu of selected fill where directed by the Engineer.

B. Before depositing fills, the surface of the ground shall be cleared of all refuse, brush, and large stones. Conform to Section "Site Clearing."

C. Prior to placing fill over undistributed material, scarify to a minimum depth of 6 inches.

D. Where fills are made on hillsides or slopes, the slope of the original ground upon which the fill is to be placed shall be plowed or scarified deeply or where the slope ratio of the original ground is steeper than 2 horizontal to 1 vertical, the bank shall be stepped or benched.

E. The original ground shall be proof rolled until the underlying soil is thoroughly compacted to the satisfaction of the Engineer before any filling is begun. A steel-wheel tandem roller weighing 8 to 10 tons or equipment capable of obtaining the same effort shall be used to obtain a thoroughly compacted subgrade. Remove or recompact any soft or loose soils as determined by the Engineer prior to filling.

F. A thoroughly and satisfactorily subgrade is defined as having a minimum dry density of 95 percent of the maximum density of the material used. The subgrade material shall be compacted at a moisture content suitable for obtaining the required density.

G. Place backfill and fill materials in layers not more than 12 inches in loose depth unless shown otherwise on the Drawings. Lift height shall be governed by the ability of the compaction equipment to obtain the required compaction with 12 inches as a maximum lift height. Before compaction, moisten or aerate each layer as necessary to facilitate compaction to the required density. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost, ice, ponded water, or extraneous debris.

H. When work is suspended during periods of freezing weather, measures shall be taken to prevent fill already in place from freezing. Upon resumption of work after any inclement weather, prepare the exposed surface by proof rolling to identify any zones of soft/loose soils. Soft/loose materials or frozen soils shall be removed and replaced by compacted granular fill.

I. Moisture Control:
   1. Where fill or backfill must be moisture conditioned before compaction, uniformly apply water to the surface and to each layer of fill or backfill. Prevent ponding or other free water on surface subsequent to, or during, compaction operations.
   2. Remove and replace, or scarify and air dry, soil that is too wet to permit compaction to specified density. Soil that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a value which will permit compaction to the percentage of maximum density specified.

J. All fill shall be thoroughly and satisfactorily compacted to 95 percent of the maximum density of material used.

3.4 GRADING

A. The present and finished grade lines are shown on the Drawings. Grade over the entire area, as shown on the drawings, shall be to the finished subgrade levels. Upon completion of this work, all debris shall be cleaned out and removed from the premises.

B. All cutting, filling, backfilling and grading necessary shall be done to bring the area to the following grade or subgrade levels:
   1. For roadway surface areas to the finished subgrade levels specified on the contract drawings.

2. For areas to be topsoiled and seeded to within 6 inches of the finished grade.
3. For other surface treatments as detailed on the Drawings.

C. Sufficient grading must be done during the progress of the work so that the entire site shall be well drained and free from water pockets.

D. Finish grading, including dressing swales, cleaning up excess footing excavation, dressing terraces, disposing of excess material and all other work necessary to prepare the site for topsoil and seeding shall be done after construction of structures and roadway surface areas is substantially complete.

3.5 COMPACTION EQUIPMENT

A. Compaction equipment used for the Work is subject to approval by the Engineer. Any equipment not originally manufactured for compaction purposes and equipment which is not in proper working order will not be approved. Furnish manufacturer's specifications covering data not obvious from a visual inspection of the equipment and necessary to determine its classification and performance characteristics.

B. Vibratory Drum Compactors: A self-propelled compactor classified for use according to the developed compactive force rating (CFR) per linear inch of drum width (PLI). The actual operating frequency of the compactor will determine the PLI rating. Compute the CFR at the actual operating frequency for the compactor in accordance with the applicable portions of NYSDOT Section 203-3.03.2.b and the corresponding maximum lift thickness in accordance with Figure 203-2.
1. Furnish one vibratory reed tachometer for the exclusive use of the Engineer. Tachometers shall have a frequency range adequate to cover the operating frequencies of all vibratory compactors on the project with scale divisions of 50 vibrations per minute or less. The tachometer will be returned by the Owner’s Representative at the closeout of the project.
2. Approval of vibratory compactors usage is contingent upon proper operation of equipment at all times during compaction operations.
3. Compaction equipment other than vibratory drum compactors may be used subject to the approval of the Owner’s Representative. Submit specifications at least two (2) weeks prior to use of this equipment.
4. Do not use vibratory drum compactors after concrete is poured.

3.6 DRAINAGE AND DEWATERING

A. Prevent surface, subsurface or ground water from flowing into excavation and from flooding project area, as well as surrounding areas.

B. Do not allow water to accumulate in excavations. Remove water to prevent soil changes detrimental to the stability of subgrades.

C. Provide and maintain the pumps, well points, sumps, suction and discharge lines, and other dewatering components necessary to convey water away from excavations.

D. Provide and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations by dewatering, to collection or run-off areas.

E. Dewatering operations shall be as directed by the Engineer and performed in accordance with Section "Dewatering."

3.7 FIELD QUALITY CONTROL

A. Notify the Engineer at least one (1) working day in advance of all phases of filling and backfilling operations.

B. Compaction testing shall be performed to ascertain the compacted density of the fill and backfill materials in accordance with the following methods:
   1. In-place relative density:
      a. Method: AASHTO T310, Nuclear Method.
      b. Number of Tests: One (1) per 8-inch vertical lift.
         1) Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one (1) test for every 2,000 square feet or less of paved area of building slab, but in no case fewer than three (3) tests.

C. The Engineer may direct additional tests to establish gradation, maximum density, and in-place density as required by working conditions, at the Contractor's expense.

D. Acceptance Criteria: The sole criterion for acceptability of in-place fill shall be in situ dry density. Minimum dry density for all fill or backfill shall be 95 percent of the maximum dry density. If a test fails to qualify, the fill shall be further compacted and retested. Subsequent test failures shall be followed by removal and replacement of the material.

3.8 CLEAN UP

A. Provide and maintain protections or newly filled areas against damage. Upon completion or when directed, correct all damaged and deficient work by building up low spots and remove temporary protections, fencing, shoring and bracing.

B. Remove all surplus excavated material not required for filling and backfilling and legally dispose of same away from premises.

C. Leave the premises and work in clean, satisfactory condition, ready to receive subsequent operations.

END OF SECTION

SECTION 312500 – EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

1.1 SUMMARY

A. This Section covers work necessary for stabilization of soil to prevent erosion and sedimentation during and after construction and land disturbing activities. The work shall include the furnishing of all labor, materials, tools, and equipment to perform the work and services necessary as herein specified and as indicated on the Drawings. This shall include installation, maintenance, and final removal of all temporary soil erosion and sediment control measures. All erosion and sediment control methods and devices used shall conform to the latest requirements imposed by federal, state, and local authorities.

B. Comply with SPDES General Permit GP-0-25-001for stormwater discharges from construction activities and the Stormwater Pollution Prevention Plan prepared for the project. Attached at the end of this Section.

C. Comply with the latest version of the New York Standards and Specifications for Erosion and Sediment Control.

D. The minimum areas requiring soil erosion and sediment control measures are indicated on the Drawings. The right is reserved to modify the use, location, and quantities of soil erosion and sediment control measures based on activities of the Contractor and as the Engineer considers to be the best interest of the Owner.

E. The Contractor shall be responsible for repair of any damage caused and shall be financially responsible for any penalties imposed.

1.2 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

A. Method of Measurement:
   1. Erosion and Sediment Control measured on a lump sum basis for work satisfactorily completed. Payments will be proportion on the amount of work complete as determined by the Engineer.

1.3 QUALITY ASSURANCE

A. Soil erosion and sediment control measures shall be implemented in accordance with the requirements and procedures outlined in this Specification, Contract Drawings and documents, state standards or guidelines for soil erosion and sediment control, and all regulatory authorities having jurisdiction. Where conflicts between requirements exist, the more restrictive rules shall govern.

B. The Contractor shall provide all temporary control measures shown on the Drawings, or as directed by the Owner, Owner's representative, or soil conservation district for the duration of the contract. Erosion and sediment control Drawings are intended to be a guide to address the stages of work shown. Additional measures not specified on the Drawings may be necessary and shall be implemented to address intermediary stages of work and any conditions that may develop during construction at no cost to the Owner.

C. Temporary control provisions shall be coordinated with permanent erosion control features to the extent practical to assure economical, effective, and continuous erosion and sediment control throughout the construction and post-construction period.

D. Soil erosion and sediment control measures shall at all times be satisfactory to the Owner's Representative. Owner's Representative will inform the Contractor of unsatisfactory construction procedures and operations if observed. If the unsatisfactory construction procedures and operations are not responded to and corrected within 48 hours, the Owner's Representative may suspend the performance of any or all other construction until the unsatisfactory condition has been corrected. Such suspension shall not be the basis of any claim by the Contractor for additional compensation nor for an extension of time to complete the work. Any complaints, fines, etc. relating to ineffective erosion control, shall be the sole responsibility of the Contractor.

E. The Contractor shall inspect all soil erosion and sediment control measures at least at the beginning and end of each day to ascertain that all devices are functioning properly during construction. Maintenance of all soil erosion and sediment control measures on the project site shall be the responsibility of the Contractor until final stabilization is complete, and until the permanent soil erosion controls are established and in proper working condition.

F. The Contractor shall protect adjacent properties and watercourses from soil erosion and sediment damage throughout construction.

1.4 GENERAL

A. Soil erosion stabilization and sediment control measures consist of the following elements:
   1. Maintenance of existing permanent or temporary storm drainage piping and channel systems, as necessary.
   2. Installation and maintenance of stabilized construction entrance(s).
   3. Construction of temporary erosion control facilities such as silt fences, check dams, etc.
   4. Topsoil and Seeding: Placement and maintenance of Temporary Seeding on all areas disturbed by construction. Placement of permanent topsoil, fertilizer, and seed, etc., in all areas not occupied by structures or pavement unless shown otherwise.
   5. Soil Stabilization Seeding: Placement of fertilizer and seed, etc., in areas as Specified hereinafter.

B. The Contractor shall he responsible for phasing Work in areas allocated for his exclusive use during this Project, including any proposed stockpile areas, to restrict sediment transport. This will include installation of any temporary erosion control devices or other facilities.

C. The areas set aside for the Contractor's use during the Project may be temporarily developed to provide satisfactory working, staging, and administrative areas for his exclusive use. Preparation of these areas shall be in accordance with other requirements contained within these Specifications and shall he done in a manner to both control all sediment transport away from the area.

D. Stockpiles remaining in place longer than 14 calendar days shall be considered permanent stockpiles for purposes of erosion and sediment control.

E. All permanent stockpiles shall be seeded with soil stabilization seed and protected by construction of silt fences completely surrounding stockpiles and located within 10 feet of the toes of the stockpile slopes.

F. Sediment transport and erosion from working stockpiles shall be controlled and restricted from moving beyond the immediate stockpile area by construction of temporary toe-of-slope ditches and accompanying silt fences as necessary. The Contractor shall keep these temporary facilities in operational condition by regular cleaning, regrading, and maintenance.

G. The Contractor shall maintain all elements of the Soil Erosion Stabilization and Sedimentation Control systems and facilities to be constructed during this Project for the duration of his activities on this Project.

H. Formal inspections made jointly by the Contractor and the Engineer shall be conducted every 2 weeks to evaluate the Contractor's conformance to the requirements of these Specifications.

I. Replacement or repair of failed or overloaded silt fences, check dams, or other temporary erosion control devices shall be accomplished by the Contractor within 24 hours after receiving written notice from the Engineer.

J. If the Contractor has not complied with any of the above maintenance efforts to the satisfaction of the Engineer within 2 working days after receiving written notification from the Engineer, the Owner shall have the prerogative of engaging others to perform any needed maintenance or cleanup, including removal of accumulated sediment at constructed erosion control facilities, and deduct from the Contractor's monthly partial payment the costs for such efforts in accordance with the General Conditions of the Contract.

1.5 SUBMITTALS

A. Submittals shall he made in accordance with Section 013300 "Submittal Procedures."

B. Material Certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.

C. Results of all tests and investigations, including recommendations.

D. Submit product data, samples, specifications and manufacturer's installation procedures for approval as directed by Owner's Representative prior to use.

PART 2 – PRODUCTS

2.1 GENERAL

A. Contractor shall provide all materials necessary to perform the work in accordance with the SWPPP or as shown on the Drawings or specified herein.

2.2 PERMANENT SEED

A. Refer to Section "Turf and Grasses."

2.3 SOIL STABILIZATION AND TEMPORARY SEED

A. Temporary Seed: Rye grass, cereal grasses, or other quick growing species suitable to the area as a temporary cover, which will not compete with the grasses specified for permanent cover or as specified in the SWPPP or on the Drawings.

2.4 TOPSOIL

A. Topsoil shall be as specified under Section "Soil Preparation."

2.5 FERTILIZER

A. Refer to Section "Turf and Grasses."

2.6 STRAW MULCH

A. Threshed straw of oats, wheat, barley, or rye, free from seed of noxious weeds or clean salt hay.

2.7 EROSION CONTROL BLANKET

A. Erosion Control Blanket (ECB) shall be constructed with a layer of 70 percent straw and 30 percent coconut fiber stitched with degradable thread between a heavyweight UV stabilized polypropylene top net (3 pounds) and a lightweight photodegradable polypropylene bottom net (1.50 pounds). Both the netting and fiber material shall be green in color. Acceptable products shall include SC150 Double Net Straw-Coconut Blanket as manufactured by North American Green; Curlex Double Net (Curlex II) as manufactured by American Excelsior Company or an approved equal.

2.8 STONE CHECK DAM

A. The gradation of stone check dam material identified on the plans shall meet the following requirements:

NCSA ROCK SIZE*	PERCENT PASSING BY WEIGHT
12"	100
6"	15 – 50
3"	0 – 15

*National Crushed Stone Association

B. Geotextile fabric for stone check dam shall meet the requirements non-woven fabric found in Section "Geotextiles."

2.9 SILT FENCE

A. Silt Fence (SF) shall consist of woven geotextile fabric, posts, wire mesh backing, and fasteners meeting the requirements shown on the Drawings.

B. The woven geotextile fabric shall meet the following specifications.

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs.)	110	ASTM D 4632
Elongation at Failure (%)	20	ASTM D 4632
Mullen Burst Strength (PSI)	300	ASTM D 3786
Puncture Strength (lbs)	60	ASTM D 4833
Minimum Trapezoidal Tear Strength (lbs)	50	ASTM D 4533
Flow Through Rate (gal/min/sf)	25	ASTM D 4491
Equivalent Opening Size	40-80	ASTM D 4751
Minimum UV Residual (%)	70	ASTM D 4355

2.10 COMPOST FILTER SOCK

A. Compost infill shall consist of decomposed (matured at least 3 months), weed-free, organic material that is aerobically composted, possess no odors, and contain less than 1%, by dry weight, of man-

made material. The compost infill should meet the following specifications. All biosolids compost produced in New York State must meet NYS DEC's 6 NYCRR Part 360 (Solid Waste Management Facilities) requirements or more stringent than 40 CFR Part 503 to ensure safe standards for pathogen reduction and heavy metal content.

Organic Matter Content	25% - 100% (dry weight)
Organic Portion	Fibrous and elongated
pH	6.0 – 8.0
Moisture Content	30% - 60%
Particle Size	100% passing a 1" screen and 10-50% passing a 3/8" screen
Soluble Salt Concentration	5.0 dS/m (mmhos/cm) maximum

B. Compost filter sock fabric material shall meet the minimum requirements and specifications listed in the following tables.

Material Type	**3 mil HDPE**	**5 mil HDPE**	**5 mil HDPE**	**Multi-Filament Polypropylene (MFPP)**	**Heavy Duty Multi-Filament Polypropylene (HDMFPP)**
Material Characteristics	Photodegradable	Photodegradable	Biodegradable	Photodegradable	Photodegradable
Sock Diameters	12",18"	12", 18",24", 32"	12", 18",24", 32"	12", 18",24", 32"	12", 18",24", 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

2.11 MANUFACTURED INSERT INLET PROTECTION

A. The sack structure shall consist of woven geotextile fabric equal to or exceeding the performance standard for the silt fence fabric.

PART 3 – EXECUTION

3.1 GENERAL

A. The Contractor shall comply with and implement the Stormwater Pollution Plan provided in the contract documents.

B. Review the soil erosion and sediment control Drawings as they apply to current conditions. Any deviation from the Drawings must be submitted for approval to the site Engineer in writing at least 72 hours prior to commencing that work.

C. Initial soil sediment and erosion control devices shall be in place prior to any land disturbing activity in their proper sequence and maintained until permanent protection is established.

D. The limit of the area of any earthwork operations in progress shall be commensurate with the Contractor's capability and progress in keeping the finished grading, mulching, seeding, and other such permanent control measures current and in accordance with the accepted schedule for construction phasing. Should seasonal limitations make such coordination unrealistic, as determined

by the Owner's Representative, temporary erosion control measures shall be provided immediately by the Contractor at no expense of the Owner.

E. Temporary erosion control measures shall be used to correct conditions which develop during construction that are needed prior to installation of permanent control features, or that are temporarily needed to control erosion that develops during normal construction practices but are not associated with permanent control features on the project.

F. The Contractor shall incorporate all permanent erosion control features (stabilization) into the project at the earliest practical time to minimize the need for temporary controls.

G. A stabilized construction entrance (SCE) shall be installed and maintained at any point where construction vehicles enter a public right-to-way, street, or parking area. The SCE shall be used to eliminate mud from the construction area onto public right-of-way. The SCE shall be constructed as shown on the Drawings. Any mud or debris tracked on streets shall be cleaned up immediately.

H. Dust Control: The Contractor shall provide a commercial grade; enclosed broom mechanical street sweeper to control sediment and/or dust that is tracked on to the adjacent streets. The street sweeper shall be equipped with a water storage tank to wet the area prior to sweeping. Where on site controls do not prevent material from being tracked on to adjacent streets, the street sweeper shall be used to clean the adjacent streets immediately. In addition, at a minimum, the adjacent streets shall be swept at the end of each day or as directed by the Engineer.

I. Any disturbed or stockpiled areas that will be left exposed more than 14 days or less according to State NPDES General Stormwater Permits shall immediately receive temporary or permanent seeding. Mulch/straw shall be used if the season prevents the establishment of a temporary cover. Disturbed areas shall be limed and fertilized prior to temporary seeding.

J. Permanent vegetation shall be established as specified on all exposed areas within 7 days or less according to State NPDES General Stormwater Permits after final grading. Mulch as necessary for seed protection and establishment. Lime and fertilize seedbed prior to permanent seeding.

K. Slopes shall be permanently seeded and mulched. Any slopes that erode easily shall be temporarily seeded and mulched. Any slopes deeper than 3:1 or steeper or as indicated on Drawings shall be protected with Erosion Control Blanket per specifications.

L. All storm drainage outlets must be stabilized, as specified, before the discharge points become operational. Equip all inlets with inlet protection immediately upon construction.

M. Manufactured insert inlet protection shall be installed and anchored in accordance with the manufacturers recommendations and design details. The Contractor shall maintain all manufactured insert inlet protection units until the project is stabilized and shall remove and dispose of the sediment accumulation properly when the units are more than 1/3 full. Replace and reinstall the unit if necessary.

N. Discharge from dewatering operations for the excavated areas shall not be directed to surface waters without first properly removing the suspended sediment through filtration and/or settlement. The Contractor shall obtain any required permits associated with dewatering activities.

O. Silt fence shall be installed at locations on the Drawings and any additional locations necessary for proper sediment control. The Contractor shall maintain the silt fence until the project is stabilized and shall remove and dispose of the silt fence and silt accumulation when 1/3 the height of the fence is reached.

P. Filter Socks shall be place at locations indicated on plans or as directed by the Engineer. They should be installed parallel to the base of the slope or other affected area. The Contractor shall maintain the Filter Socks and they shall be inspected weekly and after each rain event. If the Filter Sock requires repair, it shall be repaired in accordance with the manufacture's recommendations or replaced within 24 hours of inspection notification. Biodegradable filter socks shall be replaced after 6 months; photodegradable filter socks after 1 year. Polypropylene socks shall be replaced according to the manufacturer's recommendations.

Q. Soil erosion and sediment control shall include but not be limited to the approved measures. The Contractor shall be responsible for providing all additional measures that may be necessary to accomplish the intent of the Drawings.

R. Comply with all other requirements of authorities having jurisdiction.

S. Soil Stabilization and Temporary Seeding:
   1. Soil stabilization seeding shall consist of the application of the following materials in quantities as further described herein for stockpiles and disturbed areas left inactive for more than 14 days.
      a. Fertilizer.
      b. Seed.
      c. Mulch.
      d. Maintenance.
   2. Hydroseeding will be permitted as an alternative method of applying seed and associated soil conditioning agents described above. Should the Contractor elect to apply soil stabilization seeding by hydroseeding methods, he shall submit his operational plan and methods to the Engineer.
   3. Temporary Seeding is to be placed and maintained over all disturbed areas prior to Permanent Seeding. Maintain Temporary Seeding until such time as areas are approved for Permanent Seeding. As a minimum, maintenance shall include the following:
      a. Fix-up and reseeding of bare areas or re-disturbed areas.
      b. Mowing for stands of grass or weeds exceeding 6 inches in height.

T. Topsoil and Permanent Seeding: conform to the requirements of Section "Soil Preparation" and Section "Turf and Grasses."

END OF SECTION

SECTION 313710 – STONE FILL

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes provisions for the placement of stone fill on embankment slopes and streambanks.

1.2 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

A. Method of Measurement:
   1. The quantity of stone fill will be paid on a lump sum basis

B. Basis of Payment:
   1. The unit price shall include the cost of furnishing all labor, equipment, materials, including the geotextiles, bedding, stone fill and incidentals necessary to complete the work.

1.3 REFERENCES

A. Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering.

1.4 SUBMITTALS

A. Material Certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.

B. Results of all tests, investigations, including recommendations.

C. Manufacturer's catalog cuts, production data, and recommended installation procedures for geotextile fabric.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Stone fill shall conform with NYSDOT Section 733.21 and shall meet the following gradation requirements:
   1. Light:

STONE FILL	PERCENT OF TOTAL BY WEIGHT
<100 pounds	90 – 100
>6 inches	50 – 100
<1/2 inches	0 – 10

   2. Extra Heavy:

STONE FILL	PERCENT OF TOTAL BY WEIGHT
>1,300 pounds	50-100
< 6 inches	0 – 10

PART 3 – EXECUTION

3.1 SURFACE PREPARATION

A. Clear the surface on which the riprap is to be placed of brush, trees, or other objectionable material.

3.2 INSTALLATION

A. Stone Fill:
   1. Place the stones so that the dimension approximately equal to the layer thickness is perpendicular to the slope surface such that the weight of the stone is carried by the underlying material, not by the adjacent stones.
   2. Place light stone fill to minimize void spaces between adjacent stones.
   3. On slopes the largest stones shall be placed at the bottom of the slope.
   4. Place stone fill to avoid disruption and damage to the existing bedding material.

END OF SECTION

SECTION 316213 – DRIVEN PILES

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes driven foundation pilings.

B. Types of driven piles include the following:
   1. Structural steel H-section.

1.2 MEASUREMENT FOR PAYMENT

A. Payment will be made on a lump sum

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B.

C. Driving records of each pile to Owners Representative not later than 2 days after driving. Include the following data:
   1. Project name and number.
   2. Name of Contractor.
   3. Pile location and number.
   4. Type and size of hammer used.
   5. Type of pile driving cap used.
   6. Rate of operation of pile driving equipment.
   7. Pile dimensions.
   8. Elevation of point.
   9. Elevation of butt before and after cut-off.
   10. Ground elevation.
   11. Record of number of blows for each foot of penetration.

D. Submit records which have been compiled and attested to by a registered professional engineer.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: Firm which has minimum of 5 years of successful experience in fabrication of precast concrete units similar to units required for this Project with sufficient production capacity to produce required units without causing delay in Work.
   1. Fabricator must be an active member of the Prestressed Concrete Institute (PCI) and participate in its Plant Certification Program.

B. Welder Qualifications: Qualify welders, welding processes, and procedures in accordance with American Welding Society (AWS) D1.1 "Structural Welding Code - Steel."

1.5 DELIVERY, STORAGE, AND HANDLING

A. Except for piles to be used for test purposes, materials ordered or delivered to Project site prior to verification of assumed pile length, will be at Contractor's risk.

B. After pile lengths are verified, deliver materials to Project site in such quantities and at such times to ensure continuity of pile driving operations and adherence to project schedule.

C. Store piles in orderly groups above ground and blocked to prevent distortion of members.

1.6 PROJECT CONDITIONS

A. Site Information: Data on indicated subsurface conditions are not intended as representations or warranties of continuity of such conditions. It is expressly understood that Owner will not be responsible for interpretations or conclusions drawn therefrom by Contractor. The data are made available for convenience of Contractor.

B. Protection: Protect structures, underground utilities, and other construction from damage caused by pile driving operations. Pre-excavate for piles if required, as herein specified.

C. Provide surveyed elevation bench marks on structures where directed by Architect before commencing work when structures are within 10 feet of pile driving operations. Record and report elevation of each bench mark after driving piles and at least twice a day while pile driving is in progress. Should bench mark readings indicate displacement, halt driving operations until corrective action has been provided and is acceptable to Architect.

PART 2 – PRODUCTS

2.1 STEEL H-SECTION PILES

A. Steel: Hot-rolled, carbon steel structural shapes and plates, complying with ASTM A36.

B. Fabrication: Provide splice plates, pile caps, and bottom plates of same basic steel as pile sections. Fasten to H-piles with all-welded connections, as shown on the Drawings.

C. Provide pile point reinforcement of same basic steel as pile sections. Weld web reinforcement plates with a continuous fillet weld on top and bottom edge only; weld flange reinforcement plates, angles, or shapes with a continuous fillet weld on edges unless otherwise indicated.

2.2 DRIVING EQUIPMENT

A. General: Provide pile driving equipment of type generally used in standard pile driving practice, operated at manufacturer's specified rate, to develop required rated energy per blow.

B. Hammer: Provide pile driving hammers of sufficient capacity, size, and type to be able to deliver consistently effective dynamic energy, suitable to piles to be driven and to subgrade material into which they are to be driven, when operating at not more than 75 percent efficiency of rated driving energy.

C. Driving Caps: Equip hammer with cast steel or structural steel driving cap with grooved base conforming to pile shape. Keep bearing surfaces of grooves true and smooth.

D. Leads: Use fixed or rigid-type pile driver leads that will hold pile firmly in position and alignment, and in axial alignment with hammer. Extend leads to within 2 feet of elevation at which the pile enters ground.

PART 3 – EXECUTION

3.1 PRELIMINARY WORK

A. Site Conditions: Drive piles to allow for installation of erosion and sedimentation control devices prior to clearing operations

B. Pile Length Markings: Mark each pile length with horizontal line at 1-foot intervals, and the number of feet from pile point at 5-foot intervals.

C. Welded Splices: Clean surfaces to be welded of rust, scale, oil, paint, and foreign material. Use only pile members with identical cross-sections for splicing.

D. Only one splice per pile will be permitted unless otherwise authorized by Owners Representative. Make splices before starting driving operations wherever possible. If a welded splice is required during driving operation, make splice when top of driven pile is at least 3 feet above ground to permit inspection of welded connection during welding and during subsequent driving.

E. Splices shall be 100 percent butt welded, producing straight pile alignment through splice and developing full strength of pile in both bearing and bending.

F. Build-Ups: If it is determined during driving operations that a pile length will not be sufficient to meet final cut-off elevation, fabricate cast-in-place reinforced concrete build-up to required elevation.
   1. Minimum compressive strength not less than 5000 psi at 28 days.
   2. Payment for build-ups will be made in accordance with Contract provisions for changes in Work.

3.2 DRIVING PILES

A. General: Continuously drive piles at locations indicated to required point elevation and driving resistance established by driving and loading of test piles.
   1. Maintain center of gravity for each group or cluster of piles to conform to locations shown on drawings.
   2. Plumb leads and pile before driving. Take care during driving to prevent, and to correct, any tendency of piles to twist or rotate.

B. When high-resistant strata lying near the surface must be penetrated, spud piles may be used to minimize hard driving of long piles during early stages of driving operations.

C. Driving Tolerances: Drive piles within following maximum tolerances:
   1. Location: 6 inches from location indicated for center of gravity of each single pile or pile groups; 1 inch for piles under walls.
   2. Plumbness: Maintain 1 inch in 10 feet from vertical, or a maximum of 4 inches, measured when the pile is above ground in leads.
   3. Batter Angle: Maximum 1 inch in 10 feet from required angle, measured when pile is above ground in leads.

D. Backfill voids between pile and pre-excavated hole using satisfactory soil materials.

E. Heaved Piles: Provide recorded instrument observations made during pile driving to determine whether driven pile has lifted from its original seat during driving of adjacent piles. If uplift occurs, redrive affected piles to point elevation at least as deep as original point elevation with a driving resistance at least as great as original driving resistance.

F. Withdraw piles rejected after driving and replace with new piles.

G. Piles rejected after driving may be abandoned and cut-off and additional piles driven to replace rejected units at designated locations.

H. Solidly fill spaces left by withdrawn piles that will not be filled by new piles using cohesionless soil material such as gravel, broken stone, and gravel-sand mixtures. Place and compact throughout length of space in lifts not exceeding 6 feet.

I. Cutting-Off: Cut-off tops of driven piles square with pile axis and at elevations indicated. Dispose of excess materials off site.

J. Top Plates: After pile is cut off, weld top plates in place square and level.

3.3 WITHDRAWING AND REDRIVING PILES

A. Pile Withdrawal: Withdraw selected driven piles when directed by Owners Representative to determine condition of piles after driving.

B. Redriving: Redrive piles withdrawn for test and inspection, unless damaged or found not meeting specification requirements.

C. Withdrawing and redriving of piles found to be satisfactory will be paid for in accordance with Contract provisions for changes in Work.

D. Replace rejected piles with new piles as specified under "Damaged or Misdriven Piles."

3.4 FIELD QUALITY CONTROL

A. In absence of specific information for soil conditions at site or information supplied by local building department, make load tests to verify design pile lengths and loads. Provide complete testing materials and equipment as required. Notify Architect in ample time before performing tests.

B. Test piles, furnished and driven by Contractor to determine lengths of piles, may be located, cut off, and become part of foundation system provided they conform to Contract requirements.

C. Drive test piles at locations indicated to a point elevation below final cut-off elevation equal to pile length specified as basis of bid, or to refusal, whichever occurs first. Piles will be considered as driven to refusal when five (5) blows of hammer are required to produce a total penetration of 1/4 inch or less.

D. Include with test pile reports a record of driving equipment used including: hammer make and model number, stroke, weight of ram, and rated driving energy; driving cap weight and description and actual rate of operation of hammer during test pile driving.

END OF SECTION

SECTION 329119.19 - LANDFILL TOPSOIL

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes the placement of topsoil in conformance with the lines, grades and thicknesses as shown on the Drawings and as herein specified.

B. Minimum thickness is 6 inches, for all areas disturbed during construction and not receiving other surface treatment.

1.2 SUBMITTALS

A. Samples: The Contractor shall furnish earth materials to the testing laboratory for analysis and report, as directed by the Engineer or as outlined in the specifications.

B. Quality Control Submittals:
   1. Test Reports: The testing laboratory shall submit written reports of all tests, investigations, and recommendations to the Contractor and the Engineer. The test results should include gradation, pH, organic content, U.S.D.A soil texture classification and chemical make-up.
   2. Submit manufacturer's or vender's certified analysis for soil amendments.

1.3 QUALITY ASSURANCE

A. Reference Standards: The latest edition of the following standards, as referenced herein, shall be applicable.
   1. Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering.
   2. Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO).

B. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of soils with the specifications, in accordance with Section "Quality Control Services."

1.4 PROJECT CONDITIONS

A. Coordinate the placement of topsoil with the completion all underground work including that of the other trades.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Topsoil: Fertile, friable, natural non-contaminated loam free of subsoil, clay lumps, brush, stones, or other deleterious materials larger than 2 inches in greatest dimension, meeting the following gradation requirements:

SIEVE SIZE	PERCENT PASSING
2"	100
1"	95 – 100
1/4”	70 – 95
No. 40	20 – 65
No. 200	10 – 20

1. pH range: 5.5 - 7.6
2. Organic Content: 5% - 25%
3. U.S.D.A Soil Texture: Sand loam, loam, clay loam, silt loam, or sandy clay loam.

B. The Contractor may amend natural topsoil or the Barrier Protection material with approved materials and by approved methods to meet the above specifications.

2.2 ACCESSORIES

A. Soil Amendments:
1. Soil amendments are not to be made without review and authorization by the Engineer.
2. Lime: Natural limestone containing not less than 85% of total carbonates, ground so that not less than 90% passes a 10-mesh sieve and not less than 50% passes a 100-mesh sieve.
3. Aluminum Sulfate: Commercial grade.
4. Peat Humus: FS Q-P-166 and with texture and pH range suitable for intended use.
5. Bonemeal: Commercial, raw, finely ground; 4% nitrogen and 20% phosphoric acid.
6. Superphosphate: Soluble mixture of treated mixtures; 20% available phosphoric acid.
7. Sand: Clean, washed sand, free of toxic materials.
8. Perlite: Conforming to National Bureau of Standards PS 23.
9. Vermiculite: Horticultural grade, free of toxic substances.
10. Sawdust: Rotted sawdust, free of chips, stones, sticks, soil or toxic substances and with 7.5 lbs. nitrogen uniformly mixed into each cubic yard of sawdust.
11. Manure: Well-rotted, unleached stable or cattle manure containing not more than 25% by volume of straw, sawdust or other bedding materials and containing no chemicals or ingredients harmful to plants.
12. Commercial Fertilizer: Complete fertilizer of neutral character, with some elements derived from organic sources and containing available plant nutrients.
13. Commercial Compost: Containing no chemical or ingredients harmful to plants.

2.3 MATERIAL ACCEPTANCE

A. Topsoil may be acquired from approved sites that are designated on the Drawings or in the Proposal. If no sites are designated, material proposed for use as topsoil must be stockpiled, sampled, and tested prior to use.

B. Topsoil containing foreign or contaminated material may be rejected on the basis of visual examination by the Engineer, prior to testing.

C. Acceptance of topsoil shall be based upon test results. Tested topsoil must be approved in writing by the Engineer before any material is used.

PART 3 – EXECUTION

3.1 STOCKPILING

A. Topsoil shall be stockpiled from on-site sources or provided from off-site sources and stockpiled if on-site quantities are deficient.

B. Stockpiles shall contain not less than 200 cu. yds. or the minimum required for the project.

C. Stockpiles shall have a height of at least 4 feet and shall be trimmed to uniform surfaces and slopes.

D. The sites of all stockpiles and areas adjacent thereto which have been disturbed by the Contractor shall be graded and put into an acceptable condition by seeding as directed by the Engineer.

3.2 PREPARATION

A. Place topsoil on compacted subgrade conforming to Section “Earthwork” only after subgrades have been accepted by the Engineer.

B. Subgrades shall conform to the specified lines and grades.

C. Scarify the subgrade parallel to the contours to permit sufficient bonding with the topsoil. Do not scarify to the extent that the subgrade stability or density is disrupted.

D. Mix approved soil amendments into 6" inches of topsoil at necessary rates, if necessary.

3.3 TOPSOILING

A. Place topsoil in areas where seeding is to be performed. Place a 6" minimum depth to the finished grade elevations as shown on the Drawings.

B. Fine grade topsoil to eliminate uneven areas and to ensure proper drainage. Maintain finished grade elevations required.

C. Remove all stones, roots, grass, weeds or other foreign matter while placing.

D. Lightly compact the topsoil to ensure its stability.

E. Topsoil in an unworkable condition due to excessive moisture, frost, or other conditions shall not be placed until it is suitable for placement.

3.4 CLEANING

A. Remove all surplus subsoil and topsoil from project site.

B. Leave the site in clean, satisfactory condition ready to receive subsequent operations.

END OF SECTION

SECTION 329219.20 – LANDFILL SEEDING

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes preparation of ground surfaces, fertilizing, seeding, mulching, and maintenance of seeded areas as shown on the Drawings or as specified herein.

B. Seed shall be sown from April 1st to June 1st or from September 1st to October 15th, unless otherwise approved by the Engineer.

1.2 SUBMITTALS

A. Quality Control Submittals:
   1. Certification:
      a. Submit manufacturer's or vendor's certified analysis for fertilizer materials.
      b. Submit vendor's certified analysis for each grass seed mixture required, stating botanical and common name, percentages by weight, percentages by purity, germination, and weed seed.
   2. Maintenance Instructions: Submit instructions recommending procedures to be established for maintenance of landscaped work for one (1) full year. Submit prior to expiration of Contractor's maintenance period.
   3. Submit description of planned mulching techniques and corresponding manufacturer's installation recommendation for approval by the Engineer.

1.3 QUALITY ASSURANCE

A. All landscaping work shall be performed by one (1) Contractor, with proven experience in this field.

B. Package standard products with the manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.

C. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of materials with the specifications, in accordance with Section "Quality Requirements."

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Fertilizer:
   1. Commercial fertilizer (5-10-5) inorganic, or organic, containing not less than five (5) percent nitrogen, ten (10) percent available phosphoric acid, and five (5) percent water soluble potash.

2. If, as an alternative, the Contractor wishes to substitute for commercial fertilizer 5-10-5, another commercial fertilizer with a 1- 2-1 ratio, such as 10-20-10 or 6-12-6, he may do so with the approval of the Engineer and the rate of fertilizer to be used shall be whatever amount is required to furnish the same amount of nitrogen as would be supplied by the 5-10-5.

B. Seed:

1. Seed shall be fresh, clean, new-crop seed mixed in the proportions specified for species and variety, conforming to Federal and State Standards.
2. Use the following standard mixture, unless a special mixture is otherwise indicated or approved by the Engineer:

SPECIES	% BY WEIGHT	% BY PURITY	% GERMINATION
Creeping Red Fescue	40	95	85
Tall Fescue	30	95	85
Kentucky Bluegrass	15	95	85

3. Weed seed content shall not exceed 0.25%.

SPECIES	% BY WEIGHT	% BY PURITY	% GERMINATION
Perennial Rye	10	95	85
White Clover	5	80	80

C. Water: Clean, potable.

D. Mulch:

1. Provide and install a mulch adequate to protect the seeding during its growing period. It shall be the responsibility of the Contractor to determine the appropriate mulching techniques for the particular site conditions and acquire approval of the same from the Engineer.
2. Clean straw for gentle slopes, consisting of stalks of oats, wheat, rye, or other approved crops which are free of noxious weed seeds. Weight shall be based on a fifteen (15) percent moisture content.
3. Mulching blanket for steep slopes and drainage swales: "Curlex Blanket" by Amxco, "Ero-Mat" by Armco, or equal.

PART 3 – EXECUTION

3.1 PREPARATION OF TOPSOIL

A. Mix fertilizer into top 2 inches of topsoil at a rate of 20 lbs. per 1000 square feet.

B. Water dry topsoil to depth of 4 inches at least 48 hours prior to seeding to obtain a loose friable seed bed.

3.2 SEEDING

A. Apply seed only when wind velocities are less than five (5) miles per hour.

B. Sow half the seed with mechanical seeder.

C. Sow remaining half of seed at right angles to first seeding pattern, using the same method.

D. Apply seed at 5 lbs. per 1000 square feet.

E. Cover seed to a depth of 1/8 inch by raking, harrowing or cultipacking.

F. Roll seeded area with roller weighing no more than 150 lbs. per foot of roller width.

G. Water seeded areas to a depth of four (4) inches.

3.3 MULCHING

A. Spread straw uniformly over seeded area with 75% ground coverage and at least 1 1/2 inches loose depth.
   1. If, in the opinion of the Engineer, wind will disrupt the mulching, apply asphalt emulsion at a rate of 10 gallons per 1000 square feet.

B. Place mulching blanket in accordance with submitted manufacturer's recommendations.

3.4 HYDROSEEDING

A. Mix specified seed, fertilizer and pulverized mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

B. Apply slurry uniformly to all areas to be seeded. Rate of application as required to obtain specified seed sowing rate.

3.5 PROTECTION

A. Immediately after seeding and sodding, erect barricades and warnings to protect seeded areas from traffic until grass is established.

B. Repair or replace damaged landscape work as directed by Engineer.

3.6 MAINTENANCE

A. Begin maintenance immediately after seed placement.

B. Watering:
   1. Keep soil moist during seed germination period.
   2. Supplement rainfall to produce a total depth penetration of 2 inches per day after germination.

C. Mowing:
   1. When grass reaches 4 inches in height, mow to 2-1/2 inches in height.
   2. Maintain grass between 1-1/2 inches and 2-1/2 inches in height.
   3. Do not cut off more than 40% of grass leaf in a single mowing.
   4. Remove grass clippings.

D. Reseed and mulch spots larger than 1 square foot not having uniform coverage.

E. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regardening and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.

F. Maintain and protect all seeded areas until final acceptance of the Contract. Final acceptance of "Seeding: will not be made until an acceptable uniform stand of grass is obtained in all new lawn areas, except that the Engineer at his discretion may accept a portion or portions of the "Seeding" at various times. Upon acceptance by the Engineer of a seeded area, the Owner will immediately assume responsibility for maintenance and protection of that portion of the Contract Seeding.

END OF SECTION

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