



Title:	Approval of 90% Design Plans for the East Auburn Wetland Restoration Project and Authorization to Solicit Bids	
Resolution number:	25-024	
Prepared by:	Rachel Baker, Planner-Project Manager Phone: (952) 641-4522 rbaker@minnehahacreek.org	
Reviewed by:	Michael Hayman, Project Planning Director	
Recommended action:	The Board of Managers approves final design of the weir and boardwalk system at the East Auburn Wetland Project and authorizes the District Administer to solicit bids for construction during optimal bid window, projected to be mid-summer 2025.	
Schedule:	April 2025 – Final design completed and bid set prepared Summer 2025 – bid solicitation and construction contracting Fall 2025 – notice of award for construction Winter 2025-2026 – construction of weir and boardwalk	
Budget considerations:	Fund name and code: East Auburn Wetland Restoration (3160) Fund budget: \$550,000 Expenditures to date: \$78,516	
Past Board action:	Res # 24-063	Authorization to amend the design contract for the East Auburn Wetland Restoration Project
	Res # 24-032	Authorization of contract execution for design of East Auburn Wetland Restoration Project in the Six Mile Creek – Halsted Bay Subwatershed
	Res # 24-015	Ordering of the East Auburn Wetland Restoration Project and Authorization to Release a Request for Proposals for Design and Engineering Services
	Res # 22-085	Authorization to Award Contract for East Auburn Wetlands Feasibility Study
	Res # 22-063	Authorization to release a Request for Proposals for the East Auburn Wetlands feasibility study.

Summary:

The 2017 Watershed Management Plan (WMP) for the Minnehaha Creek Watershed District (MCWD) states that the main cause of impairments in East Auburn Lake is phosphorus being exported from nearby wetlands and entering the lake. The WMP also identifies the wetland systems between Wassermann Lake and East Auburn Lake (East Auburn Wetland or wetland) as a potential restoration opportunity to address nutrient export to downstream East Auburn Lake.

In early 2023, MCWD contracted with Moore Engineering to complete a feasibility study that identified opportunities to address phosphorus export from the East Auburn Wetland. The feasibility report identified hydrologic restoration of the wetland through the installation of an outlet control structure (sheet pile weir) as the most cost-effective and feasible opportunity to reduce nutrient export from the wetland system by approximately 50% to East Auburn Lake while restoring the wetland to a more natural hydrologic condition.

At the January 25, 2024 meeting, the Board received an update from staff on the outcomes of the feasibility study and staff's recent coordination to initiate project design with the City of Victoria (City), which owns the land on which the project will occur. The Board was informed that the City supports the District's project goals and wishes to facilitate project development and implementation, and potentially integrate trail improvements (boardwalk reconstruction) along with the proposed outlet control structure.

On March 14, 2024, by Resolution 24-015, the Board, after public hearing, ordered the project. On May 9, 2024, following a competitive request for proposal process, MCWD selected Moore Engineering as the consultant for the design of the outlet control structure, and a potential new boardwalk, in consideration of the water quality benefits to downstream East Auburn Lake.

Staff provided a 30% design update at the Policy and Planning Committee on August 22, 2024. On November 21, 2024, the Board of Managers authorized the District Administrator to amend the agreement between MCWD and Moore Engineering to include additional geotechnical and engineering services, revised boardwalk design efforts, and additional coordination tasks to complete design of the project.

At its February 27, 2025 meeting, the Board of Managers received a 60% design update highlighting the results of the geotechnical investigation and revised weir and boardwalk design. Staff also provided the anticipated project schedule and remaining design steps, including project permitting and technical specification development.

On March 25, 2025, MCWD and the City hosted a public meeting at Victoria City Hall, which had been noticed to all residents within 1,000 feet of the project, to provide information on the restoration project and gather feedback from interested residents within proximity of the Project. The meeting was well attended and included participation from the City Engineer; there seemed to be overall support of the project.

Final Design Report:

The project has reached the 90% design milestone, which includes 90% plan sets, a technical memo, draft technical specifications, and modeling results. Design of both the sheet pile weir and the boardwalk are informed by a geotechnical evaluation, completed in December 2024. Additionally, all permit applications (MCWD, DNR, and WCA) have been submitted and are under review.

Sheet pile weir

The objective of the control structure is to retain 6-12 inches of water behind the weir, thereby preventing leaching of phosphorus-rich groundwater and mobilization of phosphorus to the ditched channel and subsequent transport downstream during precipitation events. This work will also restore the degraded wetland by re-engineering the hydrology to replicate its natural wetland function.

The designed sheet pile weir spans the width of the wetland at its narrowest point, bisecting the ditched channel of Six Mile Creek. The weir will be 138.2 feet long and will contain a single, 42.5-foot-wide notch where the water will pass through. The sheet pile will be driven 16 feet deep into the ground and will sit one to two feet above the wetland surface, depending on the position within the wetland. Modeling of the weir shows that there are no water level impacts to the nearby waterbodies – Carl Krey, Wassermann, or East Auburn – during design storm events.

Boardwalk

The length, location, and general appearance of the designed boardwalk matches the existing, failing boardwalk. The boardwalk system consists of steel stringers and timber decking, positioned on top of helical piers. The system will maintain a toe-curb along the edge for safety. Instead of the current ten-foot width, the designed boardwalk will have a width of eight feet. The boardwalk will maintain a 4% or less grade change, which meets ADA and MnDOT bike standards.

Cost

The boardwalk is included in the final design as a bid alternate, allowing firms to bid on just the weir, or both the weir and boardwalk. This format also allows for the City, which will bear the boardwalk construction cost, to review the bid

price for that element of the work and affirm its decision to proceed with it. The opinion of probable cost (estimate) of the project, broken down by project element and payer responsibility, is shown in the table below:

Project Element	Cost Estimate
Base Bid – Weir	\$336,855
<i>Base Bid – Construction Engineering</i>	<i>\$33,000</i>
Add Alternate – Boardwalk	\$227,830
<i>Add Alternate – Construction Engineering</i>	<i>\$13,000</i>
Total	\$610,685

MCWD is responsible for funding construction of the weir, as well as mobilization and any related lump sum project-wide cost. The term sheet for the project agreement (attachment 2) specifies that MCWD will fund construction of the boardwalk refurbishment upfront, and the City will repay MCWD in 20% increments over the next five years, beginning in 2026 upon completion of the project. The City will remain responsible for the boardwalk’s maintenance, and MCWD will own and maintain the weir.

At the April 10, 2025 Board of Managers meeting, staff will give a presentation outlining 90% design plans of both the weir and the boardwalk. After any final Board input, final review and preparation of the plan set and technical specifications for bid will be underway, constituting 100% design completion. Staff will recommend that the Board approve 90% design plans and authorize the District Administer to solicit construction bids in the summer of 2025, with condition that a City agreement be signed prior to seeking bids.

Attachments

- East Auburn Wetland Restoration 90% Design package
- City Term Sheet



RESOLUTION

Resolution number: 25-024

Title: Approval of 90 Percent Design Plans for the East Auburn Wetland Restoration Project and Authorization to Solicit Bids

- WHEREAS the Minnehaha Creek Watershed District (MCWD) has developed a plan for the Six Mile Creek-Halsted Bay Subwatershed (SMCHB) that identifies implementation strategies to achieve MCWD's goals of protecting and improving water quality, water quantity, ecological integrity, and thriving communities through land use and water integration;
- WHEREAS the MCWD Watershed Management Plan (WMP) identifies the wetlands between Wassermann Lake and East Auburn Lake as the location of a capital investment to reduce watershed nutrient loading to improve water clarity and create a more abundant and diverse aquatic vegetation community in East Auburn Lake;
- WHEREAS in 2021 and 2022, MCWD staff conducted a refined water quality sampling, hydrology, and vegetation analysis in the wetland system between Wassermann Lake and East Auburn Lake to identify specific areas within the wetland responsible for the majority of the phosphorus export;
- WHEREAS the analysis indicated that the wetland cell (the "Cell 1 Wetland") directly downstream of the outlet of Wasserman Lake is the primary driver of phosphorus export to East Auburn Lake, indicating total phosphorus concentration in groundwater is much greater than that in the stream channel and that the phosphorus in groundwater and wetland soil is mobilizing and exporting to downstream East Auburn Lake;
- WHEREAS between December 2022 and October 2023, Moore Engineering conducted a feasibility study for the East Auburn Wetland; in October 2023, Moore Engineering delivered its final report to MCWD, assessing seven alternative approaches to nutrient reduction in the Cell 1 Wetland, and identified hydrologic restoration of the wetland through the installation of an outlet control structure as the most feasible and cost-effective opportunity to reduce nutrient export to East Auburn Lake;
- WHEREAS on January 25, 2024, the MCWD Board of Managers (the "Board") reviewed the feasibility report and directed staff to continue partnership discussions with the City of Victoria (the "City") to effectively advance the project;
- WHEREAS on February 26, 2024, the City Council adopted a resolution of support that expressed the City's support for the East Auburn Wetland Restoration project; authorized the MCWD to access city land within the project area to perform surveys and investigations for the purpose of project design; and authorized city staff to work with MCWD staff to develop project agreements, easements or other documents necessary for the District to construct and maintain the project on city land, and bring such documents forward for consideration by the City Council;
- WHEREAS on March 14, 2024, the Board, after public hearing, ordered the East Auburn Wetland Restoration Project, including boardwalk reconstruction adjacent to the weir (the "Project") and on May 9, 2024, the Board authorized execution of a contract for design and engineering services for the Project with Moore Engineering;

WHEREAS on August 22, 2024, the Board reviewed the 30% design memorandum and plan sets for the Project and provided feedback and direction to staff for continued design work;

WHEREAS on November 21, 2024, the Board authorized the District Administrator to amend the agreement between MCWD and Moore Engineering, Inc. to include additional geotechnical and engineering services, revised boardwalk design efforts, and additional coordination tasks to complete design of the Project;

WHEREAS on February 27, 2025, the Board reviewed the 60% design memorandum and plan set for the Project;

WHEREAS on March 25, 2025, MCWD and the City hosted a public meeting at Victoria City Hall, which had been noticed to all residents within 1,000 feet of the project, to provide information on the restoration project and gather feedback from interested residents within proximity of the Project;

WHEREAS on April 10, 2025, the Board reviewed a final design memorandum, 90 percent design plans, and technical specifications containing design details for a sheetpile weir to be constructed in the wetland that will reduce nutrient loading and hydrologically restore the wetland as identified in the feasibility study, and a boardwalk refurbishment conforming to City specifications;

NOW, THEREFORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers approves the 90 percent design for the East Auburn Wetland Restoration Project and directs the engineer to prepare conforming final plans for the purpose of soliciting bids;

BE IT FURTHER RESOLVED that the MCWD Board of Managers authorizes the District Administrator, on advice of counsel, with the condition that City Agreement be signed prior to bid solicitation, to solicit bids for construction during the appropriate bid period in order to contract and complete construction of the Project during the winter of 2025-2026.

Resolution Number 25-024 was moved by Manager _____, seconded by Manager _____. Motion to adopt the resolution ___ ayes, ___ nays, ___ abstentions. Date: April 10, 2025.

Secretary Date: _____

Memorandum

Date: April 1st, 2025

Prepared By: Dan Elemes, PE
Quentin Scott, PE
Jeff Madejczyk

Project: East Auburn Wetland Restoration

Subject: 90% Design Technical Memorandum

Narrative:

Minnehaha Creek Watershed District (MCWD) hired Moore Engineering, Inc. (Moore) to design a sheet pile weir in a wetland in Victoria, MN. The wetland is located between Wassermann Lake (upstream) and East Auburn Lake (downstream) as shown in Figure 1. Studies conducted by MCWD and its consultants identified the wetland as a contributor of phosphorus to East Auburn Lake. MCWD funded a feasibility study in 2023 to evaluate potential improvement alternatives to prevent phosphorus from leaching from the wetland into the lake. One of the improvement options, a sheet pile weir, was selected for implementation.

Several other alternatives, including backfilling the channel, placing absorptive media in the channel, regrading the wetland, excavating within the wetland, treating the in-place sediment, and an alum treatment system were considered. As discussed in detail in the 2023 feasibility study, the sheet pile weir ranked highest when evaluated against the other alternatives based on impacts to the wetland, permitting complexity, engineering complexity, TP export reduction, capital costs, O&M costs, time scale, risk, and ability to mitigate that risk. The do-nothing alternative was discarded as this would continue discharging high concentrations of phosphorus to the lake. Sheet pile was selected rather than beaver dam analogs due to the relatively wide structure needed to manage water levels, and the expected sensitivity of floodplain management. Therefore, the sheet pile weir concept was selected to advance into further design. This memorandum describes Moore's design of the sheet pile weir and the effects on adjacent water levels.



Figure 1: Project Location

Existing Conditions

The existing East Auburn wetland complex contains four cells as shown in Figure 2. Cell 1 is the upstream most cell and receives water from Wassermann Lake. The wetland, and particularly Cell 1, has been identified as a source of phosphorus loading to East Auburn Lake. This finding was documented in the East Auburn Wetland Phosphorus Analysis (Beck, 2019), which was completed to better understand phosphorus loading to the lake. Cell 1 was identified as the most likely source of phosphorus release. Subsequent studies determined phosphorus leaching from Cell 1 occurs during dry conditions, where phosphorus leaches out of Cell 1's underlying soil and is discharged to the lake.

Six Mile Creek flows through the wetland complex, connecting Wasserman and East Auburn Lake. Within the proposed project area, there is a pedestrian trail on either side of Cell 1 that is connected by a boardwalk that roughly separates Cell 1 and Cell 2.



Figure 2: Wetland Complex

Proposed Conditions

A 2023 feasibility study identified installing a sheet pile weir to prevent the underlying soil in Cell 1 from drying out, by raising the wetland's normal water level with the intent of maintaining saturated conditions for the underlying soil and preventing phosphorus-rich groundwater from draining through the channel that cuts through the wetland cells. Under existing conditions, the channel through Cell 1 is at an elevation of 942.21 (unless clearly stated otherwise, all elevations referenced in the body of the text are in reference to the North America Vertical Datum of 1988 (NAVD88)). The proposed sheet pile will have a low flow runout elevation set to 943.9. The sheet pile will be installed along the entire length of the wetland offset from the boardwalk. Depending on future discussions between MCWD and the City, the boardwalk may be replaced in conjunction with the sheet pile weir, but as a separate structure.

Methodology and Objectives

Moore received an existing XPSWMM model from MCWD that has the entire watershed modeled and is maintained and updated by MCWD. Moore truncated the model to focus on the Six Mile Creek (SMC) watershed, which includes the wetland complex, Wassermann Lake, and East Auburn Lake. The wetland complex was subdivided into its four cells, as the provided model considered the entire wetland complex as a single cell. Subdividing the single complex into its four cells allows for an understanding of cell-specific high-water levels, discharge rates between the cells, and how constructing the sheet pile weir could affect adjacent properties. This approach is necessary to demonstrate how the project and its impacts meet MCWD regulations regarding floodplain management, discharge rates, high-water levels, and other rules.

Moore updated modeled culverts and natural channels with collected survey data. New, cell-specific storage curves were developed based on LiDAR. It should be noted that modeled elevations in the MCWD XPSWMM model are in the National Geodetic Vertical Datum of 1929 (NGVD29). In the location of the project, NAVD88 is 0.23 feet higher than NGVD29. Moore converted survey data and LiDAR from the NAVD88 datum to the NGVD29 datum for purposes of updating the model.

Hydraulic connections from one cell to another were input based on survey information. Overflows between the cells were supplemented based on LiDAR, where survey information was unavailable. The fish barrier at Wasserman's outlet was added to the model based on MCWD provided information. Hydrologic inputs were updated to reflect the smaller, cell-specific drainage area, for all four cells. Moore executed the model to evaluate existing conditions. A sheet pile weir to control water levels on Cell 1 was added to the existing model as a subsequent "Scenario" to create a proposed model. In the proposed model, Cell 1 hydrology inputs were modified as follows:

- Percent impervious updated to assume Cell 1 maintains its water level at the runout elevation of 943.9, and the permanent pool of water acts as "impervious" surface. This increased impervious acreage modeled by slightly more than five acres (eight percent). This has the net effect of increasing runoff volume by about two acre-feet for the 100-year event. This approach is intentionally conservative and follows typical modeling practice for a "wet pond".
- Manning's n value modified from 0.014 to 0.08 in "Infiltration" input menu for impervious surfaces. Justification: assuming a roughness of 0.014 for flow through dense vegetation such as cattails and reed canary grass is likely inaccurate. Impervious areas were ratioed based on assuming a Manning's value of 0.014 for non-wetland impervious area, and 0.410 for wetland impervious area (equivalent of Bermuda Grass, according to TR-55).
- Percent zero detention modified from 50-percent to 42.65-percent in "Infiltration" input menu for impervious surfaces. Justification: partially submerged wetland vegetation likely does not behave in a similar manner as smooth, impervious pavement or roofs. This percentage was similarly ratioed based on upland impervious area and partially submerged wetland.

These modifications to hydrology were discussed with the MCWD District Engineer and MCWD staff, and generally were deemed reasonable approaches and assumptions as a.) the increased runoff volume is still accounted for in the model, b.) assuming/modeling partially submerged wetland vegetation functions similarly as the permanent pool maintained by a large body of water is conservative, and c.) it is not expected that the permanent pool of water will be perpetually maintained at its runout elevation of 943.9, as efforts undertaken in the feasibility study indicated that some amount of infiltration is to be expected by impounding a shallow depth of water over a lower groundwater table.

Moore designed the sheet pile weir with the design objectives summarized in Table 1 below.

Location	Existing 100-yr HWL	Design Objective
Lake Auburn	942.36	No-rise $\pm 0.00'$; in mapped Zone A floodplain
Carl Krey Lake	945.93	
Wasserman Lake	946.50	
Cell 1	945.51	Increase no greater than 946.0 allowed as this is within publicly owned land and estimated wetland boundaries
Cell 2	945.51	
Cell 3	943.98	No-rise $\pm 0.00'$; 100-year HWL is on private property
Cell 4	943.98	

Table 1: HWL Constraints

Hydraulic Findings

The sheet pile weir profile, shown in Figure 3 below and in Attachment 1, meets the objectives listed in Table 1 above. The no-rise objective, precise to ± 0.00 -feet, was achieved at Wasserman, Carl Krey, and Auburn Lakes, and at Cells 3 and 4. Cells 1 and 2 do increase, but within permissible limits.

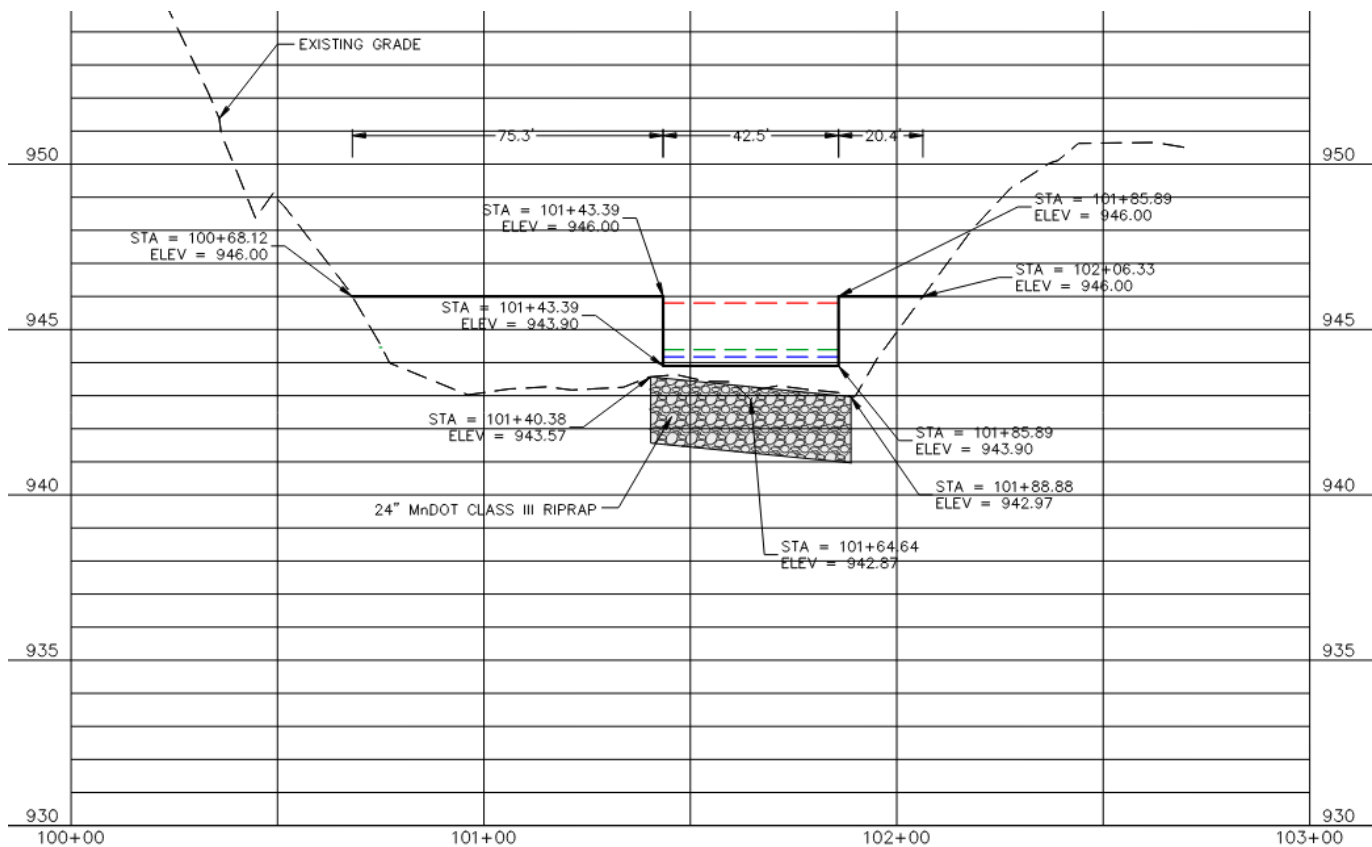


Figure 3: Sheet Pile Profile

Table 2 through Table 4 summarize modeled HWLs on the lakes and wetlands considered as part of this analysis. As shown in Table 2, there are no “rises” greater than 0.005-feet for Wasserman, Carl Krey, Auburn, or Cells 3 and 4. Table 5 presents existing and proposed discharge rates out of Cell 1. Rate control is provided for all storm events considered.

Proposed 100-yr HWL (NGVD29)			
Name	Existing	Proposed	Change (ft)
Wasserman Lake	946.50263	946.50755	+0.00492
Carl Krey Lake	945.92808	945.92808	±0.00000
Lake Auburn	942.36155	942.36246	+0.00091
Cell 1	945.50810	945.57358	+0.06548
Cell 2	945.50802	945.53661	+0.02859
Cell 3	943.97699	943.98189	+0.00490
Cell 4	943.97542	943.98032	+0.00490

Table 2: Proposed 100-yr HWLs

Proposed 10-yr HWL (NGVD29)			
Name	Existing	Proposed	Change
Wasserman Lake	945.27	945.27	±0.00
Carl Krey Lake	945.19	945.19	±0.00
Lake Auburn	941.56	941.56	+0.00
Cell 1	943.77	944.16	+0.39
Cell 2	943.77	943.80	+0.03
Cell 3	942.96	942.94	-0.02
Cell 4	942.94	942.92	-0.02

Table 3: Proposed 10-yr HWLs

Proposed 2-yr HWL (NGVD29)			
Name	Existing	Proposed	Change
Wasserman Lake	944.62	944.62	±0.00
Carl Krey Lake	944.63	944.63	±0.00
Lake Auburn	940.96	940.96	±0.00
Cell 1	943.38	943.94	+0.56
Cell 2	942.85	942.78	-0.07
Cell 3	942.52	942.49	-0.03
Cell 4	941.85	941.69	-0.16

Table 4: Proposed 2-yr HWLs

Discharge Rates (cfs)			
Storm Event	Existing	Proposed	Change
Wasserman Lake	76	19	-57
Carl Krey Lake	120	47	-73
Lake Auburn	165	82	-83

Table 5: Existing and Proposed Discharge Rates out of Cell 1

The velocities overtopping the weir are 1.7, 2.3, and 1.0 feet-per-second for the 2, 10, and 100-year events respectively. To protect against erosion riprap is recommended on the downstream side of the sheet pile weir. This will likely be considered wetland “fill” and will need to be permitted through the WCA process.

Water Quality Findings

The potential effects on water quality were considered extensively as part of the 2023 feasibility study. The 2023 study estimated that controlling Cell 1's water level would reduce its ongoing phosphorus export by approximately 50-percent. This would result in a reduction of phosphorus loading to Cell 2 of approximately 200 pounds of TP per year, and 68 pounds of OP per year. Though not explicitly considered as part of the 2023 feasibility study, the control structure would create a shallow body of water that would also settle out some sediments from runoff flowing into the cell (though with Wasserman, and neighborhoods with stormwater BMPs upstream of Cell 1, this additional water quality benefit is assumed to be negligible compared to the magnitude of water quality improvements by preventing the leaching of phosphorus rich groundwater).

Boardwalk

Moore and Heyer Engineering designed the boardwalk with the following criteria in mind:

- Replace all the existing boardwalk, including the section that appears to be stable, installed on helical piers.
- Design profile to MnDOT bike design standards, specifically having no gradient change greater than 4.00-percent (which would require adding a vertical curve to the design, which would be challenging to accurately construct with timber framing).
- 8 feet wide, based on City preferences.
- Generally, match aesthetic and structural design of the Wasserman boardwalk, including toe curb.
- Design boardwalk to withstand City's preferred snow removal equipment (3,000 pond, four wheeled ATV).

Conclusion

Moore and Heyer Engineering collaborated to develop a set of construction plans for installing a sheet pile weir and replacing the boardwalk on the East Auburn Wetland complex. As currently shown, Cell 1 in the wetland would be inundated with approximately six to 12-inches of standing water on average, depending on the exact location. Inundated depths within the existing channel would be deeper. This would minimize phosphorus leaching by maintaining saturated conditions and preventing groundwater to flow through and out of the wetland except potentially in extreme drought circumstances.

As part of the design, Moore evaluated the hydraulic and hydrologic impact of the proposed improvements. As summarized above, model output indicates 100-year HWLs will rise in some locations within Cells 1 and 2, but Cells 3 and 4 and the surrounding lakes do not bounce more than 0.005-feet. In order to achieve the no-rise the runout elevation of 943.90 was used for the sheet pile structure. Heyer Engineering provided structural design for the boardwalk and sheet pile improvements. Design was informed based on the completed geotechnical report, included as an attachment to this memorandum. Finally, a cost estimate and an operations and maintenance plan are included as attachments to this memorandum.

Attachments:

1. 90% Project Manual and Plans
 2. 90% Opinion of Probable Cost
 3. Operations and Maintenance Plan
 4. Electronic Copy of XPSWMM Model
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BASE BID						
ITEM NO.	SPEC NO.	ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	TOTAL PROJECT COST
1	015526	TRAFFIC CONTROL	LS	1	\$ 10,000	\$ 10,000
2	017113	MOBILIZATION	LS	1	\$ 32,000	\$ 32,000
3	310516	COARSE FILTER AGGREGATE	CY	4	\$ 100	\$ 400
9	310519	GEOTEXTILE FABRIC	SY	27	\$ 5	\$ 135
4	312316	COMMON EXCAVATION (P) (EV)	CY	18	\$ 50	\$ 900
5	312500	STORMWATER MANAGEMENT	LS	1	\$ 30,000	\$ 30,000
6	312500	SILT FENCE, MS	LF	300	\$ 5	\$ 1,500
7	312500	STREET SWEEPER (WITH PICKUP BROOM)	HR	20	\$ 100	\$ 2,000
8	313716	RANDOM RIPRAP CLASS III	CY	14	\$ 125	\$ 1,750
10	329219	SEED MIX - WINTER WHEAT (WW)	LB	22	\$ 25	\$ 550
11	329219	SEED MIX - SOUTHERN TALLGRASS ROADSIDE (STR)	LB	2	\$ 250	\$ 500
12	329219	SEED MIX - WET DITCH (WD)	LB	3	\$ 250	\$ 750
13	329219	CATEGORY 10 ROLLED EROSION PREVENTION	SY	1,020	\$ 3	\$ 3,060
14	329219	CATEGORY 20 ROLLED EROSION PREVENTION	SY	1,020	\$ 3	\$ 3,060
15	329300	SHRUB PLANTINGS	EA	20	\$ 50	\$ 1,000
16	PLAN	SHEET PILE	SF	2,650	\$ 85	\$ 225,250
17	PLAN	SHEET PILE CAP	TON	1.6	\$ 15,000	\$ 24,000
BASE BID SUBTOTAL						\$ 336,855
CONSTRUCTION ENGINEERING						\$ 33,000
BASE BID TOTAL						\$ 369,855

ADD ALTERNATE						
1A	024200	REMOVE SIDEWALK/TRAIL (ALL TYPES)	SY	70	\$ 20	\$ 1,400
2A	024200	REMOVE BOARDWALK	SF	2,030	\$ 20	\$ 40,600
3A	024200	REMOVE BULKHEAD	EA	2	\$ 500	\$ 1,000
4A	321123	AGGREGATE BASE - CL 5	CY	6	\$ 50	\$ 300
5A	321216	3" BITUMINOUS TRAIL PATCH	SY	25	\$ 300	\$ 7,500
6A	312316	COMMON EXCAVATION (P) (CV)	CY	6	\$ 50	\$ 300
7A	PLAN	HELICAL PIERS (BOARDWALK)	LF	800	\$ 110	\$ 88,000
8A	PLAN	STEEL BEAMS (BOARDWALK)	TON	3.0	\$ 15,000	\$ 45,000
9A	PLAN	MISC. STEEL	TON	1.2	\$ 15,000	\$ 18,000
10A	PLAN	6x6 TIMBER PLANKS	SF	100	\$ 11	\$ 1,100
11A	PLAN	4x6 TIMBER PLANKS	SF	1,720	\$ 11	\$ 18,920
12A	PLAN	4X4 TIMBER PLANKS	SF	450	\$ 11	\$ 4,950
13A	PLAN	2x4 BOARDS	SF	190	\$ 4	\$ 760
ADD ALTERNATE SUBTOTAL						\$ 227,830
CONSTRUCTION ENGINEERING						\$ 13,000
ADD ALTERNATE TOTAL						\$ 240,830

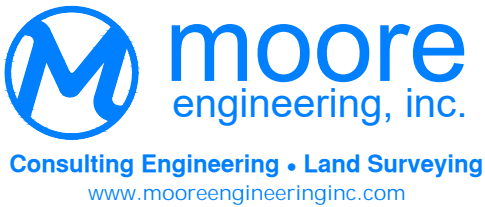
CONSTRUCTION TOTAL (BASE BID + ADD ALTERNATE)						\$ 610,685
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EAST AUBURN WETLAND RESTORATION



**MINNEHAHA CREEK
WATERSHED DISTRICT**
QUALITY OF WATER, QUALITY OF LIFE

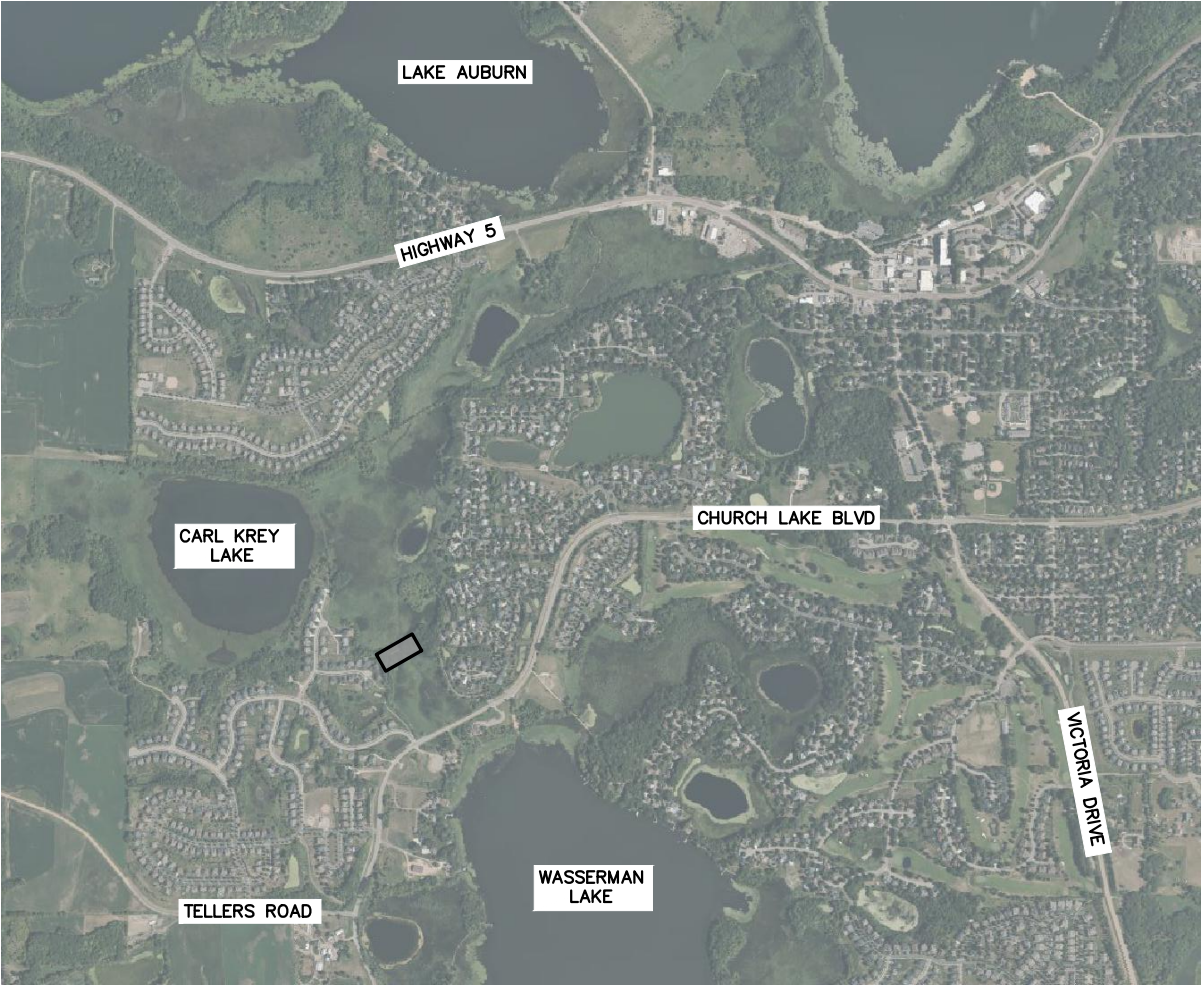
MINNEHAHA CREEK WATERSHED DISTRICT



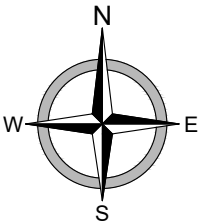
CARVER COUNTY, MINNESOTA

VICINITY MAP

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
G-001	COVER
C-001	LEGEND
C-002	NOTES
C-101	SITE ACCESS AND TRAFFIC CONTROL
C-102	TEMPORARY EROSION CONTROL AND REMOVALS
C-103	BOARDWALK PHOTOS
C-201	DETAILS
C-202	DETAILS
C-401	SHEET PILE WEIR PLAN AND PROFILE
C-402	BOARDWALK PLAN AND PROFILE
C-601	RESTORATION PLAN
S001	GENERAL NOTES
S201	OVERALL BOARDWALK WEIR WALL PLAN
S202	HELICAL PILE LAYOUT PLAN
S203	HELICAL PILE LAYOUT PLAN
S204	BOARDWALK FRAMING PLAN
S205	BOARDWALK FRAMING PLAN
S401	SHEET PILE WEIR WALL ELEVATION
S402	FRAMING DETAILS
S403	FRAMING DETAILS
S404	FRAMING DETAILS



 PROJECT LOCATION



PROJECT No. 24026

PRELIMINARY

EXISTING	
	BENCHMARK
	IRON MONUMENT FOUND
	EXISTING PROPERTY LINE
	EXISTING PLAT LOT LINE
	EXISTING RIGHT OF WAY LINE
	EXISTING EASEMENT LINE
	EXISTING PLAT EASEMENT LINE
	EXISTING GAS LINE MARKER
	EXISTING GAS GATE VALVE
	EXISTING POWER POLE
	EXISTING LIGHT POLE
	EXISTING LIGHT POLE W/SIGN
	EXISTING GUY WIRE
	EXISTING TRAFFIC SIGNAL ARM
	EXISTING SIGN
	EXISTING CULVERT W/FLARED END SECTION (F.E.S.)
	EXISTING FLARED END SECTION (F.E.S.)
	EXISTING CURB STOP
	EXISTING HYDRANT W/GATE VALVE
	EXISTING GATE VALVE
	EXISTING PROPANE TANK
	EXISTING SANITARY SEWER MANHOLE
	EXISTING SANITARY SEWER CLEANOUT
	EXISTING STORM SEWER CATCH BASIN
	EXISTING STORM SEWER MANHOLE
	EXISTING WATER MAIN
	EXISTING WATER SERVICE W/CURB STOP
	EXISTING SANITARY SEWER
	EXISTING SANITARY SEWER (RELINE W/ CIPP)
	EXISTING SANITARY FORCEMAIN
	EXISTING SANITARY SEWER SERVICE
	EXISTING STORM SEWER
	EXISTING STORM SEWER FORCEMAIN
	EXISTING STEAM PIPE
	EXISTING AIR CONDITIONER
	EXISTING UTILITY PEDESTAL
	EXISTING UTILITY MANHOLE
	EXISTING UTILITY VAULT
	EXISTING UNDERGROUND COMMUNICATIONS
	EXISTING UNDERGROUND FIBER
	EXISTING UNDERGROUND TELEPHONE
	EXISTING OVERHEAD TELEPHONE
	EXISTING UNDERGROUND TELEVISION
	EXISTING OVERHEAD TELEVISION
	EXISTING UNDERGROUND GAS
	EXISTING UNDERGROUND ELECTRIC
	EXISTING OVERHEAD POWER
	EXISTING BARBED WIRE FENCE
	EXISTING CHAIN LINK/STEEL FENCE
	EXISTING PVC/WOOD FENCE
	EXISTING RAILROAD
	EXISTING SHRUB
	EXISTING STUMP
	EXISTING BOULDER
	EXISTING TREE/TREE CLUSTER
	EXISTING SPRINKLER HEAD
	EXISTING CLUSTER BOX UNIT (CBU)
	EXISTING MAILBOX
	EXISTING CURB AND GUTTER

PROPOSED	
	NEW PROPERTY LINE
	NEW PLAT LOT LINE
	NEW RIGHT OF WAY LINE
	NEW EASEMENT LINE
	NEW PLAT EASEMENT LINE
	CONSTRUCTION EASEMENT
	CONSTRUCTION LIMITS
	NEW LIGHT POLE
	NEW LIGHT POLE W/SIGN
	NEW GUY WIRE
	NEW SIGN
	TRAFFIC CONTROL - DRUM
	TRAFFIC CONTROL - TUBULAR MARKER
	NEW CULVERT W/FLARED END SECTION (F.E.S.)
	NEW FLARED END SECTION (F.E.S.)
	NEW CURB STOP
	NEW HYDRANT W/GATE VALVE
	NEW GATE VALVE
	NEW TAPPING SLEEVE
	NEW FITTINGS
	NEW PLUG
	NEW SANITARY SEWER MANHOLE
	NEW SANITARY SEWER CLEANOUT
	NEW STORM SEWER CATCH BASIN
	NEW STORM SEWER MANHOLE
	NEW WATER MAIN
	NEW WATER SERVICE W/CURB STOP (S.B. ELEV.)
	NEW SANITARY SEWER
	NEW SANITARY FORCEMAIN
	NEW SANITARY SEWER SERVICE (S.S. ELEV.)
	NEW STORM SEWER
	NEW STORM SEWER FORCEMAIN
	NEW STEAM PIPE
	INSULATION PER DETAIL
	NEW BARBED WIRE FENCE
	NEW CHAIN LINK/STEEL FENCE
	NEW PVC/WOOD FENCE
	NEW CLUSTER BOX UNIT (CBU)
	NEW MAILBOX
	NEW LARGE DECIDUOUS TREE
	NEW SMALL DECIDUOUS TREE
	NEW SHRUB
	NEW LARGE EVERGREEN TREE
	NEW SMALL EVERGREEN TREE

WETLAND	
	PROPOSED NORMAL WATER LEVEL
	PROPOSED HIGH WATER LEVEL
	EDGE OF WETLAND

CIVIL LEGEND

	REMOVALS
	INDICATES REMOVAL
	REMOVE CURB AND GUTTER
	REMOVE ASPHALT PAVEMENT
	REMOVE CONCRETE PAVEMENT
	REMOVE AGGREGATE SURFACE

PAVEMENT REHAB	
	UNIFORM MILL & OVERLAY
	TAPERED MILL & OVERLAY
	LEVELING COURSE
	RECLAIM
	ASPHALT PATCH
	CHIP SEAL

PAVEMENT	
	NEW INFLOW CURB AND GUTTER
	NEW OUTFLOW CURB AND GUTTER
	NEW ASPHALT SURFACE
	NEW CONCRETE SURFACE
	NEW GRANULAR SURFACE
	NEW CRUSHED CONCRETE SURFACE
	NEW DECORATIVE COLORED CONCRETE
	NEW ASPHALT SIDEWALK/MULTI-USE PATH
	NEW CONCRETE SIDEWALK/MULTI-USE PATH
	NEW CONCRETE APPROACH/DRIVEWAY
	NEW DETECTABLE WARNING PANEL
	NEW GRAVEL APPROACH/DRIVEWAY
	NEW CONCRETE VALLEY GUTTER
	NEW MEDIAN NOSE APRON
	NEW ADA RAMP W/WARNING PANEL

SOIL DISTURBANCE	
	DISTURBANCE AREA / TOPSOIL REMOVAL
	REMOVE STOCKPILE
	EXISTING STOCKPILE
	TEMPORARY STOCKPILE
	PERMANENT STOCKPILE
	REAR YARD GRADING
	GRASS BUFFER STRIP

SOIL STABILIZATION	
	DISTURBED SOIL STABILIZATION
	STRAW MULCH
	SEEDING & STRAW MULCH
	SEEDING & HYDRO MULCH
	TOPSOIL, SEEDING & STRAW MULCH
	TOPSOIL, SEEDING & HYDRO MULCH
	TOPSOIL, SEEDING & BLANKET

MISCELLANEOUS	
	EXISTING RIPRAP
	NEW RIPRAP
	EXISTING LANDSCAPING AREA
	NEW LANDSCAPING AREA
	EXISTING WATER SURFACE
	NEW WATER SURFACE
	EXISTING WETLAND

REMOVALS	
	INDICATES REMOVAL
	REMOVE CURB AND GUTTER
	REMOVE ASPHALT PAVEMENT
	REMOVE CONCRETE PAVEMENT
	REMOVE AGGREGATE SURFACE

PAVEMENT REHAB	
	UNIFORM MILL & OVERLAY
	TAPERED MILL & OVERLAY
	LEVELING COURSE
	RECLAIM
	ASPHALT PATCH
	CHIP SEAL

PAVEMENT	
	NEW INFLOW CURB AND GUTTER
	NEW OUTFLOW CURB AND GUTTER
	NEW ASPHALT SURFACE
	NEW CONCRETE SURFACE
	NEW GRANULAR SURFACE
	NEW CRUSHED CONCRETE SURFACE
	NEW DECORATIVE COLORED CONCRETE
	NEW ASPHALT SIDEWALK/MULTI-USE PATH
	NEW CONCRETE SIDEWALK/MULTI-USE PATH
	NEW CONCRETE APPROACH/DRIVEWAY
	NEW DETECTABLE WARNING PANEL
	NEW GRAVEL APPROACH/DRIVEWAY
	NEW CONCRETE VALLEY GUTTER
	NEW MEDIAN NOSE APRON
	NEW ADA RAMP W/WARNING PANEL

SOIL DISTURBANCE	
	DISTURBANCE AREA / TOPSOIL REMOVAL
	REMOVE STOCKPILE
	EXISTING STOCKPILE
	TEMPORARY STOCKPILE
	PERMANENT STOCKPILE
	REAR YARD GRADING
	GRASS BUFFER STRIP

SOIL STABILIZATION	
	DISTURBED SOIL STABILIZATION
	STRAW MULCH
	SEEDING & STRAW MULCH
	SEEDING & HYDRO MULCH
	TOPSOIL, SEEDING & STRAW MULCH
	TOPSOIL, SEEDING & HYDRO MULCH
	TOPSOIL, SEEDING & BLANKET

MISCELLANEOUS	
	EXISTING RIPRAP
	NEW RIPRAP
	EXISTING LANDSCAPING AREA
	NEW LANDSCAPING AREA
	EXISTING WATER SURFACE
	NEW WATER SURFACE
	EXISTING WETLAND

EROSION CONTROL	
	DRAINAGE BREAK LINE
	EXISTING DRAINAGE DIRECTION
	FINISHED DRAINAGE DIRECTION & SLOPE
	FINISHED GRADE
	EXISTING CONTOUR ELEVATION
	FINISHED CONTOUR ELEVATION
	GRADE ELEVATIONS
	SEDIMENTATION CONTROL WATTLE
	SEDIMENTATION CONTROL FENCE
	ROCK CHECK
	STABILIZED CONSTRUCTION ENTRANCE
	CONCRETE WASHOUT
	INLET PROTECTION DEVICE

ABBREVIATIONS:	
BOC	= BACK OF CURB
BOW	= BACK OF WALK
C	= COMMUNICATION
CB#	= STORM SEWER CATCH BASIN
CIPP	= CURED IN PLACE PIPE
CL	= CENTERLINE
CSP	= CORRUGATED STEEL PIPE
CO#	= SANITARY SEWER CLEANOUT
CS#	= CONTROL STRUCTURE
DIA	= DIAMETER
DIP	= DUCTILE IRON PIPE
E	= ELECTRICAL
ECC	= EDGE OF CRUSHED CONCRETE
EG	= EXISTING GRADE
EOC	= EDGE OF CONCRETE
EOG	= EDGE OF GRAVEL
EOP	= EDGE OF PAVEMENT
EOW	= EDGE OF WALK
EX	= EXISTING
F	= FIBER OPTIC
FES	= FLARED END SECTION
FG	= FINISHED GRADE
FL	= FLOWLINE
FM	= FORCEMAIN
G	= GAS LINE
HP	= HIGH POINT
INV	= INVERT
LP	= LOW POINT
MA	= MATCH
M#	= STORM SEWER MANHOLE
MT#	= STORM SEWER TEE MANHOLE
MM#	= STORM SEWER MULTI-MANHOLE
MC	= MIDPOINT OF CURVE
OHP	= OVERHEAD POWER
OHT	= OVERHEAD TELEPHONE
OHTV	= OVERHEAD TELEVISION
PC	= POINT OF CURVATURE
PRC	= POINT OF REVERSE CURVE
PVC	= POLYVINYL CHLORIDE PIPE
PT	= POINT OF TANGENCY
RIM	= RIM OF STRUCTURE
S#	= SANITARY SEWER MANHOLE
S.B. ELEV	= STOP BOX ELEVATION
S.S. ELEV	= SANITARY SEWER SERVICE INVERT
SS	= SANITARY SEWER
ST	= STORM SEWER
STA	= ALIGNMENT STATION
T	= TELEPHONE
TOC	= TOP OF CONCRETE
TOP	= TOP OF PAVEMENT
TOP	= TOP OF PIPE
TOW	= TOP OF WALK
TR#	= SANITARY TELEVISION RISER
TRANS	= TRANSFORMER
TV	= TELEVISION
U	= UTILITY (UNKNOWN UTILITY)

PRELIMINARY

THE FOLLOWING PLAN NOTES SUPPLEMENT AND AMEND THE PLAN SHEETS, SPECIFICATIONS AND MNDOT REFERENCES AS FOLLOWS:

GENERAL NOTES:

- 1. Take necessary precautions required to protect adjacent properties during the construction operations.
- 2. Notify Engineer where section, subsection or property monuments are encountered, before such monuments are removed. Protect and carefully preserve all property markers and monuments until the engineer and authorized surveyor has witnessed or otherwise referenced the location.
- 3. The drawings designate those existing items for removal, replacement, or improvement. If not designated for removal, replacement, or improvement, all other existing items within the site to be protected.
- 4. Any construction traffic damage to roads outside the construction area to be repaired by the contractor.

DISPOSAL NOTES:

- 1. No material shall be wasted on the site or in the project area.
- 2. Removed pipes, bridge decks, bridge piers, existing weir materials, trees and roots, plastic, wood, metal, tires and other construction material or debris shall be properly disposed of offsite. This work shall be incidental to the project unless otherwise specified.
- 3. Any removed items not salvaged as shown on the plans become the property of the contractor and are the contractor's responsibility once off the site.
- 4. No material may be buried or burned on site.

CONSTRUCTION LIMITS:

- 1. The contractor shall limit work to within the construction easements and right of way shown on the plans. Contractor is responsible for all damage expense for work done outside of project right-of-way.
- 2. Contractor vehicles, equipment, and materials shall be stored within the site.

HAUL ROADS:

- 1. It shall be the contractor's responsibility to investigate the suitability of routes with the agency having control of the roads and acquire their approval prior to submitting a bid and doing the work.
- 2. Any damage to roads as a result of hauling shall be repaired at the contractor's expense and at no cost to the owner.

UNDERGROUND NOTES:

- 1. Coordinate any utility relocations.
- 2. Unless otherwise noted, any removal, relocation, replacement, or bracing of power poles or any other utilities is the responsibility of the Contractor.
- 3. Existing utilities (both public and private) shown on the plans are approximate and may not be complete. It will be the contractor's responsibility to verify and locate any utilities prior to excavation. There will be no additional payment for exploratory time.
- 4. There is a potential for water on the project. It shall be the contractor's responsibility to dewater for constructability.
- 5. The subsurface utility information in this plan is Utility Quality Level D. This quality level was determined according to the guidelines of ASCE 38-02 entitled "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data".
- 6. Verify all existing pipe sizes in the field.

REMOVAL NOTES

- 1. All miscellaneous debris, fittings, pipe material, appurtenances etc. Resulting from construction operations shall be first right of refusal to the owner. Otherwise, it will become the property of the contractor and shall be properly disposed of off-site.
- 2. All removals shall be saw cut. Saw cuts must be full depth.

SURVEY NOTES:

- 1. Engineer requires a 48 hour notice for any contractor requested survey. Contractor shall coordinate with RPR for scheduling.

TRAFFIC CONTROL NOTES:

- 1. Contractor must follow the current M.U.T.C.D. for traffic control for any and all construction operations that interfere with traffic.
- 2. Contractor to give no less than 48 hour notice prior to any work being done on the project. All no parking signs and any traffic control shall be posted at least 48 hours prior to work commencing.

PRELIMINARY



CIVIL
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
CARVER COUNTY, MINNESOTA
NOTES

DATE:	3-31-2025
REV DATE:	---
REV NUM:	---
RECORD:	---
PROJECT No.	24026
MANAGER:	JCM
DESIGNER:	QDS
DRAFTER:	DWA
REVIEWER:	DTE

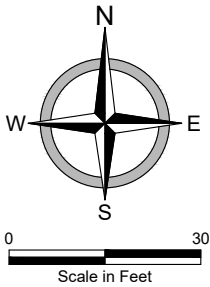
C-002



DATE:	3-31-2025
REV DATE:	----
REV NUM:	----
RECORD:	----
PROJECT No. 24026	
MANAGER:	JCM
DESIGNER:	QDS
DRAFTER:	DWA
REVIEWER:	DTE

FILE LOCATION: R:\Projects\24000\24000\24026\CIVIL\PRODUCTION\24026_SiteAccess.dwg

- NORMAL WATER LEVEL (943.9 NAVD88)
- EXISTING HIGH WATER LEVEL (945.74 NAVD88)
- PROPOSED HIGH WATER LEVEL (945.80 NAVD88)
- WETLAND BOUNDARY (DELINEATED JULY 2024)
- WETLAND BUFFER (40' FOR MANAGE 1)



PRELIMINARY



PROJECT LAYOUTS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
CARVER COUNTY, MINNESOTA
TEMPORARY EROSION CONTROL AND REMOVALS

DATE:	3-31-2025
REV DATE:	---
REV NUM:	---
RECORD:	---
PROJECT No.	24026
MANAGER:	JCM
DESIGNER:	QDS
DRAFTER:	DWA
REVIEWER:	DTE

C-102

DOUBLE ROW SILT FENCE, MACHINE SLICED
IF ADD ALTERNATE IS NOT SELECTED, SILT FENCE TO BE INSTALLED
BETWEEN EXISTING BOARDWALK AND LOCATION OF PROPOSED SHEET PILE WIER.

REMOVE BULK HEAD
(ADD ALTERNATE)
(SEE C-103)

REMOVE TRAIL
(ADD ALTERNATE)

SAWCUT PAVEMENT (INCIDENTAL)
(ADD ALTERNATE)

REMOVE BOARDWALK AND PIERS.
EXCAVATION IS NOT AN ALLOWABLE METHOD TO
REMOVE PIERS. (ADD ALTERNATE)
(SEE C-103)

APPROXIMATE 20' WIDE CORRIDOR THAT CITY STAFF CLEARED VEGETATION
WITHIN TO ACCESS FOR SOIL BORING. ANY ADDITIONAL CLEARING IS
CONSIDERED INCIDENTAL. CONTRACTOR RESPONSIBLE FOR REMOVING ANY
CLEARED VEGETATION FROM THE SITE AND DISPOSING OF APPROPRIATELY.



PHOTO 1: EXISTING BOARDWALK



PHOTO 2: EXISTING ABUTMENT

NOTE:
1. ALL LABOR AND MATERIALS NECESSARY TO COMPLETELY REMOVE THE EXISTING BOARDWALK IS INCLUDED IN THE REMOVE BOARDWALK AND REMOVE BULKHEAD BID ITEMS. THIS INCLUDES BUT IS NOT LIMITED TO REMOVING THE TOE RAIL, THE PLANKS, BEAMS, PIERS, AND OTHER MISCELLANEOUS BRACING.



NOTE EXISTING PIERS INCLUDE
TIMBER PIERS AND HELICAL PIERS.

PHOTO 3: TIMBER AND HELICAL PIERS



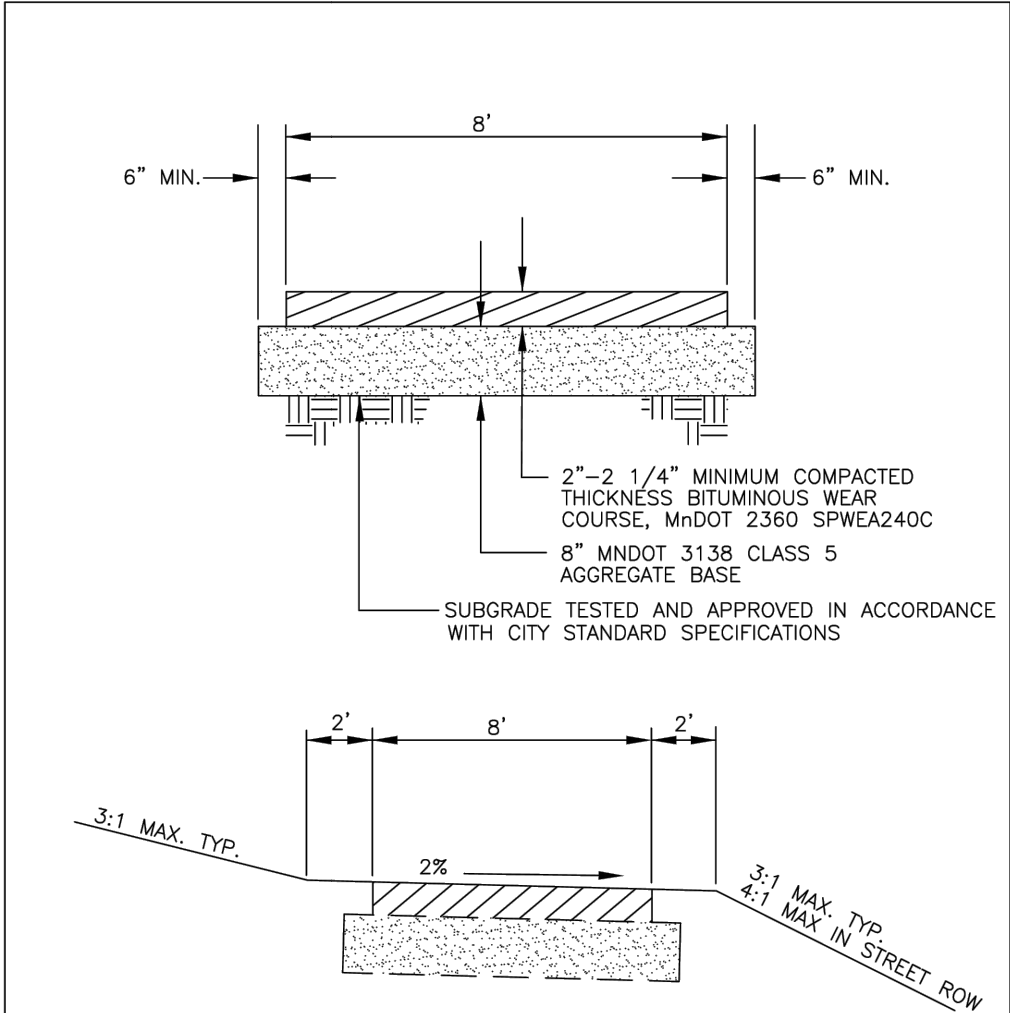
PHOTO 4: BOARDWALK – BULKHEAD CONNECTION

PRELIMINARY



PROJECT LAYOUTS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
CARVER COUNTY, MINNESOTA
BOARDWALK PHOTOS

DATE:	3-31-2025
REV DATE:	---
REV NUM:	---
RECORD:	---
PROJECT No.	24026
MANAGER:	JCM
DESIGNER:	QDS
DRAFTER:	DWA
REVIEWER:	DTE



- NOTE
1. BITUMINOUS TRAILS SHALL HAVE CONCRETE PED RAMPS AT ALL STREET INTERSECTIONS.
 2. PROVIDE 2% CROSS-SLOPE TO MAINTAIN POSITIVE DRAINAGE AWAY FROM TRAIL SURFACE THROUGHOUT LENGTH OF TRAIL.

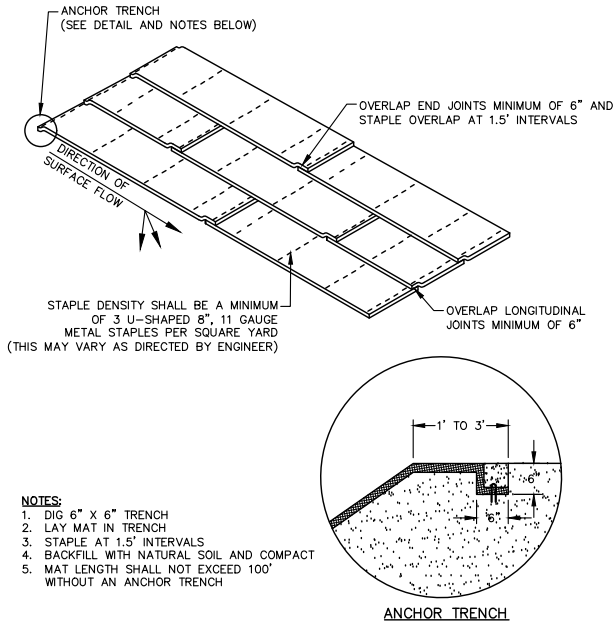
BICYCLE-PEDESTRIAN PATH

FEBRUARY 2022



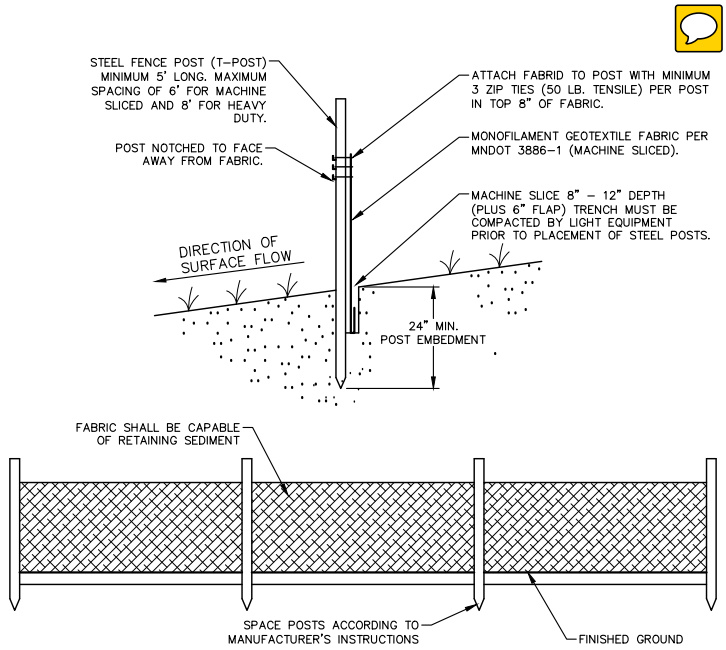
CITY OF VICTORIA

STANDARD DRAWING
NO.
509
Victoria



- NOTES:
1. DIG 6" X 6" TRENCH
 2. LAY MAT IN TRENCH
 3. STAPLE AT 1.5' INTERVALS
 4. BACKFILL WITH NATURAL SOIL AND COMPACT
 5. MAT LENGTH SHALL NOT EXCEED 100' WITHOUT AN ANCHOR TRENCH

EROSION STABILIZATION MAT
NO SCALE EPSC-FI-5 10.19.20



MACHINED SILT FENCE DETAIL
NO SCALE WRG-312500-02 12.15.17

- NOTES:
1. INSPECT AND REPAIR AFTER EACH STORM EVENT, AND REMOVE SEDIMENT WHEN NECESSARY.
 2. REMOVED SEDIMENTS SHALL BE DEPOSITED IN AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

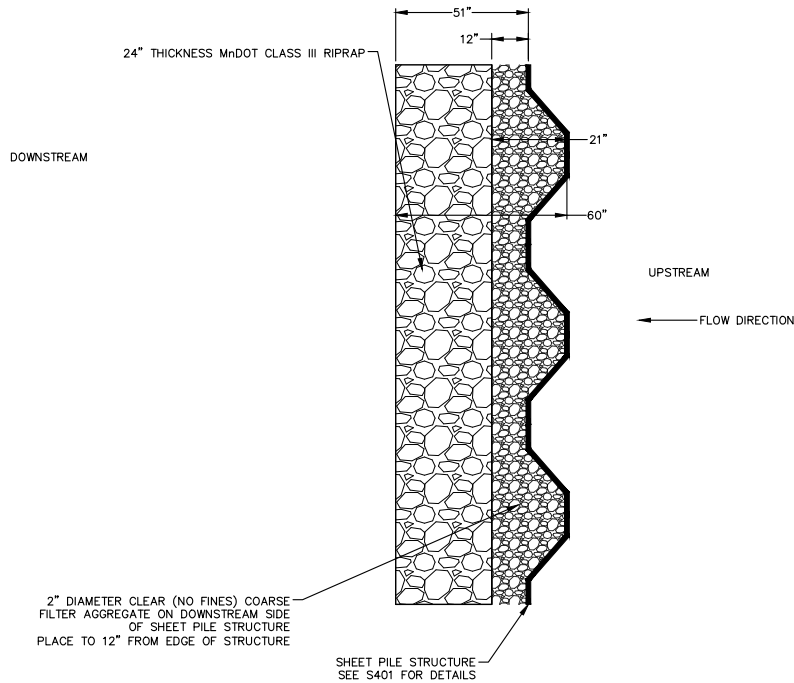
PRELIMINARY



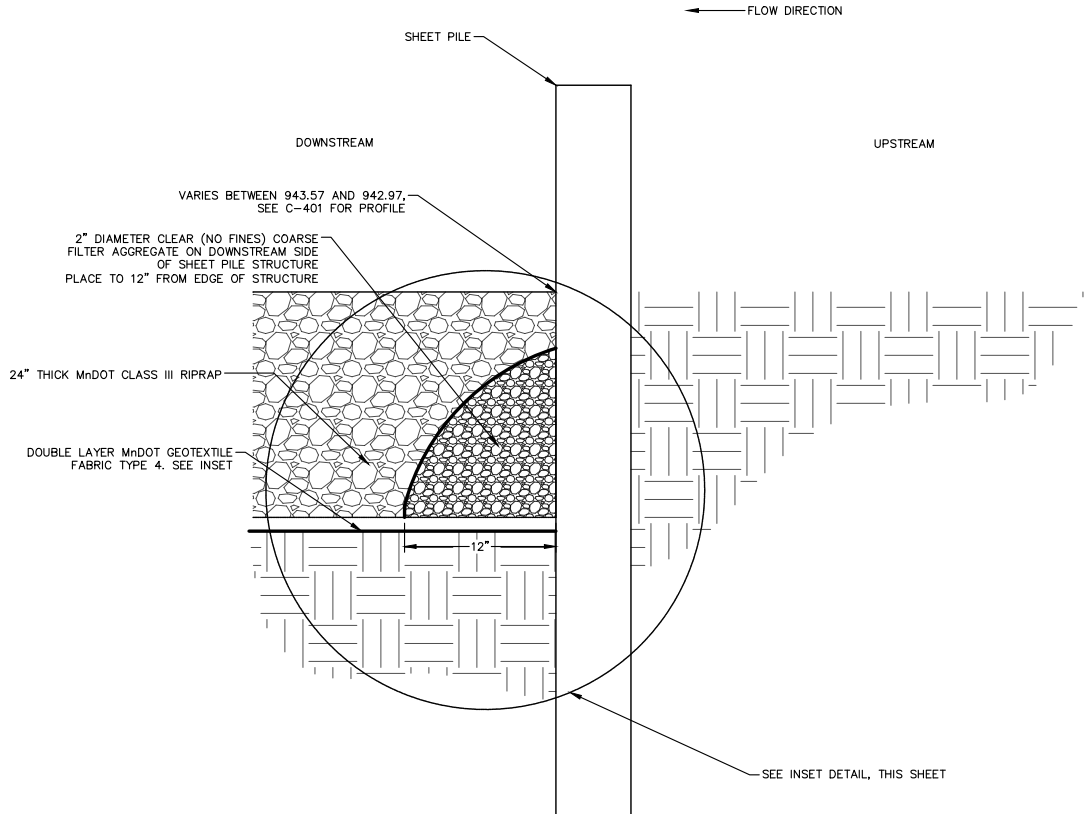
DETAILS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
CARVER COUNTY, MINNESOTA
DETAILS

DATE:	3-31-2025
REV DATE:	----
REV NUM:	----
RECORD:	----
PROJECT No.	24026
MANAGER:	JCM
DESIGNER:	QDS
DRAFTER:	DWA
REVIEWER:	DTE

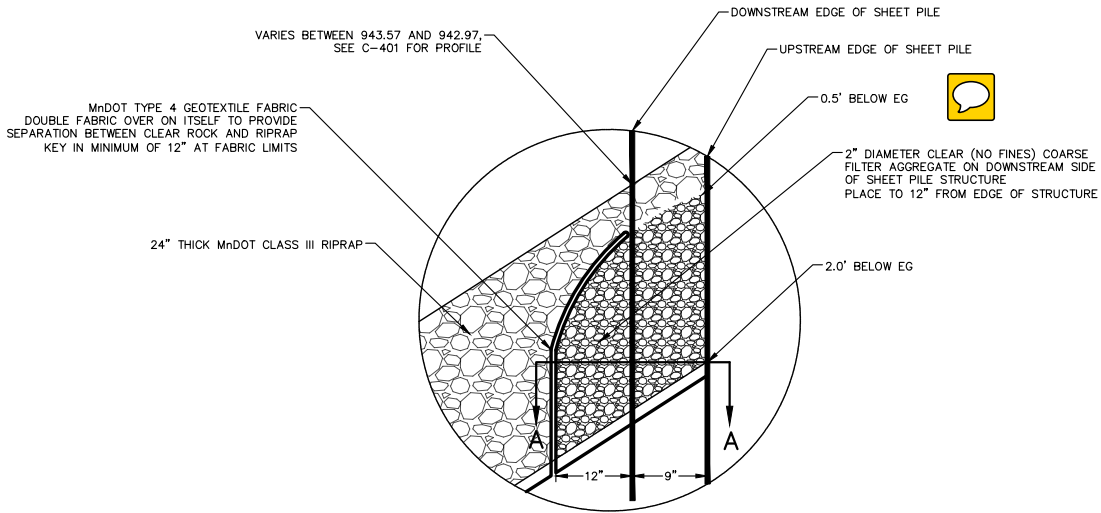
C-201



RIPRAP DETAIL - SHEET PILE PLAN VIEW (A-A)
NO SCALE



RIPRAP DETAIL - SHEET PILE SECTION VIEW
NO SCALE



RIPRAP DETAIL - INSET DETAIL
NO SCALE

PRELIMINARY

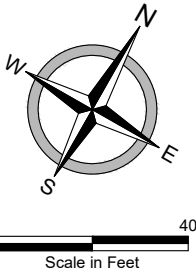
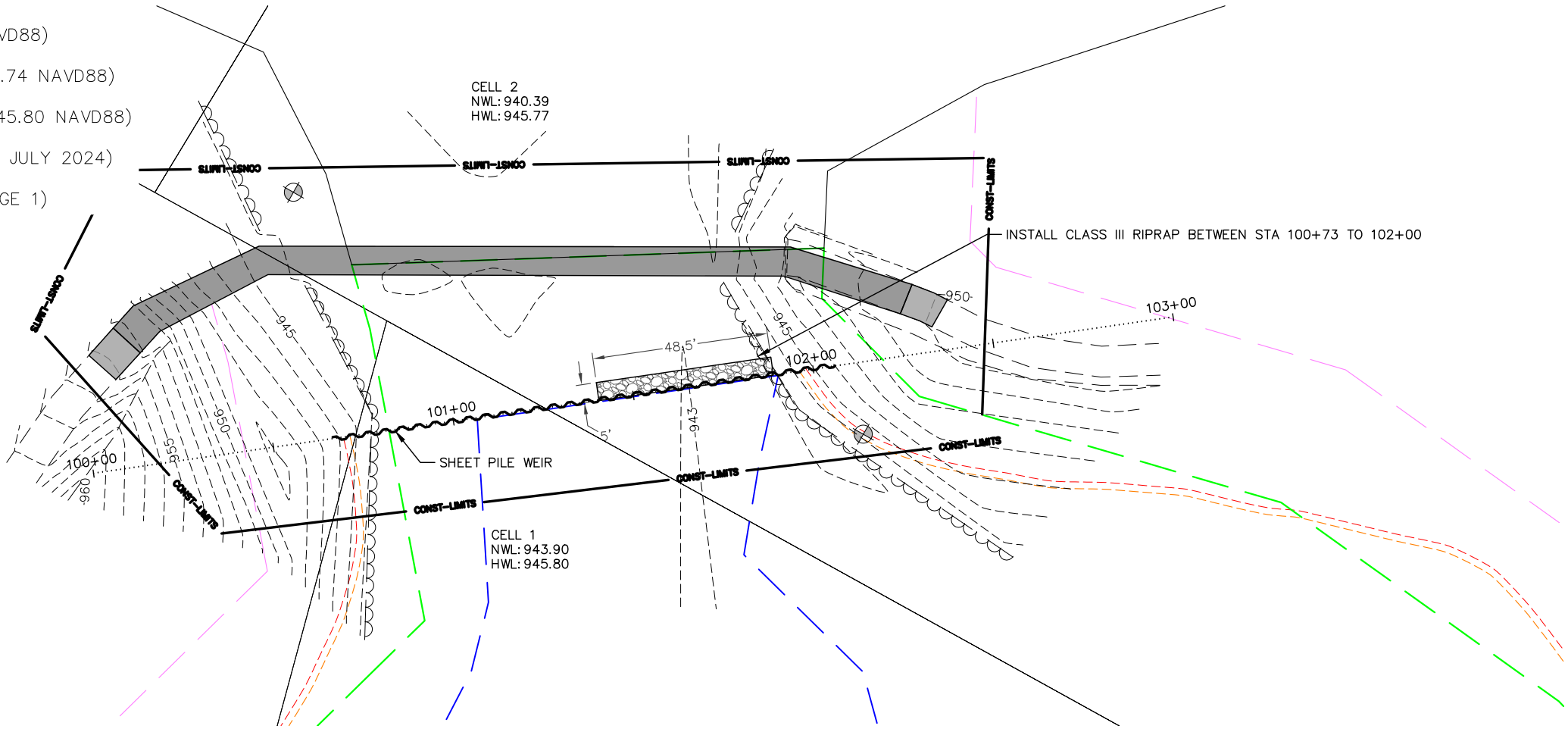


DETAILS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
CARVER COUNTY, MINNESOTA
DETAILS

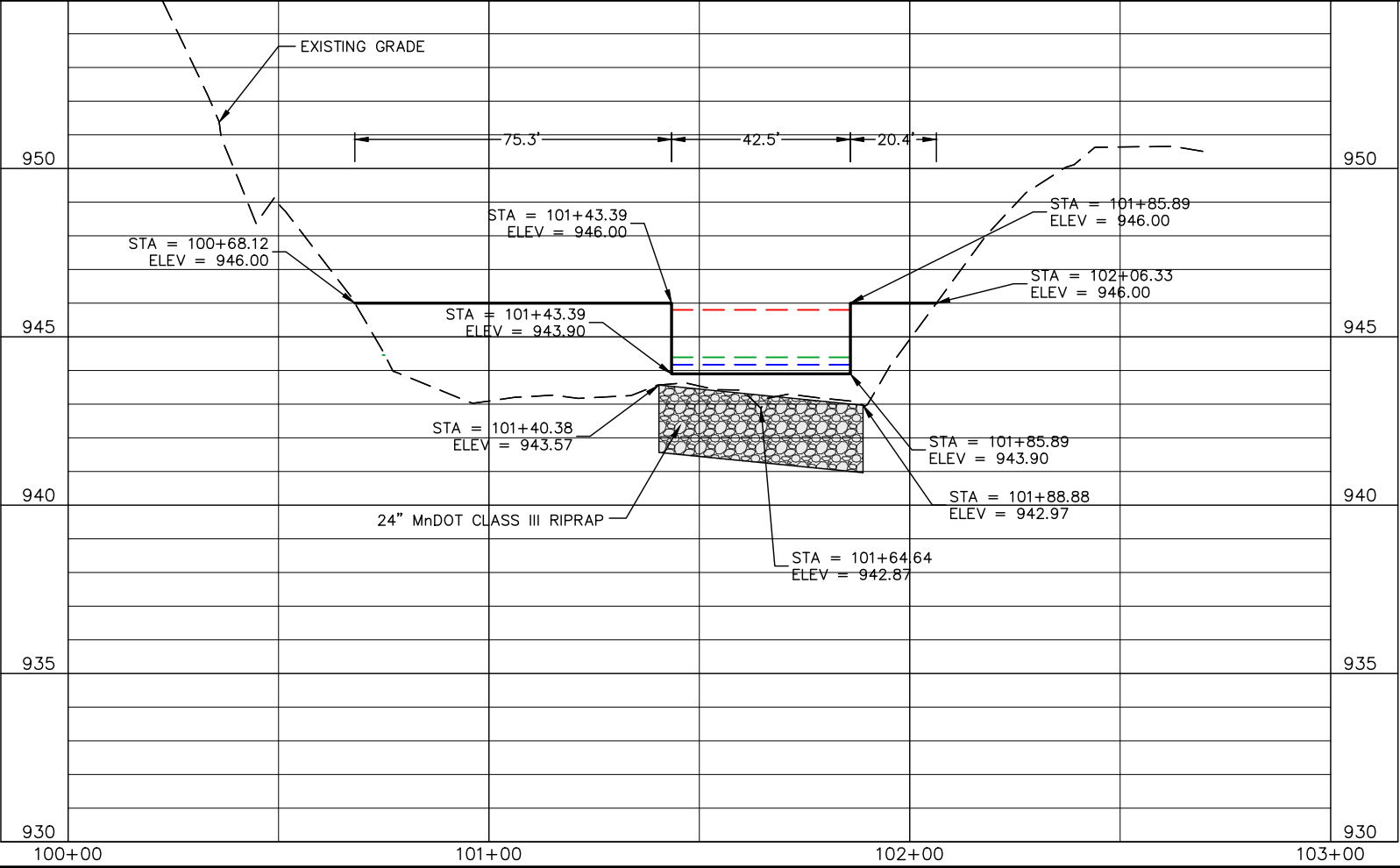
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REV DATE:	---
REV NUM:	---
RECORD:	---
PROJECT No.	24026
MANAGER:	JCM
DESIGNER:	QDS
DRAFTER:	DWA
REVIEWER:	DTE

FILE LOCATION: R:\Projects\24000\240026\CIVIL\PRODUCTION\24026_Plan.dwg

- NORMAL WATER LEVEL (943.9 NAVD88)
- EXISTING HIGH WATER LEVEL (945.74 NAVD88)
- PROPOSED HIGH WATER LEVEL (945.80 NAVD88)
- WETLAND BOUNDARY (DELINEATED JULY 2024)
- WETLAND BUFFER (40' FOR MANAGE 1)



PRELIMINARY



- 2-YEAR HWL: ELEV: 944.17
- 10-YEAR HWL: ELEV: 944.39
- 100-YEAR HWL: ELEV: 945.80

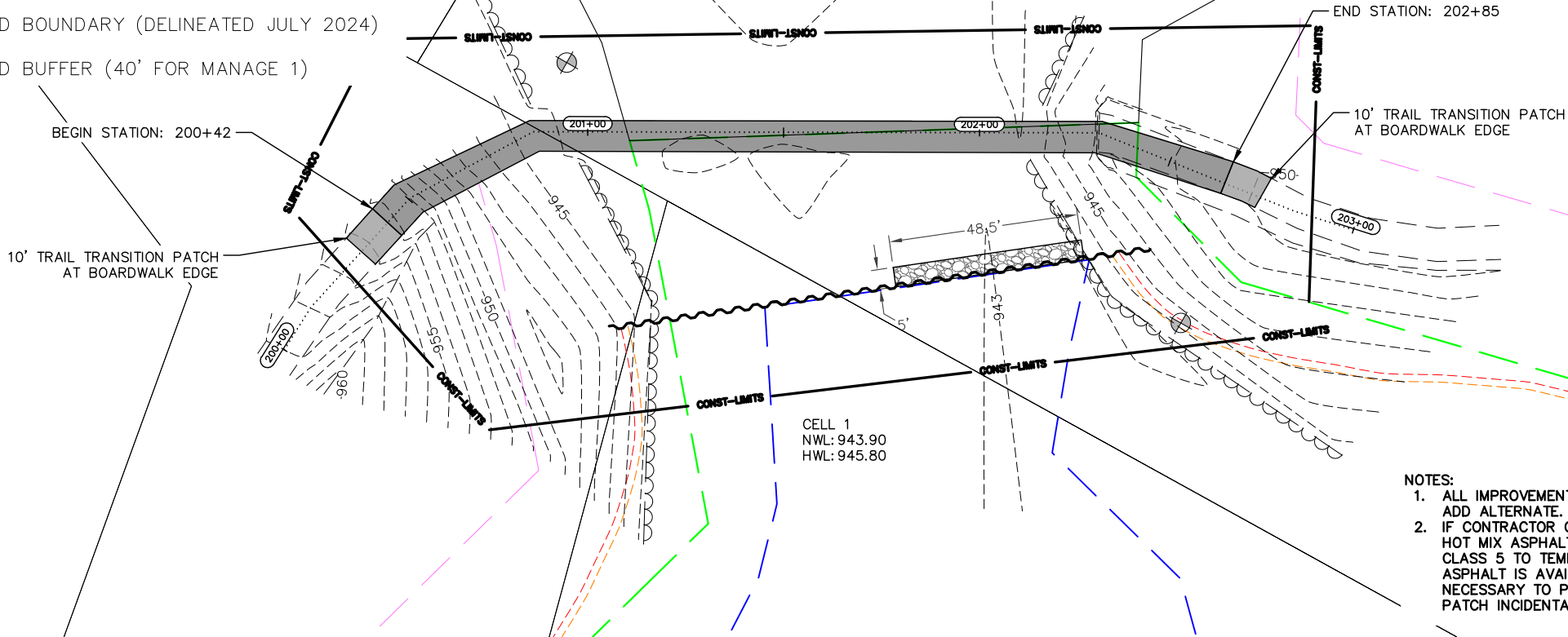
PLAN & PROFILE
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
CARVER COUNTY, MINNESOTA
SHEET PILE WEIR PLAN AND PROFILE

DATE:	3-31-2025
REV DATE:	---
REV NUM:	---
RECORD:	---
PROJECT No.	24026
MANAGER:	JCM
DESIGNER:	QDS
DRAFTER:	DWA
REVIEWER:	DTE

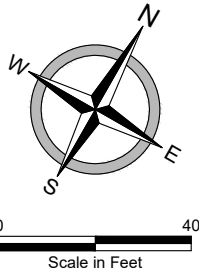
C-401

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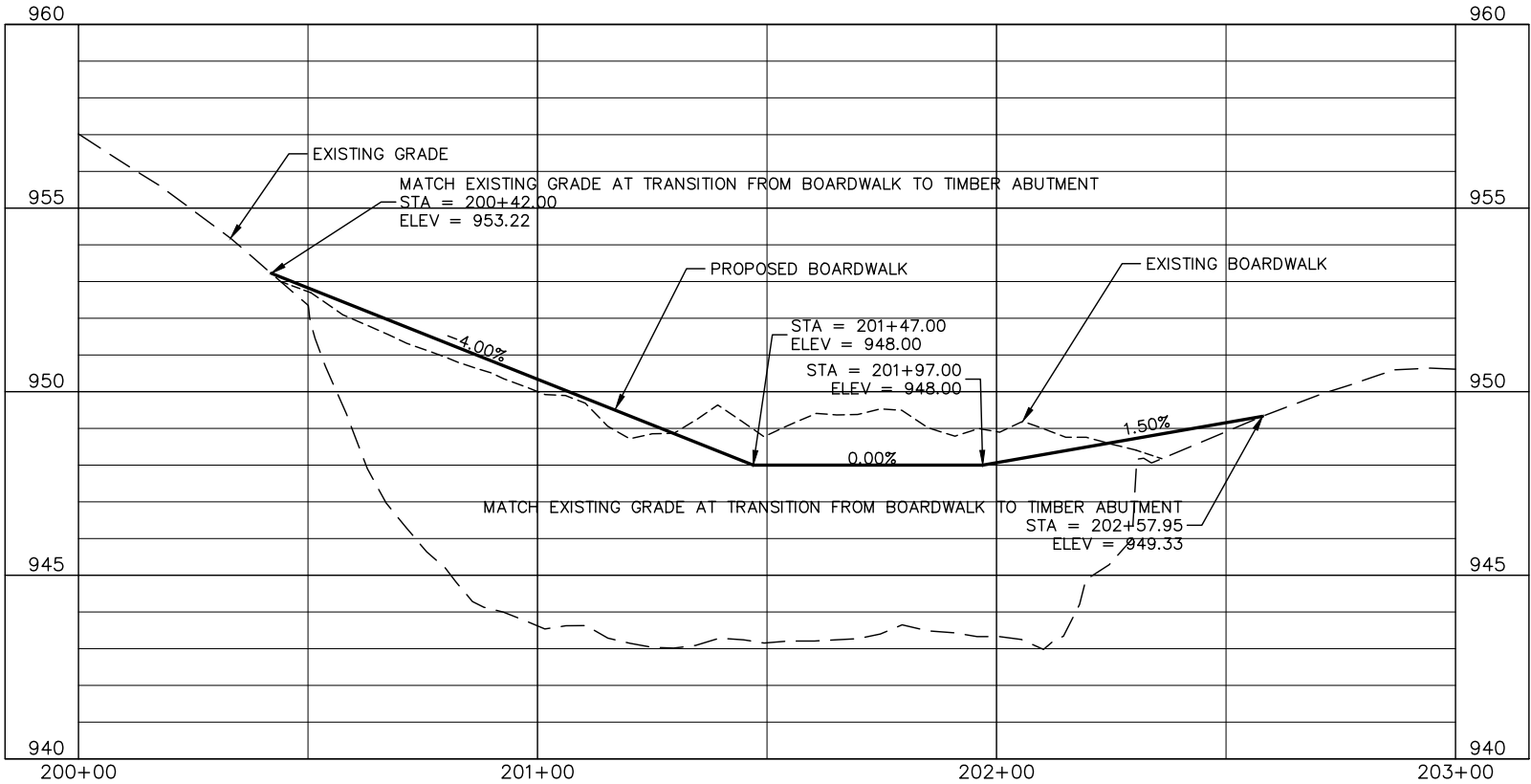
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- PROPOSED HIGH WATER LEVEL (945.80 NAVD88)
- WETLAND BOUNDARY (DELINEATED JULY 2024)
- WETLAND BUFFER (40' FOR MANAGE 1)



- NOTES:
- ALL IMPROVEMENTS SHOWN ON THIS SHEET ARE PART OF THE ADD ALTERNATE.
 - IF CONTRACTOR CONSTRUCTS BOARDWALK DURING PERIOD WHEN HOT MIX ASPHALT IS UNAVAILABLE, CONTRACTOR TO USE CLASS 5 TO TEMPORARILY PATCH THE TRAIL UNTIL HOT MIX ASPHALT IS AVAILABLE. ALL EFFORTS AND MATERIALS NECESSARY TO PLACE, REMOVE, AND DISPOSE OF TEMPORARY PATCH INCIDENTAL TO THE PROJECT.

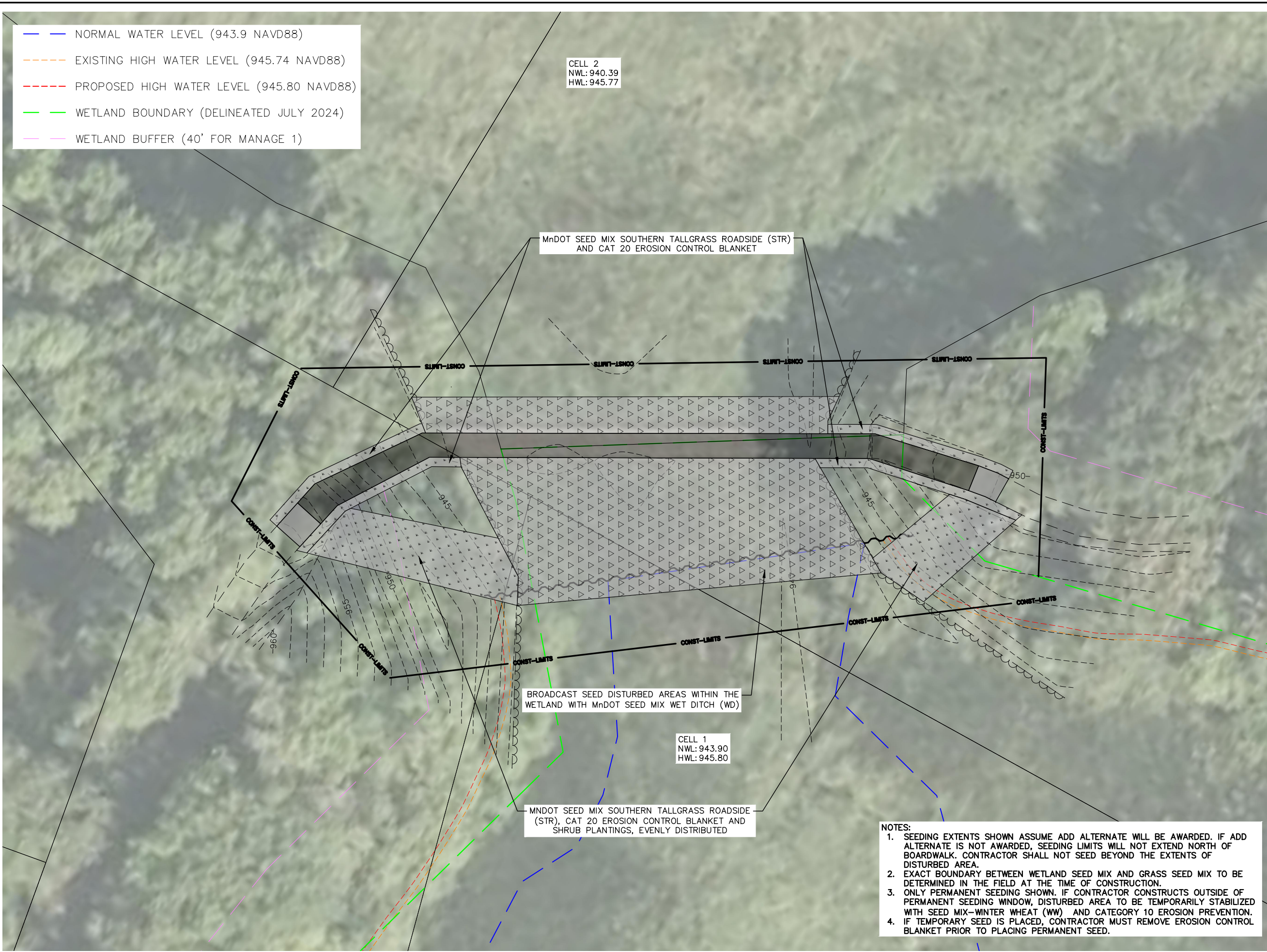


PRELIMINARY

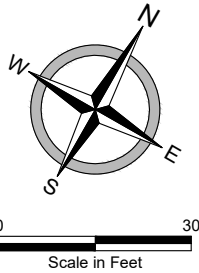


PLAN & PROFILE
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
CARVER COUNTY, MINNESOTA
BOARDWALK PLAN AND PROFILE

DATE:	3-31-2025
REV DATE:	---
REV NUM:	---
RECORD:	---
PROJECT No.	24026
MANAGER:	JCM
DESIGNER:	QDS
DRAFTER:	DWA
REVIEWER:	DTE



PRELIMINARY



PLAN & PROFILE
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
CARVER COUNTY, MINNESOTA
RESTORATION PLAN

DATE:	3-31-2025
REV DATE:	---
REV NUM:	---
RECORD:	---
PROJECT No.	24026
MANAGER:	JCM
DESIGNER:	QDS
DRAFTER:	DWA
REVIEWER:	DTE

EXCAVATION AND BACKFILL NOTES:

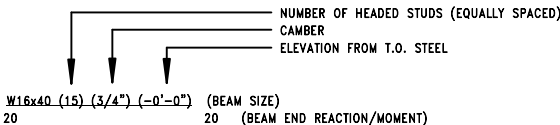
1. EXCAVATION AND BACKFILL SHALL BE EXECUTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2. BACKFILL AND COMPACTION SHALL BE INSPECTED AND CERTIFIED BY A LICENSED GEOTECHNICAL ENGINEER. REPORTS ARE TO BE SUBMITTED TO THE CIVIL/STRUCTURAL ENGINEER.
4. BACKFILL SHALL BE COMPACTED BY MECHANICAL MEANS. FLOODING OR WATER INUNDATION SHALL NOT BE PERMITTED.
5. BACKFILL SHALL BE PLACED IN 8" (ALTERNATING) LIFTS ON EACH SIDE OF THE RETAINING WALLS TO MAINTAIN STABILITY OF RETAINING WALLS.
6. THE CONTRACT STRUCTURAL DOCUMENTS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THE MEANS AND METHODS USED TO PERFORM THE EXCAVATION IS AT THE SOLE DISCRETION OF THE CONTRACTOR, INCLUDING THE DESIGN AND INSTALLATION OF TEMPORARY BRACING OR SHORING. CONTRACTOR IS RESPONSIBLE FOR ALL CODE AND REGULATORY SAFETY REQUIREMENTS.

1. STRUCTURAL STEEL WORK SHALL BE PER AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION, 14TH EDITION, MATERIAL:

A690	GRADE 50 - SHEET PILES	Fy = 50 ksi
A992	W SHAPES	Fy = 50 ksi
A36	S, AND M SHAPES	Fy = 36 ksi
A53	GRADE C - STANDARD PIPES	Fy = 35 ksi
A500	GRADE C - HSS PIPES	Fy = 46 ksi
A500	GRADE C - HSS TUBES	Fy = 50 ksi
A36	PLATES, BARS, MISC SHAPES (ANGLES), CHANNELS, & RODS	Fy = 36 ksi
A240	GRADE 316 - S.S. PLATE	Fy = 30 ksi
F1554	GRADE 36 - ANCHOR RODS	Fy = 36 ksi
	GRADE 55 - ANCHOR RODS	Fy = 55 ksi
F325	GRADE 105 - ANCHOR RODS	Fy = 105 ksi
	GRADE A325 - CONNECTION BOLTS	
	GRADE A490 - CONNECTION BOLTS	
A563	CONNECTION NUTS	
F436	WASHERS	
A108	HEADED STUD ANCHORS	Fy = 65 ksi
E70XX	ELECTRODES	Fy = 70 ksi
E309LXX	ELECTRODES	Fy = 58 ksi

- CONNECTIONS SHALL BE SELECTED TO SUPPORT BEAM END REACTIONS INDICATED ON THE CONTRACT DRAWINGS.
- IF BEAM END REACTIONS ARE NOT INDICATED, CONNECTIONS SHALL BE SELECTED TO SUPPORT 1/2 THE TOTAL UNIFORM LOAD CAPACITY GIVEN IN THE ALLOWABLE UNIFORM LOAD TABLES, PART 5- FOURTEENTH EDITION (ASD), FOR THE SPECIFIED BEAM SIZE, SPAN, AND STEEL GRADE UON. OTHER RATIONAL ENGINEERING CONNECTION DESIGN AND STANDARD CONNECTION PRACTICES MAY BE USED WITH APPROVAL OF THE ENGINEER.

- ## 9. STEEL BEAM KEY:



13. ALL STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.
14. ALL STRUCTURAL STEEL FASTENERS AND COMPONENTS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.

1. WOOD AND TIMBER CONSTRUCTION SHALL CONFORM TO PROJECT SPECIFICATIONS AND AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) STANDARDS.
2. WOOD CONSTRUCTION SHALL CONFORM TO CHAPTER 23, OF THE INTERNATIONAL BUILDING CODE (IUBC).
3. ALL NAILING SHALL BE COMMON WIRE NAILS (IUBC) & SHALL CONFORM TO TABLE 2304.10.1 "FASTENING SCHEDULE" OF THE INTERNATIONAL BUILDING CODE UNLESS OTHER REQUIREMENTS NOTED ON THE PLAN ARE MORE STRICT.
4. FRAMING LUMBER SHALL CONFORM WITH THE PROVISIONS OF THE AMERICAN SOFTWOOD LUMBER STANDARD PS20-10 AND EACH PIECE SHALL BEAR THE GRADE STAMP OF A GRADING AGENCY APPROVED BY THE AMERICAN LUMBER STANDARDS COMMITTEE. ALL FRAMING LUMBER 2" AND LESS IN THICKNESS SHALL BE SEASONED TO A MOISTURE CONTENT OF 19% OR LESS PRIOR TO SURFACING WITH THE INDICATION "S-DRY" ON THE GRADE STAMP.
5. PRESSURE TREATED LUMBER SHALL BE SOUTHERN PINE WENGEN (SPW), NO. 2 GRADE OR BETTER WITH THE FOLLOWING MINIMUM DESIGN VALUES (IUBC):

Fb	=	800	psi	-	BENDING
Fv	=	175	psi	-	SHEAR
Fc	=	1300	psi	-	COMPRESSION PARALLEL TO GRAIN
Fc	=	565	psi	-	COMPRESSION PERPENDICULAR TO GRAIN
E	=	1400	ksi	-	MODULUS OF ELASTICITY
Emin	=	510	ksi	-	MINIMUM MODULUS OF ELASTICITY

6. LUMBER USED FOR HEADERS, BEAMS, AND JOISTS SHALL BE FREE OF CHECKS AND SPLITS

7. ALL HEADERS, BEAMS, JOISTS, AND TRUSSES SHALL BEAR FULLY ON STUD WALLS, POSTS, AND JACK STUDS. DO NOT OVERCUT.
8. NO NOTCHING OF STUDS, JOISTS, BEAMS, OR TRUSSES IS PERMITTED WITHOUT THE ENGINEERS APPROVAL. DO NOT OVERCUT NOTCHES. HOLES BORED IN STUDS OR JOISTS SHALL BE IN THE MIDDLE ONE-THIRD OF THE DEPTH AND MIDDLE ONE-THIRD OF THE SPAN. THE DIAMETER OF ANY SUCH HOLE SHALL NOT EXCEED ONE-FOURTH THE DEPTH.

AR	ADHESIVE	MFG	MANUFACTURER
AR	ANCHOR ROD	MIN	MINIMUM
APA	AMERICAN PLYWOOD ASSOCIATION	MISC	MISCELLANEOUS
ARCH	ARCHITECT/ARCHITECTURAL	MTL	METAL
BB	BOND BEAM	MO	MASONRY OPENING
BLDG	BUILDING	N	NORTH
BLK	BLOCK	NTS	NOT TO SCALE
BM	BEAM	NS	NON-SHRINK
B.O.	BOTTOM OF	OC	ON CENTER
BOT	BOTTOM	OD	OUTSIDE DIAMETER
BRG	BEARING	OF	OUTSIDE FACE
CL	CENTER LINE	OH	OVERHEAD
CJ	CONTROL JOINT	OPNG	OPENING
CCJ	CONSTRUCTION CONTROL JOINT	ORIG	ORIGINAL
CLR	CLEAR/CLEARANCE	PAF	POWDER ACTUATED FASTENER
CMU	CONCRETE MASONRY UNIT	PART	PARTITION
COL	COLUMN	PC	PRECAST CONCRETE
CONC	CONCRETE	PLF	POUND PER LINEAR FOOT
CONN	CONNECTION	PL	PLATE
CONT	CONTINUOUS	PWD	PLYWOOD
CSA	CONCRETE SCREW ANCHOR	PNL	PANEL
DBL	DOUBLE	PSF	POUNDS PER SQUARE FOOT
DET	DETAIL	PSI	POUNDS PER SQUARE INCH
DEG	DEGREES	RAD	RADIUS
DIA	DIAMETER	RD	ROOF DRAIN
DIM	DIMENSION	REINF	REINFORCING
DL	DEAD LOAD	REM	REMOVE
DT	DRAIN TILE	ROD	REQUIRED
DWL	DOWEL	RFG	ROOFING
EA	EACH	RO	ROOF OPENING
EF	EACH FACE	SA	SCREW ANCHOR
EJ	EXPLANATION JOINT	SB	SOIL BORING
EL	ELEVATION	SCHED	SCHEDULE
ELEV	ELEVATOR	SD	SEE DETAIL
EQ	EQUAL	SDL	SUPERIMPOSED DEAD LOAD
EW	EACH WAY	SL	SUPERIMPOSED LIVE LOAD
(E)	EXISTING	SER	STRUCTURAL ENGINEER OF RECORD
EXC	EXCAVATION	SHT	SHEET
EXP	EXPANSION	SIM	SIMILAR
FD	FLOOR DRAIN	SQ	SQUARE
FDN	FOUNDATION	SJ	STEEL JOIST
FTG	FOOTING	SL	SNOW LOAD
FT	FOOT/FEET	SPA	SPACE/SPACING
GALV	GALVANIZE	SPECS	SPECIFICATIONS
GA	GAUGE	SS	STAINLESS STEEL
GC	GENERAL CONTRACTOR	STD	STANDARD
GT	GIRDER TRUSS	STL	STEEL
HC	HOLLOW CORE	TEMP	TEMPORARY
HORIZ	HORIZONTAL	T & B	TOP & BOTTOM
HSA	HEADED STUD ANCHOR	T & G	TONGUE & GROOVE
HSS	HOLLOW STRUCTURAL SECTION	THK	THICK/THICKENED
IF	INSIDE FACE	T.O.	TOP OF
INT	INTERIOR	TRANS	TRANSVERSE
JST	JOIST	TS	TUBE STEEL
K	KIPS	TP	TYPICAL
KLF	KIPS PER LINEAR FOOT	UON	UNLESS OTHERWISE NOTED
KSI	KIPS PER SQUARE INCH	VER/(V)	VERIFY
L	ANGLE	VERT	VERTICAL
LL	LIVE LOAD	WF	WIDE FLANGE
LB	LEDGER BEAM	WD	WOOD
LBS	POUNDS	WL	WIND LOAD
LLH	LONG LEG HORIZONTAL	W/	WITH
LLV	LONG LEG VERTICAL	W/O	WITH OUT
LONG	LONGITUDINAL	WT	WEIGHT
MAS	MASONRY	WWF	WELDED WIRE FABRIC
MAX	MAXIMUM	Ø	AT
MECH	MECHANICAL	+/-	PLUS OR MINUS

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STRUCTURAL DRAWINGS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
VICTORIA, MINNESOTA
GENERAL NOTES

DATE:	3/28/25-IFR
REVISED:	
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PROJECT No.	24026
DRAWN BY:	KF
CHECKED BY:	JDG
PROJ. MANAGER:	JCM
PROJ. ENGINEER:	QDS

S001



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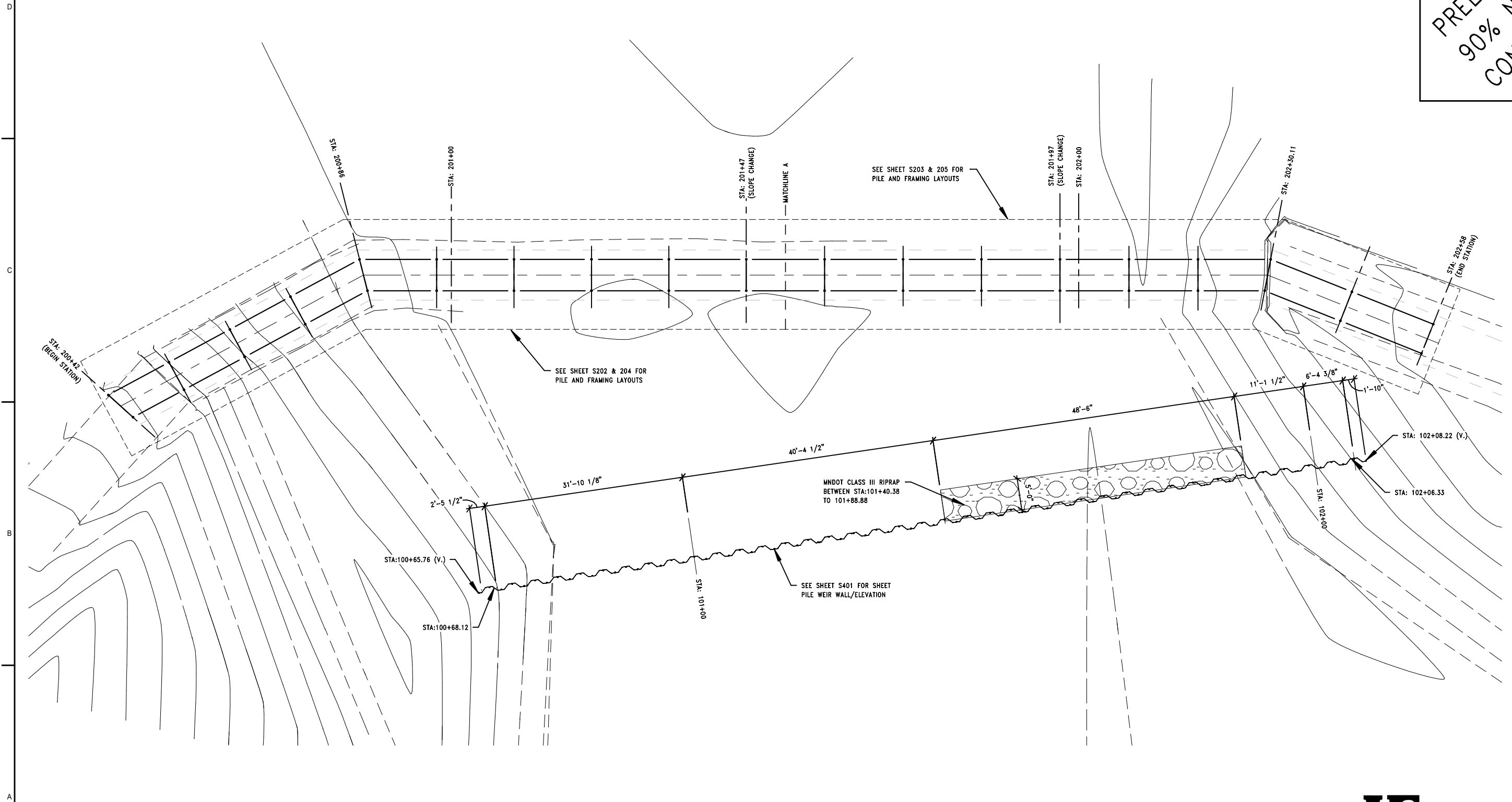
STRUCTURAL DRAWINGS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
VICTORIA, MINNESOTA
OVERALL BOARDWALK/WEIR WALL PLAN

DATE:	3/28/25-IFR
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PROJECT No.	24026
DRAWN BY:	KF
CHECKED BY:	JDG
PROJ. MANAGER:	JCM
PROJ. ENGINEER:	QDS

S201

SHEET NOTES:

1. SEE SHEET S001 FOR GENERAL CONSTRUCTION NOTES.
2. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO NEW ADDITION INSTALL. CONTACT HEYER ENGINEERING IF DIFFERENCES OCCUR.
3. FINAL STATION, ELEVATION, AND DIMENSION CALLOUTS TO BE VERIFIED USING MOORE ENGINEERING PROCESS DRAWINGS.



OVERALL BOARDWALK/WEIR WALL PLAN
1/16" = 1'-0"

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HELICAL PILE PLACEMENT TABLE				
HELICAL #	MIN. HELICAL SIZE	HELICAL DESIGNED WORKING CAPACITY REQUIRED (COMP./TENS.)	ULTIMATE DRIVEN CAPACITY (COMP./TENS.)	NOTES
HP1-HP20	3" DIA.	10 KIPS/2 KIPS	20 KIPS/4 KIPS	1-7
NOTES: 1. ALL HELICAL PIPE PILE & PL'S SHALL BE ASTM A527 (MINIMUM GRADE FOR HELICAL PL). 2. MINIMUM WALL THICKNESS = 0.375" 3. MINIMUM HELIX PL TO BE 3/8". HELICAL ANCHOR SUPPLIER TO DETERMINE FINAL f SIZE. 4. CORRODED PROPERTIES & CAPACITIES INCLUDE A 50 YEAR SCHEDULED SACRIFICIAL LOSS IN THICKNESS PER ICC-ES AC308. ABOVE THIS REQUIREMENT, SOIL TO BE TESTED BY SOIL ENGINEER TO DETERMINE ADDITIONAL REQUIREMENTS. 5. PILE DESIGNER TO DESIGN PILES FOR MAX LATERAL LOAD OF 2 KIPS. 6. PILE DESIGNER TO DESIGN PILE FOR MAX MOMENT AT PILE CAP, DUE TO WIND LOADING, OF 0.84 KIPS/FT 7. THE LATERAL DEFLECTION OF EACH HELICAL ANCHOR SHALL NOT EXCEED 1" FOR THE REQUIRED LOADING. PILE DESIGNER TO ADD CROSS BRACING AS NECESSARY.				

- SHEET NOTES:
- SEE SHEET S001 FOR GENERAL CONSTRUCTION NOTES.
 - FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO NEW ADDITION INSTALL. CONTACT HEYER ENGINEERING IF DIFFERENCES OCCUR.
 - FINAL STATION, ELEVATION, AND DIMENSION CALLOUTS TO BE VERIFIED USING MOORE ENGINEERING PROCESS DRAWINGS.
 - HPXX - HELICAL PILE MARK SEE SCHEUDLE ON THIS SHEET.
 - ALL STRUCUTRAL STEEL TO BE HOT DIPPED GALVANIZED, SEE SHEET S001.

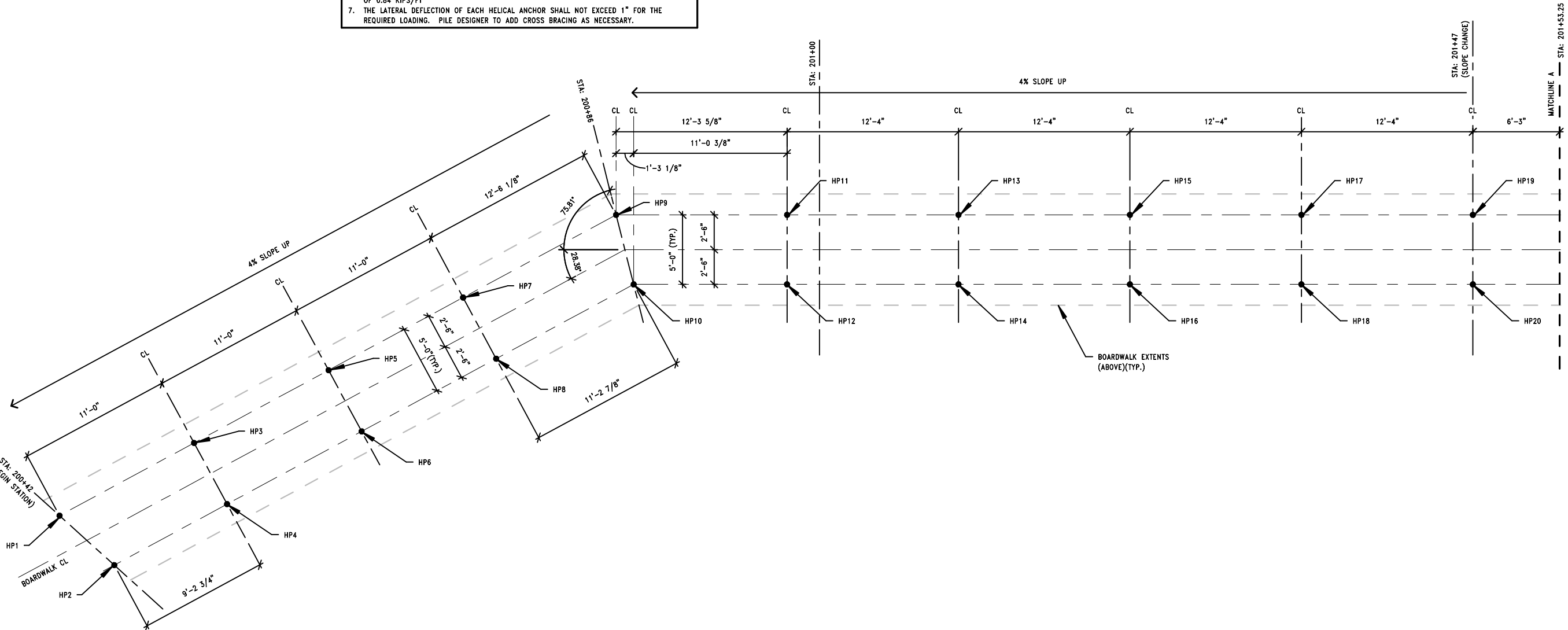
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CONSTRUCTION



STRUCTURAL DRAWINGS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
VICTORIA, MINNESOTA
HELICAL PILE LAYOUT PLAN

DATE:	3/28/25-IFR
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PROJECT No.	24026
DRAWN BY:	KF
CHECKED BY:	JDG
PROJ. MANAGER:	JCM
PROJ. ENGINEER:	QDS

S202



HELICAL PILE LAYOUT PLAN STA:200+42 TO STA:201+53.25
1/8" = 1'-0"

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HELICAL PILE PLACEMENT TABLE				
HELICAL #	MIN. HELICAL SIZE	HELICAL DESIGNED WORKING CAPACITY REQUIRED (COMP./TENS.)	ULTIMATE DRIVEN CAPACITY (COMP./TENS.)	NOTES
HP21-HP38	3" DIA.	10 KIPS/2 KIPS	20 KIPS/4 KIPS	1-7
NOTES: 1. ALL HELICAL PIPE PILE & PL'S SHALL BE ASTM A527 (MINIMUM GRADE FOR HELICAL PL). 2. MINIMUM WALL THICKNESS = 0.375" 3. MINIMUM HELIX PL TO BE 3/8". HELICAL ANCHOR SUPPLIER TO DETERMINE FINAL f SIZE. 4. CORRODED PROPERTIES & CAPACITIES INCLUDE A 50 YEAR SCHEDULED SACRIFICIAL LOSS IN THICKNESS PER ICC-ES AC308. ABOVE THIS REQUIREMENT, SOIL TO BE TESTED BY SOIL ENGINEER TO DETERMINE ADDITIONAL REQUIREMENTS. 5. PILE DESIGNER TO DESIGN PILES FOR MAX LATERAL LOAD OF 2 KIPS. 6. PILE DESIGNER TO DESIGN PILE FOR MAX MOMENT AT THE PILE CAP, DUE TO WIND LOADING, OF 0.84 KIP-FT. 7. THE LATERAL DEFLECTION OF EACH HELICAL ANCHOR SHALL NOT EXCEED 1" FOR THE REQUIRED LOADING. PILE DESIGNER TO ADD CROSS BRACING AS NECESSARY				

- SHEET NOTES:
- SEE SHEET S001 FOR GENERAL CONSTRUCTION NOTES.
 - FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO NEW ADDITION INSTALL. CONTACT HEYER ENGINEERING IF DIFFERENCES OCCUR.
 - FINAL STATION, ELEVATION, AND DIMENSION CALLOUTS TO BE VERIFIED USING MOORE ENGINEERING PROCESS DRAWINGS.
 - HPXX - HELICAL PILE MARK SEE SCHEDULE ON THIS SHEET.
 - ALL STRUCTURAL STEEL TO BE HOT DIPPED GALVANIZED, SEE SHEET S001.

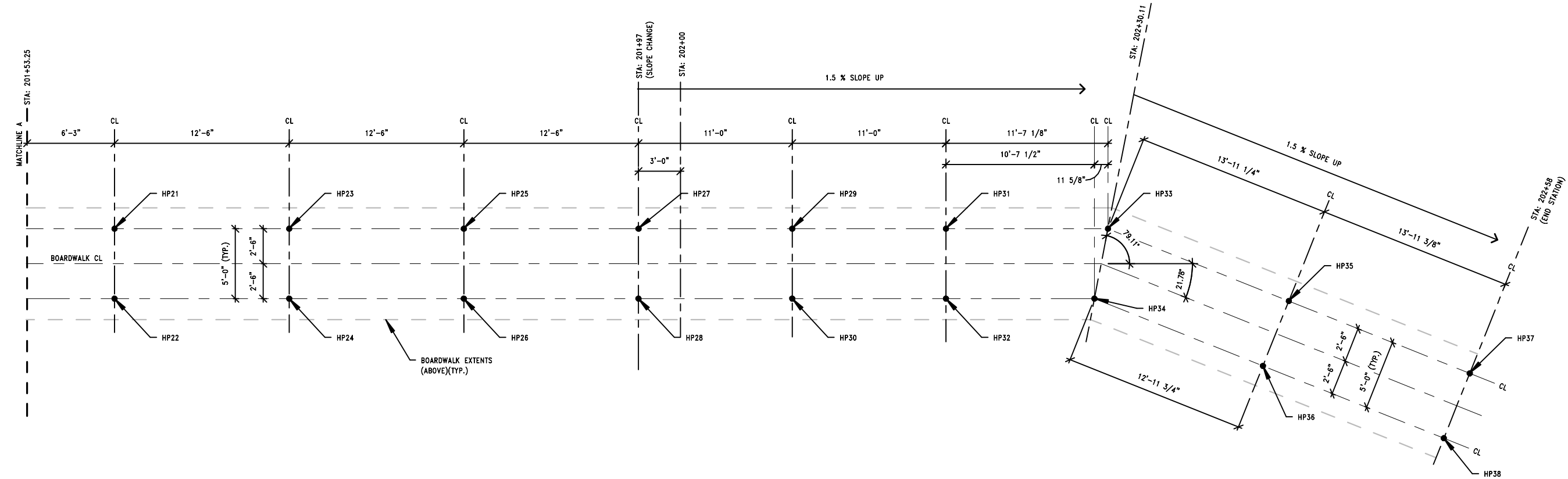
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STRUCTURAL DRAWINGS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
VICTORIA, MINNESOTA
HELICAL PILE LAYOUT PLAN

DATE:	3/28/25-IFR
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PROJECT No.	24026
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CHECKED BY:	JDG
PROJ. MANAGER:	JCM
PROJ. ENGINEER:	QDS

S203



HELICAL PILE LAYOUT PLAN STA:201+53.25 TO STA:202+58
1/8" = 1'-0"



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CHECKED BY:	JDG
PROJ. MANAGER:	JCM
PROJ. ENGINEER:	QDS



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⊕ T.O. STEEL EL. = VARIES

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STRUCTURAL DRAWINGS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
VICTORIA, MINNESOTA
BOARDWALK FRAMING PLAN

DATE:	3/28/25-IFR
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PROJECT No.	24026
DRAWN BY:	KF
CHECKED BY:	JDG
PROJ. MANAGER:	JCM
PROJ. ENGINEER:	QDS

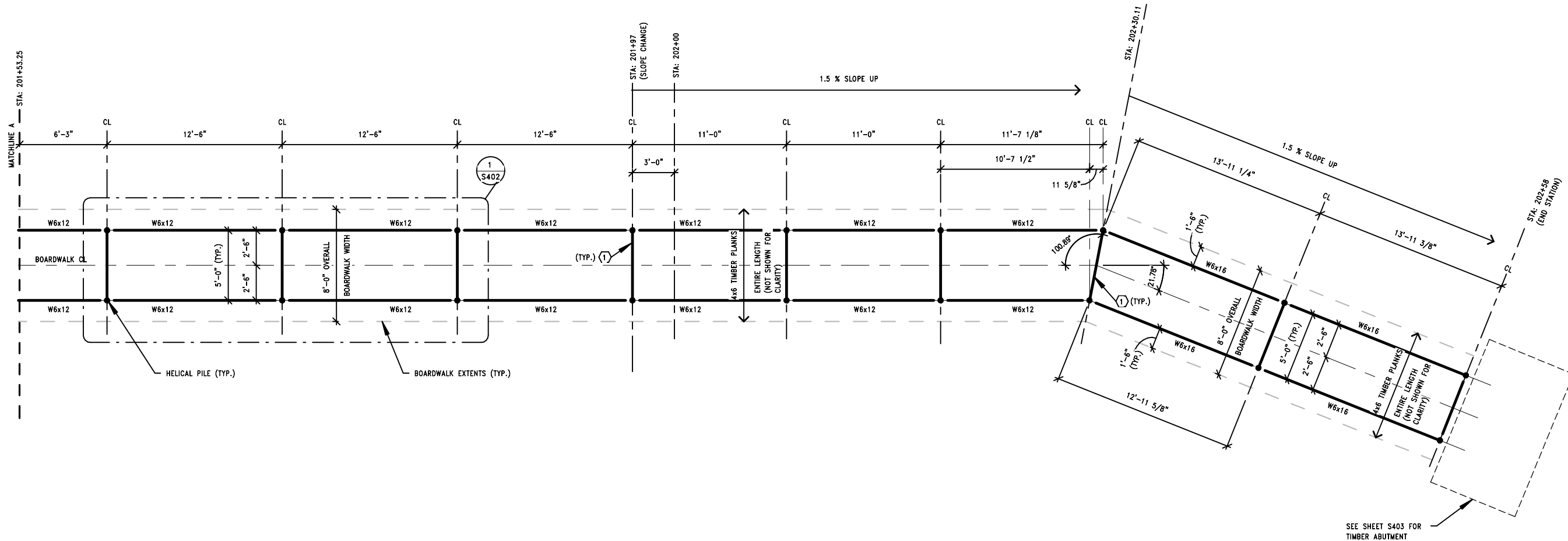
S205

SHEET NOTES:

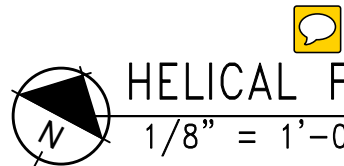
1. SEE SHEET S001 FOR GENERAL CONSTRUCTION NOTES.
2. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO NEW ADDITION INSTALL. CONTACT HEYER ENGINEERING IF DIFFERENCES OCCUR.
3. FINAL STATION, ELEVATION, AND DIMENSION CALLOUTS TO BE VERIFIED USING MOORE ENGINEERING PROCESS DRAWINGS.
4. LUMBER NOTATED W/ 'TREATED' SHALL BE PRESSURE TREATED SOUTHERN PINE NO. 2 OR BETTER.
5. ALL STRUCTURAL STEEL TO BE HOT DIPPED GALVANIZED, SEE SHEET S001.
5. TOP OF STEEL ELEVATION AT LEVEL/FLAT SECTION OF BOARDWALK IS 948'-5 3/16".

KEY NOTES:

- ① 3" DIA. SCHED 40 PIPE



SEE SHEET S403 FOR
TIMBER ABUTMENT



HELICAL PILE LAYOUT PLAN STA:201+53.25 TO STA:202+58

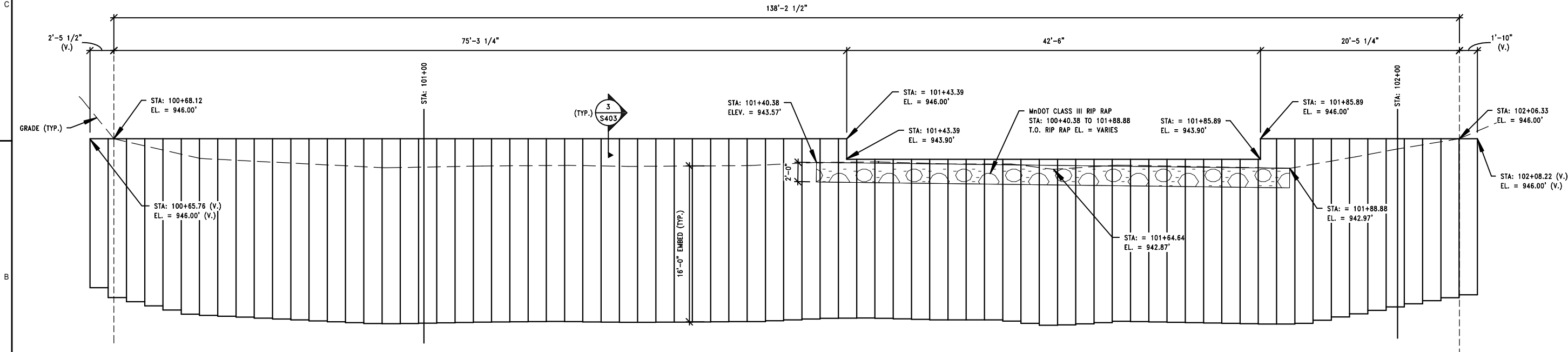
T.O. STEEL EL. = VARIES



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- SHEET NOTES:
- 1. SEE SHEET S001 FOR GENERAL CONSTRUCTION NOTES.
 - 2. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO NEW ADDITION INSTALL. CONTACT HEYER ENGINEERING IF DIFFERENCES OCCUR.
 - 3. FINAL STATION, ELEVATION, AND DIMENSION CALLOUTS TO BE VERIFIED USING MOORE ENGINEERING PROCESS DRAWINGS.
 - 4. SHEET PILE TO BE P222 A690 GR.50.
 - 5. CONTRACTOR TO INSTALL ONE FULL PILE WIDTH BEYOND INTERSECTION WITH GRADE.

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1 SHEET PILE/WEIR WALL ELEVATION
S401 3/32" = 1'-0"

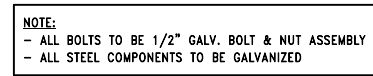
STRUCTURAL DRAWINGS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
VICTORIA, MINNESOTA
SHEET PILE WEIR WALL ELEVATION

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PROJECT No.	24026
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PROJ. ENGINEER:	QDS



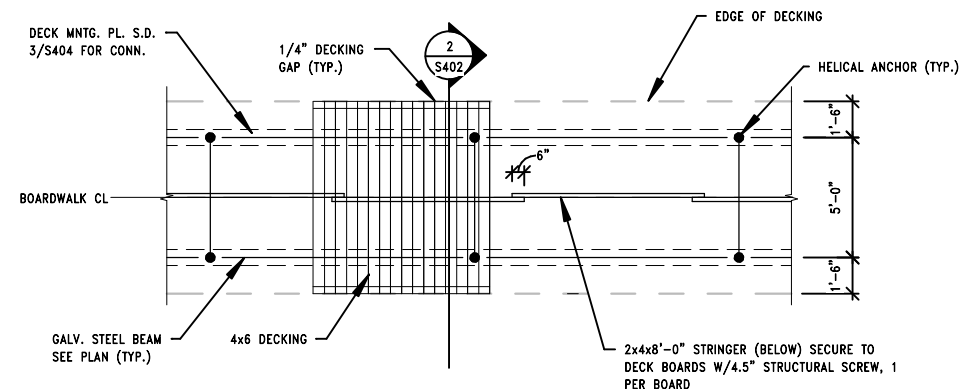
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S401



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2 BOARDWALK SECTION
S402 1/2" = 1'-0"



1 BOARDWALK DETAIL PLAN
S402 1/8" = 1'-0"

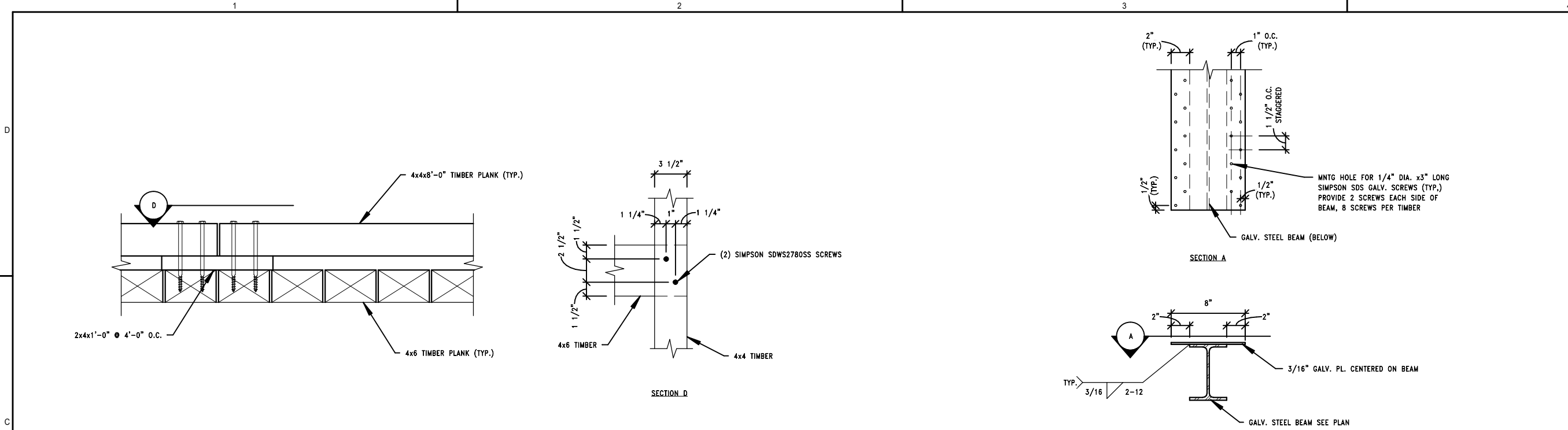


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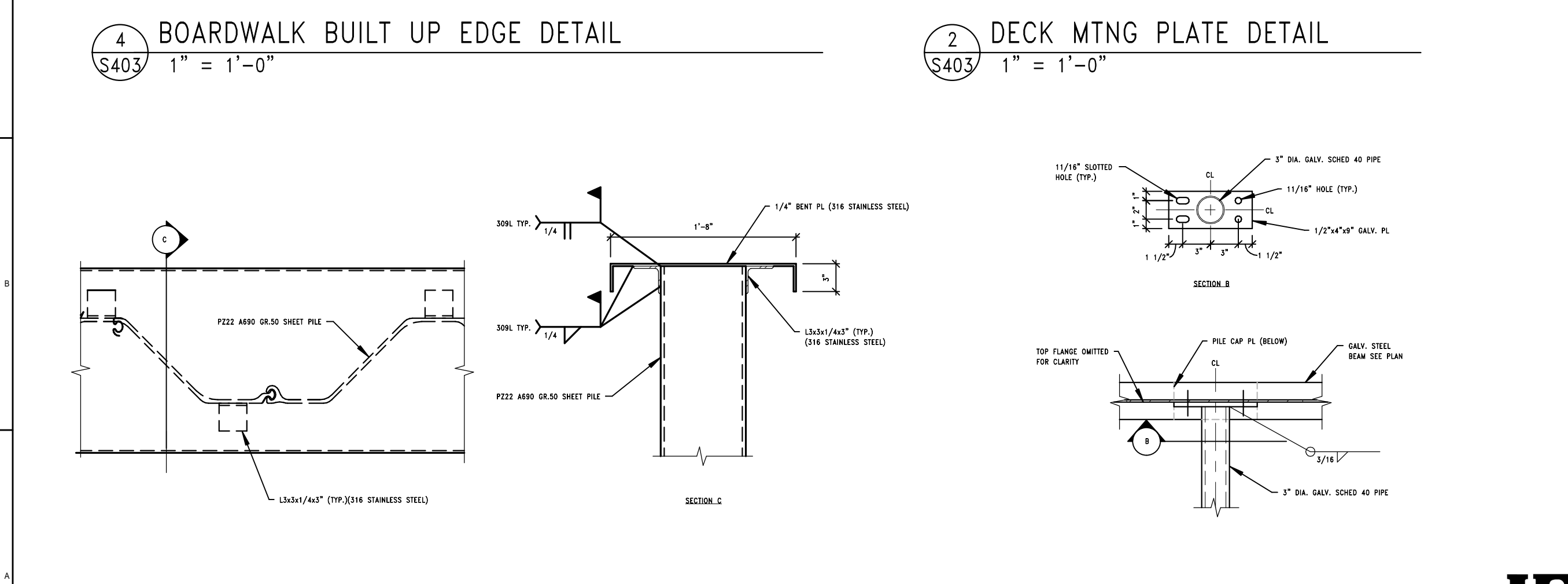
STRUCTURAL DRAWINGS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
VICTORIA, MINNESOTA
FRAMING DETAILS

DATE:	3/28/25-JFR
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PROJECT No. 24026	
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CHECKED BY:	JDG
PROJ. MANAGER:	JCM
PROJ. ENGINEER:	QDS

S402



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STRUCTURAL DRAWINGS
 EAST AUBURN WETLAND RESTORATION
 MINNEHAHA CREEK WATERSHED DISTRICT
 VICTORIA, MINNESOTA
 FRAMING DETAILS

DATE:	3/28/25-IFR
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PROJECT No.	24026
DRAWN BY:	KF
CHECKED BY:	JDG
PROJ. MANAGER:	JCM
PROJ. ENGINEER:	QDS

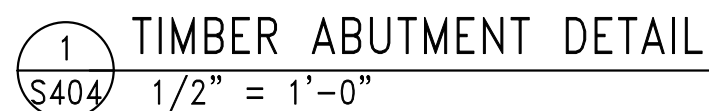
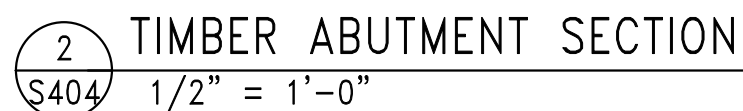
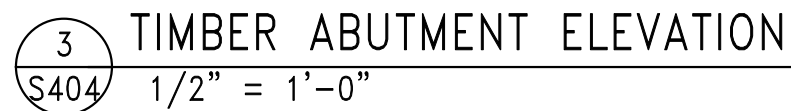


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STRUCTURAL DRAWINGS
EAST AUBURN WETLAND RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
VICTORIA, MINNESOTA
FRAMING DETAILS

DATE:	3/28/25-IFR
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REVISED:	
PROJECT No. 24026	
DRAWN BY:	Author
CHECKED BY:	Designer
PROJ. MANAGER:	JCM
PROJ. ENGINEER:	QDS

S404



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Term Sheet (Draft 1-28-25)

Project Agreement for East Auburn Wetland Restoration

City of Victoria & Minnehaha Creek Watershed District

RECITALS

A. MCWD Resolution 14-047 identifies the Six Mile Creek Halsted Bay (SMCHB) subwatershed as a priority focus area.

B. On March 26, 2015, the City and MCWD entered into a memorandum of understanding (MOU) to coordinate on the SMCHB subwatershed implementation plan in the MCWD 2018-27 Watershed Management Plan (WMP), and on the City's corresponding local water management plan.

C. MCWD Resolution 18-004 adopted the WMP, containing an assessment of SMCHB subwatershed goals and priorities, and an implementation plan to pursue them.

D. In 2019, the City adopted its 2040 land use plan, setting forth the City's vision for expansion into the western growth area and, in consultation with MCWD, incorporating the Victoria Chain of Lakes Greenway Policy and Implementation Plan.

E. Since 2015, the City and MCWD have collaborated on initiatives including:

- System-wide habitat restoration through carp management, supported by a Lessard-Sams Outdoor Heritage Council grant.
- Enhancing treatment capacity of ponds near downtown Victoria to reduce phosphorus loading to East Auburn Lake, supported by a Clean Water Fund grant.
- Alum treatments of Wassermann West pond and Wassermann Lake, supported by a Clean Water Fund grant.
- Developing Wassermann Lake Preserve, with related water quality improvements.

The City and MCWD wish to continue their collaboration by partnering in a hydrologic restoration of the East Auburn Wetland, for water quality benefits to East Auburn Lake, and associated trail improvement.

F. MCWD's engineer has performed a feasibility study and concept design for a weir within the wetland that will manage water level to reduce transport of internal nutrient loads downgradient to East Auburn Lake.

G. Weir location and surface water area to be managed all lie on real property owned by the City. The City wishes to facilitate the project by granting a right of access to MCWD to build and maintain the project.

H. The public trail section over the wetland adjacent to the weir location, consisting of boardwalk on helical piers, needs to be refurbished. There are economies in having the work done in conjunction with the weir installation.

DESIGN

1. MCWD has retained Moore Engineering (with Heyer as subconsultant) as design engineer for the weir and boardwalk. The City concurs in the retention.
2. The City does not have an interest, under the agreement, in the weir design.
3. Moore has prepared a 60 percent design for the boardwalk, which the City has reviewed and in which it concurs. Moore will prepare a 90 percent design for City review and approval, and will prepare a 100 percent design conforming to the 90 percent design.
4. The boardwalk design will meet the following criteria:
 - The design will be ADA-compliant.
 - The boardwalk will have an eight-foot width tied into connecting trail segments.
 - The aesthetic and structural design generally will match the Wasserman Lake Preserve boardwalk.
 - Dimensionally and structurally, the boardwalk will support City snow removal equipment, specified as a Utility Task Vehicle (UTV) with associated snow removal equipment.
5. The City will timely specify any other criteria, fencing, signage and any other appurtenances for the boardwalk design.
6. The design contract will extend the boardwalk design warranty to the City in the same manner as it extends to MCWD. The City will hold harmless/indemnify MCWD for the boardwalk design.
7. The City will timely advise MCWD and the designer of subsurface facilities, local road restrictions or terms, access routes, staging areas, construction-phase trail closure terms and signage, and any other construction management and site protection requirements.
8. The City will timely process any city permits/approvals without fee. The City, as landowner, will cooperate with respect to permits or approvals of other regulatory bodies. MCWD is responsible for permit fees and costs related to the latter.

CONSTRUCTION

9. The bid form will be unit price, and structured to distinguish MCWD and City (boardwalk) costs, and to bid the boardwalk as an add alternate. Firms may bid on both the weir and the combined project, or on just the combined project.

10. The contract will require:

- Contractor warranties run to both MCWD and the City.
- Contractor names the City as an additional insured for commercial general liability (ongoing & completed operations), automobile liability, and any associated umbrella/excess to \$2 million per event/annual aggregate.
- Contractor (or the City) procures builder's risk coverage if/as City chooses.
- Contractor conforms to local load requirements, terms of easement.

11. MCWD will solicit bids for construction. MCWD will share the bid tabulation with the City. The City will decide to proceed with the boardwalk work or not.

12. The City may attend construction meetings. With respect to the boardwalk, MCWD is Owner's representative and assigns to the City all rights and responsibilities of Owner regarding the work, price and schedule changes and acceptance of work. The City holds Owner's rights as to work in progress and owns the improvements.

13. The City holds MCWD harmless and indemnifies it as to its acts as Owner's representative (aside from grossly negligent or willful acts) and as to construction work and defects.

14. MCWD will give the City notice of substantial completion and completion. The City will inspect within the stipulated time frame and formally concur in substantial completion and completion.

MAINTENANCE

15. The City will own the boardwalk and appurtenances, and maintain them according to its own prerogatives.

16. MCWD will own the weir and appurtenances, and maintain them according to its own prerogatives.

17. The City will maintain and manage the real property on which the project is situated, as property owner and public land manager, according to its own prerogatives.

COSTS

18. MCWD will pay the design cost for the project as a whole.
19. The City will pay the construction cost for boardwalk refurbishment. MCWD will pay the weir construction cost, as well as mobilization and any related lump sum project-wide cost.
20. MCWD will manage the construction contract and pay the contractor. On final acceptance, MCWD promptly will transmit to the City an accounting of City costs. The City will pay 20 percent of cost within 30 days, and the remaining amount in four equal annual payments thereafter.
21. Each party will bear its own administrative cost and other cost incurred in fulfilling its responsibilities under this agreement. Each party will bear its own cost to maintain its facilities.

EASEMENT

22. The parties will establish MCWD right of access by means of an easement. The easement will consist of a temporary construction easement; a permanent flowage easement; and a permanent easement to inspect, operate, maintain, repair, reconstruct and remove the weir improvements. The easement will allow MCWD to install and maintain project signage.
23. The easement will specify access routes and staging areas.
24. The easement will be drafted and attached to the agreement. The agreement will provide for the City to sign the easement before the project is published for bids.

MISCELLANEOUS

25. The agreement is not a joint powers agreement; each party acts independently and does not assume liability for the acts of the other. Each party will hold the other harmless, and indemnify it, with respect to claims resulting from the act or inaction of the indemnifying party. The agreement creates no right in a third party or waives any immunity, defense or liability limit of either of the parties.