
FOREST PRESERVE DETAILED PROJECT WORK PLAN

Fiscal Year 23-24

Project # O.G.S. PROJECT NO. 47251; NYS DEC ID 192-4560; CO-WP-318

<u>Region</u> 4	<u>Project Title</u> REHABILITATE SOUTH LAKE DAM
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<u>Project Type</u>	<u>Town(s)</u>	<u>County</u>	<u>Management Unit</u>
Expansion of Existing Structure/Improvement	Hunter	Greene	North South Lake Campground Intensive Use Area

Description of Desired Condition(s) for Project

The rehabilitation of South Lake Dam, which is owned and operated by the NYSDEC, is considered a Class B Intermediate Hazard Structure. To bring the dam into compliance with current dam safety regulations, it was reclassified from a Class A to a Class B in 2016. The parapet wall will be formed using concrete liners to give the appearance of stone that will blend with native features within the forest preserve. Native grasses will be planted to cover all disturbed soil areas. No trees will be planted as that is not allowed by dam safety. Due to the health and safety requirements from NYSDEC Dam Safety, this project will abate potential risk to life and property.

Key measures for the project have been identified to not only provide for public safety at and downstream of South Lake Dam but also maintaining current aesthetic, historic character, recreational opportunities, and the unique natural resource habitat the resulting dam impoundment provides.

Description of Project Specifications

The South Lake Dam is in a condition whereby its deficiencies are of such a nature that the safety of the dam cannot be assured. The recommended dam rehabilitation modifications include: - Replacement of the primary spillway CMP riser with a new precast concrete drop inlet structure that includes an elevated working platform and pedestrian bridge for access. - Re-lining the primary spillway conduit and add a flow control gate to the intake end. - Replacement of the LLO intake pipe and flow control valve. - Construction of a parapet and diversion wall system along the dam embankment crest. - Investigate and replace as necessary the plunge pool armoring. - Rip rap installation to repair erosion within the auxiliary spillway. - General Dam embankment improvements including filling of depression, adding rip rap to localize areas of erosion and removal of brush and trees that have encroached onto the embankment. Detailed Engineered drawings are attached.

Description of Measures Taken to Avoid, Mitigate and Minimize Impacts to Natural Resources

See attached "Erosion & Sediment Controls Descriptions" for proposed turbidity curtain, silt fence and construction safety fence, filter bag, and temporary cofferdam on sheet C-111. All wash water from vehicle cleaning (concrete trucks), equipment cleaning, etc. will be detained and properly treated or disposed. Sufficient oil and grease absorbing materials will be maintained on site or readily available

to contain and clean up fuel or chemical spills and leaks. Rubbish, trash and garbage, litter or other materials will be deposited in sealed containers. Any other incidental disturbances will be repaired and left in their original state.

There is a total of 1 threatened, endangered, or candidate species on this species list. Monarch Butterfly *Danaus plexippus*. No critical habitat has been designated for this species. See attached US Dept. of Interior regarding a full report on threatened and endangered species for this proposed site.

Analysis of Project Location and Design Alternatives

Several alternatives were considered for this project. Alternatives considered were 1) No Action, 2) Dam Removal 3) Alternative Parapet wall configuration, and 4) Dam Replacement

Alternative 1 – No Action, Existing Dam to Remain in Place

The “No Action” alternative is not preferred, as the existing Class B, Intermediate Hazard Dam poses a risk to human life and property if it were to fail. Over time, this risk would only increase for facility patrons, staff and the public downstream from the existing dam.

Alternative 2 – Dam Removal

Although offering a mitigative effect on the acute public safety risk presented by an inevitable uncontrolled dam failure presented in Alternative 1, a controlled removal would present undesirable impacts to both public recreation and the areas natural resources. The 84-acre North South Lake that the dam impounds is extensively used by the public for many forms of recreation. Boating, fishing, swimming, and wildlife viewing are just some of the recreational pursuits that would cease if the dam were to be removed. The intrinsic beauty and public attraction to the entire area would also be severely impacted if the lake were drained. The dam also serves as public access to the south lake recreation area. Removal would require the construction of a bridge to cross the future stream bed or the abandonment/removal of the recreational facilities as there would be no way to access that area. In addition to public health, safety and recreational enjoyment impacts, dam removal would have both short- and long-term natural resource impacts. North South Lake is regionally unique habitat in being a relatively large, high elevation, waterbody in a region dominated by fast flowing mountain valley streams. Many species dependent on this waterbody would be locally extirpated if the dam were removed. In addition, a suite of transient or migratory species that regularly use the waterbody would be displaced. The resulting 84 acres of exposed lakebed sediment would pose a significant risk to downstream environs until it naturally revegetated. Due to the high elevation, minimal depth to bedrock and topographical conditions this risk would be present for an extended period.

Alternative 3 – Alternative Parapet Wall Configuration

An alternative configuration was considered that would include the proposed parapet wall along the upstream side of the embankment crest, and the diversion wall at the auxiliary spillway would intersect the campground roadway. A stoplog closure system would be constructed across the roadway to allow traffic through the diversion wall. This alternative would require NYSDEC staff to install the stop logs prior to a flood, which may be impractical due to the remote location of the site and the other operational responsibilities leading up to a large storm. Therefore, this alternative was not selected. This alternative would involve the same amount of temporary and permanent wetland impacts (and same number of trees to be cut) as the Proposed Action.

Alternative 4 – Preferred Action, New Dam

The Project as proposed was selected as the preferred alternative because it addresses the existing deficiencies and safety concerns, and it is the least environmentally damaging practical alternative. Additionally, this alternative requires minimal maintenance and is consistent with the ongoing operations of the campground.

This structure is referenced in the 1998 approved UMP. Detailed Engineered drawings are attached.

Description of Use of Motorized Equipment and/or Motor Vehicles (if any)

Tree clearing will involve handheld chain saws. Logging trucks will be used to haul to a location within the campground. A stump grinder/tree chipper will be used to grind woody debris to spread in an open area on the forest floor for natural decay. Grubbing machines will be used to remove roots. The Project will require the use of typical construction equipment (i.e., excavators and dump trucks) for demolition and installation activities, and for earthwork in upland areas.

Description of Applicable Standards for Accessibility by People with Disabilities

Consistent with ADA requirements, the Department incorporates accessibility for people with disabilities into the planning, construction and alteration of recreational facilities and assets supporting them. However, there is no public access points within the scope of work for this project. Furthermore, for public safety we would not encourage access on this dam.

Other Relevant Considerations

Prepared by (Name & Title): Brett Byrne COS3
Phone: 518-357-2343

Date: 8/28/2023

REGULATORY CLEARANCE CHECKLIST – STATE LANDS and CONSERVATION EASEMENT PROJECTS

PROGRAM	PERMIT	REQUIRED		SECURED BY	COMMENTS
		YES	NO	(NAME)	
Air Resources	Restricted Burning	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Mineral Resources	Mining	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Materials Management	Solid Waste Mgt. Fac.	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Water	Dam Safety Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Schnabel Engineering and EDR (term contract design consultant and subconsultant) prepared the Joint Permit Application that was submitted on May 5, 2023	DEC's DSS has reviewed the 60% design submission submitted with the JPA and provided review comments, one comment remains outstanding – 100% design drawings need to be submitted to the DSS when completed (estimated to be submitted by the end of September 2023)
	Const. in Flood Hazard	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Public Water Supply	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	SPDES	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Spills Management	Petro. Bulk Storage	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Lands and Forests	Unit Management Plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1998 UMP	
	Tree Cutting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Schnabel Engineering and EDR (term contract design consultant and subconsultant)	EDR completed a tree survey in 2023 and prepared a Potential Summer Bat Habitat Tree Survey Memo for the project
	Protected Native Plants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Schnabel Engineering and EDR (term contract design consultant and subconsultant)	In June 2022 DEC received a letter from the US Fish & Wildlife Service
	Historic Preservation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Charles Vandrei, DEC Agency Historic Preservation Officer	DEC received a letter from NYS OPRHP noting that based upon their review, it is the opinion of the NY SHPO that no historic properties, including archaeological and/or historic resources, will be affected by the South Lake Dam rehabilitation project
Fish and Wildlife	Freshwater Wetlands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Schnabel Engineering and EDR (term contract design consultant and subconsultant) prepared the Joint Permit Application that was submitted on May 5, 2023	Notice of Complete Application soon to be issued along with permits per Evan Hogan, R4 RPA
	Wild Scenic & Rec. River	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Compliance Services	Other Protection of Waters	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	EAF	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Type II action
	Negative Declaration	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Env. Impact Statement	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Water Quality Cert.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Schnabel Engineering and EDR (term contract design consultant and subconsultant) prepared the Joint Permit Application that was submitted on May 5, 2023	Notice of Complete Application soon to be issued along with permits per Evan Hogan, R4 RPA
DEC (other)	CP-17	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Commissioner (aircraft, motorized equipment)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Flight Request	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Contract Clearance Sh.	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	DOB Exemption	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Other Agencies	APA MOU	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	APA Wetlands Permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Corps. of Engineers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Schnabel Engineering and EDR (term contract design consultant and subconsultant) prepared the Joint Permit Application that was submitted on May 5, 2023	Awaiting response from US ACE
	Building Permits	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Local Permits	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Easements	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Highway Enter DOT	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	Wastewater Disposal	<input type="checkbox"/>	<input checked="" type="checkbox"/>		



Memorandum

To: Zach Baum, PE, Schnabel Engineering, Inc.
From: Andy Mavian, Project Manager
Date: May 31, 2023
Reference: Revised Potential Summer Bat Habitat Tree Survey Memorandum – South Lake Dam Rehabilitation Project, Town of Hunter, Greene County, New York
EDR Project No: 22106

Introduction

This memorandum presents the results of a tree survey conducted by Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) on June 9, 2022, November 10, 2022, and May 17, 2023, for the South Lake Dam Rehabilitation project in North/South Lake Campground in the Town of Hunter, Greene County New York. The Study Area for the tree survey was an approximate 1.8-acre area located near the dam rehabilitation activities, hereafter referred to as the “Study Area.” The Study Area boundaries were provided to EDR by Schnabel Engineering, Inc.

The survey identified all trees with a diameter at breast height (dbh) greater than 1 inch and all trees displaying characteristics typically associated with potential summer roosting by listed endangered bat species; specifically, the Northern Long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*). Correspondence from the US Fish and Wildlife Service does not indicate that the Northern Long-eared bat or Indiana bat may occur within the Study Area. Additionally, no critical habitats have been designated within the Study Area. A review of the New York State Department of Environmental Conservation’s (NYSDEC) online Environmental Resource Mapper indicates the Study Area does not provide documented habitat for state-listed threatened or endangered species.¹

Background

The Indiana bat and Northern long-eared bat have experienced significant population declines due to a fungal disease known as white-nose syndrome.² Protection of suitable habitat is important for the protection and recovery of these species. Both Indiana bats and Northern long-eared bats typically hibernate in caves and mines with relatively constant temperature and

¹ NYSDEC Environmental Resource Mapper website: <https://gisservices.dec.ny.gov/gis/erm/>

² NYSDEC. 2019b. Northern long-eared Bat. Available at: <https://www.dec.ny.gov/animals/106713.html>

humidity throughout the winter.³ Following emergence and dispersal from their winter hibernacula, these bat species tend to roost individually or in small colonies, often utilizing the cavities, crevices, and hollows of live and dead trees. These summer roost sites are typically found in proximity to the winter hibernaculum.

Methods

Trees were defined as potential summer roost trees if they had a dbh of 1 inch or greater and if they exhibited one or more of the following characteristics: cavities in the trunk or branches, peeling or exfoliating bark, or visible cracks or crevices in the trunk or branches. Dbh measurements were taken with a standard dbh tape. All trees meeting the criteria outlined above were identified as part of this survey (see Attachment 1). The locations of trees with a dbh greater than 1 inch within the Study Area were mapped using a global positioning system (GPS) with reported sub-meter accuracy. In places where a multi-stemmed trees were identified, a single GPS location was recorded, and data for each component with a dbh greater than 1 inch was documented. A total of 103 multi-stemmed tree clumps were encountered within the Study Area. A summary of the survey results is presented below. Mapping of the surveyed trees is included as Attachment 2.

Results

The Study Area is comprised of several ecological community types, including mixed forest, developed land, evergreen forest, and woody wetlands. Dominant trees within the Study Area include eastern hemlock (*Tsuga canadensis*), American beech (*Fagus grandifolia*), and yellow birch (*Betula alleghaniensis*). EDR identified a total of 456 trees with a dbh greater than 1 inch within the Study Area. See Attachment 2 for a table showing trees with bat roosting habitat. Tree species identified within the Study Area that are likely to display favorable bat roosting characteristics (e.g., grooved bark, large cavities, etc.) include snags, large black cherry (*Prunus serotina*), sugar maple (*Acer saccharum*), yellow birch, paper birch (*Betula papyrifera*), eastern hemlock, red oak (*Quercus rubra*), and ash (*Fraxinus* sp.) tree species. Therefore, it is recommended that these species in particular are avoided where possible during construction. Tree species identified within the Study Area that are not likely to display favorable bat roosting characteristics due to their relatively smooth bark include American beech (*Fagus grandifolia*), red maple (*Acer rubrum*), striped maple (*Acer pensylvanicum*), and witch hazel (*Hamamelis virginiana*).

Based on the findings provided above, potential summer roost trees occur within the Study Area. However, the abundance of nearby forested areas suggests that potential summer roost trees likely exist throughout the area, and any tree removal within the Study Area would not eliminate

³ United States Fish and Wildlife Service (USFWS). 2014. Northern long-eared Bat Interim Conference and Planning Guidance. Available at: <https://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf>

essential summer roosting habitat for bats. To avoid potential impacts to bats, it is recommended that tree removals within the Study Area be conducted between November 1 and March 31 when bats are typically inactive and within their winter hibernaculum.

References

Cheng Tina L., et al. 2021. *The scope and severity of white-nose syndrome on hibernating bats in North America*. *Conservation Biology*.35:1586–1586. Available at: <https://doi.org/10.1002/cobi.13739> (Accessed November 2022).

Edinger, Gregory J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M Olivero (Editors). 2014. *Ecological Communities of New York State*. Second Edition. A revised and expanded edition of Carol Reschke's *Ecological Communities of New York State*. NY Natural Heritage Program, NYSDEC, Albany, NY.

New York State Department of Environmental Conservation (NYSDEC). *Indiana Bat*. Available at: <https://www.dec.ny.gov/animals/6972.html>

NYSDEC, 2021. *Protection of Northern Long-Eared Bats*. Bureau of Wildlife. Available at: <https://www.dec.ny.gov/animals/106090.html> (Accessed November 2022).

United States Fish and Wildlife Service (USFWS). 2014. *Northern Long-eared Bat Interim Conference and Planning Guidance*. Available at: <https://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf>.

United States Fish and Wildlife Service (USFWS). 2022. *Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines*. Available at: [Range-wide Indiana Bat & Northern Long-eared Bat Summer Survey Guidelines \(fws.gov\)](https://www.fws.gov/range-wide/indiana-bat-northern-long-eared-bat-summer-survey-guidelines)

USFWS, 2022. *Northern Long-eared Bat*. Available at: <https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis> (Accessed November 2022).

United States Fish and Wildlife Service (USFWS). 2021. *Section 4(d) Rules: Frequently Asked Questions*. Available at: <https://www.fws.gov/node/267756> (Accessed November 2022).

Wildlife Service (USFWS). 2016. *Federal Register: Endangered and Threatened Wildlife and Plants; 4(d) Rule for the Northern Long-Eared Bat*. Available at: <https://www.federalregister.gov/documents/2016/01/14/2016-00617/endangered-and-threatened-wildlife-and-plants-4d-rule-for-the-northern-long-eared-bat> (Accessed November 2022).

Attachments:

1. Data Table
2. Project Mapping

ATTACHMENT 1

Data Table

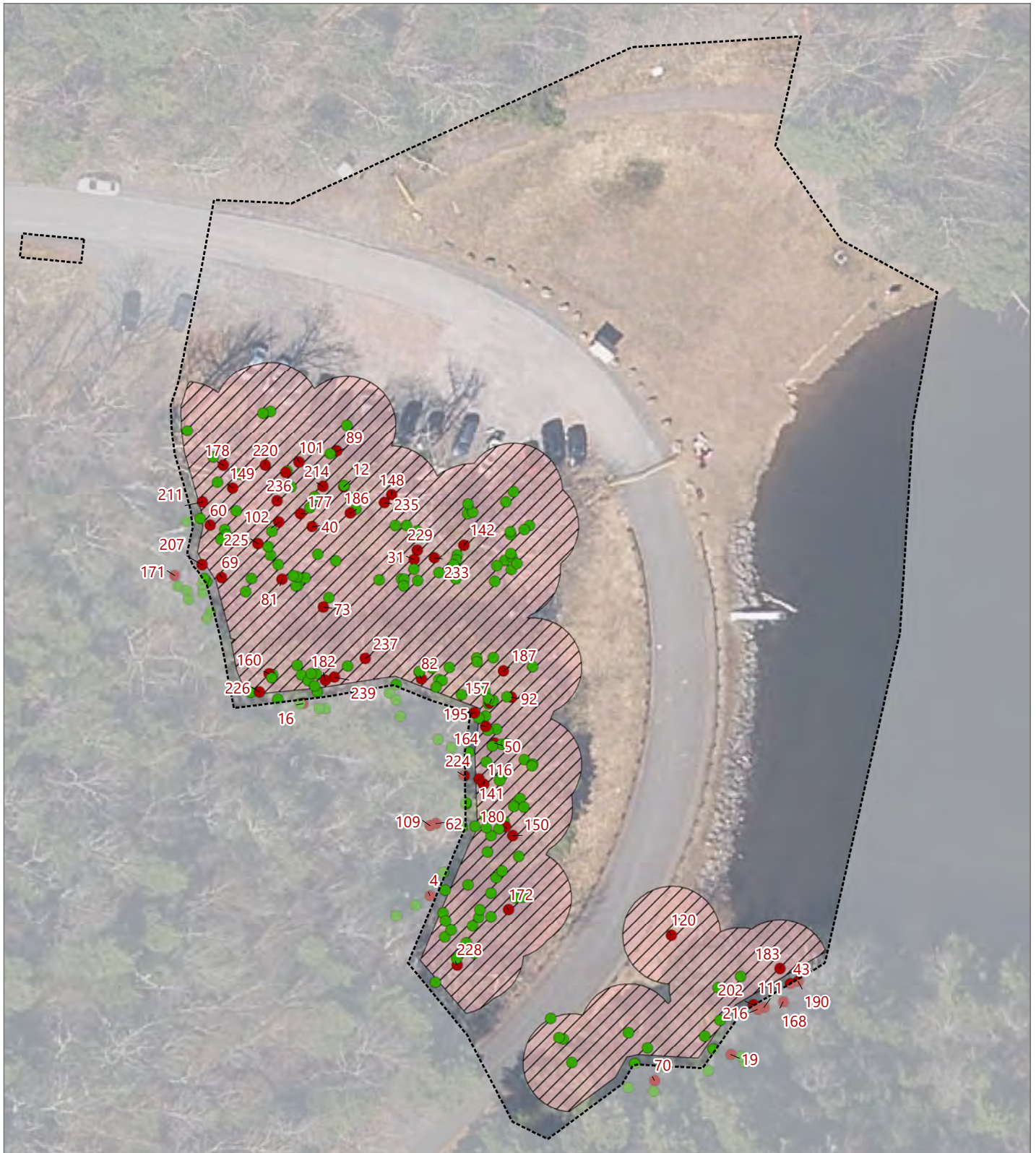
FID	Species	Characteristics	Count	Roost	Tree 1 DBH (in)	Tree 2 DBH (in)	Tree 3 DBH (in)	Tree 4 DBH (in)	Tree 5 DBH (in)	Tree 6 DBH (in)	Tree 7 DBH (in)	Tree 8 DBH (in)	Tree 9 DBH (in)	Tree 10 DBH (in)	Tree 11 DBH (in)	Tree 12 DBH (in)	Lat	Long	To Be Removed
57	American Beech		2	N	4.8	9	-	-	-	-	-	-	-	-	-	-	42.19635	-74.05122	Yes
58	Eastern Hemlock		3	N	1.8	1.5	6.9	-	-	-	-	-	-	-	-	-	42.19592	-74.05099	Yes
59	Red Maple		3	N	5.5	6	10	-	-	-	-	-	-	-	-	-	42.19577	-74.05062	Yes
61	Eastern Hemlock		6	N	2.6	1.8	3.2	1	4.5	3.35	-	-	-	-	-	-	42.19625	-74.05133	Yes
63	Black Spruce		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19590	-74.05107	No
64	American Beech		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19634	-74.05134	Yes
65	Red Maple		1	N	12	-	-	-	-	-	-	-	-	-	-	-	42.19572	-74.05058	No
66	Eastern Hemlock		5	N	19	1	4.6	2.6	1.4	-	-	-	-	-	-	-	42.19616	-74.05107	Yes
67	Yellow Birch		1	N	2	-	-	-	-	-	-	-	-	-	-	-	42.19598	-74.05094	Yes
68	Eastern Hemlock		4	N	5.8	1.7	4.8	1.9	-	-	-	-	-	-	-	-	42.19589	-74.05103	Yes
71	Fir Species		1	N	5	-	-	-	-	-	-	-	-	-	-	-	42.19598	-74.05098	No
72	Eastern Hemlock		3	N	1.5	2.3	1	-	-	-	-	-	-	-	-	-	42.19625	-74.05143	No
74	American Beech		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19608	-74.05094	Yes
75	Yellow Birch		3	N	1	1	1	-	-	-	-	-	-	-	-	-	42.19591	-74.05096	Yes
76	Ash		1	N	6	-	-	-	-	-	-	-	-	-	-	-	42.19612	-74.05096	Yes
77	Yellow Birch		3	N	7	2.7	2.7	-	-	-	-	-	-	-	-	-	42.19627	-74.05104	Yes
78	Eastern Hemlock		2	N	4.8	2	-	-	-	-	-	-	-	-	-	-	42.19586	-74.05103	Yes
79	Eastern Hemlock		5	N	2	1.9	1.3	2	2.9	-	-	-	-	-	-	-	42.19625	-74.05139	No
80	Sugar Maple		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19626	-74.05139	No
83	American Beech		2	N	6.3	1.4	-	-	-	-	-	-	-	-	-	-	42.19628	-74.05128	Yes
84	Eastern Hemlock		2	N	2.1	1.6	-	-	-	-	-	-	-	-	-	-	42.19616	-74.05102	Yes
85	Striped Maple		3	N	1.3	1.3	1.6	-	-	-	-	-	-	-	-	-	42.19599	-74.05094	Yes
86	Dead		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19575	-74.05064	Yes
87	Eastern Hemlock		6	N	1.7	1.7	3.5	2.8	1.7	3.3	-	-	-	-	-	-	42.19569	-74.05075	No
88	Ash		1	N	1.7	-	-	-	-	-	-	-	-	-	-	-	42.19625	-74.05125	Yes
90	Eastern Hemlock		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19634	-74.05123	Yes
91	American Beech		2	N	3.95	2.7	-	-	-	-	-	-	-	-	-	-	42.19632	-74.05136	Yes
93	Eastern Hemlock		4	N	12.5	2.4	1.7	5.8	-	-	-	-	-	-	-	-	42.19571	-74.05070	No
94	Dead		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19632	-74.05110	Yes
95	American Beech		4	N	1.6	1.9	3.6	3	-	-	-	-	-	-	-	-	42.19631	-74.05136	Yes
96	Yellow Birch		1	N	7	-	-	-	-	-	-	-	-	-	-	-	42.19616	-74.05107	Yes
97	Ash		1	N	2	-	-	-	-	-	-	-	-	-	-	-	42.19614	-74.05097	Yes
98	Red Oak		1	N	22	-	-	-	-	-	-	-	-	-	-	-	42.19643	-74.05141	Yes
99	Red Maple		1	N	14	-	-	-	-	-	-	-	-	-	-	-	42.19616	-74.05129	Yes
100	Eastern Hemlock		6	N	8.6	3.2	5.8	1.2	1.6	1.9	-	-	-	-	-	-	42.19593	-74.05094	Yes
103	American Beech		4	N	8	3	2.15	1.35	-	-	-	-	-	-	-	-	42.19635	-74.05093	Yes
104	Eastern Hemlock		3	N	7.25	3.1	9.2	-	-	-	-	-	-	-	-	-	42.19613	-74.05110	No
105	Yellow Birch		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19631	-74.05136	Yes
106	American Beech		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19615	-74.05123	Yes
107	Eastern Hemlock		2	N	5.1	6.7	-	-	-	-	-	-	-	-	-	-	42.19635	-74.05117	Yes
108	American Beech		4	N	1.3	7.1	2.7	2.5	-	-	-	-	-	-	-	-	42.19629	-74.05101	Yes
110	Dead		3	N	8.5	3.5	4.7	-	-	-	-	-	-	-	-	-	42.19590	-74.05091	Yes
112	Eastern Hemlock		2	N	5.45	14.5	-	-	-	-	-	-	-	-	-	-	42.19640	-74.05120	Yes
113	Eastern Hemlock		1	N	11	-	-	-	-	-	-	-	-	-	-	-	42.19601	-74.05091	Yes
114	Ash		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19605	-74.05090	Yes
115	American Beech		2	N	1.4	3.5	-	-	-	-	-	-	-	-	-	-	42.19601	-74.05092	Yes
117	Red Maple		3	N	4.1	3.3	8.6	-	-	-	-	-	-	-	-	-	42.19626	-74.05095	Yes
118	Eastern Hemlock		4	N	3.3	16.7	2	5.2	-	-	-	-	-	-	-	-	42.19572	-74.05074	No
119	Sugar Maple		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19626	-74.05109	Yes
121	American Beech		1	N	1.1	1.1	-	-	-	-	-	-	-	-	-	-	42.19612	-74.05125	No
122	Eastern Hemlock		1	N	10.6	10.6	-	-	-	-	-	-	-	-	-	-	42.19611	-74.05109	No
123	Eastern Hemlock		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19614	-74.05122	No
124	American Beech		2	N	4.7	1	-	-	-	-	-	-	-	-	-	-	42.19612	-74.05122	No
125	Yellow Birch		1	N	2	-	-	-	-	-	-	-	-	-	-	-	42.19613	-74.05093	Yes
126	Striped Maple		1	N	2	-	-	-	-	-	-	-	-	-	-	-	42.19611	-74.05098	Yes
127	Striped Maple		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19601	-74.05100	No
128	Eastern Hemlock		2	N	2.8	1.2	-	-	-	-	-	-	-	-	-	-	42.19624	-74.05141	No
129	Eastern Hemlock		2	N	7.3	9.9	-	-	-	-	-	-	-	-	-	-	42.19633	-74.05139	No
130	American Beech		4	N	7	3.4	4.1	2.7	-	-	-	-	-	-	-	-	42.19633	-74.05099	Yes
131	Witch Hazel		4	N	2.4	1.3	1	1	-	-	-	-	-	-	-	-	42.19608	-74.05104	No
132	Striped Maple		2	N	1.2	1.25	-	-	-	-	-	-	-	-	-	-	42.19601	-74.05091	Yes
133	Eastern Hemlock		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19601	-74.05100	No
134	American Beech		3	N	2	2.5	1.7	-	-	-	-	-	-	-	-	-	42.19628	-74.05101	Yes
135	Striped Maple		2	N	1.2	2.6	-	-	-	-	-	-	-	-	-	-	42.19588	-74.05103	Yes
136	Red Maple		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19614	-74.05122	Yes
137	Eastern Hemlock		2	N	4.2	1.6	-	-	-	-	-	-	-	-	-	-	42.19628	-74.05101	Yes
138	Striped Maple		2	N	1.5	1.8	-	-	-	-	-	-	-	-	-	-	42.19598	-74.05097	Yes
139	Eastern Hemlock		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19631	-74.05136	Yes
140	Eastern Hemlock		4	N	8.5	4	2	4	-	-	-	-	-	-	-	-	42.19581	-74.05058	Yes
143	Striped Maple		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19625	-74.05142	No
144	Dead		1	N	10	-	-	-	-	-	-	-	-	-	-	-	42.19615	-74.05103	Yes
145	Yellow Birch		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19616	-74.05123	Yes
146	Red Maple		1	N	8	-	-	-	-	-	-	-	-	-	-	-	42.19585	-74.05100	Yes
147	Ash		4	N	5	6.8	3.8	8.7	-	-	-	-	-	-	-	-	42.19631	-74.05093	Yes
151	Red Oak		1	N	4	-	-	-	-	-	-	-	-	-	-	-	42.19617	-74.05098	Yes
152	Yellow Birch		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19629	-74.05122	Yes
153	American Beech		2	N	2.4	2.1	-	-	-	-	-	-	-	-	-	-	42.19616	-74.05105	Yes
154	Eastern Hemlock		3	N	3.25	1.2	1.6	-	-	-	-	-	-	-	-	-	42.19634	-74.05098	Yes
155	Red Maple		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19622	-74.05139	No
156	American Beech		5	N	1	1.3	1.1	1.2	1.1	-	-	-	-	-	-	-	42.19614	-74.05110	No
158	Ash		1	N	7	-	-	-	-	-	-	-	-	-	-	-	42.19643	-74.05117	Yes
159	Eastern Hemlock		1	N	2	-	-	-	-	-	-	-	-	-	-	-	42.19626	-74.05125	Yes
161	Witch Hazel		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19626	-74.05132	Yes
162	Dead		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19630	-74.05129	Yes
163	Eastern Hemlock		1	N	15	-	-	-	-	-	-	-	-	-	-	-	42.19615	-74.05129	Yes
165	Yellow Birch		1	N	2	-	-	-	-	-	-	-	-	-	-	-	42.19588	-74.05096	Yes
166	Yellow Birch		1	N	10	-	-	-	-	-	-	-	-	-	-	-	42.19613	-74.05100	Yes
167	American Beech		2	N	1.5	1.7	-	-	-	-	-	-	-	-	-	-	42.19587	-74.05102	Yes
169	American Beech		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19614	-74.05104	Yes
170	Striped Maple		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19637	-74.05126	Yes
173	Sugar Maple		1	N	5	-	-	-	-	-	-	-	-	-	-	-	42.19632	-74.05091	Yes
174	American Beech		5	N	3	3.9	3.1	1.7	8										

FID	Species	Characteristics	Count	Roost	Tree 1 DBH (in)	Tree 2 DBH (in)	Tree 3 DBH (in)	Tree 4 DBH (in)	Tree 5 DBH (in)	Tree 6 DBH (in)	Tree 7 DBH (in)	Tree 8 DBH (in)	Tree 9 DBH (in)	Tree 10 DBH (in)	Tree 11 DBH (in)	Tree 12 DBH (in)	Lat	Long	To Be Removed
201	Dead		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19626	-74.05107	Yes
203	Striped Maple		1	N	4	-	-	-	-	-	-	-	-	-	-	-	42.19581	-74.05104	No
204	American Beech		1	N	7	-	-	-	-	-	-	-	-	-	-	-	42.19635	-74.05099	Yes
205	American Beech		1	N	3	-	-	-	-	-	-	-	-	-	-	-	42.19627	-74.05125	Yes
206	Eastern Hemlock		2	N	4.8	1.95	-	-	-	-	-	-	-	-	-	-	42.19591	-74.05103	No
208	Eastern Hemlock		1	N	1	-	-	-	-	-	-	-	-	-	-	-	42.19625	-74.05109	Yes
209	American Beech		2	N	2	1	-	-	-	-	-	-	-	-	-	-	42.19575	-74.05086	No
210	American Beech		1	N	5	-	-	-	-	-	-	-	-	-	-	-	42.19590	-74.05092	Yes
212	Sugar Maple		1	N	9.1	-	-	-	-	-	-	-	-	-	-	-	42.19629	-74.05093	Yes
213	American Beech		1	N	2	-	-	-	-	-	-	-	-	-	-	-	42.19613	-74.05111	No
215	Yellow Birch		2	N	2.7	1	-	-	-	-	-	-	-	-	-	-	42.19595	-74.05096	Yes
217	Eastern Hemlock		3	N	1	1.1	2.3	-	-	-	-	-	-	-	-	-	42.19577	-74.05087	No
218	American Beech		3	N	9.8	1.5	2.25	-	-	-	-	-	-	-	-	-	42.19645	-74.05130	Yes
219	American Beech		3	N	3.3	4.9	1	-	-	-	-	-	-	-	-	-	42.19628	-74.05095	Yes
221	Yellow Birch		1	N	9	-	-	-	-	-	-	-	-	-	-	-	42.19626	-74.05113	Yes
222	Eastern Hemlock		3	N	15.8	10.1	15.15	-	-	-	-	-	-	-	-	-	42.19631	-74.05107	Yes
223	Eastern Hemlock		1	N	17	-	-	-	-	-	-	-	-	-	-	-	42.19598	-74.05095	Yes
227	Red Maple		1	N	8	-	-	-	-	-	-	-	-	-	-	-	42.19616	-74.05089	Yes
230	Eastern Hemlock		3	N	2.5	4.4	16.2	-	-	-	-	-	-	-	-	-	42.19616	-74.05117	Yes
231	Striped Maple		1	N	3	-	-	-	-	-	-	-	-	-	-	-	42.19573	-74.05073	Yes
232	Eastern Hemlock		3	N	7	5	13	-	-	-	-	-	-	-	-	-	42.19584	-74.05101	Yes
234	Eastern Hemlock		3	N	12.5	20.4	13.1	-	-	-	-	-	-	-	-	-	42.19607	-74.05102	No
238	Red Oak		1	N	15	-	-	-	-	-	-	-	-	-	-	-	42.19607	-74.05096	Yes
241	Red Oak		1	N	2	-	-	-	-	-	-	-	-	-	-	-	42.19628	-74.05092	
242	American Beech		3	N	1.5	2.3	3.5	-	-	-	-	-	-	-	-	-	42.19638	-74.05134	
243	Striped Maple		4	N	2	2.3	2.8	4.1	-	-	-	-	-	-	-	-	42.19626	-74.05139	

ATTACHMENT 2

Project Mapping

Attachment 2. Location of Surveyed Trees



South Lake Dam Rehabilitation

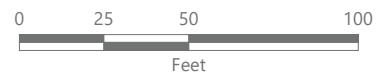
Town Hunter, Greene County, New York

Tree Survey Memo



Surveyed Tree

- ^{ID} Potential Roost Tree
- Non-Potential Roost Tree
- ▨ Tree Removal Area
- ⋯ Limit of Construction (LOC)



Prepared May 31, 2023
Basemap: NYS DOP "2021" orthoimagery map service.

Joint Application for Permit

South Lake Dam Rehabilitation Project

North/South Lake Campground

Town of Hunter

Greene County, New York

Prepared for:



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March 2023

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Appendix E. 60 Percent Design Report

JOINT APPLICATION FOR PERMIT FORM



Department of Environmental Conservation

APPLICATION FOR PERMIT FOR THE CONSTRUCTION, RECONSTRUCTION OR REPAIR OF A DAM OR OTHER IMPOUNDMENT STRUCTURE Supplement D-1

Please read all instructions on the following page. Please TYPE or PRINT clearly in ink. Attach additional information as needed.

FOR DEPARTMENT USE ONLY	
APPLICATION NO.	
DAM NO.	
WATERSHED	

PROJECT DESCRIPTION

1. LOCATION On U.S. GEOLOGICAL SURVEY MAP Name of Map: <u>Kaaterskill Clove</u> Latitude: <u>42.196111</u> Longitude: <u>74.050694</u>		2. PROPOSED USE FOR IMPOUNDED WATER <u>Recreation</u>		3. STATE THE HEIGHT ABOVE SPILLCREST OF THE LOWEST PART OF THE IMMEDIATE UPSTREAM ADJOINING PROPERTY OR PROPERTIES <u>20</u> Feet	
4. IS THIS PROPOSED POND OR LAKE PART OF A PUBLIC WATER SUPPLY? If not, where is nearest downstream public water supply intake? <u>N/A</u>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		5. SIZE OF AREA DRAINING INTO POND OR LAKE (Acres or Square Miles) <u>1.7 sq. mi.</u>	
6. THE DRAINAGE AREA IS COMPOSED OF: (Total = 100%) <u>88</u> % Forest <u> </u> % Cropland <u> </u> % Pasture <u>6</u> % Other <u>2</u> % Swamp <u>4</u> % Suburban Lands <u> </u> % Urban Lands					
7. TYPE OF SPILLWAY <input checked="" type="checkbox"/> Service Spillway - Auxiliary Spillway Combination <input type="checkbox"/> Pip Riser ONLY <input type="checkbox"/> Single Spillway <input type="checkbox"/> Other			8. DESIGNER'S ESTIMATE OF CLASS OF HAZARD (As described in 6NYCRR Part 673) <input type="checkbox"/> Class "A" <input checked="" type="checkbox"/> Class "B" <input type="checkbox"/> Class "C" NOTE: Provide descriptive information on character of downstream area.		
9a. SPILLWAY INFLOW DESIGN FLOOD Frequency <u>150%</u> 100-year Flood Peak <u>2218</u> cfs Runoff Volume <u>10.7</u> in.			9b. SERVICE SPILLWAY INFLOW DESIGN FLOOD Frequency <u>50</u> Flood Peak <u>1251</u> cfs Runoff Volume <u>6.0</u> in.		
10. THE SINGLE SPILLWAY OR AUXILIARY SPILLWAY IS COMPOSED OF: <input checked="" type="checkbox"/> Vegetated Earth <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Timber <input type="checkbox"/> Rock-filled Crib <input type="checkbox"/> Masonry <input checked="" type="checkbox"/> Other					
11. MAXIMUM VELOCITY WITHIN THE SINGLE OR AUXILIARY SPILLWAY <u>5</u> fps		12. SINGLE OR AUXILIARY SPILLWAY DISCHARGE AT DESIGN HIGH WATER <u>524</u> cfs		13. TYPE OF ENERGY DISSIPATER PROVIDED ON SINGLE SPILLWAY <input type="checkbox"/> Hydraulic Jump Basin <input type="checkbox"/> Drop Structure <input checked="" type="checkbox"/> Other <u>Plunge Pool</u>	
14. POND OR LAKE WILL BE DRAINED BY MEANS OF <u>30-inch slide gate/orifice</u>			WATER WILL BE SUPPLIED TO RIPARIAN OWNERS DOWNSTREAM BY MEANS OF <u>N/A</u>		
15. AREA CAPACITY DATA Answer 1, 2 and 3, OR 1, 2, 4, 5					
		ELEVATION, Referred to Assumed Benchmark		SURFACE AREA	
1. Top of Dam		<u>2140.0</u> Feet		<u>111.6</u> Acres	
2. Design High Water		<u>2139.4</u> Feet		<u>109.5</u> Acres	
3. Single Spillway Crest		<u>N/A</u> Feet		<u>N/A</u> Acres	
4. Auxiliary Spillway Crest		<u>2137.8</u> Feet		<u>105</u> Acres	
5. Service Spillway Crest		<u>2133.0</u> Feet		<u>83.8</u> Acres	
		VOLUME STORED		16. TYPE OF ENERGY DISSIPATER AT OUTLET OF CONDUIT: <input type="checkbox"/> Impact Basin <input type="checkbox"/> Hydraulic Jump Basin <input checked="" type="checkbox"/> Plunge Pool <input type="checkbox"/> Other	
		<u>1299</u> Acre-Feet		IS RISER PROVIDED WITH AN ANTI-VORTEX DEVICE? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
		<u>1123.7</u> Acre-Feet			
		<u>N/A</u> Acre-Feet			
		<u>1058.1</u> Acre-Feet			
		<u>594.8</u> Acre-Feet			
17. DRAWDOWN TIMES: Answer 1 and 2, OR 1, 3, and 4					
1. Has provision been made to evacuate 90% of the storage below the lowest spillway crest within fourteen days? <small>DEC will incorporate provisions into their O&M Plan for the dam to draw down the impoundment below the LLO elevation using pumps or siphons. See additional discussion in the 60% Design Report.</small>		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		3. Can the Service Spillway evacuate 75% of the storage between the auxiliary spillway and the Service Spillway crest within seven days? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
2. Can the single spillway evacuate 75% of the storage between the maximum design high water and the spillway crest within 48 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No				4. Can the Service Spillway and the Auxiliary Spillway in combination evacuate the storage between the design high water and the auxiliary spillway crest within 12 hours? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
18. SOIL DATA - State the character of the bed and banks in respect to natural types of soil materials, hardness, perviousness, water bearing, effect of exposure to air and water, uniformity, etc. <u>Glacial till foundation soils are generally comprised of silty gravel, silty sand, clayey sand, silt, and low plasticity clay.</u> If an earth dam, describe the material to be used in the embankment. Imported embankment fill shall be classified as SM, SC, SP, ML, or GM with a plasticity index of non-plastic to 15. Refer to Section 310000. Filter sand shall be in accordance with ASTM C33 Fine Aggregate, and filter stone in accordance with ASTM C33 No. 8 Coarse Aggregate. What is the source of embankment fill material? <u>Earthfill, aggregates, and riprap will be trucked in from off-site sources. Existing embankment fill may be reused if gradation and moisture are acceptable.</u> Are there porous seams or fissures beneath the foundation of the proposed dam? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Method used to obtain the above soil data <input checked="" type="checkbox"/> Soil Borings <input checked="" type="checkbox"/> Soil Bearing <input type="checkbox"/> Test Pits					
19. DESIGN ENGINEER Name of agency or individual <u>Gregory J. Daviero</u>		P.E. License No. of Individual <u>076824</u>		20. CONSTRUCTION ENGINEER Name of agency or individual <u>Gregory J. Daviero</u>	
Address <u>Schnabel Engineering, 28 Corporate Drive, Suite 204, Clifton Park, NY</u>		P.E. License No. of Individual <u>076824</u>		Address <u>Schnabel Engineering, 28 Corporate Drive, Suite 204, Clifton Park, NY</u>	
Title <u>Principal</u>		Telephone No. <u>518-348-8575</u>		Title <u>Principal</u>	
				Telephone No. <u>518-348-8575</u>	

**INSTRUCTIONS FOR INFORMATION TO ACCOMPANY SUPPLEMENT D-1
(DAM/IMPOUNDMENT APPLICATION)**

1. Five (5) copies of all documents must be filed, including detailed construction plans and specifications.
2. The plans and specifications submitted with the application must include the following information:
NOTE: The following is required to satisfy the requirement in 6NYCRR Part 608, section 608.6(a)(3)(iii) for construction plans and project specifications that are sufficiently detailed for department evaluation of the safety aspects of the dam.
 - a. A plan showing the proposed dam and dam appurtenances, horizontal and vertical controls, the normal water level in the lake or pond, the limits of the owner's property, the location of drill holes, test pits or other foundation exploration, the location of borrow areas, and topographic contours at the dam and around the anticipated reservoir area, including 2-foot contours to 6 feet above high water level.
 - b. A profile along the dam axis from abutment to abutment and a cross section diagram of the dam at its maximum height, showing original, existing, and proposed conditions.
 - c. A profile along the center line and a cross section diagram, or diagrams, of the spillways, including stilling basins, outlet work, and other details of the design of the structures.
 - d. Specifications for the materials and for the methods of construction.
 - e. A description of construction inspection activities, to be performed by the applicant's engineer, to ensure that work is performed in conformance with the approved design.
 - f. A record of subsurface investigation and soils information used by the design engineer or conservationist for foundation and borrow assessment.
 - g. Any additional drawings needed to clearly show all details of the proposed project.
 - h. Samples of foundation, embankment and construction materials need not be furnished unless specifically requested by the Department.
3. The design, preparation of plans, estimates and specifications, and the supervision of the erection, reconstruction and repair of all the structures, herein applied for, shall be done by a licensed professional engineer, or, in the case of farm ponds, by an engineer or conservationist employed by a governmental agency cooperating with a soil conservation district.
4. A technical guidance document "Guidelines for Design of Dams" is available upon request from the DEC Regional Permit Administrator or through the DEC website at <http://www.dec.ny.gov>. Click on Environmental Protection, then Water, then Flood Protection and finally Dam Safety. This document outlines hydrologic and other criteria which should be utilized by the design engineer.
5. **NO WORK** (including site preparation) for construction of new structures or reconstruction or repairs of existing structures **SHALL BE STARTED UNTIL A PERMIT** has been issued by the New York State Department of Environmental Conservation.

1.0 PROJECT PURPOSE AND OVERVIEW

At the request of Schnabel Engineering, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) has prepared this Joint Application for Permits for the proposed rehabilitation of South Lake Dam (Project) at North/South Lake Campground in the Town of Hunter, Greene County, New York.

The South Lake Dam is owned and operated by New York State Department of Environmental Conservation (NYSDEC) and is considered a Class B, Intermediate Hazard structure. The dam consists of an approximately 260-foot-long earthen embankment structure that supports a 26-foot-wide paved campground access road on top. South Lake outflows through a 48-inch diameter corrugated metal drop inlet located near the dam and water is then conveyed through a 36-inch diameter corrugated metal pipe beneath the dam to the upper reaches of Kaaterskill Falls Creek.

The dam currently exhibits the following deficiencies:

- The drop inlet is corroded and leaking.
- The corrugated metal outlet pipe is aged and needs to be relined to extend its serviceable life.
- The low-level outlet control gate leaks significantly and does not seat properly when closed.
- During high flow, the lake discharges through an auxiliary spillway channel located on the southwest side of the lake that flows across the roadway/parking area into Kaaterskill Falls Creek. Discharges during recent large storms (2011, 2020, and 2021) have caused significant erosion on the downstream side of the auxiliary spillway.
- The trash racks on the drop inlet have deteriorated, which limits the ability to reduce clogging due to beaver activity in the lake.
- The dam has inadequate hydraulic capacity to pass the spillway design flood (150% of the 100-year storm) without overtopping the embankment.
- Trees and other woody vegetation have encroached on the earthen embankment.

As a result of these deficiencies, the Project is proposed to maintain flow and dam infrastructure integrity, improve the ability to manage lake levels, and better manage high flow conditions with reduced potential for erosion to the dam and stream banks.

2.0 PROJECT LOCATION AND WATER RESOURCES

2.1 Project Site Description

The Project is located in the southwest portion of South Lake on land owned and managed by the NYSDEC. The Project will occur on approximately 1.8 acres along the South Lake shoreline, the existing earthen dam impoundment, and nearby areas, hereafter referred to as the "Project Site" (see Appendix A, Figure 1). The

Project Site is generally bounded by Lake Road to the north, South Lake to the east, an unnamed campground road to the south, and Scutt Road to the west (see Appendix A, Figure 2).

2.2 Waters of the United States

In accordance with Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) has regulatory jurisdiction over Waters of the United States (WOTUS). As defined by the USACE, WOTUS include lakes, ponds, streams (intermittent and perennial), tidal waters, and wetlands. Wetlands are defined as *“those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”* (USEPA, 2001). Such areas are indicated by the presence of three conditions: 1) a dominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) evidence of wetland hydrology during the growing season (Environmental Laboratory, 1987).

The Clean Water Rule (the “2015 Rule”), effective August 28, 2015, was adopted to provide a clearer and more consistent approach to defining the scope of the CWA and WOTUS. However, in February 2017, an Executive Order was issued directing the United States Environmental Protection Agency (USEPA) and USACE to review and rescind or revise the 2015 Rule. On April 21, 2020, the USEPA and USACE published The Navigable Waters Protection Rule: Definition of “Waters of the United States” (USACE and USEPA, 2020) as a replacement for the 2015 Rule. However, on August 30, 2021, the U.S. District Court threw out the 2020 replacement rule due to procedural errors in its issuance, noting that implementation of the rule could lead to “serious environmental harm” (Pasqua Yaqui Tribe v. USEPA, 2021), thereby restoring the definition of regulated WOTUS to the pre-2015 Rule (i.e., *Rapanos v. United States*, 2006 and *Carabell v. United States*, 2006). Four major elements of the pre-2015 Rule that define jurisdictional waters are summarized as follows:

1. **Traditional navigable waters (TNW).** The agencies will assert jurisdiction over TNW, interstate waters, territorial seas, and impoundments of jurisdictional waters consistent with existing regulations.
2. **Wetlands adjacent to TNW.** The agencies will assert jurisdiction over wetlands adjacent to TNW. Regulations define “adjacent” as “bordering, contiguous, or neighboring, including waters separated from other ‘waters of the United States’ by constructed dikes or barriers, natural river berms, beach dunes and the like.”
3. **Non-navigable tributaries.** The agencies will assert jurisdiction over non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally.
4. **Wetlands that directly abut such tributaries.** The agencies will assert jurisdiction over wetlands adjacent to jurisdictional non-navigable tributaries, using the same definition of “adjacent” provided in number 2.

Where waters cannot be categorized as jurisdictional, the agencies will conduct a significant nexus analysis to determine jurisdiction on a case-by-case basis. The significant nexus analysis considers waters that are

similarly situated to known jurisdictional waters based on their flow characteristics and functions, to determine if they significantly affect the chemical, physical, and/or biological integrity of downstream TNWs. The following waters may be regulated based on the results of the significant nexus analysis:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

Agencies will typically not assert jurisdiction over swales or erosional features, or ditches excavated wholly in and draining only uplands and that do not carry a relative permanent flow of water.

The U.S. Fish and Wildlife Service National Wetlands Inventory mapping identifies two features within the Project Site (see Appendix A, Figure 4). One is a freshwater lake (North-South Lake) and the other is a riverine feature that is the upper reaches of Kaaterskill Falls Creek.

2.3 New York State Freshwater Wetlands and Protected Streams

The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law) is administered by the NYSDEC for any disturbance to a state-protected wetland or its 100-foot Regulated Adjacent Area. Under Article 15 of the Environmental Conservation Law (Protection of Waters), the NYSDEC also has regulatory jurisdiction over any activity that disturbs the bed or banks of protected streams. Protected streams include any stream or particular portion of a stream, that has been assigned by the NYSDEC any of the following classifications or standards: AA, A, B, or C(TS) or C(T) (6 New York Codes, Rules, and Regulations Part 701).

The NYSDEC wetland mapping indicates no state regulated wetlands mapped within the Project Site (see Appendix A, Figure 4). The closest NYSDEC wetland is located approximately 1.9 miles east of the Project Site.

According to the NYSDEC's online Environmental Resource Mapper, the Kaaterskill Falls Creek is classified as a C stream for approximately 0.25 mile downstream from the South Lake Dam. Farther downstream, the Kaaterskill Falls Creek has a B(TS) classification. South Lake is shown on the Environmental Resource Mapper as having a B classification (see Appendix A, Figure 4).

2.4 Navigable Waters

Section 10 of the Rivers and Harbor Act requires a permit from the USACE to construct any structure in or over any TNW of the United States,¹ as well as any proposed action that would alter or disturb these waters

¹ Traditional navigable waters presently or formerly used to transport interstate or foreign commerce.

(such as excavation/dredging or deposition of materials). Navigable waters do not occur within the Project Site. Therefore, Section 10 is not applicable to the proposed Project.

2.5 Delineated Wetlands and Streams

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) conducted wetland and stream delineations within the Project Site on June 9, 2022. EDR identified two wetlands and one stream within the Project Site (Figure 5).

The data collected at each delineated wetland and stream are summarized in Table 1. In accordance with the Cowardin et al. (1979) classification system, the waters delineated within the Project Site consist of the following community types: palustrine open water wetland (POW), palustrine forested wetland (PFO), and perennial stream (R3).

Table 1. Delineated Wetlands and Streams

Delineation ID ¹	Latitude of Centroid	Longitude of Centroid	Wetland Type ²	Wetland Acreage Within Project Site	Stream Type ³	Linear Feet of Stream Within Project Site	Federal Jurisdiction ⁴	State Jurisdiction ⁵
Wetland 001	41.5014	-74.8759	POW	0.46	-	-	Yes	Yes
Wetland 002	41.5019	-74.8765	PFO	0.02	-	-	Yes	No
Stream 001	41.5010	-74.8761	-	-	R3	171	Yes	No

¹ Field ID assigned by EDR.

² Wetland community types are based upon the Cowardin et al. (1979) classification system: palustrine open water wetland (POW), and palustrine forested wetland (PFO).

³ Stream type is based upon the Cowardin et al. (1979) classification system: perennial stream (R3).

⁴ Presumed jurisdiction based on visual observation of hydrologic connectivity in the field and review of available spatial data. Final jurisdictional determination to be made by the USACE.

⁵ Presumed Article 15 jurisdiction based on the NYSDEC's online Environmental Resource Mapper.

All the delineated wetlands and streams included in Table 1 are expected to be considered jurisdictional by the USACE under Section 404 of the Clean Water Act. None of the delineated wetlands coincide with NYSDEC-mapped state wetlands pursuant to Article 24 of the Environmental Conservation Law (ECL). However, Wetland 001 (South Lake) is anticipated to be regulated pursuant to Article 15 of the ECL due to the B Classification as indicated on the NYSDEC Environmental Resource Mapper.

Delineated Stream 001 is classified by the NYSDEC as a Class C stream within the Project Site and, therefore, is not expected to be considered jurisdictional pursuant to Article 15 of the ECL. However, final determination of the jurisdictional status of all waters delineated within the Project Site must be made by the USACE and NYSDEC.

Detailed information on the wetlands and streams delineated within the Project Site are provided in the Wetland and Stream Delineation Report (see Appendix B).

2.6 Floodplains

According to Federal Emergency Management Agency map service, no portion of the Project Site is located within a Federal Emergency Management Agency-mapped floodplain (see Figure 4).

2.7 Coastal Zone Management

The Project Site is not located within a Coastal Zone area.

3.0 PROJECT DESCRIPTION AND CONSTRUCTION PLAN

The NYSDEC proposes the following activities to rehabilitate the South Lake Dam:

- Construct a new primary spillway drop inlet structure with same spillway crest elevation.
- Construct a new walkway from the dam to the inlet structure.
- Line the primary spillway outlet pipe with a cured-in-place pipe liner.
- Replace the downstream exposed section of primary spillway outlet pipe and construct a new headwall.
- Replace the low-level outlet with a gated opening on the upstream face of the drop inlet.
- Construct a concrete parapet wall and diversion wall (3 to 4 feet tall) along the length of the dam on the downstream side of the crest. This arrangement avoids the need for large stop logs or a similar closure at the right (north) side of the embankment.
- Extend the pavement between parking area/road and the top of the downstream slope of the auxiliary spillway channel.
- Repair erosion/head cutting with earth fill and install stone riprap armoring on the downstream slope of the auxiliary spillway channel.
- Remove trees on and within 15 feet of the embankment and trees within the auxiliary spillway erosion repair area.

To limit the potential for water quality impacts, an Erosion and Sediment Control Plan is proposed for construction activities that include the following measures:

- **Turbidity Curtain:** A turbidity curtain is to be installed around the upstream temporary cofferdam and would extend the full depth of the lake for the length of the curtain provided on the drawings (approximately 275 feet long and ranging from approximately 4 feet deep at the construction pool [EL 2128] to 9 feet deep at normal pool [EL 2133]). The curtains are to be a bright color (yellow or "international" orange are recommended) for safety purposes. The seams in the fabric are to either be vulcanized welded or sewn and shall develop the full strength of the fabric. The flotation devices used for the curtain are to be flexible and buoyant units contained within an individual flotation sleeve or collar attached to the curtain. The buoyant units must be able to support the weight of the curtain and maintain 3 inches of freeboard above the water surface level. Load lines must be

fabricated into the bottom of the silt curtains. The supplemental (bottom) load line shall consist of a chain incorporated into the bottom hem of the curtain of sufficient weight to serve as ballast to hold the curtain in a vertical position. Additional anchorage shall be provided as necessary. The load lines shall have suitable connection devices which develop the full breaking strength for connecting to load line in adjacent sections. External anchors may consist of wood or metal stakes.

- Silt Fence and Construction Safety Fence: A silt fence is to be provided along the downgradient limits of the Project. The fence will consist of wooden posts spaced a maximum of 10 feet apart with a mesh reinforced filter fabric installed between them. The mesh at a minimum must extend 18 inches above the existing ground and 8 inches into the ground. The first 4 inches (in plain view) of soil uphill or upstream of the silt fence is to be compacted. The mesh is to be fastened securely to the posts using wire ties or staples. Maintenance will be performed as needed and material removed when bulges develop in the silt fence.
- Sediment Filter Bag: A sediment filter bag is to be used for filtering discharges from dewatering pumps used to remove groundwater and surface water from excavations and from within cofferdams. The filter bag assembly will consist of a filter bag, pump, clamps, and discharge hoses.
- Temporary Cofferdam: A temporary cofferdam will be used around the proposed drop inlet. A downstream release will be maintained via a bypass pump and/or siphons while the drop inlet is being replaced and while the primary spillway conduit is out of service. Temporary cofferdams could be constructed from steel sheet piling, sandbags/supersacks, approved proprietary systems (i.e., Portadam), or approved equals as needed. Cofferdams will not be constructed of earth or other erodible/unconfined materials. Temporary cofferdam plans are to be submitted to and approved by Schnabel, the New York State Office of General Services, and the NYSDEC.

A temporary lake drawdown will be necessary during construction. The drawdown will be avoided between May 15 and October 1 to reduce impacts to normal campground operations. Additionally, the NYSDEC prohibits in-water work between March 15 and July 15 to protect aquatic resources. This would result in a total drawdown avoidance timeframe of March 15 and October 1. It is anticipated that there would be a 12-week drawdown in the fall and the lake would refill over winter. The proposed drawdown is 5 feet from normal pool at elevation 2,133 feet above mean sea level to construction pool at 2,128 feet above mean sea level. During the drawdown period, the new spillway riser and downstream slope/headwall work will be completed. The work on the dam may require some partial road/lane closures on the park access road during construction, if scheduled, when park is operational (mid-May to mid-October). Construction activities are anticipated to initiate in late summer/fall 2023.

3.1 Proposed Construction Sequence

Phasing Plan

The total construction duration is estimated to be approximately 6 months (26 weeks), initiating in Summer 2024, with in-water work occurring during Fall 2024. Construction activity will generally proceed in the following sequence:

1. Survey Project boundaries and limits of construction.
2. Establish temporary traffic controls.
3. Install temporary erosion control barriers, turbidity curtains, and construction fencing.
4. Install a temporary stabilized construction entrance at the stockpile and staging area.
5. Clear, grub, and stabilize stockpile and staging areas, as needed.
6. Clear and grub trees, stumps, roots, brush, and other vegetation within the limits of construction.
7. Strip and stockpile existing topsoil from temporary access routes and areas to receive non-vegetative final surface treatment.
8. Install a temporary cofferdam within impoundment and dewatering systems. Draw down impoundment to construction pool elevation of EL 2128.0 using pumps, siphons, or equivalent temporary means.
9. Strip and stockpile the existing stone riprap around the drop inlet to the extents of excavation for the new drop inlet.
10. Remove the existing metal bridge and provide it to the director's representative.
11. Demolish the existing drop inlet, low-level outlet pipe, low-level outlet gate, trash rack, anti-vortex plate, and concrete base.
12. Construct a concrete drop inlet, construct concrete bridge foundation, install metal bridge, install/test a slide gate, and install metal trash racks.
13. Replace riprap around the drop inlet supplemented with imported riprap.
14. Strip and stockpile existing stone riprap within downstream plunge pool.
15. Excavate, dewater, and demolish existing concrete pipe support and downstream segment of 36-inch corrugated metal pipe (CMP).

16. Construct the concrete headwall. Partially place the filter diaphragm below the low-level outfall pipe and install the seepage collection/conveyance pipes and filters. Install the 36-inch high density polyethylene pipe (HDPE) conduit extension from the existing CMP to the newly constructed headwall. Grout the annular space between the HDPE conduit extension and the concrete headwall. Complete the filter diaphragm and backfill around and above the low-level outfall pipe.
17. Install cured-in-place pipe liner through existing CMP and newly constructed HDPE pipe.
18. Construct new plunge pool with reused existing riprap and imported riprap.
19. Regrade, and place compacted fill and riprap within, the auxiliary spillway channel.
20. Notify the director's on-site representative to contact the NYSDEC that work is sufficiently complete for normal pool filling.
21. Remove the temporary cofferdam and turbidity curtain within the impoundment. Throttle the temporary flow bypass system and refill the impoundment while providing minimum required downstream releases. Remove the temporary flow bypass system.
22. Demolish the existing timber guardrail and metal swing gate.
23. Excavate along the embankment crest, construct concrete the parapet wall, and backfill.
24. Install new timber guardrails and a metal swing gate.
25. Restore disturbed areas with reused topsoil supplemented with imported topsoil and seed.
26. Pave the campground road and parking area.
27. Remove materials and equipment from staging areas and restore to existing conditions.
28. Remove erosion control barriers once site stabilization is complete and approval is given by the NYSDEC.

4.0 JURISDICTIONAL IMPACTS

The proposed Project involves approximately 0.36 acre of temporary disturbance to wetlands and water resources and approximately 0.06 acre of permanent disturbance. These wetland and water resources are presumed to be USACE jurisdictional WOTUS. Approximately 0.36 acre of temporary disturbance will occur in the proximity of the dam and inlet structure along the western shoreline of South Lake (Wetland 001). The temporary wetland impacts are associated with open cut trenching, temporary construction disturbance, and/or installation of timber matting in work areas. Indirect impacts will be avoided through use of silt fence and other erosion and sediment control (ESC) best management practices to limit silt-laden runoff discharges within the Project Site.

Permanent disturbance consists of 0.063 acre at the outlet into Kaaterskill Falls Creek (Stream 001). The permanent disturbances involve grading and fill activities (i.e., dam infrastructure, piping, riprap) required to address the deficiencies and safety concerns associated with the existing dam. The permanent impacts are generally within previously disturbed areas.

The proposed temporary and permanent impacts to WOTUS are presumed to require authorization under the USACE Nationwide Permit #3 Maintenance.

The Project Site wetlands do not correspond with or connect to NYSDEC-mapped wetlands. The Project is not expected to be under state jurisdiction pursuant to Article 24 of the ECL.

The NYSDEC Environmental Resource Mapper identifies South Lake as a Class B resource. As such, the NYSDEC may determine that portions of the Project require a Protection of Waters permit pursuant to Article 15 of the ECL.

Additionally, the Project is expected to require Water Quality Certification from the NYSDEC pursuant to Section 401 of the Clean Water Act. The Project is anticipated to qualify for coverage under the NYSDEC's blanket Water Quality Certification.

Table 2. Summary of Wetland and Stream Impacts

Wetland/Stream Field ID	Proposed Temporary Impacts	Proposed Permanent Impacts
W001	0.36 acre	No Impact
W002	No Impact	No Impact
S001	No Impact	0.06 acre
Totals	0.36 acre	0.06 acre

4.1 Summary of Impacts

In summary, the Project will result in 0.36 acre of temporary disturbance and 0.06 acre of permanent impact to WOTUS. These impacts are the minimum necessary to adequately address the existing deficiencies and safety concerns associated with the dam.

5.0 ALTERNATIVE ANALYSIS

5.1 Alternative 1 – No Action

The “No Action” alternative is not preferred, as the existing Class B Intermediate Hazard Dam poses a risk to human life and property if it were to fail.

5.2 Alternative 2 – Alternative Parapet Wall Configuration

An alternative configuration was considered that would include the proposed parapet wall along the upstream side of the embankment crest, and the diversion wall at the auxiliary spillway would intersect the

campground roadway. A stoplog closure system would be constructed across the roadway to allow traffic through the diversion wall. This alternative would require NYSDEC staff to install the stop logs prior to a flood, which may be impractical due to the remote location of the site and the other operational responsibilities leading up to a large storm. Therefore, this alternative was not selected. This alternative would involve the same amount of temporary and permanent wetland impacts as the Proposed Action.

5.3 Alternative 3 – Preferred Action

The Project as proposed was selected as the preferred alternative because it addresses the existing deficiencies and safety concerns, and it is the least environmentally damaging practical alternative. Additionally, this alternative requires minimal maintenance and is consistent with the ongoing operations of the campground.

6.0 AVOIDANCE, MINIMIZATION, AND MITIGATION

The Applicant is committed to avoiding and minimizing direct and indirect impacts to on-site and surrounding environmental resources to the maximum extent practicable. This will be accomplished through the following actions:

- Utilize existing public roads for transportation of machinery and equipment.
- Restrict disturbance to previously disturbed areas to the extent practicable.
- Minimize the footprint of required work areas in wetlands.
- Use timber matting or equivalent for work areas associated within wetlands or streams, where appropriate.
- Install various ESC measures between the work zones and surface water resources, in accordance with the Project Stormwater Pollution Prevention Plan, which will be inspected daily to assure that they are functioning properly and remain in place until all disturbed areas are stabilized and revegetated.
- Restore all temporary disturbance areas to their pre-construction conditions.

Work within wetlands will include the following additional measures to minimize impacts to the wetlands and streams:

- 1) Use timber matting or similar for equipment access in wetlands, where necessary.
- 2) While excavating, segregate organics/topsoil from subsoils to avoid mixing of topsoil and subsoils.
- 3) When backfilling, replace organics/topsoil to as near the original position to maintain original contours and promote natural revegetation of the wetland.
- 4) Prohibit disposal of surplus soils in wetlands or adjacent areas.

7.0 COMPLIANCE WITH THE FEDERAL AND STATE ENDANGERED SPECIES ACT

Federal-listed Species

Consultation with the U.S. Fish and Wildlife Service via the Information, Planning, and Consultation online support system was conducted on June 6, 2022 (Appendix C). No federally listed endangered or threatened species were documented as potentially occurring within or near the Project Site. A candidate species, the monarch butterfly (*Danaus plexippus*), was identified as potentially occurring within or near the Project Site. However, candidate species are not federally protected.

State-listed Species

The New York State Natural Heritage Program (NYNHP) responded to a request for information regarding listed species and significant natural communities at or near the Project Site in a letter dated July 25, 2022 (Appendix C). The NYNHP indicated that no state-listed threatened or endangered species are documented within or in the vicinity of the Project Site. According to the NYNHP, Hemlock-Northern Hardwood Forest occurs within or near the Project Site.

This community is identified as a “High quality occurrence of an uncommon community type.” The NYNHP considers this a significant natural community with “high ecological and conservation value.” The proposed dam rehabilitation is not expected to result in a significant adverse effect on this forest community at or near the Project Site.

8.0 COMPLIANCE WITH THE HISTORIC PRESERVATION ACT

The New York State Historic Preservation Office responded to a request for information regarding cultural resources at or near the Project Site in a letter dated January 3, 2023 (Appendix C), and concluded “that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.”

9.0 REFERENCES

Cowardin, L.M., V. Carter, F.C. Goblet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31. U.S. Fish and Wildlife Service. Washington, D.C.

Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual*. Technical Report Y-87-1. U.S. Army Corps of Engineers: Waterways Experiment Station. Vicksburg, MS.

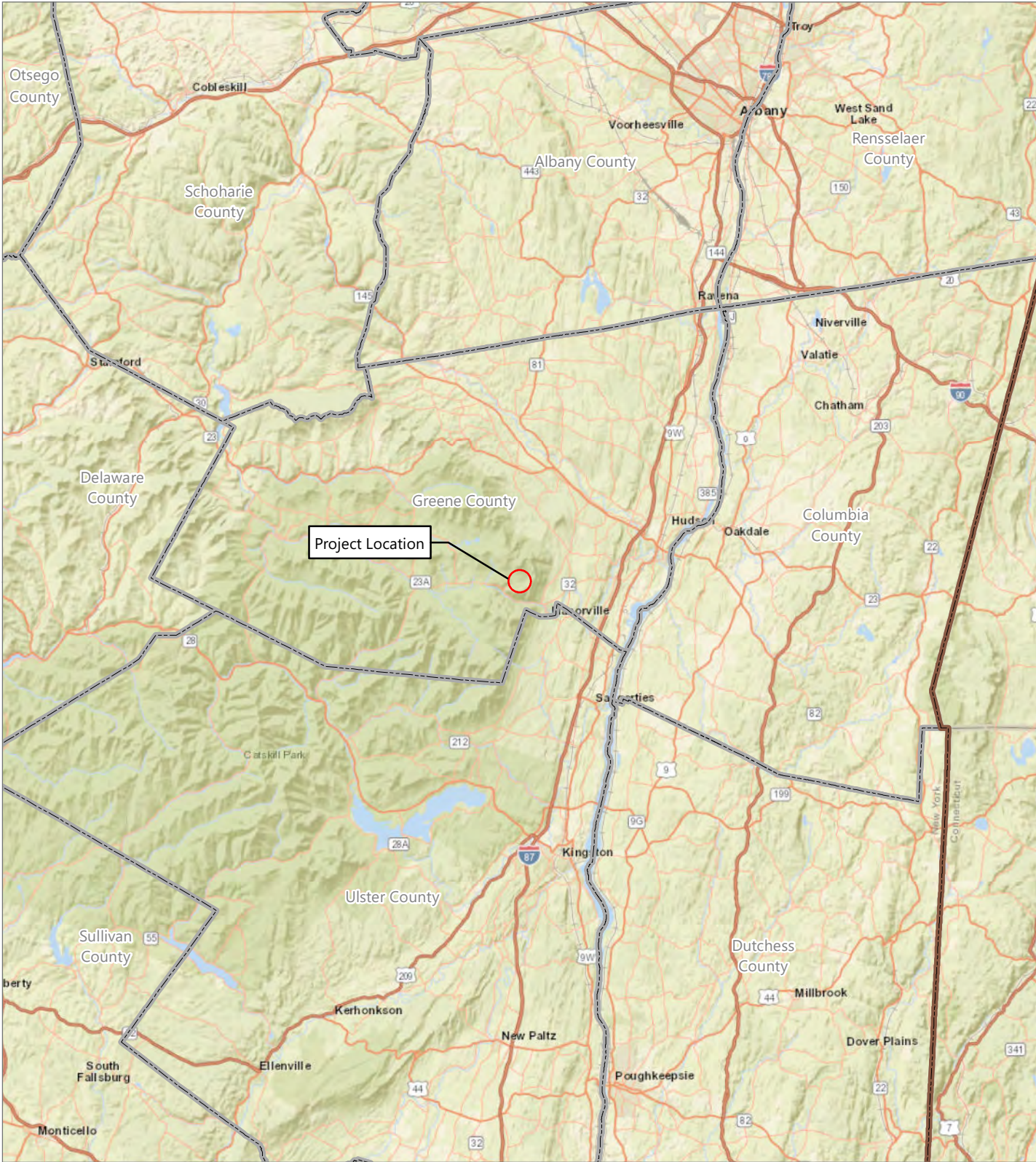
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United States Environmental Protection Agency (USEPA). 2001. Interagency Memorandum from Gary S. Guzy (General Counsel for the U.S. Environmental Protection Agency) and Robert M. Anderson (Chief Counsel for the U.S. Army Corps of Engineers). Re: *Supreme Court Ruling Concerning CWA Jurisdiction over Isolated Waters*.

APPENDIX A

Figures

Figure 1. Regional Project Location



**South Lake Dam
Rehabilitation**
Town of Hunter, Greene County, New York

Joint Application for Permit

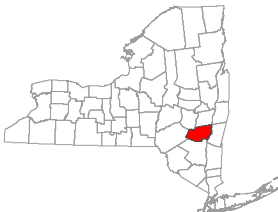


Figure 2. Limit of Disturbance



**South Lake Dam
Rehabilitation**

Town Hunter, Greene County, New York

Joint Application for Permit

 Limit of Disturbance

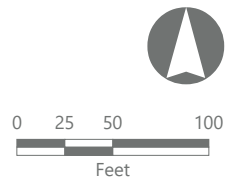


Figure 3. Mapped Wetlands and Streams







**South Lake Dam
Rehabilitation**

Town of Hunter, Greene County, New York

Joint Application for Permit

NYSDEC Stream Classification

-  Class B Stream
-  Class C Stream
-  NWI Mapped Freshwater Pond/Lake/Riverine
-  Limit of Disturbance

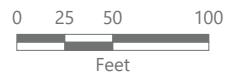


Figure 4. Delineated Wetlands and Streams



South Lake Dam Rehabilitation

Town Hunter, Greene County, New York

Joint Application for Permit

- ▲ Stream Flag
- Wetland Flag
- ⊕ Datapoint Stream
- ⊕ Datapoint Wetland
- ➡ Culvert
- Wetland Continues
- ▬ Delineated Stream
- ▨ Delineated Wetland
- ▭ Limit of Disturbance

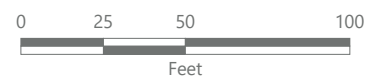
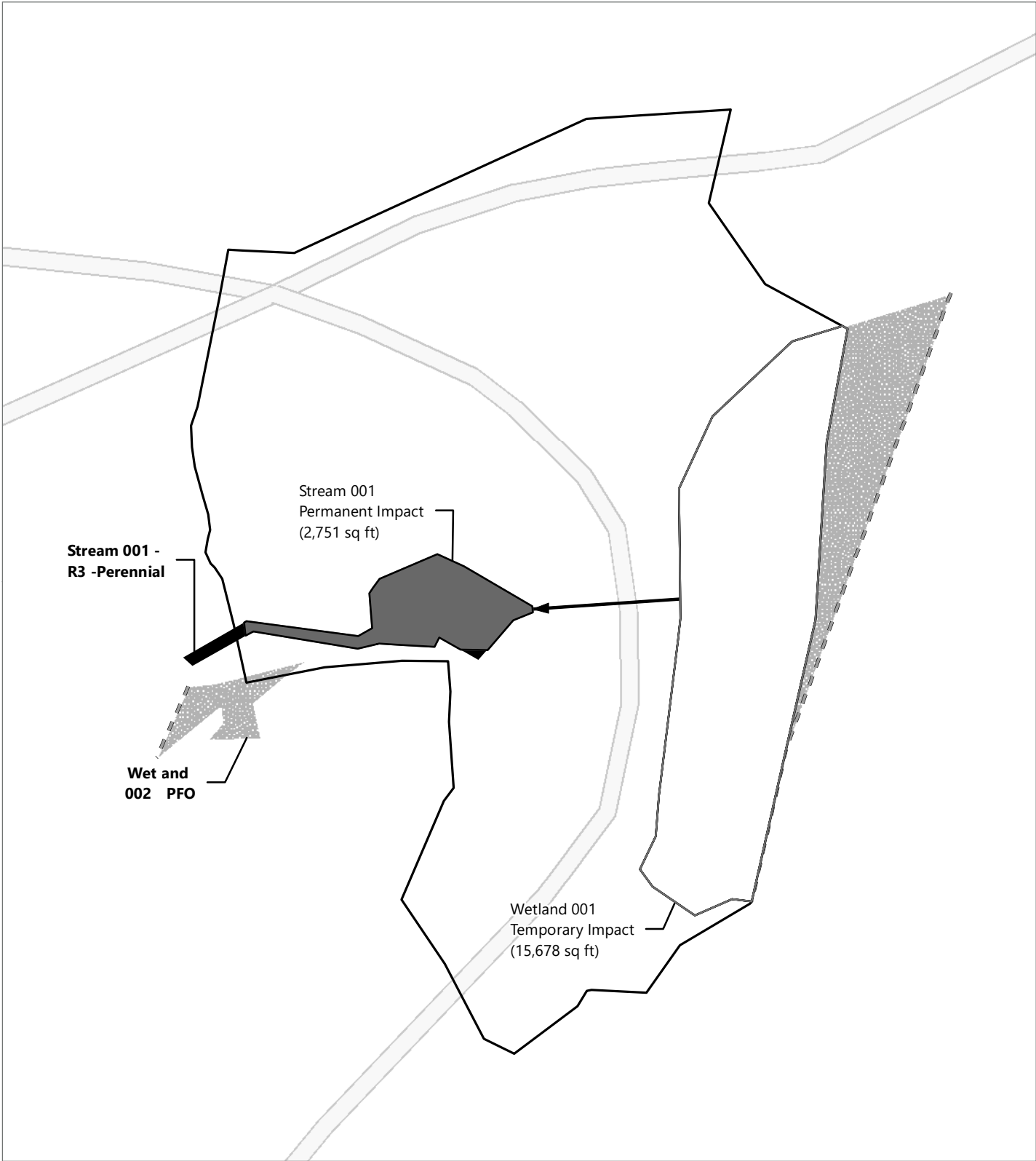









Figure 5. Wetland and Stream Impacts

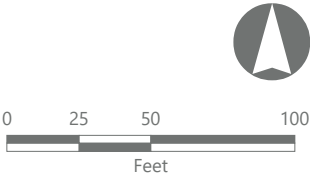


South Lake Dam Rehabilitation

Town Hunter, Greene County, New York

Joint Application for Permit

-  Culvert
-  Wetland Continues
-  Delineated Stream
-  Delineated Wetland
-  Temporary Impact
-  Permanent Impact
-  Limit of Disturbance



APPENDIX B

Wetland and Stream Delineation Report

Wetland and Stream Delineation Report

South Lake Dam Rehabilitation

North/South Lake Campground

Town of Hunter

Greene County, New York

Prepared for:



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August 2022

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Figure 3. Project Site Soils

Figure 4. Mapped Wetlands and Streams

Figure 5. Delineated Wetlands and Streams

Appendix B. Routine Wetland Determination Data Sheets and Stream Inventory Forms

Appendix C. Photo Documentation

1.0 INTRODUCTION

1.1 PROJECT SITE LOCATION AND DESCRIPTION

At the request of Schnabel Engineering, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) conducted a wetland delineation at South Lake dam in North/South Lake Campground, Town of Hunter, Greene County New York. The wetland delineation study area covered approximately 1.8 acres along the western shoreline of South Lake, the existing earthen dam impoundment, and nearby areas, hereafter referred to as the "Project Site" (see Appendix A, Figure 1). The Project Site is generally bounded by Lake Road to the north, South Lake to the east, an unnamed campground road to the south, and Scutt Road to the west (see Appendix A, Figure 2).

1.2 PURPOSE

The purpose of this study was to delineate and describe on-site wetlands and streams that occur within the Project Site that could potentially fall under state or federal jurisdiction. Specific tasks performed for this study included: 1) review of background resource data/mapping, 2) field delineation and flagging of potential state and federal jurisdictional wetlands and streams, 3) Global Positioning System (GPS) survey of delineated wetland and stream boundaries, 4) quantification of the area of on-site wetlands and streams, and 5) description of potentially jurisdictional areas based on hydrology, vegetation, and soils data collected in the field.

This report describes the results of the wetland and stream delineations conducted by EDR. It is intended to provide the information necessary to identify jurisdictional areas and support any required permit applications to the United States Army Corps of Engineers (USACE) and the New York State Department of Environmental Conservation (NYSDEC), as well as other impact evaluations conducted in support of the Project.

1.3 DATA SOURCES

Materials and data supporting this investigation have been derived from a number of sources including United States Geological Survey (USGS) topographic mapping (*Kaaterskill Clove 7.5 minute quadrangle*), United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, NYSDEC Freshwater Wetlands mapping, the Natural Resources Conservation Service (NRCS) *Web Soil Survey* (Soil survey Staff, 2022), the NRCS List of Hydric Soils of the State of New York (NRCS, 2022), the National Land Cover Database (NLCD) land cover and vegetation classes (Yang et al., 2018), and recent aerial photography.

Vascular plant nomenclature and wetland indicator status for plant species were determined by the Wildnote field data collection app, which refers to the USDA PLANTS Database (USDA NRCS, 2021) and the National Wetland Plant List (USACE, 2018). Jurisdictional areas were characterized according to the wetlands and deepwater habitats classification system used in NWI mapping (Cowardin, 1979).

2.0 REGULATORY AUTHORITIES AND PERMITS

2.1 WATERS OF THE UNITED STATES

In accordance with Section 404 of the Clean Water Act (CWA), the USACE has regulatory jurisdiction over Waters of the United States (WOTUS). As defined by the USACE, WOTUS include lakes, ponds, streams (intermittent and perennial), tidal waters, and wetlands. Wetlands are defined as *“those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”* (USEPA, 2001). Such areas are indicated by the presence of three conditions: 1) a dominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) evidence of wetland hydrology during the growing season (Environmental Laboratory, 1987).

The Clean Water Rule (the “2015 Rule”), effective August 28, 2015, was adopted to provide a clearer and more consistent approach to defining the scope of the CWA and WOTUS. However, in February 2017, an Executive Order was issued directing the United States Environmental Protection Agency (USEPA) and USACE to review and rescind or revise the 2015 Rule. On April 21, 2020, the USEPA and USACE published The Navigable Waters Protection Rule: Definition of “Waters of the United States” (USACE and USEPA, 2020) as a replacement for the 2015 Rule. However, on August 30, 2021, the US District Court threw out the 2020 replacement rule due to procedural errors in its issuance, noting that implementation of the rule could lead to “serious environmental harm” (Pasqua Yaqui Tribe v. USEPA, 2021), thereby restoring the definition of regulated WOTUS to the pre-2015 Rule (i.e., *Rapanos v. United States*, 2006 and *Carabell v. United States*, 2006). Four major elements of the 2015 Rule that define jurisdictional waters are summarized below:

1. **Traditional navigable waters (TNW).** The agencies will assert jurisdiction over TNW, interstate waters, territorial seas, and impoundments of jurisdictional waters consistent with existing regulations.
2. **Wetlands adjacent to TNW.** The agencies will assert jurisdiction over wetlands adjacent to TNW. Regulations define “adjacent” as “bordering, contiguous, or neighboring, including waters separated from other ‘waters of the United States’ by constructed dikes or barriers, natural river berms, beach dunes and the like.”
3. **Non-navigable tributaries.** The agencies will assert jurisdiction over non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally.
4. **Wetlands that directly abut such tributaries.** The agencies will assert jurisdiction over wetlands adjacent to jurisdictional non-navigable tributaries, using the same definition of “adjacent” provided above.

Where waters cannot be categorized as jurisdictional as listed above, the agencies will conduct a significant nexus analysis to determine jurisdiction on a case-by-case basis. The significant nexus analysis considers waters that are similarly situated to known jurisdictional waters based on their flow characteristics and

functions, to determine if they significantly affect the chemical, physical, and/or biological integrity of downstream TNWs. The following waters may be regulated based on the results of the significant nexus analysis:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

Agencies will typically not assert jurisdiction over swales or erosional features, or ditches excavated wholly in and draining only uplands and that do not carry a relative permanent flow of water.

For the purposes of this investigation, the initial presumption is that all delineated wetlands and streams could be jurisdictional under Section 404 of the CWA. A Section 404 permit from the USACE is required for activities that result in the placement of dredged or fill materials in WOTUS. In addition to Section 404 of the CWA, Section 10 of the Rivers and Harbor Act requires a permit from the USACE to construct any structure in or over any traditional navigable waters of the United States¹, as well as any proposed action that would alter or disturb these waters (such as excavation/dredging or deposition of materials). The Project Site does not include any navigable waters, and therefore, Section 10 is not applicable to the proposed Project.

2.2 NEW YORK STATE FRESHWATER WETLANDS AND PROTECTED STREAMS

The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law [ECL]) gives the NYSDEC jurisdiction over state-protected wetlands and adjacent areas. The Freshwater Wetlands Act requires the NYSDEC to map all state-protected wetlands to allow landowners and other interested parties a means of determining where state-jurisdictional wetlands exist. To implement the policy established by this Act, regulations were promulgated by the state under 6 NYCRR Parts 663 and 664. Part 664 of the regulations designates wetlands into four class ratings, with Class I being the highest or best quality wetland, and Class IV being the lowest. In general, wetlands regulated by the state are those 12.4 acres in size or larger. Smaller wetlands can also be regulated if they are considered of unusual local importance. A 100-foot adjacent area around the delineated boundary of any state regulated wetland is also under NYSDEC jurisdiction. An Article 24 permit is required from the NYSDEC for any disturbance to a state-protected wetland or adjacent area.

Under Article 15 of the ECL (Protection of Waters), the NYSDEC has regulatory jurisdiction over any activity that disturbs the bed or banks of protected streams or other watercourse. In addition, small lakes and ponds with a surface area of 10 acres or less, located within the course of a stream, are considered to be part of a stream and are subject to regulation under the stream protection category of Article 15. According to 6 NYCRR Part 608.1(aa), protected streams include any stream, or particular portion of a stream, that has

¹ Traditional navigable waters presently or formerly used to transport interstate or foreign commerce.

been assigned by the NYSDEC any of the following classifications or standards: AA, A, B, or C(T) or C(TS). A classification of AA or A indicates that the best use of the stream is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing. Streams designated (T) indicate that they support trout, while those designated (TS) support trout spawning. An Article 15 permit is required from the NYSDEC for any disturbance to the bed and banks of protected streams, with special requirements applied to streams designated as supporting trout or trout spawning. Where banks are not clearly defined, the NYSDEC may extend permitting jurisdiction to 50 feet beyond the stream.

In addition to the protection of waters permit required to change, modify, or disturb protected streams, Article 15 also requires a permit from the NYSDEC to construct any structure in or above any navigable waters of the state, as well as any proposed action that would alter or disturb these waters (such as excavation/dredging or deposition of materials). As mentioned previously, the Project Site does not include any navigable waters, and therefore, these sections of Article 15 are not applicable to the proposed Project.

3.0 REVIEW OF BACKGROUND DATA AND MAPPING

3.1 PHYSIOGRAPHY AND SOILS

The Project Site is located within the Catskill Mountains physiographic province of New York State. At the eastern end of the province, the mountains begin quite dramatically with the Catskill Escarpment rising up suddenly from the Hudson Valley. As you move from east to west, the mountains gradually decline in height and grade into the rest of the Allegheny Plateau. Soils within the region were derived from glacial till that were left behind as glaciers advanced and retreated.

Elevations within the Project Site range from approximately 2,124 to 2,144 above mean sea level (see Appendix A, Figure 2).

The Web Soil Survey of Greene County (Soil Survey Staff, 2022) indicates the occurrence of three soil series on site (see Appendix A, Figure 3). Lewbeach and Willowemoc channery silt loam (LmC) is the predominant series occurring within the Project Site. Other soil series found on-site include Ochrepts (Oc), and Water (W). These soils range from moderately well drained to well drained, and are predominantly silt loam. Table 1 lists the soil series found within the Project Site and their characteristics. Hydric ratings and hydric soil classifications are based on information obtained from the NRCS Web Soil Survey (Soil Survey Staff, 2022). Although soil series may have a hydric rating in the online databases indicating hydric or potentially hydric conditions, this is for general use and does not supersede specific conditions documented in the field.

Table 1. Project Site Soils

Mapping Unit Symbol	Series	Slope (%)	Drainage ¹	Hydric Rating ²	Hydric Soil ³
LmC	Lewbeach and Willowemoc channery silt loam	8-15	WD	0%	No
Oc	Ochrepts, frequently flooded	3-5	MWD	20%	No
W	Water	-	-	0%	No

¹ Soil drainage is represented by the following abbreviation: "WD" = well drained, "MWD" = moderately well drained.

² Map units are composed of one or more component soil types, each of which is individually rated as hydric or not hydric. The hydric rating, as provided in the USDA Web Soil Survey, indicates the percentage of the map unit that meets hydric criteria.

³ "Yes" indicates that this soil series is listed as containing 66% or more hydric components within the map unit as listed on the USDA Web Soil Survey.

3.2 HYDROLOGY

The Project Site is located entirely within the Middle Hudson Hydrologic Unit (HUC 02020006). South Lake is an extension of North Lake, located immediately to the north. The North Lake/South Lake impoundment receives surface hydrology from precipitation, runoff from the adjacent terrain, and groundwater. South Lake discharges at the existing dam into Kaaterskill Falls Creek, which is tributary to the Hudson River, located approximately 7.6 miles to the east.

The Hudson River is the closest traditional navigable waters. The Hudson River has a drainage area of approximately 13,400 square miles and flows approximately 115 miles south until its confluence with the Atlantic Ocean.

3.3 FEDERAL AND STATE MAPPED WETLANDS AND STREAMS

The USFWS NWI mapping identifies two features within the Project Site (see Appendix A, Figure 4). One is a freshwater lake (South Lake) and the other is a riverine feature that appears to represent a portion of Kaaterskill Creek.

The NYSDEC wetland mapping indicates no state regulated wetlands within the Project Site (see Appendix A, Figure 4). The closest NYSDEC wetland is located approximately 1.9 miles east of the Project Site.

The NYSDEC stream classification maps indicate two mapped streams within the Project Site. According to the NYSDEC's online Environmental Resource Mapper, the Kaaterskill Creek is classified as a C stream for approximately 0.25 miles downstream from the South Lake dam. Further downstream the Kaaterskill Creek has a B(TS) classification. South Lake is shown on the Environmental Resource mapper as having a B classification (see Appendix A, Figure 4).

3.4 MAPPED FLOODPLAINS

According to Federal Emergency Management Agency (FEMA) map service, no portion of the Project Site is located within a FEMA mapped floodplain.

3.5 VEGETATION

Land cover and vegetation occurring within the Project Site were evaluated using current NLCD mapping (Yang et al., 2018), and further verified during the on-site field investigations. The Project Site encompasses approximately 1.8 acres and primarily consists of mixed forest and developed land (see Table 2).

Table 2. Vegetation/Land Cover Within the Project Site

Land Cover Class	Acres	Percent Cover (%)
Mixed Forest	0.61	33
Developed, Open Space	0.6	32
Developed, Low Intensity	0.49	27
Evergreen Forest	0.07	4
Woody Wetlands	0.07	4
Total	1.84	100

Source: NLCD 2016 (Yang et al., 2018).

4.0 ON-SITE WETLAND AND STREAM DELINEATION

EDR Environmental Scientists conducted field delineations of wetlands and streams at the proposed Project Site on June 9, 2022.

4.1 METHODOLOGY

The identification of wetland boundaries was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). Determination of wetland boundaries was also guided by the methodologies presented in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* (USACE, 2012) and the *New York State Freshwater Wetland Delineation Manual* (NYSDEC, 1995). Attention was given to the identification of potential hydrologic connections between wetlands and areas that could influence their jurisdictional status.

Wetland boundaries were defined in the field with sequentially numbered pink surveyor's flagging and mapped using a GPS unit with reported sub-meter accuracy. Data were collected from sample plots in representative wetland cover types and recorded on USACE Routine Wetland Determination forms (see Appendix B). The data collected at each delineated wetland included dominant vegetation, hydrology indicators, and soil characteristics.

The Regional Supplement lists the following primary indicators of wetland hydrology: (A1) surface water, (A2) high water table, (A3) saturation, (B1) water marks, (B2) sediment deposits, (B3) drift deposits, (B4) algal mat or crust, (B5) iron deposits, (B7) inundation visible on aerial imagery, (B8) sparsely vegetated concave surface, (B9) water-stained leaves, (B13) aquatic fauna, (B15) marl deposits, (C1) hydrogen sulfide odor, (C3) oxidized rhizospheres on living roots, (C4) presence of reduced iron, (C6) recent iron reduction in tilled soils, and (C7) thick muck surface. Per the Regional Supplement, the presence of any one of these "primary" indicators is sufficient evidence that wetland hydrology is present. In addition, the Regional Supplement identifies the following secondary indicators which were also used by EDR personnel to determine wetland hydrology: (B6) surface soil cracks, (B10) drainage patterns, (B16) moss trim lines, (C2) dry-season water table, (C8) crayfish burrows, (C9) saturation visible on aerial imagery, (D1) stunted or stressed plants, (D2) geomorphic position, (D3) shallow aquitard, (D4) microtopographic relief, and (D5) FAC-neutral test. In accordance with the Regional Supplement, in the absence of a primary indicator, the presence of any two of these "secondary" indicators is considered a suitable indication of wetland hydrology.

Assessment of vegetation focused on the identification of dominant plant species in four categories: trees (greater than 3 inches diameter at breast height), saplings/shrubs (less than 3.0" inches diameter at breast height and greater than 3.2 feet tall), herbs (all vegetation less than 3.2 feet tall), and woody vines. Dominance was determined by visually estimating those species having the greatest absolute percent cover within each stratum. Wetland indicator status for dominant plant species was determined by reference to the National Wetland Plant List (USACE, 2018; USDA NRCS, 2021). Wetlands are indicated by a dominance of hydrophytic plant species.

Hydric soils are those that are poorly drained and are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil layer. The presence of hydric soils is indicative of the presence of wetlands (Environmental Laboratory, 1987). Hydric soil conditions were determined in the field through observation of soils composition, color, and morphology. Soils data were collected by using a Dutch auger and tiling spade to examine the soil profile. Soil colors were determined using Munsell Soil Charts (Munsell Color, 2009). Information concerning soil series, color, texture, and matrix and mottle color was recorded for each delineated wetland and used to determine whether the soils displayed hydric characteristics.

Streams were identified according to the Cowardin Classification System (1979), and stream boundaries were determined based on the presence of ordinary high water line characteristics, including a "*clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris*" (33 CFR 329.11). Stream boundaries were defined and mapped in the field using the same method as described above for wetlands. Stream flow regime (i.e., perennial, intermittent, or ephemeral) was determined through evaluation of hydrologic, geomorphic, and biological characteristics (NC DWQ, 2010). Data regarding stream gradient (gentle, moderate, or steep), stream bank and channel width, water depth, stream bed substrate, in-stream cover, and biological indicators were collected and recorded on stream inventory forms (see Appendix B).

Photographs were taken of each wetland and stream delineated within the Project Site. Photographs of each delineated feature are included in Appendix C.

4.2 RESULTS

EDR Environmental Scientists identified two wetlands and one stream within the Project Site (see Appendix A, Figure 5). The data collected at each delineated wetland and stream are summarized below in Table 3. In accordance with the Cowardin et al. (1979) classification system, the waters delineated within the Project Site consist of the following community types: palustrine open water wetland (POW), palustrine forested wetland (PFO), and perennial stream (R3).

Table 3. Delineated Wetlands and Streams

Delineation ID ¹	Latitude of Centroid	Longitude of Centroid	Wetland Type ²	Wetland Acreage Within Project Site	Stream Type ³	Linear Feet of Stream Within Project Site	Federal Jurisdiction ⁴	State Jurisdiction ⁵
Wetland 001	41.5014	-74.8759	POW	0.46	-	-	Yes	Yes
Wetland 002	41.5019	-74.8765	PFO	0.02	-	-	Yes	No
Stream 001	41.5010	-74.8761	-	-	R3	171	Yes	No

¹ Field ID assigned by EDR.

² Wetland community types are based upon the Cowardin et al. (1979) classification system: palustrine open water wetland (POW), and palustrine forested wetland (PFO).

³ Stream type is based upon the Cowardin et al. (1979) classification system: perennial stream (R3).

⁴ Based on visual observation of hydrologic connectivity in the field and review of available spatial data. Final jurisdictional determination to be made by the USACE.

⁵ Based on the NYSDEC's online Environmental Resource Mapper. See Sections 2.2 and 3.3 for additional information.

All the delineated wetlands and streams included in Table 3 are expected to be considered jurisdictional by the USACE under Section 404 of the Clean Water Act. However, none of the wetlands delineated within the Project Site are expected to fall under state jurisdiction pursuant to Article 24 of the ECL, as they do not appear to correspond with or connect to wetlands included on NYSDEC wetland maps. Stream 001 is expected to be protected under Article 15 of the ECL, as this is identified as a Class B (TS) stream based on the NYSDEC's Environmental Resource Mapper.

Descriptions of the delineated wetlands within the Project Site are provided below in Sections 4.2.1, while Section 4.2.2 provides descriptions of the delineated streams within the Project Site.

4.2.1 Wetlands

Wetland 001 is an approximately 0.46-acre open water wetland and represents the portion of South Lake that falls within the Project Area. The vegetation within Wetland 001 was entirely submerged, therefore no wetland plants were identified. Indicators of wetland hydrology included surface water (A1), high water table (A2), saturation (A3), and aquatic fauna (B13). Soils in Wetland 001 were unable to be collected, due to the steep banks and high-water level present within the wetland. Wetland 001 was hydrologically connected to Stream 001, which forms as a result of the existing impoundment dam. Additionally, the eastern limits of Wetland 001 extend beyond the limits of the Project Site, making additional hydrologic connections unknown beyond the boundaries of the Project Site. Photographs 1 and 2 in Appendix C illustrate Wetland

001. The wetland-upland transition was abrupt, and generally followed a sharp shift in topography, with the adjacent upland being a mixed forest with a canopy dominated by eastern hemlock (*Tsuga canadensis*), and sugar maple (*Acer saccharum*). No indicators of hydric soil or wetland hydrology were observed in the adjacent upland.

Wetland 002 is an approximately 0.02-acre palustrine forested wetland that has a canopy dominated by the surrounding upland trees, and a herbaceous layer consisting of side flowering skullcap (*Scutellaria lateriflora*), lady fern (*Athyrium filix-femina*), and New York fern (*Parathelypteris noveboracensis*). Indicators of wetland hydrology include surface water (A1), high water table (A2), saturation (A3), sparsely vegetated concave surface (B8), water-stained leaves (B9), and aquatic fauna (B9). Soils in Wetland 002 were dark brown (10YR 3/2) mucky sand, with rock refusal at 6 inches. Hydric soil indicators included sandy mucky material (S1), and dark surface (S7). There were no observed hydrologic connections to Wetland 002 and other delineated features within the Project Site. However, the western limits of Wetland 002 extended beyond the boundaries of the Project Site, making potential hydrologic connections between Wetland 002 and other WOTUS unknown. Therefore, Wetland 002 will likely fall under federal jurisdiction pursuant to Section 404 of the Clean Water Act. Photograph 3 in Appendix C illustrates characteristics used to delineate Wetland 002. The wetland upland transition was abrupt and followed a sharp shift in topography. No wetland indicators were observed in the adjacent upland, which had a tree stratum consisting of eastern hemlock, sugar maple, American beech (*Fagus grandifolia*), and witch hazel (*Hamamelis virginiana*).

4.2.2 Streams

Stream 001 is a perennial stream reach that corresponds with portions of Kaaterskill Creek. It flows east to west, and serves as a drainage for Wetland 001 (South Lake), beginning at its western edge as a result of an impoundment dam. Stream 001 had channel widths ranging from 6 to 35 feet wide, a water depth of greater than 12 inches, and a gentle gradient. Stream 001 was characterized by a well-defined channel, moderate sinuosity, and a strong baseflow. Stream 001 also had a coarse substrate that consisted of boulder, cobble, and stone (see Photo 4 in Appendix C). The larger particle sizes of the stream substrate materials were in stark contrast to the finer-textured sandy clay soils in the adjacent uplands. Observed biological indicators of perennial streams included a strong presence of macroinvertebrates.

5.0 CONCLUSIONS

Within the Project Site, EDR identified two wetlands totaling 0.48 acre, and one perennial stream totaling 171 linear feet. These resources appear to have surface water connections to WOTUS, and therefore, are likely to be considered jurisdictional by the USACE under Section 404 of the Clean Water Act.

Wetlands 001 and 002 are not expected to fall under state jurisdiction pursuant to Article 24 of the ECL because they do not occur within or have hydrologic connection to wetlands included on the NYSDEC Freshwater Wetlands Maps. Work affecting the beds and banks of Wetland 001 (South Lake) is expected to require a NYSDEC Article 15 permit because it is a Class B resource. Stream 1 is a NYSDEC Class C resource within the Project Site and is not expected to require an Article 15 permit. A final determination of jurisdictional status of all waters delineated within the Project Site must be made by the USACE and NYSDEC.

6.0 REFERENCES

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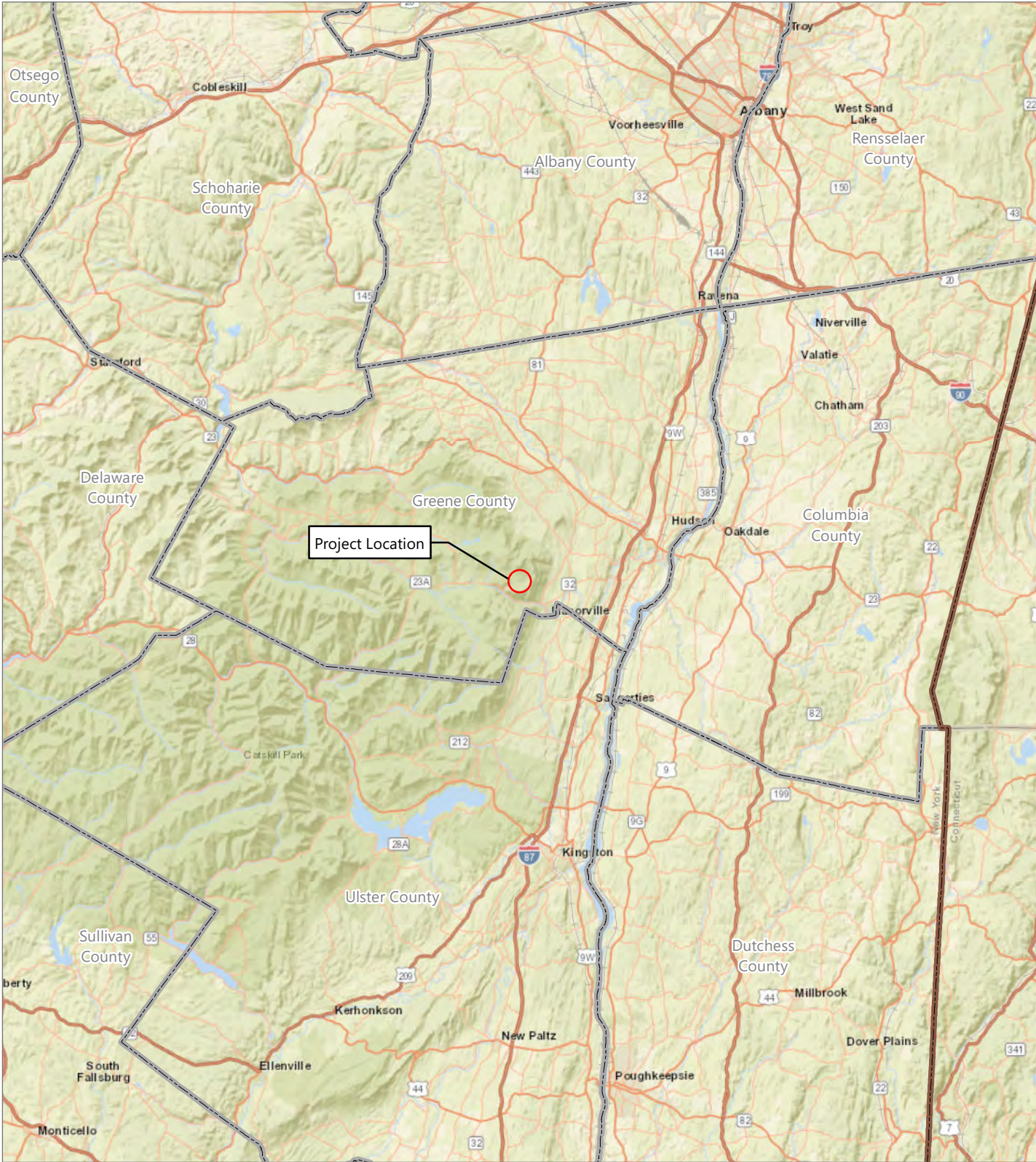
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APPENDIX A

Figures

Figure 1. Regional Project Location



**South Lake Dam
Rehabilitation**
Town of Hunter, Greene County, New York
Wetland and Stream Delineation Report

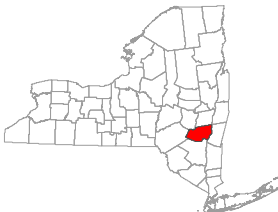



Figure 2. Topographic Mapping



**South Lake Dam
Rehabilitation**

Town Hunter, Greene County, New York

Wetland and Stream Delineation Report

 Study Area

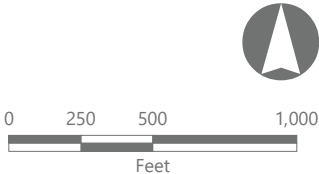
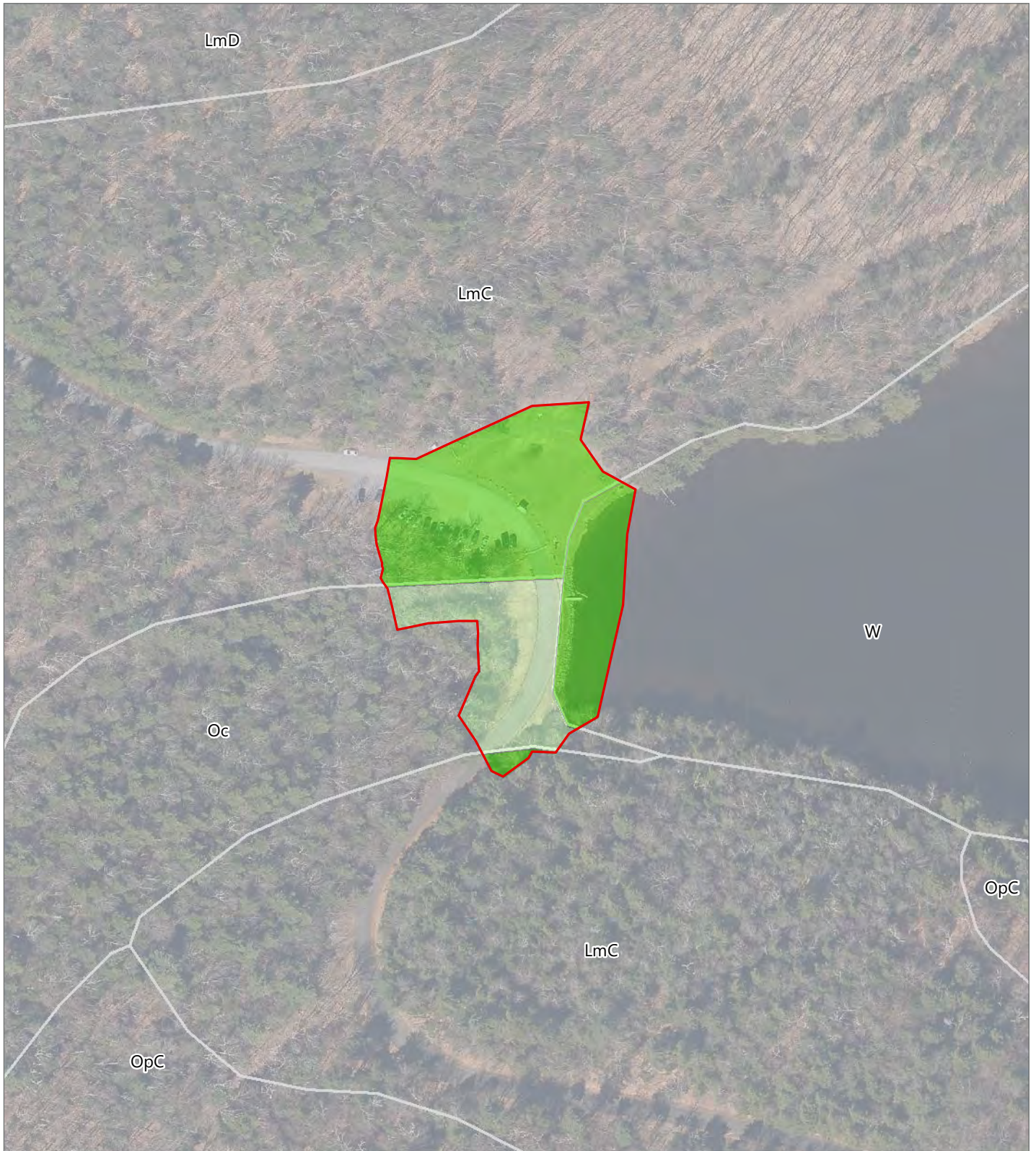


Figure 3. Study Area Soils






**South Lake Dam
Rehabilitation**

Town Hunter, Greene County, New York

Wetland and Stream Delineation Report

Study Area Soils

-  Not Hydric (0%)
-  Hydric (1 to 32%)
-  Study Area

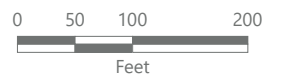


Figure 4. Mapped Wetlands and Streams



South Lake Dam Rehabilitation

Town Hunter, Greene County, New York

Wetland and Stream Delineation Report



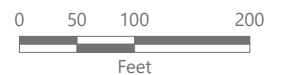
NYSDEC Stream Classification

— Class B or B(TS) Stream

— Class C Stream

— NWI Mapped Freshwater Pond/Lake/Riverine

— Study Area






Prepared March 24, 2023
Basemap: NYS DOP "2021" orthoimagery map service.

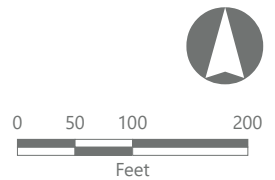


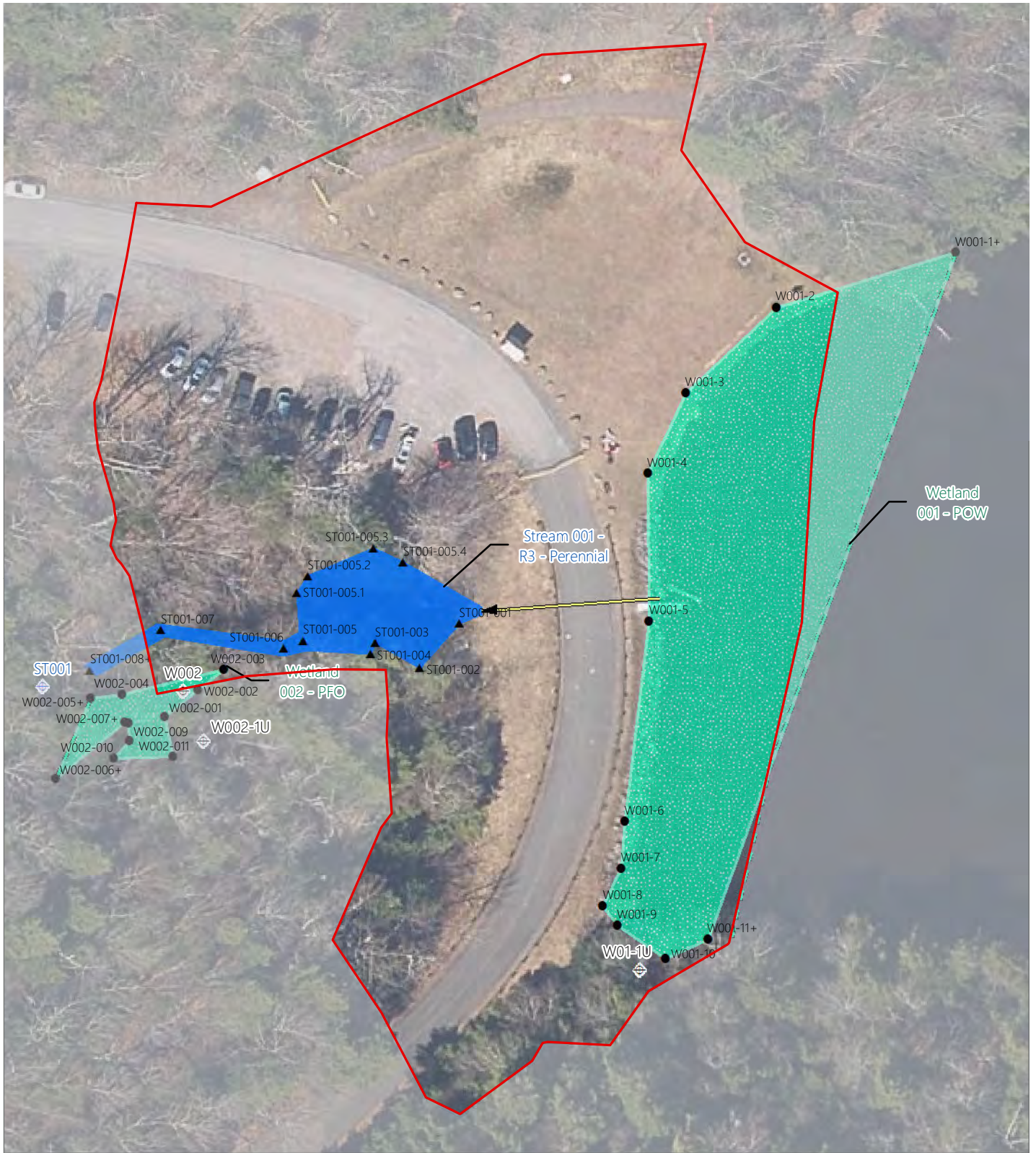
South Lake Dam Rehabilitation

Town Hunter, Greene County, New York

Wetland and Stream Delineation Report

-  Delineated Stream
-  Delineated Wetland
-  Study Area





South Lake Dam Rehabilitation

Town Hunter, Greene County, New York

Wetland and Stream Delineation Report

- ▲ Stream Flag
- Wetland Flag
- ⊕ Datapoint Stream
- ⊕ Datapoint Wetland
- ➡ Culvert
- Wetland Continues
- Delineated Stream
- ▨ Delineated Wetland
- Study Area

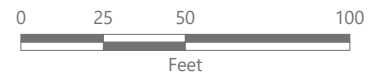




Figure 6. Photograph Locations

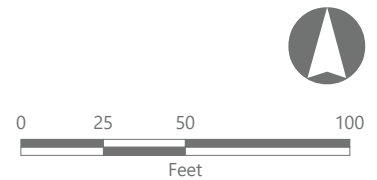


South Lake Dam Rehabilitation

Town Hunter, Greene County, New York

Wetland and Stream Delineation Report

-  Photograph Location
-  Study Area



APPENDIX B

Routine Wetland Determination Data Sheets and Stream Inventory Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: South Lake Dam Rehabilitation City/County: Town of Hunter, Greene County Sampling Date: 6/9/2022
 Applicant/Owner: Schnabel Engineering State: NY Sampling Point: W001-1W
 Investigator(s): Kyle Crawford and Mike McDermott Section, Township, Range: Town of Hunter
 Landform (hillside, terrace, etc.): Bowl-shaped depression Local relief (concave, convex, none): Concave Slope %: 0-3
 Subregion (LRR or MLRA): LRR R Lat: 42.195842 Long: -74.050564 Datum: NAD83
 Soil Map Unit Name: Water NWI classification: Lake

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>W001-1W POW</u>
Remarks: (Explain alternative procedures here or in a separate report.) Soil data was not collected due to the steep banks and water level of the open water wetland	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
--	--

Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W001-1W

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
	=Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
	=Total Cover			
Herb Stratum (Plot size: <u>5</u>)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	=Total Cover			
Woody Vine Stratum (Plot size: <u>30</u>)				
1.				
2.				
3.				
4.				
	=Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)
 All wetland vegetation was entirely submerged and unable to identify.

SOIL

Sampling Point W001-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- High Chroma Sands (S11) (**LRR K, L**)
- Loamy Mucky Mineral (F1) (**LRR K, L**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- Coast Prairie Redox (A16) (**LRR K, L, R**)
- 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- Polyvalue Below Surface (S8) (**LRR K, L**)
- Thin Dark Surface (S9) (**LRR K, L**)
- Iron-Manganese Masses (F12) (**LRR K, L, R**)
- Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____ N/A
 Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

Soil data was not obtained due to the steep banks and water level of open water wetland 001

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: South Lake Dam Rehabilitation City/County: Town of Hunter, Greene County Sampling Date: 6/9/2022
 Applicant/Owner: Schnabel Engineering State: NY Sampling Point: W001-1U
 Investigator(s): Kyle Crawford and Mike McDermott Section, Township, Range: Town of Hunter
 Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): _____ Slope %: 0-3
 Subregion (LRR or MLRA): LRR R Lat: 42.195797 Long: -74.050591 Datum: NAD83
 Soil Map Unit Name: Ochrepts, frequently flooded NWI classification: Lake

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W001-1U

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Tsuga canadensis</i></u>	60	Yes	FACU	<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>5</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">Total % Cover of:</th> <th style="width:50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>105</u></td> <td>x 4 = <u>420</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>430</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.91</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>105</u>	x 4 = <u>420</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>430</u> (B)	Prevalence Index = B/A = <u>3.91</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>105</u>	x 4 = <u>420</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>430</u> (B)																			
Prevalence Index = B/A = <u>3.91</u>																				
2. <u><i>Acer saccharum</i></u>	20	Yes	FACU																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	80	=Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Tsuga canadensis</i></u>	10	Yes	FACU	<p>Hydrophytic Vegetation Indicators:</p> <p><u> </u> 1 - Rapid Test for Hydrophytic Vegetation</p> <p><u> </u> 2 - Dominance Test is >50%</p> <p><u> </u> 3 - Prevalence Index is ≤3.0¹</p> <p><u> </u> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><u> </u> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Definitions of Vegetation Strata:</p> <p>Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.</p> <p>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines – All woody vines greater than 3.28 ft in height.</p> <p>Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u></p>																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	10	=Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Dryopteris marginalis</i></u>	15	Yes	FACU	<p>Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u></p>																
2. <u><i>Osmunda cinnamomea</i></u>	5	Yes	FACW																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	20	=Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____				<p>Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u></p>																
2. _____																				
3. _____																				
4. _____																				
				=Total Cover																

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point W001-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/2	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR K, L)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____ N/A _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
 Rock refusal at 5 inches

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: South Lake Dam Rehabilitation City/County: Town of Hunter, Greene County Sampling Date: 6/9/2022
 Applicant/Owner: Schnabel Engineering State: NY Sampling Point: W002-1W
 Investigator(s): Kyle Crawford and Mike McDermott Section, Township, Range: Town of Hunter
 Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope %: 0-3
 Subregion (LRR or MLRA): LRR R Lat: 42.196124 Long: -74.051308 Datum: NAD83
 Soil Map Unit Name: Ochrepts, frequently flooded NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>W002-1W PFO</u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
--	--

Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>6</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W002-1W

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	_____ =Total Cover			Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">Total % Cover of:</th> <th style="width:50%;">Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>10</u></td><td>x 1 = <u>10</u></td></tr> <tr><td>FACW species <u>0</u></td><td>x 2 = <u>0</u></td></tr> <tr><td>FAC species <u>5</u></td><td>x 3 = <u>15</u></td></tr> <tr><td>FACU species <u>0</u></td><td>x 4 = <u>0</u></td></tr> <tr><td>UPL species <u>10</u></td><td>x 5 = <u>50</u></td></tr> <tr><td>Column Totals: <u>25</u></td><td>(A) <u>75</u> (B)</td></tr> <tr><td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.00</u></td></tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>25</u>	(A) <u>75</u> (B)	Prevalence Index = B/A = <u>3.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>25</u>	(A) <u>75</u> (B)																			
Prevalence Index = B/A = <u>3.00</u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	_____ =Total Cover																			
<u>Herb Stratum</u> (Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Scutellaria lateriflora</u>	10	Yes	OBL																	
2. <u>Athyrium filix-femina</u>	10	Yes	UPL																	
3. <u>Parathelypteris noveboracensis</u>	5	Yes	FAC																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	_____ 25 =Total Cover																			
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____ =Total Cover																			
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

Remarks: (Include photo numbers here or on a separate sheet.)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/1	100					Mucky Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

Indicators for Problematic Hydric Soils³:

- Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- High Chroma Sands (S11) (**LRR K, L**)
- Loamy Mucky Mineral (F1) (**LRR K, L**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (**LRR K, L**)

- 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- Coast Prairie Redox (A16) (**LRR K, L, R**)
- 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- Polyvalue Below Surface (S8) (**LRR K, L**)
- Thin Dark Surface (S9) (**LRR K, L**)
- Iron-Manganese Masses (F12) (**LRR K, L, R**)
- Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed):</p> <p>Type: _____ N/A _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____</p>
--	---

Remarks:

Rock refusal at 6 inches

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: South Lake Dam Rehabilitation City/County: Town of Hunter, Greene County Sampling Date: 6/9/2022
 Applicant/Owner: Schnabel Engineering State: NY Sampling Point: W001-1U
 Investigator(s): Kyle Crawford and Mike McDermott Section, Township, Range: Town of Hunter
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope %: 0-3
 Subregion (LRR or MLRA): LRR R Lat: 42.196067 Long: -74.051271 Datum: NAD83
 Soil Map Unit Name: Ochrepts, frequently flooded NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: W001-1U

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u><i>Tsuga canadensis</i></u>	40	Yes	FACU	
2. <u><i>Acer saccharum</i></u>	15	Yes	FACU	
3. <u><i>Fagus grandifolia</i></u>	10	No	FACU	
4. <u><i>Hamamelis virginiana</i></u>	10	No	FACU	
5. _____				
6. _____				
7. _____				
	75	=Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
		=Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u><i>Thelypteris noveboracensis</i></u>	15	Yes	FAC	
2. <u><i>Acer rubrum</i></u>	5	Yes	FAC	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	20	=Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
		=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>75</u>	x 4 = <u>300</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>95</u> (A)	<u>360</u> (B)
Prevalence Index = B/A = <u>3.79</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No X

Remarks: (Include photo numbers here or on a separate sheet.)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-3	10YR 4/2	100					Loamy/Clayey

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR K, L)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____ N/A _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Rock refusal at 5 inches

Gordon Dam Stream Data Form 1

Project	22106 South Lake Dam
ID	253757
Survey Date	07/05/2022
User	Kyle Crawford
Town/County/State	Town of Hunter, Greene County, NY
Investigator(s)	Kyle Crawford
Stream Delineation ID	Stream 001
Latitude, Longitude	
Latitude	42.196130
Longitude	-74.051522
Accuracy	m
Current Precipitation	None
Precipitation in Past 48 Hours	Rain
General Characteristics	
NYSDEC Mapped Stream	Yes
NYSDEC mapped Classification	C
Drainage Ditch	No
Surface Water Depth at Thalweg (Inches)	12
Stream Gradient	Gentle (0-5%)
Substrate	Boulder, Cobble, Gravel
OHWL width for stream reach (feet)	35
Geomorphology	
Continuity of channel bed and bank	Strong (3)
Sinuosity of channel along thalweg	Moderate (2)
In Channel Structures	Moderate (2)
Particle Size of Stream Substrate	Strong (3)
Active/Relic Floodplain	Moderate (2)
Depositional Bars or Benches	Moderate (2)
Recent Alluvial Deposits	Weak (1)
Are Headcuts present	Moderate (2)
Grade Control	Strong (1.5)
Natural Valley	Strong (1.5)
Second or Greater Order Channel	No (0)
Hydrology	

Presence of Baseflow	Strong (3)
Iron Oxidizing Bacteria	Weak (1)
Leaf Litter	Absent (1.5)
Sediment on Plants or Debris	Moderate (1)
Organic Debris Lines or Piles	Moderate (1)
Soil-based evidence of high water table	No (0)

Biology

Fibrous Roots in Streambed	Absent (3)
Rooted Upland Plants in Streambed	Absent (3)
Aquatic Macroinvertebrates	Moderate (2)
Aquatic Mollusks	Absent (0)
Fish	Weak (0.5)
Crayfish	Absent (0)
Amphibians	Strong (1.5)
Algae	Weak (0.5)
Wetland Plants in Streambed	FACW (0.75)

Stream Type Determination

Total Score	38.75
Stream Determination	Perennial (≥ 30)

Photos and Notes

Notes

APPENDIX C

Photo Documentation



Photo 1

Representative photo of Wetland 001



Photo 2

Representative photo of Wetland 001

South Lake Dam Rehabilitation

Town of Hunter, Greene County, New York

Wetland and Stream Delineation Report



Photo 3

Representative photo of Wetland 002



Photo 4

Representative photo of Stream 001

South Lake Dam Rehabilitation

Town of Hunter, Greene County, New York

Wetland and Stream Delineation Report

APPENDIX C

Agency Correspondence



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699

In Reply Refer To:
Project Code: 2022-0050835
Project Name: South Lake Dam Rehabilitation Project

June 06, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office

3817 Luker Road

Cortland, NY 13045-9385

(607) 753-9334

Project Summary

Project Code: 2022-0050835

Event Code: None

Project Name: South Lake Dam Rehabilitation Project

Project Type: Dam - Maintenance/Modification

Project Description: The South Lake Dam is considered to be in a condition whereby its deficiencies are of such a nature that the safety of the dam cannot be assured. The recommended dam rehabilitation modifications include:

- Replacement of the primary spillway CMP riser with a new precast concrete drop inlet structure that includes an elevated working platform and pedestrian bridge for access.
- Re-lining the primary spillway conduit and add a flow control gate to the intake end.
- Replacement of the LLO intake pipe and flow control valve.
- Construction of a parapet and diversion wall system along the dam embankment crest.
- Investigate and replace as necessary the plunge pool armoring.
- Rip rap installation to repair erosion within the auxiliary spillway.
- General Dam embankment improvements including filling of depression, adding rip rap to localize areas of erosion and removal of brush and trees that have encroached onto the embankment.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.1962133,-74.05068672770489,14z>



Counties: Greene County, New York

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: EDRDPC
Name: Lewis Lolya
Address: 41 State Street
Address Line 2: Suite 806
City: Albany
State: NY
Zip: 12207
Email: llolya@edrdpc.com
Phone: 5184519150

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program

625 Broadway, Fifth Floor, Albany, NY 12233-4757

P: (518) 402-8935 | F: (518) 402-8925

www.dec.ny.gov

Re:

Dear

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 4 Office, Division of Environmental Permits, at dep.r4@dec.ny.gov.

Sincerely,



Heidi Kraehling

Herpetological Review Specialist



Department of
Environmental
Conservation



The following rare plants, rare animals, and significant natural communities have been documented at the project site, or in its vicinity.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQRA. Field surveys of the project site may be necessary to determine whether a species currently occurs at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following natural community is considered significant from a statewide perspective by the NY Natural Heritage Program. By meeting specific, documented criteria, the NY Natural Heritage Program considers this community occurrence to have high ecological and conservation value.

COMMON NAME

HERITAGE CONSERVATION STATUS

Upland/Terrestrial Communities

Hemlock-Northern Hardwood Forest

High Quality Occurrence of Uncommon Community Type

Documented adjacent to the project site. A very large, apparently mature matrix forest with potential old growth patches and intact gap dynamics. Some fragmentation occurs around the periphery. The forest has diverse species composition and physiognomy along an elevation gradient. It occurs in a largely protected, primarily forested roadless area surrounded by a moderately fragmented landscape.

1908

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/29384.html for Ecological Communities of New York State.



**New York State
Parks, Recreation and
Historic Preservation**

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

January 06, 2023

Charles Vandrei
Agency Historic Preservation Officer
NYS Environmental Conservation
Office of Indian Nation Affairs
625 Broadway
Albany, NY 12233-4255

Re: USACE
Rehabilitation of the South Lake Dam - North South Lake Public Campground
Town of Hunter, Greene County, NY
23PR00083

Dear Charles Vandrei:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

R. Daniel Mackay

Deputy State Historic Preservation Officer
Division for Historic Preservation

rev: E. Czernecki

APPENDIX D

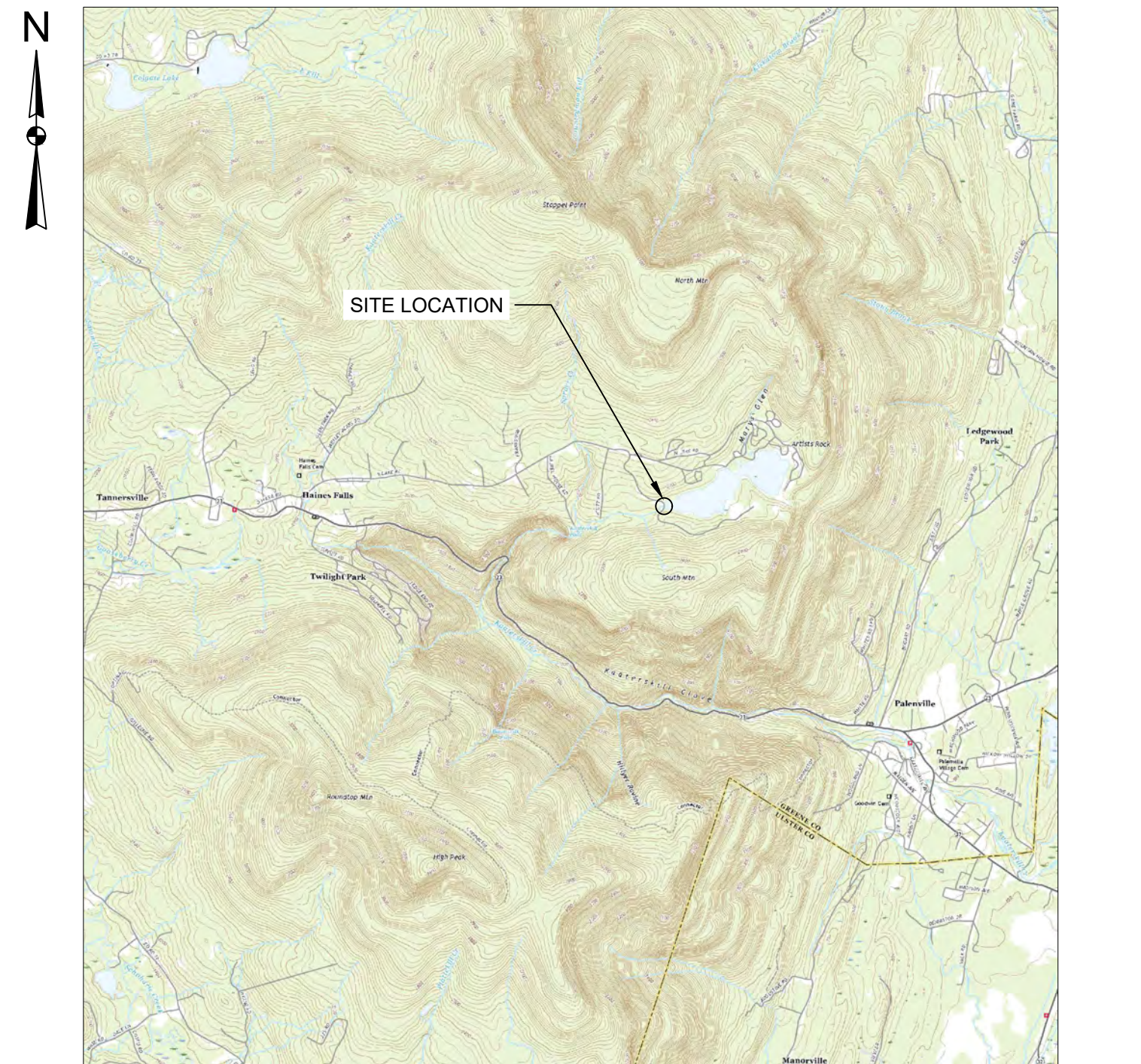
Proposed Project Details and Construction Plans

REHABILITATE SOUTH LAKE DAM

NYS DEC ID 192-4560

TOWN OF HAINES FALLS, GREENE COUNTY, NEW YORK

O.G.S. PROJECT NO. 47251



SITE LOCATION SCALE: 1"=5000'
0 5000' 10000'

DRAWING INDEX		
SHEET NO.	DRAWING NO.	SHEET TITLE
GENERAL		
1	G-001	COVER SHEET
2	G-002	LEGENDS & NOTES
3	G-003	KEY MAP, VICINITY MAP & OVERALL SITE MAP
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**Office of
General Services**
DESIGN & CONSTRUCTION



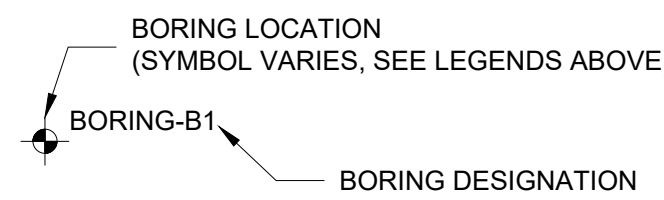
**Department of
Environmental
Conservation**

DRAWING NUMBER:

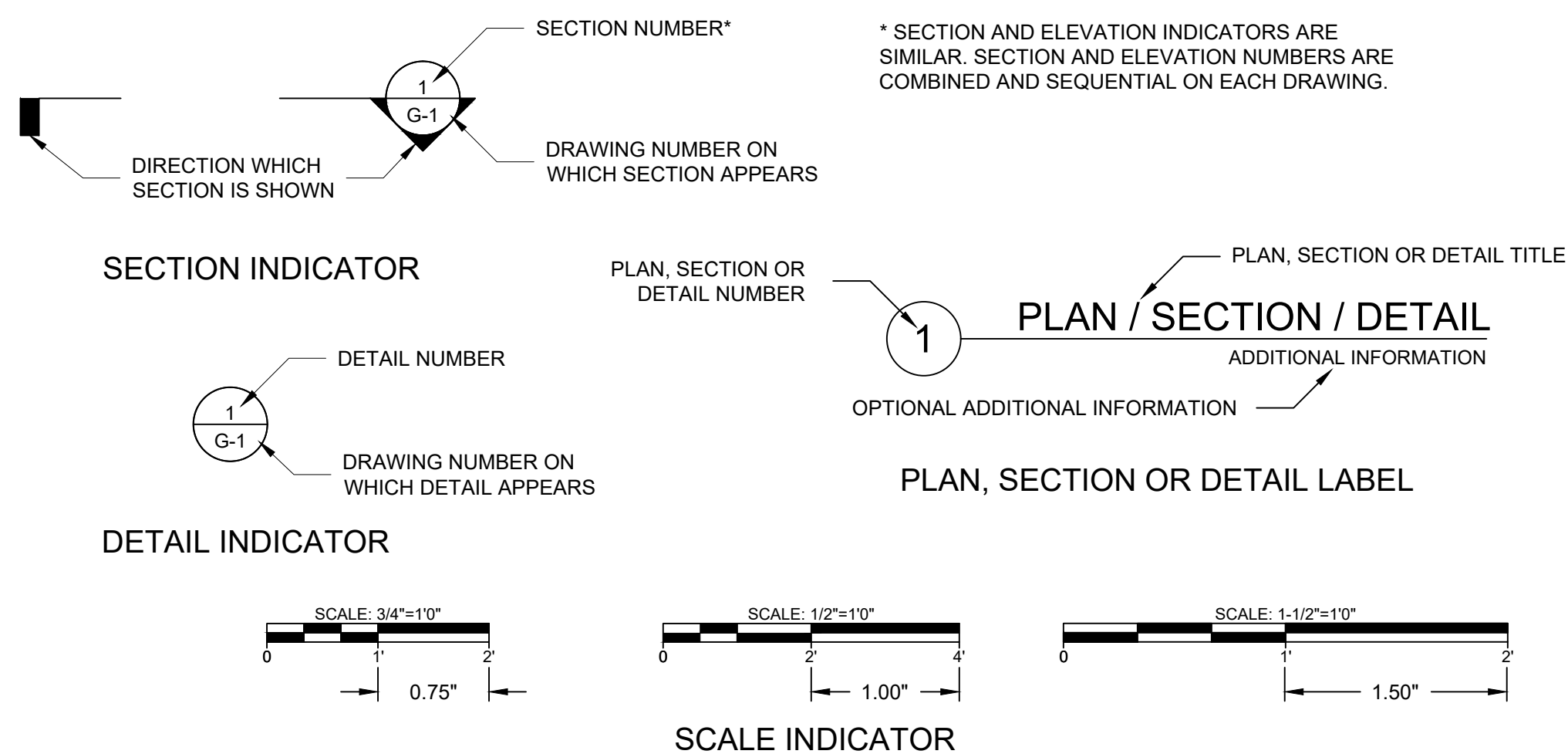
CIVIL ABBREVIATIONS LEGEND

CL	CENTER LINE
AB	ANCHOR BOLTS
ABC	AGGREGATE BASE COURSE
ADH	ADHESIVE
ALT	ALTERNATIVE, ALTERNATE
ANC	ANCHOR
BM	BENCH MARK
BOT	BOTTOM
BF	BOTTOM FACE
C-C	CENTER TO CENTER
CIPP	CURED-IN-PLACE PIPE
CJ	CONSTRUCTION JOINT
CMP	CORRUGATED METAL PIPE
CTR	CENTER, CENTERS
CONC	CONCRETE
DEG	DEGREES
DET	DETAIL
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
D/S	DOWNSTREAM
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EL	ELEVATION
EMB	EMBEDMENT
EQ	EQUAL
ES	EQUAL SPACE
EW	EACH WAY
FF	FAR FACE
FPS	FEET PER SECOND
FS	FAR SIDE
GPM	GALLONS PER MINUTE
HDPE	HIGH DENSITY POLYETHYLENE
HK	HOOK
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HS	HIGH STRENGTH
HW	HEADWATER
HYDRO	HYDROPHILIC
ID	INSIDE DIAMETER
IN	INCHES
INJ	INJECTION
INV.	INVERT
LB	POUND
LFT	LEFT
LG	LONG LENGTH
LOC	LIMITS OF CONSTRUCTION
LLO	LOW LEVEL OUTLET
MAX	MAXIMUM
MIN	MINIMUM
NF	NEAR FACE
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
NYSDDT	NEW YORK STATE DEPARTMENT OF TRANSPORTATION
OC	ON CENTER
OE	OVERHEAD ELECTRIC
PFO	PALUSTRINE FORESTED WETLAND
POW	PALUSTRINE OPEN WATER WETLAND
PL	PLATE
PROJ	PROJECT
PVC	POLYVINYL CHLORIDE PIPE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REINF	REINFORCING, REINFORCED
REF	REFERENCE
REQD	REQUIRED
RT	RIGHT
RHT	RIGHT HAND THREAD
SAN	SANITARY SEWER
SF	SILT FENCE
SHT	SHEET
SIM	SIMILAR
SL	STOP LOG
SP	SPACE
SPEC	SPECIFICATION
SS	STAINLESS STEEL
ST	STORM DRAIN
STD	STANDARD
STL	STEEL
SYM	SYMMETRICAL
TC	TURBIDITY CURTAIN
TEMP	TEMPORARY
TF	TOP FACE
TR	TRASH RACK
TS	TUBE STEEL
TYP	TYPICAL
TOS	TOP OF STEEL
TW	TAILWATER
UE	UNDERGROUND ELECTRIC
UNO	UNLESS NOTED OTHERWISE
US	UPSTREAM
UV	UNIFORMLY VARYING
VERT	VERTICAL
W	WITH
WO	WITHOUT
WP	WORK POINT
WS	WATER STOP
WSTUD	WELDABLE STUD

BORING SYMBOLS LEGEND



DRAWING SYMBOLS LEGEND



NEW FEATURES LEGEND

DEMOLITION / REMOVAL	
SPOT ELEVATION	x 200.1
MINOR CONTOUR LINE	
MAJOR CONTOUR LINE	
EROSION CONTROL BARRIER	
CONSTRUCTION FENCE	
LIMITS OF CONSTRUCTION	
TURBIDITY CURTAIN	
LIMIT OF CLEARING AND GRUBBING	
COFFERDAM	
LIGHT RIPRAP	
RIPRAP	
CONSTRUCTION ENTRANCE	
STOCKPILE AND STAGING AREA	
CLEAR AND GRUB	
SANITARY SEWER LOCATING AREA	
RESTRICTED WORK AREA	

GENERAL NOTES

- LAND SURVEY WAS PERFORMED BY FOIT-ALBERT ASSOCIATES IN JUNE 2020. HORIZONTAL DATUM IS NAD83 (2011). COORDINATES ARE NEW YORK STATE PLANE COORDINATE SYSTEM (NAD 83), EAST ZONE, FEET. VERTICAL CONTROL IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88 GEOID12B), FEET.
- WETLANDS DELINEATED AND TREES INVENTORIED BY ENVIRONMENTAL DESIGN & RESEARCH, D.P.C. ON JUNE 9, 2022. WETLAND AND INDIVIDUAL TREE LOCATIONS WERE ESTABLISHED USING A SUBMETER GLOBAL POSITIONING SYSTEM (GPS). WETLAND BOUNDARIES AND INDIVIDUAL TREE LOCATIONS MAY VARY FROM SURVEYED OR ACTUAL FIELD LOCATIONS.
- RELOCATE SURVEY REFERENCE POINTS AS NECESSARY OUTSIDE LIMIT OF WORK PRIOR TO DISTURBANCE.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING AND COORDINATING ALL WORK WITH THE AFFECTED UTILITY COMPANIES.
- THE LOCATIONS OF THE 2-INCH SEWER FORCE MAIN AND BURIED ELECTRICAL CONDUIT SHOWN HEREON WERE LOCATED BY BLOOD HOUND UNDERGROUND IN MARCH 2020 AND SURVEYED BY FOIT-ALBERT IN JUNE 2020. OTHER UTILITIES SHOWN ARE BASED ON PHYSICAL EVIDENCE AS SURVEYED BY FOIT-ALBERT OR AS SHOWN ON AVAILABLE RECORD PLANS. THE DRAWINGS SHOW KNOWN SUBSURFACE STRUCTURE, ABOVE GROUND STRUCTURES, AND/OR UTILITIES BELIEVED TO EXIST IN THE WORK AREA. THE CONTRACTOR IS WARNED THAT THE ACTUAL LOCATIONS OF SUCH FEATURES MAY DIFFER FROM THE LOCATIONS SHOWN AND THAT ADDITIONAL STRUCTURES AND UTILITIES MAY BE PRESENT. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING OR REPAIRING DAMAGE TO ALL KNOWN OR UNKNOWN STRUCTURES AND UTILITIES AT NO COST TO THE STATE.
- CALL BEFORE YOU DIG! CONTRACTOR SHALL CONTACT UDIG NY BY DIALING 811 AT LEAST THREE DAYS PRIOR TO ANY EXCAVATION. IT IS A BEST PRACTICE TO HAVE A COPY OF THE LOCATION REQUEST AND AUTOMATED POSITIVE RESPONSE (APR) ON SITE WITH YOU, OR THE ABILITY TO ACCESS EXACTIX TO HELP ANSWER QUESTIONS ABOUT THE DIG LOCATION OR THE UTILITY RESPONSE. RETAIN THE SERVICES OF A UTILITY LOCATOR TO IDENTIFY, LOCATE, AND MARK PRIVATE UTILITIES NOT MARKED BY UDIG NY.
- REFERENCES TO "LEFT" AND "RIGHT" WITHIN THESE PLANS ASSUME ONE IS FACING THE DOWNSTREAM DIRECTION.
- NOTIFY THE DIRECTOR'S REPRESENTATIVE IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. DO NOT VARY THE WORK FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE DIRECTOR'S REPRESENTATIVE.
- COMPLY WITH ALL REQUIRED PERMITS. OBTAIN AND INCUR THE COST OF ALL REQUIRED PERMITS NOT OBTAINED BY THE STATE, INSPECTIONS, CERTIFICATES, AND OTHER APPROVALS NECESSARY TO COMPLETE THE WORK.
- PROVIDE ALL FIELD LAYOUT FOR WORK LIMITS AND PROPOSED WORK THAT IS VERIFIED BY A NYS LICENSED LAND SURVEYOR.
- QUANTITIES OR LIMITS SHOWN ARE ESTIMATES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND PROVIDING ALL FINAL QUANTITIES AND ADJUSTING LIMITS TO MEET CONTRACT REQUIREMENTS AND ACCOMPLISH THE CONTRACT WORK AS SHOWN AND SPECIFIED.

EROSION CONTROL NOTES

- PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND/OR OTHER EQUIPMENT OF MUD PRIOR TO ENTERING NYSDOT, LOCAL, OR CAMPGROUND RIGHTS-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ALL STREETS, ALLAY DUST, AND TO TAKE WHATEVER MEASURES NECESSARY TO ENSURE THE ROAD(S) ARE MAINTAINED IN A CLEAN, MUD, AND DUST FREE CONDITION AT ALL TIMES.
- WHERE EXISTING NATURAL DRAINAGE DITCHES OR STREAM BANKS ARE DISTURBED DURING CONSTRUCTION, RESTORE THESE AREAS TO ORIGINAL ALIGNMENT, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- RESTORE ALL DISTURBED AREAS WITH 6 INCHES OF TOPSOIL, SEED, AND MULCH OR EROSION CONTROL BLANKETS, UNLESS OTHERWISE SHOWN OR SPECIFIED.
- REPAIR ALL DAMAGED BITUMINOUS PAVEMENT AND GRAVEL PATHS TO MATCH EXISTING CONDITIONS.
- PERFORM WORK IN ACCORDANCE WITH NYSDEC GENERAL PERMIT GP-0-20-001.
- DO NOT PERFORM LAND CLEARING OR GRADING UNTIL ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED (SILT FENCE, TREE/VEGETATION PROTECTION FENCE, AND STABILIZED CONSTRUCTION ENTRANCE).
- IMMEDIATELY SEED POND DRAWDOWN AREA WITHIN PROJECT LIMITS BETWEEN ELEV. 2133.0 and 2128.0 WITH TEMPORARY SEED MIX PER THE SEEDING SPECIFICATION AND RESEED AS NEEDED TO ESTABLISH TEMPORARY VEGETATION COVER. DRAWDOWN AREA WITHIN TEMPORARY COFFERDAM WILL NOT REQUIRE TEMPORARY SEEDING UNLESS DIRECTED BY DIRECTOR'S REPRESENTATIVE.
- IMMEDIATELY STABILIZE ALL STOCKPILED SOILS THAT ARE NOT TO BE USED WITHIN 7 DAYS AFTER PLACEMENT TO PREVENT RUNOFF. COVER OR MULCH STOCKPILES AND PROVIDE ADDITIONAL EROSION CONTROL BARRIERS AROUND STOCKPILES AS NEEDED TO PREVENT EROSION AND SEDIMENTATION.
- SEED ALL EXPOSED AREAS WITH TEMPORARY SEEDING AND MULCH AS SPECIFIED WITHIN 7 DAYS OF FINAL GRADING.
- INACTIVE PORTIONS OF THE SITE ARE TO BE SEEDED WITH TEMPORARY SEEDING AND MULCHED AS SPECIFIED WITHIN 7 DAYS.
- REFER TO SEEDING SECTION 329219 FOR SEED MIX REQUIREMENTS FOR UPLAND AREAS, WETLAND AREAS, AND AREAS TO BE TEMPORARILY SEEDED DURING CONSTRUCTION. ESTIMATED QUANTITIES ARE INCLUDED IN THE SEEDING SPECIFICATION; HOWEVER, THE CONTRACTOR SHALL DETERMINE FINAL QUANTITIES FOR BIDDING PURPOSES.
- INSPECT SEDIMENT AND EROSION CONTROL MEASURES AT LEAST ONCE EVERY SEVEN (7) DAYS OR MORE FREQUENTLY IF REQUIRED. COMMENCE ALL MAINTENANCE REQUIRED BY INSPECTION WITHIN 24 HOURS AND COMPLETE WITHIN 48 HOURS OF REPORT.
- COMPLY WITH ALL STATE, FEDERAL, AND LOCAL REGULATIONS AND ORDINANCES THAT APPLY.
- INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES IF DEEMED NECESSARY BY ON-SITE INSPECTION.
- TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- PROVIDE AND MAINTAIN SITE HAUL ROAD(S) AS REQUIRED. COST ASSOCIATED WITH PROVIDING CONSTRUCTION ACCESS SHALL BE INCLUDED IN THE BID, INCLUDING PROTECTING EXISTING CULVERTS. IF CULVERTS BECOME DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR, REPLACE THEM AT NO ADDITIONAL COST TO THE STATE.

CONSTRUCTION NOTES

- ALL EXISTING UNDERGROUND FEATURES ARE APPROXIMATE ONLY AND ARE INDICATED FOR GENERAL REFERENCE AND DESIGN UNLESS OTHERWISE NOTED. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- DISPOSE OF DREDGE SPOILS AND OTHER UNSUITABLE MATERIALS AT AN OFF-SITE LOCATION.
- REFUEL AND AT THE END OF EACH DAY STORE ALL EQUIPMENT AND MACHINERY AT LEAST 100 FEET LANDWARD OF REGULATED WETLANDS AND WATER BODIES.
- CONSTRUCT TEMPORARY COFFERDAM OF NON-ERODIBLE MATERIALS THAT WILL NOT CONTRIBUTE TO TURBIDITY OR SILTATION OF THE WETLANDS AND WATER BODIES.
- TAKE ALL NECESSARY PRECAUTIONS TO PREVENT CONTAMINATION OF ANY WETLAND OR WATER BODY WITH SUSPENDED SOLIDS, SEDIMENTS, FUELS, SOLVENTS, LUBRICANTS, EPOXY COATINGS, PAINTS, CONCRETE, LEACHATE, OR OTHER ENVIRONMENTALLY DAMAGING MATERIALS ASSOCIATED WITH THE PROJECT.
- MAINTAIN AT LEAST ONE FULL TRAVEL LANE ALONG THE PARK ROAD THAT CROSSES THE DAM BETWEEN THE DATES OF MAY 15 AND OCTOBER 1. PROVIDE TRAFFIC CONTROLS, FLAGGERS, AND ALL OTHER NECESSARY WORK TO PROTECT TRAFFIC AND THE CONTRACTORS WORK.

WORK RESTRICTIONS

- SEE SEEDING SECTION 329219 FOR SEEDING DATES.
- TO REDUCE ANY POTENTIAL ADVERSE EFFECTS ON THE FEDERALLY THREATENED NORTHERN LONG-EARED BAT, TREES (WOODY VEGETATION GREATER THAN 3 INCHES DIAMETER AT BREAST HEIGHT) SHALL NOT BE CUT BETWEEN APRIL 1ST AND SEPTEMBER 30TH, OF ANY YEAR.
- DRAWDOWN OF THE IMPOUNDMENT IS PROHIBITED BETWEEN THE DATES OF MARCH 15 AND OCTOBER 1, OF ANY YEAR.
- ALL IN-WATER WORK IS PROHIBITED BETWEEN MARCH 15 AND JULY 15, OF ANY YEAR.
- PERFORM ALL EXCAVATION, DEMOLITION, CONSTRUCTION OF NEW STRUCTURES, AND FILL PLACEMENT ON THE DOWNSTREAM SLOPE OR AT THE DOWNSTREAM TOE OF THE EMBANKMENT, OR WITHIN THE DOWNSTREAM CHANNEL WITH THE IMPOUNDMENT DRAWN DOWN TO THE CONSTRUCTION LEVEL.
- PERFORM EXCAVATION ON THE UPSTREAM SLOPE, DEMOLITION OF THE EXISTING DROP INLET, AND CONSTRUCTION OF THE NEW DROP INLET USING A TEMPORARY COFFERDAM WITH THE IMPOUNDMENT AT NORMAL POOL OR CONSTRUCTION LEVELS. IN-WATER WORK FOR THE DROP INLET IS PROHIBITED DURING THE PERIOD NOTED ABOVE.
- EXCAVATION AND CONSTRUCTION OF THE PARAPET WALL MAY BE PERFORMED WITH THE IMPOUNDMENT AT NORMAL OR CONSTRUCTION LEVELS.
- EXCAVATION FOR AND INSTALLATION OF THE AUXILIARY SPILLWAY RIPRAP MAY BE PERFORMED WITH THE IMPOUNDMENT AT NORMAL OR CONSTRUCTION LEVELS. WORK ASSOCIATED WITH THE AUXILIARY SPILLWAY RIPRAP SHALL COMPLY WITH THE IN-WATER WORK RESTRICTIONS NOTED ABOVE.

CONTROL OF WATER

- SOUTH LAKE LEVELS:
 - NORMAL POOL EL. 2133.0
 - CONSTRUCTION LEVEL EL. 2128.0
 - PROJECT COMPLETION NORMAL POOL EL. 2133.0
- REFER TO WORK RESTRICTION NOTES ABOVE FOR IN-WATER WORK AND LAKE DRAWDOWN RESTRICTIONS.
- COORDINATE WITH DIRECTOR'S REPRESENTATIVE TO OPEN THE LOW LEVEL OUTLET GATE TO TEMPORARILY LOWER THE LAKE ELEVATION TO THE EXTENT POSSIBLE. PROVIDE TEMPORARY PUMPS, SIPHONS, OR AN EQUIVALENT SYSTEM TO LOWER THE POOL TO CONSTRUCTION ELEVATION OF 2128.0 FEET. PROVIDE A TEMPORARY BYPASS SYSTEM TO DISCHARGE A MINIMUM CONSERVATION FLOW RELEASE THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH THE TABLE BELOW. THESE CONSERVATION FLOWS WERE DEVELOPED USING THE NYSDEC DIVISION OF WATER TECHNICAL AND OPERATIONAL GUIDANCE SERIES, DOW 1.3.12 - INCORPORATION OF FLOW-RELATED CONDITIONS IN WATER WITHDRAWAL PERMITS.

MONTH	
JANUARY	
FEBRUARY	
MARCH	
APRIL	
MAY	
JUNE	
JULY	
AUGUST	
SEPTEMBER	
OCTOBER	
NOVEMBER	
DECEMBER	

- PROVIDE A TEMPORARY COFFERDAM SYSTEM AS SHOWN ON THE PLANS, AND REMOVE THE SYSTEM AT PROJECT COMPLETION. PROVIDE A LAYOUT AND DETAILED SECTIONS OF THE COFFERDAM SYSTEM TO THE DIRECTOR'S REPRESENTATIVE FOR REVIEW AT LEAST 30 DAYS PRIOR TO INSTALLATION. PROVIDE A CONTROL OF WATER SYSTEM SUBMITTAL SIGNED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK. REFER TO SPECIFICATION SECTION 315200 FOR ADDITIONAL REQUIREMENTS.
- THE COFFERDAM WILL NOT PROTECT AGAINST ALL STORM EVENTS. TAKE NECESSARY PRECAUTIONS PRIOR TO OR DURING STORM EVENTS TO PREVENT DAMAGE TO THE DAM, NEW WORK, EQUIPMENT, MATERIALS, AND ADJACENT LAND OR STRUCTURES.
- USE SEDIMENT DEWATERING BAG WITH STONE BERM DURING DEWATERING AS NEEDED IN CONJUNCTION WITH STONE CHECK DAM(S) TO PREVENT SEDIMENTS FROM ENTERING WETLAND OR OPEN WATER.

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CONTRACT:
TITLE: REHABILITATE SOUTH LAKE DAM NYS DEC ID NO. 192-4560
LOCATION: TOWN OF HAINES FALLS GREENE COUNTY, NEW YORK
CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MARK	DATE	DESCRIPTION
PROJECT NUMBER:		---
DESIGNED BY:	ZDB	
DRAWN BY:	SMH	
FIELD CHECK:	--	
APPROVED:	GJD	

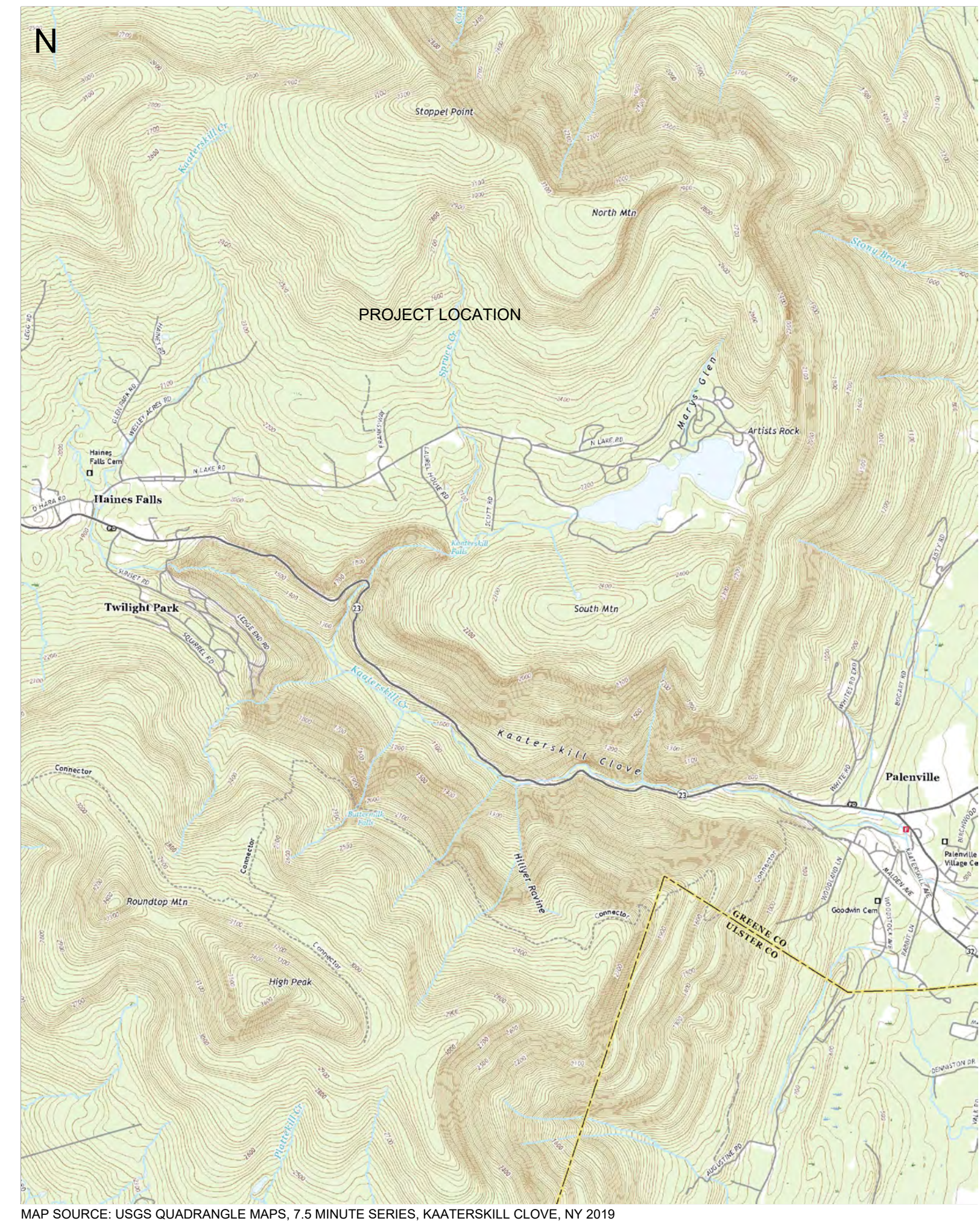
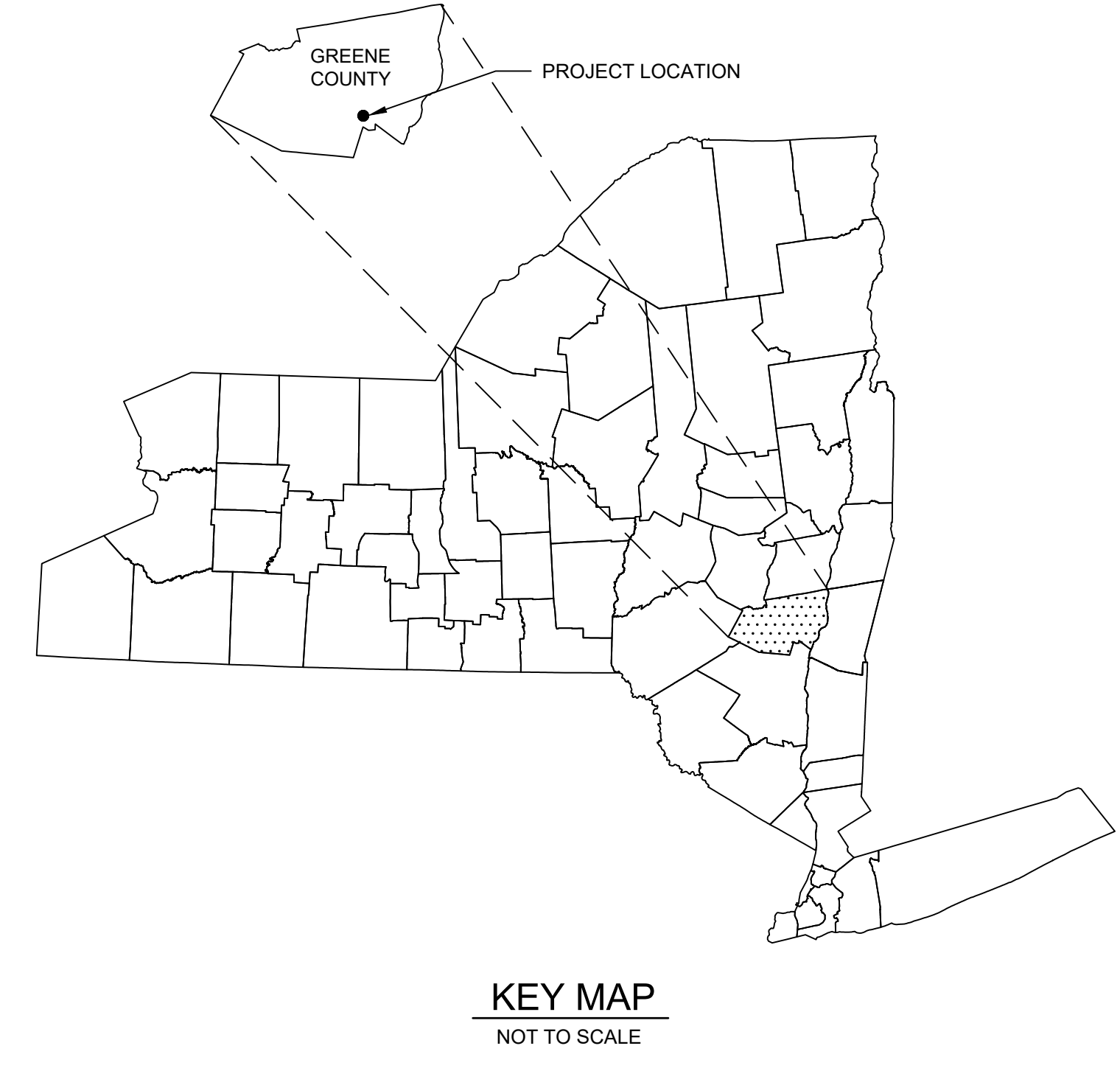
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LOCATION:
TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK
CLIENT:
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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DRAWN BY:		SMH
FIELD CHECK:		—
APPROVED:		GJD
SHEET TITLE:		
DRAWING NUMBER:		
SHEET 3 OF 27		



VICINITY MAP
SCALE: 1"=2000'
0 2000 4000

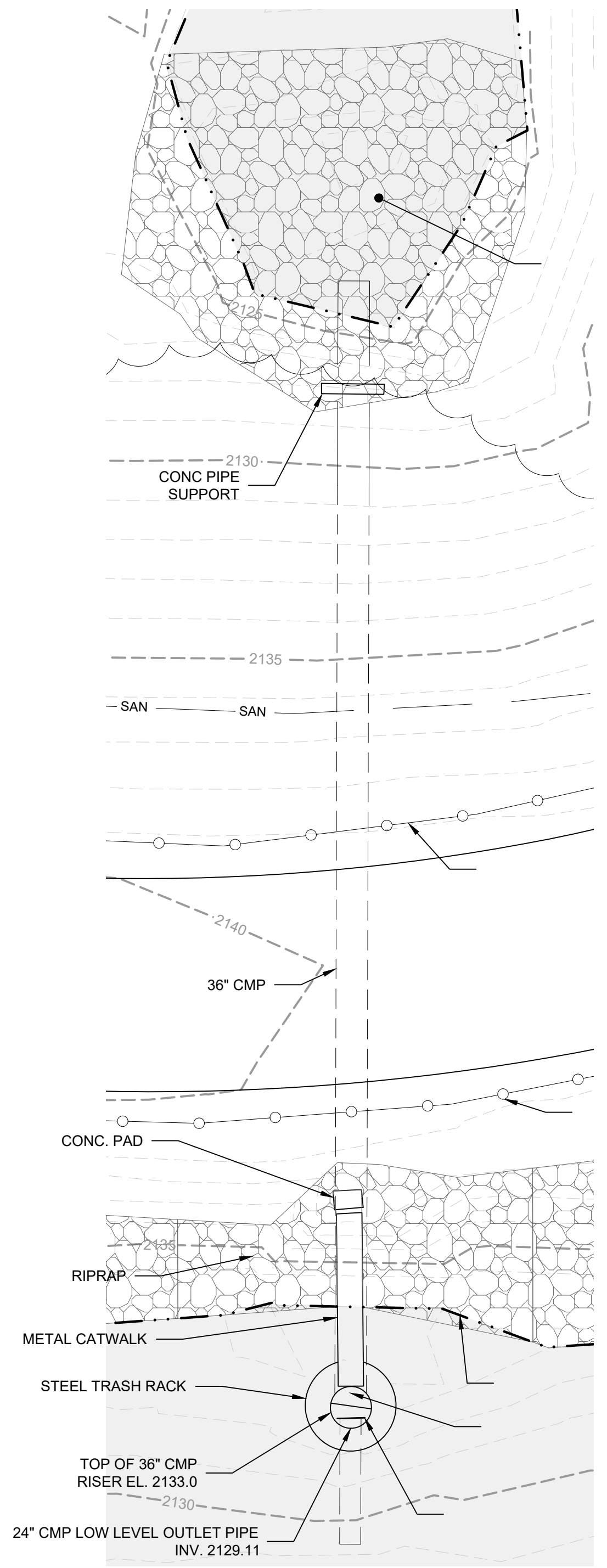
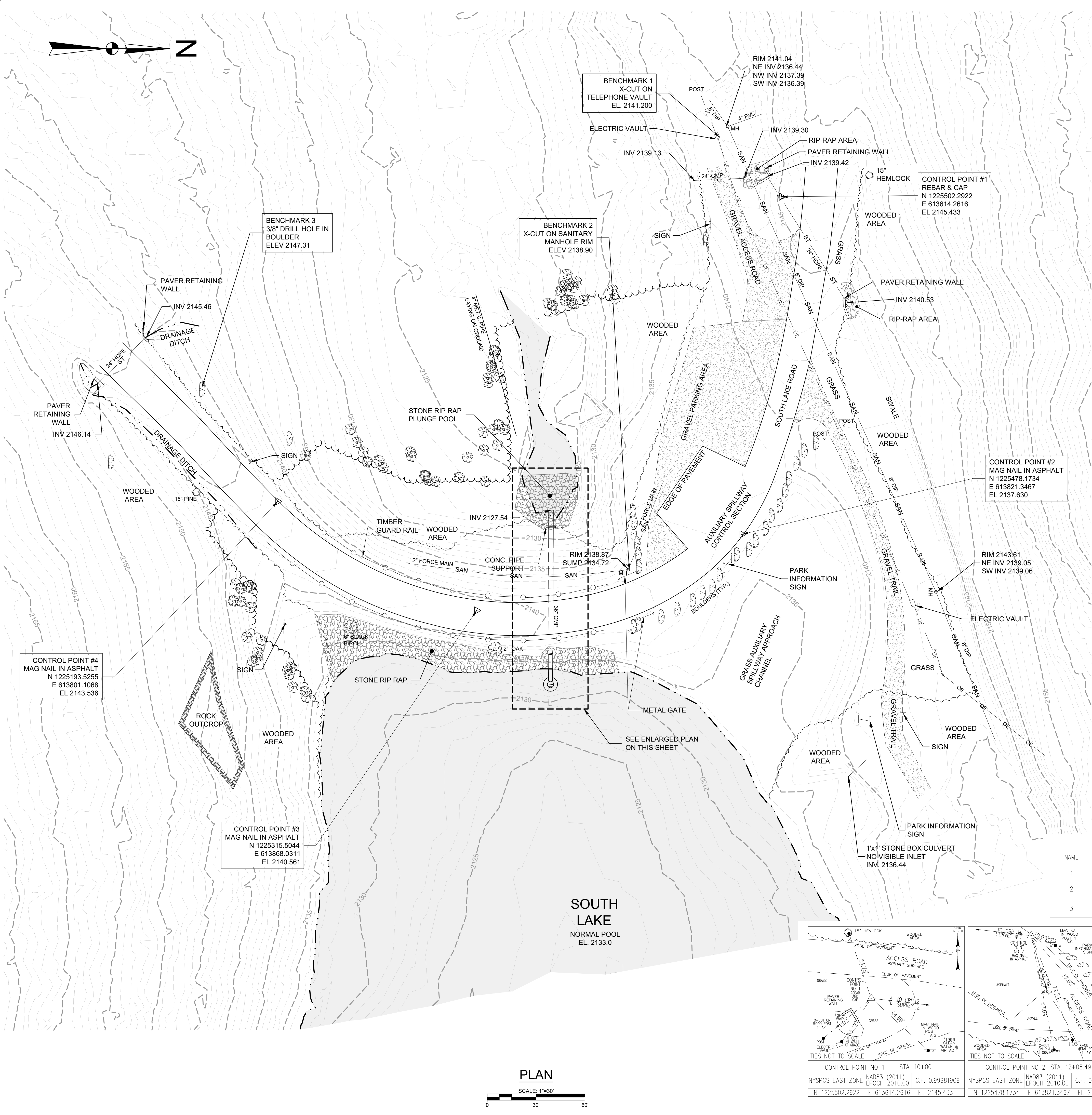


OVERALL SITE MAP
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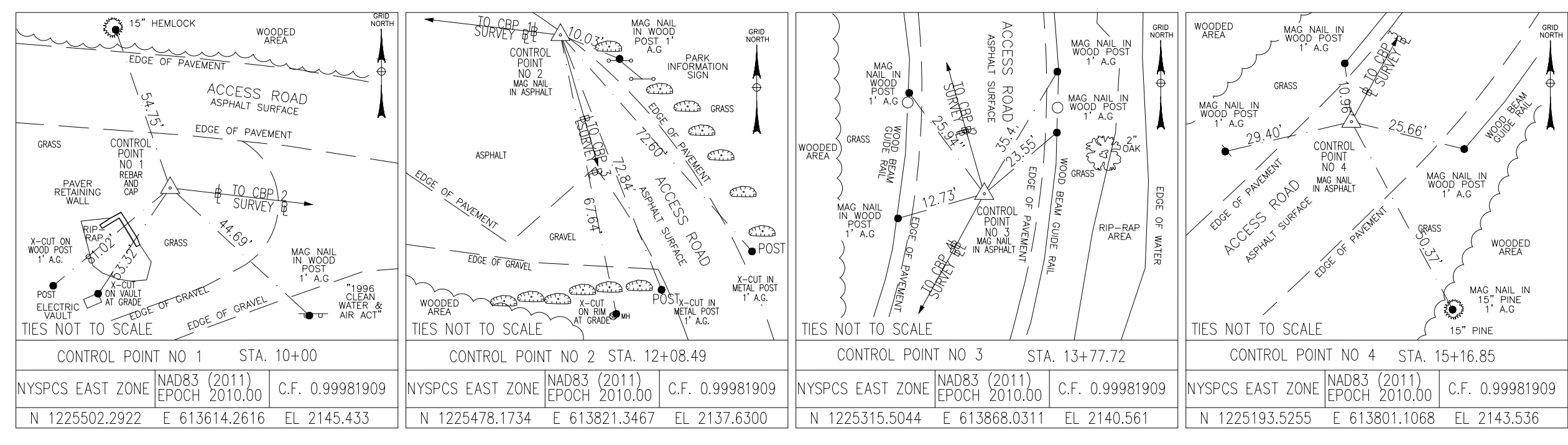
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 36x24 PLOT SHEET

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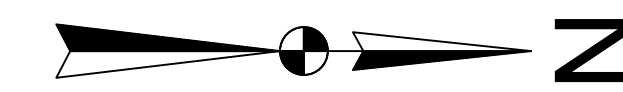
NAME	STATION OFFSET	ELEVATION	DESCRIPTION
1	94+968.36 41.66' R	2141.200	SET X-CUT ON NORTHWEST CORNER OF TELEPHONE VAULT, 56' SOUTH OF EDGE OF PAVED ACCESS ROAD, 350' NORTHWEST OF SOUTH LAKE OVERFLOW.
2	12+81.28 2.54' L	2138.904	SET X-CUT ON RIM OF SANITARY MANHOLE, 8' WEST OF EDGE OF PAVED ACCESS ROAD, 84' NORTHWEST OF SOUTH LAKE OVERFLOW.
3	15+89.35 38.26' R	2147.305	SET DRILL HOLE IN 5'X8' BOULDER, 13' WEST OF EDGE OF PAVED ACCESS ROAD, 281' SOUTHWEST OF SOUTH LAKE OVERFLOW.



PLAN

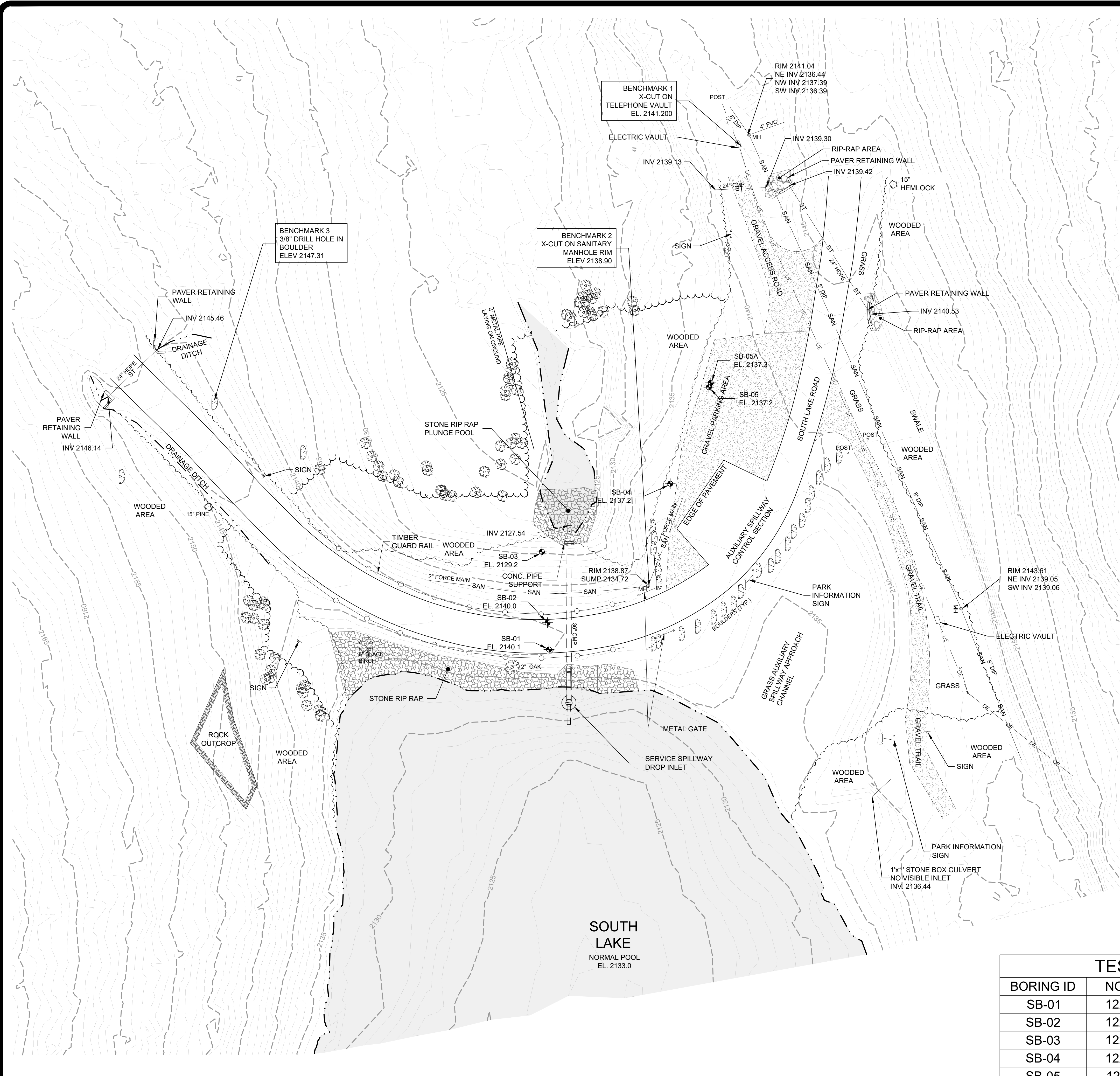


Mar 15, 2023 - 6:41 am
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 36x24 PLOT SHEET



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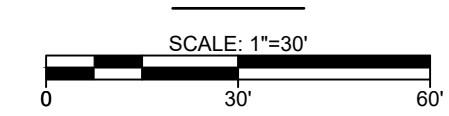
LEGEND

◆ SCHNABEL BORING

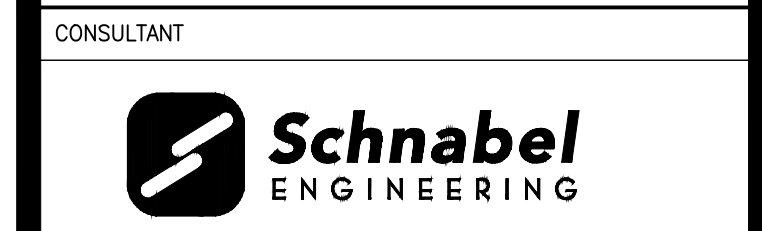
TEST BORING SUMMARY TABLE

BORING ID	NORTHING	EASTING		
SB-01	1225348.74	613881.28		
SB-02	1225347.89	613865.10		
SB-03	1225344.46	613822.42		
SB-04	1225421.79	613781.39		
SB-05	1225445.11	613723.23		
SB-05A	1225446.24	613720.61		

PLAN



Mar 15, 2023 - 6:41 am
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 36x24 PLOT SHEET



CONSULTANT

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GREENE COUNTY, NEW YORK

CLIENT:
NYS DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

MARK

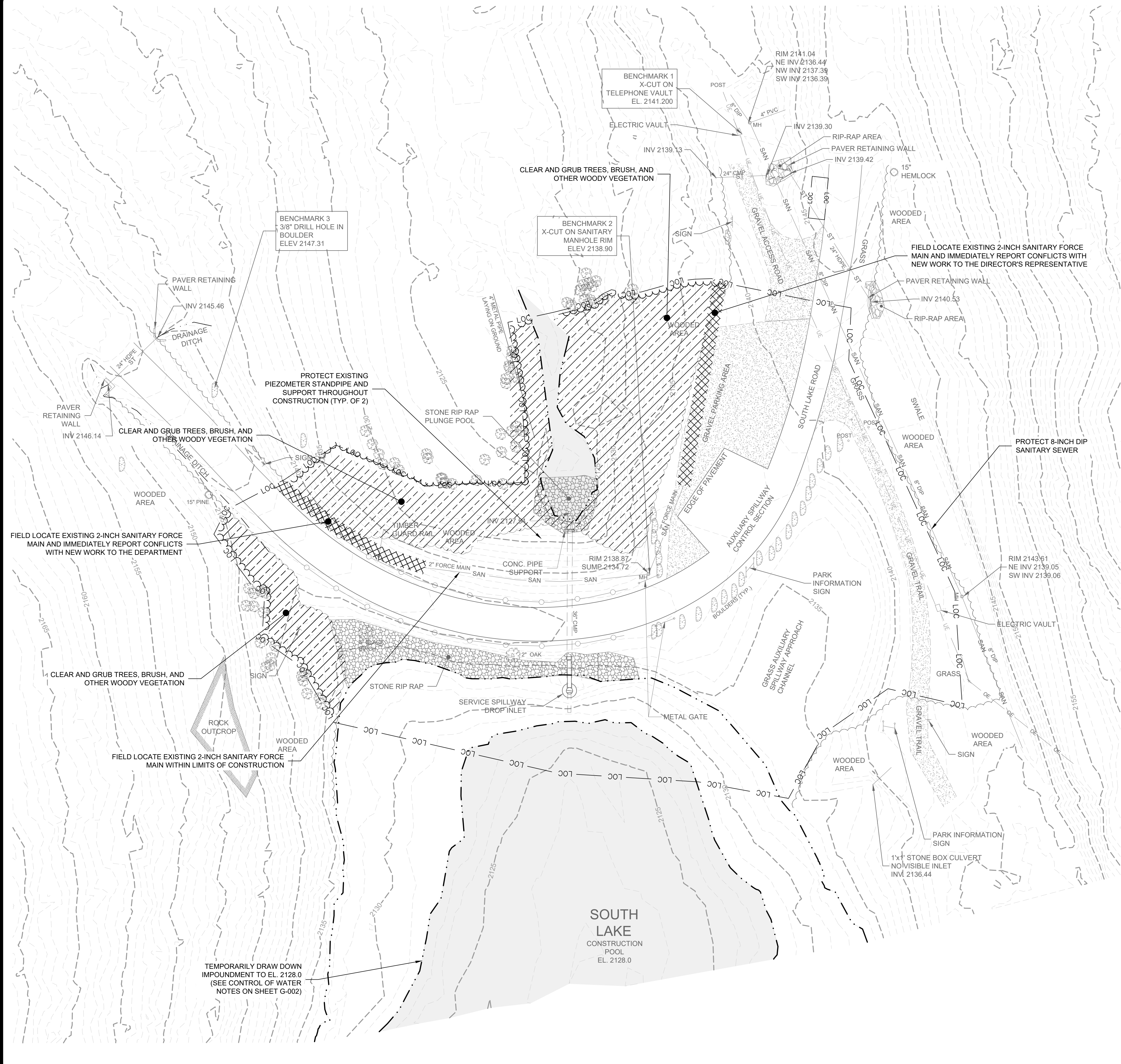
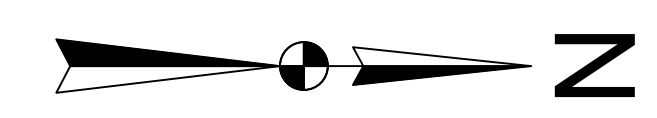
DATE

DESCRIPTION

PROJECT NUMBER:	-	
DESIGNED BY:	ZDB	
DRAWN BY:	SMH	
FIELD CHECK:	-	
APPROVED:	GJD	
SHEET TITLE:		

DRAWING NUMBER:

SHEET 6 OF 27



NOTES:

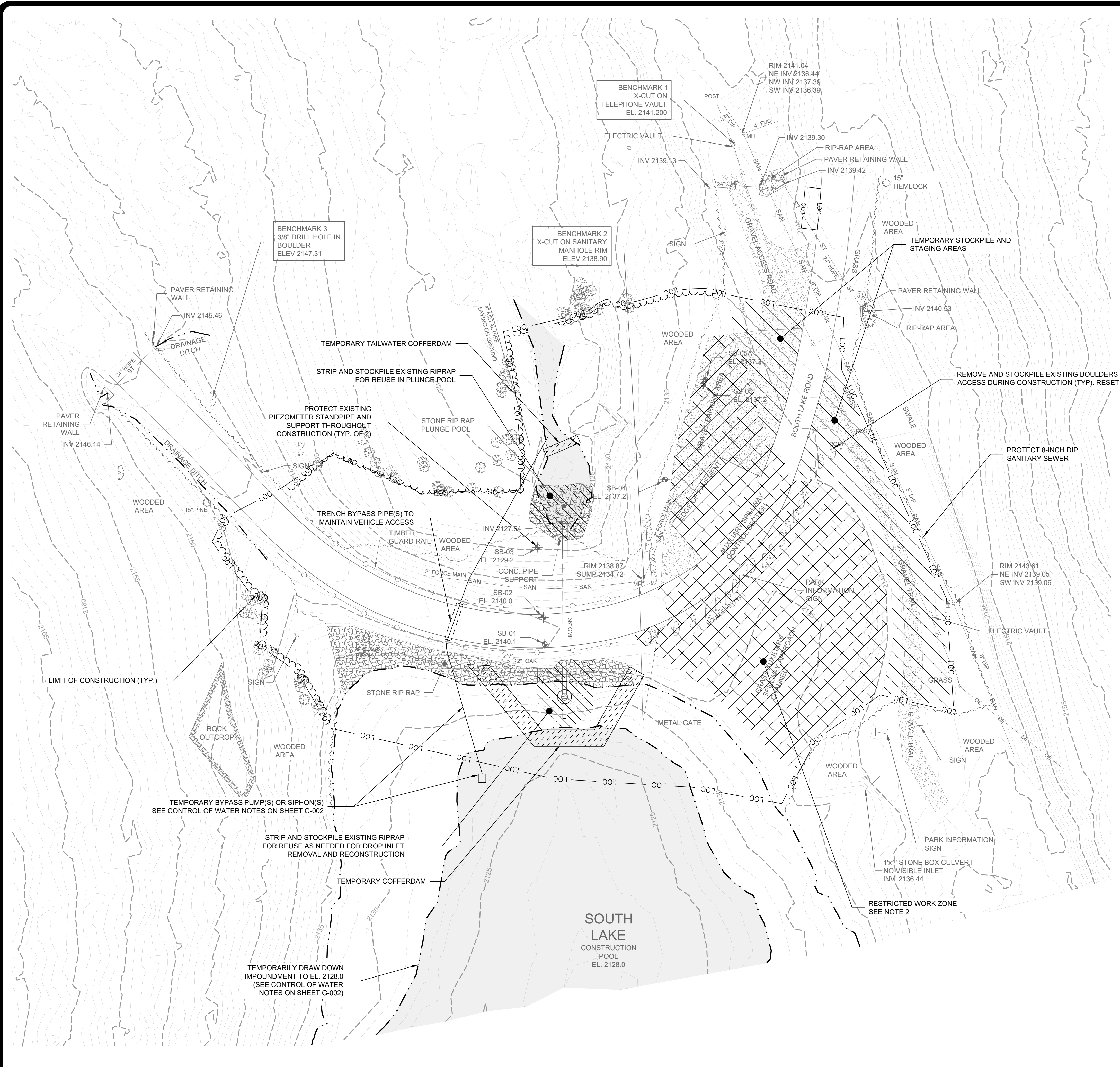
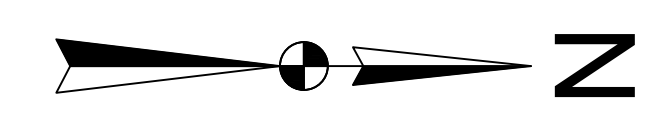
1. RETAIN THE SERVICES OF A UTILITY LOCATING COMPANY TO LOCATE AND MARK ALL EXISTING UTILITIES AT THE SITE. PROTECT ALL UTILITIES THROUGHOUT CONSTRUCTION. SUPPORT UTILITIES ADJACENT TO OR WITHIN EXCAVATIONS, AND IMMEDIATELY NOTIFY THE DIRECTOR'S REPRESENTATIVE OF ANY CONFLICTS BETWEEN EXISTING UTILITIES AND NEW WORK.

PLAN
SCALE: 1"=30'

36x24 PLOT SHEET
Mar 15, 2023 - 6:41 am
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 THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS "A" MISDEMEANOR.

CONTRACT:
 TITLE: REHABILITATE SOUTH LAKE DAM
 NYS DEC ID NO. 192-4560
 LOCATION: TOWN OF HAINES FALLS
 GREENE COUNTY, NEW YORK
 CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION



PLAN



NOTES:

- CLEAN STRIPPED AND STOCKPILED EXISTING RIPRAP OF SOIL, MUD, ORGANICS, AND DEBRIS PRIOR TO REUSE IN BYPASS ENERGY DISSIPATOR AND NEW WORK.
- STOCKPILING AND STORING EQUIPMENT OR MATERIALS WITHIN THE AUXILIARY SPILLWAY APPROACH CHANNEL AND CONTROL SECTION IS PROHIBITED. THE CONTRACTOR MAY OPERATE EQUIPMENT AND TRANSFER MATERIALS THROUGH THESE AREAS DURING NORMAL WORK HOURS. REMOVE ALL MATERIALS AND EQUIPMENT FROM THE AUXILIARY SPILLWAY PRIOR TO THE END OF EACH WORK DAY AND PRIOR TO ALL WEEKENDS AND SHUT DOWNS. NON-ERODIBLE MATERIALS SUCH AS RIPRAP AND CRUSHED STONE MAY BE STOCKPILED WITHIN THE AUXILIARY SPILLWAY DISCHARGE CHANNEL TO THE SOUTH OF THE CONTROL SECTION/EXISTING PARKING AREA. MATERIALS STOCKPILED WITHIN THE DISCHARGE CHANNEL ARE AT THE CONTRACTOR'S RISK AND MAY BE FLOODED OR DAMAGED DURING STORM EVENTS. LIMIT HEIGHT OF MATERIAL STOCKPILES IN THE DISCHARGE CHANNEL SUCH THAT THEY DO NOT EXCEED THE CONTROL SECTION CREST (EL. 2137.7).

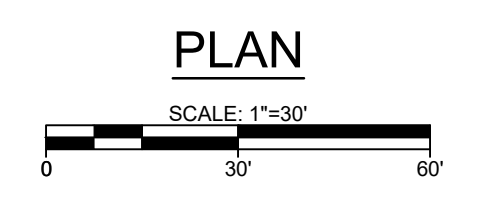
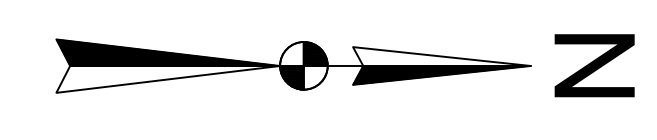
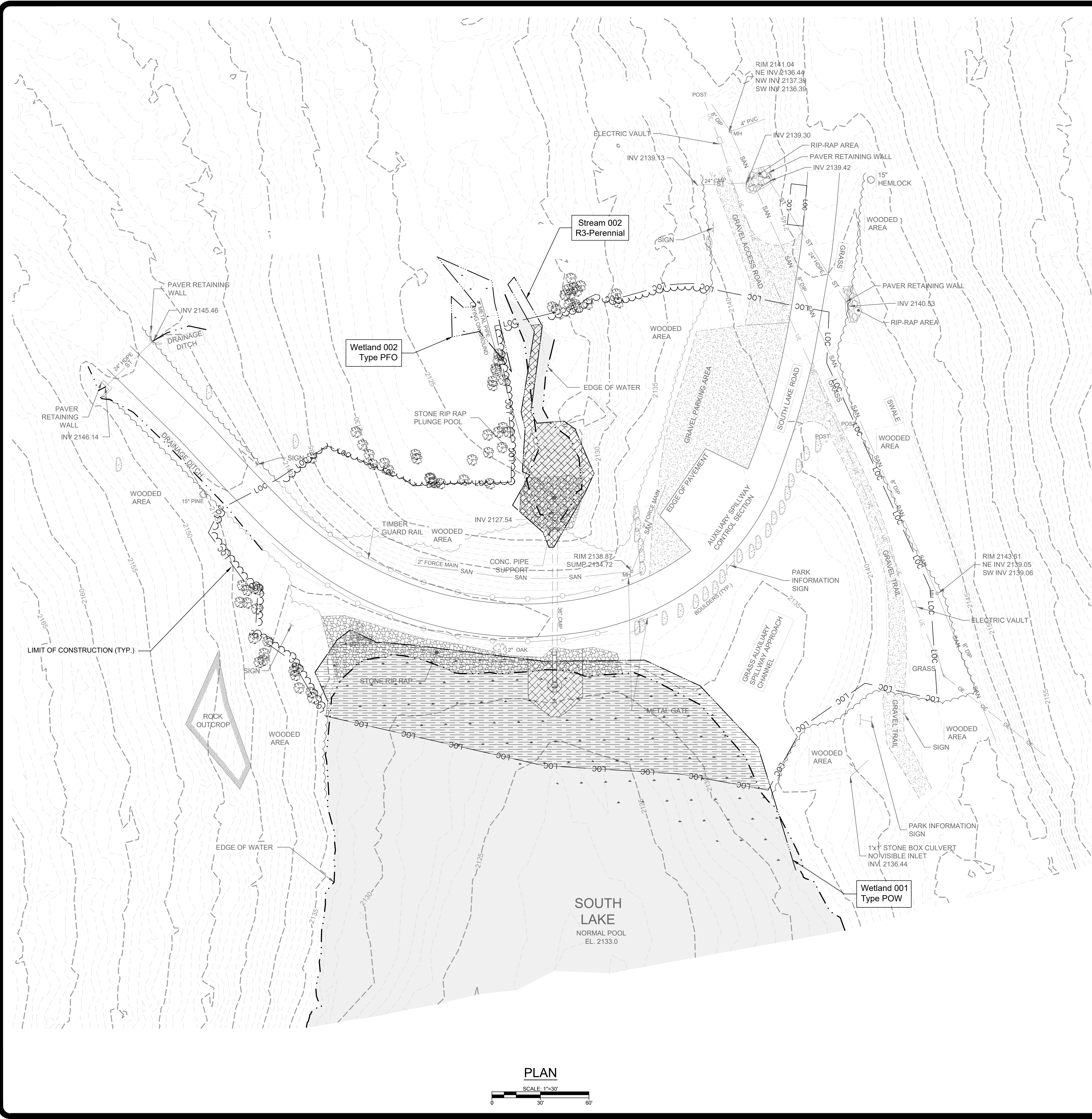
MARK	DATE	DESCRIPTION

PROJECT NUMBER:	—
DESIGNED BY:	ZDB
DRAWN BY:	SMH
FIELD CHECK:	—
APPROVED:	GJD

SHEET TITLE:
 DRAWING NUMBER:

Mar 15, 2023 - 6:41 am
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 36x24 PLOT SHEET

Mar 15, 2023 - 11:58am
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 36x24 PLOT SHEET



LEGEND

	TEMPORARY IMPACT AREAS TOTAL = 14,671 S.F. (0.34 AC)
	PERMANENT IMPACT AREAS TOTAL = 3,759 S.F. (0.09 AC)

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CONTRACT:
 TITLE: REHABILITATE SOUTH LAKE DAM
 NYS DEC ID NO. 192-4560

LOCATION:
 TOWN OF HAINES FALLS
 GREENE COUNTY, NEW YORK

CLIENT:
 NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

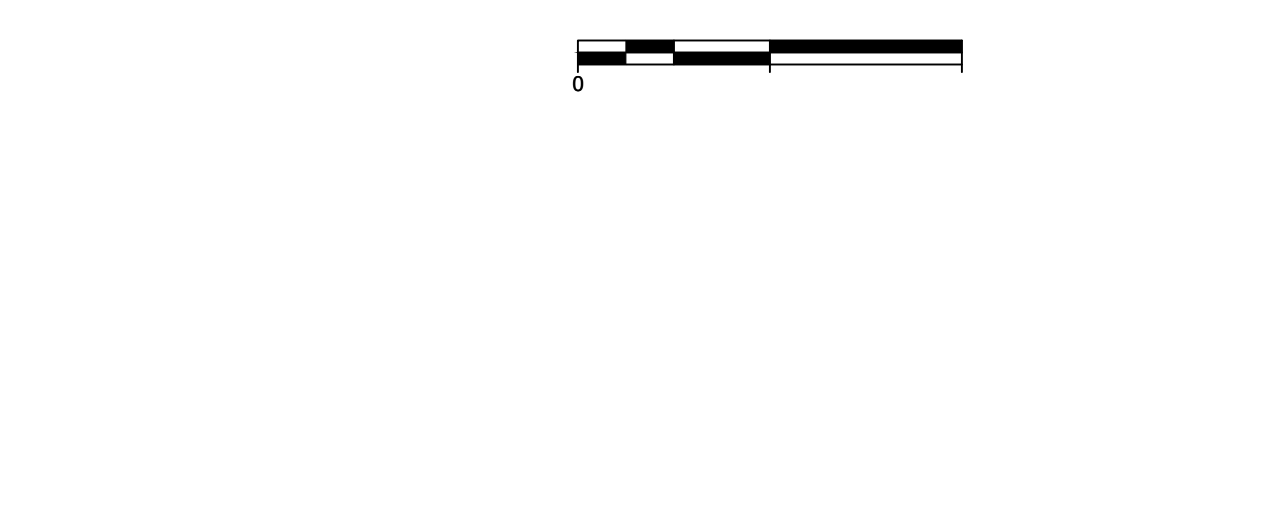
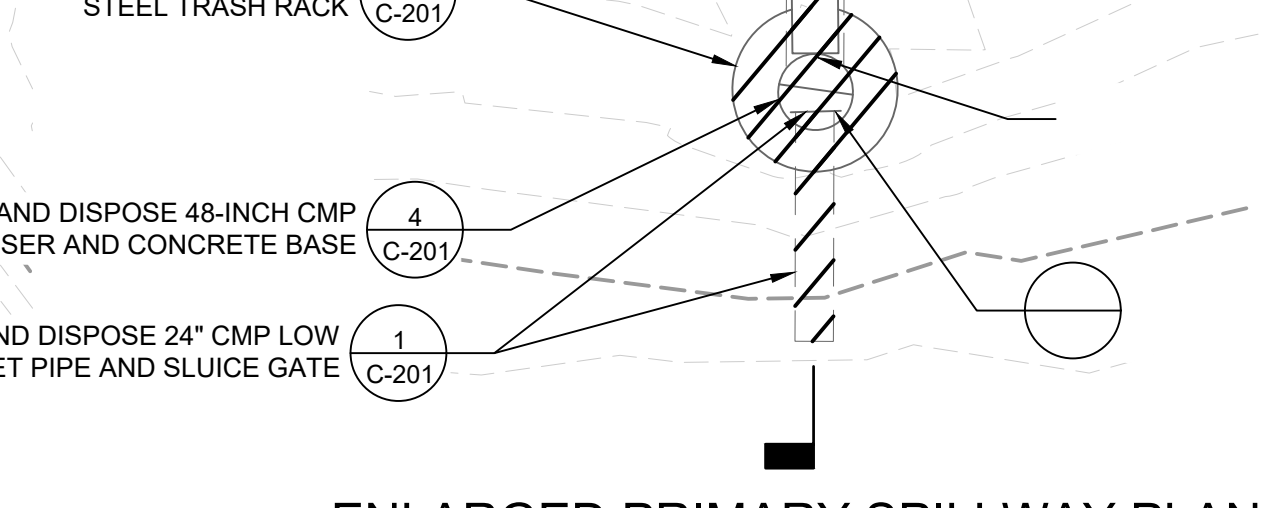
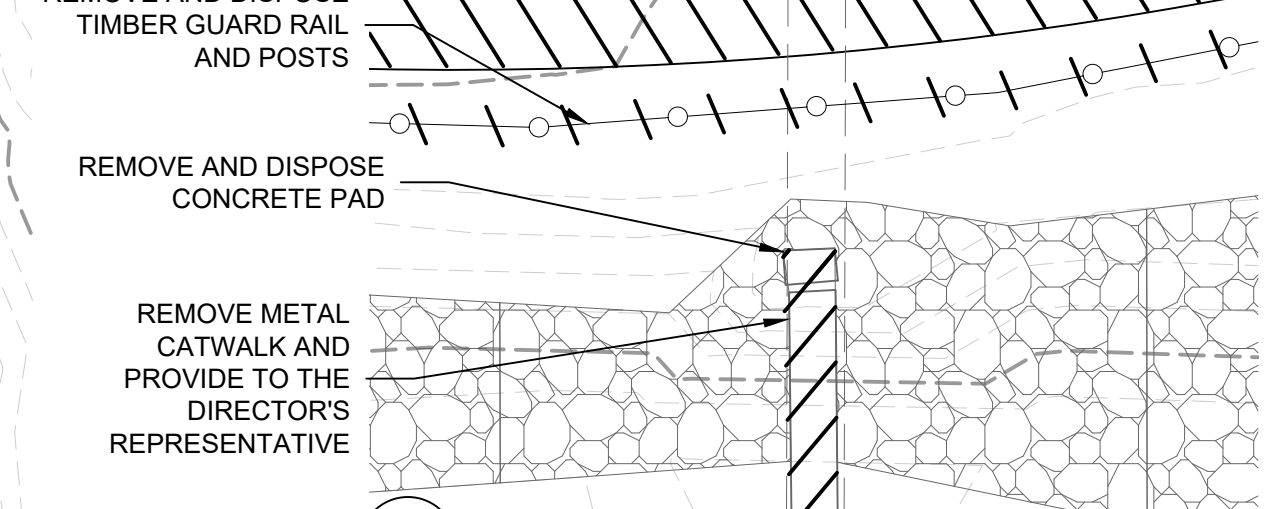
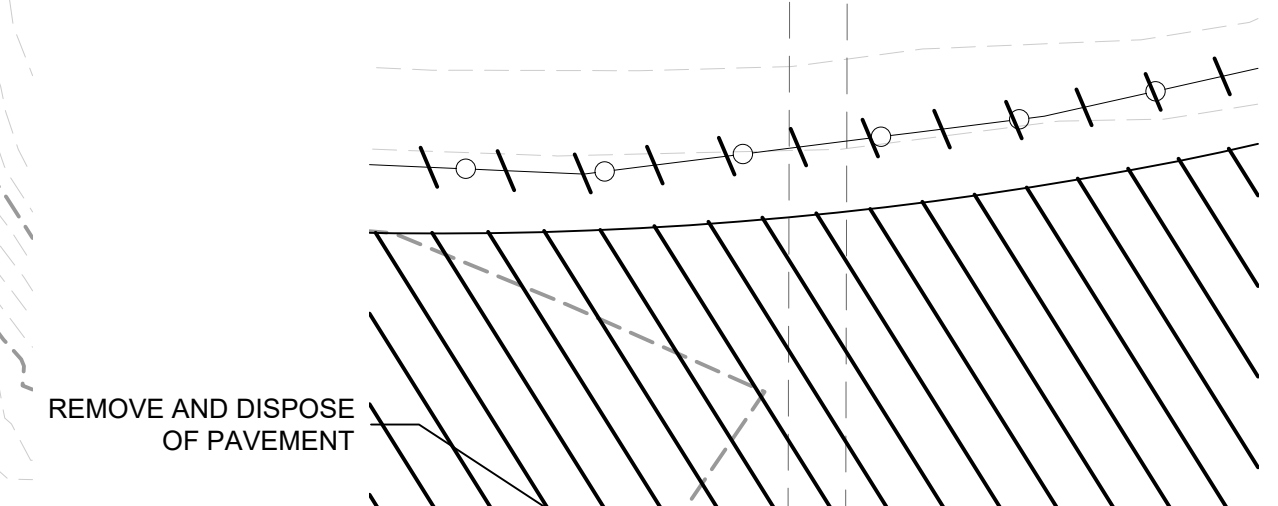
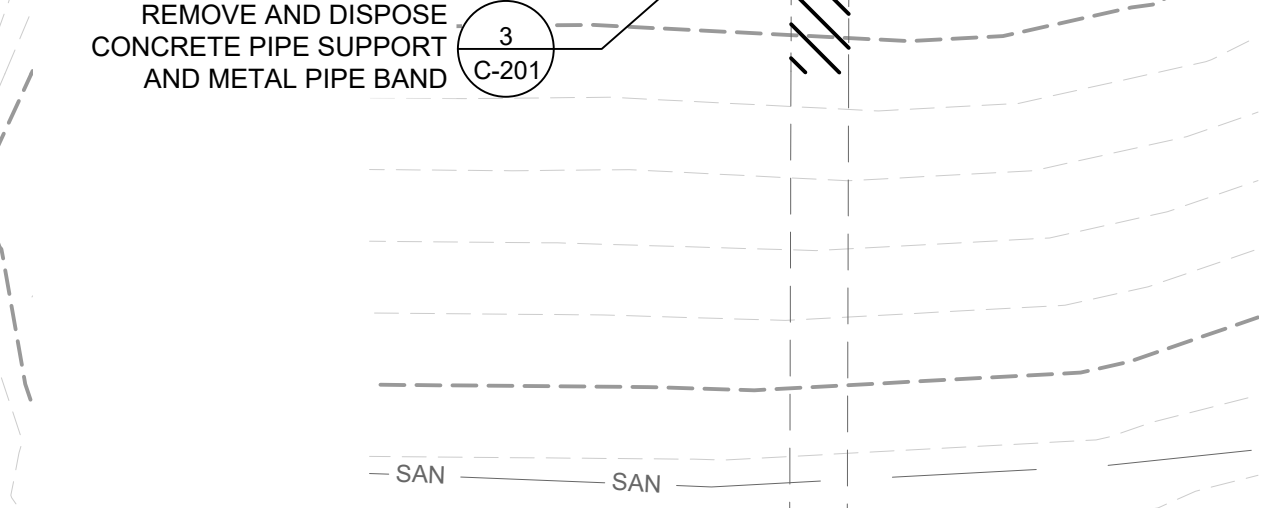
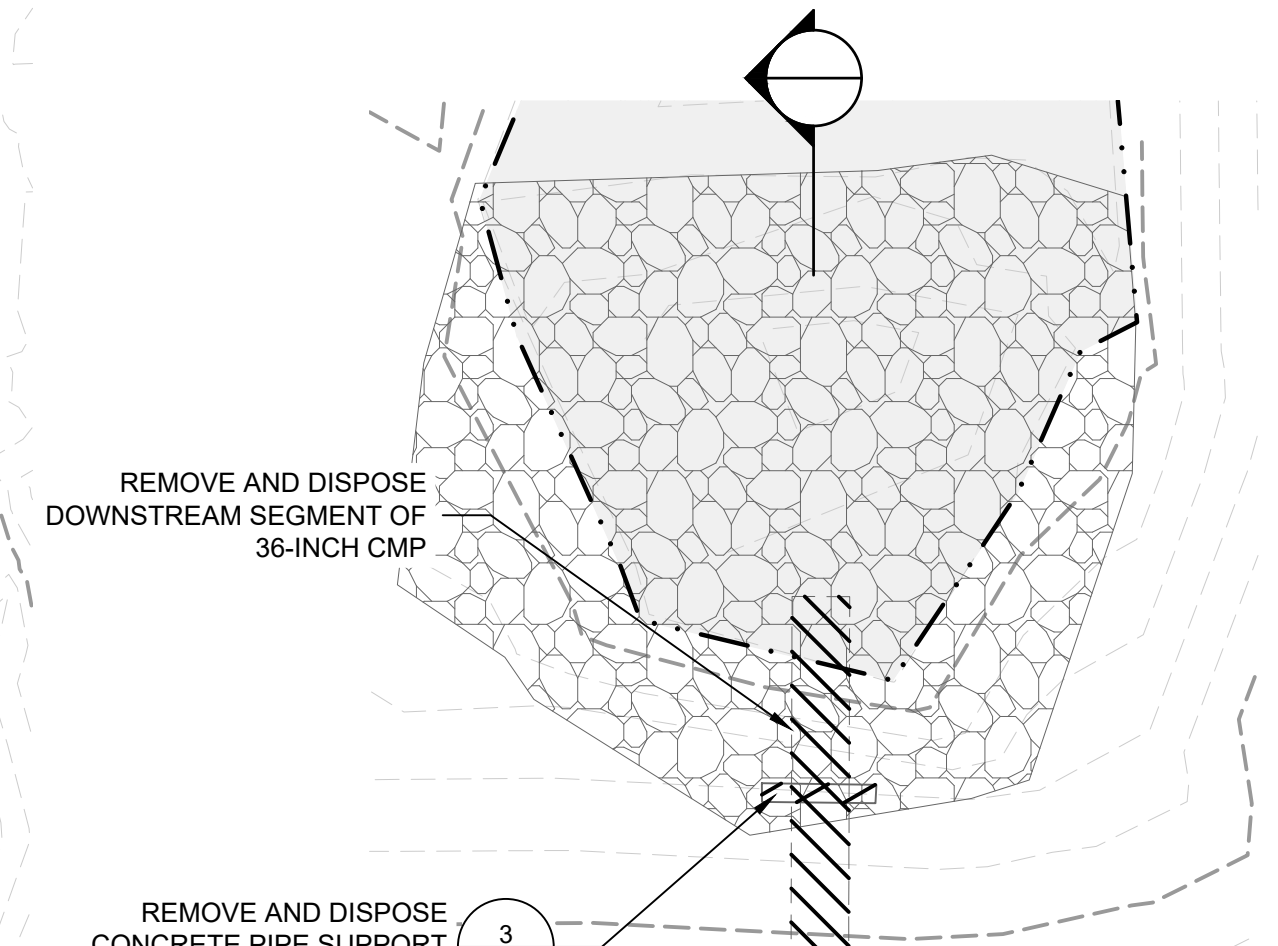
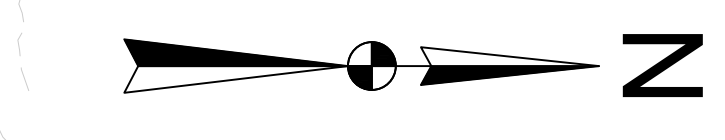
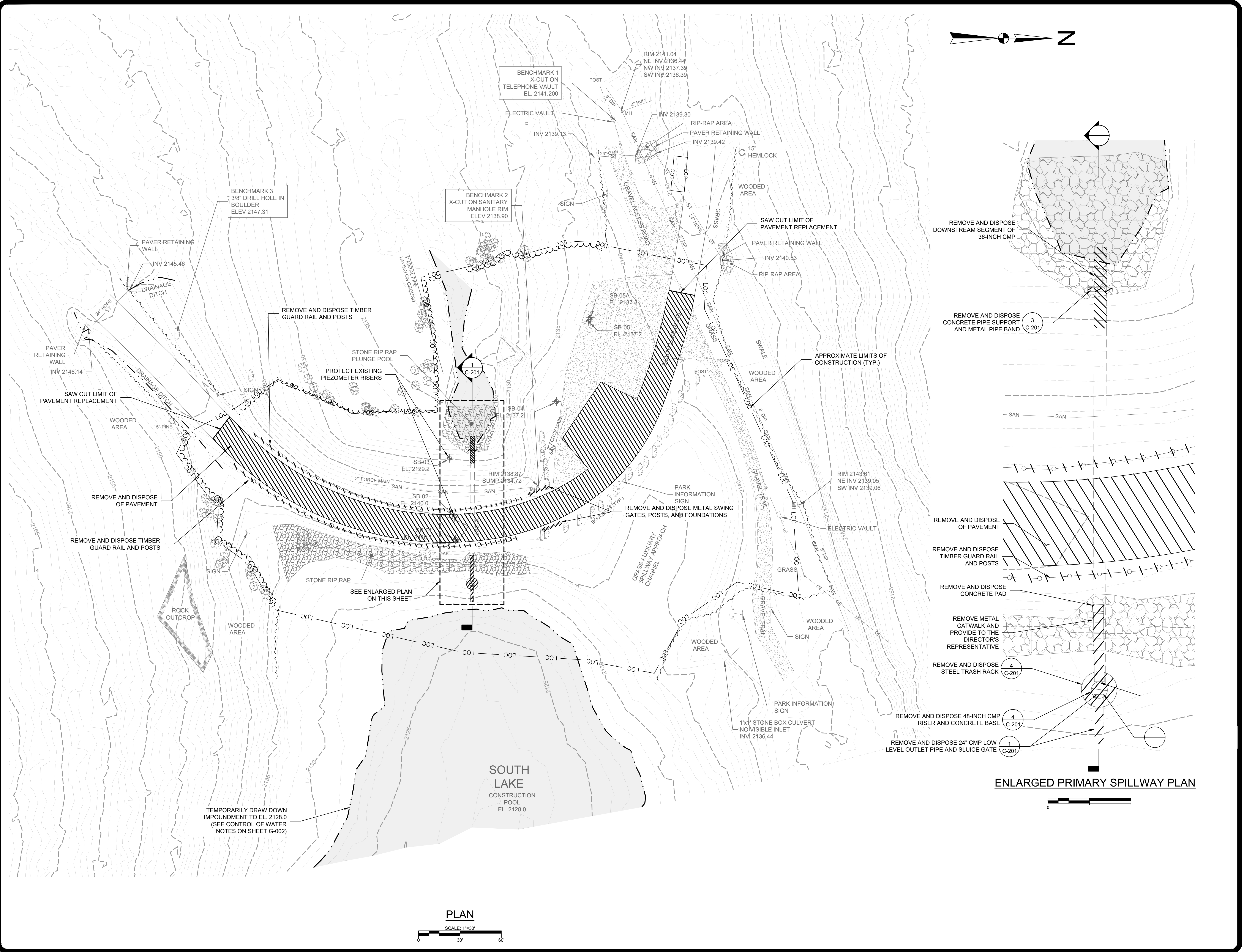
**60% DESIGN SUBMITTAL
 NOT FOR CONSTRUCTION**

MARK	DATE	DESCRIPTION
PROJECT NUMBER:	47251	- C
DESIGNED BY:	ZDB	
DRAWN BY:	SMH	
FIELD CHECK:	-	
APPROVED:	GJD	

SHEET TITLE:
WETLANDS IMPACT PLAN

DRAWING NUMBER:
C-105

Mar 15, 2023 - 6:42am
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 36x24 PLOT SHEET



ENLARGED PRIMARY SPILLWAY PLAN



NEW YORK STATE OF OPPORTUNITY Office of General Services
 DESIGN & CONSTRUCTION

NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

CONSULTANT
Schnabel ENGINEERING

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CONTRACT:
 TITLE: REHABILITATE SOUTH LAKE DAM
 NYS DEC ID NO. 192-4560
 LOCATION: TOWN OF HAINES FALLS
 GREENE COUNTY, NEW YORK
 CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MARK	DATE	DESCRIPTION
PROJECT NUMBER:		
DESIGNED BY:	ZDB	
DRAWN BY:	SMH	
FIELD CHECK:	-	
APPROVED:	GJD	
SHEET TITLE:		
DRAWING NUMBER:		

SHEET 9 OF 27

CONSULTANT



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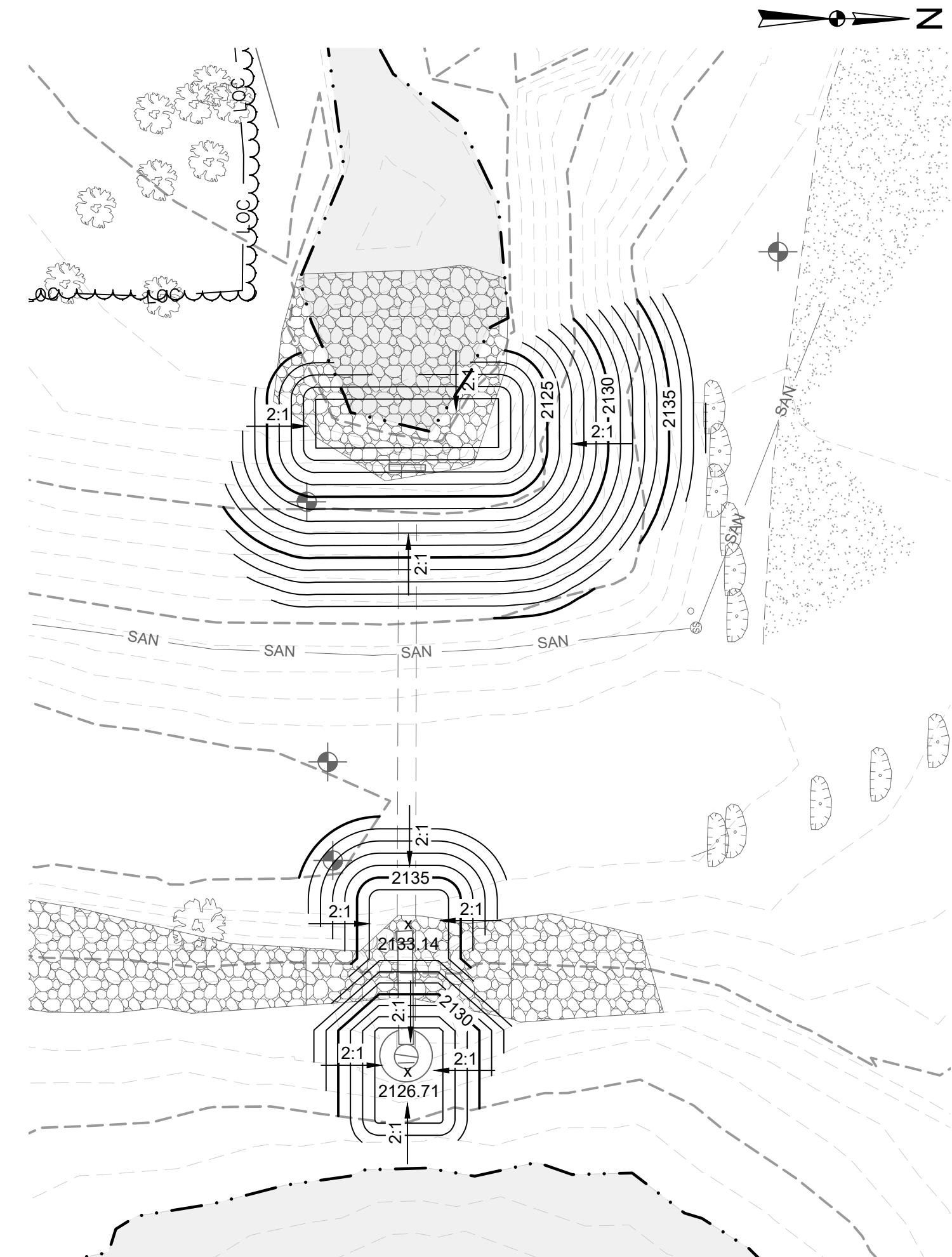
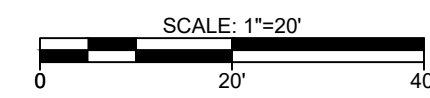
TITLE:
REHABILITATE SOUTH LAKE DAM
NYS DEC ID NO. 192-4560

LOCATION:
TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK

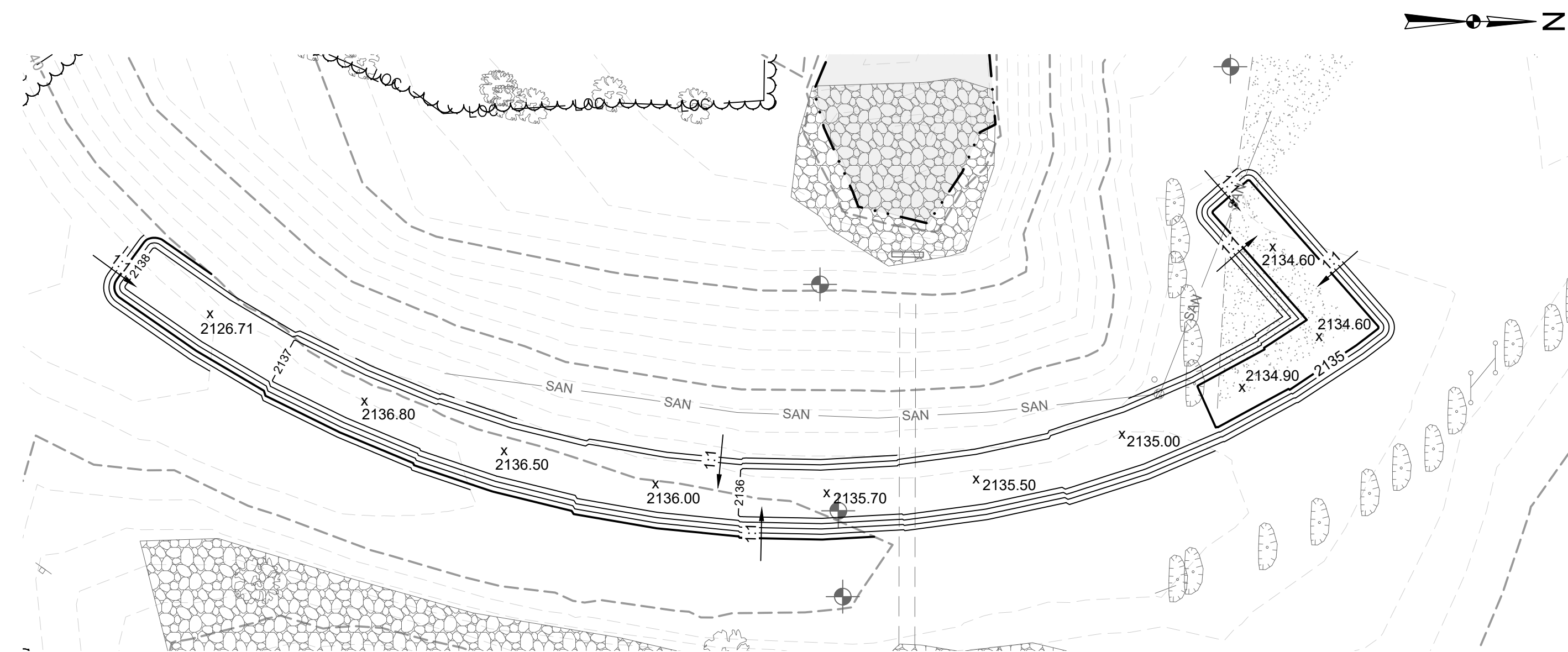
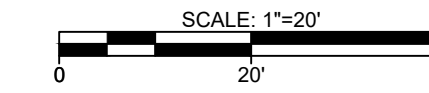
CLIENT:
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION



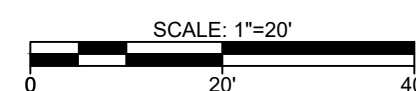
AUXILIARY SPILLWAY AND PLUNGE POOL EXCAVATION PLAN



SERVICE SPILLWAY DROP INLET AND HEADWALL EXCAVATION PLAN



PARAPET EXCAVATION PLAN

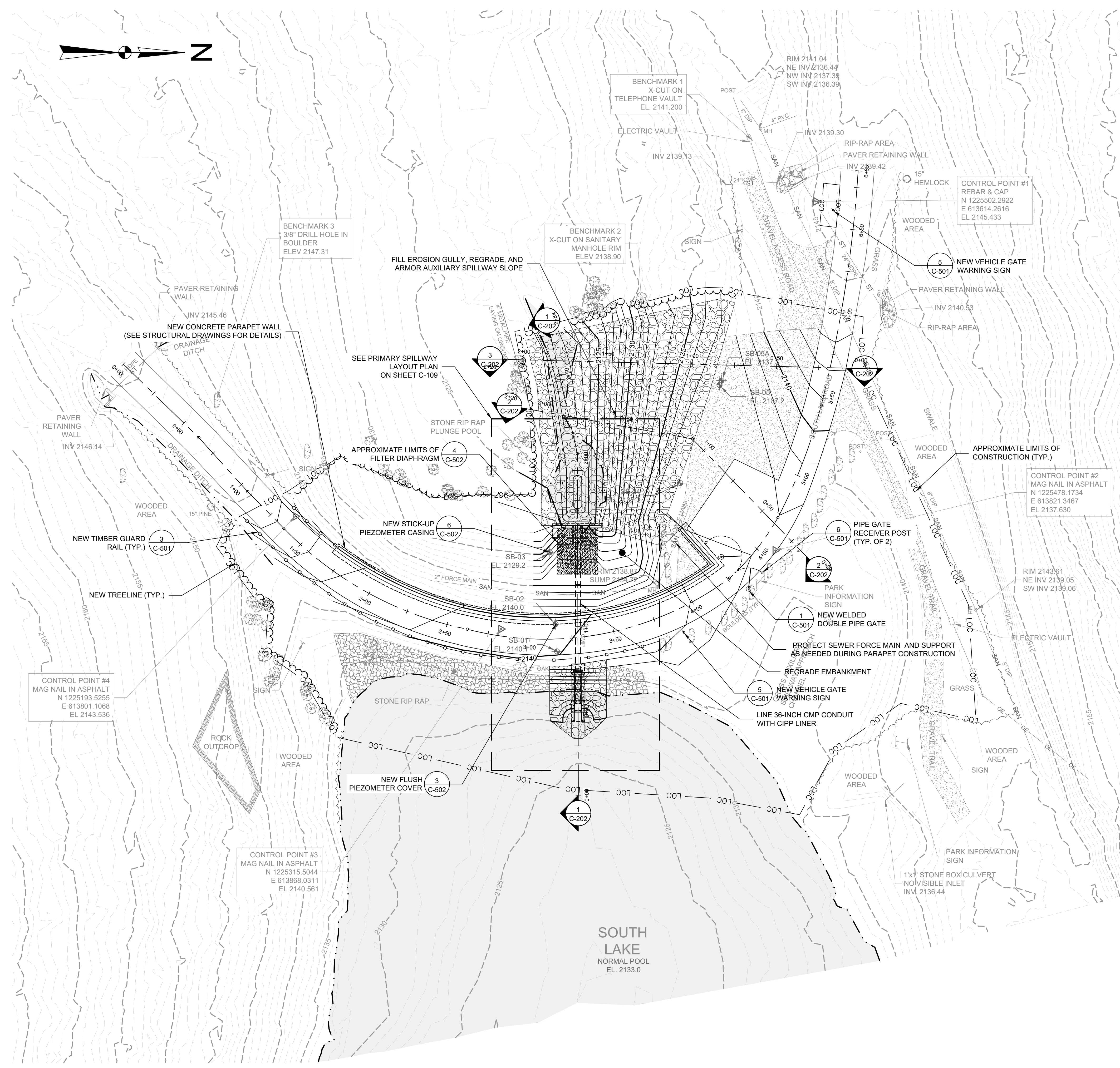
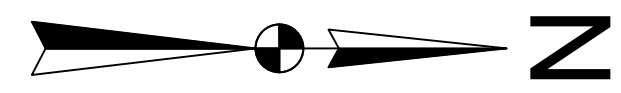


NOTES:

- EXCAVATION CONTOURS ARE PROVIDED TO ILLUSTRATE REMOVAL OF EXISTING STRUCTURES AND CONSTRUCTION OF NEW STRUCTURES. SHOULD UNSUITABLE SUBGRADE CONDITIONS BE ENCOUNTERED, ADDITIONAL EXCAVATION MAY BE REQUIRED AT THE DIRECTION OF THE DIRECTOR'S REPRESENTATIVE.
- CONTRACTOR MAY ELECT TO ALTER THIS EXCAVATION PLAN TO SUIT CONSTRUCTION MEANS AND METHODS AT NO ADDITIONAL COST. SUBMIT AN EXCAVATION PLAN TO THE DIRECTOR'S REPRESENTATIVE PRIOR TO COMMENCING THE WORK. PROVIDE SUPPORT OF EXCAVATIONS AND DEWATERING OF EXCAVATIONS AS NEEDED TO MAINTAIN STABLE SLOPES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- EXCAVATIONS TO CONSTRUCT THE DROP INLET AND PARAPET SHALL BE NO STEEPER THAN 2H:1V. PROVIDE FLATTER EXCAVATIONS AS NEEDED TO MAINTAIN STABLE SLOPES AT NO ADDITIONAL COST.
- EXCAVATION FOR DROP INLET AND PARAPET WILL ENCRoACH ON RESPECTIVE TRAFFIC LANES. CONTRACTOR TO MAINTAIN ONE LANE OPEN TO PARK TRAFFIC AND PROVIDE TRAFFIC SAFETY CONTROLS. SEE CONSTRUCTION NOTE 6 ON SHEET G-002.

MARK	DATE	DESCRIPTION
PROJECT NUMBER:		—
DESIGNED BY:		ZDB
DRAWN BY:		SMH
FIELD CHECK:		—
APPROVED:		GJD

SHEET TITLE:
DRAWING NUMBER:



SOUTH LAKE
NORMAL POOL
EL. 2133.0

PLAN
SCALE: 1"=30'

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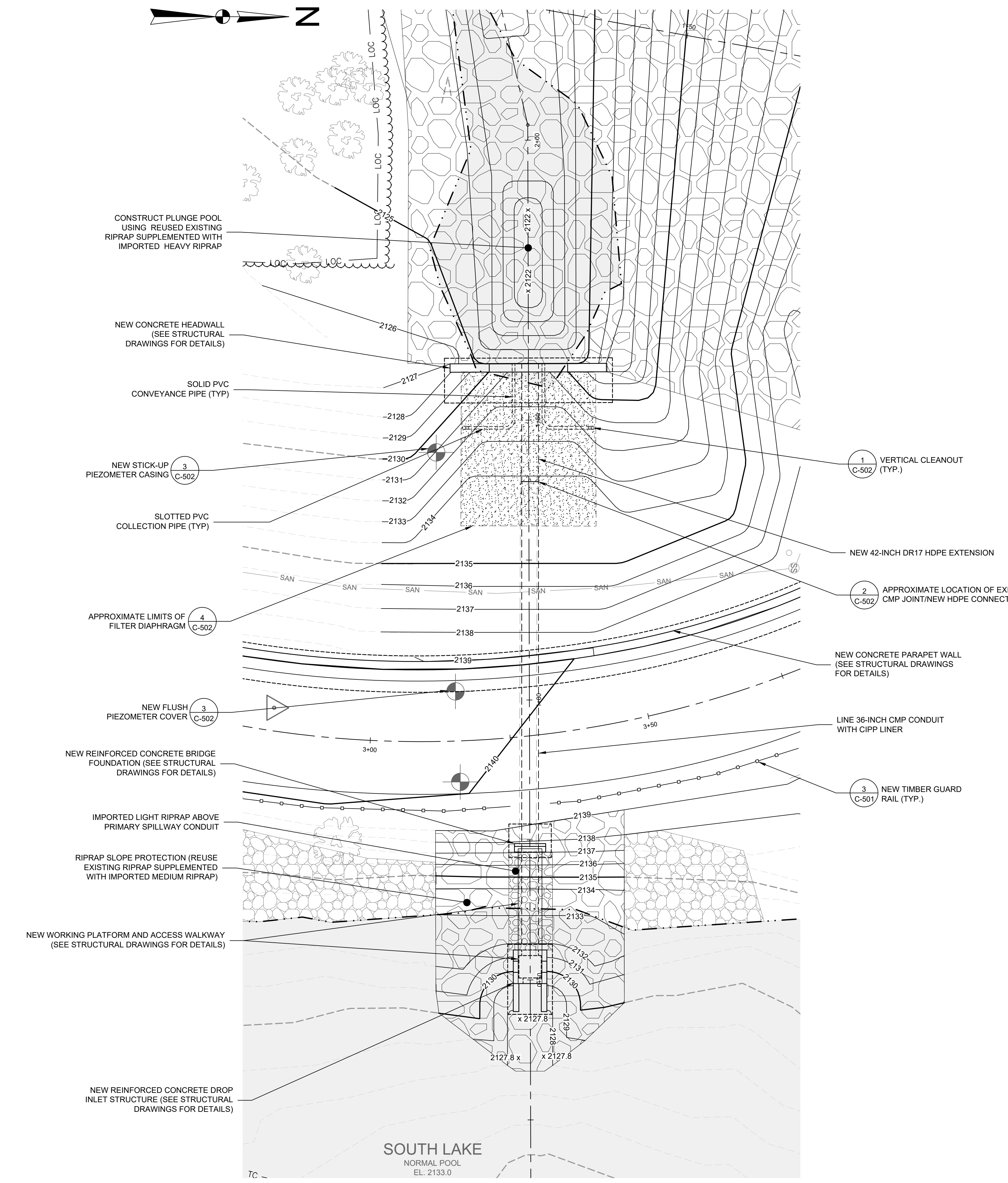
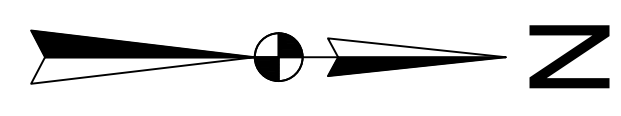
CONTRACT:
TITLE:
REHABILITATE SOUTH LAKE DAM
NYS DEC ID NO. 192-4560

LOCATION:
TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK

CLIENT:
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

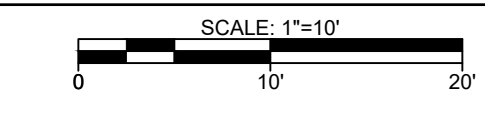
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PROJECT NUMBER:		
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SHEET TITLE:		
DRAWING NUMBER:		

Mar 15, 2023 - 6:42am
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36x24 PLOT SHEET



SOUTH LAKE
NORMAL POOL
EL. 2133.0

SERVICE SPILLWAY PLAN



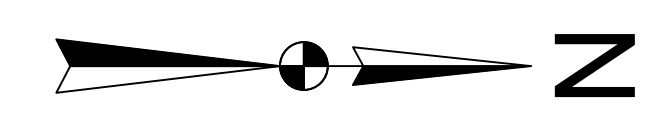
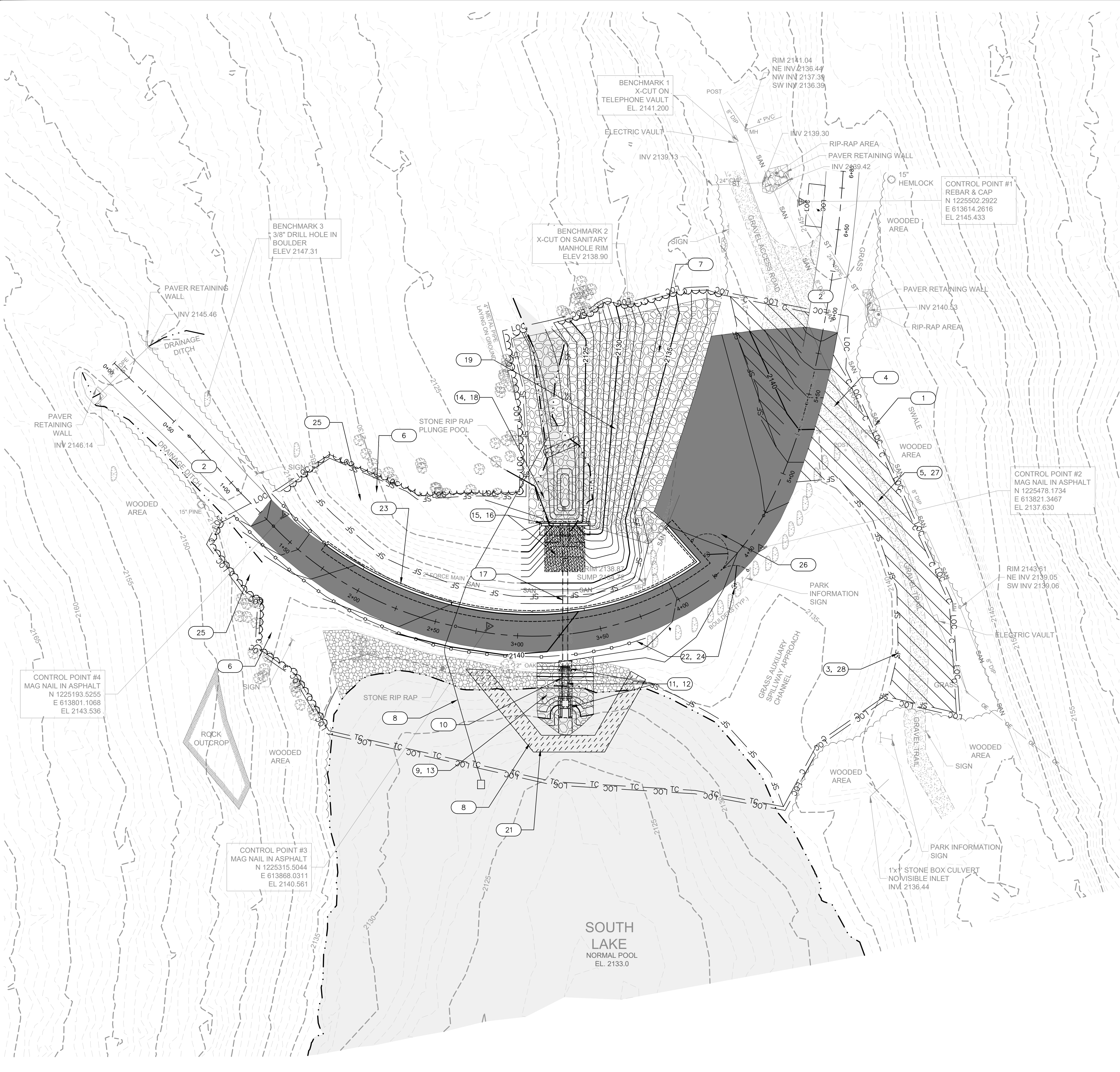
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CONTRACT:
TITLE:
REHABILITATE SOUTH LAKE DAM
NYS DEC ID NO. 192-4560
LOCATION:
TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK
CLIENT:
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MARK	DATE	DESCRIPTION
PROJECT NUMBER:		
DESIGNED BY:		ZDB
DRAWN BY:		SMH
FIELD CHECK:		-
APPROVED:		GJD
SHEET TITLE:		

DRAWING NUMBER:

Mar 15, 2023 - 6:42am
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 36x24 PLOT SHEET

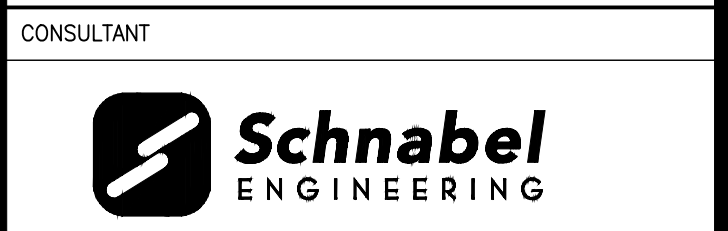


ANTICIPATED CONSTRUCTION SEQUENCE:

THE CONSTRUCTION SEQUENCE PROVIDED BELOW IS BASED ON THE CONSULTANT'S UNDERSTANDING OF SITE CONDITIONS, THE NATURE OF THE NEW WORK, AND WORK RESTRICTIONS. REFER TO THE WORK RESTRICTION AND CONTROL OF WATER NOTES ON SHEET G-002 FOR REQUIREMENTS THAT AFFECT THE SEQUENCE OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING AND SUBMITTING THE FINAL SEQUENCE OF CONSTRUCTION.

1. SURVEY OF PROJECT BOUNDARIES (LIMITS OF CONSTRUCTION) BY CONTRACTOR'S PROFESSIONAL LAND SURVEYOR. LOCATE AND MARK OUT UTILITIES WITHIN THE LIMITS OF CONSTRUCTION.
2. ESTABLISH TEMPORARY TRAFFIC CONTROLS.
3. INSTALL TEMPORARY EROSION CONTROL BARRIERS, TURBIDITY CURTAINS, AND CONSTRUCTION FENCING.
4. INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCES AT STOCKPILE/STAGING AREAS AND CONCRETE WASHOUT AREA (CWA).
5. CLEAR, GRUB, AND STABILIZE STOCKPILE/STAGING AREAS AS NEEDED TO ACCOMMODATE CONTRACTOR'S USE OF THE AREAS.
6. CLEAR AND GRUB TREES, STUMPS, ROOTS, BRUSH, AND OTHER VEGETATION WITHIN LIMITS OF CONSTRUCTION.
7. STRIP AND STOCKPILE EXISTING TOPSOIL FROM TEMPORARY ACCESS ROUTES AND AREAS TO RECEIVE NON-VEGETATIVE FINAL SURFACE TREATMENT.
8. INSTALL TEMPORARY COFFERDAM WITHIN LAKE AND TEMPORARY BYPASS PUMP(S) AND/OR SIPHON(S). DRAW DOWN IMPOUNDMENT TO CONSTRUCTION POOL USING PUMPS, SIPHONS, OR EQUIVALENT TEMPORARY MEANS.
9. STRIP AND STOCKPILE EXISTING STONE RIPRAP AROUND DROP INLET TO EXTENTS OF EXCAVATION FOR NEW DROP INLET.
10. CAREFULLY REMOVE EXISTING METAL BRIDGE AND PROVIDE TO DIRECTOR'S REPRESENTATIVE.
11. DEMOLISH EXISTING DROP INLET, LOW LEVEL OUTLET PIPE, LOW LEVEL OUTLET GATE, TRASH RACK, ANTI-VORTEXT PLATE, AND CONCRETE BASE.
12. CONSTRUCT CONCRETE DROP INLET, CONSTRUCT CONCRETE BRIDGE FOUNDATION, INSTALL METAL BRIDGE, INSTALL/TEST SLIDE GATE, AND INSTALL METAL TRASH RACKS.
13. REINSTALL RIPRAP AROUND DROP INLET SUPPLEMENTED WITH IMPORTED LIGHT AND MEDIUM RIPRAP.
14. STRIP AND STOCKPILE EXISTING STONE RIPRAP WITHIN DOWNSTREAM PLUNGE POOL.
15. EXCAVATE, DEWATER, AND DEMOLISH EXISTING CONCRETE PIPE SUPPORT AND DOWNSTREAM SEGMENT OF 36-INCH CMP.
16. CONSTRUCT CONCRETE HEADWALL, PARTIALLY PLACE FILTER DIAPHRAGM, INSTALL COLLECTION/CONVEYANCE PIPES AND FILTERS, INSTALL 42-INCH HDPE CONDUIT EXTENSION, AND COMPLETE FILTER DIAPHRAGM/HEADWALL BACKFILL.
17. INSTALL CIPP LINER THROUGH EXISTING 36-INCH CMP AND NEW 42-INCH HDPE PIPE.
18. CONSTRUCT NEW PLUNGE POOL WITH REUSED EXISTING RIPRAP AND IMPORTED HEAVY RIPRAP.
19. REGRADE, PLACE COMPACTED EMBANKMENT FILL, AND INSTALL RIPRAP AT AUXILIARY SPILLWAY DISCHARGE CHANNEL.
20. NOTIFY DIRECTOR'S ON-SITE REPRESENTATIVE TO CONTACT NYSDEC DAM SAFETY SECTION THAT WORK IS SUFFICIENTLY COMPLETE FOR NORMAL POOL FILLING.
21. WHEN APPROVED BY NYSDEC DAM SAFETY SECTION, REMOVE TEMPORARY COFFERDAM AND TURBIDITY CURTAIN WITHIN LAKE. THROTTLE TEMPORARY FLOW BYPASS SYSTEM AND REFILL LAKE WHILE PROVIDING MINIMUM REQUIRED DOWNSTREAM RELEASES. REMOVE TEMPORARY FLOW BYPASS SYSTEM.
22. DEMOLISH EXISTING TIMBER GUARDRAIL AND METAL SWING GATE.
23. EXCAVATE, CONSTRUCT CONCRETE PARAPET WALL, AND BACKFILL.
24. INSTALL NEW TIMBER GUARDRAILS AND METAL SWING GATE.
25. RESTORE DISTURBED AREAS WITH REUSED TOPSOIL SUPPLEMENTED WITH IMPORTED TOPSOIL, SEED, AND MULCH.
26. PAVE CAMPGROUND ROAD AND PARKING AREA.
27. REMOVE MATERIALS AND EQUIPMENT FROM STAGING AREAS AND RESTORE TO EXISTING CONDITIONS.
28. REMOVE EROSION CONTROL BARRIERS ONCE SITE STABILIZATION IS COMPLETE AND APPROVAL IS GIVEN BY THE DIRECTOR'S REPRESENTATIVE.

PLAN
SCALE: 1"=30'



- CONSULTANT
1. SURVEY OF PROJECT BOUNDARIES (LIMITS OF CONSTRUCTION) BY CONTRACTOR'S PROFESSIONAL LAND SURVEYOR. LOCATE AND MARK OUT UTILITIES WITHIN THE LIMITS OF CONSTRUCTION.
 2. ESTABLISH TEMPORARY TRAFFIC CONTROLS.
 3. INSTALL TEMPORARY EROSION CONTROL BARRIERS, TURBIDITY CURTAINS, AND CONSTRUCTION FENCING.
 4. INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCES AT STOCKPILE/STAGING AREAS AND CONCRETE WASHOUT AREA (CWA).
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 7. STRIP AND STOCKPILE EXISTING TOPSOIL FROM TEMPORARY ACCESS ROUTES AND AREAS TO RECEIVE NON-VEGETATIVE FINAL SURFACE TREATMENT.
 8. INSTALL TEMPORARY COFFERDAM WITHIN LAKE AND TEMPORARY BYPASS PUMP(S) AND/OR SIPHON(S). DRAW DOWN IMPOUNDMENT TO CONSTRUCTION POOL USING PUMPS, SIPHONS, OR EQUIVALENT TEMPORARY MEANS.
 9. STRIP AND STOCKPILE EXISTING STONE RIPRAP AROUND DROP INLET TO EXTENTS OF EXCAVATION FOR NEW DROP INLET.
 10. CAREFULLY REMOVE EXISTING METAL BRIDGE AND PROVIDE TO DIRECTOR'S REPRESENTATIVE.
 11. DEMOLISH EXISTING DROP INLET, LOW LEVEL OUTLET PIPE, LOW LEVEL OUTLET GATE, TRASH RACK, ANTI-VORTEXT PLATE, AND CONCRETE BASE.
 12. CONSTRUCT CONCRETE DROP INLET, CONSTRUCT CONCRETE BRIDGE FOUNDATION, INSTALL METAL BRIDGE, INSTALL/TEST SLIDE GATE, AND INSTALL METAL TRASH RACKS.
 13. REINSTALL RIPRAP AROUND DROP INLET SUPPLEMENTED WITH IMPORTED LIGHT AND MEDIUM RIPRAP.
 14. STRIP AND STOCKPILE EXISTING STONE RIPRAP WITHIN DOWNSTREAM PLUNGE POOL.
 15. EXCAVATE, DEWATER, AND DEMOLISH EXISTING CONCRETE PIPE SUPPORT AND DOWNSTREAM SEGMENT OF 36-INCH CMP.
 16. CONSTRUCT CONCRETE HEADWALL, PARTIALLY PLACE FILTER DIAPHRAGM, INSTALL COLLECTION/CONVEYANCE PIPES AND FILTERS, INSTALL 42-INCH HDPE CONDUIT EXTENSION, AND COMPLETE FILTER DIAPHRAGM/HEADWALL BACKFILL.
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 18. CONSTRUCT NEW PLUNGE POOL WITH REUSED EXISTING RIPRAP AND IMPORTED HEAVY RIPRAP.
 19. REGRADE, PLACE COMPACTED EMBANKMENT FILL, AND INSTALL RIPRAP AT AUXILIARY SPILLWAY DISCHARGE CHANNEL.
 20. NOTIFY DIRECTOR'S ON-SITE REPRESENTATIVE TO CONTACT NYSDEC DAM SAFETY SECTION THAT WORK IS SUFFICIENTLY COMPLETE FOR NORMAL POOL FILLING.
 21. WHEN APPROVED BY NYSDEC DAM SAFETY SECTION, REMOVE TEMPORARY COFFERDAM AND TURBIDITY CURTAIN WITHIN LAKE. THROTTLE TEMPORARY FLOW BYPASS SYSTEM AND REFILL LAKE WHILE PROVIDING MINIMUM REQUIRED DOWNSTREAM RELEASES. REMOVE TEMPORARY FLOW BYPASS SYSTEM.
 22. DEMOLISH EXISTING TIMBER GUARDRAIL AND METAL SWING GATE.
 23. EXCAVATE, CONSTRUCT CONCRETE PARAPET WALL, AND BACKFILL.
 24. INSTALL NEW TIMBER GUARDRAILS AND METAL SWING GATE.
 25. RESTORE DISTURBED AREAS WITH REUSED TOPSOIL SUPPLEMENTED WITH IMPORTED TOPSOIL, SEED, AND MULCH.
 26. PAVE CAMPGROUND ROAD AND PARKING AREA.
 27. REMOVE MATERIALS AND EQUIPMENT FROM STAGING AREAS AND RESTORE TO EXISTING CONDITIONS.
 28. REMOVE EROSION CONTROL BARRIERS ONCE SITE STABILIZATION IS COMPLETE AND APPROVAL IS GIVEN BY THE DIRECTOR'S REPRESENTATIVE.

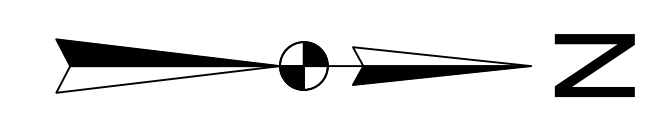
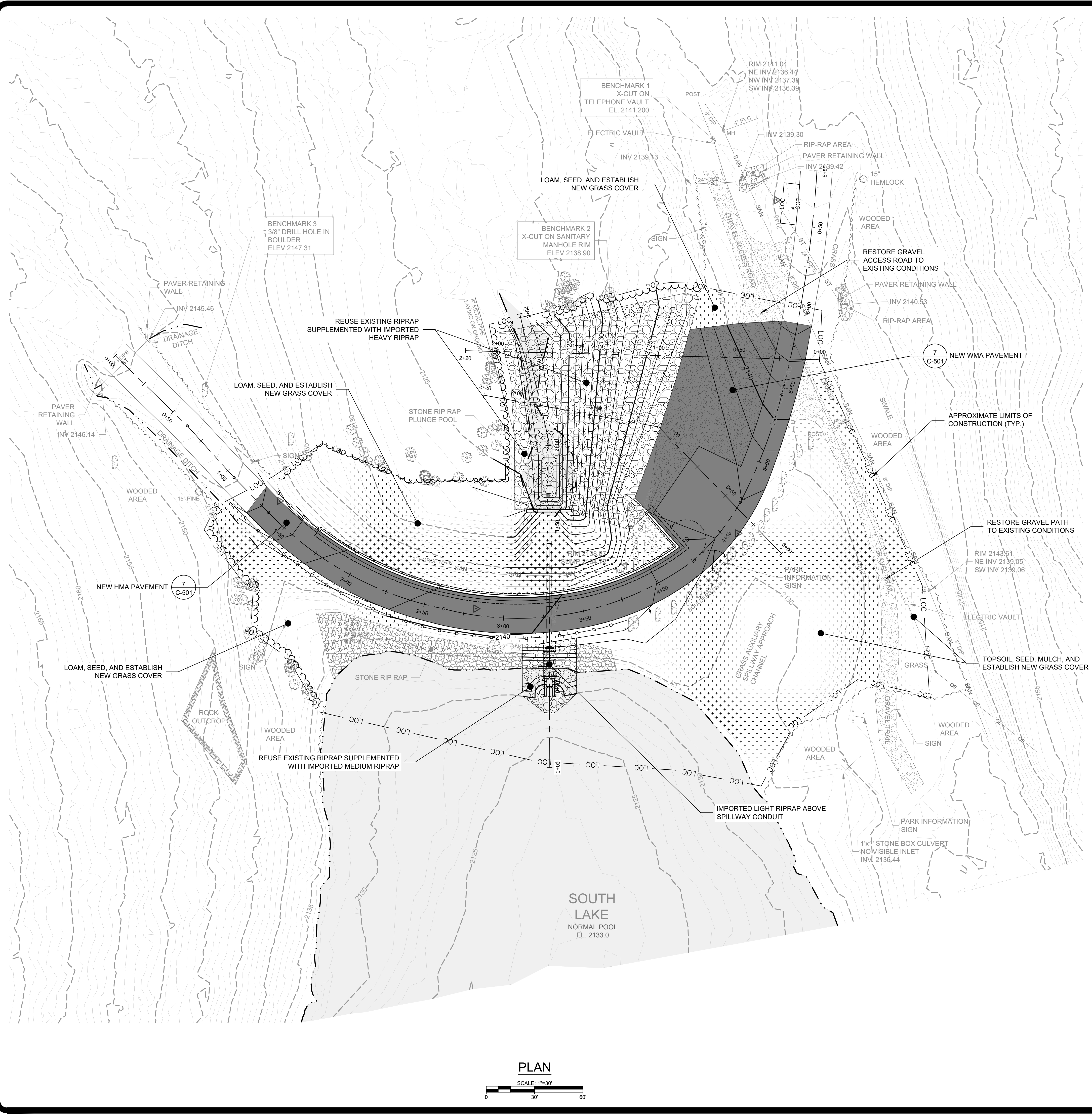
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CONTRACT:
TITLE: REHABILITATE SOUTH LAKE DAM
NYS DEC ID NO. 192-4560
LOCATION: TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK
CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MARK	DATE	DESCRIPTION
PROJECT NUMBER:		
DESIGNED BY:	ZDB	
DRAWN BY:	SMH	
FIELD CHECK:	-	
APPROVED:	GJD	
SHEET TITLE:		
DRAWING NUMBER:		
SHEET 13 OF 27		

Mar 15, 2023 - 6:42am
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 36x24 PLOT SHEET

Mar 15, 2023 6:42am
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CONTRACT:

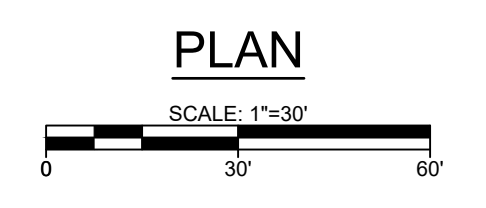
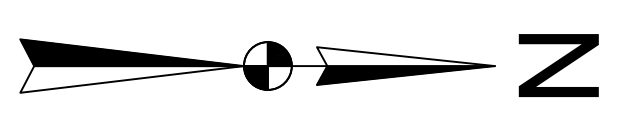
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REHABILITATE SOUTH LAKE DAM
NYS DEC ID NO. 192-4560

LOCATION:
TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK

CLIENT:
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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APPROVED:	GJD	
SHEET TITLE:		
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SHEET 14 OF 27		

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 36x24 PLOT SHEET



NOTES:

- RESTORE STOCKPILE AND STAGING AREA TO EXISTING CONDITIONS UPON COMPLETION OF THE WORK.
- REMOVE TURBIDITY CURTAINS, EROSION CONTROL BARRIERS, AND ALL OTHER TEMPORARY CONTROLS UPON COMPLETION OF SITE RESTORATION AND WITH APPROVAL OF THE DIRECTOR'S REPRESENTATIVE.
- ADJUST LOCATION AND EXTENTS OF TURBIDITY CURTAIN TO ACCOMMODATE FLUCTUATIONS IN CONSTRUCTION POOL. ADJUST LOCATIONS OF EROSION CONTROL BARRIERS AND PROVIDE ADDITIONAL EROSION CONTROL BARRIERS AS NEEDED THROUGHOUT CONSTRUCTION TO FACILITATE ACCESS AND WORK IN PROGRESS.

WARNING:
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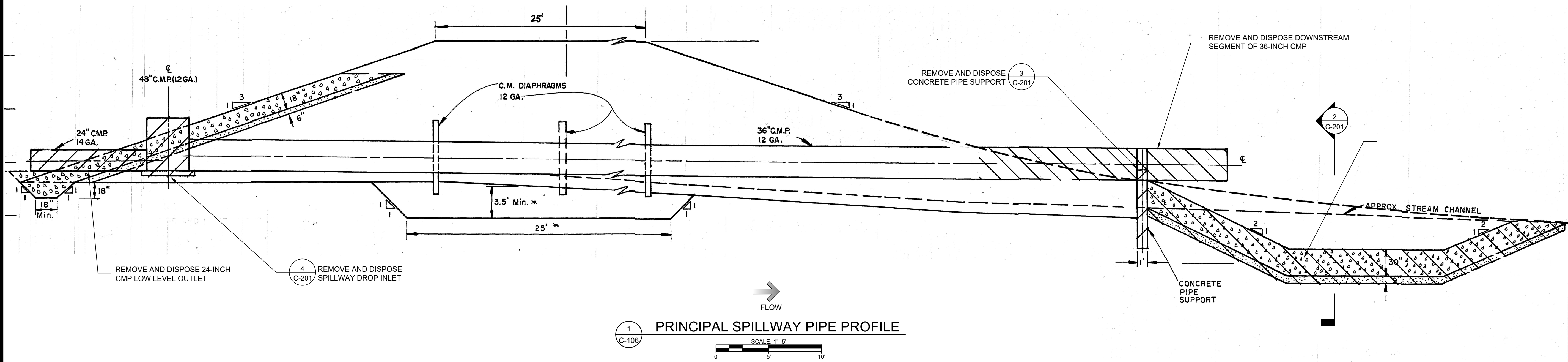
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DESIGNED BY:	ZDB	
DRAWN BY:	SMH	
FIELD CHECK:	-	
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SHEET TITLE:		
DRAWING NUMBER:		

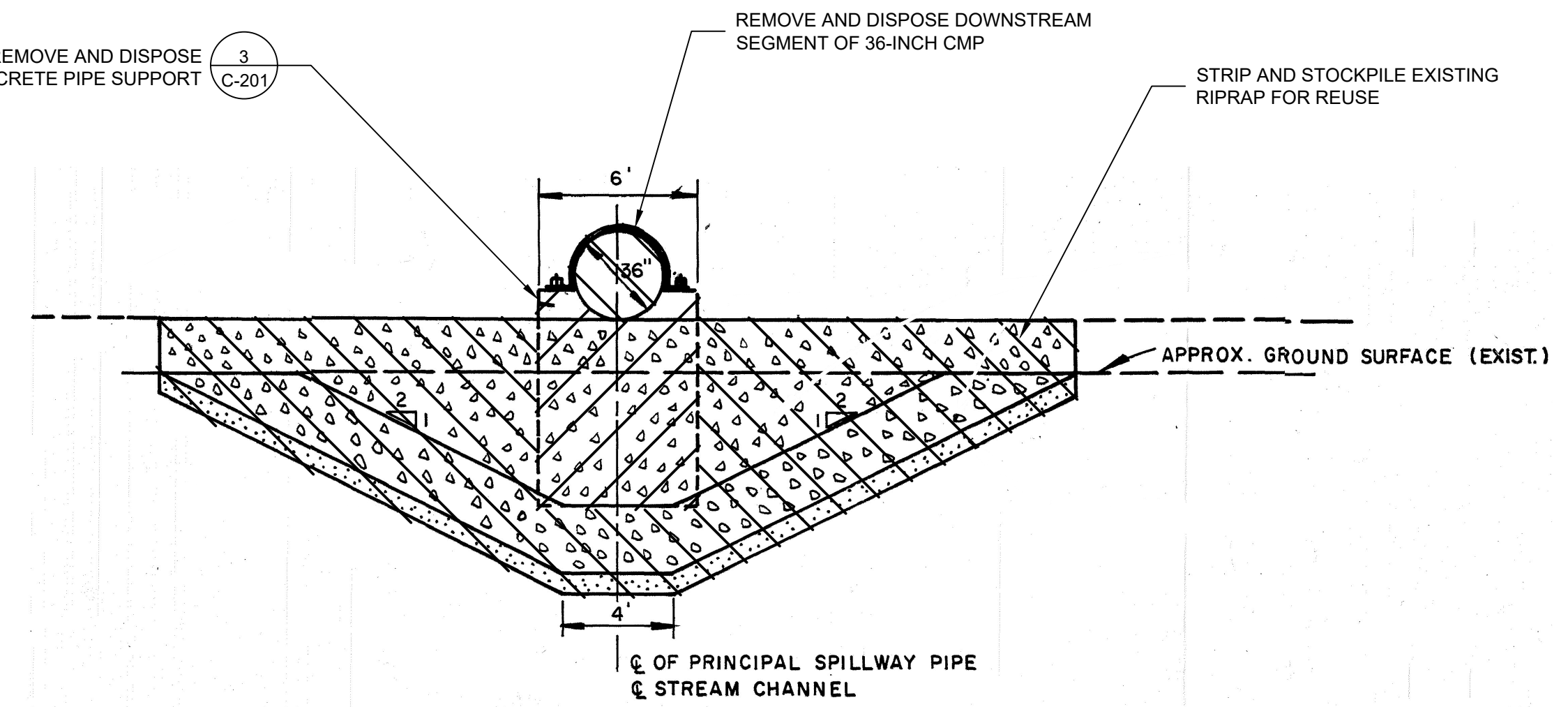
SHEET 15 OF 27

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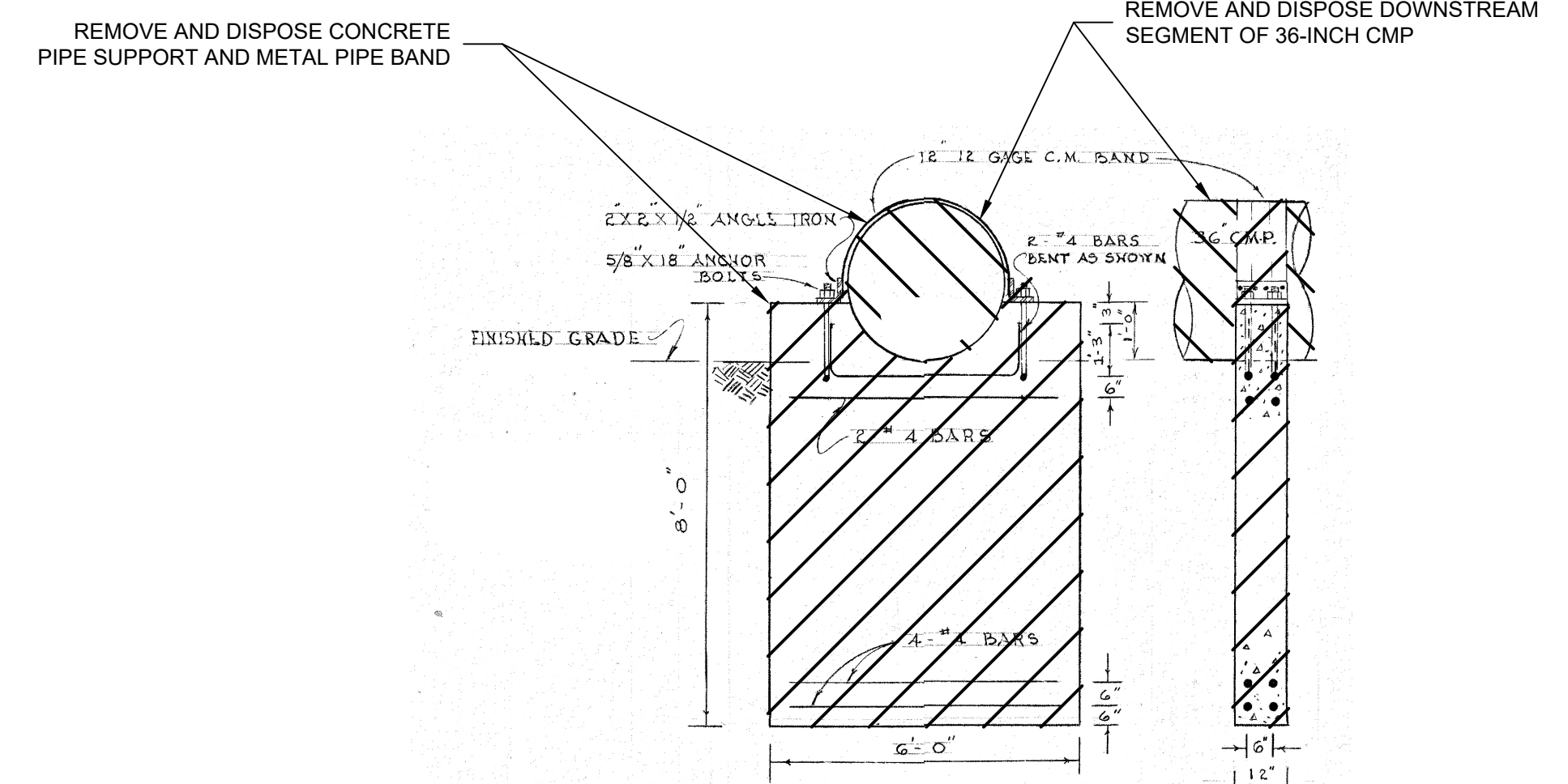
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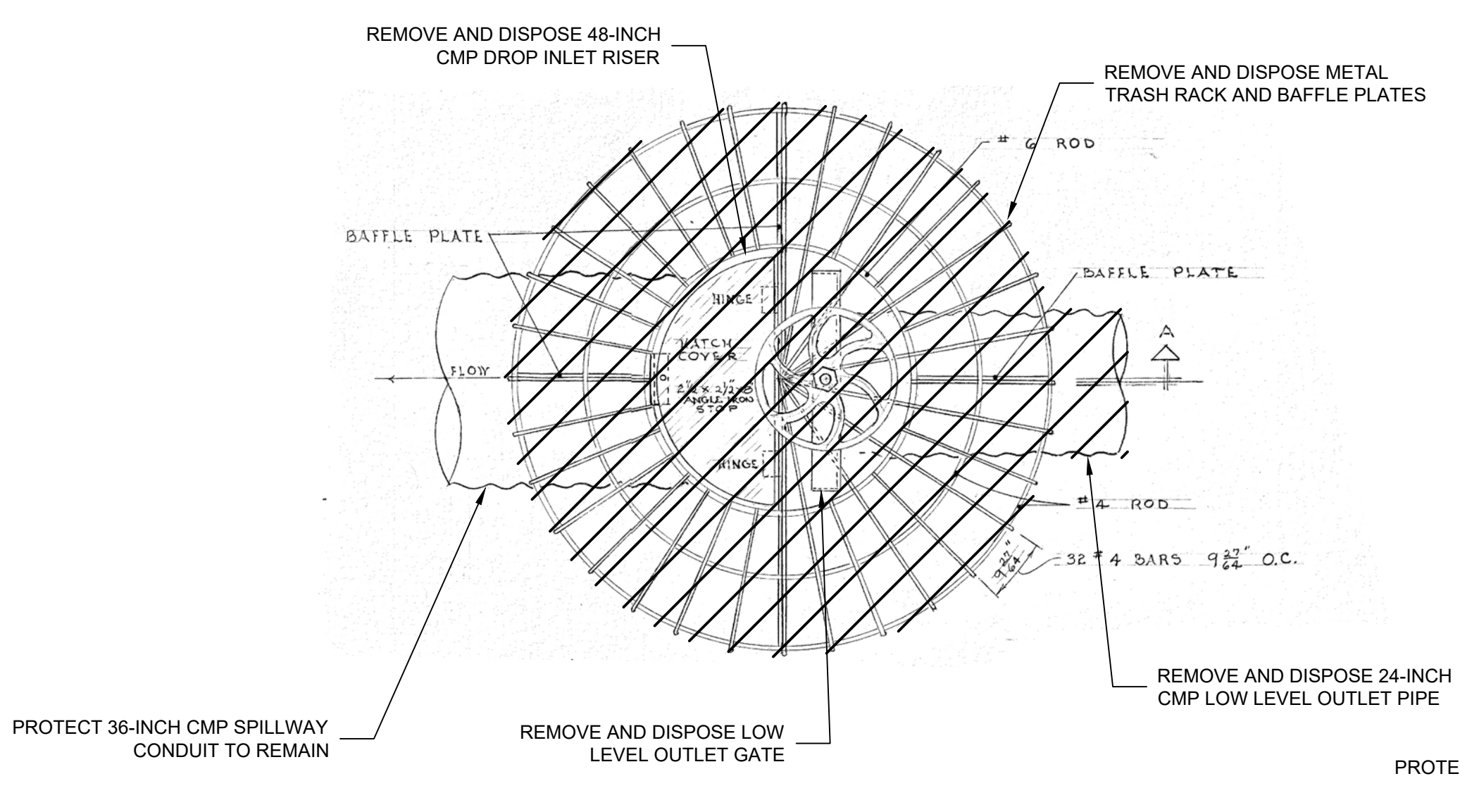
1 PRINCIPAL SPILLWAY PIPE PROFILE
SCALE: 1"=5'



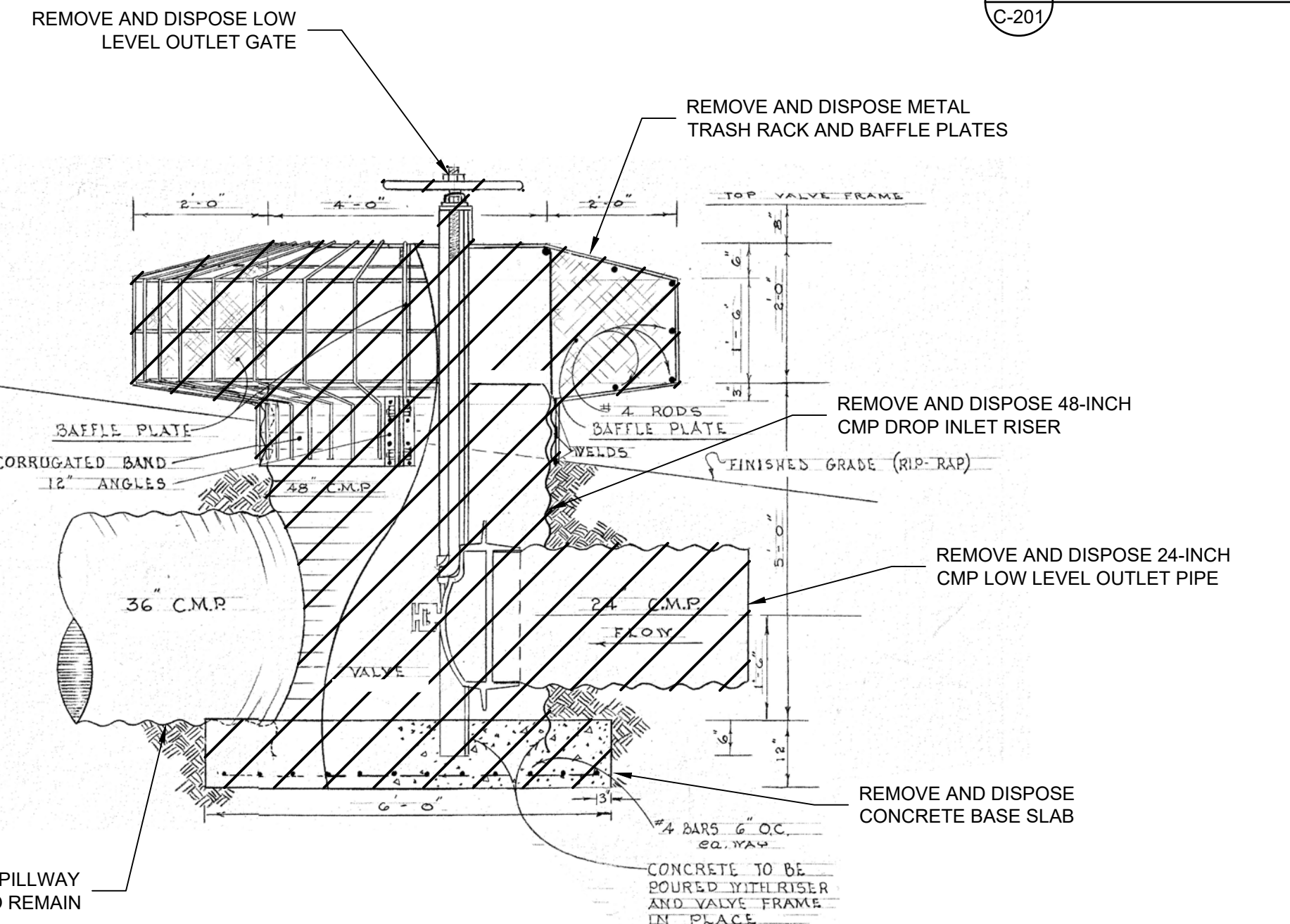
2 SECTION
SCALE: 1"=5'



3 CONCRETE PIPE SUPPORT DETAIL
NOT TO SCALE



PLAN VIEW

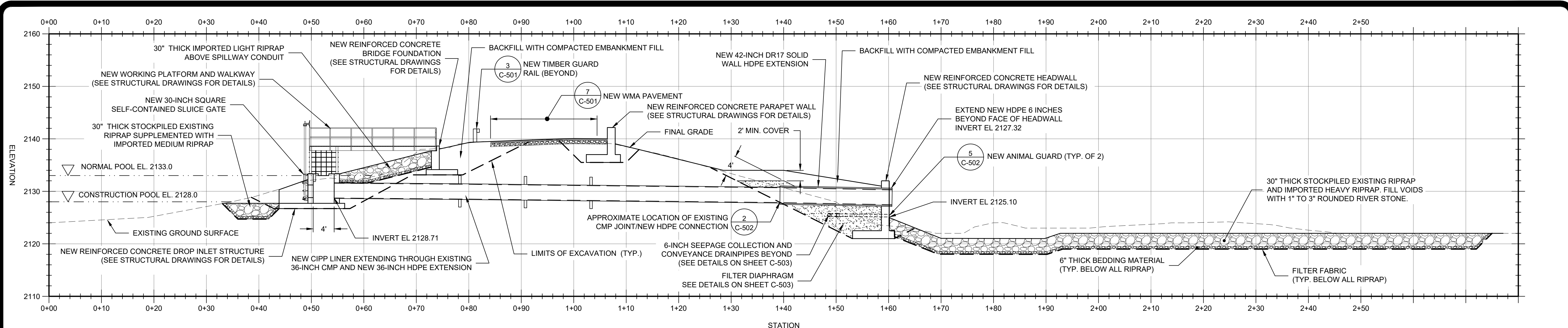


SECTION VIEW

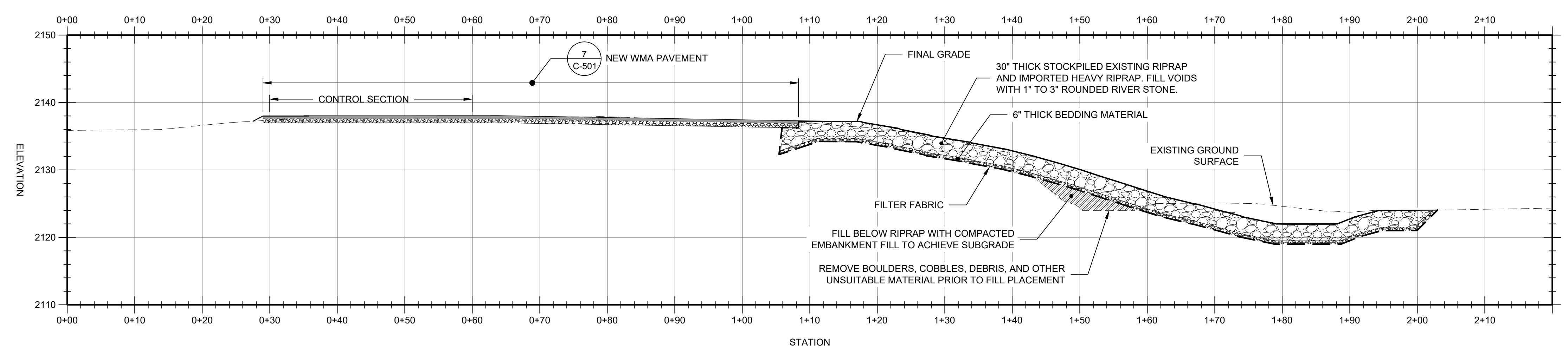
4 SPILLWAY DROP INLET DETAIL
SCALE: 1/2"=1'0"

MARK	DATE	DESCRIPTION
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DESIGNED BY:	ZDB	
DRAWN BY:	SMH	
FIELD CHECK:		
APPROVED:	GJD	
SHEET TITLE:		
DRAWING NUMBER:		

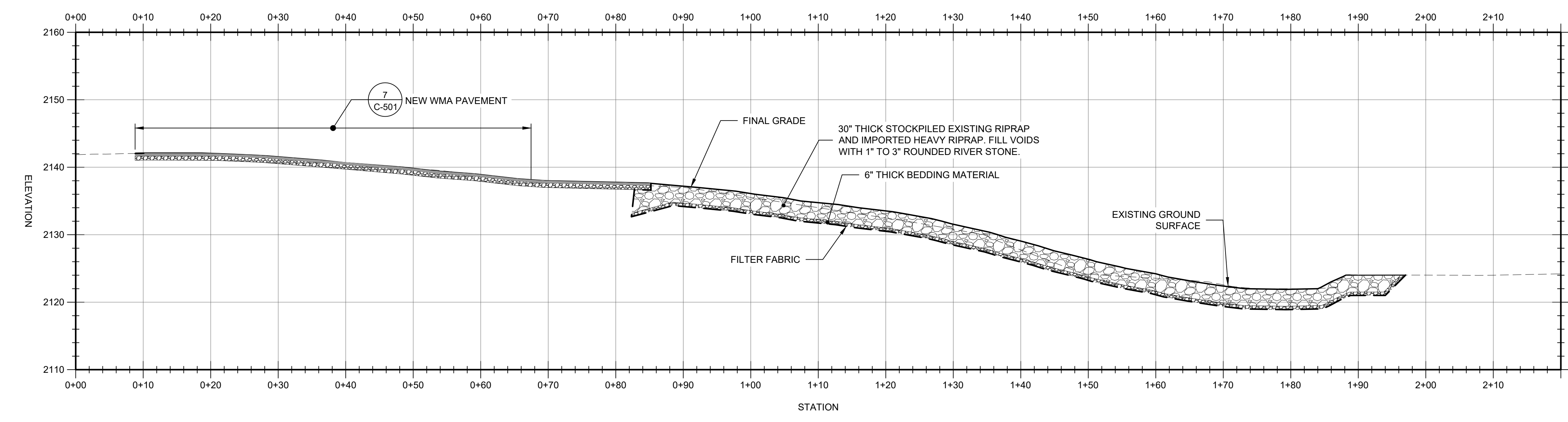
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 36x24 PLOT SHEET



1 SERVICE SPILLWAY AND EMBANKMENT SECTION
SCALE: 1"=10'



2 AUXILLIARY SPILLWAY SECTION
SCALE: 1"=10'



3 AUXILIARY SPILLWAY SECTION
SCALE: 1"=10'

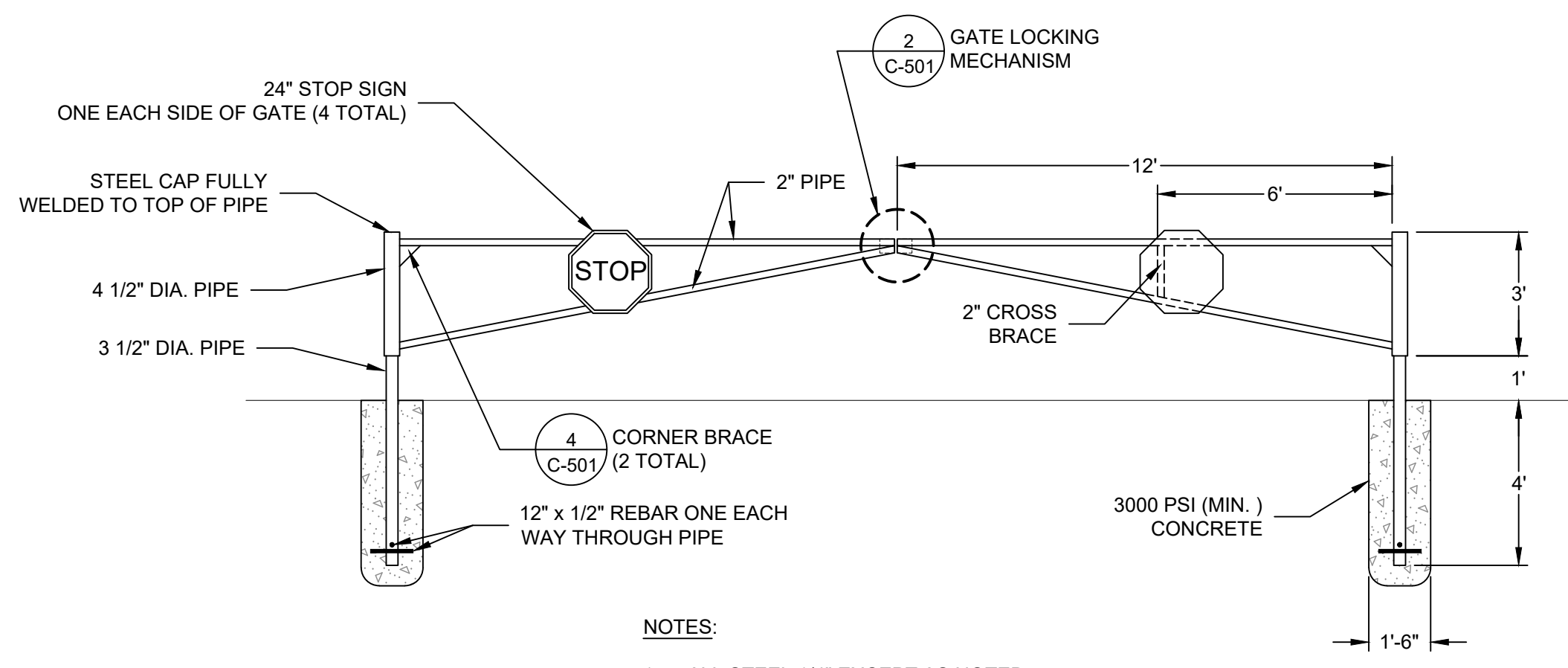
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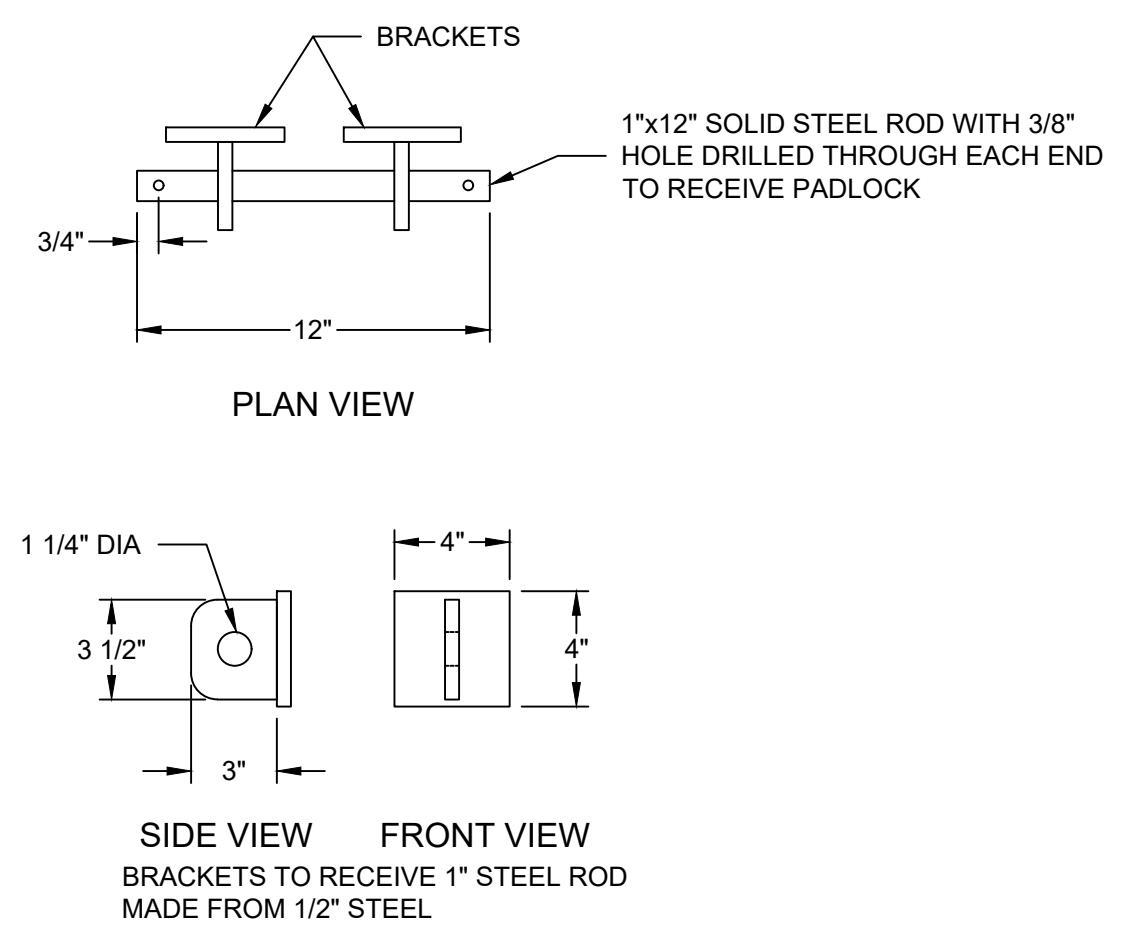
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DRAWING NUMBER:
SHEET 17 OF 27

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36x24 PLOT SHEET

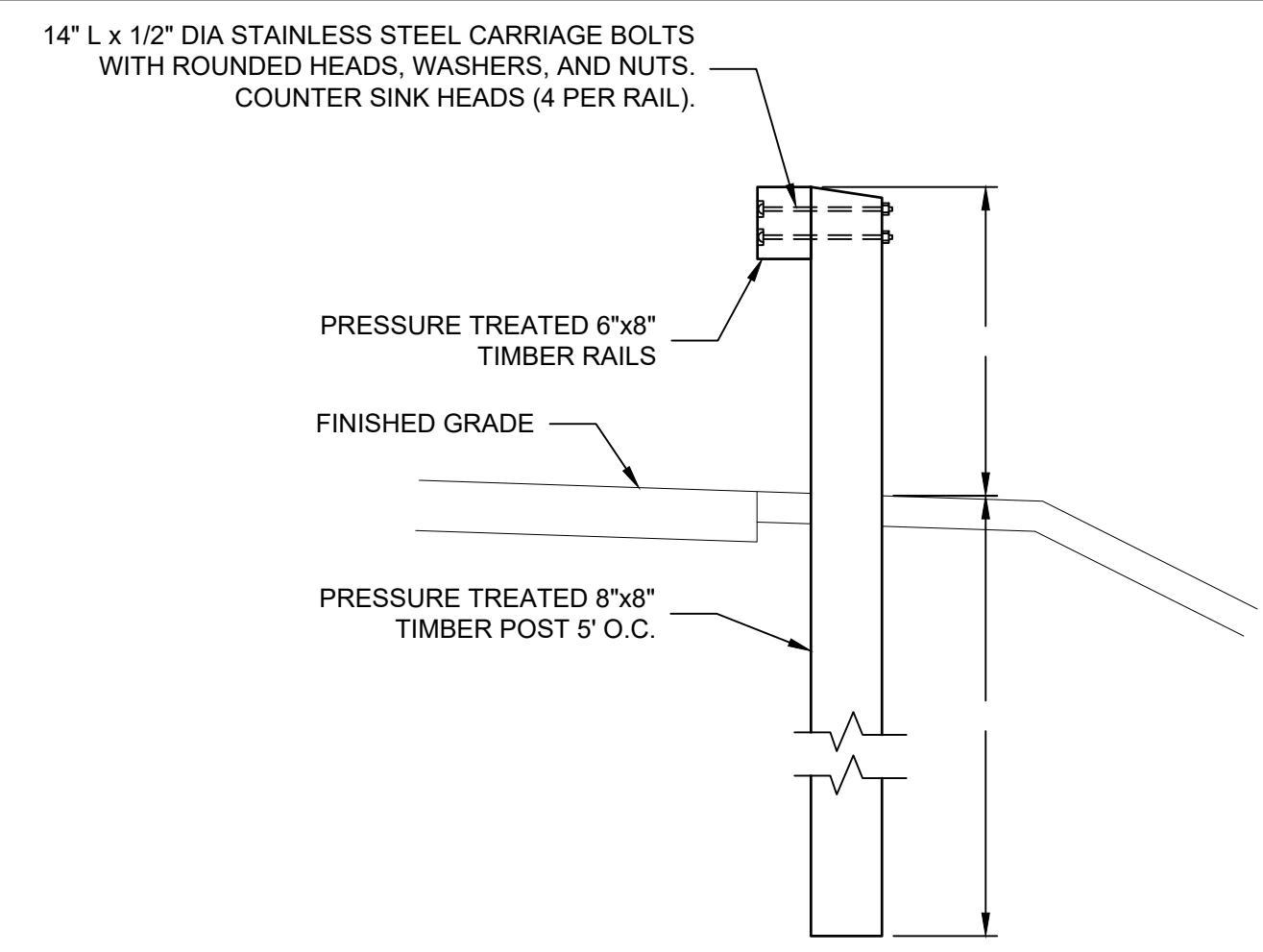


NOTES:
1. ALL STEEL 1/4" EXCEPT AS NOTED.

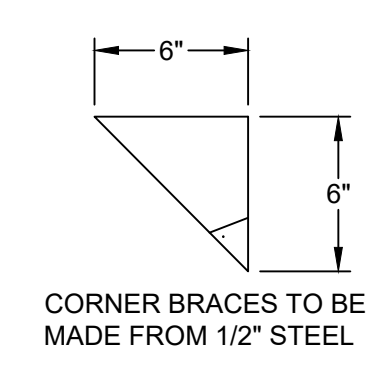
1 WELDED DOUBLE PIPE GATE
C-108 NOT TO SCALE



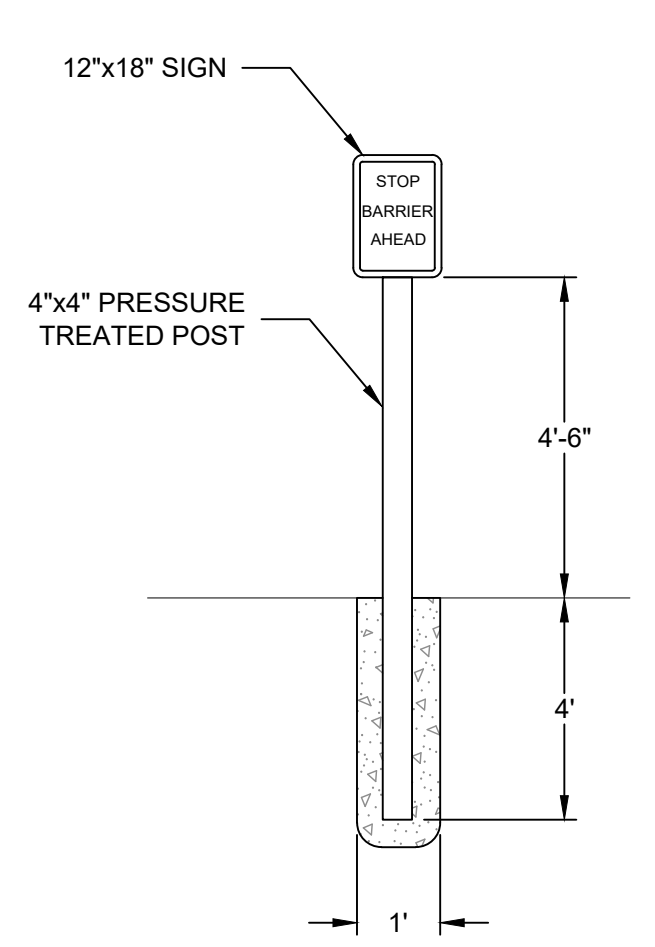
2 GATE LOCKING MECHANISM DETAILS
C-501 NOT TO SCALE



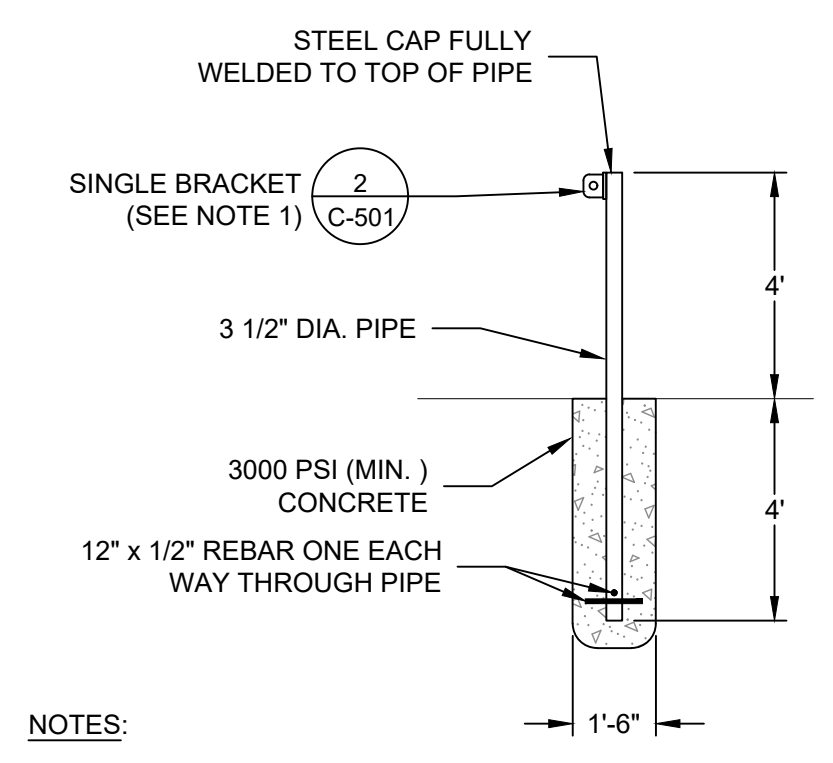
3 TIMBER GUARD RAIL DETAIL
C-108



4 PIPE GATE CORNER BRACE DETAIL
C-501 NOT TO SCALE

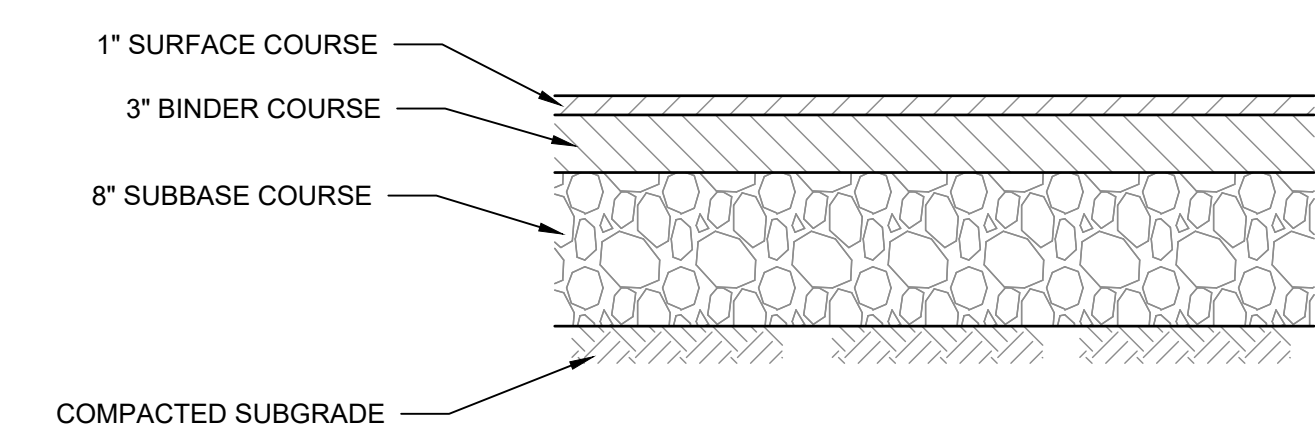


5 WARNING SIGN DETAIL
C-108 NOT TO SCALE

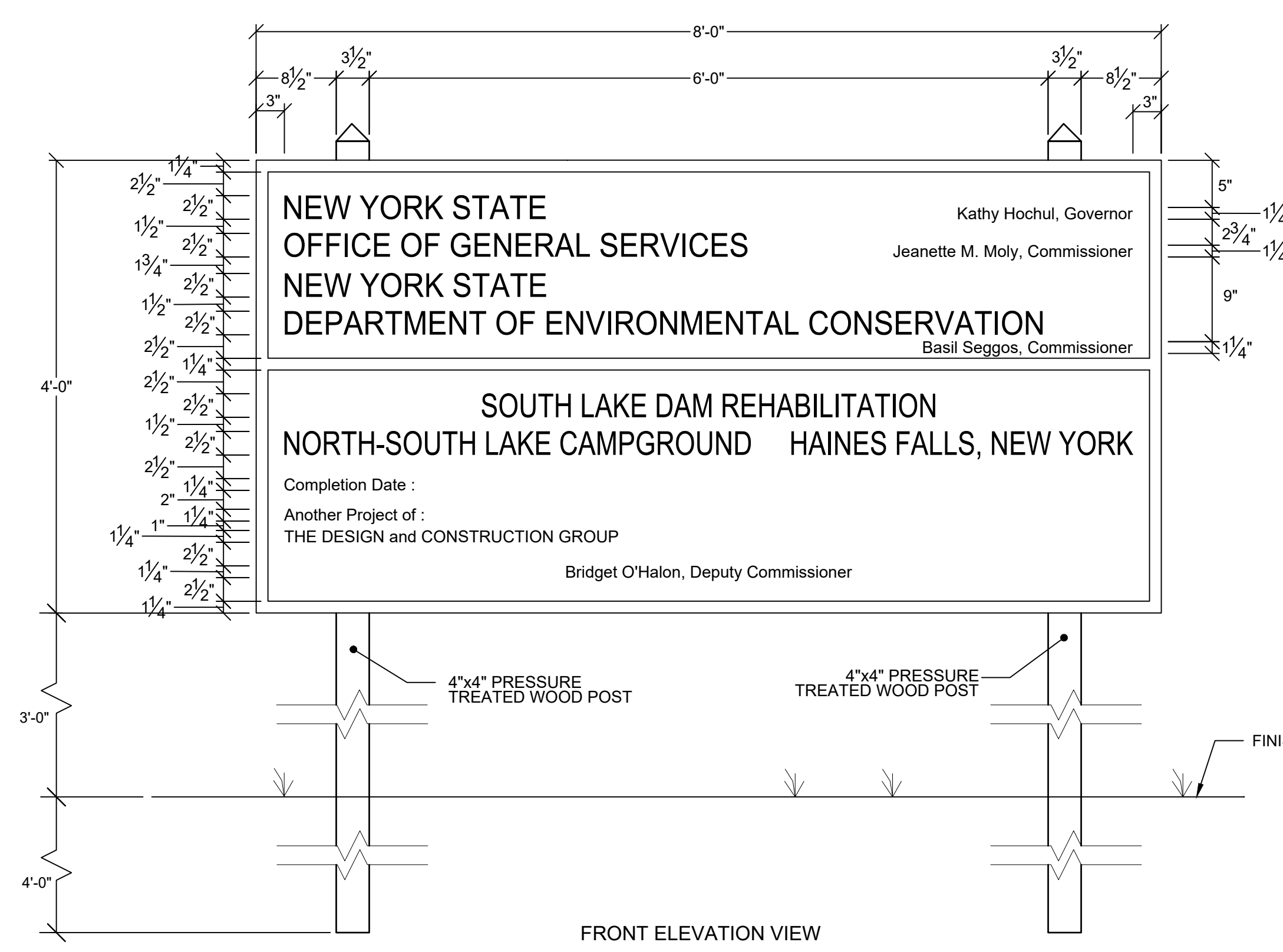


NOTES:
1. GATE RECEIVER POSTS SHALL BE INSTALLED SUCH THAT THE LOCKING BRACKET IS MOUNTED AT THE SAME ELEVATION AS THE LOCKING BRACKETS ON THE PIPE GATE.

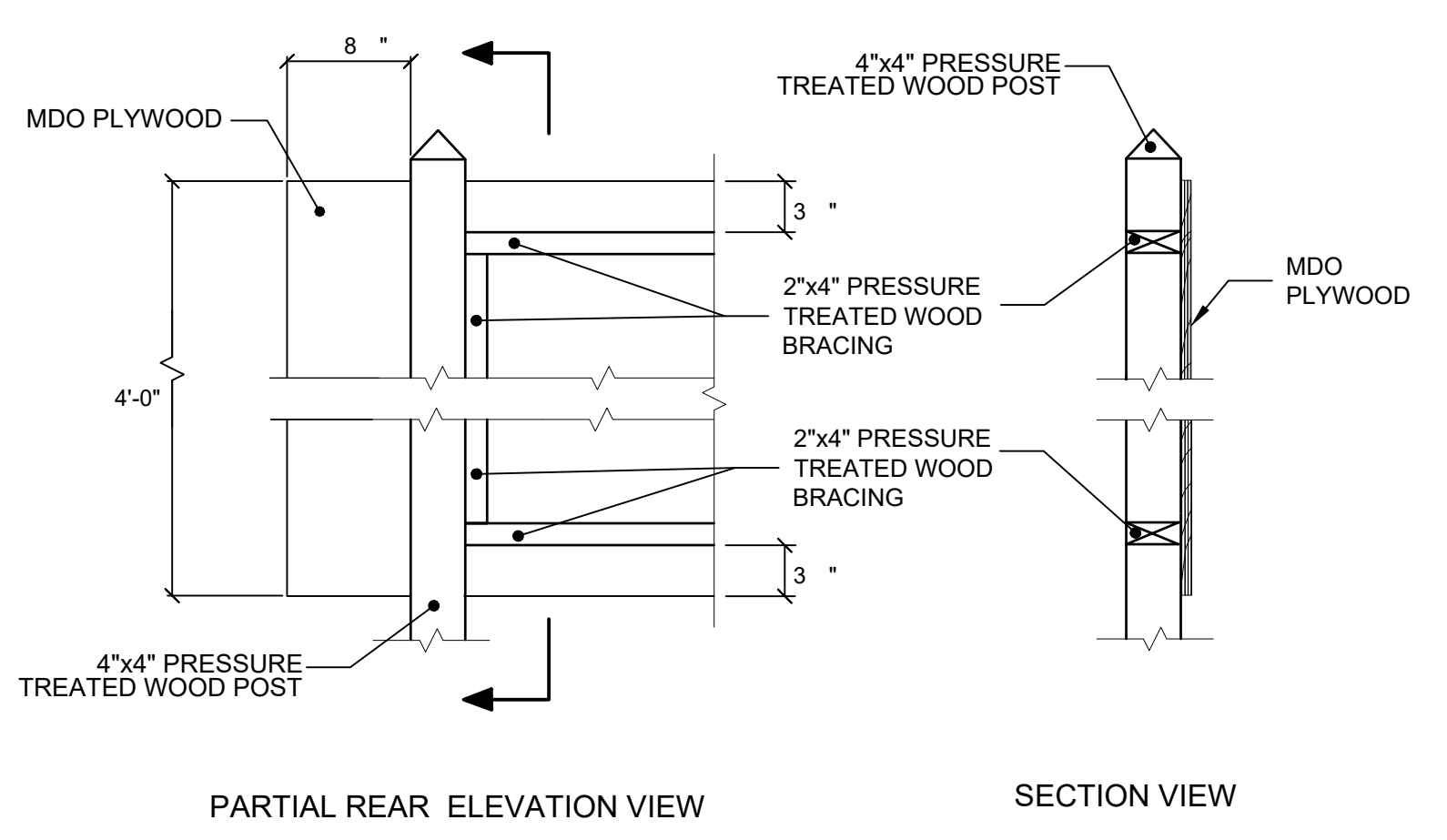
6 PIPE GATE RECEIVER POST DETAIL
C-108 NOT TO SCALE



7 WMA PAVEMENT DETAIL
C-111



8 TEMPORARY PROJECT IDENTIFICATION SIGN DETAIL
C-108 NOT TO SCALE



NOTES:
1. INSTALL SIGN AT A LOCATION NEAR THE LIMIT OF CONSTRUCTION AS DETERMINED BY THE DIRECTOR'S REPRESENTATIVE. THE SIGN LOCATION SHALL NOT IMPEDE TRAFFIC, AND THE SIGN SHALL BE VISIBLE TO PEDESTRIANS FROM BEYOND THE LIMIT OF CONSTRUCTION.

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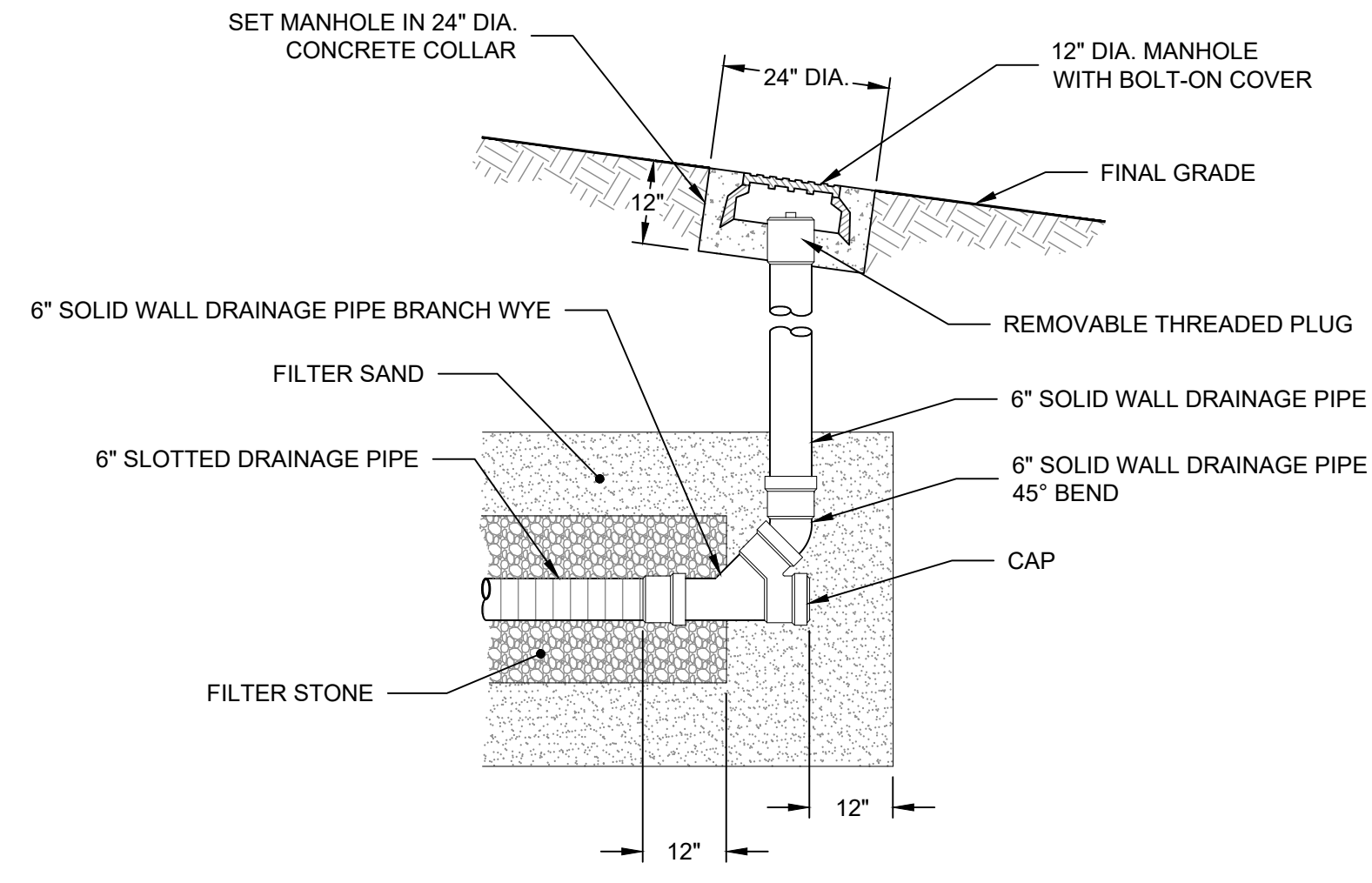
CONTRACT:
TITLE: REHABILITATE SOUTH LAKE DAM
NYS DEC ID NO. 192-4560
LOCATION: TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK
CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MARK	DATE	DESCRIPTION
PROJECT NUMBER:		
DESIGNED BY:	ZDB	
DRAWN BY:	SMH	
FIELD CHECK:	-	
APPROVED:	GJD	
SHEET TITLE:		
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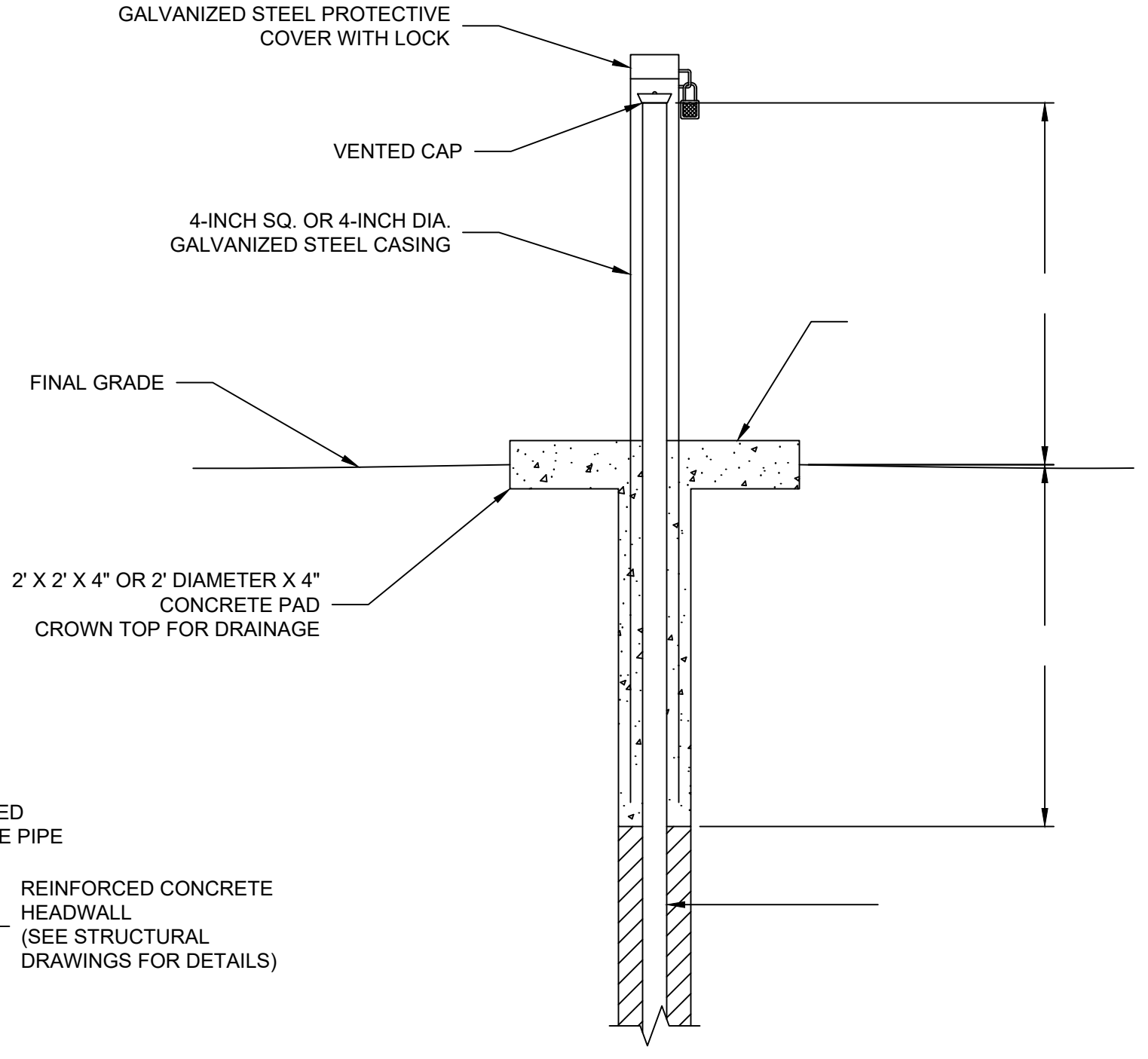
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36x24 PLOT SHEET

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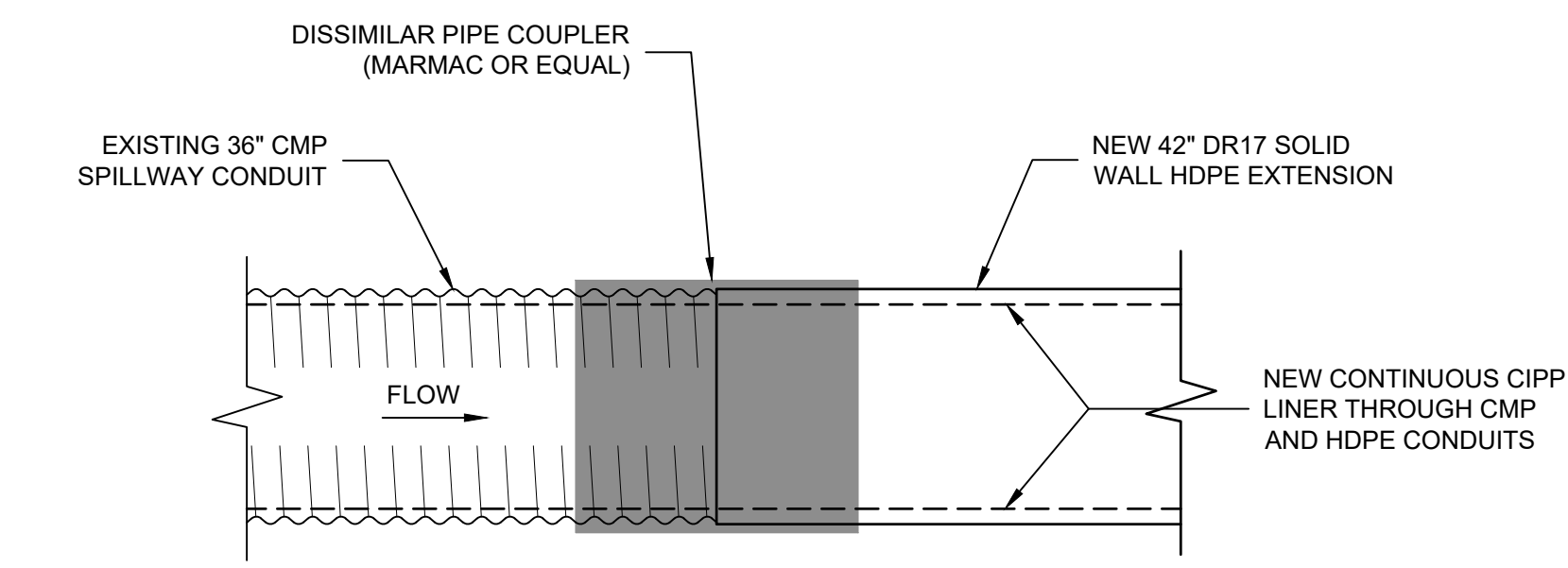
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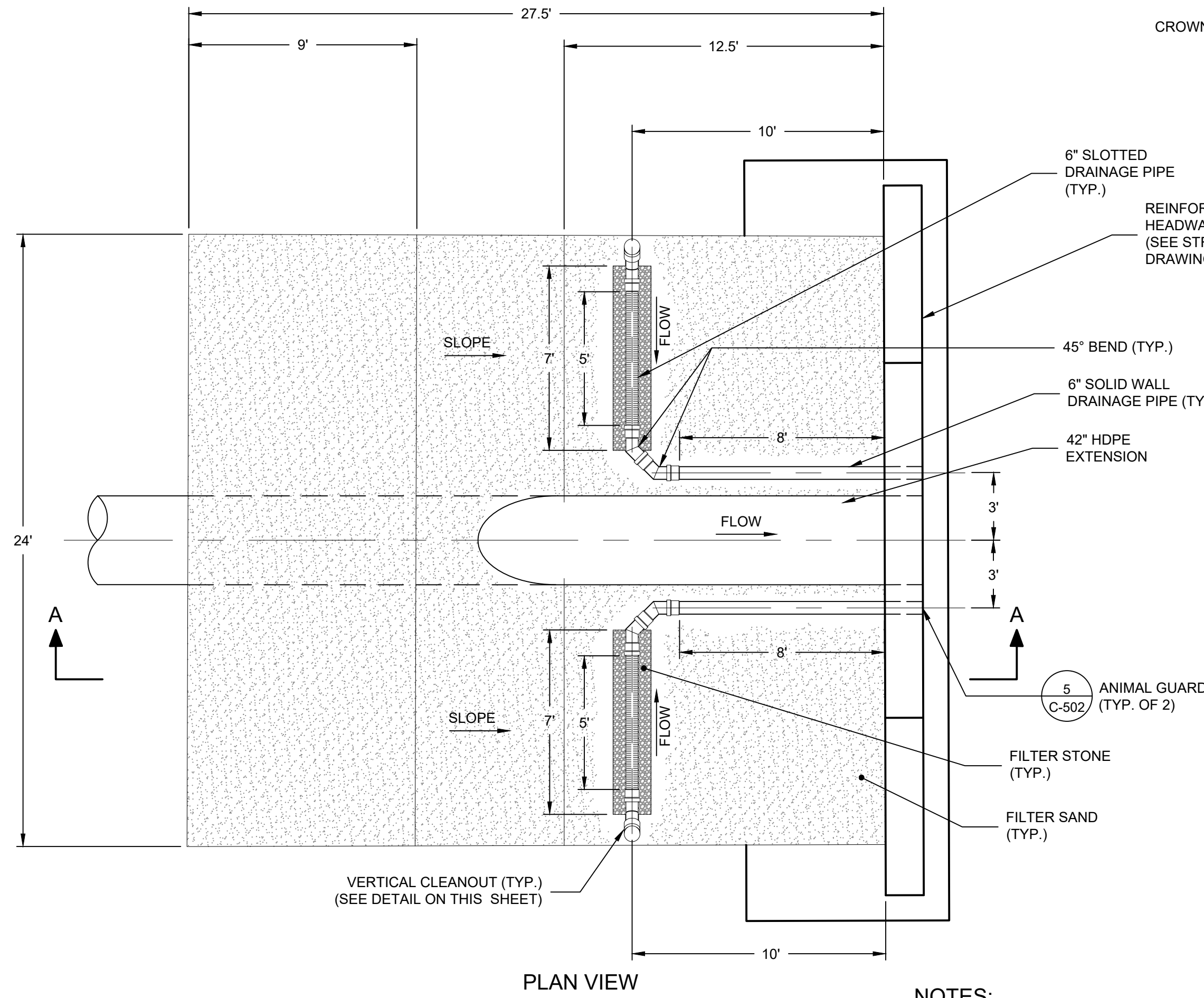
1 VERTICAL CLEANOUT DETAIL
 C-109 NOT TO SCALE



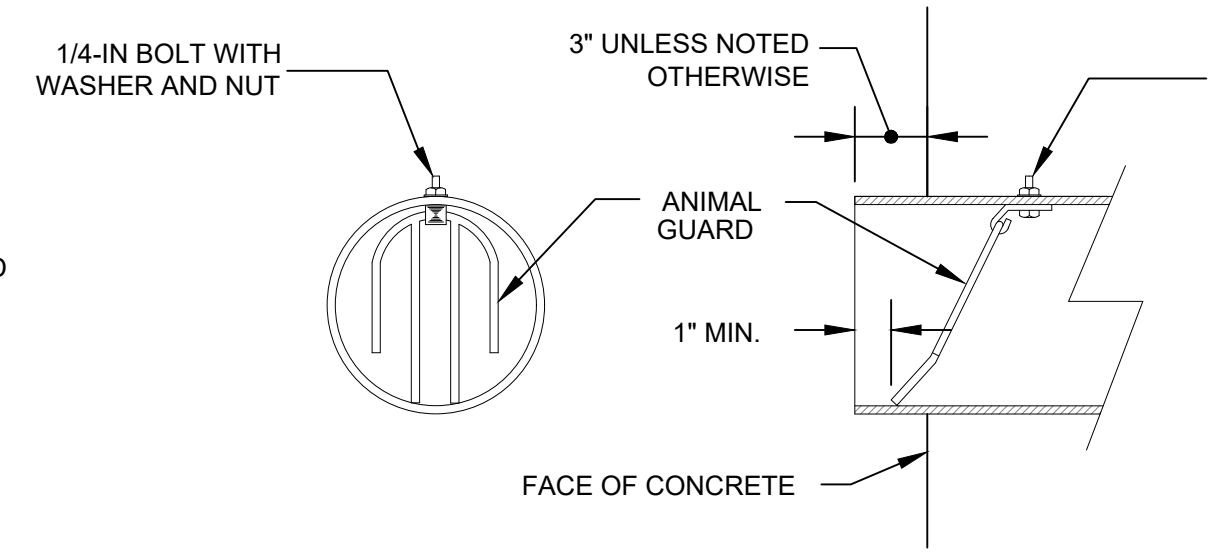
6 STICK-UP PIEZOMETER CASING DETAIL
 C-502



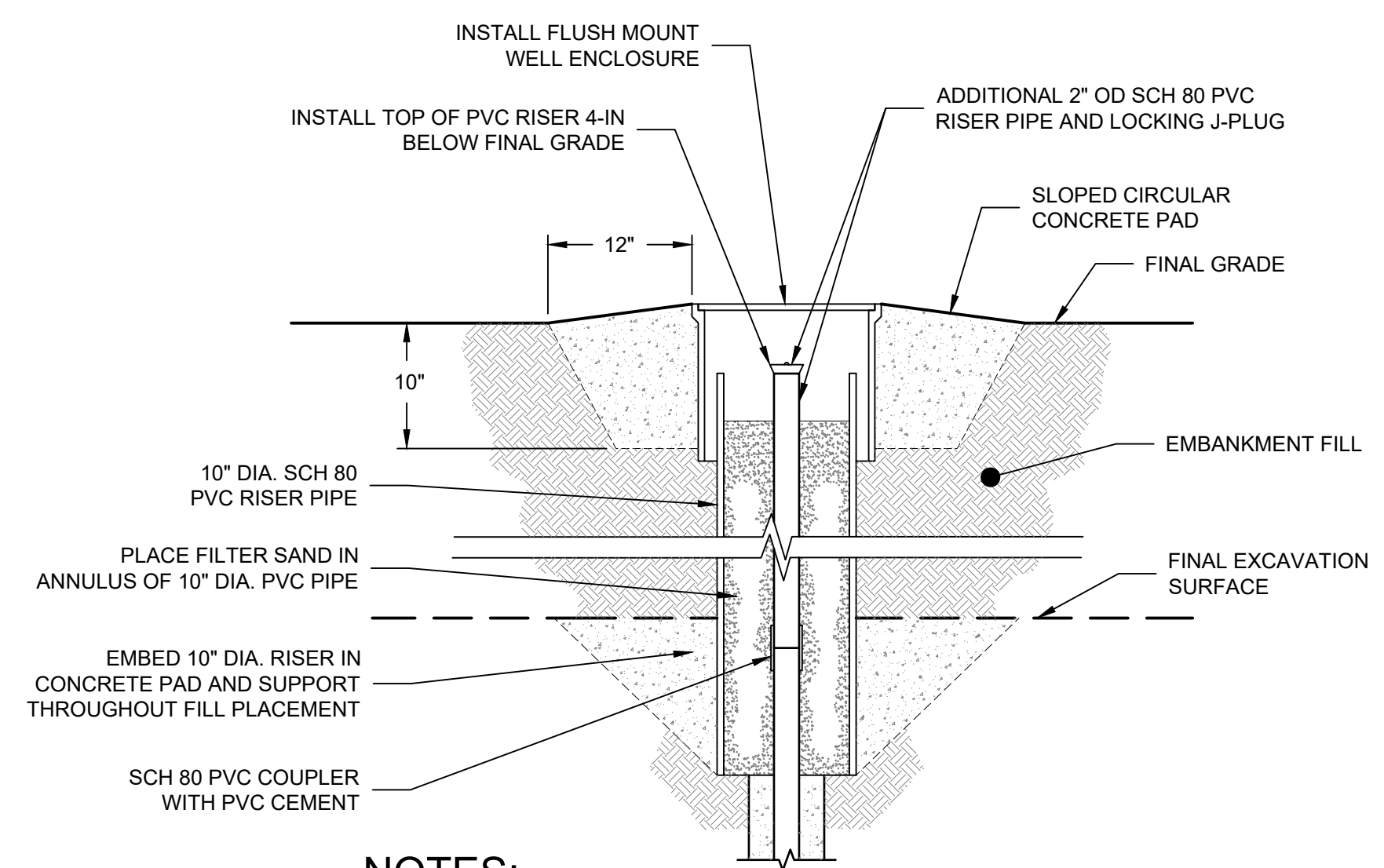
2 SPILLWAY CONDUIT EXTENSION DETAIL
 C-109 NOT TO SCALE



PLAN VIEW

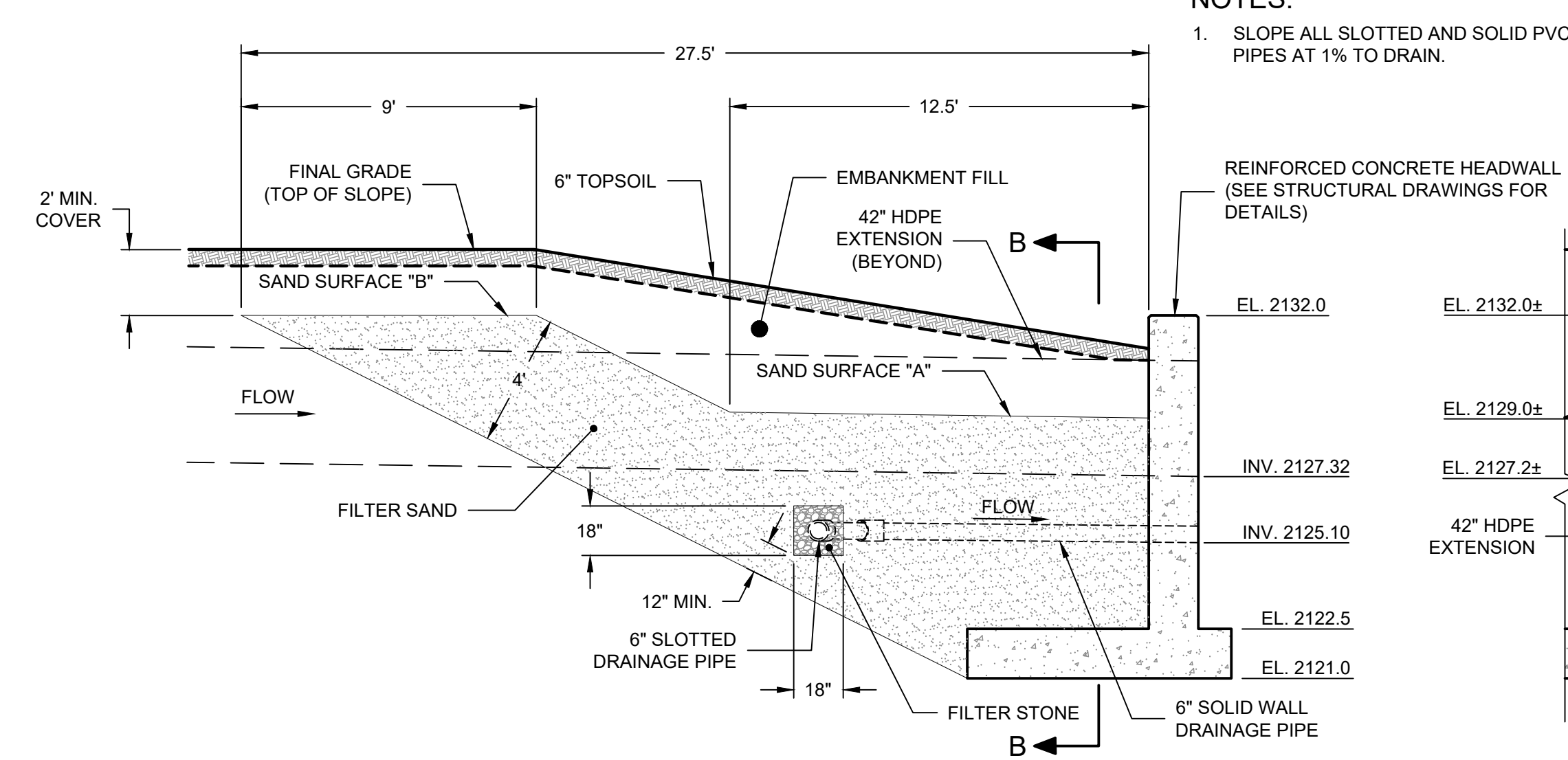


5 ANIMAL GUARD DETAIL
 C-502



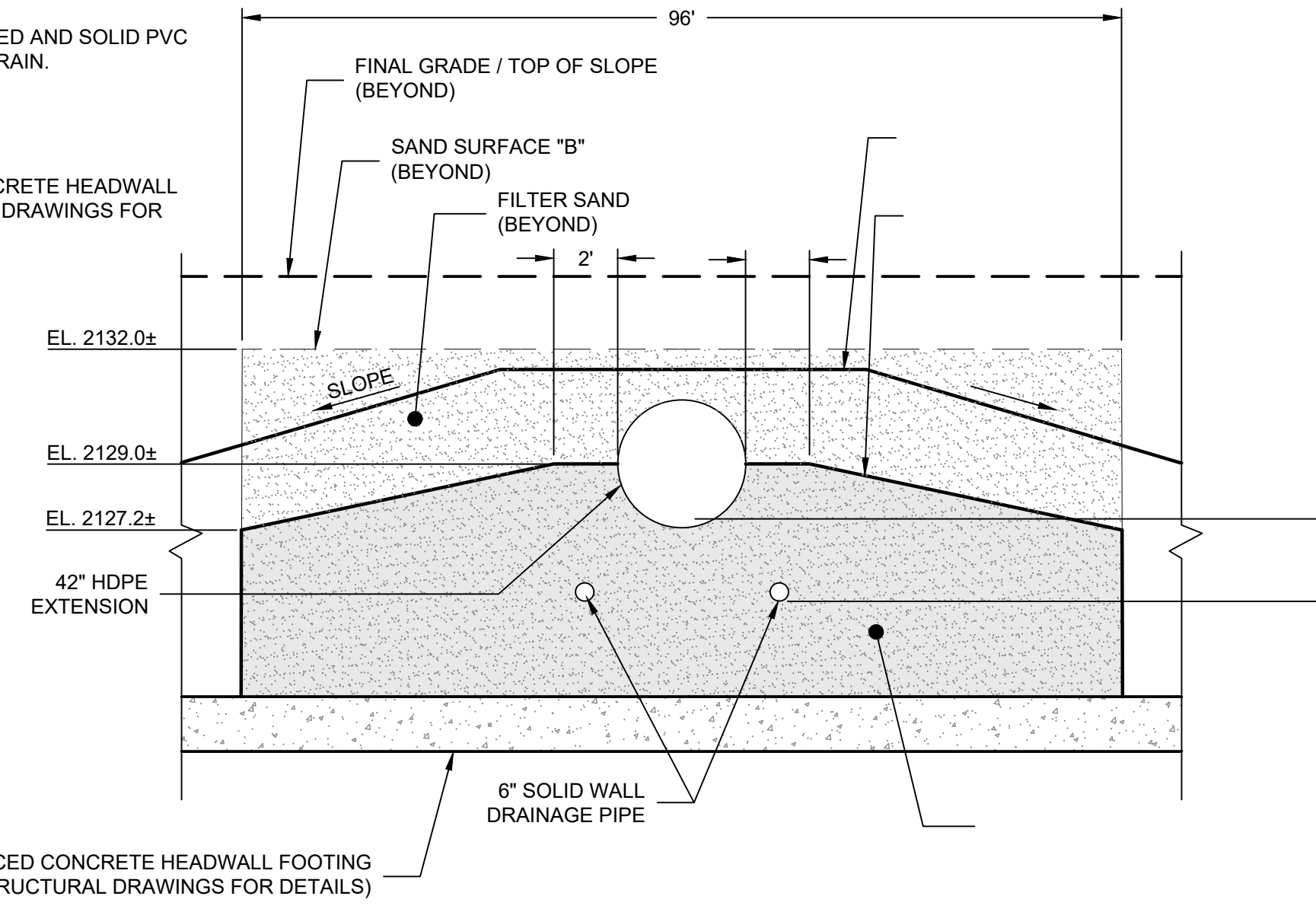
NOTES:
 1. REMOVE EXISTING PROTECTIVE CASING, CONCRETE PAD, PVC PLUG, AND PVC RISER DURING EXCAVATION. INSTALL J-PLUG AND PROTECT RISER FROM DAMAGE AND VANDALISM THROUGHOUT CONSTRUCT.
 2. AT SB-02: TOP OF FLUSH MOUNT ENCLOSURE AND CONCRETE PAD SHALL BE AT ADJACENT GRADE. AT SB-03: TOP OF FLUSH MOUNT ENCLOSURE AND CONCRETE PAD SHALL BE 2 INCHES ABOVE ADJACENT GRADE AND PERIMETER OF CONCRETE PAD SHALL BE FLUSH WITH ADJACENT GRADE.

3 PIEZOMETER EXTENSION DETAIL
 C-108 NOT TO SCALE



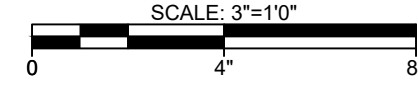
SECTION A-A

NOTES:
 1. SLOPE ALL SLOTTED AND SOLID PVC PIPES AT 1% TO DRAIN.



(FLOW OUT OF PAGE)
 SECTION B-B

4 FILTER DIAPHRAGM DETAILS
 C-108

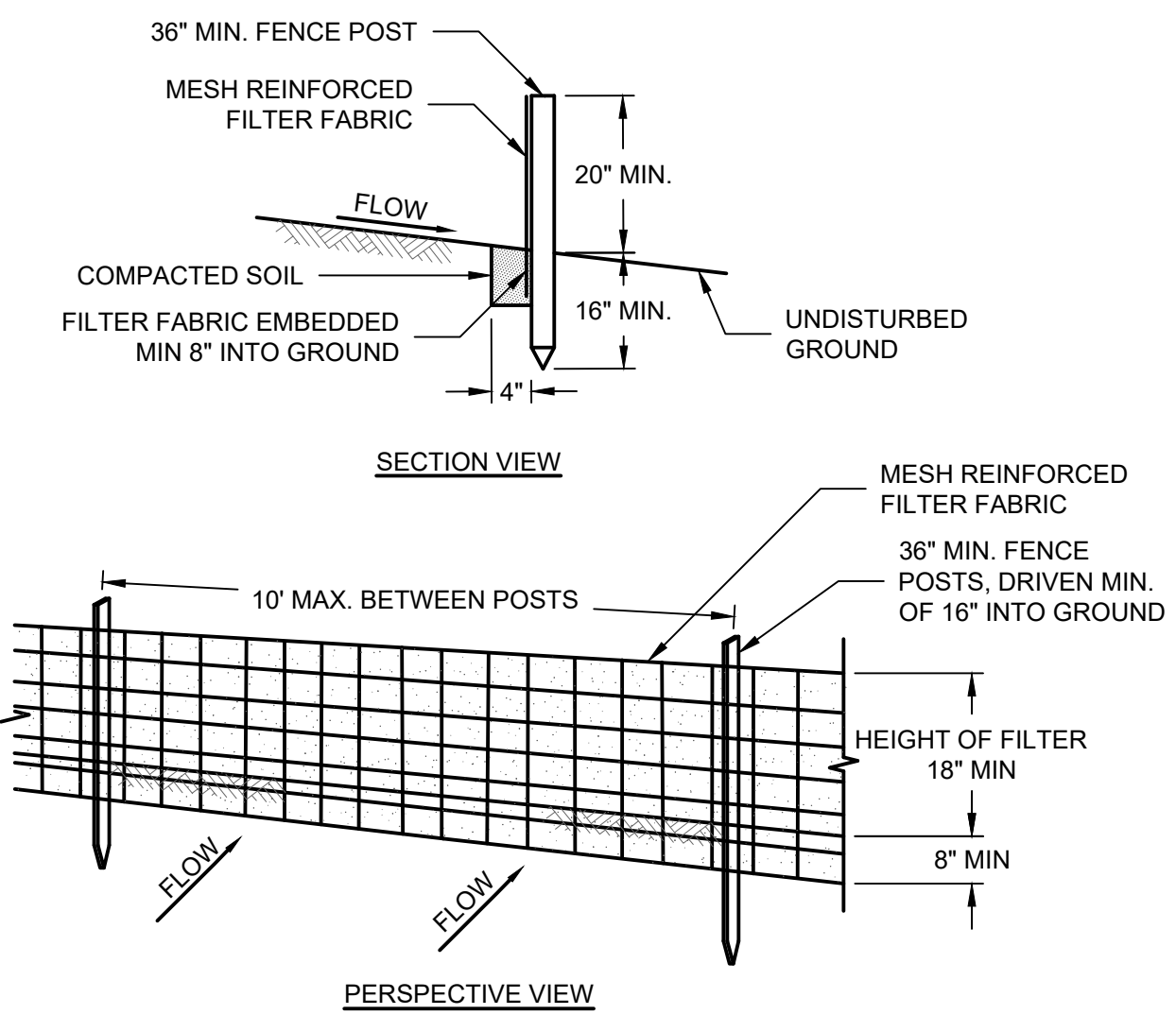


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 36x24 PLOT SHEET

MARK	DATE	DESCRIPTION

PROJECT NUMBER:	
DESIGNED BY:	ZDB
DRAWN BY:	SMH
FIELD CHECK:	
APPROVED:	GJD

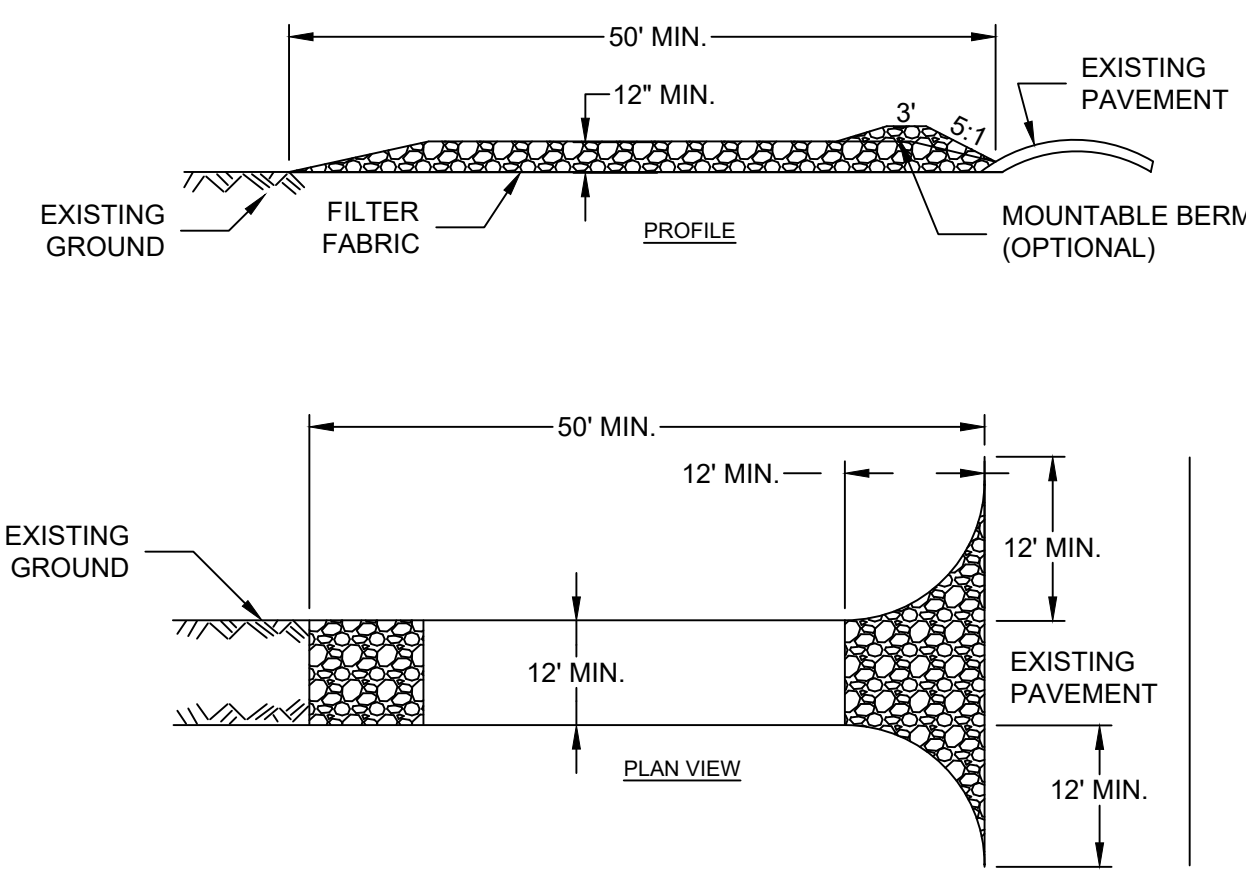
SHEET TITLE:
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NOTES:

- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
- PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

1 SILT FENCE DETAIL
NOT TO SCALE
C-112



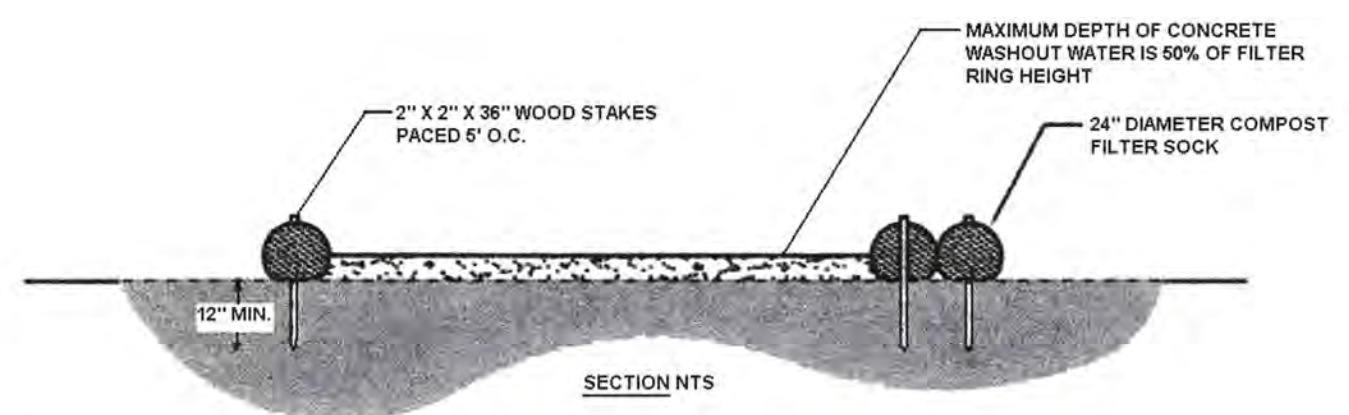
CONSTRUCTION NOTES:

- CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND GRADE PROPERLY.
- PLACE FILTER FABRIC OVER CLEARED AREA.
- PLACE 2" STONE (OR OTHER GRADE AS SPECIFIED) TO THE DIMENSIONS SHOWN ON THE PLANS AND SMOOTH IT.
- PROVIDE DRAINAGE TO CARRY WATER TO A SUITABLE OUTLET.

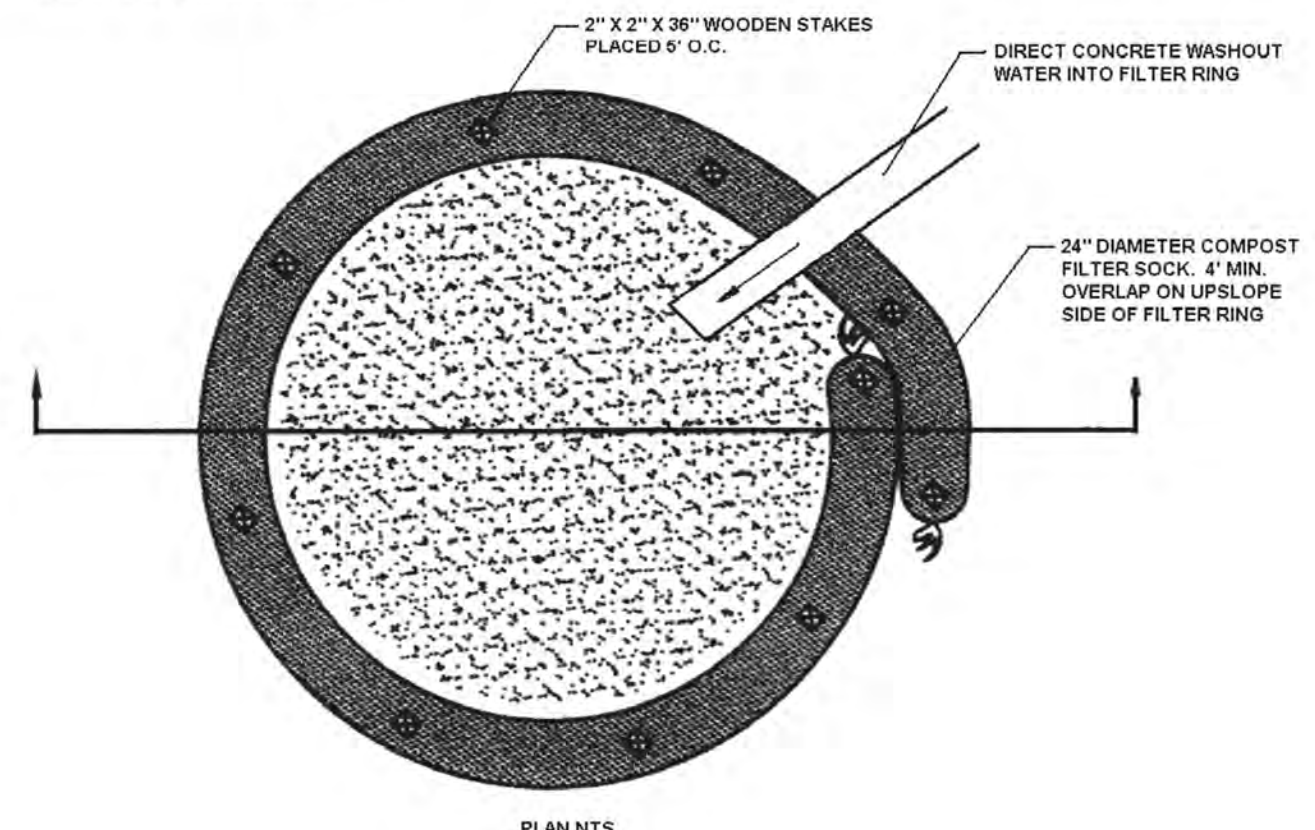
MAINTENANCE NOTES:

- MAINTAIN THE STONE PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE.
- AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY.
- IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

2 STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE
C-112



- NOTES:**
- INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
 - 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.



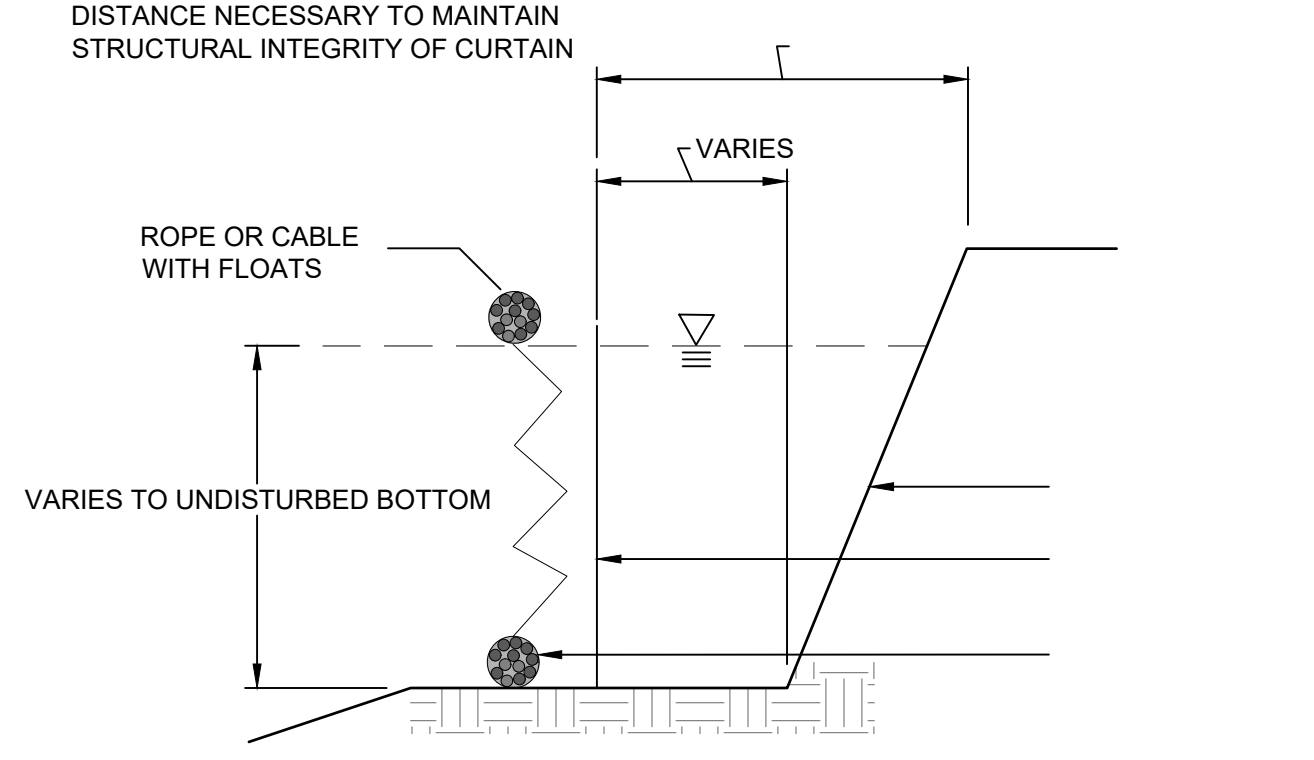
PLACE CONTINUOUS 10-MIL LINER AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE FILTER RING. RING DIAMETER AND DEPTH ARE CONTRACTOR'S OPTION BUT SHALL BE CAPABLE OF READILY HANDLING ANTICIPATED WASHOUT WATER. ADD ADDITIONAL WASHOUTS AS NEEDED.

MAXIMUM DEPTH OF CONCRETE WASHOUT WATER IS 50% OF FILTER RING HEIGHT.

DRIED MATERIAL FROM INSIDE WASHOUT RING SHALL BE DISPOSED OFF-SITE. IF RING IS RE-USED MULTIPLE TIMES (I.E., CLEANED OUT), THE LINER SHALL BE REPLACED EACH TIME AND THE INTEGRITY OF THE RING MAINTAINED.

MAINTENANCE: INSPECT WEEKLY AND AFTER EACH RAIN EVENT. IMMEDIATELY REPLACE FILTER SOCK AND LINER AS NECESSARY.

5 CONCRETE WASHOUT AREA (CWA)
NOT TO SCALE
C-112



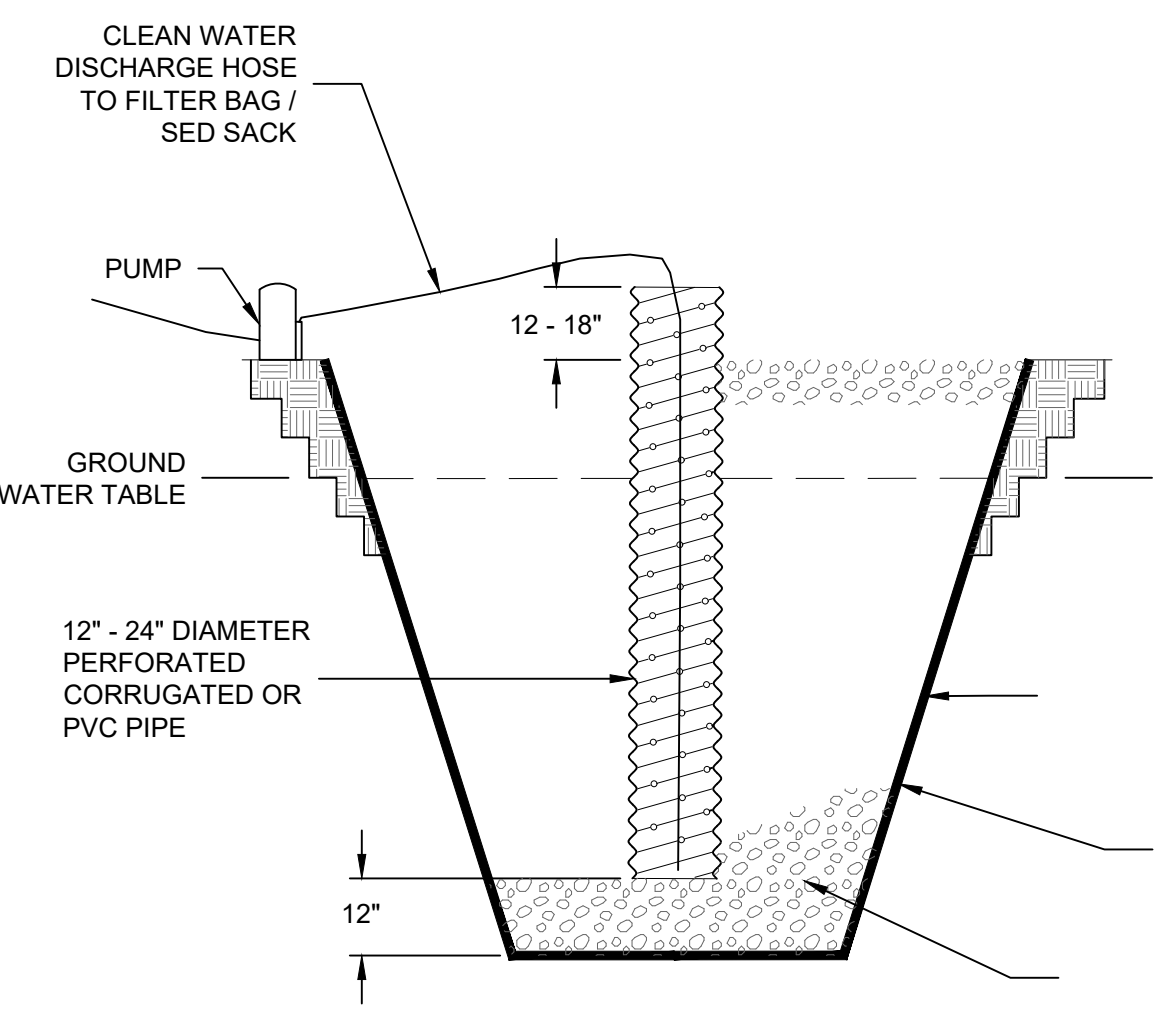
CONSTRUCTION SPECIFICATIONS:

- BARRIERS SHOULD BE A BRIGHT COLOR (YELLOW OR "INTERNATIONAL" ORANGE ARE RECOMMENDED) FOR SAFETY PURPOSES.
- THE SEAMS IN THE FABRIC SHALL BE EITHER VULCANIZED WELDED OR SEWN, AND SHALL DEVELOP THE FULL STRENGTH OF THE FABRIC.
- FLOTATION DEVICES SHALL BE FLEXIBLE, BUOYANT UNITS CONTAINED IN AN INDIVIDUAL FLOTATION SLEEVE OR COLLAR ATTACHED TO THE CURTAIN. BUOYANCY PROVIDED BY THE FLOTATION UNITS SHALL BE SUFFICIENT TO SUPPORT THE WEIGHT OF THE CURTAIN AND MAINTAIN A FREEBOARD OF AT LEAST 3-INCHES ABOVE WATER SURFACE LEVEL.
- LOAD LINES MUST BE FABRICATED INTO THE BOTTOM OF ALL FLOATING SILT CURTAINS. THE SUPPLEMENTAL (BOTTOM) LOAD LINE SHALL CONSIST OF A CHAIN INCORPORATED INTO THE BOTTOM HEM OF THE CURTAIN OF SUFFICIENT WEIGHT TO SERVE AS BALLAST TO HOLD THE CURTAIN IN A VERTICAL POSITION. ADDITIONAL ANCHORAGE SHALL BE PROVIDED AS NECESSARY. THE LOAD LINES SHALL HAVE SUITABLE CONNECTION DEVICES WHICH DEVELOP THE FULL BREAKING STRENGTH FOR CONNECTING TO LOAD LINE IN ADJACENT SECTIONS.
- EXTERNAL ANCHORS MAY CONSIST OF WOOD OR METAL STAKES (2-X4-INCH OR 2 1/2-INCH MINIMUM DIAMETER WOOD OR 1.33 POUNDS PER LINEAR FOOT STEEL).

MAINTENANCE NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE TURBIDITY CURTAIN FOR THE DURATION OF THE PROJECT IN ORDER TO ENSURE THE CONTINUOUS PROTECTION OF THE WATERCOURSE.
- SHOULD REPAIRS TO GEOTEXTILE FABRIC BE NECESSARY, THERE ARE NORMALLY REPAIR KITS AVAILABLE FROM THE MANUFACTURERS. MANUFACTURER'S INSTRUCTIONS MUST BE FOLLOWED TO ENSURE THE ADEQUACY OF THE REPAIR.
- WHEN THE CURTAIN IS NO LONGER REQUIRED AS DETERMINED BY THE INSPECTOR, THE CURTAIN AND RELATED COMPONENTS SHALL BE REMOVED IN SUCH A MANNER AS TO MINIMIZE TURBIDITY. REMAINING SEDIMENT SHALL BE SUFFICIENTLY SETTLED BEFORE REMOVING THE CURTAIN. SEDIMENT MAY BE REMOVED AND THE ORIGINAL DEPTH (OR PLAN ELEVATION) RESTORED. ANY SPOILS MUST BE TAKEN TO AN UPLAND AREA TO BE STABILIZED.

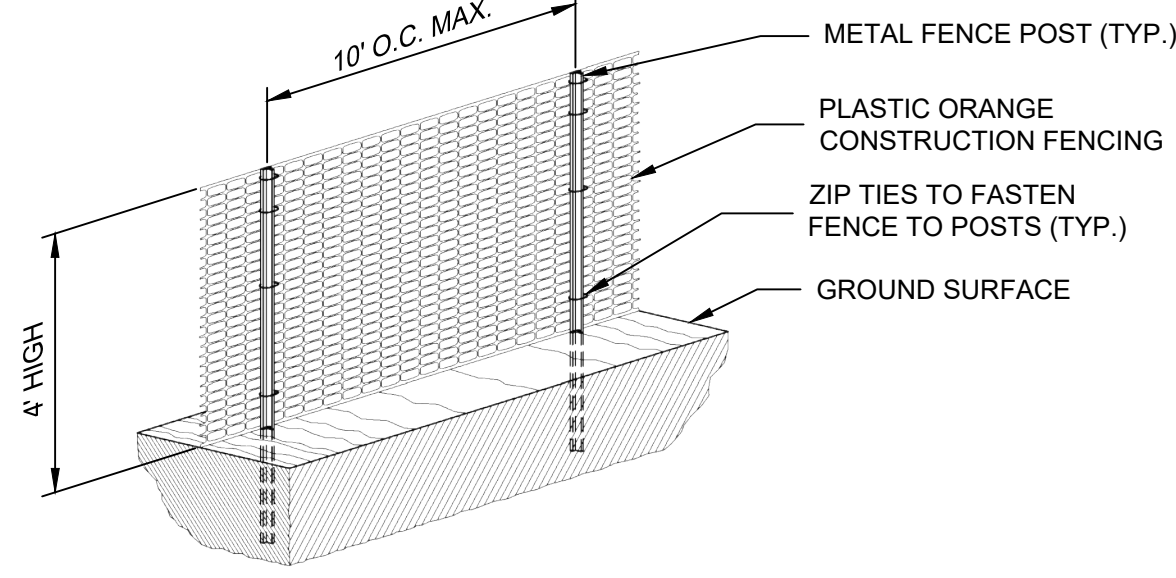
3 TURBIDITY CURTAIN DETAIL
C-112



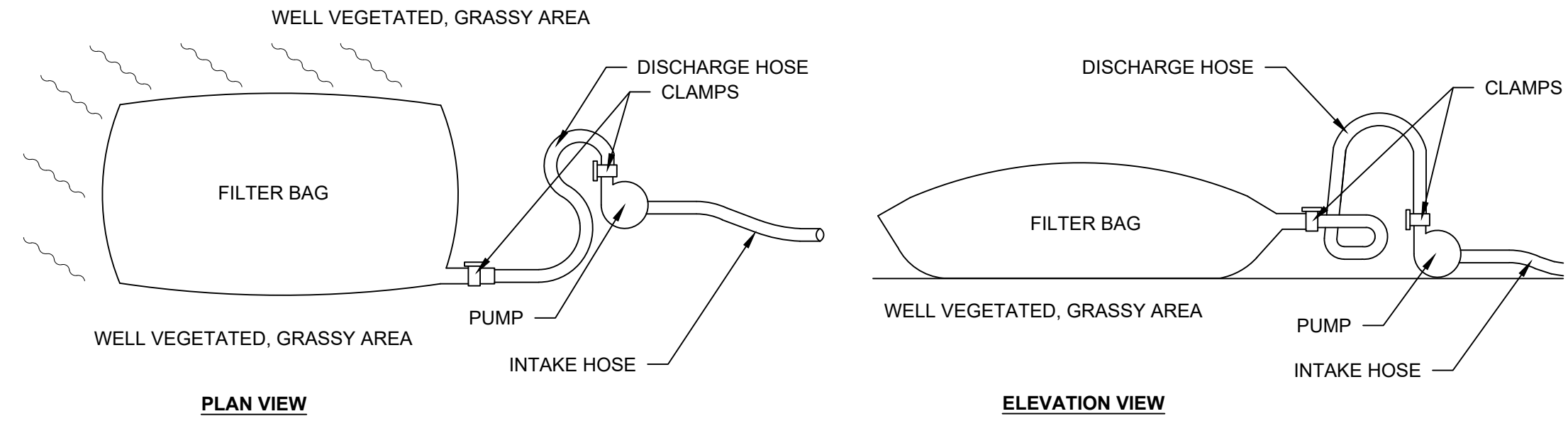
CONSTRUCTION SPECIFICATIONS

- PIT DIMENSIONS ARE VARIABLE
- THE STANDPIPE SHOULD BE CONSTRUCTED BY PERFORATING A 12-24" DIAMETER CORRUGATED OR PVC PIPE.
- A BASE OF NYS DOT #2 OR EQUIVALENT AGGREGATE SHOULD BE PLACED IN THE PIT TO A DEPTH OF 12". AFTER INSTALLING THE STANDPIPE, THE PIT SURROUNDING THE STANDPIPE SHOULD BE BACKFILLED WITH NYS DOT #2 OR EQUIVALENT AGGREGATE FULLY SURROUNDED BY A NON-WOVEN GEOTEXTILE.
- THE STANDPIPE SHOULD EXTEND 12-18" ABOVE THE LIP OF THE PIT.
- REMOVE ALL SUMP MATERIALS AND BACKFILL THE SUMP WITH COMPACTED EMBANKMENT FILL UPON COMPLETION.

7 DEWATERING SUMP DETAIL
C-112



4 CONSTRUCTION FENCE DETAIL
NOT TO SCALE
C-112



6 FILTER BAG DETAIL
NOT TO SCALE
C-112

WARNING:

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CONTRACT:

TITLE: **REHABILITATE SOUTH LAKE DAM**
NYS DEC ID NO. 192-4560

LOCATION: **TOWN OF HAINES FALLS**
GREENE COUNTY, NEW YORK

CLIENT: **NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

MARK	DATE	DESCRIPTION

Mar 15, 2023 - 6:43am
 H:\2019\Albany\19025014_03_South Lake Dam\03-SEProducts\08-CAD\DRAWINGS\05-FINAL_DESIGN\47251-EROS_CNTRL_DTLS.dwg
 36x24 PLOT SHEET

DESIGN DATA

- 1. GENERAL
DESIGN PROVISIONS:
a. 2020 BUILDING CODE OF NEW YORK STATE (BCNYS)
b. 2020 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, INCLUDING THE LATEST AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES AND INTERIM REVISIONS.
RISK CATEGORY: II
TERRAIN/EXPOSURE CATEGORY: C
BASIC SEISMIC/MAIN WIND FORCE RESISTING SYSTEM: NORTH-SOUTH, EAST-WEST
2. PEDESTRIAN LOAD: 90 psf
3. RAILING LOAD: 200 lb OR 50 lbs/FT
4. PARAPET VEHICULAR IMPACT: NCHRP 350 TL-1
5. SOIL SURCHARGE: 250 psf
6. SOIL PARAMETERS (FROM SCHNABEL ENGINEERING OF NEW YORK MEMORANDUM DATED JUNE 13, 2022).
7. WATER PARAMETERS (FROM SCHNABEL ENGINEERING OF NEW YORK MEMORANDUM DATED JUNE 13, 2022).

Table with 2 main columns: LOCATION and NORMAL POOL. Sub-columns include GROUNDWATER, IMPOUNDMENT, TAILWATER, SPILLWAY DESIGN FLOOD (150% OF 100-YEAR), GROUNDWATER, IMPOUNDMENT, TAILWATER. Rows include DROP INLET, PARAPET WALL, DOWNSTREAM HEADWALL.

- 8. STRUCTURES HAVE BEEN DESIGNED CONSIDERING THE EFFECTS OF HYDROSTATIC AND HYDRODYNAMIC LOADS IN ACCORDANCE WITH NYSDEC DAM STABILITY REQUIREMENTS WHICH INCLUDE:
A. NORMAL POOL
B. NORMAL POOL WITH ICE
C. MAXIMUM POOL
D. NORMAL POOL WITH SEISMIC
9. SEISMIC:
SITE CLASS: C
SHORT-PERIOD DESIGN ACCELERATION (Sdg): 0.133
ONE-SECOND DESIGN ACCELERATION (Sdt): 0.074
SHORT PERIOD MAPPED SPECTRAL RESPONSE (Ss): 0.166
ONE-SECOND MAPPED SPECTRAL RESPONSE (St): 0.065
SEISMIC DESIGN CATEGORY: B
IMPORTANCE FACTOR (Ie): 1.0
SYSTEM COEFFICIENT R (NORTH-SOUTH): 1.3
SYSTEM COEFFICIENT R (EAST-WEST): 3
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
SEISMIC RESPONSE COEFFICIENT (Cs): 0.111
SEISMIC DESIGN BASE SHEAR (V): VARIES PER COMPONENT
10. STRUCTURAL MATERIAL STRENGTHS:
STRUCTURAL AND MISCELLANEOUS STEEL:
ROLLED STEEL W SHAPES: ASTM A 992
ROLLED STEEL C SHAPES: ASTM A 572, GRADE 50
ROLLED STEEL PLATES, BARS, AND ANGLES: ASTM A 572, GRADE 50
HOLLOW STRUCTURAL SECTIONS (HSS): ASTM A 500, GRADE C
PIPE: ASTM A 53, TYPE E OR S, GRADE B
CONCRETE:
FOOTINGS: f'c = 3,000 psi
WALLS: f'c = 5,000 psi
CONCRETE EXPOSURE CATEGORY:
DROP INLET: F2, S0, W1, C1
DOWNSTREAM HEADWALL: F2, S0, W1, C1
ABUTMENT: F2, S0, W1, C1
PARAPET WALL: F3, S0, W1, C2

GENERAL NOTES

- 1. DIMENSIONS TO, OF, AND IN EXISTING STRUCTURE SHALL BE VERIFIED IN FIELD BY CONTRACTOR.
2. DO NOT SCALE DRAWINGS. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES IN DIMENSIONS BETWEEN EXISTING CONDITIONS AND/OR CIVIL DRAWINGS AND THE STRUCTURAL DRAWINGS.
3. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
4. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
5. THE NOTES ON THE STRUCTURAL DRAWINGS ARE TYPICAL UNLESS OTHERWISE INDICATED.
6. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION OF CONSTRUCTION AND TO SUPPORT ONLY THE DESIGN LOADS INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS AND SEQUENCE OF CONSTRUCTION AND FOR THE ADEQUACY OF THE STRUCTURE TO SUPPORT TEMPORARY LOADS OCCURRING DURING CONSTRUCTION.
7. CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF PROPOSED DEVIATIONS OR SUBSTITUTIONS FROM DIMENSIONS, MATERIALS, OR EQUIPMENT SHOWN ON THE DRAWINGS AND MAKE ONLY THOSE DEVIATIONS OR SUBSTITUTIONS ACCEPTED BY ENGINEER.
8. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR DAMAGES WHICH MIGHT OCCUR AS A RESULT OF FAILING TO EXACTLY LOCATE AND PRESERVE EXISTING UTILITIES.
9. COORDINATE NUMBER AND LOCATION OF INLET AND OUTLET PIPES AND OPENINGS WITH CIVIL DRAWINGS.
10. DO NOT SUSPEND UTILITY ITEMS FROM PEDESTRIAN BRIDGE.
11. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY.

FOUNDATION NOTES

- 1. BEAR FOOTINGS ON FIRM UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL.
2. FOOTINGS HAVE BEEN DESIGNED FOR A SOIL BEARING PRESSURE AS FOLLOWS:
PARAPET WALL: 1,500 psf
DROP INLET STRUCTURE: 1,500 psf
BRIDGE ABUTMENT: 1,500 psf
HEADWALL: 3,000 psf
BEARING STRATUM FOR THIS CAPACITY SHALL BE VERIFIED IN FIELD BY DIRECTOR'S REPRESENTATIVE BEFORE CASTING CONCRETE FOOTINGS.
3. UNLESS OTHERWISE NOTED, BOTTOM OF FOOTINGS IS 3 FEET 6 INCHES MINIMUM BELOW FINISH GRADE. FOOTINGS MAY BE STEPPED DOWN OR LOWERED TO REACH AN ACCEPTABLE BEARING STRATUM AS DETERMINED BY DIRECTOR'S REPRESENTATIVE.
4. ELEVATIONS OF BOTTOM OF FOOTINGS ARE FOR ESTIMATING PURPOSES AND WILL BE ADJUSTED TO REQUIRED BEARING STRATA AS DETERMINED UPON EXCAVATION.
5. SOIL BEARING SURFACES PREVIOUSLY ACCEPTED BY DIRECTOR'S REPRESENTATIVE WHICH ARE ALLOWED TO BECOME SATURATED, FROZEN, OR DISTURBED SHALL BE REWORKED TO SATISFACTION OF GEOTECHNICAL ENGINEER.
6. WHERE FOOTINGS ARE LOWERED IN ELEVATION DUE TO SOIL CONDITIONS, LOWER ADJACENT FOOTINGS IN ELEVATION IN ORDER THAT RATIO OF CLEAR DISTANCE BETWEEN NEAREST EDGE OF FOOTINGS TO DIFFERENCE IN ELEVATION BETWEEN BOTTOMS OF FOOTINGS SHALL NOT EXCEED 2H:1V.
7. FOUNDATION PREPARATION: REFER TO SPECIFICATIONS FOR "EARTHWORK" AND "DEWATERING".
8. DO NOT PLACE FOOTINGS IN WATER OR ON FROZEN GROUND.
9. DO NOT ALLOW GROUND BENEATH FOOTINGS TO FREEZE.
10. USE SIDE FORMS FOR FOOTINGS.
11. WHERE REQUIRED, JOIN NEW FOOTINGS UP OR DOWN IN RATIO OF TWO HORIZONTALS TO ONE VERTICAL TO JOIN EXISTING FOOTINGS.
12. CONCRETE WALLS SHALL ATTAIN A MINIMUM STRENGTH OF 70% f'c BEFORE PLACING BACKFILL AGAINST THEM.
13. WALLS THAT ARE TO BE BACKFILLED ON ONE SIDE ONLY MAY BE BACKFILLED UP TO 3 FEET ABOVE THE TOP OF THE FOOTING AFTER WALLS ATTAIN MINIMUM STRENGTH OF 70% f'c. REMAINING BACKFILL MAY NOT BE PLACED UNTIL TOP SLAB IS IN PLACE, SLAB ATTAINS MINIMUM STRENGTH OF 70% f'c, AND WALLS ATTAIN MINIMUM STRENGTH 100% f'c.

CAST-IN-PLACE CONCRETE NOTES (FOUNDATION)

- 1. REINFORCE CONCRETE ELEMENTS INCLUDING FOOTINGS, WALLS, AND DROP INLET STRUCTURES. REINFORCEMENT SHOWN PERTAINS TO TYPICAL CONDITIONS.
2. LAP SPLICE CONCRETE REINFORCEMENT AS INDICATED IN THE CONCRETE REINFORCEMENT LAP SPLICE SCHEDULE, UNLESS NOTED OTHERWISE.
3. LAP CONTINUOUS FOOTING AND HORIZONTAL WALL REINFORCEMENT WITH A CLASS B LAP SPLICE UNLESS NOTED OTHERWISE.
4. PROVIDE CORNER BARS IN FOOTINGS, THE SAME SIZE AND NUMBER AS CONTINUOUS REINFORCEMENT. PROVIDE CLASS B LAP SPLICE WITH MAIN REINFORCEMENT, BUT NOT LESS THAN 2'-0".
5. PLACE TRANSVERSE REINFORCEMENT IN CONTINUOUS FOOTINGS WHERE SHOWN IN BOTTOM LAYER.
6. CAST STEPPED FOOTINGS MONOLITHICALLY.
7. DOWEL CONCRETE WALLS INTO FOOTINGS WITH DOWELS THE SAME SIZE AND SPACING AS VERTICAL REINFORCEMENT. EXTEND DOWELS TO WITHIN 3 INCHES OF BOTTOM OF FOOTING, TERMINATED WITH A.C.I. STANDARD 90 DEGREE HOOK. PROVIDE LAP SPLICE WITH VERTICAL REINFORCEMENT AS INDICATED ON DRAWINGS.
8. AT INTERSECTIONS OF CONCRETE WALLS, PROVIDE CORNER BARS IN OUTER LAYER THE SAME SIZE AND SPACING AS HORIZONTAL REINFORCEMENT AND PROVIDE A CLASS B LAP SPLICE WITH MAIN REINFORCEMENT, BUT NOT LESS THAN 2'-0". AT "T" INTERSECTIONS, PROVIDE CORNER BARS FROM EACH LAYER IN INTERSECTING WALL TO OUTER LAYER OF THROUGH WALL.
9. PROVIDE KEYS IN CONCRETE WALLS AT VERTICAL CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE. KEYS SHALL BE 1 1/2 INCHES DEEP AND THE WIDTH OF THE KEY SHALL BE ONE-THIRD THE WALL THICKNESS AND CENTERED WITHIN THE WALL.
10. ALIGN FOUNDATION WALL CONSTRUCTION JOINTS WITH FOOTING STEPS.
11. VERIFY SIZE AND LOCATION OF INLET AND OUTLET PIPES.
12. PIPING THROUGH STRUCTURAL WALLS SHALL BE SLEEVED OR CHASED. NO CORE-DRILLING OF WALLS IS PERMITTED.
13. MINIMUM BAR DEVELOPMENT LENGTH EQUALS CLASS A LAP LENGTH.
14. CHAMFER EXPOSED CONCRETE CORNERS AND EDGES 3/4 INCH UNLESS NOTED OTHERWISE.
15. CONCRETE COVER FOR REINFORCEMENT SHALL BE AS INDICATED IN THE CONCRETE COVER SCHEDULE.
16. PROVIDE WATERSTOP IN BELOW-GRADE WALL JOINTS, WALL-TO-FOOTING JOINTS, AND SLAB-TO-WALL JOINTS.

Table with 2 main sections: CONCRETE REINFORCEMENT LAP SPLICE SCHEDULE and CONCRETE COVER SCHEDULE. Columns include BAR SIZE, MINIMUM CLEAR COVER (INCH), MINIMUM SPACING CENTER/CENTER (INCH), CLASS B LAP NOT A TOP BAR (INCH), CLASS B LAP TOP BAR (INCH). Rows include #4, #5, #6, #7, #8, #9, #10, #11.

NOTES FOR SCHEDULE:

- 1. USE VALUES FOR "CLASS B LAP TOP BAR" FOR ALL HORIZONTAL REINFORCEMENT HAVING 12 INCHES OR MORE FRESH CONCRETE BELOW REINFORCEMENT BAR. ALL OTHER CONDITIONS MAY USE "CLASS B LAP" SPLICE LENGTHS.
2. LAP SPLICE LENGTHS APPLY TO CONCRETE CONSTRUCTION HAVING F'c = 3,500 psi OR HIGHER.
3. BAR DEVELOPMENT LENGTH MAY BE OBTAINED BY DIVIDING APPLICABLE LAP SPLICE LENGTH BY 1.3. MINIMUM BAR DEVELOPMENT LENGTH IS 12 INCHES.
4. CONTACT ENGINEER FOR REQUIRED SPLICE LENGTH WHERE BAR COVER OR SPACING IS LESS THAN TABULATED VALUES.

Table with 2 columns: LOCATION and COVER. Rows include FOOTINGS POURED AGAINST EARTH: 3"; SURFACE EXPOSED TO WEATHER OR EARTH (INCLUDING SURFACES OF FOUNDATION WALLS COVERED WITH WATERPROOFING MEMBRANE AND/OR INSULATION): BARS LARGER THAN #5: 2", #5 BARS OR SMALLER: 1 1/2"; SURFACES NOT EXPOSED TO WEATHER OR EARTH: SLABS AND WALLS: 3/4", BEAMS, GIRDERS, PIERS, AND COLUMNS: 1 1/2"; BETWEEN BARS AND EMBEDDED ITEMS: IN CONCRETE ELEMENTS EXPOSED TO WEATHER OR EARTH: 1 1/2", IN CONCRETE ELEMENTS NOT EXPOSED TO WEATHER OR EARTH: 3/4".

CAST IN PLACE CONCRETE NOTES (STRUCTURAL)

- 1. CHAMFER EXPOSED CORNERS 3/4 INCH.
2. NO HOLES OR OPENINGS ARE PERMITTED THROUGH CONCRETE FOOTINGS.
3. PROVIDE ADDITIONAL REINFORCING ON EACH SIDE OF OPENINGS AS NOTED IN DRAWINGS.
4. KEYS SHALL BE 2 INCHES BY 4 INCHES UNLESS OTHERWISE SHOWN ON DRAWINGS.
5. CAST CONCRETE ON SLOPED SURFACES BEGINNING AT LOWEST ELEVATION AND CONTINUING MONOLITHICALLY TOWARD HIGHER ELEVATIONS UNTIL INTENDED POUR IS COMPLETED.
6. LOCATE ADDITIONAL CONSTRUCTION JOINTS REQUIRED TO FACILITATE CONSTRUCTION NEAR CENTER OF SPANS USING VERTICAL BULKHEADS AND AS ACCEPTABLE TO ENGINEER. PLACE REINFORCEMENT CONTINUOUSLY THROUGH JOINT. DETAIL JOINT IN SHOP DRAWINGS.
7. VERIFY SIZE AND LOCATION OF PIPE AND GATE OPENINGS.
8. MECHANICAL SPLICES WILL BE PERMITTED FOR #8 BARS AND LARGER.
9. PROVIDE 100 FEET OF #4, 100 FEET OF #5, AND 100 FEET OF #6 BARS IN 20-FOOT LENGTHS TO BE FIELD CUT AND PLACED IN FIELD AS LOCATED BY ENGINEER.

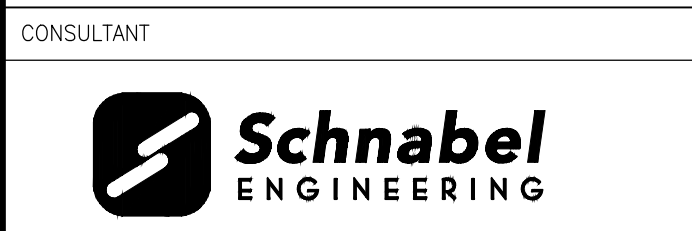
STRUCTURAL STEEL NOTES

- 1. DO NOT BEGIN STEEL ERECTION UNTIL SUPPORTING CONCRETE OBTAINS 75 PERCENT OF THE MATERIAL STRENGTHS NOTED IN DESIGN DATA NOTES.
2. DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
3. PROVIDE HOT-DIP GALVANIZED FASTENERS FOR GALVANIZED FRAMING CONNECTIONS AND STAINLESS STEEL FASTENERS FOR STAINLESS STEEL FRAMING CONNECTIONS.
4. GALVANIZING WHERE NOTED IN THE DRAWINGS SHALL BE HOT-DIP GALVANIZING IN ACCORDANCE WITH ASTM A123, UNLESS NOTED OTHERWISE.

STRUCTURAL OBSERVATION NOTES

- 1. THE REGISTERED DESIGN PROFESSIONAL WILL MAKE VISITS TO THE SITE AT APPROPRIATE INTERVALS FOR THE PURPOSE OF OBSERVING THE CONSTRUCTION FOR GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE FOLLOWING LIST INCLUDES SOME APPROPRIATE TIMES FOR VISITING THE SITE. THE CONTRACTOR SHALL NOTIFY THE REGISTERED DESIGN PROFESSIONAL AT LEAST 48 HOURS PRIOR TO PERFORMING THESE ACTIVITIES SO THAT SITE VISITS CAN BE SCHEDULED.
- INITIAL PLACEMENT OF REINFORCING BARS FOR FOOTINGS, HEADWALL, AND PARAPET WALL (AFTER EXCAVATION AND PRIOR TO CLOSING OF FORMS).
- INITIAL ERECTION OF STRUCTURAL STEEL AND GRATING.
- COMPLETION OF THE STRUCTURAL PORTION OF THE PROJECT.
- OTHER TIMES AS REQUIRED DUE TO FIELD CONDITIONS OR SPECIAL CONSTRUCTION TYPES.
2. THE REGISTERED DESIGN PROFESSIONAL MAY VISIT THE SITE AT TIMES OTHER THAN THOSE LISTED IN NOTE 1.
3. THE REGISTERED DESIGN PROFESSIONAL WILL PREPARE A FIELD OBSERVATION REPORT FOR EACH SITE VISIT MADE TO OBSERVE CONSTRUCTION. PART II OF EACH REPORT IS FOR CONTRACTOR VERIFICATION AND IS MANDATORY. PART II MUST BE COMPLETED (SIGNED BY THE CONTRACTOR VERIFYING THAT THE REQUIRED ACTION WAS TAKEN AND LISTING THE DATE COMPLETED) AND RETURNED TO THE ENGINEER IN A TIMELY MANNER.

Table titled STRUCTURAL ABBREVIATIONS LEGEND. Columns include ADDL, ADJ, L, APPROX, ARCH, B/, BLDG, BRG, BP, CANT, CJ, C, CMU, CONC, CONT, COL, CFMF, COORD, DIM, DN, ds, DWG, EA, EF, EJ, ELEC, ELEV, ENGR, EMBD, EQ, EQUIP, ES, EW, EXIST, EXP, EXT, EOD, EOS, FD, FDN, FTG, GA, GALV, HSS, HORIZ, HI, HP, HVAC, INFO, INT, INV, K, LG, LLH, LLV, LOC, LW, LVL, LO, MANUF, MAX, MECH, MIN, MISC, MO, NA, NIC, NOM, NW, OC, OD, OPNG, OPP, PL, PAF, PE, PERP, PLF, PSF, PSI, PCF, PC, PSL, PT, R, RD, RDP, REQD, REIN, REV, RO, SIM, SPA, STD, SF, SS, STL, SQ, T/, TYP, UNO, VERT, VF, W/, WIP, WWR, WCJ.



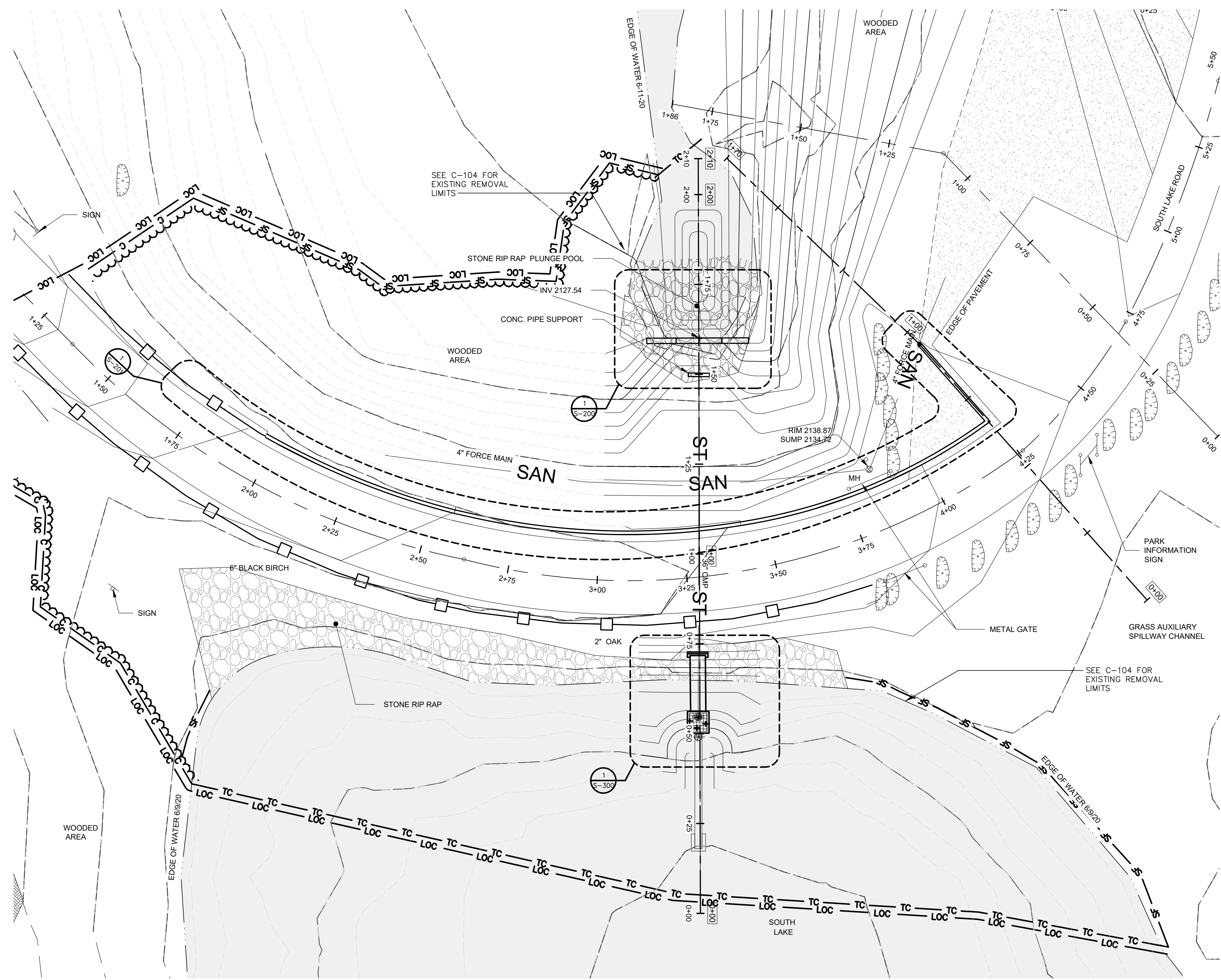
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CONTRACT:
TITLE: SOUTH LAKE DAM REHABILITATION NYS DEC ID 192-4560
LOCATION: TOWN OF HAINES FALLS GREENE COUNTY, NEW YORK
CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Table with columns: B, A, MARK, PROJECT NUMBER, DESIGNED BY, DRAWN BY, FIELD CHECK, APPROVED, SHEET TITLE, DRAWING NUMBER. Rows include dates (3/15/2023, 11/1/2022) and names (MGY, JMO).

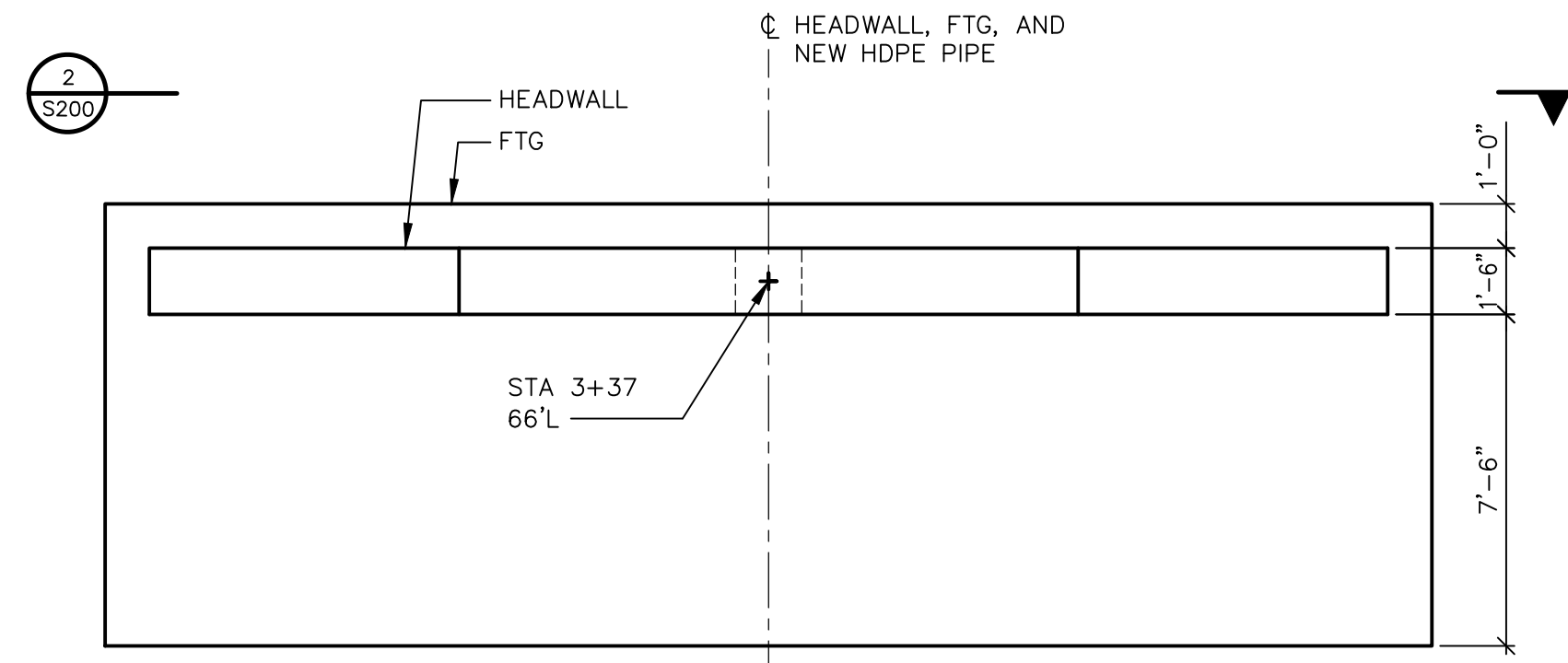
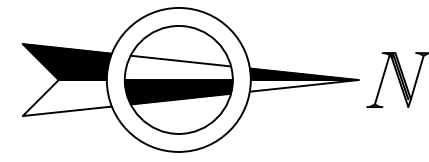
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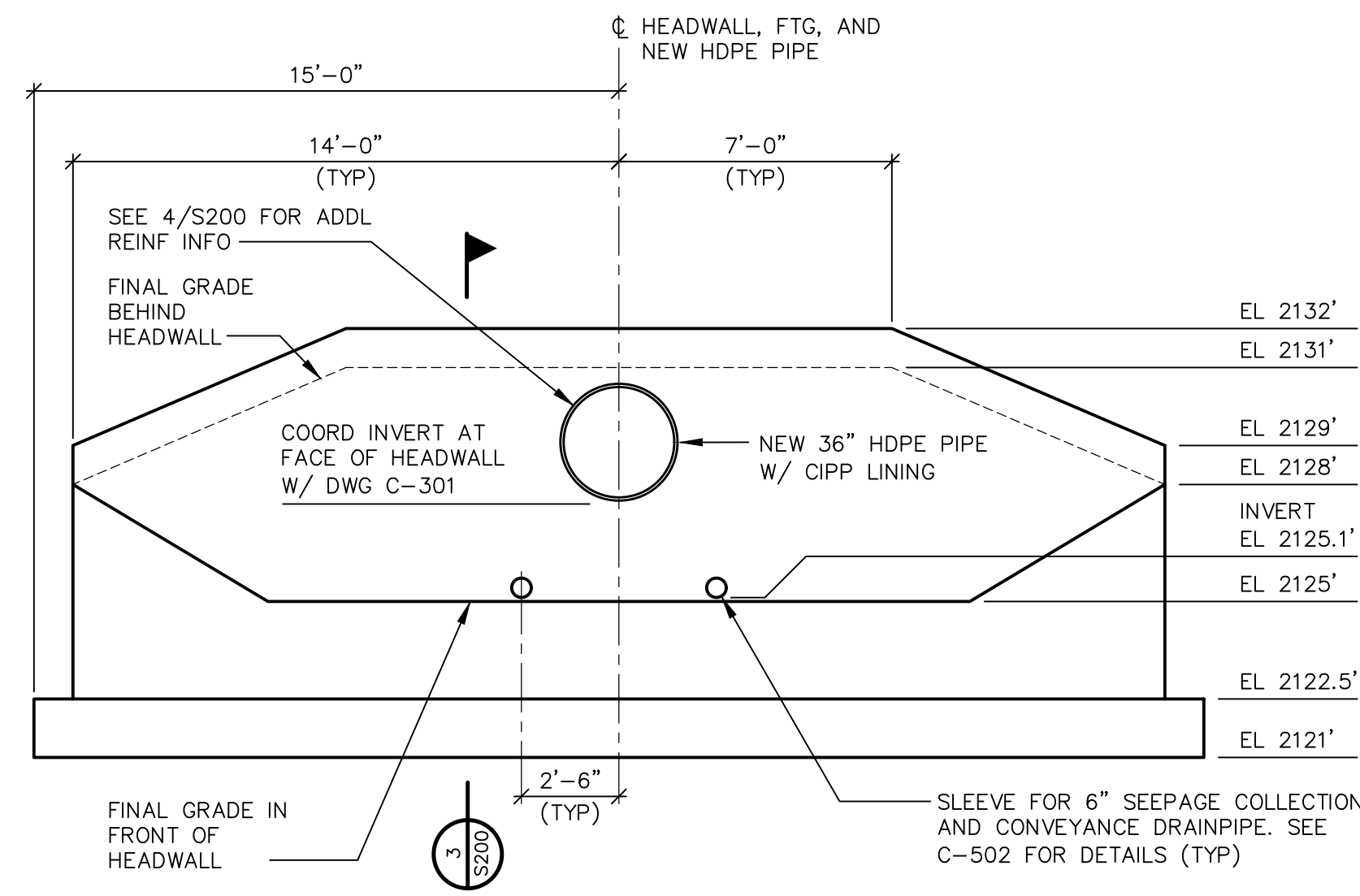


SITE PLAN
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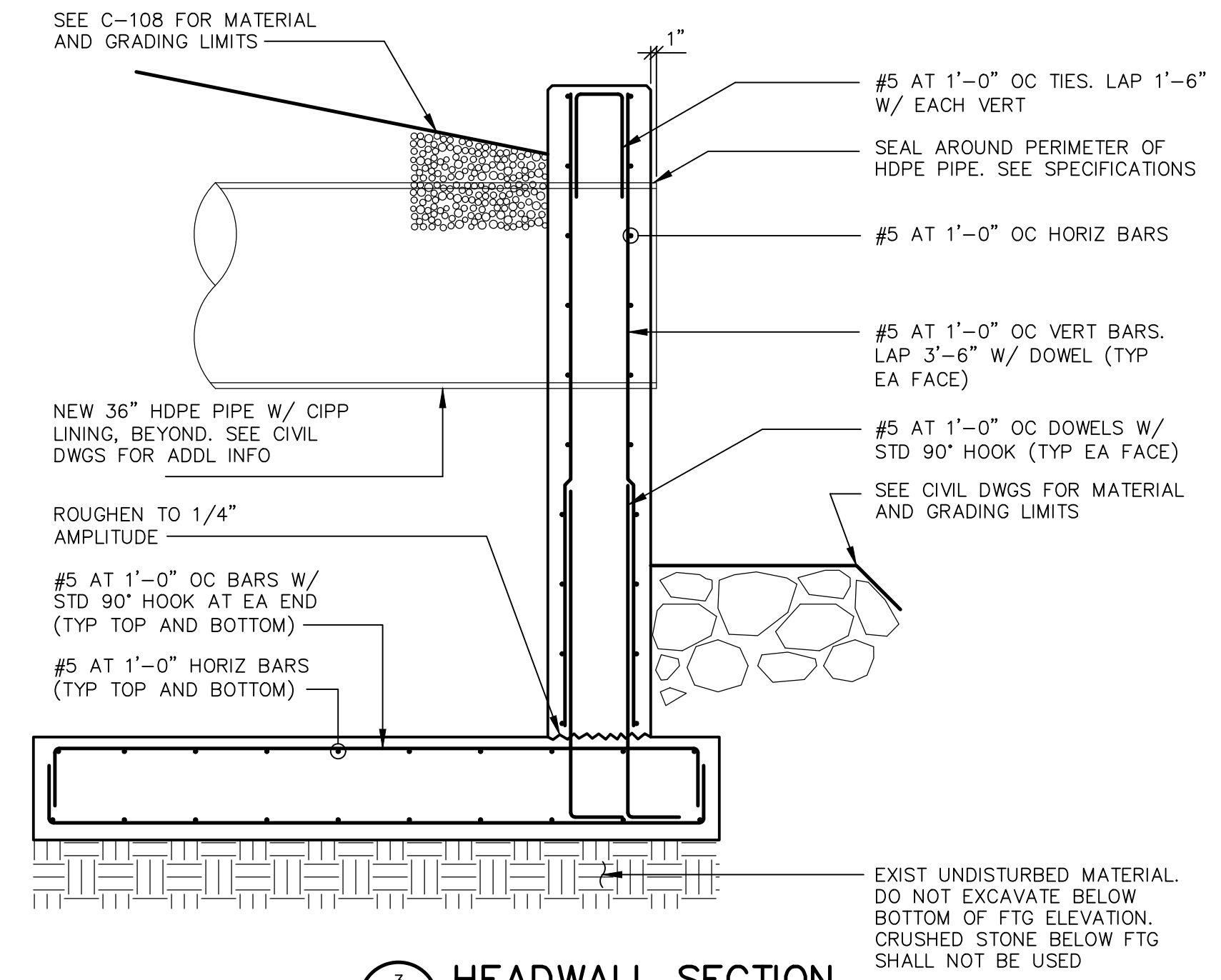
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DESIGNED BY:		MGY
DRAWN BY:		JMO
FIELD CHECK:		-
APPROVED:		-
SHEET TITLE:		



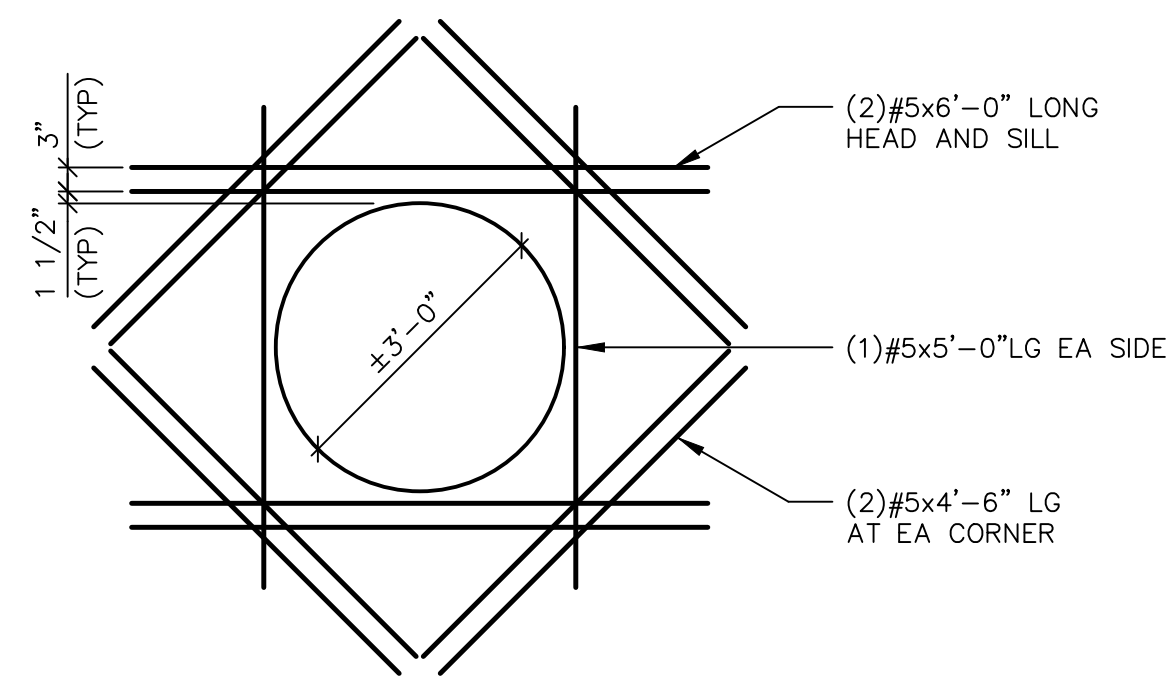
1 HEADWALL PLAN
SCALE 1/4" = 1'-0"



2 HEADWALL ELEVATION
SCALE 1/4" = 1'-0"



3 HEADWALL SECTION
SCALE 1/2" = 1'-0"



4 REINFORCEMENT AT HDPE PIPE
SCALE 1/2" = 1'-0"

- NOTES:
1. LOCATE REINFORCEMENT WITH 1 1/2" CLEAR TO OPENING.
 2. REINFORCEMENT SHOWN AT OPENING SHALL BE PROVIDED FOR EACH LAYER OF WALL REINFORCEMENT.

CONSULTANT



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LOCATION: TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK

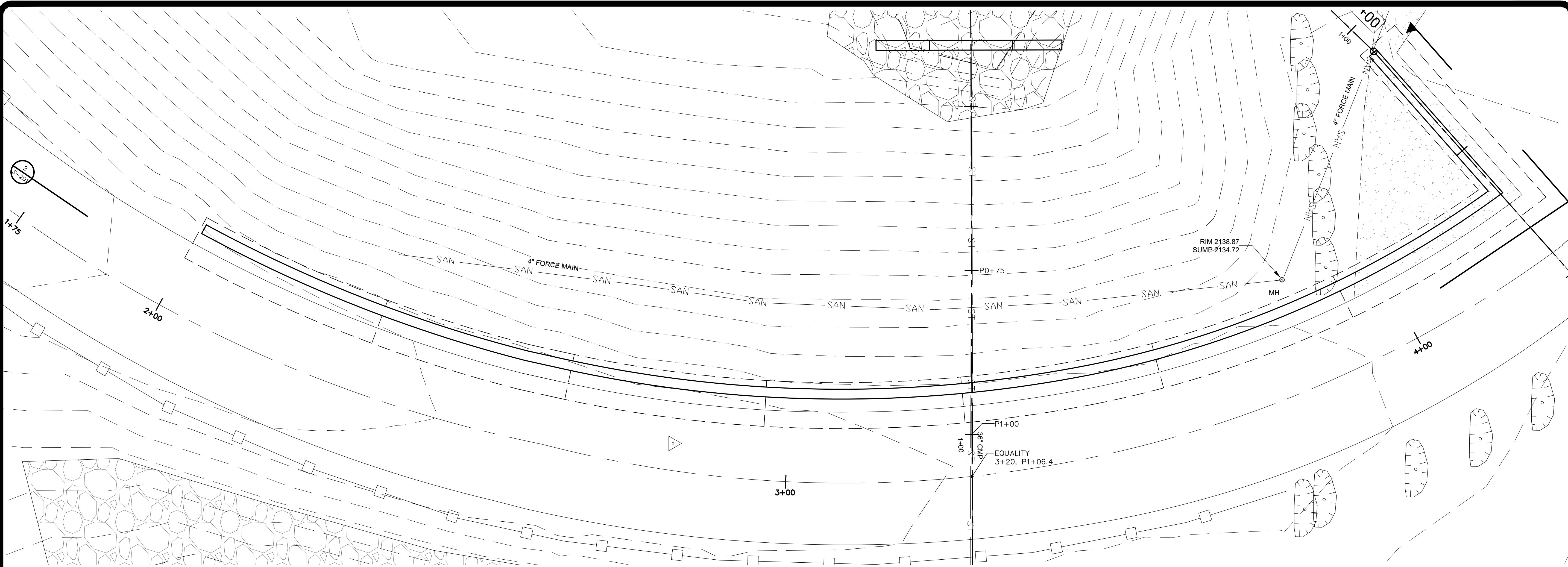
CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MARK	DATE	DESCRIPTION
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A	11/1/2022	
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DESIGNED BY: MGY		
DRAWN BY: JMO		
FIELD CHECK: -		
APPROVED: -		
SHEET TITLE:		

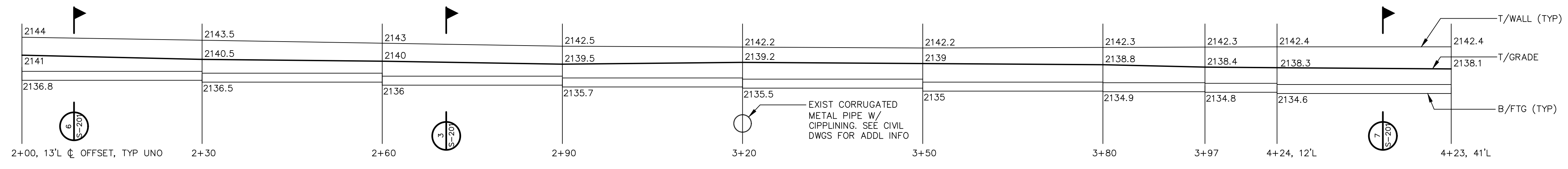
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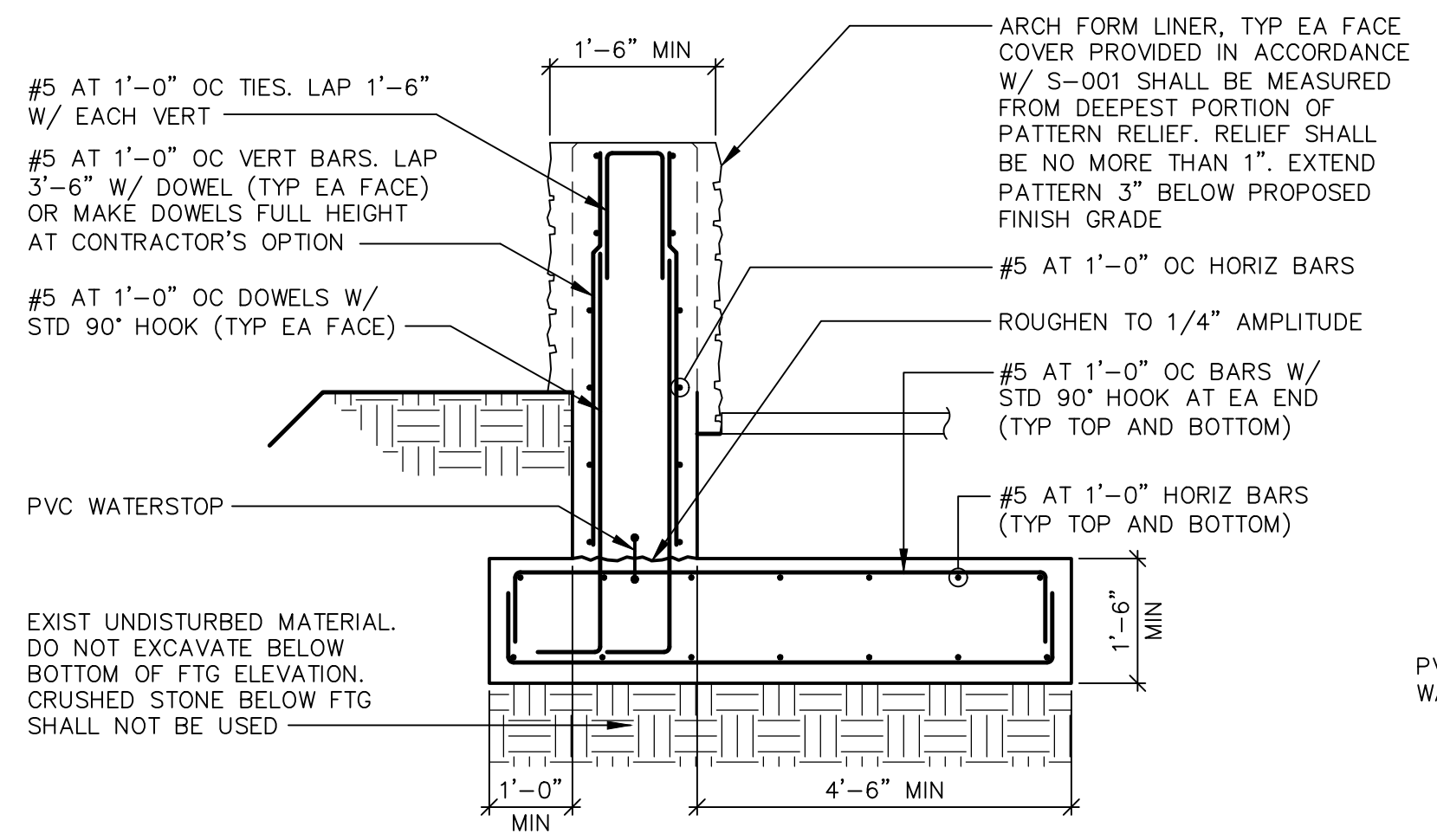
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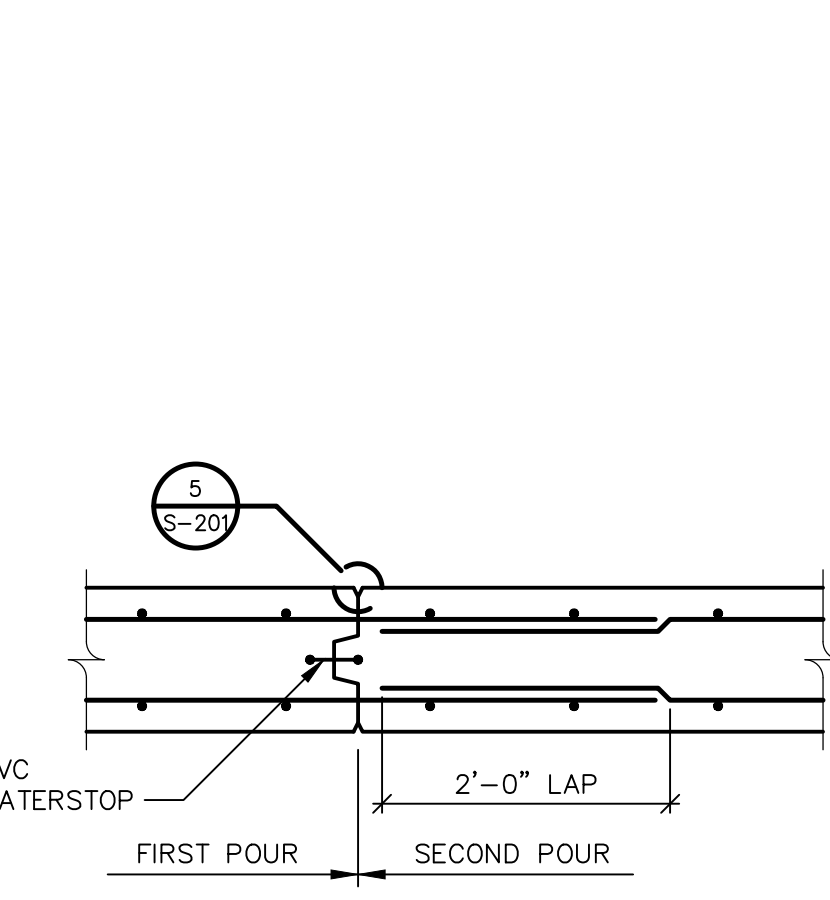
1 PLAN
S-201 SCALE: 1/8" = 1'-0"



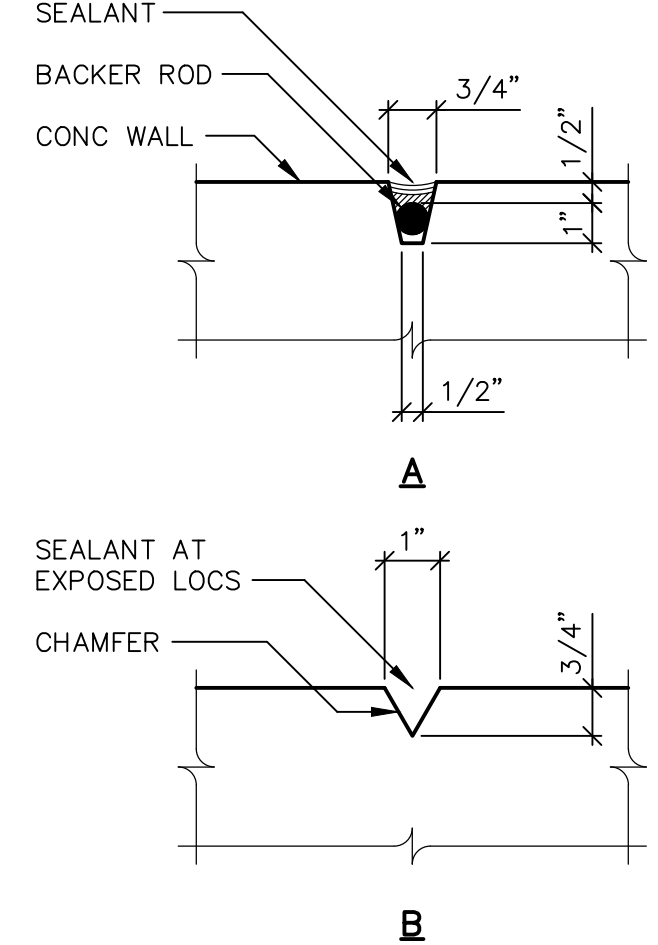
2 ELEVATION
S-201 SCALE: 3/32" = 1'-0"



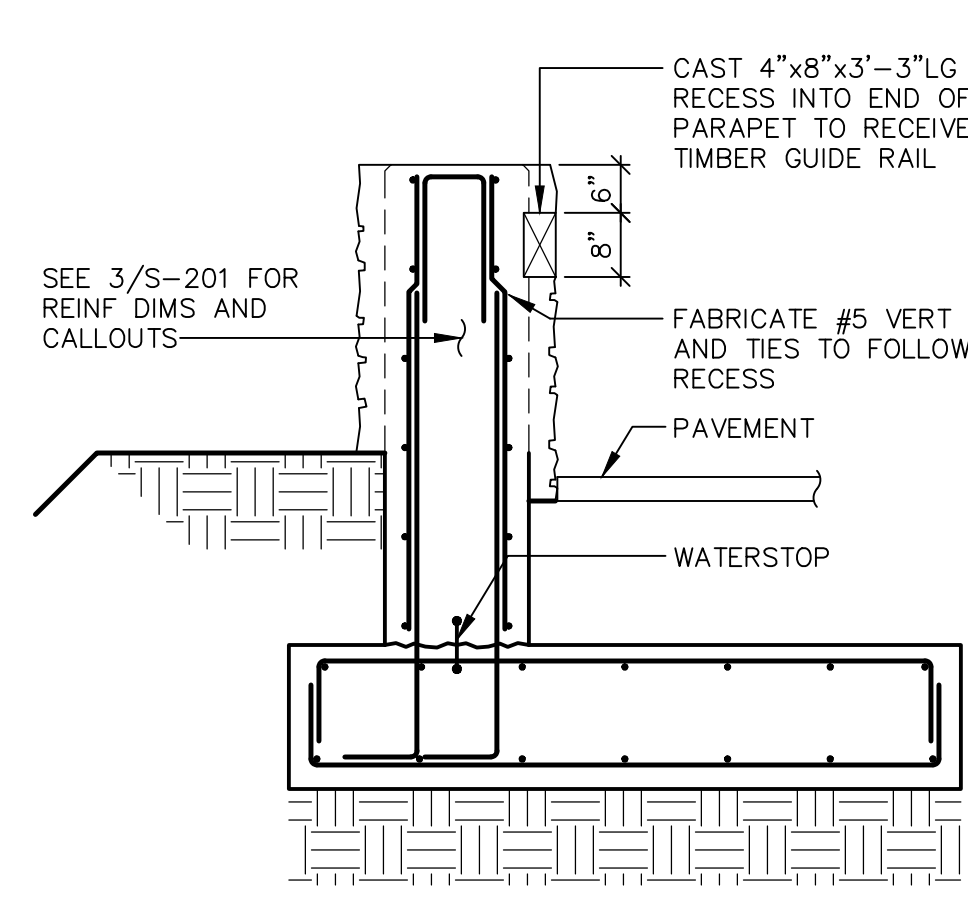
3 PARAPET SECTION
S-201 SCALE: 1/2" = 1'-0"



4 WALL CONSTRUCTION JOINT
S-201 SCALE: 3/4" = 1'-0"



5 WALL JOINT DETAIL
S-201 NOT TO SCALE



6 TRANSITION SECTION
S-201 SCALE: 1/2" = 1'-0"

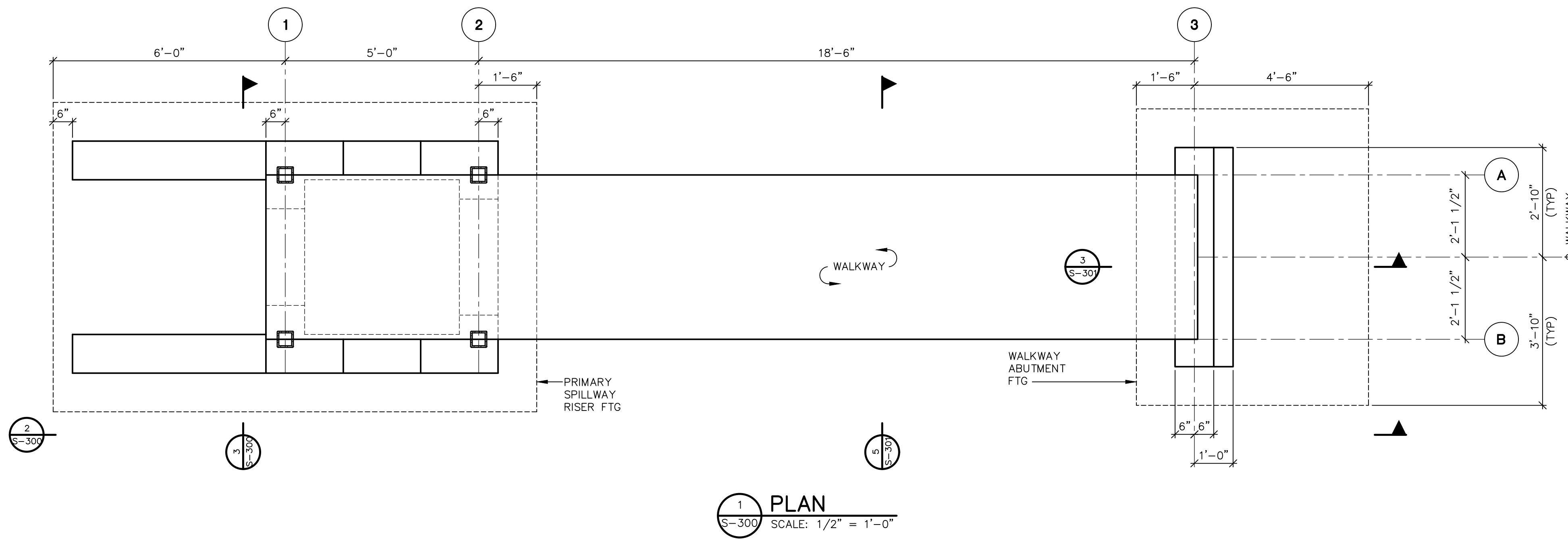


7 SECTION
S-201 SCALE: 1/2" = 1'-0"

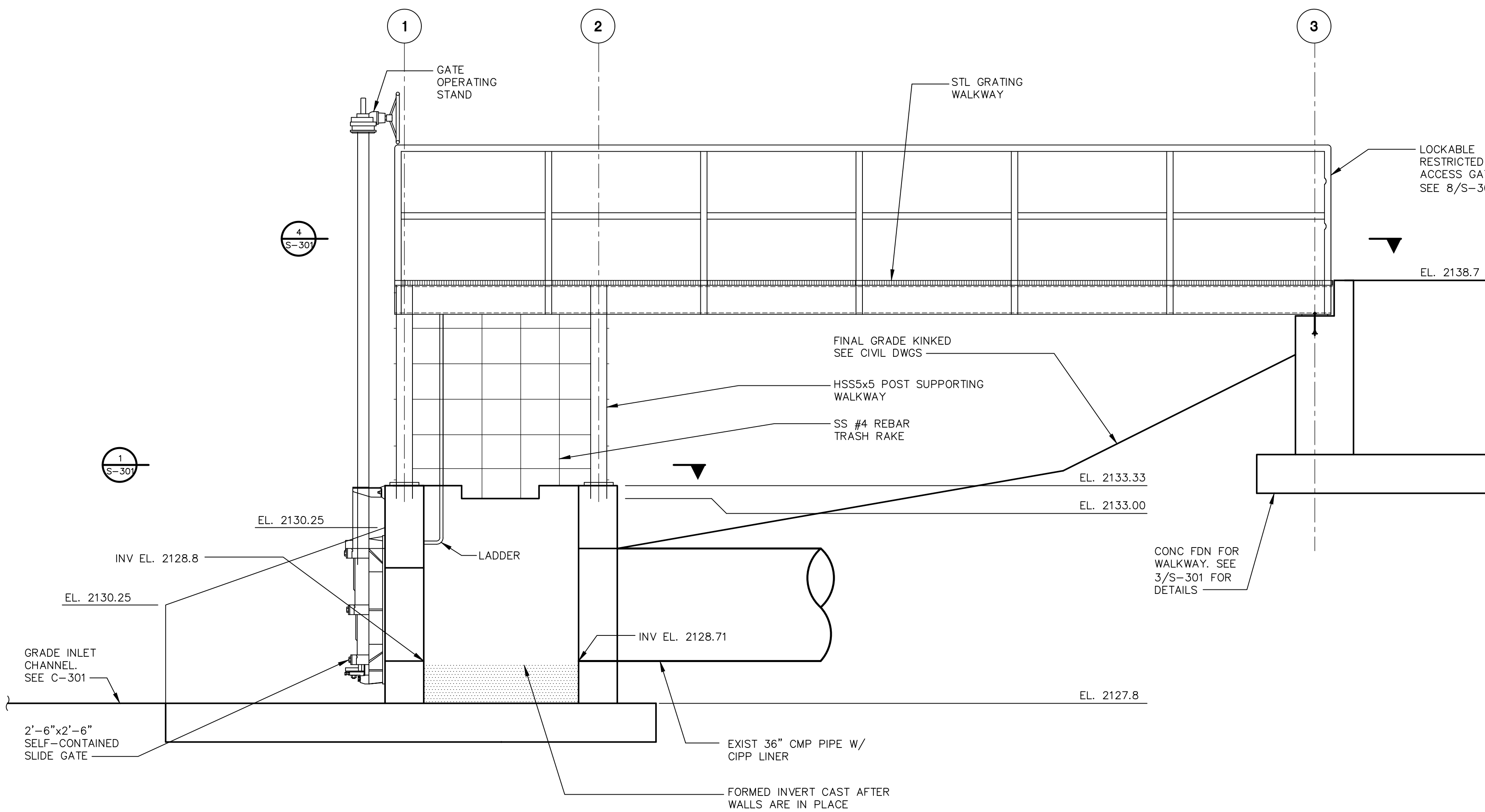
NOTE:
CONTRACTOR'S OPTION TO CAST PVC OR GALVANIZED STEEL CONDUIT SLEEVES INTO WALL IN LIEU OF "GREASE AND WRAP".

NOTES:
1. USE "A" AT WALLS GREATER THAN 12" THICK AND AT JOINTS WHICH ARE EXPOSED.
2. USE "B" AT WALLS WHICH ARE CONCEALED AND ARE 12" THICK OR LESS.
3. BACKER ROD AND SEALANT ARE ONLY REQUIRED AT EXPOSED LOCATIONS.

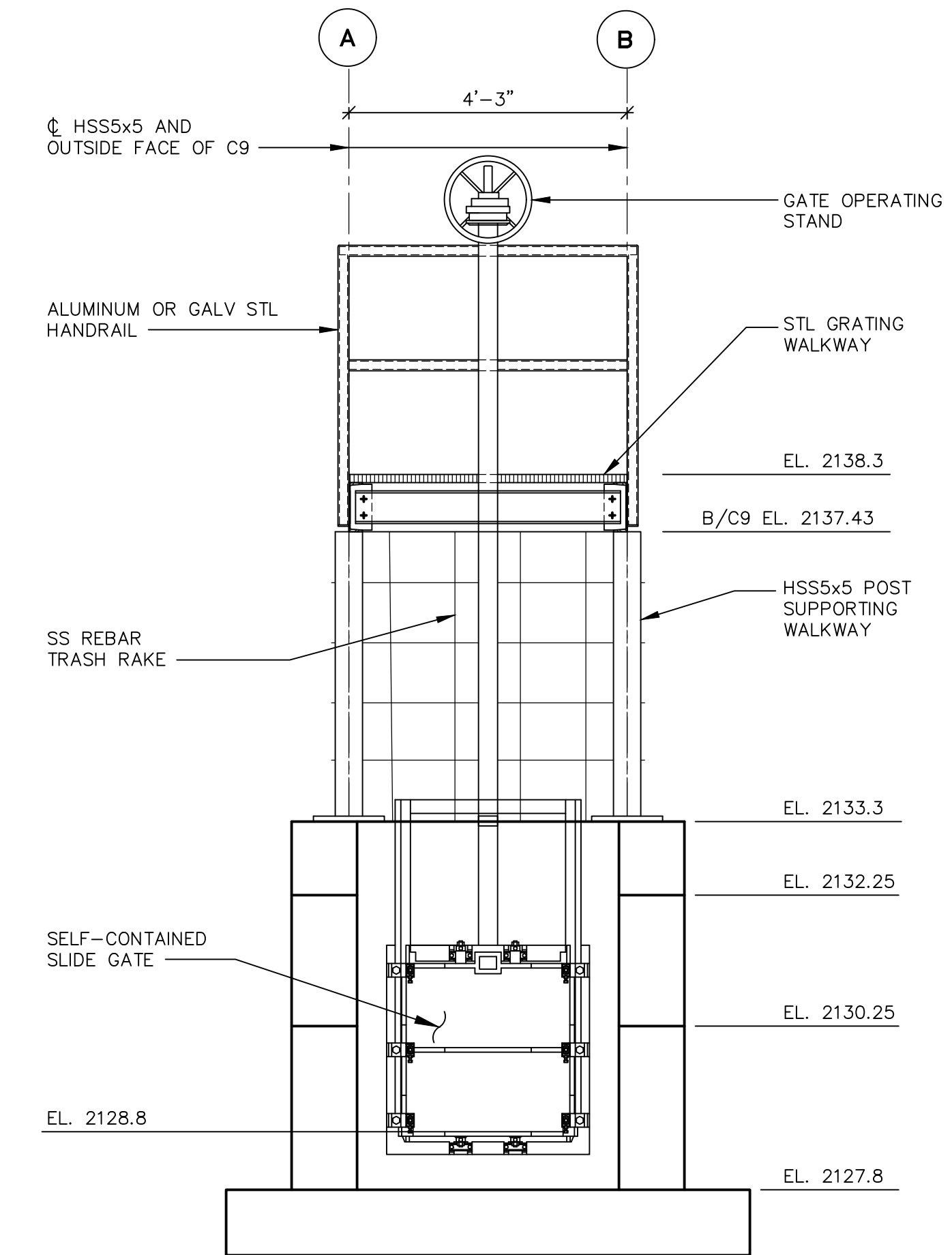
MARK	DATE	DESCRIPTION
B	3/15/2023	
A	11/1/2022	
PROJECT NUMBER:	-	
DESIGNED BY:	MGY	
DRAWN BY:	JMO	
FIELD CHECK:	-	
APPROVED:	-	
SHEET TITLE:		
DRAWING NUMBER:		



1 PLAN
S-300 SCALE: 1/2" = 1'-0"



2 SECTION
S-300 SCALE: 1/2" = 1'-0"



3 ELEVATION
S-300 SCALE: 1/2" = 1'-0"

CONSULTANT



WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS "A" MISDEMEANOR.

CONTRACT:

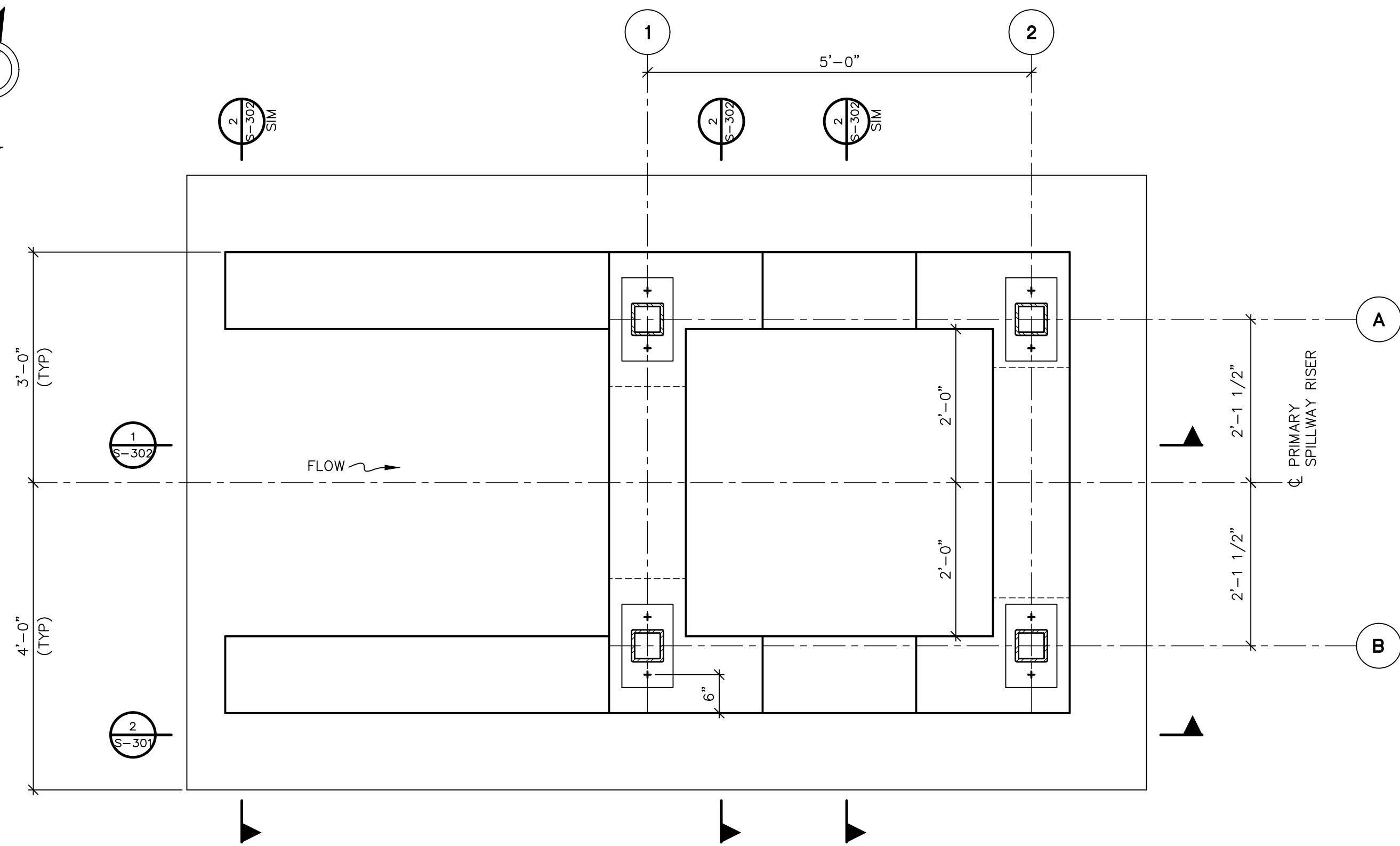
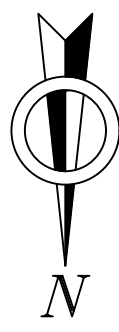
TITLE: SOUTH LAKE DAM REHABILITATION
NYS DEC ID 192-4560

LOCATION: TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK

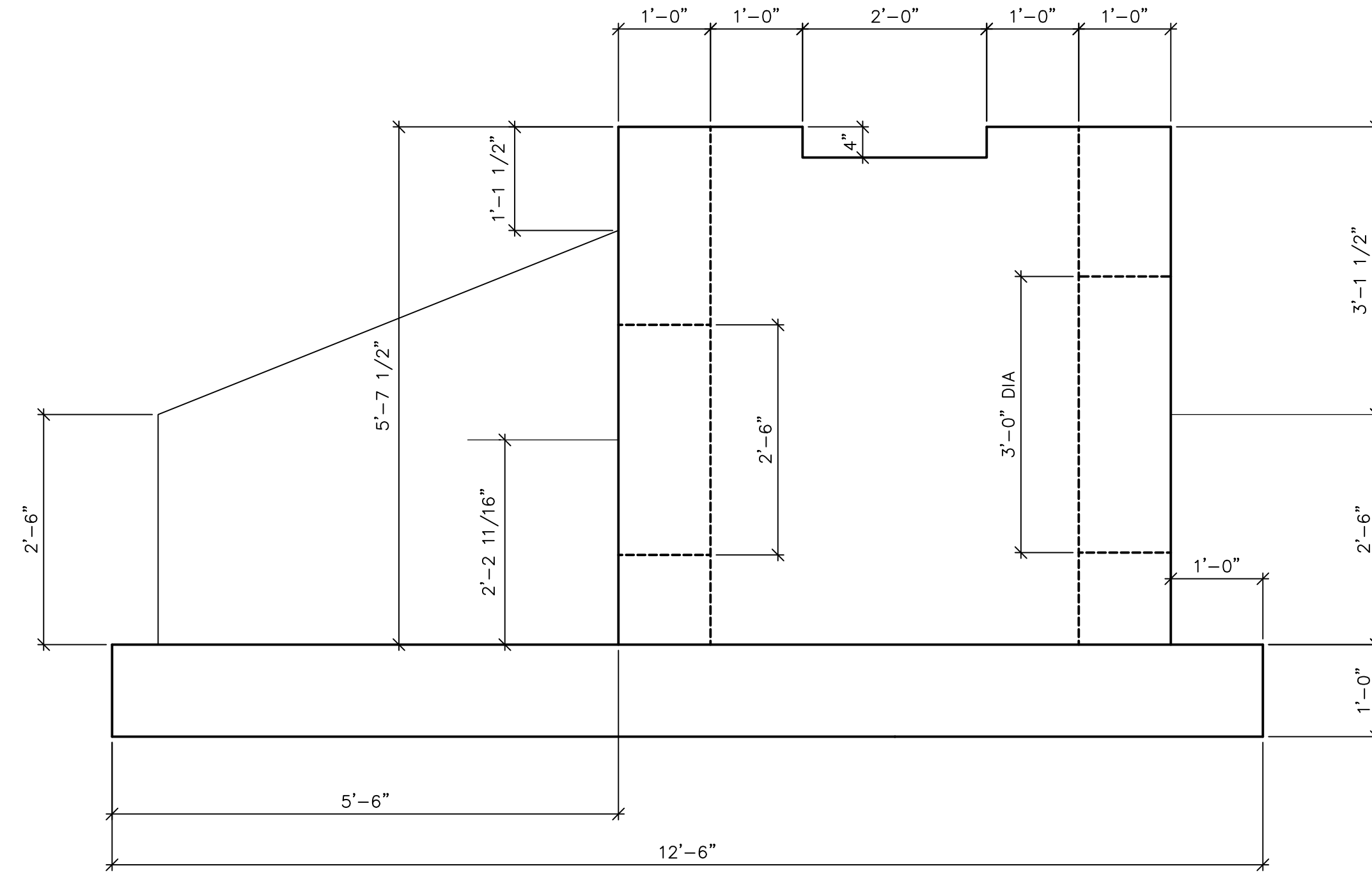
CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MARK	DATE	DESCRIPTION
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A	11/1/2022	
PROJECT NUMBER: -		
DESIGNED BY:		MGY
DRAWN BY:		SJW
FIELD CHECK:		-
APPROVED:		-
SHEET TITLE:		

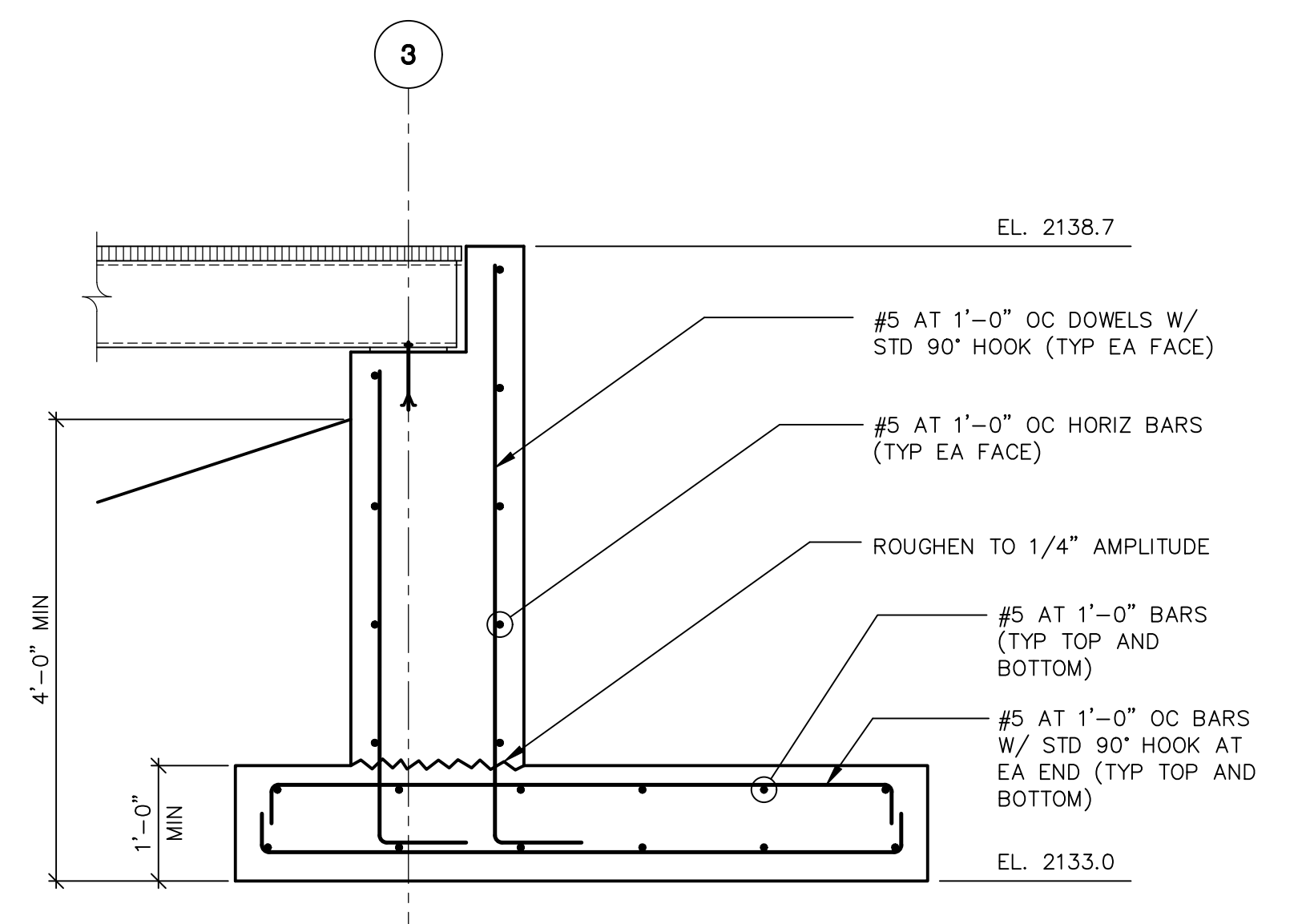
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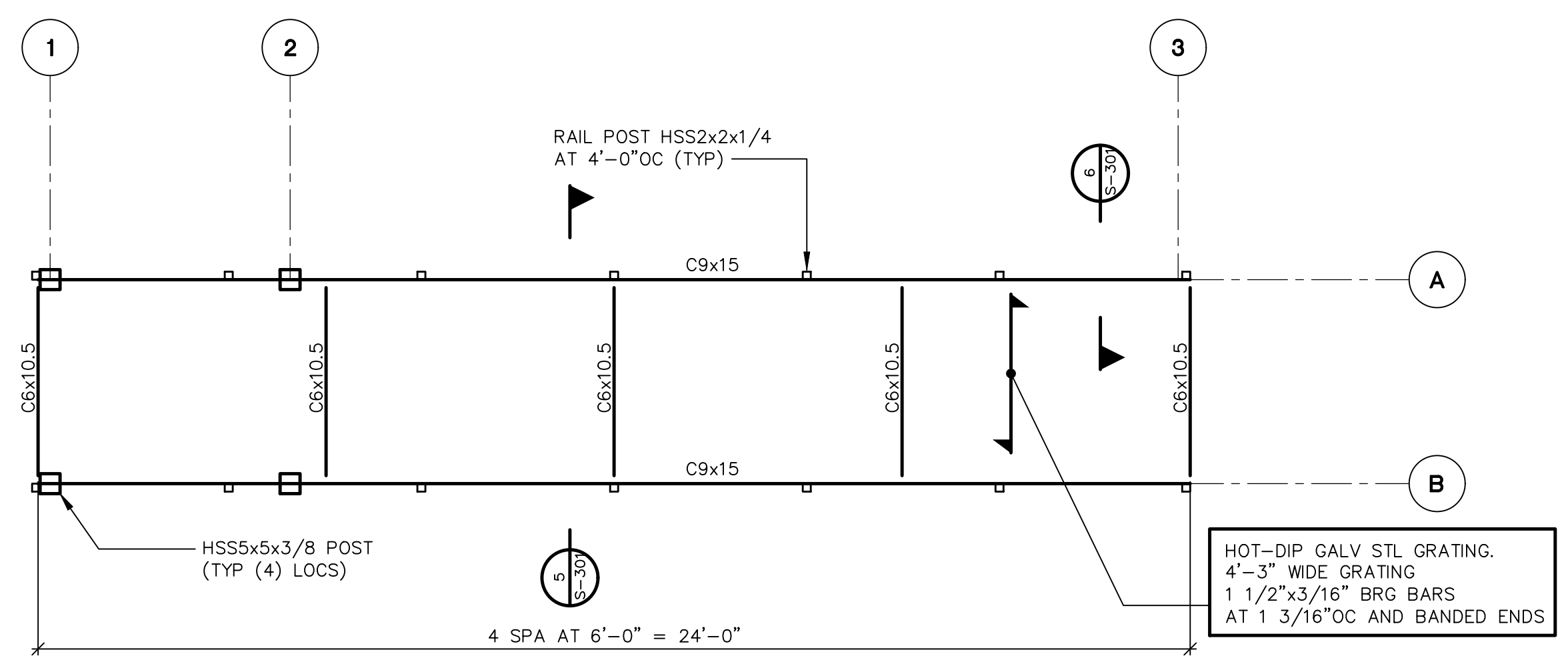
1 PRIMARY SPILLWAY RISER PLAN
S-301 SCALE: 3/4" = 1'-0"



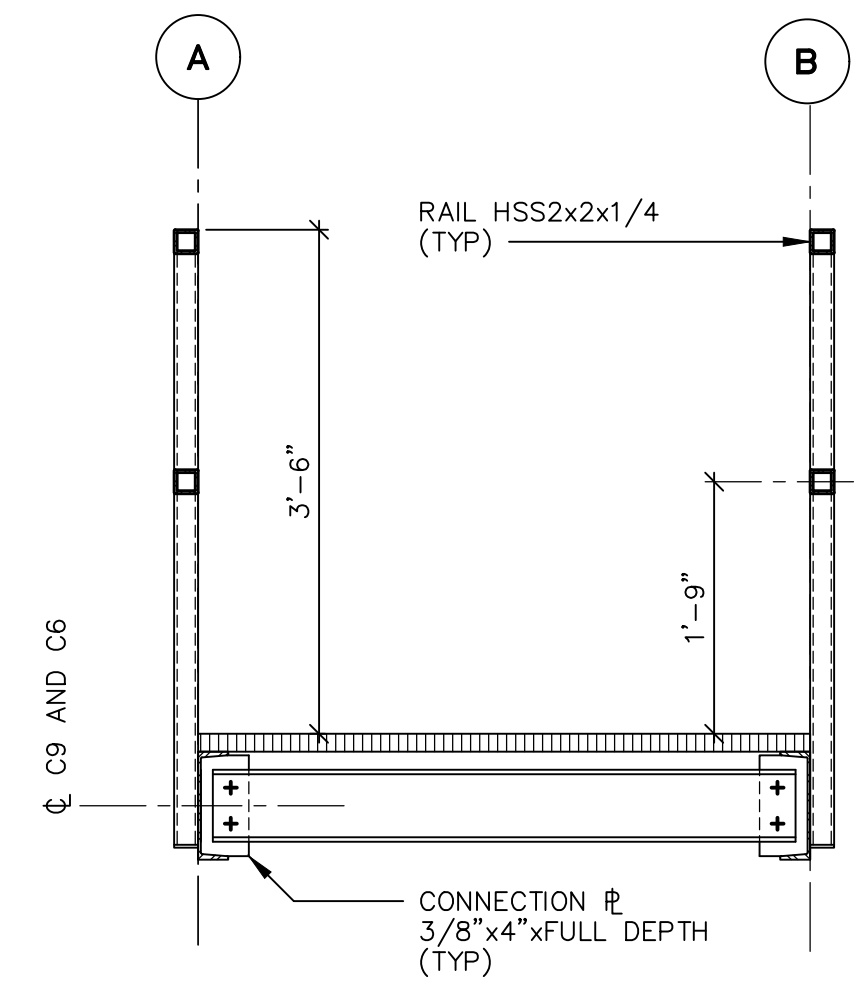
2 SECTION
S-301 SCALE: 3/4" = 1'-0"



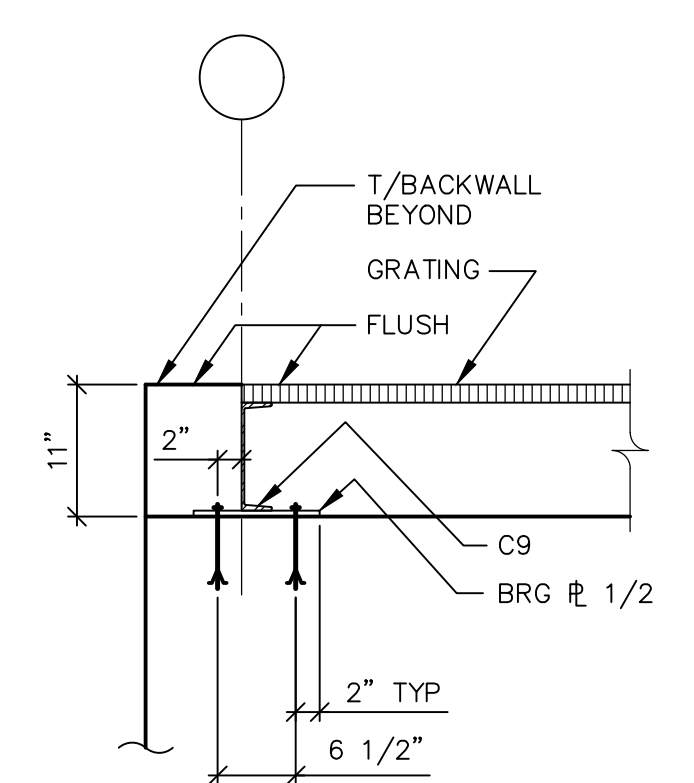
3 SECTION
S-301 SCALE: 3/4" = 1'-0"



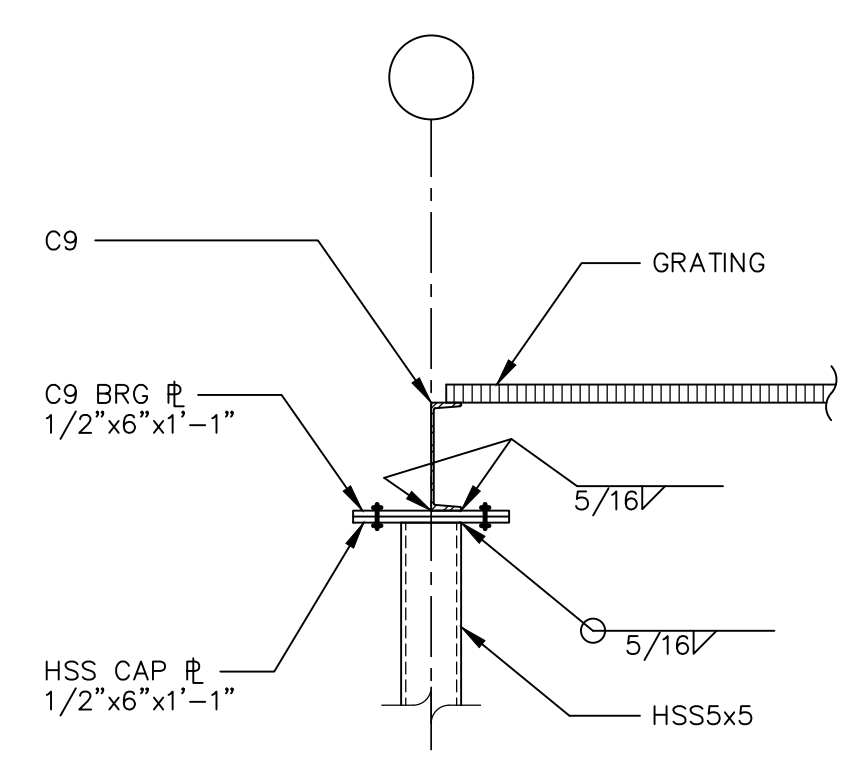
4 WALKWAY FRAMING PLAN
S-301 SCALE: 3/8" = 1'-0"



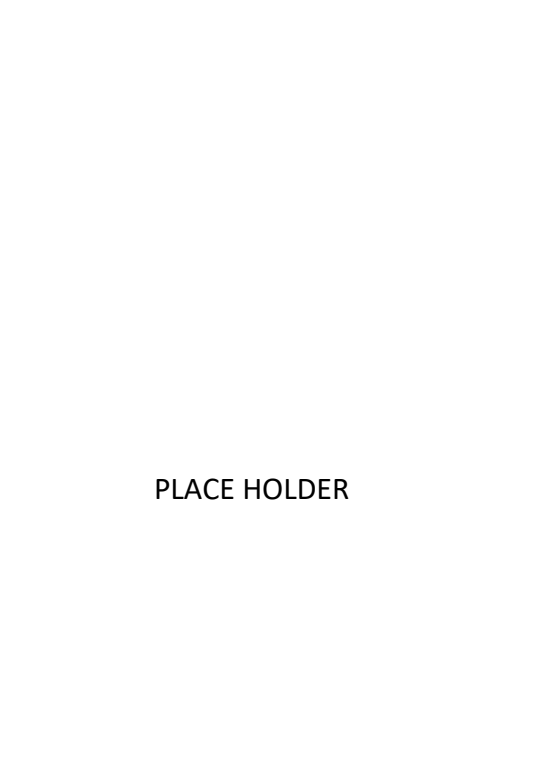
5 SECTION
S-301 SCALE: 3/4" = 1'-0"



6 SECTION
S-301 SCALE: 3/4" = 1'-0"



7 SECTION
S-301 SCALE: 3/4" = 1'-0"



8 GATE DETAIL
S-301 SCALE: 3/4" = 1'-0"

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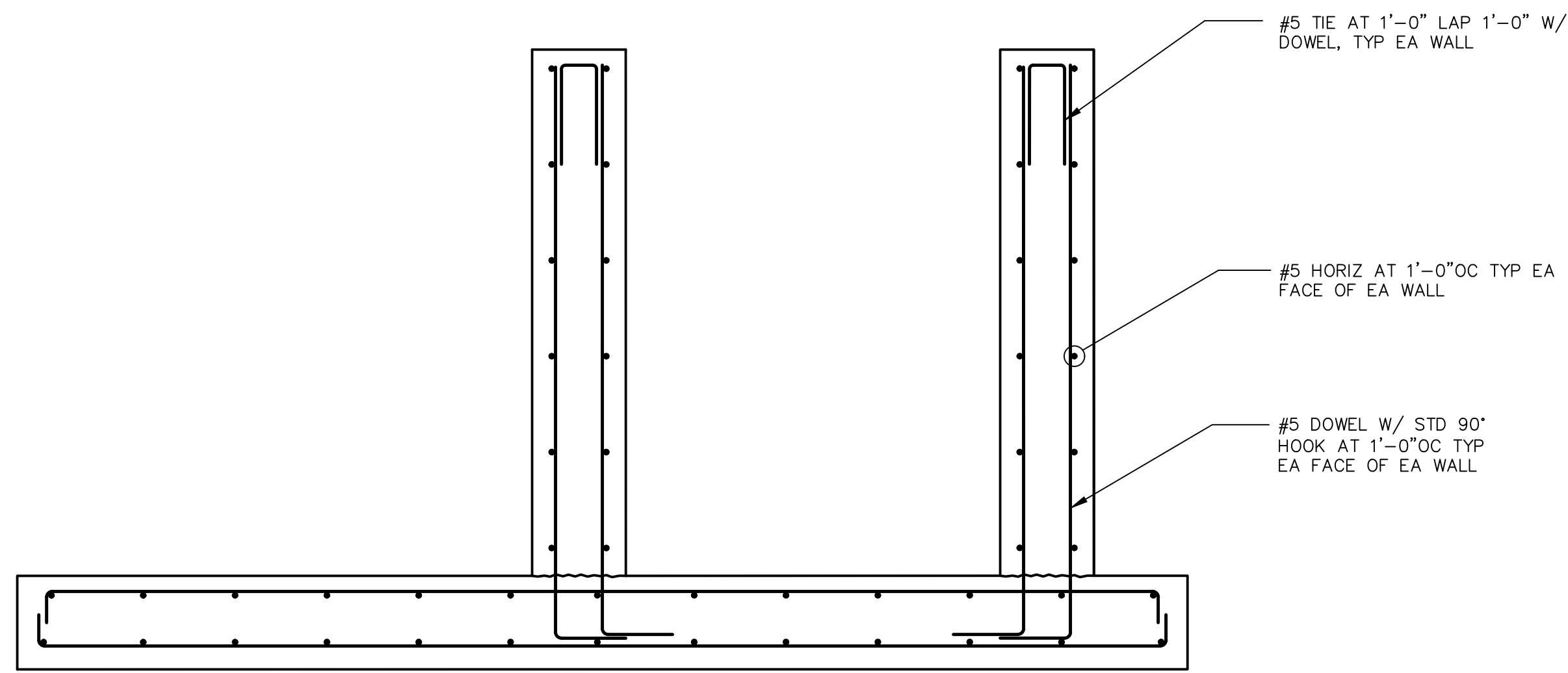
CONTRACT:

TITLE: SOUTH LAKE DAM REHABILITATION
NYS DEC ID 192-4560

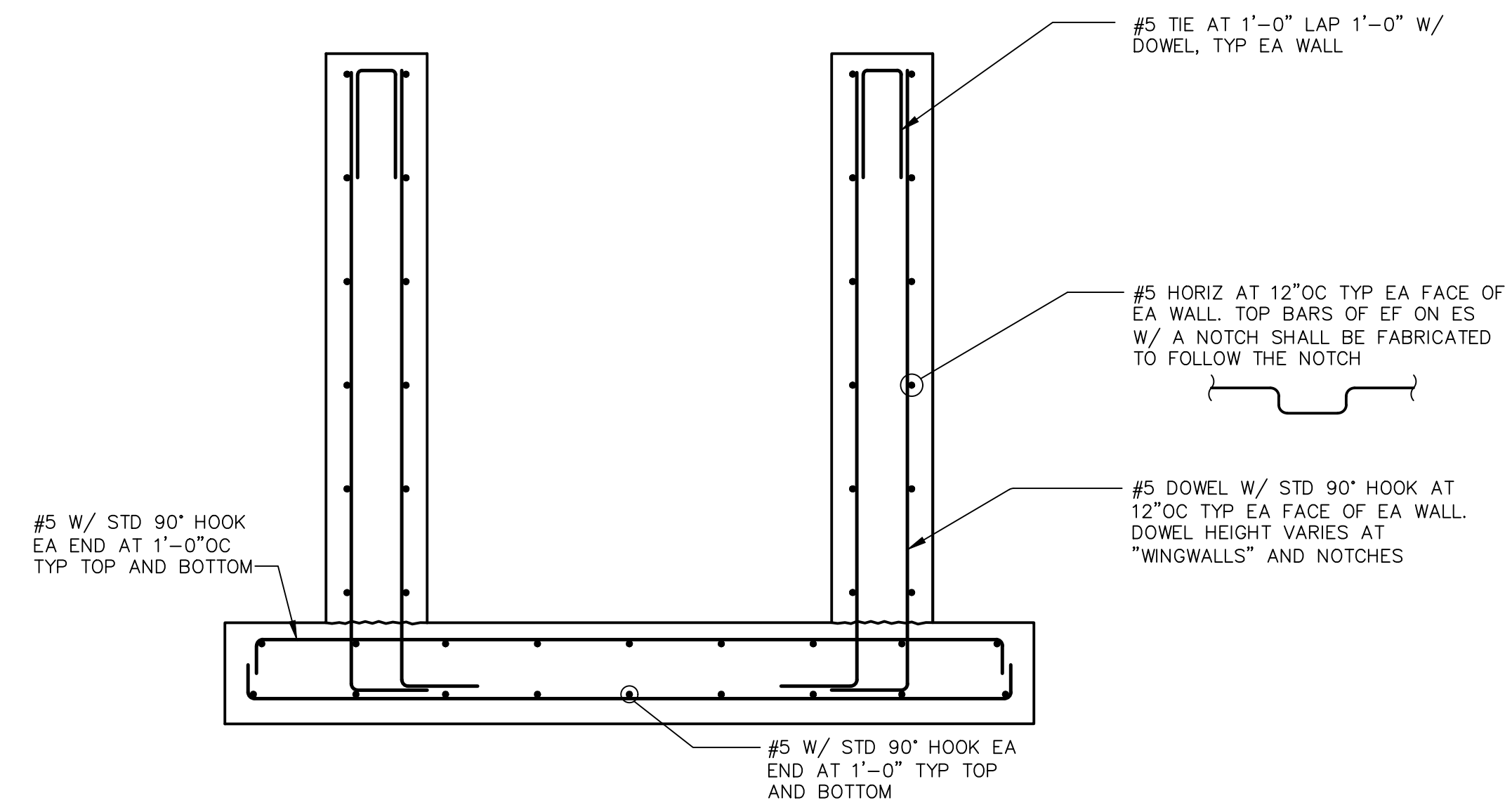
LOCATION: TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK

CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

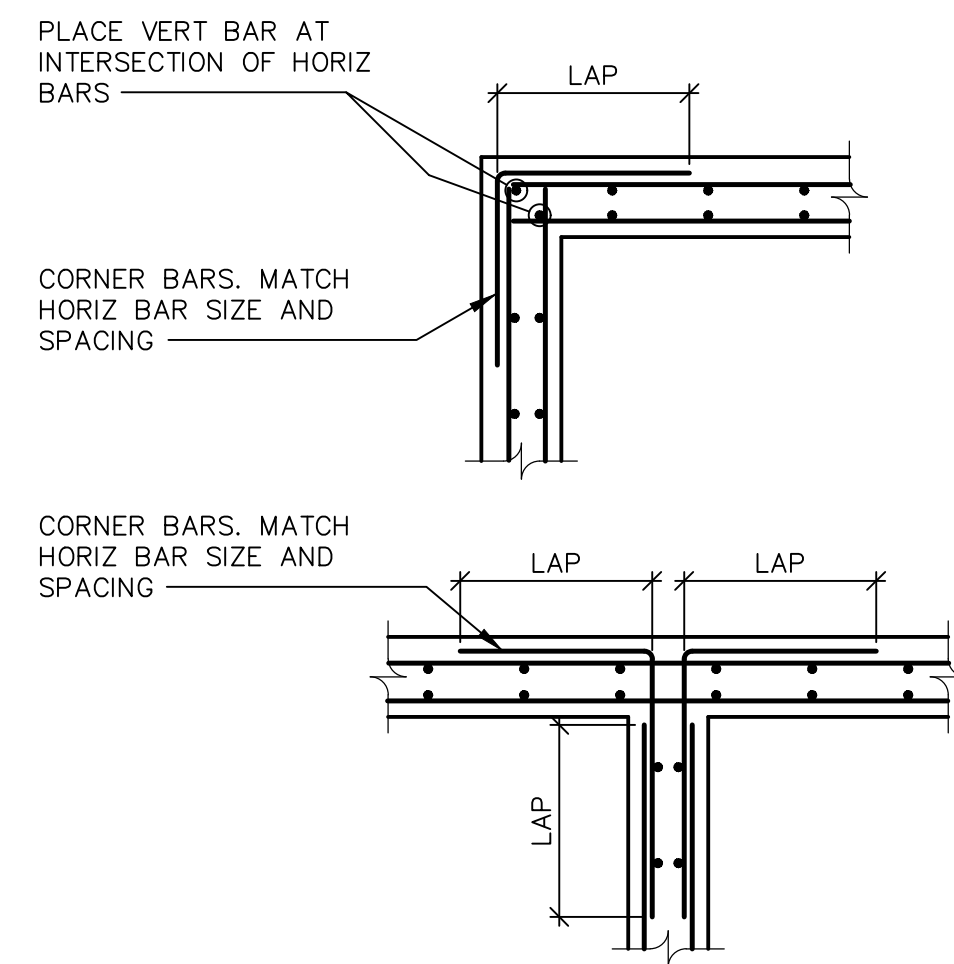
MARK	DATE	DESCRIPTION
B	3/15/2023	
A	11/1/2022	
PROJECT NUMBER: -		
DESIGNED BY:		MGY
DRAWN BY:		SJW
FIELD CHECK:		-
APPROVED:		-
SHEET TITLE:		
DRAWING NUMBER:		



1 SECTION
S-302 SCALE: 3/4" = 1'-0"

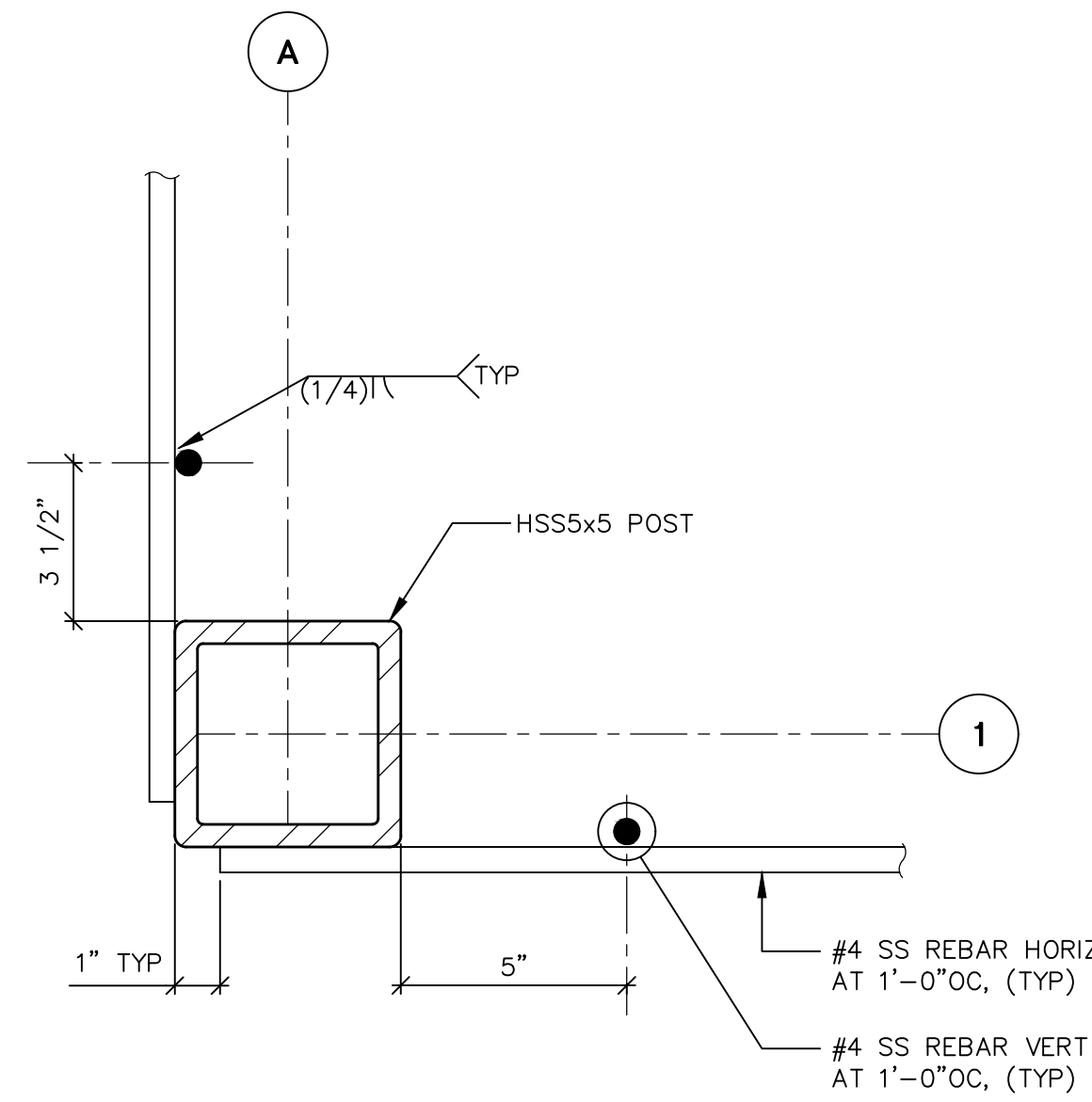


2 SECTION
S-302 SCALE: 3/4" = 1'-0"



3 TYPICAL WALL INTERSECTION REINFORCEMENT
S-302 SCALE: 1/2" = 1'-0"

NOTE:
LAPS ARE CLASS B, BUT NOT LESS THAN 2'-0".



4 DETAIL
S-302 SCALE: 3" = 1'-0"

CONSULTANT



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CONTRACT:

TITLE: SOUTH LAKE DAM REHABILITATION
NYS DEC ID 192-4560

LOCATION: TOWN OF HAINES FALLS
GREENE COUNTY, NEW YORK

CLIENT: NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MARK	DATE	DESCRIPTION
B	3/15/2023	
A	11/1/2022	
PROJECT NUMBER: -		
DESIGNED BY:		MGY
DRAWN BY:		SJW
FIELD CHECK:		-
APPROVED:		-
SHEET TITLE:		

DRAWING NUMBER:

APPENDIX E

60 Percent Design Report