

IDALS CAL883432B GRODAHL WETLAND

CALHOUN COUNTY, IOWA

CONSTRUCTION PLANS

ISG PROJECT # 24-30402



IOWA DEPARTMENT OF
AGRICULTURE &
LAND STEWARDSHIP



1-800-292-8989
www.iowaonecall.com



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PROJECT

IDALS CAL883432

GRODAHL
WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	24-30402
FILE NAME	30402-C0-TITLE
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

TITLE

SHEET

C0-10

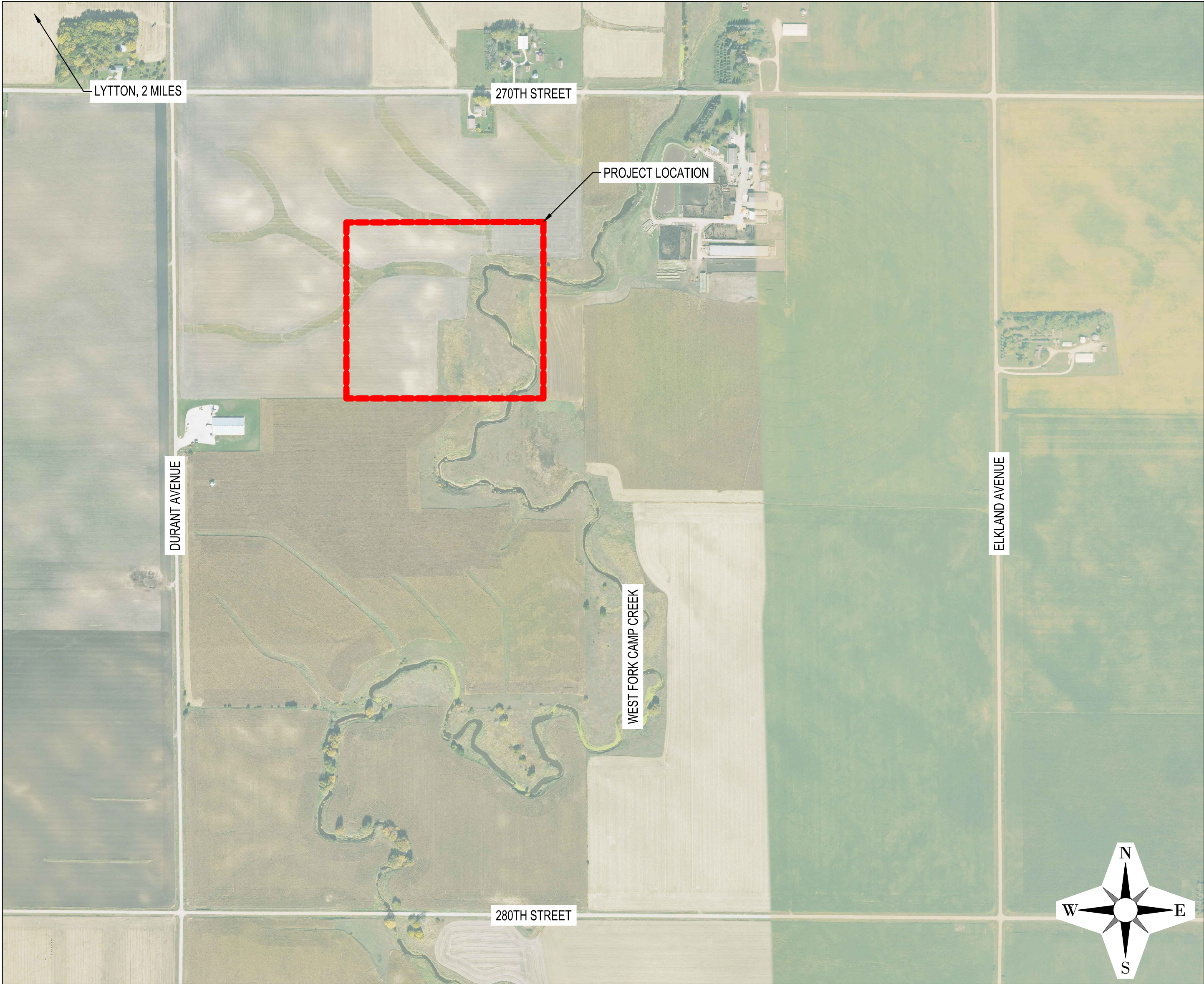
LEGEND

EXISTING

	WATERSHED BOUNDARY
	CITY LIMITS
	SECTION LINE
	QUARTER SECTION LINE
	RIGHT OF WAY LINE
	PROPERTY / LOTLINE
	EASEMENT LINE
	ACCESS CONTROL
	WATER EDGE
	WETLAND BOUNDARY
	FENCE LINE
	EXISTING OPEN DITCH
	CULVERT
	TILE
	PRIVATE TILE
	WATER
	GAS
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC
	UNDERGROUND TELEPHONE
	UNDERGROUND TV
	OVERHEAD UTILITY
	UNDERGROUND UTILITY
	UNDERGROUND FIBER OPTIC
	CONTOUR (MAJOR)
	CONTOUR (MINOR)
	DECIDUOUS TREE
	CONIFEROUS TREE
	TREE LINE
	DROP INTAKE
	HYDRANT
	POWER POLE

PROPOSED

	EASEMENT
	PROPOSED OPEN DITCH
	OPEN DITCH REPAIR
	CULVERT (RCP)
	CULVERT (CMP)
	CULVERT (HDPE)
	TILE
	TILE (PIPE WIDTH)
	PRIVATE TILE
	WATER
	GAS
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC
	UNDERGROUND TV
	CONTOUR (MAJOR)
	CONTOUR (MINOR)
	DROP INTAKE
	SLOUGH REPAIR
	SPOIL PLACEMENT
	TREE CLEARING
	REMOVE TREE
	BUFFER

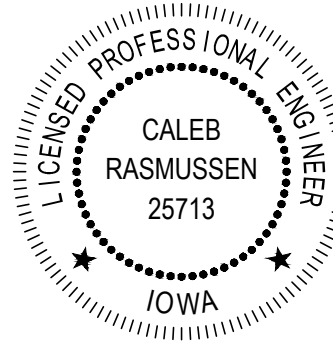


LOCATION MAP

SHEET INDEX

C0-10	TITLE
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C4-30	CROSS SECTION

SEAL



I hereby certify that this engineering document was prepared by me or under direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

(signature) Caleb Rasmussen (date) 2-13-2025

Printed or typed name CALEB RASMUSSEN

License number 25713

My license renewal date is December 31, 2026

Pages or sheets covered by this seal:
All Sheets

GIS DISCLAIMER:

INFORMATION FOR THE BOUNDARY / LOT LINES, AND UNDERGROUND UTILITIES SHOWN WAS DERIVED FROM DIGITAL DATABASES AND IS FOR INFORMATIONAL PURPOSES ONLY. DATA MAY NOT HAVE BEEN PREPARED FOR, OR BE SUITABLE FOR: LEGAL, ENGINEERING, OR SURVEYING PURPOSES.

PROJECT GENERAL NOTES

- ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE OWNER - CONTRACTOR AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL SUPPLEMENTARY CONDITIONS AND SPECIFICATIONS), DRAWINGS OF ALL DISCIPLINES AND ALL ADDENDA, MODIFICATIONS, AND CLARIFICATIONS ISSUED BY ARCHITECT/ENGINEER.
- CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK.
- WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
- DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED THROUGHOUT THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN, WHERE SPECIFIC DIMENSIONS, DETAILS, OR DESIGN INTENT CANNOT BE DETERMINED, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
- ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED, AND CONDITIONED ACCORDING TO MANUFACTURERS' INSTRUCTIONS. IN CASE OF DISCREPANCIES BETWEEN MANUFACTURERS' INSTRUCTIONS AND THE CONTRACT DOCUMENTS, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
- ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
- THE LOCATION AND TYPE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY AND ARE ACCURATE AND COMPLETE TO THE BEST OF THE KNOWLEDGE OF I & S GROUP, INC. (ISG). NO WARRANTY OR GUARANTEE IS IMPLIED. THE CONTRACTOR SHALL VERIFY THE SIZES, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM PLAN.
- THE CONTRACTOR IS TO CONTACT "IOWA ONE CALL" FOR UTILITY LOCATIONS A MINIMUM OF 2 BUSINESS DAYS PRIOR TO ANY EXCAVATION / CONSTRUCTION (1-800-292-8989).

SPECIFICATIONS REFERENCE

ALL CONSTRUCTION SHALL COMPLY WITH CALHOUN COUNTY'S REQUIREMENTS AND WITH THE MOST RECENT NRCS CONSTRUCTION SPECIFICATION, UNLESS DIRECTED OTHERWISE.

PROJECT DATUM

HORIZONTAL COORDINATES HAVE BEEN REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83), ON THE IOWA REGIONAL ZONE 4 COORDINATE SYSTEM, IN U.S. SURVEY FEET. ELEVATIONS HAVE BEEN REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). RTK GPS METHODS WERE USED TO ESTABLISH HORIZONTAL AND VERTICAL COORDINATES FOR THIS PROJECT.

TOPOGRAPHIC SURVEY

THIS PROJECT'S TOPOGRAPHIC SURVEY CONSISTS OF DATA COLLECTED IN APRIL 2024 BY ISG.

PROJECT INDEX:

OWNER:

GRODAHL FARMS INC.
1471 270TH ST.
LYTTON, IA 50561

PROJECT ADDRESS / LOCATION:

SECTION 32/T88N/R34W

GARFIELD TWP
LYTTON, IA

MANAGING OFFICE:



STORM LAKE OFFICE
1725 LAKE AVE. NORTH
STORM LAKE, IA 50588
PHONE: 712.732.7745

PROJECT MANAGER: CALEB RASMUSSEN
EMAIL: CALEB.RASMUSSEN@ISGINC.COM

CONSTRUCTION NOTES:

GENERAL NOTES

1. ACCESS - CONTRACTOR IS TO ARRANGE ACCESS WITH LANDOWNER PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE TO SECURE PERMISSION OF THE COUNTY ENGINEER TO CONSTRUCT TEMPORARY ACCESS IF NECESSARY.
2. EQUIPMENT STAGING: CONTRACTOR TO DESIGNATE EQUIPMENT STAGING AREA AT PRE-CONSTRUCTION MEETING.

2.1. REFER TO THE PLANS FOR FLOOD PLAIN EXTENTS. THE CONTRACTOR IS RESPONSIBLE FOR MONITORING WEATHER AND REMOVING EQUIPEMENT FROM THE FLOODPLAIN IF AN ADVERSE EVENT IS EXPECTED.
3. WORK LIMITS ARE CONFINED TO THE EASEMENT AREA EXCEPT WHERE INDICATED ON PLANS. CONTRACTOR SHALL TRY TO MINIMIZE DISTURBANCE FOOTPRINT.
4. UTILITIES: CONTRACTOR IS RESPONSIBLE FOR CALLING IOWA ONE CALL (1-800-292-8989) AND MUST PROVIDE VERIFICATION (TICKET NO.) TO THE ENGINEER PRIOR TO MOBILIZATION. CONTRACTOR RESPONSIBLE FOR PROTECTION OF ALL UTILITIES AND IS RESPONSIBLE TO VERIFY LOCATION/ELEVATION OF ALL UTILITIES IN WORK AREA PRIOR TO EXCAVATION. A DESIGN ONE CALL WAS PERFORMED ON DECEMBER 31, 2024.

4.1. EXPECTED WETLAND UTILITIES: NONE.

4.2. EXPECTED FIELD ENTRANCE UTILITIES:

4.2.1. MID-AMERICAN ELECTRIC

4.2.2. MID-AMERICAN GAS

4.2.3. WINDSTREAM COMMUNICATIONS
5. DEWATERING: CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING REASONABLE DRY WORKING CONDITIONS DURING CONSTRUCTION. ANY TEMPORARY DEWATERING IS TO BE AT CONTRACTOR'S DISCRETION AND INCIDENTAL TO ITEMS OF WORK.
6. TOPSOIL STRIPPING (CS-IA-01):

a. STRUCTURE AND BORROW AREAS SHALL BE STRIPPED OF NO LESS THAN TWELVE (12) INCHES.

b. AREAS FOR TILE WORK SHALL BE STRIPPED NO LESS THAN TWELVE (12) INCHES.

c. ALL OTHER AREAS TO BE STRIPPED TO NINE (9) INCHES.
7. TOPSOIL STOCKPILE: CONTRACTOR IS RESPONSIBLE FOR SEGREGATION TOPSOIL FROM EXCAVATION SPOILS THROUGHOUT CONSTRUCTION. CONTRACTOR IS TO DESCRIBE TOPSOIL MANAGEMENT AT PRECONSTRUCTION MEETING.
8. TOPSOIL SPREADING: ALL AREAS RECEIVING TOPSOIL DRESS SHALL BE UNDERCUT 6 INCHES AND TOPSOIL SHALL BE SPREAD AT LEAST 6 INCHES THICK TO THE DESIGN SURFACE, OR AS INDICATED ON PLANS.
9. EARTHFILL: ALL STRUCTURAL EARTHFILL SHALL BE PLACED AND COMPACTED IN LOOSE LIFTS NO THICKER THAN NINE (9) INCHES. ENGINEER MAY DIRECT THINNER LIFTS BASED ON AVAILABLE COMPACTION EQUIPMENT.
10. AREAS UNDER FILL SHALL BE SCARIFIED LIGHTLY BEFORE FIRST LIFT TO A DEPTH OF SIX (6) INCHES AND RECOMPACTED IN ACCORDANCE WITH SPECIFICATION IA-23, SECTION 6, METHOD 1.
11. CONSTRUCT CORE TRENCH UNDER ENTIRE DIKE ALIGNMENT AT CENTERLINE.
12. TESTING: CONTRACTOR TO ENSURE ADEQUATE MOISTURE AND DENSITY THROUGHOUT CONSTRUCTION. COMPACTION IS TO BE PERFORMED IN ACCORDANCE WITH SPECIFICATION IA-23 EARTHFILL. CONTRACTOR IS RESPONSIBLE FOR ENSURING SOILS MEET ADEQUATE MOISTURE REQUIREMENTS.
13. WEED CONTROL IA CS-06: CONTRACTOR IS REQUIRED TO CONTROL WEED GROWTH WITHIN THE WORK LIMITS AS NEEDED WITHIN THE CONSTRUCTION LIMITS, FOR THE APPROVED CONSTRUCTION WINDOW.
14. RUBBISH DISPOSAL IA CS-01: ROCKS, FENCE, AND RUBBISH ENCOUNTERED WITHIN THE EASEMENT AREA ARE TO BE DISPOSED OF BY BURIAL OR OTHER APPROVED MEANS. MISCELLANEOUS ROCKS AND RUBBISH ENCOUNTERED DURING EXCAVATION ARE TO BE INCLUDED FOR BURIAL AS WELL. A MINIMUM OF THREE (3) FEET OF COVER OVER BURIED RUBBISH IS REQUIRED. CONTACT ENGINEER PRIOR TO REMOVING ANY FENCE.
15. WORKMANSHIP: CONTRACTOR SHALL PERFORM ALL WORK WITH CRAFTSMAN-LIKE APPEARANCE AND LEAVE NO TRASH/DEBRIS AFTER DEMOBILIZATION.
16. SAFETY - CONTRACTOR IS RESPONSIBLE FOR SAFETY ON THE WORK SITE, INCLUDING THE BRACING OF, SHORING OF, SHAPING OF, AND/OR USE OF TRENCH BOX IN THE EXCAVATIONS. THIS INCLUDES KNOWLEDGE AND COMPLIANCE WITH ALL RULES AND REGULATIONS INTENDED TO PROTECT THE HEALTH AND SAFETY OF THE CONTRACTOR, ENGINEERS, AND OWNER'S PERSONNEL. ALL TRENCHING SHALL BE DONE ACCORDING TO OSHA STANDARDS FOR THE PROTECTION OF LIFE.
17. FLOODPLAIN: PROJECT WORK LIMITS RESIDE IN A MAPPED FLOODPLAIN. MATERIALS, EQUIPMENT, AND EXCESS SPOIL MAY NOT BE STOCKPILED OR STORED WITHIN THE FLOODPLAIN. FINAL GRADING SHOULD BE DONE TO ENSURE ANY SPOIL PLACEMENT AND FILL WITHIN THE FLOODPLAIN DOES NOT DEVIATE SIX (6) INCHES FROM EXISTING GRADE.
18. VEGETATION CLEARING & TREATMENT: VEGETATION MANAGEMENT TO BE DETERMINED BASED ON CONSTRUCTION SCHEDULE AND AVAILABLE SEEDING WINDOWS. CONTRACTOR IS EXPECTED TO BE ABLE TO PERFORM, MOWING/HAYING WITH REMOVAL (SUCH AS BIG ROUND BALES), CONTROL FIRE BURN, CHEMICAL BURN (BY LICENSED APPLICATOR), AND DISCING-HARROWING. FOR THE PURPOSES OF BIDDING, A CONTROL FIRE BURN, FOLLOWED BY 2 APPLICATIONS FOR CHEMICAL TERMINATION, FOLLOWED BY LIGHT DISCING WITH DRAG HARROW FOLLOWER IS EXPECTED.

TILE INSTALLATION

19. WORK LIMITS - OUTSIDE OF EASEMENT AREA, CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITY TO WITHIN A 90 FOOT WIDE CORRIDOR ALONG THE LENGTH OF THE TILE ALIGNMENTS AS SHOWN ON THE PLANS.
20. TILE INVESTIGATION - VERIFY LOCATIONS AND ELEVATIONS OF EXISTING TILE PRIOR TO CONSTRUCTION. TILE INVESTIGATION INCLUDES TIME NECESSARY TO LOCATE AND DIG EXISTING TILES. EXPLORATION FOR DESIGN FOR TILE ENCOUNTERED, BUT NOT SHOWN ON THE PLANS WILL BE PAID UNDER THIS ITEM.
21. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL TILE FOUND DURING THE TILE INVESTIGATION AND DURING WETLAND EXCAVATION.
22. CONTRACTOR SHALL MAKE EFFORT TO SEGREGATE ORGANIC TOPSOIL TO MINIMUM DEPTH OF 12 INCHES FOR ALL TILE WORK OUTSIDE OF EXCAVATION AND FILL AREAS.
23. FIELD TILE CONNECTIONS - CONNECTIONS TO INTERCEPTED FIELD TILE 12" DIAMETER AND LESS SHALL BE MADE AND ENCASED IN A PORTLAND CEMENT CONCRETE (PCC) COLLAR AT LEAST TWELVE (12) INCHES WIDE AND FOUR (4) INCHES THICK, CONTINUOUS AROUND THE JOINTS. ALTERNATIVE CONNECTIONS MUST BE APPROVED BY THE ENGINEER.
24. ALL TILE SHALL BE BLINDED WITH NATIVE SOILS OR ASTM CLASS 2 MATERIAL WHEN REQUIRED IN REGULAR INTERVALS AS INSTALLATION PROCEEDS. TILE FOUND TO BE FLOATING IN THE TRENCH SHALL BE REMOVED, THE TRENCH DEWATERED, AND THE TILE IMMEDIATELY INSTALLED AND BLINDED.
25. TILE SHALL BE INSTALLED ACCORDING TO MANUFACTURERS' SPECIFICATIONS USING EITHER A SPOON TRENCH CONFORMING TO THE CURVE OF THE PIPE UP TO THE HAUNCH/SPRING LINE. FOR A BLAT BOTTOM TRENCH THE PIPE SHALL BE BEDDED AND BACKFILLED WITH AGGREGATE TO THE SPRING LINE.

RISER INLET & CONTROL STRUCTURE NOTES

26. STRUCTURE SHOP DRAWINGS ARE REQUIRED FOR ENGINEER'S REVIEW AND APPROVAL BEFORE FABRICATION OF STRUCTURES, REFER TO INSPECTION TABLE.
27. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
28. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE.
29. USE ASTM CLASS 2 MATERIAL TO BED AND LEVEL STRUCTURE. LOOSE EARTH FILL IS NOT PERMITTED AS BACKFILL TO LEVEL THE STRUCTURE.
30. CHECK TO ENSURE STRUCTURE IS LEVEL PRIOR TO BACKFILLING. PLACE BACK FILL MATERIAL AROUND STRUCTURE IN 6" LIFTS AND COMPACT BY HAND. DO NOT USE POWERED EQUIPMENT.
31. BACKFILL AROUND STRUCTURES SHALL BE COMPACTED BY HAND. NO MECHANICAL PACKING METHODS MAY BE USED.

ITEMS OF WORK TABLE

Bid Item	Sub Item	Description	Spec. Ref	Quantity	Unit	As-Built
1	-	Site stripping & preparation (Wetland)	IA CS-001	1	LS	
2	-	Site stripping & preparation (Wasting)	IA CS-001	1	LS	
3	-	Crop damage	IA CS-001	0	AC	
4	-	Other: Pollution Control	IA-CS-005	1	LS	
5	-	Structure, waterway, & channel seeding	IA CS-006	1.0	AC	
6	-	Buffer seeding	IA CS-006	3.0	AC	
7	-	Mobilization and demobilization	CS-008	1	LS	
8	-	Drain tile investigation	IA CS-009	2	HR.	
9	-	Connect to Existing Tile	IA CS-009	1	EA	
10	-	Cap Existing Tile	IA CS-009	1	EA	
11	-	Excavation (General)	IA CS-021	4269	CY	
12	-	Earthfill (General)	IA CS-023	2551	CY	
13	-	Earthfill (Wasting)	IA CS-023	1889	CY	
14	-	Drainfill	IA CS-024	13	TN	
15	-	Topsoil Placement	IA CS-026	5174	CY	
16	-	Tied Concrete Block Mat	IA CS-031	2750	SF	
17	-	Water Control Structure Assembly	IA CS-046	1	EA	
18	-	Trench Dam	IA CS-046	1	EA	
19	-	Corrugated Polyethylene pipe (non-perforated):				
	A.	12"	IA CS-046	581	LF	
	B.	10"	IA CS-046	148	LF	
20	-	Slotted 18" CMP Riser Structure	IA CS-051	1	EA	
21	-	CMP tile outlets with Animal Guard (20 LF each):				
	A.	15" x 20'	IA CS-051	1	EA	
	B.	12" x 20'	IA CS-051	1	EA	
22	-	Riprap, IDOT Class E	IA CS-061	15	TN	
23	-	Erosion Stone	IA CS-061	16	TN	

INSPECTION TABLE

Bid Item	Sub Item	Description	Spec. Ref	Shop Drawing Required	Required Inspection or Survey
1	-	Site stripping & preparation (Wetland)	IA CS-001		Inspection: verify topsoil strip depth Review: by survey or contractor equipment (laser level, machine control)
2	-	Site stripping & preparation (Wasting)	IA CS-001		Inspection: verify topsoil strip depth Review: by survey or contractor equipment (laser level, machine control)
3	-	Crop damage	IA CS-001		Inspection: area damaged Review: engineer's survey of damaged area
4	-	Other: Pollution Control	IA-CS-005		
5	-	Structure, waterway, & channel seeding	IA CS-006	X	Inspection: seed bed preperation Review: visual
6	-	Buffer seeding	IA CS-006	X	Inspection: seed bed preperation Review: visual
7	-	Mobilization and demobilization	CS-008		
8	-	Drain tile investigation	IA CS-009		Inspection: encountered drain tile not shown on plans Review: visual inspection + survey as conditions dictate
9	-	Connect to Existing Tile	IA CS-009		Inspection: soil tight joint Review: visual
10	-	Cap Existing Tile	IA CS-009		Inspection: soil tight joint Review: visual
11	-	Excavation (General)	IA CS-021		Inspection: soils suitability for earthen berm and core trench Review: visual, non-destructive field testing (ribboning)
12	-	Earthfill (General)	IA CS-023		Inspection: Compaction of earthen berm and core trench Review: visual, field testing as required (proof roll, denting)
13	-	Earthfill (Wasting)	IA CS-023		Inspection: Final grading Review: visual + survey as conditions dictate
14	-	Drainfill	IA CS-024		Inspection: Full-time observation of tile installation Review: visual + survey as conditions dictate
15	-	Topsoil Placement	IA CS-026		Inspection: subgrade to verify topsoiling depth Review: by survey or contractor equipment (laser level, machine control)
16	-	Tied Concrete Block Mat	IA CS-031	X	Inspection: subgrade prior to installation, keys, anchors. Review: visual
17	-	Water Control Structure Assembly	IA CS-045	X	Inspection: Structure installation (concrete base, dissimilar pipe connection, backfill) Review: Visual
18	-	Trench Dam	IA CS-046	X	Inspection: Installation Review: Visual
19	-	Corrugated Polyethylene pipe (non-perforated):			
	A.	12"	IA CS-046	X	Inspection: Initial blinding, use of ASTM Class 2 backfill Review: visual, engineer supplied pipe crawler (if conditions dictate), survey of flow line elevations upon notice from contractor
	B.	10"	IA CS-046	X	Inspection: Initial blinding, trench dam Review: visual, engineer supplied pipe crawler (if conditions dictate), survey of flow line elevations upon notice from contractor
20	-	Slotted 18" CMP Riser Structure	IA CS-051	X	Inspection: Dissimilar pipe connection Review: visual
21	-	CMP tile outlets with Animal Guard (20 LF each):			
	A.	15" x 20'	IA CS-051	X	Inspection: soil tight joint Review: visual
	B.	12" x 20'	IA CS-051	X	
22	-	Riprap, IDOT Class E	IA CS-061	X	Inspection: Subgrade preperation with base (less around riser), final installation Review: visual, survey or contractor equipment (laser level, machine control) as conditions dictate
23	-	Erosion Stone	IA CS-061	X	Inspection: Subgrade preperation with base (less around riser), final installation Review: visual, survey or contractor equipment (laser level, machine control) as conditions dictate

Note: Provide engineer with 48 hours notice prior to anticipated inspection date



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GRODAHL WETLAND

CALHOUN COUNTY IOWA

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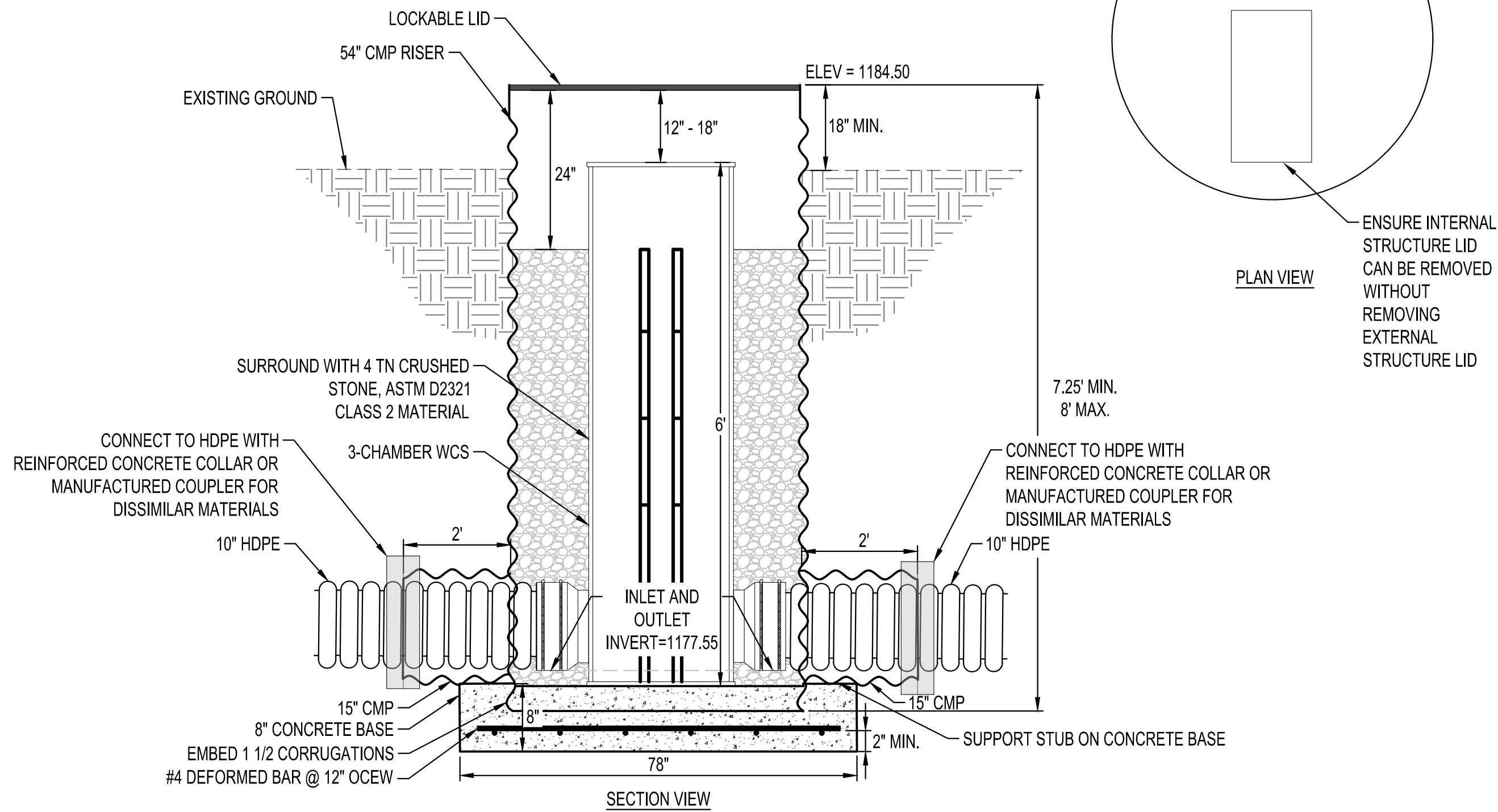
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NOTES AND QUANTITIES

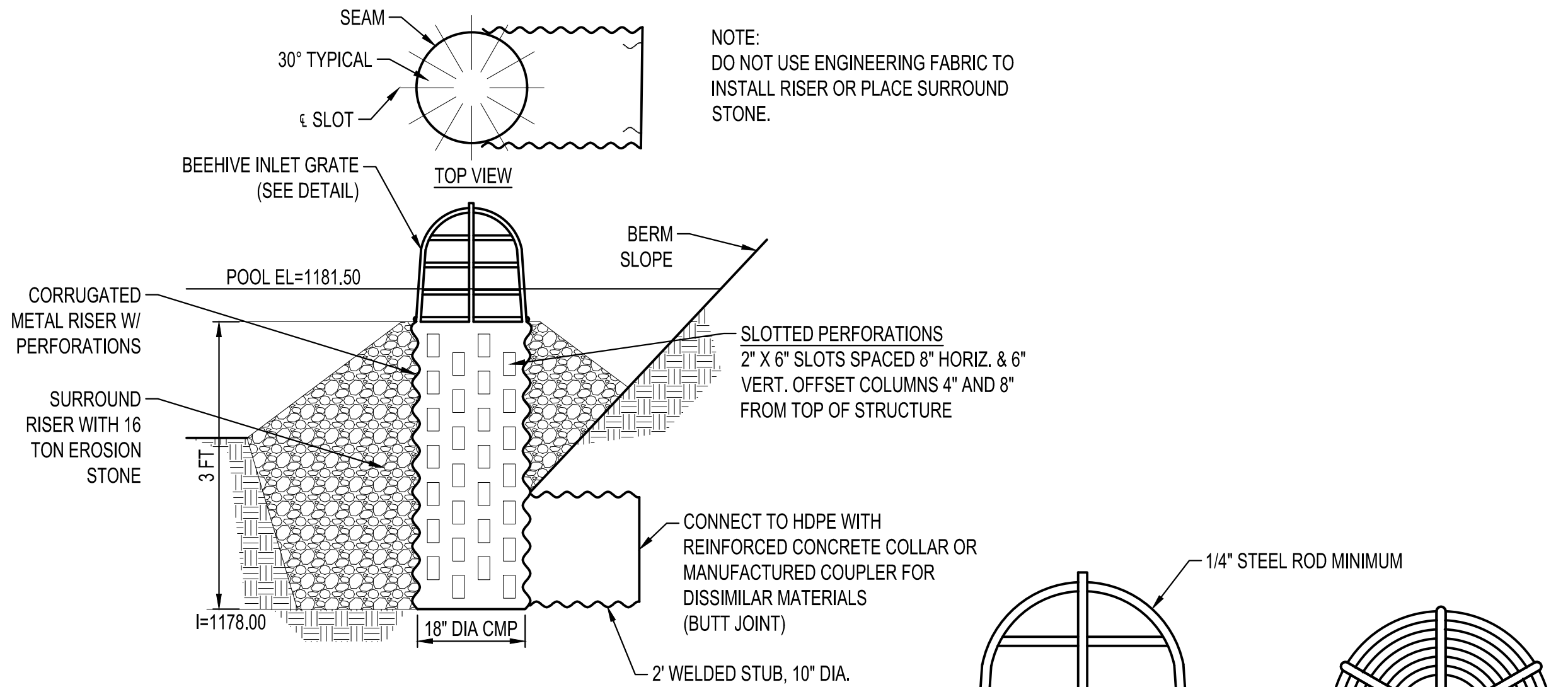
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C0-20

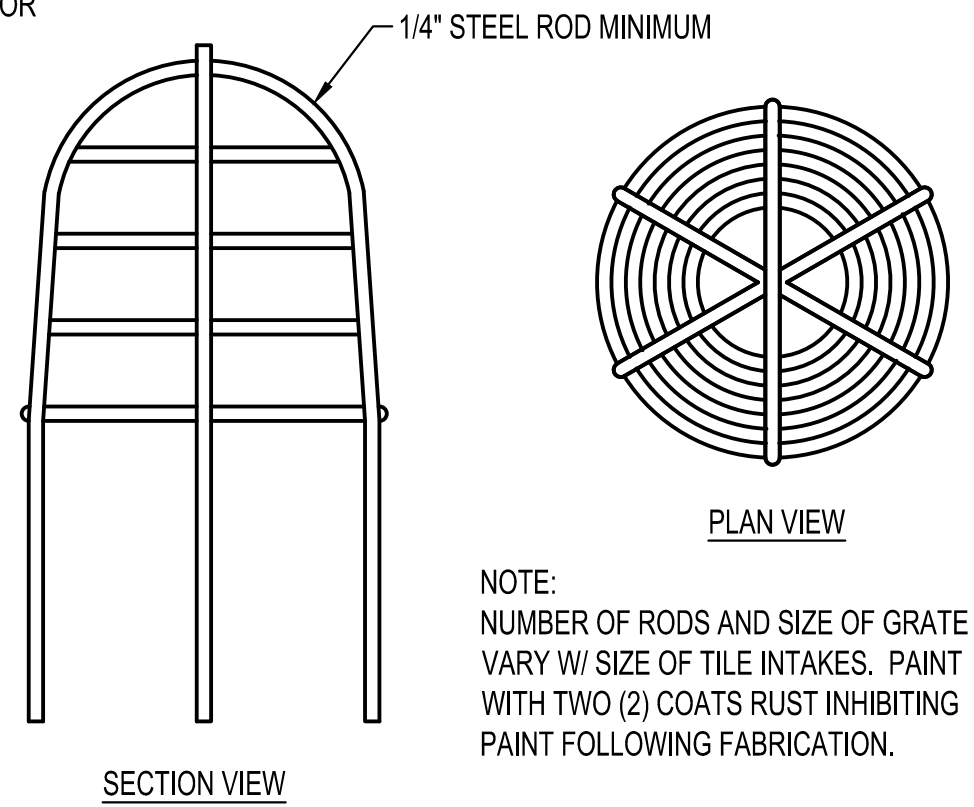
LID NOTE:
LID TO BE SECURED TO CMP WITH EITHER COMPRESSION BAND OR SET SCREWS AND BAND IS TO EXTEND APPROXIMATELY 3 INCHES BELOW THE STRUCTURE RIM.
LID SHALL HAVE MINIMAL OPENINGS AND HOLES AND BE RELATIVELY IMPERMEABLE TO WATER.
MINIMUM THICKNESS OF LID MATERIAL TO BE 3/32" AND NO BIGGER THAN 3/16" CARBON STEEL.
LID SHALL HAVE 2 BARREL HINGES ALLOWING FOR >105 DEGREE OPENING.
PLACE INTERNAL STRUCTURE SO ACCESS STOP LOGS AND BE FREELY MOVED WITHOUT ANGLING THE REMOVAL TOOL.
REFER TO IA CS-051 FOR COATING REQUIREMENTS.



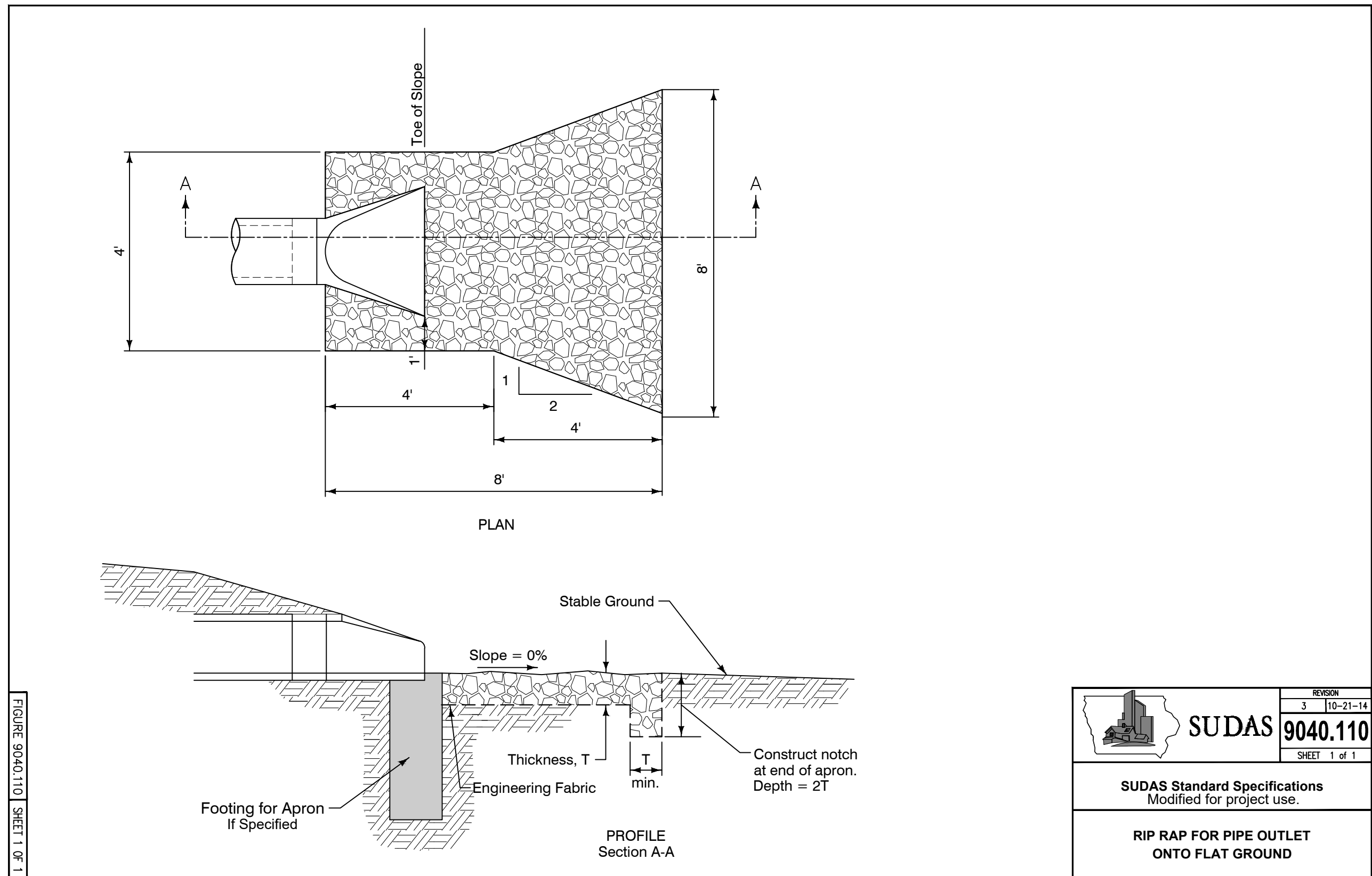
SECTION VIEW
WATER CONTROL STRUCTURE
NTS

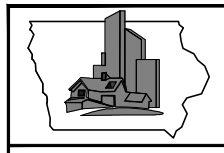


CMP SLOTTED INTAKE RISER
NTS



BEEHIVE INLET GRATE (STEEL BARS)
NTS

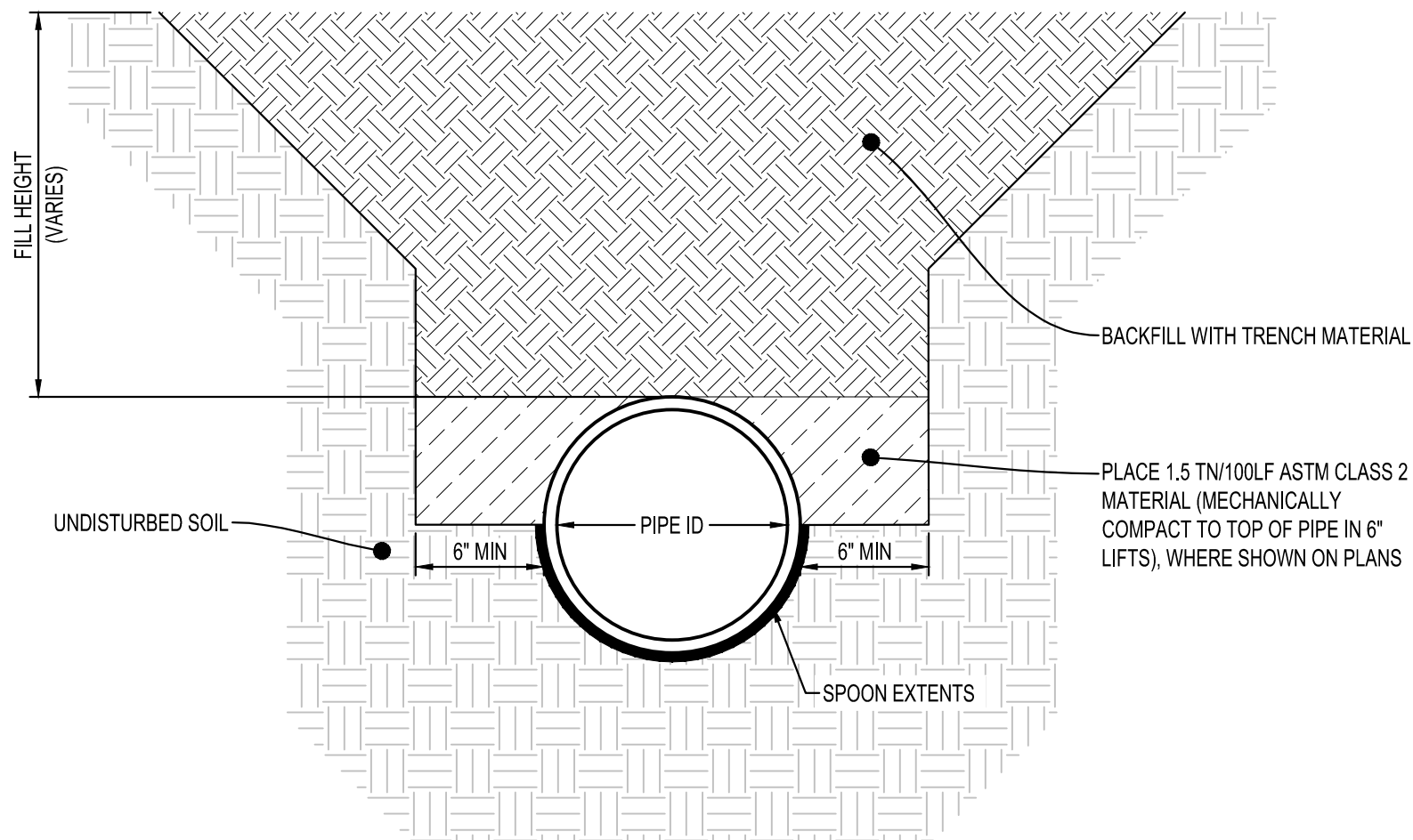




SUDAS
9040.110
SHEET 1 of 1

SUDAS Standard Specifications
Modified for project use.

RIP RAP FOR PIPE OUTLET
ONTO FLAT GROUND



- NOTES:**
- ASTM CLASS 2 AND BACKFILL SHALL BE INCIDENTAL TO CONSTRUCTION.
 - SPOON DIMENSIONS SHALL COMPLY WITH PIPE MANUFACTURER'S SPECIFICATIONS.
 - THE FIRST LIFT OF BACKFILL SHALL BE PLACED WITH AN EXCAVATOR WITH NO MORE THAN 2' OF DROP.
 - CRUSHED CONCRETE, MEETING THE REQUIREMENTS OF ASTM CLASS 2 MATERIAL MAY BE USED. ENGINEER TO AUTHORIZE USE, PRIOR TO MATERIAL STAGING.

HDPE SPOON TRENCH
NTS



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**GRODAHL
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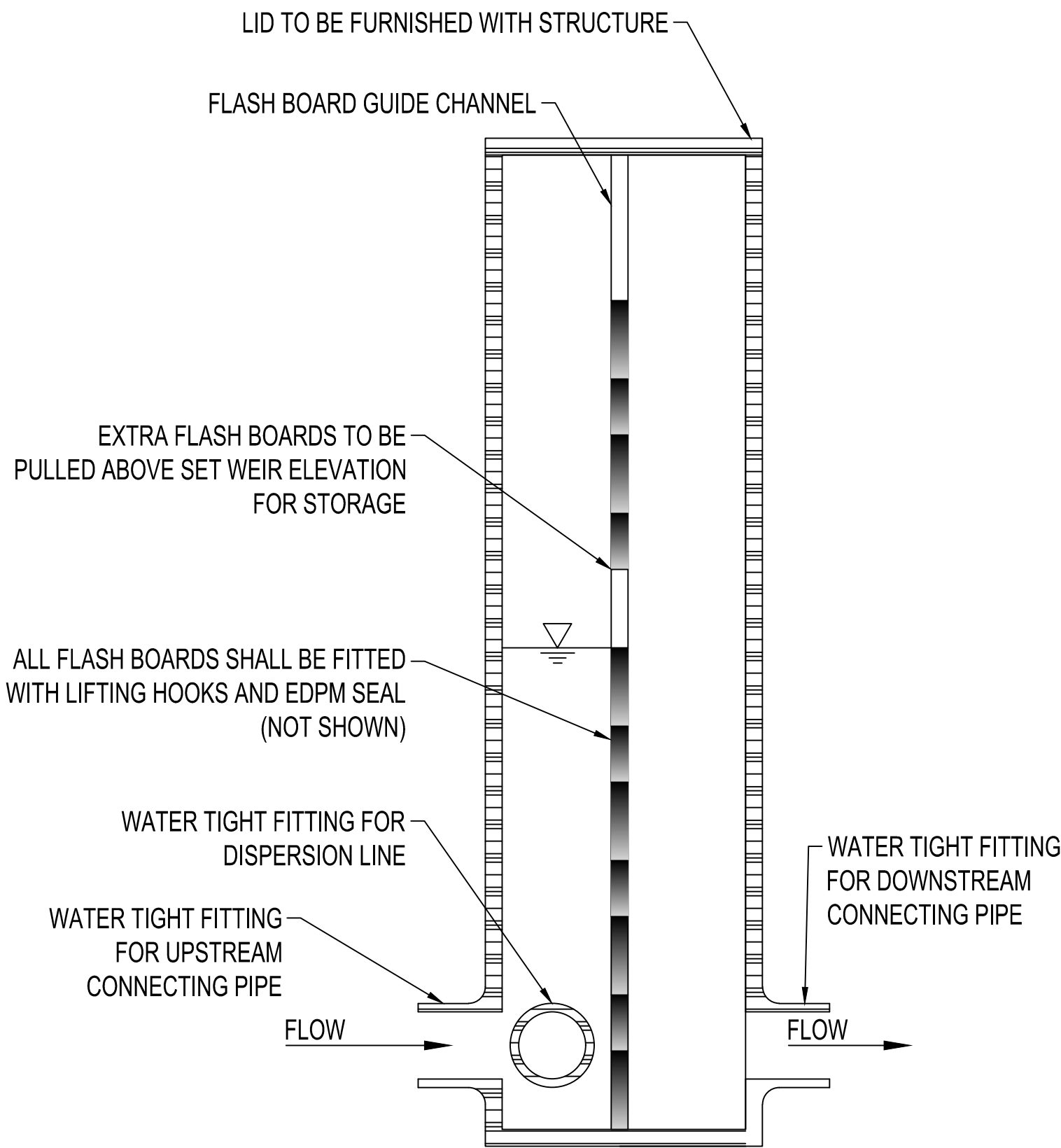
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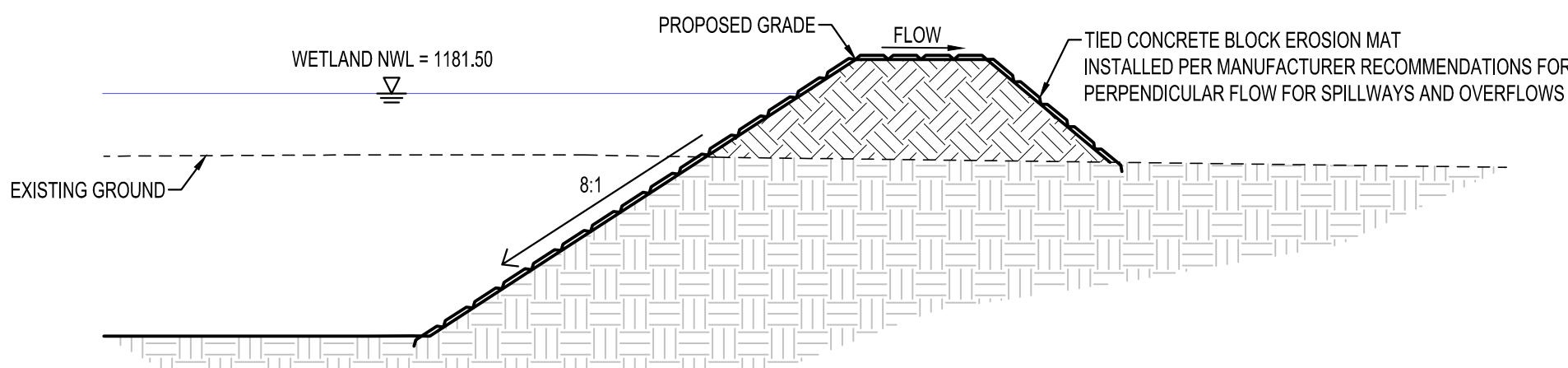
TITLE
DETAILS

SHEET
C0-30



OPTION 1
WATER CONTROL STRUCTURE DETAIL
NTS

- OPTION 1 WCS SPECIFIC:
- FLASH BOARDS SHALL BE PVC.
 - ALL RIVETS SHALL BE STAINLESS STEEL.
 - FLASHBOARD CHANNEL SHALL BE ANODIZED ALUMINUM.
 - FLASHBOARDS WILL REMAIN IN STRUCTURE DURING INSTALLATION.
 - FLASHBOARDS SHALL BE LUBRICATED UPON REMOVAL.
- WCS GENERAL NOTES:
- TOOL TO REMOVE FLASHBOARDS/ACTUATE VALVE IS TO REMAIN IN WCS FOLLOWING INSTALLATION.
 - FOR INLET ADAPTER, MAX SIZE IS TWO SIZES DOWN FROM STRUCTURE SIZE (I.E. 8" ADAPTER ON 12" STRUCTURE).
 - CHECK TO ENSURE THE STRUCTURE IS LEVEL PRIOR TO BACKFILLING. PLACE THE BACKFILL MATERIAL AROUND THE STRUCTURE IN 6" LIFTS AND COMPACT BACKFILL BY HAND ONLY. DO NOT USE POWERED EQUIPMENT TO COMPACT THE BACKFILL.
 - WATER CONTROL STRUCTURES WILL HAVE A MINIMUM OF 20' NONPERFORATED PIPE BETWEEN WATER CONTROL STRUCTURE AND DITCH.
 - ONE ANTISEEP COLLAR WILL BE INSTALLED ON THE 20' OF NONPERFORATED PIPE BETWEEN THE WATER CONTROL STRUCTURE AND DITCH.
 - FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION OF WATERTIGHT TEE, INCLUDING MINIMUM ANGLE OF SEPARATION.
 - WATER TIGHT TEE, QUANTITY, AND INSTALLATION METHOD DEPENDENT ON WCS MANUFACTURER.
 - FINAL CONFIGURATION OF WATER CONTROL STRUCTURES WILL BE DETERMINED BY AVAILABILITY FROM THE MANUFACTURER.
 - COMPONENTS OF WATER CONTROL STRUCTURES MAY BE PRICED SEPARATELY DEPENDING ON THE SUPPLIER.
- NRCS NOTES*:
- WATER CONTROL STRUCTURE (WCS) MATERIALS AND INSTALLATION SHALL BE IN CONFORMANCE WITH IOWA NRCS CONSTRUCTION SPECIFICATION (CS) IA-45, PLASTIC (PVC, PE) PIPE.
 - CONNECTING PIPE MATERIALS AND INSTALLATION SHALL BE IN CONFORMANCE WITH CS IA-45; IA-46, TILE DRAINS FOR LAND DRAINAGE; IA-51, CORRUGATED METAL PIPE CONDUITS; OR IA-52, STEEL PIPE CONDUITS.
 - WCS SHALL BE FABRICATED OF PVC WITH INTEGRAL UPSTREAM AND DOWNSTREAM WATER-TIGHT COUPLING CONNECTIONS, CORROSION-RESISTANT STOP BOARDS, ALUMINUM EXTRUSIONS AND STAINLESS STEEL FASTENERS AND APPURTENANCES. ACCEPTABLE MODELS INCLUDE AGRI DRAIN, NYLOPLAST, OR APPROVED EQUAL.
 - WCS SHALL PROVIDE FLOW CAPACITY EQUAL TO OR GREATER THAN THAT OF ADJACENT PIPE UNDER EXPECTED FLOW CONDITIONS.
 - STOP BOARDS SHALL PROVIDE A WATER-TIGHT SEAL UNDER 4 FT OF PRESSURE HEAD (MIN.).
 - IN SITUATIONS WHERE WATER LEVELS HIGHER THAN MAXIMUM DESIGN ELEVATION WOULD IMPACT NEIGHBORING PROPERTIES OR OTHER ASPECTS OF THE SITE DESIGN, CONSIDER A CUSTOM-ORDER BOX WHICH LIMITS EXTENT OF STOP BOARD TRACKS TO THE MAXIMUM DESIGN WEIR ELEVATION.
 - STOP BOARD REMOVAL TOOL SHALL BE PROVIDED.
 - AS AN ALTERNATIVE TO A STOP BOARD STRAIGHT WEIR STRUCTURE, A CIRCULAR INNER STANDPIPE MAY BE PROVIDED WHICH MEETS THE DESIGN FLOW REQUIREMENTS, WITH APPROVAL OF THE ENGINEER (NYLOPLAST STANDPIPE WCS OR EQUAL).
 - ALL CONNECTIONS SHALL BE WATER-TIGHT.
 - STRUCTURE LID SHALL BE PROVIDED WITH LOCKING MECHANISM.
 - BACKFILL AROUND THE WCS SHALL MEET THE REQUIREMENTS OF CS IA-45. NORMAL STOP BOARD OPERATION SHALL BE VERIFIED FOLLOWING BACKFILL.
 - MARK LOCATION OF EACH STRUCTURE USING POST OR MANUFACTURED MARKER FLAG FOR SAFETY IN THE FIELD



AUXILIARY SPILLWAY
WITH CONCRETE EROSION MAT
NTS



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PROJECT

IDALS CAL883432

GRODAHL
WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

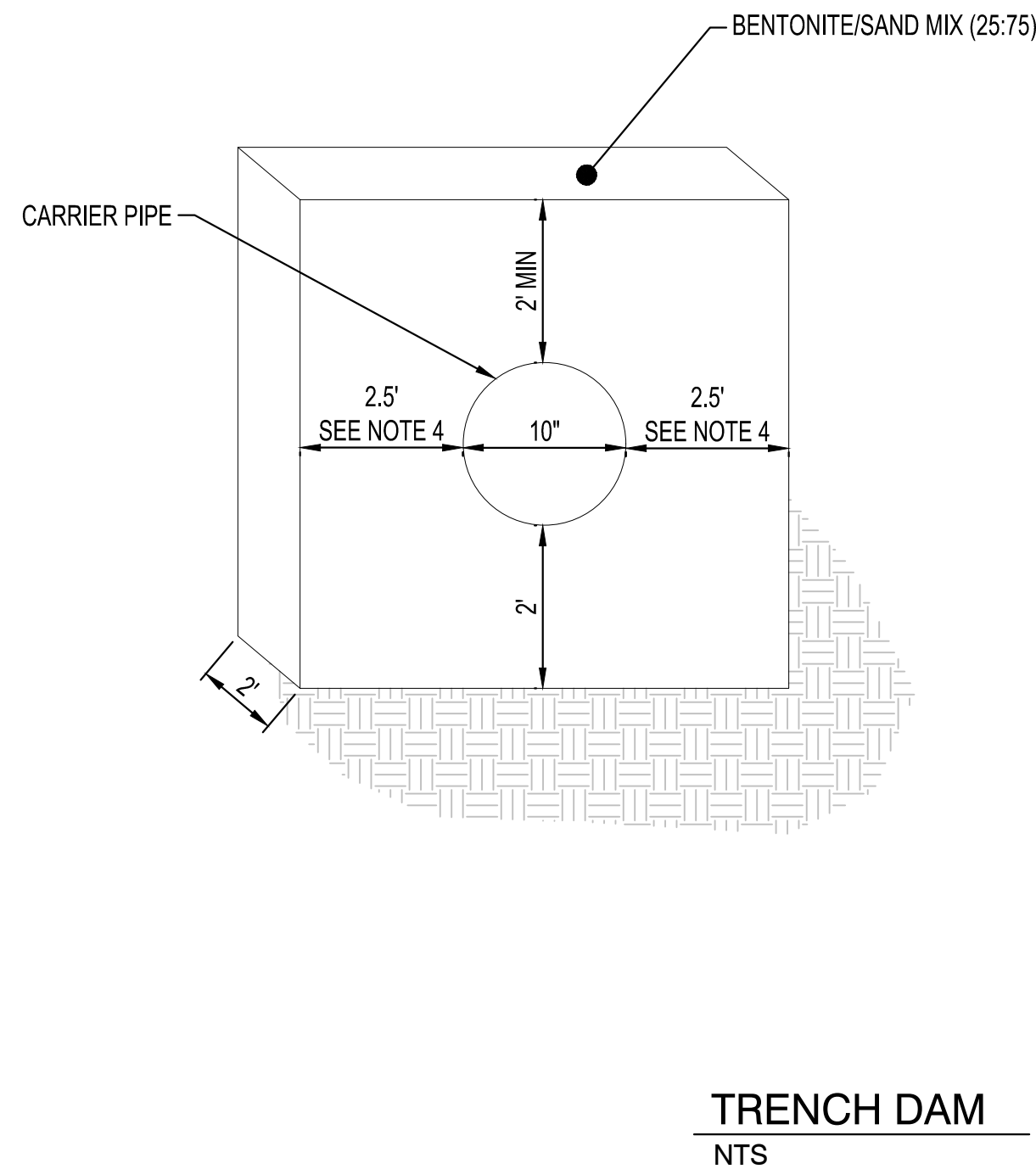
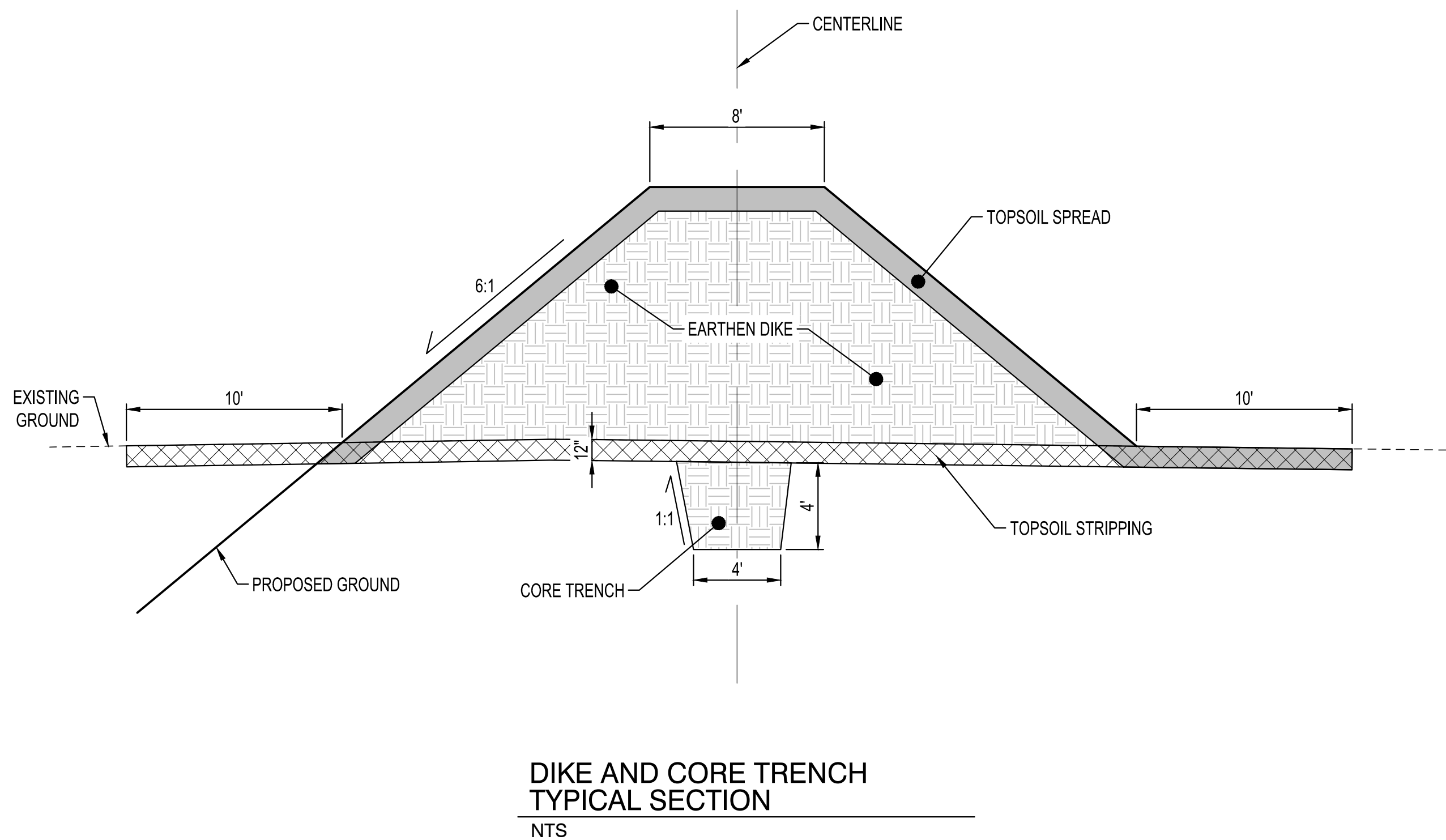
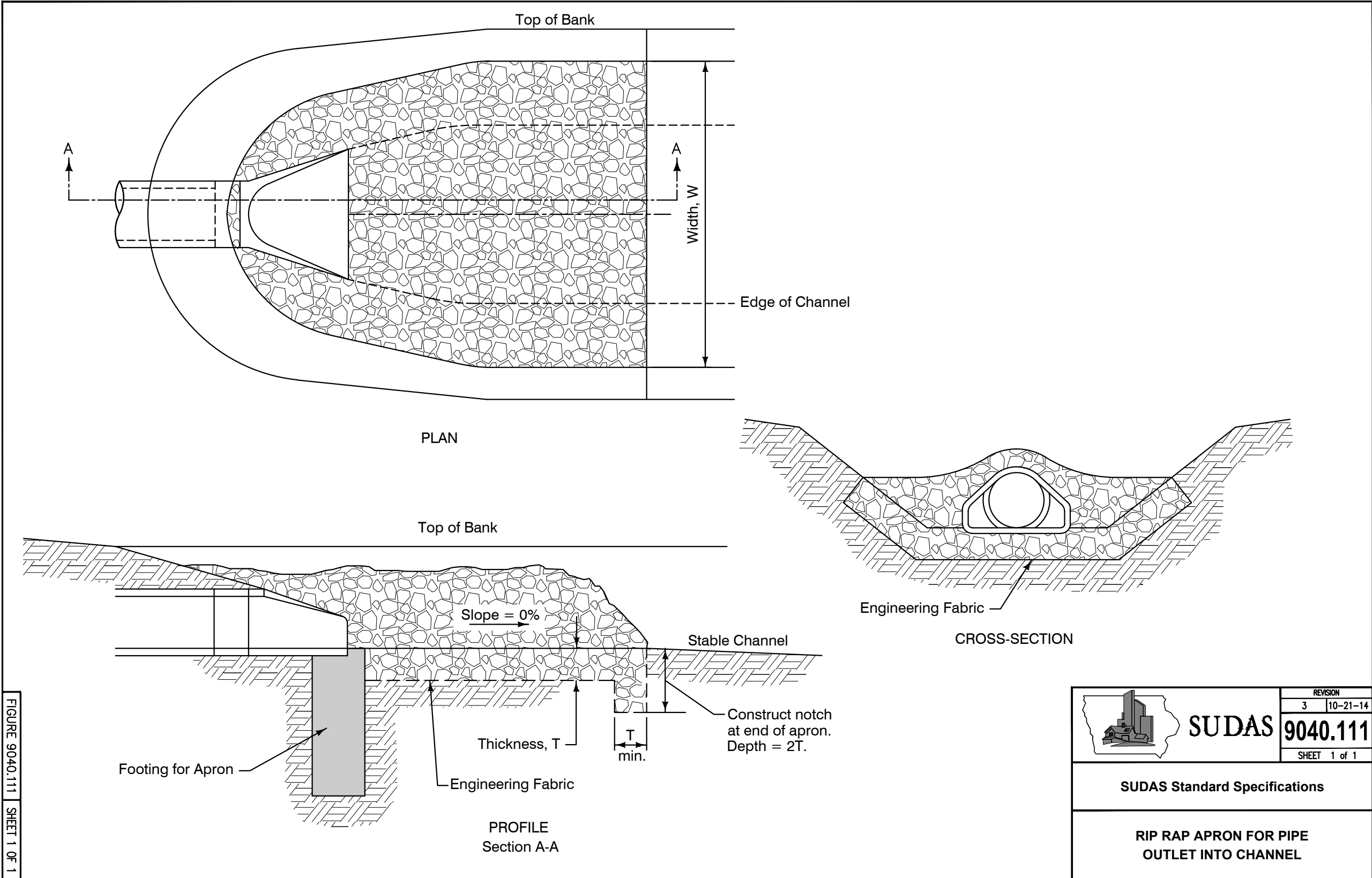
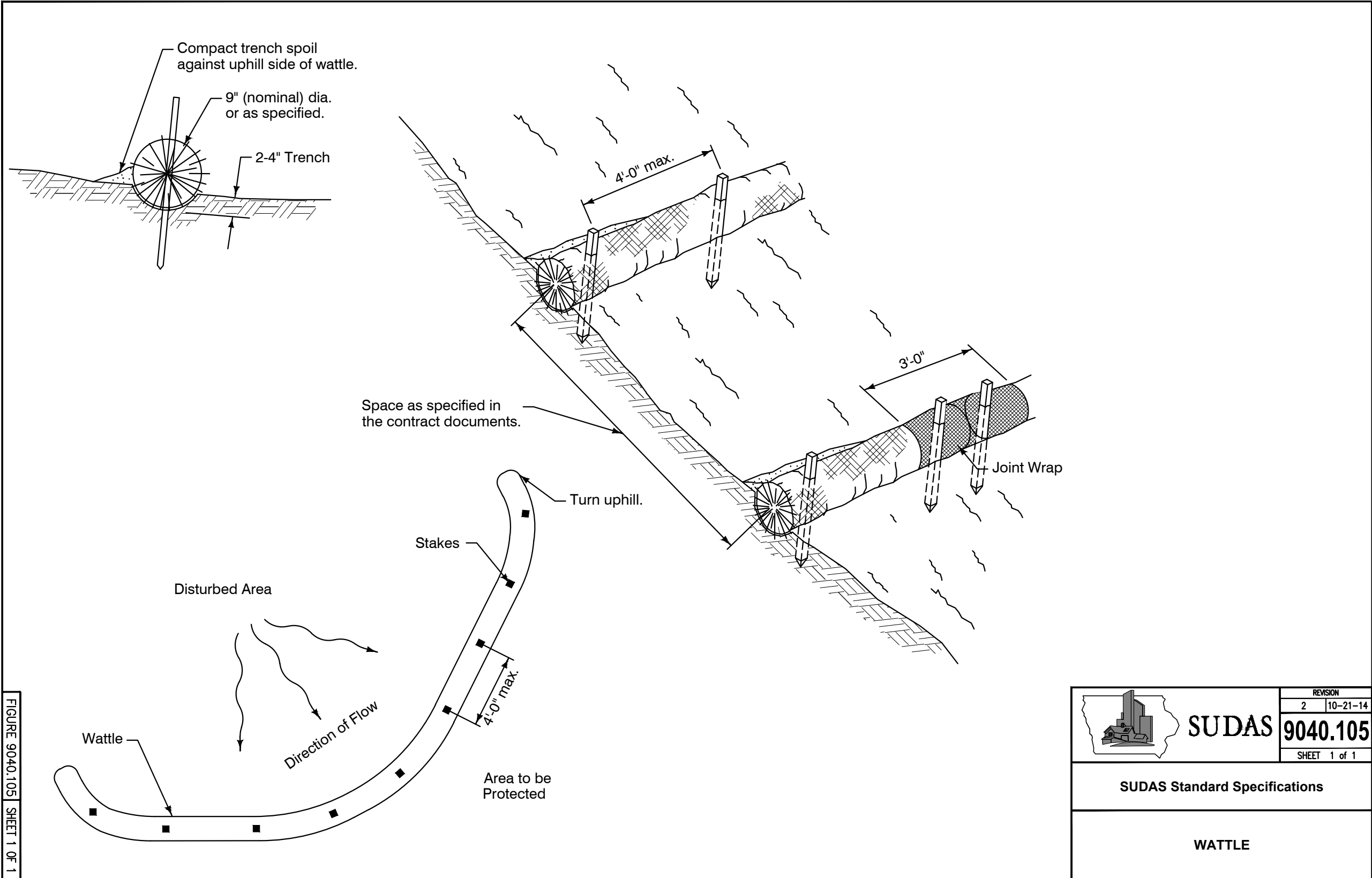
PROJECT NO.	24-30402
FILE NAME	30402-C0-DETAILS
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

DETAILS

SHEET

C0-31



- NOTES:
1. BETONITE SHALL BE EITHER IN GRANULAR OR CHIP FORM, WITH A MAXIMUM NOMINAL SIZE OF $\frac{3}{8}$ " MIXED WITH NO MORE THAN 80% SAND (C33).
 2. THE TRENCH DAM (ANTI-SEEP COLLAR) SHALL EXTEND AT LEAST 6 INCHES BEYOND THE STANDARD PIPE TRENCH.
 3. PLACEMENT OF THE COLLAR SHALL NOT BE WITHIN 2 FEET OF A PIPE JOINT.
 4. MINMUM DISTANCE FROM EDGE OF PIPE IS 3x PIPE DIAMETER OR 6" BEYOND TRENCH EXTENTS, WHICHEVER IS GREATER, TYP



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IDALS CAL883432

**GRODAHL
WETLAND**

CALHOUN COUNTY IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

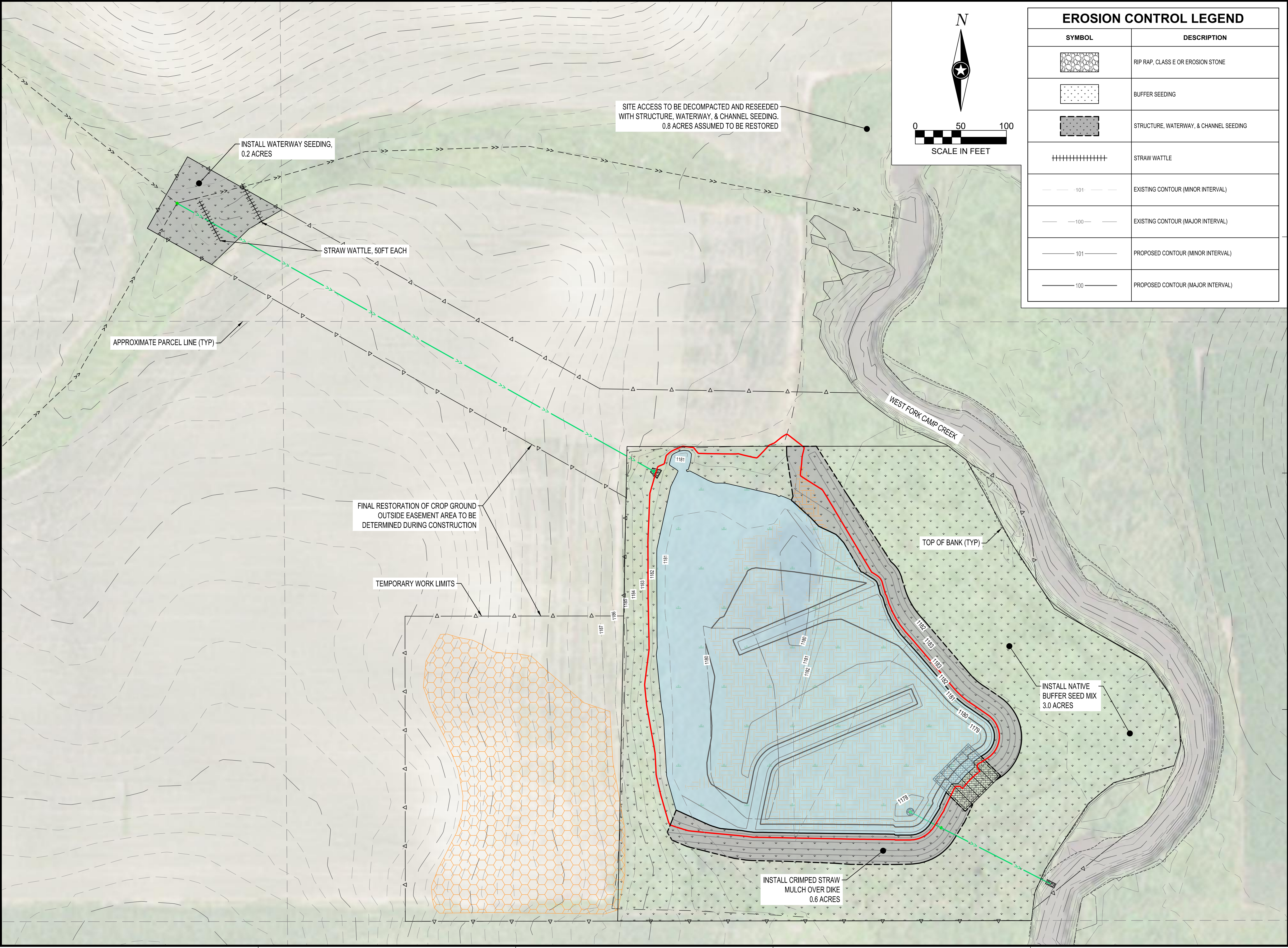
PROJECT NO.	24-30402
FILE NAME	30402-C0-DETAILS
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TITLE

DETAILS

SHEET

C0-32



EROSION CONTROL LEGEND	
SYMBOL	DESCRIPTION
	RIP RAP, CLASS E OR EROSION STONE
	BUFFER SEEDING
	STRUCTURE, WATERWAY, & CHANNEL SEEDING
	STRAW WATTLE
	EXISTING CONTOUR (MINOR INTERVAL)
	EXISTING CONTOUR (MAJOR INTERVAL)
	PROPOSED CONTOUR (MINOR INTERVAL)
	PROPOSED CONTOUR (MAJOR INTERVAL)



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WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	24-30402
FILE NAME	30402-C1-SWPPP
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

SITE
RESTORATION
PLAN

SHEET

C1-10



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**GRODAHL
WETLAND**

CALHOUN COUNTY IOWA

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DATE	DESCRIPTION	BY

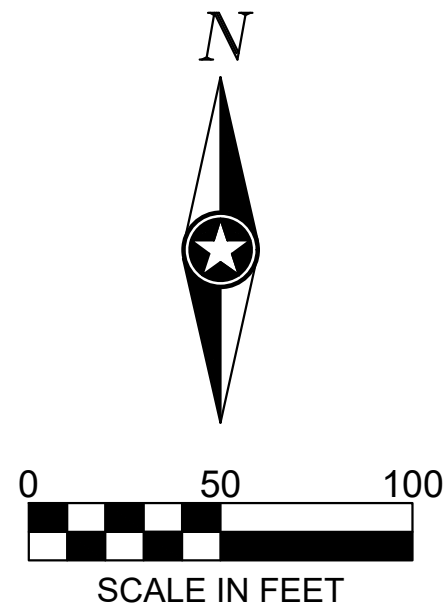
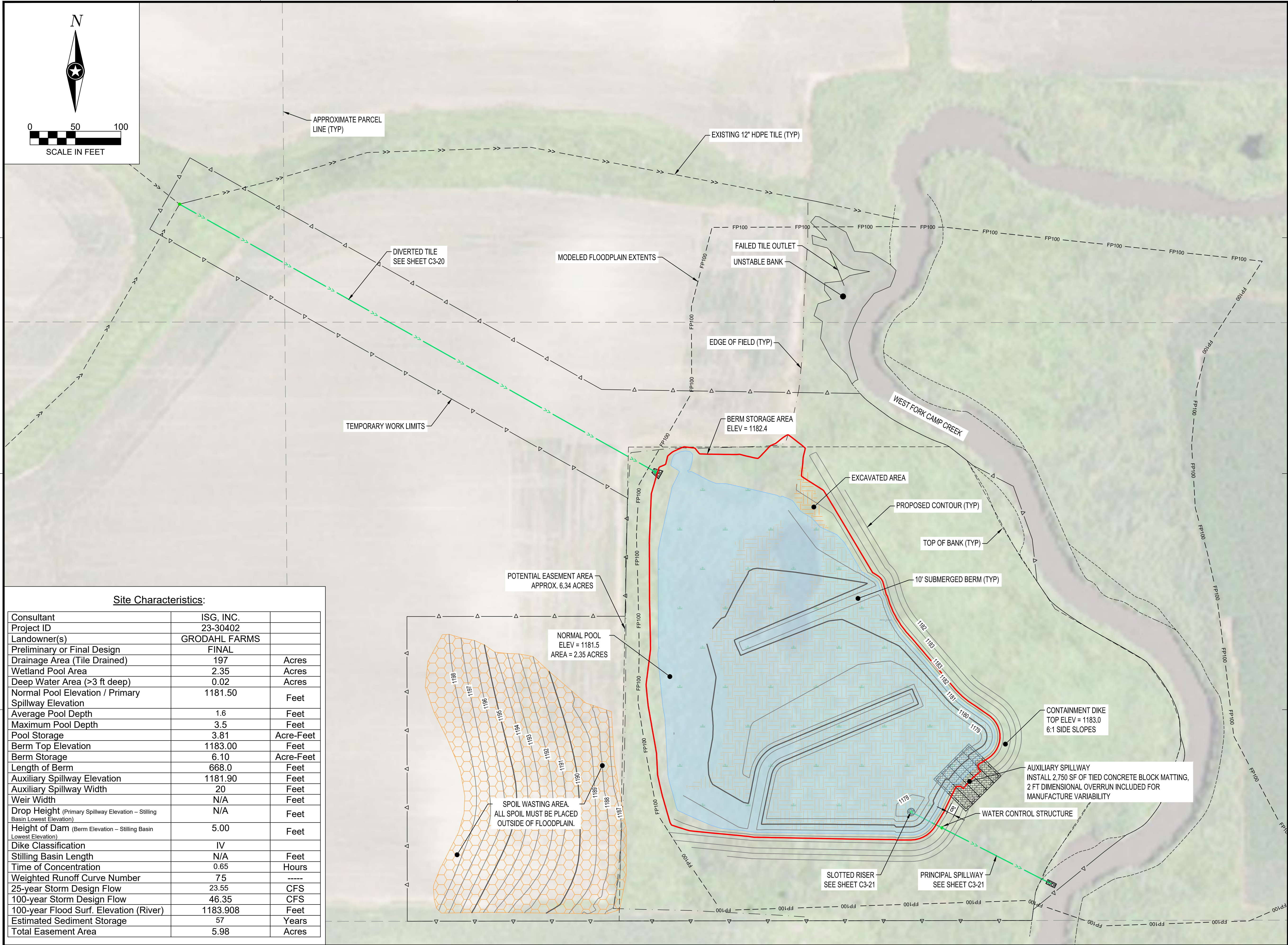
PROJECT NO.	24-30402
FILE NAME	30402-C2-EX-SITE
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

**EXISTING SITE -
WATERSHED**

SHEET

C2-10



Site Characteristics:

Consultant	ISG, INC.	
Project ID	23-30402	
Landowner(s)	GRODAHL FARMS	
Preliminary or Final Design	FINAL	
Drainage Area (Tile Drained)	197	Acres
Wetland Pool Area	2.35	Acres
Deep Water Area (>3 ft deep)	0.02	Acres
Normal Pool Elevation / Primary Spillway Elevation	1181.50	Feet
Average Pool Depth	1.6	Feet
Maximum Pool Depth	3.5	Feet
Pool Storage	3.81	Acre-Feet
Berm Top Elevation	1183.00	Feet
Berm Storage	6.10	Acre-Feet
Length of Berm	668.0	Feet
Auxiliary Spillway Elevation	1181.90	Feet
Auxiliary Spillway Width	20	Feet
Weir Width	N/A	Feet
Drop Height (Primary Spillway Elevation – Stilling Basin Lowest Elevation)	N/A	Feet
Height of Dam (Berm Elevation – Stilling Basin Lowest Elevation)	5.00	Feet
Dike Classification	IV	
Stilling Basin Length	N/A	Feet
Time of Concentration	0.65	Hours
Weighted Runoff Curve Number	75	----
25-year Storm Design Flow	23.55	CFS
100-year Storm Design Flow	46.35	CFS
100-year Flood Surf. Elevation (River)	1183.908	Feet
Estimated Sediment Storage	57	Years
Total Easement Area	5.98	Acres



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CALHOUN COUNTY IOWA

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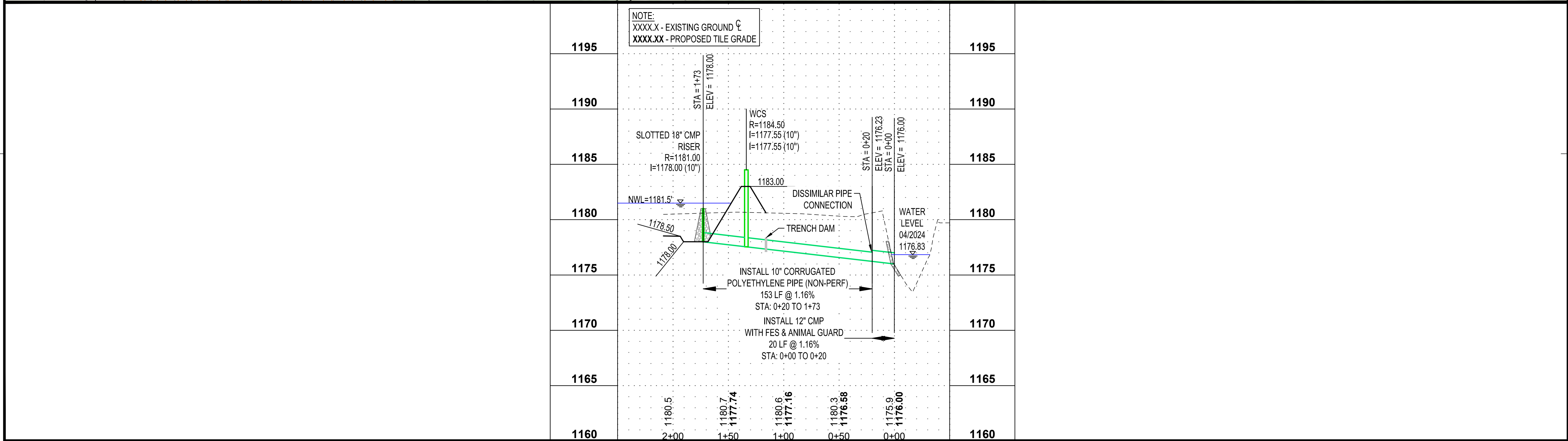
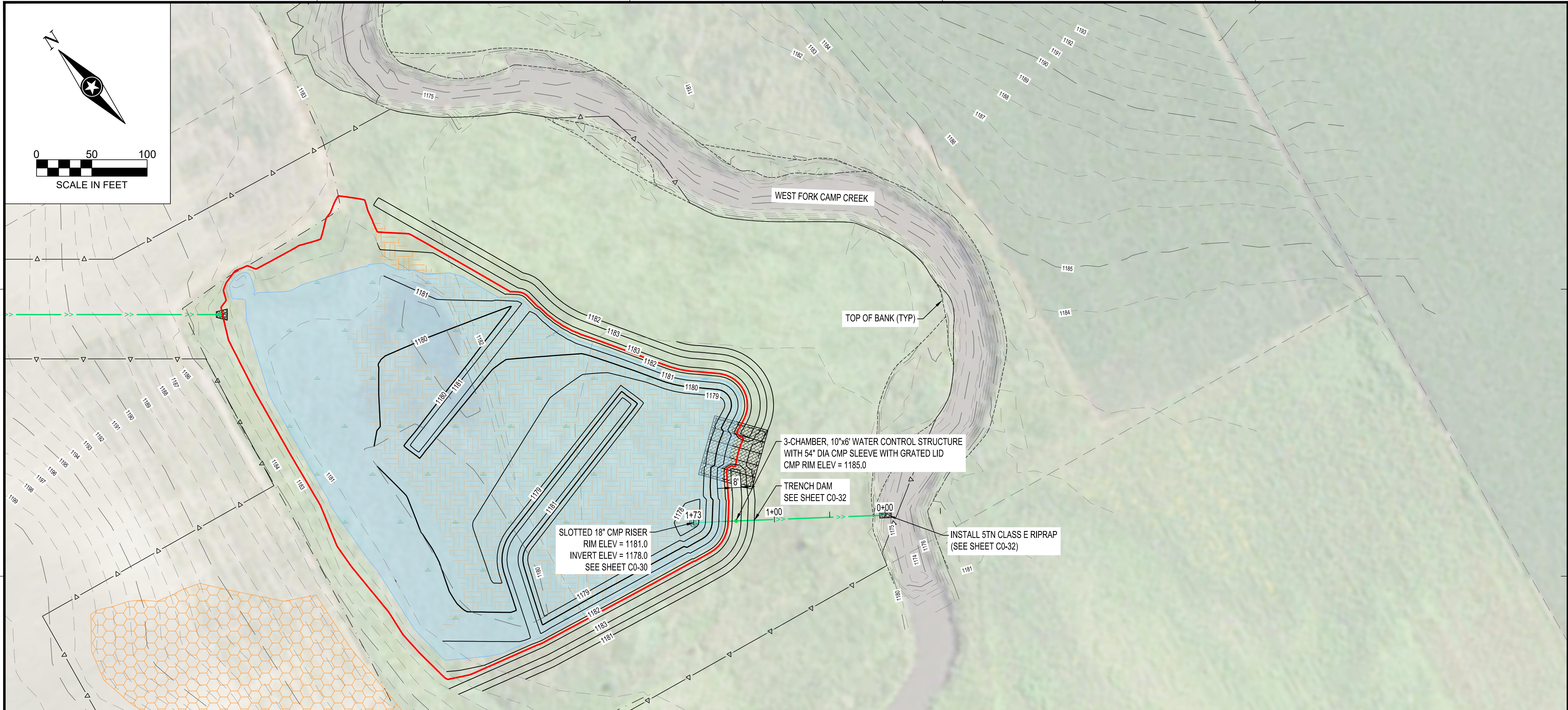
PROJECT NO.	24-30402
FILE NAME	30402-C3-SITE
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

SITE PLAN

SHEET

C3-10



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WETLAND

CALHOUN COUNTY IOWA

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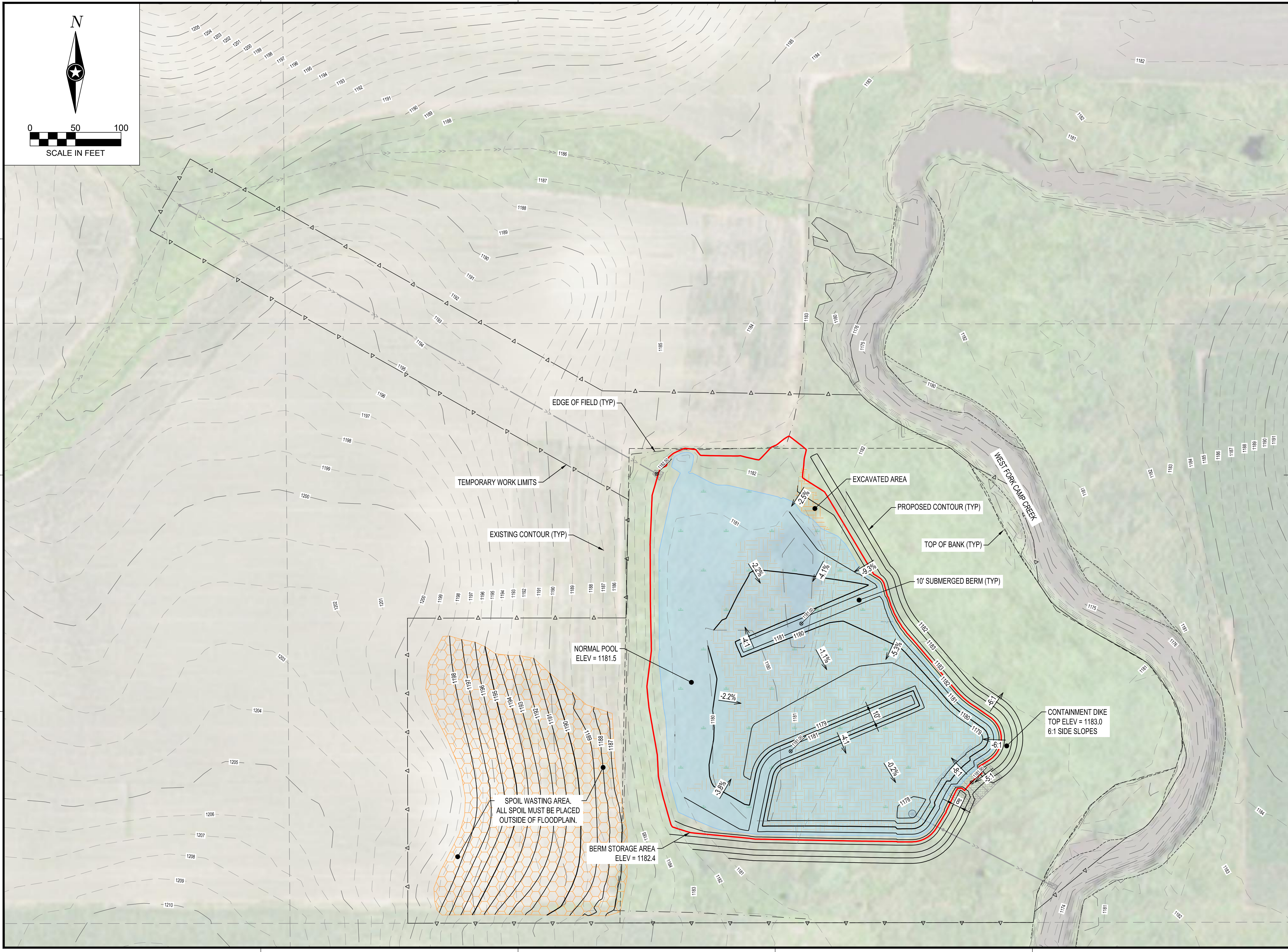
PROJECT NO.	24-30402
FILE NAME	30402-C3-PROFILE
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

OUTLET PLAN &
PROFILE

SHEET

C3-21



PROJECT

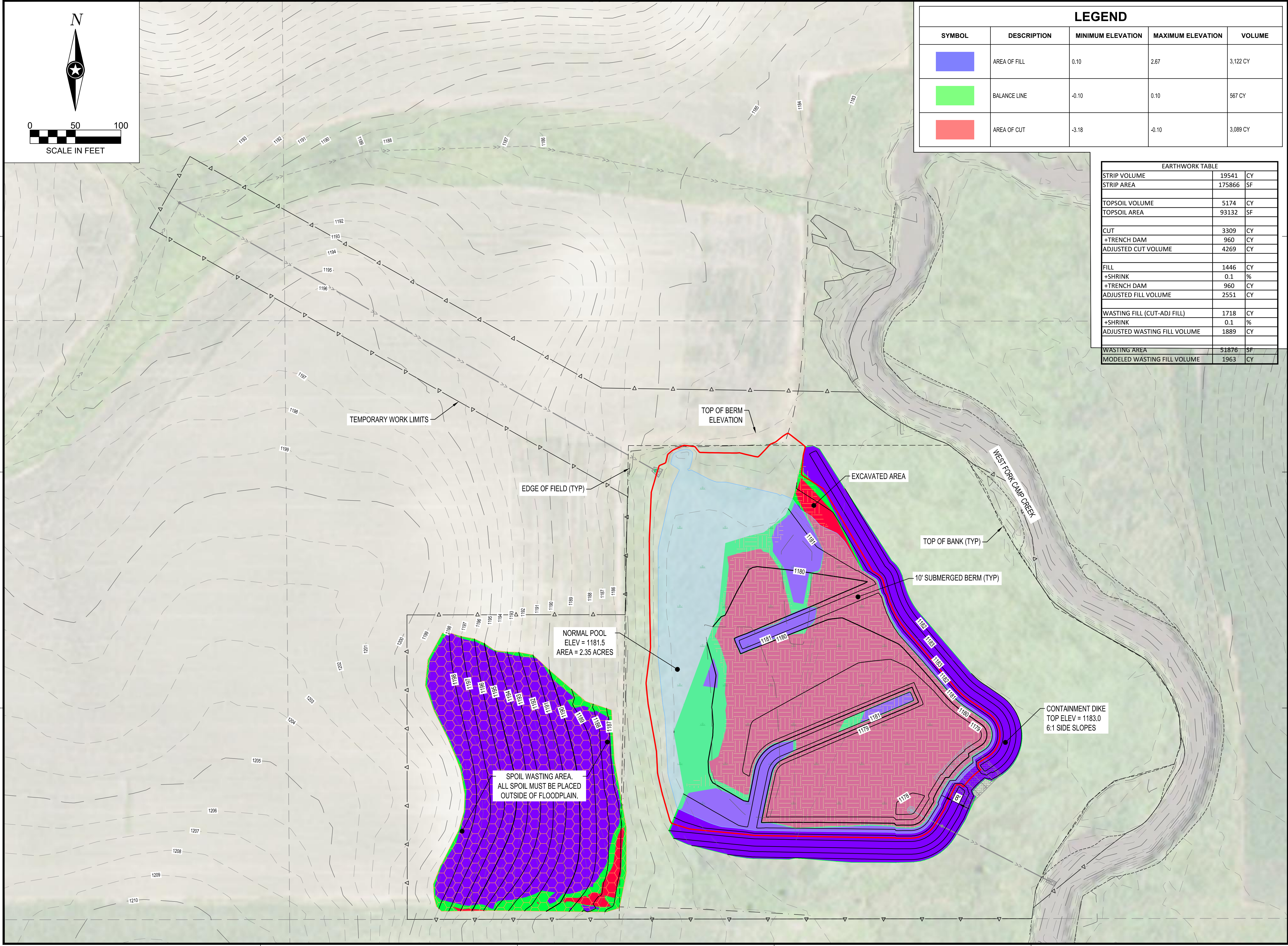
IDALS CAL883432

**GRODAHL
WETLAND**

CALHOUN COUNTY IOWA

PROJECT NO.	24-30402
FILE NAME	30402-C4-GRADE
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE	
GRADING PLAN	
SHEET	C4-10



LEGEND				
SYMBOL	DESCRIPTION	MINIMUM ELEVATION	MAXIMUM ELEVATION	VOLUME
	AREA OF FILL	0.10	2.67	3,122 CY
	BALANCE LINE	-0.10	0.10	567 CY
	AREA OF CUT	-3.18	-0.10	3,089 CY

EARTHWORK TABLE		
STRIP VOLUME	19541	CY
STRIP AREA	175866	SF
TOPSOIL VOLUME	5174	CY
TOPSOIL AREA	93132	SF
CUT	3309	CY
+TRENCH DAM	960	CY
ADJUSTED CUT VOLUME	4269	CY
FILL	1446	CY
+SHRINK	0.1	%
+TRENCH DAM	960	CY
ADJUSTED FILL VOLUME	2551	CY
WASTING FILL (CUT-ADJ FILL)	1718	CY
+SHRINK	0.1	%
ADJUSTED WASTING FILL VOLUME	1889	CY
WASTING AREA	51876	SF
MODELED WASTING FILL VOLUME	1963	CY



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WETLAND

CALHOUN COUNTY IOWA

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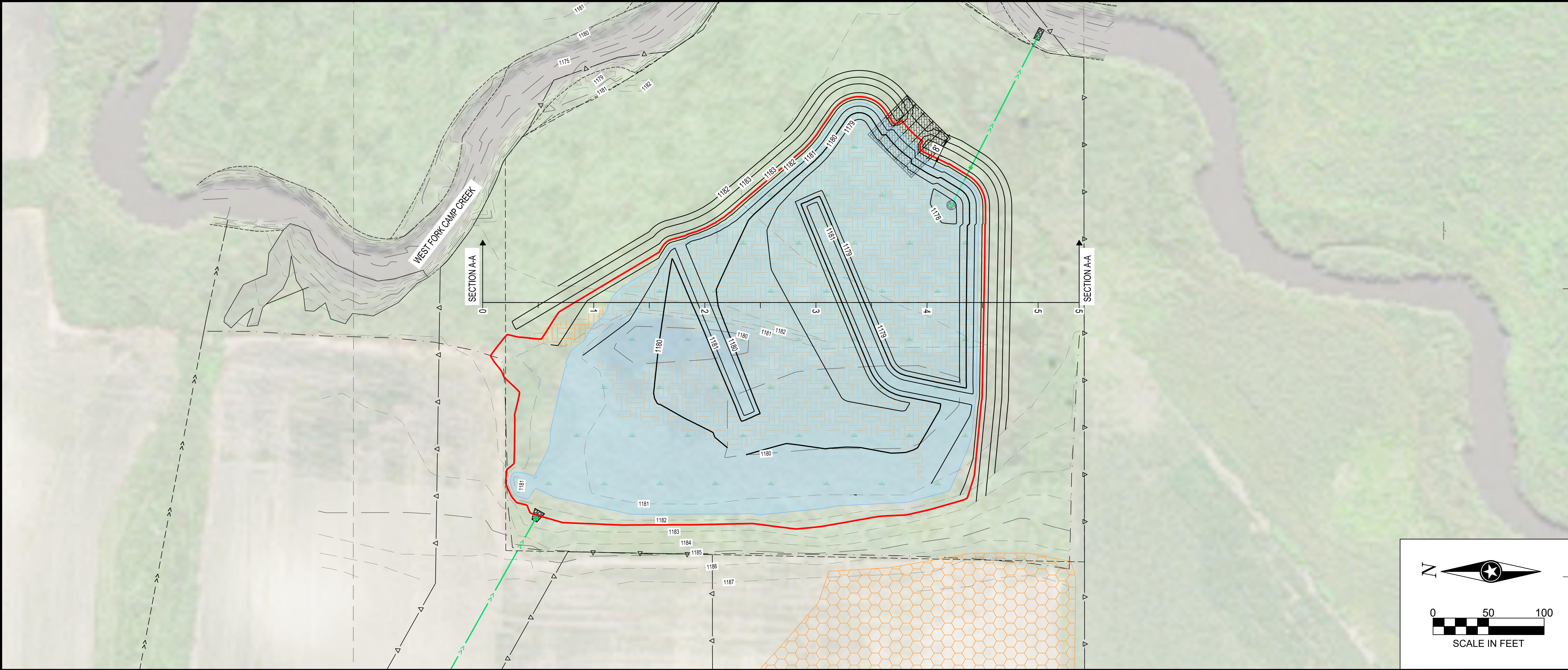
PROJECT NO.	24-30402
FILE NAME	30402-C4-CUTFILL
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
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TITLE

CUT - FILL

SHEET

C4-20



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IDALS CAL883432

**GRODAHL
WETLAND**

CALHOUN COUNTY IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	24-30402
FILE NAME	30402-C4-CROSS SECTION
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

CROSS SECTION

SHEET

C4-30

